Appendix I of
MPC Paper No. A/K10/276A

2024年 10月 8 日
此文件在＿＿＿＿＿＿收到，城市規劃委員會只會在收到所有必要的資料及文件後才正式確認收到申請的日期。

This document is received on - 8 OCT 2024
The Town Planning Board will formally acknowledge the date of receipt of the application only upon receipt of all the required information and documents.

Form No. S16-I
表格第 S16-I 號

APPLICATION FOR PERMISSION UNDER SECTION 16 OF THE TOWN PLANNING ORDINANCE (CAP. 131)

根據《城市規劃條例》(第131章) 第16條遞交的許可申請

Applicable to proposals not involving or not only involving:
適用於建議不涉及或不祇涉及:

- **(i) Construction of "New Territories Exempted House(s)";**
  興建「新界豁免管制屋宇」;
- **(ii) Temporary use/development of land and/or building not exceeding 3 years in rural areas or Regulated Areas; and**
  位於鄉郊地區或受規管地區土地上及/或建築物內進行為期不超過三年的臨時用途/發展;及
- **(iii) Renewal of permission for temporary use or development in rural areas or Regulated Areas**
  位於鄉郊地區或受規管地區的臨時用途或發展的許可續期

Applicant who would like to publish the notice of application in local newspapers to meet one of the Town Planning Board's requirements of taking reasonable steps to obtain consent of or give notification to the current land owner, please refer to the following link regarding publishing the notice in the designated newspapers: https://www.tpb.gov.hk/en/plan_application/apply.html

申請人如欲在本地報章刊登申請通知，以採取城市規劃委員會就取得現行土地擁有人的同意或通知現行土地擁有人所指定的其中一項合理步驟，請瀏覽以下網址有關在指定的報章刊登通知：https://www.tpb.gov.hk/tc/plan_application/apply.html

General Note and Annotation for the Form
填寫表格的一般指引及註解

\# "Current land owner" means any person whose name is registered in the Land Registry as that of an owner of the land to which the application relates, as at 6 weeks before the application is made
「現行土地擁有人」指在提出申請前六星期，其姓名或名稱已在土地註冊處註冊為該申請所關乎的土地的擁有人的人

& Please attach documentary proof 請夾附證明文件

^ Please insert number where appropriate 請在適當地方註明編號

Please fill "NA" for inapplicable item 請在不適用的項目填寫「不適用」

Please use separate sheets if the space provided is insufficient 如所提供的空間不足，請另頁說明

Please insert a「✔」at the appropriate box 請在適當的方格內上加上「✔」號

2402141 3018 by hand

Form No. S16-I 表格第 S16-I 號

For Official Use Only 請 勿 填 寫 此 欄	Application No. 申請編號	A/K10/276
	Date Received 收到日期	- 8 OCT 2024

1. The completed form and supporting documents (if any) should be sent to the Secretary, Town Planning Board (the Board), 15/F, North Point Government Offices, 333 Java Road, North Point, Hong Kong.
申請人須把填妥的申請表格及其他支持申請的文件 (倘有)，送交香港北角渣華道 333 號北角政府合署 15 樓城市規劃委員會(下稱「委員會」)秘書收。

2. Please read the "Guidance Notes" carefully before you fill in this form. The document can be downloaded from the Board's website at http://www.tpb.gov.hk/. It can also be obtained from the Secretariat of the Board at 15/F, North Point Government Offices, 333 Java Road, North Point, Hong Kong (Tel: 2231 4810 or 2231 4835), and the Planning Enquiry Counters of the Planning Department (Hotline: 2231 5000) (17/F, North Point Government Offices, 333 Java Road, North Point, Hong Kong and 14/F, Sha Tin Government Offices, 1 Sheung Wo Che Road, Sha Tin, New Territories).
請先細閱《申請須知》的資料單張，然後填寫此表格。該份文件可從委員會的網頁下載 (網址：http://www.tpb.gov.hk/)，亦可向委員會秘書處 (香港北角渣華道 333 號北角政府合署 15 樓 – 電話：2231 4810 或 2231 4835)及規劃署的規劃資料查詢處(熱線：2231 5000) (香港北角渣華道 333 號北角政府合署 17 樓及新界沙田上禾輋路 1 號沙田政府合署 14 樓)索取。

3. This form can be downloaded from the Board's website, and obtained from the Secretariat of the Board and the Planning Enquiry Counters of the Planning Department. The form should be typed or completed in block letters. The processing of the application may be refused if the required information or the required copies are incomplete.
此表格可從委員會的網頁下載，亦可向委員會秘書處及規劃署的規劃資料查詢處索取。申請人須以打印方式或以正楷填寫表格。如果申請人所提交的資料或文件副本不齊全，委員會可拒絕處理有關申請。

---

1. Name of Applicant 申請人姓名/名稱

(□ Mr. 先生 / □ Mrs. 夫人 / □ Miss 小姐 / □ Ms. 女士 / ☑ Company 公司 / □ Organisation 機構)

Lead Engineering Limited

2. Name of Authorised Agent (if applicable) 獲授權代理人姓名/名稱（如適用）

(□ Mr. 先生 / □ Mrs. 夫人 / □ Miss 小姐 / □ Ms. 女士 / ☑ Company 公司 / □ Organisation 機構)

KTA Planning Limited

3. Application Site 申請地點

(a) Full address / location / demarcation district and lot number (if applicable) 詳細地址／地點／丈量約份及地段號碼（如適用）	349 Prince Edward Road West, Kowloon (KIL 4011 s.A and 4168 s.A ss.2)
(b) Site area and/or gross floor area involved 涉及的地盤面積及／或總樓面面積	☑ Site area 地盤面積 582.9 sq.m 平方米 ☑ About 約 ☑ Gross floor area 總樓面面積 Not more than 2914.5 sq.m 平方米 □ About 約
(c) Area of Government land included (if any) 所包括的政府土地面積（倘有）	Nil sq.m 平方米 □ About 約

(d)	Name and number of the related statutory plan(s) 有關法定圖則的名稱及編號	Approved Ma Tau Kok Outline Zoning Plan No. S/K10/30
(e)	Land use zone(s) involved 涉及的土地用途地帶	Residential (Group B) ("R(B)")
(f)	Current use(s) 現時用途	Vacant (If there are any Government, institution or community facilities, please illustrate on plan and specify the use and gross floor area) (如有任何政府、機構或社區設施，請在圖則上顯示，並註明用途及總樓面面積)

4. "Current Land Owner" of Application Site 申請地點的「現行土地擁有人」

The applicant 申請人 –

☑ is the sole "current land owner"$^{\#\&}$ (please proceed to Part 6 and attach documentary proof of ownership).
是唯一的「現行土地擁有人」$^{\#\&}$ (請繼續填寫第 6 部分，並夾附業權證明文件)。

□ is one of the "current land owners"$^{\#\&}$ (please attach documentary proof of ownership).
是其中一名「現行土地擁有人」$^{\#\&}$ (請夾附業權證明文件)。

□ is not a "current land owner"$^{\#}$.
並不是「現行土地擁有人」$^{\#}$。

□ The application site is entirely on Government land (please proceed to Part 6).
申請地點完全位於政府土地上（請繼續填寫第 6 部分）。

5. Statement on Owner's Consent/Notification
就土地擁有人的同意/通知土地擁有人的陳述

(a) According to the record(s) of the Land Registry as at .... (DD/MM/YYYY), this application involves a total of .... "current land owner(s) "$^{\#}$.
根據土地註冊處截至 .... 年 .... 月 .... 日的記錄，這宗申請共牽涉 .... 名「現行土地擁有人」$^{\#}$。

(b) The applicant 申請人 –

□ has obtained consent(s) of .... "current land owner(s)"$^{\#}$.
已取得 .... 名「現行土地擁有人」$^{\#}$的同意。

Details of consent of "current land owner(s)"$^{\#}$ obtained 取得「現行土地擁有人」$^{\#}$同意的詳情		
No. of 'Current Land Owner(s)' 「現行土地擁有人」數目	Lot number/address of premises as shown in the record of the Land Registry where consent(s) has/have been obtained 根據土地註冊處記錄已獲得同意的地段號碼／處所地址	Date of consent obtained (DD/MM/YYYY) 取得同意的日期 (日/月/年)

(Please use separate sheets if the space of any box above is insufficient. 如上列任何方格的空間不足，請另頁說明)

☐ has notified …………… "current land owner(s)"#
已通知 ………………… 名「現行土地擁有人」#。

Details of the "current land owner(s)" # notified 已獲通知「現行土地擁有人」#的詳細資料		
No. of 'Current Land Owner(s)' 「現行土地擁有人」數目	Lot number/address of premises as shown in the record of the Land Registry where notification(s) has/have been given 根據土地註冊處記錄已發出通知的地段號碼／處所地址	Date of notification given (DD/MM/YYYY) 通知日期(日/月/年)

(Please use separate sheets if the space of any box above is insufficient. 如上列任何方格的空間不足，請另頁說明)

☐ has taken reasonable steps to obtain consent of or give notification to owner(s):
已採取合理步驟以取得土地擁有人的同意或向該人發給通知。詳情如下：

Reasonable Steps to Obtain Consent of Owner(s) 取得土地擁有人的同意所採取的合理步驟

☐ sent request for consent to the "current land owner(s)" on ________________ (DD/MM/YYYY)#&
於________________ (日/月/年)向每一名「現行土地擁有人」#郵遞要求同意書&

Reasonable Steps to Give Notification to Owner(s) 向土地擁有人發出通知所採取的合理步驟

☐ published notices in local newspapers on ________________ (DD/MM/YYYY)&
於________________ (日/月/年)在指定報章就申請刊登一次通知&

☐ posted notice in a prominent position on or near application site/premises on ________________ (DD/MM/YYYY)&
於________________ (日/月/年)在申請地點／申請處所或附近的顯明位置貼出關於該申請的通知&

☐ sent notice to relevant owners' corporation(s)/owners' committee(s)/mutual aid committee(s)/management office(s) or rural committee on ________________ (DD/MM/YYYY)&
於________________ (日/月/年)把通知寄往相關的業主立案法團/業主委員會/互助委員會或管理處，或有關的鄉事委員會&

Others 其他

☐ others (please specify)
其他（請指明）

____

____

____

____

Note: May insert more than one「✔」.
Information should be provided on the basis of each and every lot (if applicable) and premises (if any) in respect of the application.
註: 可在多於一個方格內加上「✔」號
申請人須就申請涉及的每一地段（倘適用）及處所（倘有）分別提供資料

6. Type(s) of Application 申請類別

□	Type (i) 第(i)類	Change of use within existing building or part thereof 更改現有建築物或其部分內的用途
□	Type (ii) 第(ii)類	Diversion of stream / excavation of land / filling of land / filling of pond as required under Notes of Statutory Plan(s) 根據法定圖則《註釋》內所要求的河道改道／挖土／填土／填塘工程
□	Type (iii) 第(iii)類	Public utility installation / Utility installation for private project 公用事業設施裝置/私人發展計劃的公用設施裝置
□	Type (iv) 第(iv)類	Minor relaxation of stated development restriction(s) as provided under Notes of Statutory Plan(s) 略為放寬於法定圖則《註釋》內列明的發展限制
☑	Type (v) 第(v)類	Use / development other than (i) to (iii) above 上述的(i)至(iii)項以外的用途／發展

Note 1: May insert more than one「✓」.
註 1： 可在多於一個方格內加上「✓」號
Note 2: For Development involving columbarium use, please complete the table in the Appendix.
註 2： 如發展涉及靈灰安置所用途，請填妥於附件的表格。

(i) For Type (i) application 供第(i)類申請

(a) Total floor area involved 涉及的總樓面面積	sq.m 平方米		
(b) Proposed use(s)/development 擬議用途/發展	(If there are any Government, institution or community facilities, please illustrate on plan and specify the use and gross floor area) (如有任何政府、機構或社區設施，請在圖則上顯示，並註明用途及總樓面面積)		
(c) Number of storeys involved 涉及層數		Number of units involved 涉及單位數目	
(d) Proposed floor area 擬議樓面面積	Domestic part 住用部分 …………………… sq.m 平方米 □About 約 Non-domestic part 非住用部分……………… sq.m 平方米 □About 約 Total 總計 ……………………… sq.m 平方米 □About 約		
(e) Proposed uses of different floors (if applicable) 不同樓層的擬議用途(如適用) (Please use separate sheets if the space provided is insufficient) (如所提供的空間不足，請另頁說明)	Floor(s) 樓層	Current use(s) 現時用途	Proposed use(s) 擬議用途

(ii) For Type (ii) application 供第(ii)類申請

(a) Operation involved 涉及工程	□ Diversion of stream 河道改道 □ Filling of pond 填塘 Area of filling 填塘面積 …………………… sq.m 平方米 □About 約 Depth of filling 填塘深度 …………………… m 米 □About 約 □ Filling of land 填土 Area of filling 填土面積 …………………… sq.m 平方米 □About 約 Depth of filling 填土厚度 …………………… m 米 □About 約 □ Excavation of land 挖土 Area of excavation 挖土面積 …………………… sq.m 平方米 □About 約 Depth of excavation 挖土深度 …………………… m 米 □About 約 (Please indicate on site plan the boundary of concerned land/pond(s), and particulars of stream diversion, the extent of filling of land/pond(s) and/or excavation of land) (請用圖則顯示有關土地／池塘界線，以及河道改道、填塘、填土及／或挖土的細節及/或範圍))
(b) Intended use/development 有意進行的用途／發展	

(iii) For Type (iii) application 供第(iii)類申請

(a) Nature and scale
性質及規模

□ Public utility installation 公用事業設施裝置

□ Utility installation for private project 私人發展計劃的公用設施裝置

Please specify the type and number of utility to be provided as well as the dimensions of each building/structure, where appropriate
請註明有關裝置的性質及數量，包括每座建築物/構築物(倘有)的長度、高度和闊度

Name/type of installation 裝置名稱／種類	Number of provision 數量	Dimension of each installation /building/structure (m) (LxWxH) 每個裝置／建築物／構築物的尺寸 (米) (長 x 闊 x 高)

(Please illustrate on plan the layout of the installation 請用圖則顯示裝置的布局)

(iv) For Type (iv) application 供第(iv)類申請

(a) Please specify the proposed minor relaxation of stated development restriction(s) and **also fill in the proposed use/development and development particulars in part (v) below** –
請列明擬議略為放寬的發展限制**並填妥於第(v)部分的擬議用途/發展及發展細節** –

□	Plot ratio restriction 地積比率限制	From 由 ………………… to 至 …………………
□	Gross floor area restriction 總樓面面積限制	From 由 ………..sq. m 平方米 to 至 ………..sq. m 平方米
□	Site coverage restriction 上蓋面積限制	From 由 ………………% to 至 ………………… %
□	Building height restriction 建築物高度限制	From 由 ………………m 米 to 至 ………………… m 米 From 由 ……………… mPD 米 (主水平基準上) to 至 ………………mPD 米 (主水平基準上) From 由 ……………… storeys 層 to 至 ……………… storeys 層
□	Non-building area restriction 非建築用地限制	From 由 ………………m to 至 ………………… m
□	Others (please specify) 其他（請註明）	…………………………………… ……………………………………

(v) For Type (v) application 供第(v)類申請

(a) Proposed use(s)/development 擬議用途/發展	Proposed Social Welfare Facility (Residential Care Home for the Elderly) (Please illustrate the details of the proposal on a layout plan 請用平面圖說明建議詳情)

(b) Development Schedule 發展細節表

Proposed gross floor area (GFA) 擬議總樓面面積	Not more than 2914.5 sq.m 平方米	□About 約
Proposed plot ratio 擬議地積比率	Not more than 5	□About 約
Proposed site coverage 擬議上蓋面積	Not more than 63 %	□About 約
Proposed no. of blocks 擬議座數	1	
Proposed no. of storeys of each block 每座建築物的擬議層數	11 storeys 層 ☑ include 包括 1 storeys of basements 層地庫 □ exclude 不包括...... storeys of basements 層地庫	
Proposed building height of each block 每座建築物的擬議高度	42.509 mPD 米(主水平基準上)	☑About 約
	33.4 m 米 (measured from mean street level)	☑About 約

Part 6 (Cont'd) 第 6 部分 (續)

☑ Domestic part 住用部分

GFA 總樓面面積 Not more than 2,914.5 sq. m 平方米 ☐About 約

number of Units 單位數目 141 no. of beds for RCHE

average unit size 單位平均面積 N/A sq. m 平方米 ☐About 約

estimated number of residents 估計住客數目 141

☐ Non-domestic part 非住用部分

GFA 總樓面面積

☐ eating place 食肆 …………………. sq. m 平方米 ☐About 約

☐ hotel 酒店 …………………. sq. m 平方米 ☐About 約

(please specify the number of rooms 請註明房間數目) ………………………

☐ office 辦公室 …………………. sq. m 平方米 ☐About 約

☐ shop and services 商店及服務行業 …………………. sq. m 平方米 ☐About 約

☐ Government, institution or community facilities 政府、機構或社區設施

(please specify the use(s) and concerned land area(s)/GFA(s) 請註明用途及有關的地面面積／總樓面面積)

…………………………………………………

…………………………………………………

…………………………………………………

☐ other(s) 其他

(please specify the use(s) and concerned land area(s)/GFA(s) 請註明用途及有關的地面面積／總樓面面積)

…………………………………………………

…………………………………………………

…………………………………………………

☐ Open space 休憩用地 (please specify land area(s) 請註明地面面積)

☐ private open space 私人休憩用地 …………… sq. m 平方米 ☐ Not less than 不少於

☐ public open space 公眾休憩用地 …………… sq. m 平方米 ☐ Not less than 不少於

(c) Use(s) of different floors (if applicable) 各樓層的用途 (如適用)

[Block number] [座數]	[Floor(s)] [層數]	[Proposed use(s)] [擬議用途]
Please refer to the attached Supporting Planning Statement	Please refer to the attached Supporting Planning Statement	Please refer to the attached Supporting Planning Statement

(d) Proposed use(s) of uncovered area (if any) 露天地方（倘有）的擬議用途

Parking space, lay-by and pavement

7. Anticipated Completion Time of the Development Proposal
擬議發展計劃的預計完成時間

Anticipated completion time (in month and year) of the development proposal (by phase (if any)) (e.g. June 2023)
擬議發展計劃預期完成的年份及月份（分期（倘有））(例：2023 年 6 月)
(Separate anticipated completion times (in month and year) should be provided for the proposed public open space and Government, institution or community facilities (if any))
(申請人須就擬議的公眾休憩用地及政府、機構或社區設施（倘有）提供個別擬議完成的年份及月份)

December 2027 (tentative)

8. Vehicular Access Arrangement of the Development Proposal
擬議發展計劃的行車通道安排

Any vehicular access to the site/subject building? 是否有車路通往地盤／有關建築物？	Yes 是	☑ There is an existing access. (please indicate the street name, where appropriate) 有一條現有車路。(請註明車路名稱(如適用)) Prince Edward Road West ☐ There is a proposed access. (please illustrate on plan and specify the width) 有一條擬議車路。（請在圖則顯示，並註明車路的闊度）
	No 否	☐
Any provision of parking space for the proposed use(s)? 是否有為擬議用途提供停車位？	Yes 是	☑ (Please specify type(s) and number(s) and illustrate on plan)請註明種類及數目並於圖則上顯示) Private Car Parking Spaces 私家車車位 Motorcycle Parking Spaces 電單車車位 Light Goods Vehicle Parking Spaces 輕型貨車泊車位 Medium Goods Vehicle Parking Spaces 中型貨車泊車位 Heavy Goods Vehicle Parking Spaces 重型貨車泊車位 Others (Please Specify) 其他（請列明） Disabled Car Parking Space 1
	No 否	☐
Any provision of loading/unloading space for the proposed use(s)? 是否有為擬議用途提供上落客貨車位？	Yes 是	☑ (Please specify type(s) and number(s) and illustrate on plan) 請註明種類及數目並於圖則上顯示) Taxi Spaces 的士車位 Coach Spaces 旅遊巴車位 Light Goods Vehicle Spaces 輕型貨車車位 Medium Goods Vehicle Spaces 中型貨車車位 Heavy Goods Vehicle Spaces 重型貨車車位 Others (Please Specify) 其他（請列明） Shared Lay-By for Taxi, Private Car, Ambulance, Light Goods Vehicle and Mini Coach 1
	No 否	☐

9. Impacts of Development Proposal 擬議發展計劃的影響

If necessary, please use separate sheets to indicate the proposed measures to minimise possible adverse impacts or give justifications/reasons for not providing such measures.
如需要的話，請另頁註明可盡量減少可能出現不良影響的措施，否則請提供理據/理由。

Does the development proposal involve alteration of existing building? 擬議發展計劃是否包括現有建築物的改動?	Yes 是	☐ Please provide details 請提供詳情 …………………………………………… …………………………………………… …………………………………………… …………………………………………… ……………………………………………
	No 否	☑
Does the development proposal involve the operation on the right? 擬議發展是否涉及右列的工程? (Note: where Type (ii) application is the subject of application, please skip this section. 註：如申請涉及第(ii)類申請，請跳至下一條問題。)	Yes 是	☑ (Please indicate on site plan the boundary of concerned land/pond(s), and particulars of stream diversion, the extent of filling of land/pond(s) and/or excavation of land) (請用地盤平面圖顯示有關土地／池塘界線，以及河道改道、填塘、填土及／或挖土的細節及/或範圍) ☐ Diversion of stream 河道改道 ☐ Filling of pond 填塘 Area of filling 填塘面積 ……………… sq.m 平方米 ☐About 約 Depth of filling 填塘深度 …………………… m 米 ☐About 約 ☐ Filling of land 填土 Area of filling 填土面積 ……………… sq.m 平方米 ☐About 約 Depth of filling 填土厚度 …………………… m 米 ☐About 約 ☑ Excavation of land 挖土 Area of excavation 挖土面積……291.5…… sq.m 平方米 ☑About 約 Depth of excavation 挖土深度 ……3.7…………m 米 ☑About 約
	No 否	☐

Would the development proposal cause any adverse impacts?
擬議發展計劃會否造成不良影響？

On environment 對環境	Yes 會 ☐	No 不會 ☑
On traffic 對交通	Yes 會 ☐	No 不會 ☑
On water supply 對供水	Yes 會 ☐	No 不會 ☑
On drainage 對排水	Yes 會 ☐	No 不會 ☑
On slopes 對斜坡	Yes 會 ☐	No 不會 ☑
Affected by slopes 受斜坡影響	Yes 會 ☐	No 不會 ☑
Landscape Impact 構成景觀影響	Yes 會 ☐	No 不會 ☑
Tree Felling 砍伐樹木	Yes 會 ☐	No 不會 ☑
Visual Impact 構成視覺影響	Yes 會 ☐	No 不會 ☑
Others (Please Specify) 其他 (請列明)	Yes 會 ☐	No 不會 ☑

____

____

Please state measure(s) to minimise the impact(s). For tree felling, please state the number, diameter at breast height and species of the affected trees (if possible)
請註明盡量減少影響的措施。如涉及砍伐樹木，請說明受影響樹木的數目、及胸高度的樹幹直徑及品種(倘可)

Please refer to the attached Supporting Planning Statement
……………………………………………………………
……………………………………………………………
……………………………………………………………
……………………………………………………………
……………………………………………………………

10. Justifications 理由

The applicant is invited to provide justifications in support of the application. Use separate sheets if necessary.
現請申請人提供申請理由及支持其申請的資料。如有需要，請另頁說明。

Please refer to the attached Supporting Planning Statement.

11. Declaration 聲明

I hereby declare that the particulars given in this application are correct and true to the best of my knowledge and belief.
本人謹此聲明，本人就這宗申請提交的資料，據本人所知及所信，均屬真實無誤。

I hereby grant a permission to the Board to copy all the materials submitted in this application and/or to upload such materials to the Board's website for browsing and downloading by the public free-of-charge at the Board's discretion. 本人現准許委員會酌情將本人就此申請所提交的所有資料複製及/或上載至委員會網站，供公眾免費瀏覽或下載。

Signature 簽署 ……………………………………… □ Applicant 申請人 / ☑ Authorised Agent 獲授權代理人

GLADYS NG
Name in Block Letters 姓名（請以正楷填寫）

Principal Town Planner
Position (if applicable) 職位 （如適用）

Professional Qualification(s) 專業資格 ☑ Member 會員 / □ Fellow of 資深會員
☑ HKIP 香港規劃師學會 / □ HKIA 香港建築師學會 /
□ HKIS 香港測量師學會 / □ HKIE 香港工程師學會 /
□ HKILA 香港園境師學會/ □ HKIUD 香港城市設計學會
□ RPP 註冊專業規劃師
Others 其他 ……………………………………………

on behalf of 代表 KTA Planning Limited

KTA Planning Limited

☑ Company 公司 / □ Organisation Name and Chop (if applicable) 機構名稱及蓋章（如適用）

Date 日期 30/08/2024 (DD/MM/YYYY 日/月/年)

Remark 備註

The materials submitted in this application and the Board's decision on the application would be disclosed to the public. Such materials would also be uploaded to the Board's website for browsing and free downloading by the public where the Board considers appropriate.
委員會會向公眾披露申請人所遞交的申請資料和委員會對申請所作的決定。在委員會認為合適的情況下，有關申請資料亦會上載至委員會網頁供公眾免費瀏覽及下載。

Warning 警告

Any person who knowingly or wilfully makes any statement or furnish any information in connection with this application, which is false in any material particular, shall be liable to an offence under the Crimes Ordinance.
任何人在明知或故意的情況下，就這宗申請提出在任何要項上是虛假的陳述或資料，即屬違反《刑事罪行條例》。

Statement on Personal Data 個人資料的聲明

1. The personal data submitted to the Board in this application will be used by the Secretary of the Board and Government departments for the following purposes:
委員會就這宗申請所收到的個人資料會交給委員會秘書及政府部門，以根據《城市規劃條例》及相關的城市規劃委員會規劃指引的規定作以下用途：
   (a) the processing of this application which includes making available the name of the applicant for public inspection when making available this application for public inspection; and
   處理這宗申請，包括公布這宗申請供公眾查閱，同時公布申請人的姓名供公眾查閱；以及
   (b) facilitating communication between the applicant and the Secretary of the Board/Government departments.
   方便申請人與委員會秘書及政府部門之間進行聯絡。

2. The personal data provided by the applicant in this application may also be disclosed to other persons for the purposes mentioned in paragraph 1 above.
申請人就這宗申請提供的個人資料，或亦會向其他人士披露，以作上述第 1 段提及的用途。

3. An applicant has a right of access and correction with respect to his/her personal data as provided under the Personal Data (Privacy) Ordinance (Cap. 486). Request for personal data access and correction should be addressed to the Secretary of the Board at 15/F, North Point Government Offices, 333 Java Road, North Point, Hong Kong.
根據《個人資料(私隱)條例》(第 486 章)的規定，申請人有權查閱及更正其個人資料。如欲查閱及更正個人資料，應向委員會秘書提出有關要求，其地址為香港北角渣華道 333 號北角政府合署 15 樓。

For Developments involving Columbarium Use, please also complete the following:
如發展涉及靈灰安置所用途，請另外填妥以下資料:

Ash interment capacity 骨灰安放容量@

Maximum number of sets of ashes that may be interred in the niches
在龕位內最多可安放骨灰的數量
Maximum number of sets of ashes that may be interred other than in niches
在非龕位的範圍內最多可安放骨灰的數量

Total number of niches 龕位總數

Total number of single niches
單人龕位總數

Number of single niches (sold and occupied)
單人龕位數目 (已售並佔用)
Number of single niches (sold but unoccupied)
單人龕位數目 (已售但未佔用)
Number of single niches (residual for sale)
單人龕位數目 (待售)

Total number of double niches
雙人龕位總數

Number of double niches (sold and fully occupied)
雙人龕位數目 (已售並全部佔用)
Number of double niches (sold and partially occupied)
雙人龕位數目 (已售並部分佔用)
Number of double niches (sold but unoccupied)
雙人龕位數目 (已售但未佔用)
Number of double niches (residual for sale)
雙人龕位數目 (待售)

Total no. of niches other than single or double niches (please specify type)
除單人及雙人龕位外的其他龕位總數 (請列明類別)

Number. of niches (sold and fully occupied)
龕位數目 (已售並全部佔用)
Number of niches (sold and partially occupied)
龕位數目 (已售並部分佔用)
Number of niches (sold but unoccupied)
龕位數目 (已售但未佔用)
Number of niches (residual for sale)
龕位數目 (待售)

Proposed operating hours 擬議營運時間

@ Ash interment capacity in relation to a columbarium means –
就靈灰安置所而言，骨灰安放容量指：

- the maximum number of containers of ashes that may be interred in each niche in the columbarium;
  每個龕位內可安放的骨灰容器的最高數目;
- the maximum number of sets of ashes that may be interred other than in niches in any area in the columbarium; and
  在該靈灰安置所並非龕位的範圍內，總共最多可安放多少份骨灰；以及
- the total number of sets of ashes that may be interred in the columbarium.
  在該骨灰安置所內，總共最多可安放多少份骨灰。

Gist of Application 申請摘要

(Please provide details in both English and Chinese as far as possible. This part will be circulated to relevant consultees, uploaded to the Town Planning Board's Website for browsing and free downloading by the public and available at the Planning Enquiry Counters of the Planning Department for general information.)
(請盡量以英文及中文填寫。此部分將會發送予相關諮詢人士、上載至城市規劃委員會網頁供公眾免費瀏覽及下載及於規劃署規劃資料查詢處供一般參閱。)

Application No. 申請編號	(For Official Use Only) (請勿填寫此欄)
Location/address 位置／地址	349 Prince Edward Road West, Kowloon (KIL 4011 s.A and 4168 s.A ss.2)
Site area 地盤面積	582.9 sq. m 平方米 ☑ About 約 (includes Government land of 包括政府土地 sq. m 平方米 ☐ About 約)
Plan 圖則	Approved Ma Tau Kok Outline Zoning Plan No. S/K10/30
Zoning 地帶	"Residential (Group B)"
Applied use/ development 申請用途/發展	Proposed Social Welfare Facility (Residential Care Home for the Elderly)

(i) Gross floor area and/or plot ratio 總樓面面積及／或地積比率		sq.m 平方米	Plot Ratio 地積比率
	Domestic 住用	2,914.5 ☐ About 約 ☑ Not more than 不多於	5 ☐About 約 ☑Not more than 不多於
	Non-domestic 非住用	☐ About 約 ☐ Not more than 不多於	☐About 約 ☐Not more than 不多於
(ii) No. of blocks 幢數	Domestic 住用	1	
	Non-domestic 非住用		
	Composite 綜合用途		

(iii)	Building height/No. of storeys 建築物高度／層數	Domestic 住用	About 33.4	m 米 ☐ (Not more than 不多於)
			About 42.509	mPD 米(主水平基準上) ☐ (Not more than 不多於)
			11	Storeys(s) 層 ☐ (Not more than 不多於)
			1	*(☑Include 包括/☐ Exclude 不包括* *☐ Carport 停車間* *☑ Basement 地庫* *☐ Refuge Floor 防火層* *☐ Podium 平台)*
		Non-domestic 非住用		m 米 ☐ (Not more than 不多於)
				mPD 米(主水平基準上) ☐ (Not more than 不多於)
				Storeys(s) 層 ☐ (Not more than 不多於)
				(☐Include 包括/☐ Exclude 不包括 *☐ Carport 停車間* *☐ Basement 地庫* *☐ Refuge Floor 防火層* *☐ Podium 平台)*
		Composite 綜合用途		m 米 ☐ (Not more than 不多於)
				mPD 米(主水平基準上) ☐ (Not more than 不多於)
				Storeys(s) 層 ☐ (Not more than 不多於)
				(☐Include 包括/☐ Exclude 不包括 *☐ Carport 停車間* *☐ Basement 地庫* *☐ Refuge Floor 防火層* *☐ Podium 平台)*
(iv)	Site coverage 上蓋面積		Not more than 63	% ☐ About 約
(v)	No. of units 單位數目		No. of bed for RCHE: About 141	
(vi)	Open space 休憩用地	Private 私人		sq.m 平方米 ☐ Not less than 不少於
		Public 公眾		sq.m 平方米 ☐ Not less than 不少於

(vii) No. of parking spaces and loading / unloading spaces 停車位及上落客貨車位數目	Total no. of vehicle parking spaces 停車位總數	1
	Private Car Parking Spaces 私家車車位	
	Motorcycle Parking Spaces 電單車車位	
	Light Goods Vehicle Parking Spaces 輕型貨車泊車位	
	Medium Goods Vehicle Parking Spaces 中型貨車泊車位	
	Heavy Goods Vehicle Parking Spaces 重型貨車泊車位	
	Others (Please Specify) 其他 (請列明)	
	Disabled Car Parking Space	1
	Total no. of vehicle loading/unloading bays/lay-bys 上落客貨車位／停車處總數	1
	Taxi Spaces 的士車位	
	Coach Spaces 旅遊巴車位	
	Light Goods Vehicle Spaces 輕型貨車車位	
	Medium Goods Vehicle Spaces 中型貨車位	
	Heavy Goods Vehicle Spaces 重型貨車車位	
	Others (Please Specify) 其他 (請列明)	
	Shared Lay-by for Taxi / Private Car / Ambulance / Light Goods Vehicle and Mini Coach	1

Submitted Plans, Drawings and Documents 提交的圖則、繪圖及文件

	Chinese 中文	**English 英文**
Plans and Drawings 圖則及繪圖		
Master layout plan(s)/Layout plan(s) 總綱發展藍圖／布局設計圖	☐	☑
Block plan(s) 樓宇位置圖	☐	☐
Floor plan(s) 樓宇平面圖	☐	☑
Sectional plan(s) 截視圖	☐	☑
Elevation(s) 立視圖	☐	☐
Photomontage(s) showing the proposed development 顯示擬議發展的合成照片	☐	☐
Master landscape plan(s)/Landscape plan(s) 園境設計總圖／園境設計圖	☐	☐
Others (please specify) 其他（請註明）	☐	☐
Reports 報告書		
Planning Statement/Justifications 規劃綱領/理據	☐	☑
Environmental assessment (noise, air and/or water pollutions) 環境評估（噪音、空氣及／或水的污染）	☐	☑
Traffic impact assessment (on vehicles) 就車輛的交通影響評估	☐	☑
Traffic impact assessment (on pedestrians) 就行人的交通影響評估	☐	☐
Visual impact assessment 視覺影響評估	☐	☐
Landscape impact assessment 景觀影響評估	☐	☐
Tree Survey 樹木調查	☐	☐
Geotechnical impact assessment 土力影響評估	☐	☐
Drainage impact assessment 排水影響評估	☐	☐
Sewerage impact assessment 排污影響評估	☐	☑
Risk Assessment 風險評估	☐	☐
Others (please specify) 其他（請註明）	☐	☐

Note: May insert more than one「✔」. 註：可在多於一個方格內加上「✔」號

Note: The information in the Gist of Application above is provided by the applicant for easy reference of the general public. Under no circumstances will the Town Planning Board accept any liabilities for the use of the information nor any inaccuracies or discrepancies of the information provided. In case of doubt, reference should always be made to the submission of the applicant.

註： 上述申請摘要的資料是由申請人提供以方便市民大眾參考。對於所載資料在使用上的問題及文義上的歧異，城市規劃委員會概不負責。若有任何疑問，應查閱申請人提交的文件。

此為空白頁。

This is a blank page.

S16 PLANNING APPLICATION
APPROVED MA TAU KOK OUTLINE ZONING PLAN NO. S/K10/30

Proposed Social Welfare Facility
(Residential Care Home for the Elderly)
in “Residential (Group B)” Zone
at 349 Prince Edward Road West, Kowloon

Supporting Planning Statement

August 2024

Applicant:
Lead Engineering Ltd.

Consultancy Team:
KTA Planning Limited
Spence Robinson Limited
CKM Asia Limited
Ramboll Hong Kong Limited

S3120_PS_V01

Executive Summary

This Planning Statement is prepared and submitted on behalf of Lead Engineering Limited (the “Applicant”) to seek approval from the Town Planning Board (“TPB”) under Section 16 of the Town Planning Ordinance for the proposed social welfare facility (residential care home for the elderly) at 349 Prince Edward Road West, Kowloon (“Application Site”/ “the Site”). The Application Site is zoned “Residential (Group B)” (“R(B)”) on the Approved Ngau Tau Kok Outline Zoning Plan (“Approved OZP”) No. S/K10/30.

The latest approval for social welfare facility (Residential Care Home for the Elderly (“RCHE”)) at the Application Site was granted by the TPB on 3 January 2020 (TPB Ref.: A/K10/261). In response to the increase in minimum floor area per resident in RCHE promulgated in the revised Code of Practice for Residential Care Homes (Elderly Persons) in June 2024, a revised scheme has been formulated to comply with the new spatial requirement. The revised scheme contains 1 block of 11-storey building (incl. 1 level of basement) with a building height of about 42.509 mPD (main roof level). Based on a site area of about 582.9 sq.m and a plot ratio of about 5, a total GFA of not more than 2914.5 sq.m is proposed for the RCHE use.

The Proposed Development is fully justified due to the following reasons:

- The current application is to take forward the approved 91-bed RCHE under TPB Ref.: A/K10/261, but to update the design with reference to the latest spatial requirement for RCHE promulgated by SWD.
- The Proposed Development with 141 RCHE bedspaces would help to alleviate the shortage of quality RCHE services for the elderlies within the area.
- With its convenient location and good accessibility connected by both road-based and rail-based transports, the Site is suitable for RCHE use.
- The Applicant has strived to make the greatest endeavours to come up with an optimal design by incorporating building setbacks and interesting building design in responding positively to the surrounding context.
- The proposed development intensity is well within the permissible PR and BH stipulated under the Approved OZP and is considered appropriate.
- Various technical assessments have been carried out and the findings concluded that the Proposal is technically feasible without posing negative impact onto the surrounding environment and neither to the future residents.

行政摘要

（內文如有差異，應以英文版本為準）

本規劃申請書為Lead Engineering Limited（下稱「申請人」）擬備。申請人根據城市規劃條例第16條，向城市規劃委員會（下稱「城規會」）提出規劃申請，以容許位於九龍太子道西349號（下稱「申請地點」）作社會福利設施（安老院）用途。申請地點位於馬頭角分區計劃大綱核准圖編號S/K10/30的住宅（乙類）地帶。

申請地點已於2020年1月3日獲得城規會的規劃許可，批准申請地點作安老院用途（城規會參考編號：A/K10/261）。鑒於社會福利署於2024年6月頒布的《安老院實務守則》(修訂版)，當中列明增加安老院舍每名住客的最低樓面面積，申請人就已獲規劃許可的安老院作出修改，以符合最新的空間規定。擬議發展包含一幢11層高的建築物（包括一層地庫)，最高建築物高度為主水平基準以上約42.509米（主天台層)。申請地點的地盤面積為582.9平方米，擬議建築物的地積比為5，樓面面積為2914.5平方米，用作安老院用途。

申請人提出是次規劃申請是基於以下理據：

- 現時的規劃申請是基於已獲規劃許可的安老院（城規會申請編號A/K10/261）作出修改，以符合社會福利署最新的空間要求。
- 擬議發展設有141個安老院舍床位，能有效舒緩當區安老院的短缺。
- 申請地點位置及交通便利，鄰近主要道路及鐵路網絡，適合用作安老院用途。
- 申請人已致力提供最理想的建築設計以融合各種規劃得益，並配合周邊環境發展。
- 擬議發展的建築密度符合分區計劃大綱核准圖內所訂明的高度和地積比限制，建議的發展參數可視為合適。
- 擬議發展已進行了各種技術評估，並證明不會對周圍環境產生負面影響。

TABLE OF CONTENTS

List of Figures

List of Chart

List of Tables

List of Appendices

S16 Planning Application
Approved Ma Tau Kok OZP No. A/K10/30

Proposed Social Welfare Facility
(Residential Care Home for the Elderly) in “Residential (Group B)” Zone at 349 Prince Edward Road West, Kowloon

Supporting Planning Statement

1. INTRODUCTION

1.1 Purpose

1.1.1 This Planning Application is prepared and submitted on behalf of Lead Engineering Limited (the “Applicant”) to seek approval from the Town Planning Board (“TPB”) under Section 16 of the Town Planning Ordinance for the Proposed Social Welfare Facility (Residential Care Home for the Elderly) at 349 Prince Edward Road West, Kowloon (“Application Site”/ “the “Site”). The Site falls within “Residential (Group B)” (“R(B)”) zone on the Approved Ma Tau Kok Outline Zoning Plan No. S/K10/30 (“Approved OZP”). This Planning Statement is to provide the TPB with the necessary information to facilitate consideration of this Planning Application.

1.1.2 On 3 January 2020, TPB granted an approval (with conditions) for a proposed 91-bed Residential Care Home for the Elderly (“RCHE”) at the Application Site under TPB Ref.: A/K10/261. The Social Welfare Department (“SWD”) promulgated the revised Code of Practice for Residential Care Homes (Elderly Persons) in June 2024, the latest requirement on minimum area of floor space for each resident has been increased from a 6.5m^2 to 9.5m^2. The approved development scheme under A/K10/261 can no longer meet the latest requirement, thus the Applicant has formulated the current Proposed Scheme to comply with the new spatial requirement.

1.2 Report Structure

1.2.1 Following this Introductory Section, the site and planning context will be briefly set out in Section 2. The Proposed Development Scheme is included in Section 3. The planning merits and justifications of the Proposed Development are included in Section 4. Section 5 concludes and summarizes this Supporting Planning Statement.

2. SITE AND PLANNING CONTEXT

2.1 Site Location and Existing Use

2.1.1 The Application Site, with a site area of about 582.9m^2, is located at 349 Prince Edawrd Road West, Kowloon (**Figure 2.1** refers). The Site is located within the street block bounded by Prince Edward Road West in the north, Stirling Road in the east, Argyle Street in the south and Forfar Road in the west. It is currently vacant (**Figures 2.2a** and **2.2b** refer).

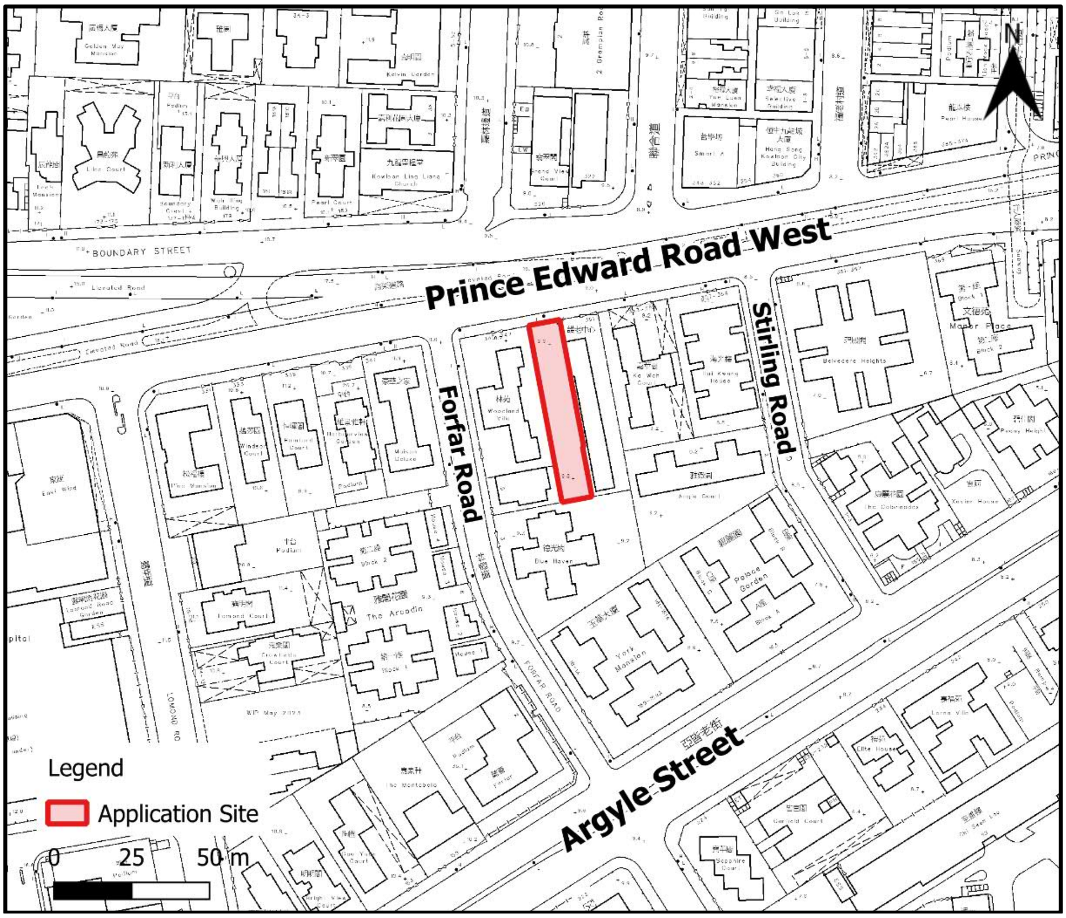


Figure 2.1 Site Location Plan

Figure 2.2a Site Photo (Viewing from Prince Edward Road West)

Figure 2.2b Site Photo (Viewing from the Crossing of Prince Edward Road West)

2.2 Land Status

2.2.1 The Application Site is registered as KIL 4011 s.A and 4168 s.A ss.2 (Lot Index Plan in **Figure 2.3** below refers). The Applicant solely owns the Site.

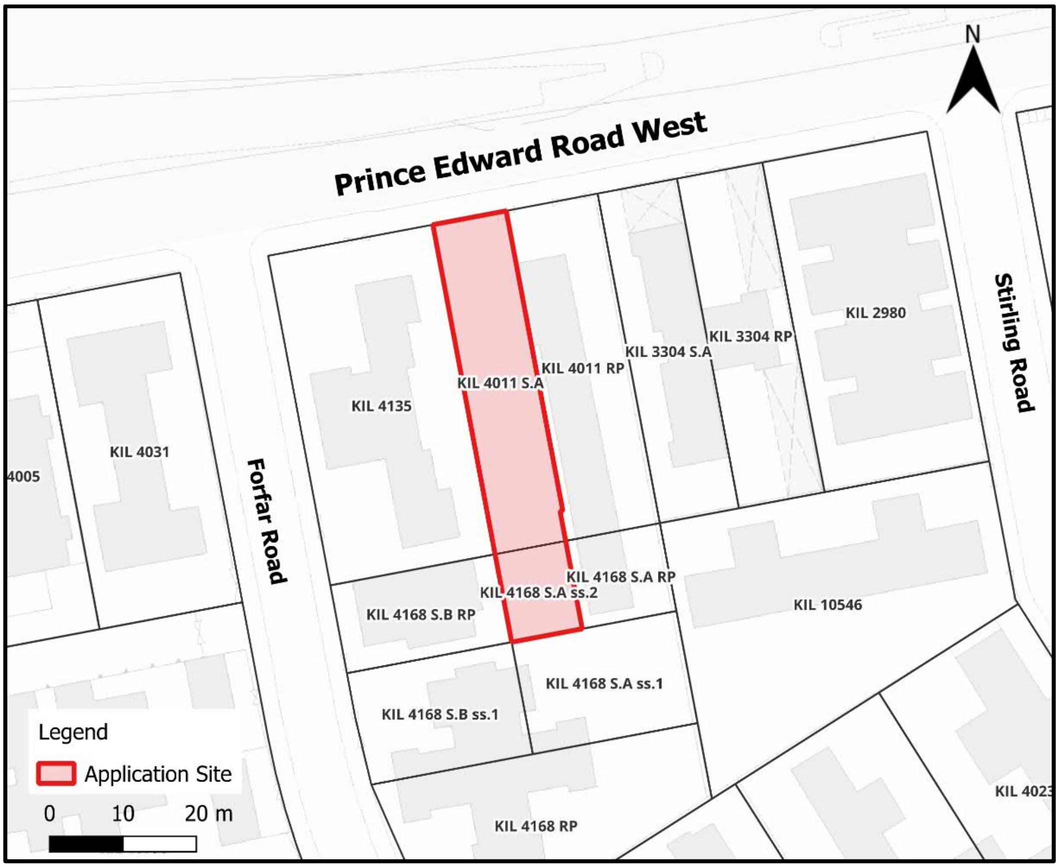


Figure 2.3 Lot Index Plan

2.3 Surrounding Land Use Pattern

2.3.1 The Site is surrounded predominantly by medium-rise residential developments and various GIC facilities (**Figure 2.4** refers). Details of the surrounding land uses are as follows:

- To the east, south and west within the same street block are some existing medium-rise residential developments, including Woodland Villa, Ka Wah Court and Blue Haven. The adjoining site in the east is a four-storey building being used by three RCHEs (namely Kin Tat Home For The Aged, Prince Home For The Elderly and Hung To For The Home);

- To the further northeast across Prince Edward Road West Road is the Kowloon City area. It is a residential area with low to medium-rise residential developments. Some individual sites have been redeveloped into high-rise residential developments;

- To the northwest across Prince Edward Road West is Kowloon Ling Liang Church and some low to medium-rise residential developments; and

- To the further west are St. Teresa’s Hospital, Hong Kong Eye Hospital, clinics and other medical facilities.

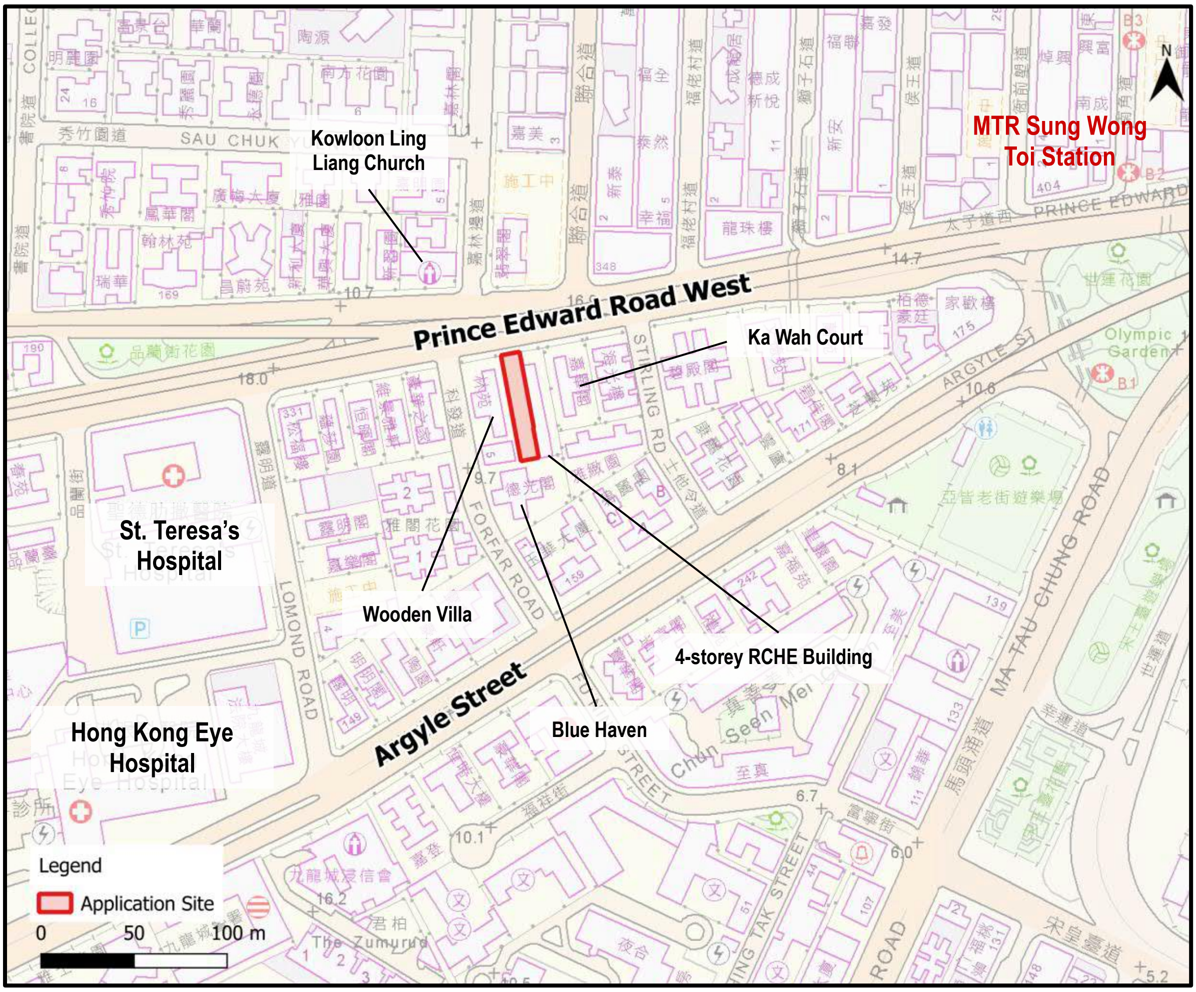


Figure 2.4 Surrounding Land Use

2.4 Accessibility of the Site

2.4.1 The Site is accessible via Prince Edward Road West and served by various public transport modes including MTR, franchised buses and green minibuses. As illustrated in **Figure 2.4**, MTR Sung Wong Toi Station is located about 300m away in the east of the Site (within 5 minutes walking distance). Numerous franchised bus and green minibus operate along Prince Edward Road West and Junction Road.

2.5 Statutory Planning Context

2.5.1 The Application Site falls within an area zoned "Residential Group(B)" ("R(B)") with a maximum plot ratio ("PR") of 5.0 and building height ("BH") of +80mPD as stipulated on the Approved Ma Tau Kok Outline Zoning Plan ("Approved OZP") No. S/K10/30 (**Figure 2.5** refers). According to the Statutory Notes of the Approved OZP, the planning intention of "R(B)" zone is as follows:

"This zone is intended primarily for medium-density residential developments where commercial uses serving the residential neighbourhood may be permitted on application to the Town Planning Board."

2.5.2 According to the Statutory Notes of the Approved OZP, 'Social Welfare Facility' is a Column 2 use in the "R(B)" zone which requires planning permission from the Town Planning Board.

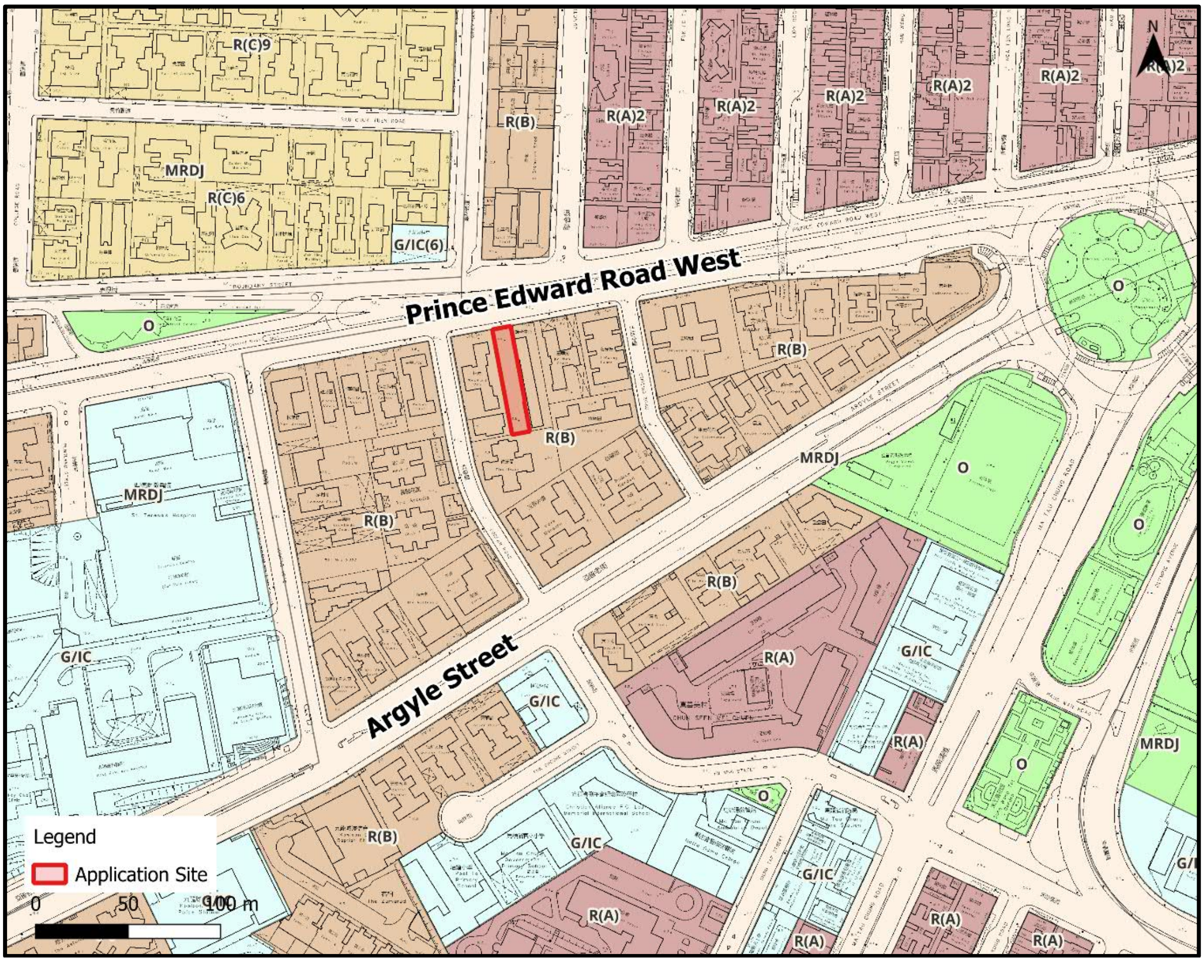
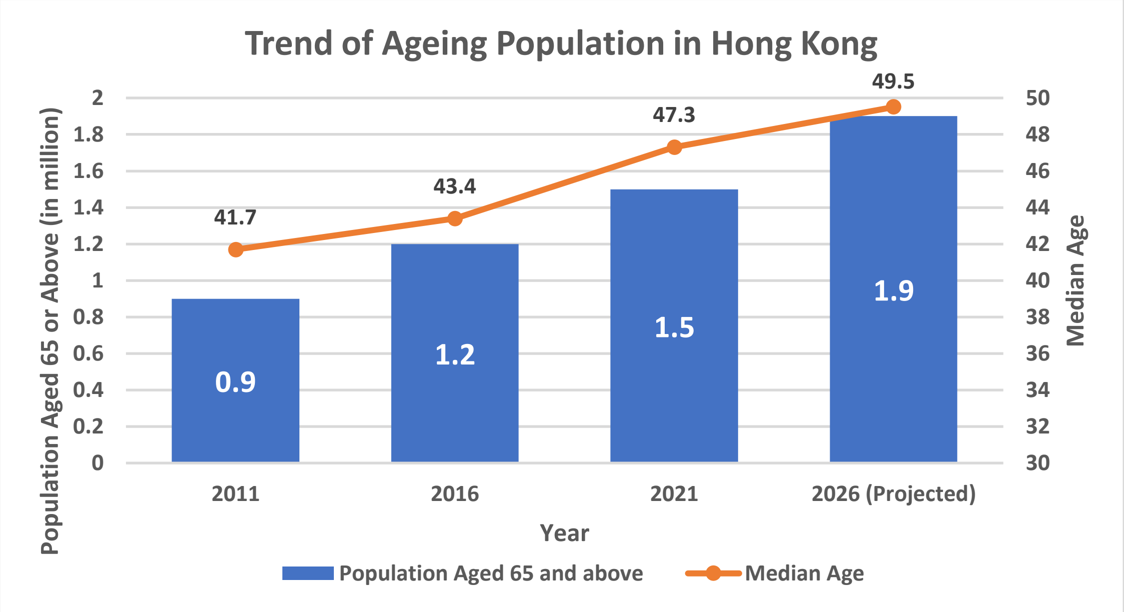


Figure 2.5 Zoning Context Plan

2.6 Overview on the Trend of Ageing Population and the Provision of RCHE in Hong Kong and Ma Tau Kok District

2.6.1 In recent years, Hong Kong has been experiencing a significant trend of population aging. This demographic shift is driven by factors such as increased life expectancy as well as declining fertility rates. According to the census data published by the Census and Statistics Department in 2022, **Chart 2.1** shows that population aged 65 and above has been constantly increasing in the past years (from about 0.9 million in 2011 to about 1.5 million in 2021). More importantly, it is expected to further increase to 1.9 million in 2026 under the projection of census data. The upward trend in the median age of the population also suggests that there will be increasing pressure on government healthcare services for the elderlies in the future.



Sources: Hong Kong Population Projections for 2022-2046 released from Census and Statistics Department In 2022

Chart 2.1 Trend of Ageing Population

2.6.2 The aging population trend in Hong Kong poses several challenges and implications on the provision of elderly care services, especially residential cares for the elderly. In Hong Kong, RCHEs are generally classified into four types, including subvented homes, contract homes, non-profit-making self-financing homes and private homes. There is a shortage of bedspace provision resulting in long waiting times for different types of residential care services for the elderly. According to the Government’s statistics published in 2022, the enrolment rates of RCHEs remain at a high level (**Table 2.1** refers). **Table 2.2** shows the number of applicants and average waiting time of various types of subsidised residential care services for the elderly in the Central Waiting List for subsidised long term care services.

Table 2.1 Enrolment Rates of Residential Care Homes in Hong Kong

Type of Homes		Enrolment Rate
RCHEs	Subvented and contract homes	91%
	Private homes[1]	71%
	Self-financing homes[2]	68%

[1] Including homes participating in bought place schemes.

[2] Homes operated by non-governmental organizations.

Source: Written reply by the Secretary for Labour and Welfare on the enrolment position of various types of residential care home in the Legislative Council on 16 November 2022

Table 2.2 Number of Applicants and Respective Waiting Time for Subsidised Residential Care Services for the Elderly

Subsidszed Residential Care Services for the Elderly		Average Waiting Time (in months)[3]	No. of Applicants
Care and Attention Places	Subvented and contract homes	34	15,011
	Private homes[1]	5	
Nursing Home Places[2]		19	3,134

[1] Including homes participating in bought place schemes.

[2] Including nursing home places provided by subvented nursing homes, self-financing nursing homes and contract homes.

[3] It is the average number of months taken between the waitlist date and the admission date of normal cases admitted to service from November 2022 to January 2023.

Source: Legislative Council Paper (No. CB(2)190/223(02)) published by the Subcommittee on Increasing the Provision of Residential Care Places for Elderly on 7 March 2023.

2.6.3 For Ma Tau Kok, with reference to the TPB Paper No. 10889 for consideration by the Town Planning Board on 14.4.2023, the existing and planned provision of RCHE in the K10 Planning Area is tabulated in **Table 2.3**. There is a total of 173 beds shortfall against the planned provision in this area.

Table 2.3 Shortfall of RCHE Beds against Planned Provision

Type of Facilities (RCHE)	Hong Kong Planning Standards and Guidelines (HKPSG)	HKPSG Requirement (based on planned population)	Provision		Surplus/ Shortfall (against planned provision)
			Existing Provision	Planned Provision (including Existing Provision)	
Subsidised Beds	21.3 subsidised beds per 1,000 elderly persons aged 65 or above (assessed by Social Welfare Department (SWD) on a cluster basis)	1,004 beds	831 beds	831 beds	-173 beds (A long-term target assessed on a wider spatial context by SWD)

2.7 Policy Initiative to Encourage Private Sectors to Provide RCHE

2.7.1 The Elderly Services Programme Plan published by the Elderly Commission in 2017 suggested that in the short-to-medium term, measures should be explored to better utilize quality places in the private sector to cater to the immediate needs of the elderly. To further provide incentives for private sectors, the 2023-2024 Budget has increased the allowable GFA of RCHEs in each private development project and encouraged developers to add other value-added services to newly-built RCHEs, so as to improve the living conditions of RCHE residents. Against this policy background and recognizing the substantial demand for elderly residential care services as well as the limited land resources in Hong Kong, the Applicant tries to make proactive response to the policy and provide purpose-built premises for the elderly.

2.8 Review of Minimum Floor Space per Resident in RCHE

2.8.1 The living standards at residential care homes for the elderly in Hong Kong have long been criticised as being lower than major cities internationally, particularly in terms of the limited living space provided per resident. There has been ongoing public discussion about increasing the minimum space requirement per resident at these care homes. In response, SWD promulgated the revised Code of Practice for Residential Care Homes (Elderly Persons) in June 2024 to raise the minimum floor space requirement per resident from 6.5 m^2 to 9.5 m^2, which aims to improve the living conditions and standards of residential care homes.

2.9 Planning History of the Site

2.9.1 According to the Town Planning Board Statutory Planning Portal, the Site was the subject of 1 previous planning application (TPB Ref. A/K10/261) for Social Welfare Facility (Residential Care Home for the Elderly). The application was approved by the Metro Planning Committee on 3.1.2020. Details of the above are shown in **Table 2.4**.

Table 2.4 Planning History of the Site

Application No.	A/K10/261
Location	349 Prince Edward Road West, Kowloon
Site Area	About 582.925 m^2
Applied uses	Proposed Social Welfare Facility (Residential Care Home for the Elderly)
Zoning	"Residential (Group B)" ("R(B)")
Proposed PR	About 3.92
Proposed GFA	About 2,285.056 m^2
Proposed BH	27 m
Proposed BH in mPD	+36.108 mPD
Decision (Date)	Approved with condition (3/1/2020)

3. THE PROPOSED DEVELOPMENT SCHEME

3.1 The Development Scheme

3.1.1 Schematic drawings for the Proposed RCHE are presented in **Appendix 1** of this Supporting Planning Statement. The Site of an area of about 582.9 m^2 yields a total GFA of approximate 2,914.5m^2 at PR 5. The Proposed RCHE comprises one single block with a total of 11-storey (including 1 level of basement) with a building height of about 42.509mPD (at main roof) to provide 141 RCHE bed spaces. With an updated design, the Proposed RCHE optimise the permissible PR of the Site and provide 50 (+54.9%) extra bed spaces to meet the growing demand for RCHE. The completion year of the Proposed Development is estimated to be 2032.

3.1.2 Major development parameters and proposed floor uses of the Proposed RCHE are summarised in **Table 3.1** and **Table 3.2** respectively. The floor plans and schematic section plan are presented in **Appendix 1**.

Table 3.1 Key Development Parameters

	Approved Scheme under Planning Application No. A/K10/261 [a]	**Proposed Scheme [b]**	**Difference [b]-[a]**
Total Site Area	About 582.925 m^2	About 582.9 m^2	-0.025 m^2
PR	About 3.92	About 5	+1.08
Total GFA	Not more than 2,285.056 m^2	Not more than 2,914.5 m^2	+629.444 m^2
No. of RCHE Bed Space	About 91	About 141	+50
Site Coverage	49%	Not more than 63%	+14%
Class of Site	Class A	Class A	-
No. of Block	1	1	-
Maximum Building Height (Main Roof Level)	About +36.108 mPD	About +42.509 mPD	+6.482 mPD
Actual Building Height (measured from mean street level)	About 27 m	About 33.4 m	+6.4 m
No. of Storeys	8	11 (including 1 level of basement)	+3 storeys

Table 3.2 Proposed Floor Uses

Floor	**Proposed Uses**
R/F	E&M Facilities
9/F	General Office and E&M Facilities
8/F	Flat Roof Area, Physiotherapy Room and Storage Room
1/F – 7/F	Wards for RCHE
G/F	Kitchen, Office, Interview Room, Waiting Room and E&M Facilities
B1/F	E&M Facilities

3.2 Key Design Considerations

3.2.1 In formulating the Proposed Development Scheme, the schematic design has taken into account site constraints (e.g. relatively narrow frontage) as well as design considerations in order to ensure the Proposed RCHE is able to create a high-quality development in harmony with the surrounding environment. The Proposed Development Scheme has incorporated the following design considerations:

- Provide building setback from the site boundary along Prince Edward Road West for about 10.4m to create a wider street canyon for better visual amenity.

- Create an interesting building profile with setbacks at 1/F, 8/F and the main facade to reduce visual impact of the building bulk as viewed from pedestrian level.

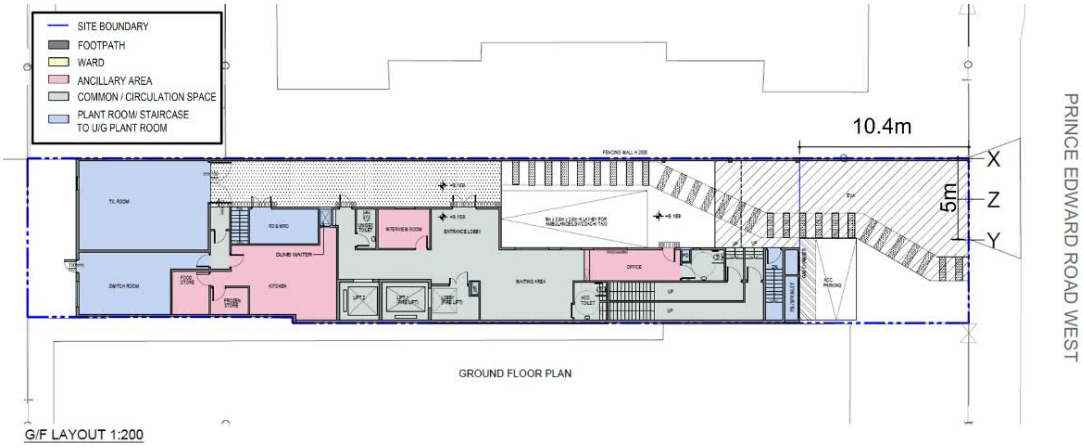


Figure 3.1 Provision of Building Setback on G/F

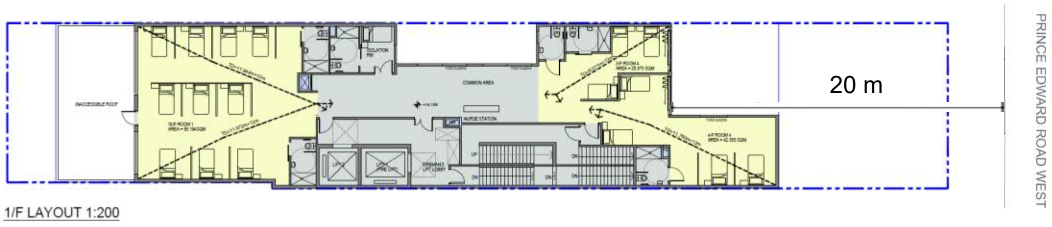


Figure 3.2 Floor Plan of 1/F

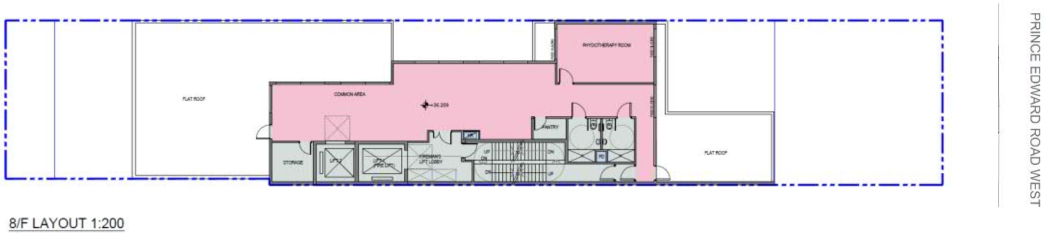


Figure 3.3 Floor Plan of 8/F

3.3 Access and Provision of Internal Transport Facilities

3.3.1 The Hong Kong Planning Standards and Guidelines stipulates no recommendation on the provision of internal transport facilities for elderly home. The proposed internal transport facilities are summarised and presented in **Table 3.3**.

Table 3.3 Internal Transport Facilities Provision

Type of Facilities	Total Provision
Disabled Car Parking Space (5m x 3.5m with headroom of 2.4m)	1
Lay-by for Taxi / Private Car / Ambulance / Light Goods Vehicle and Mini Coach (9m x 3.5m with headroom of 3.6m)	1

3.3.2 The vehicular access of the Proposed RCHE will be maintained at the existing location connecting to Price Edward Road West and will be widened to 5m (**Figure 3.1** refers) to enhance the movement of ambulance and vehicles providing welfare services.

4. PLANNING MERITS AND JUSTIFICATIONS

4.1 The Proposed Development is In-line with Government’s Policies of Encouraging the Private Sector to Provide RCHE

4.1.1 As mentioned in **Sections 2.6** and **2.7** of the Supporting Planning Statement, there is a pressing need to prioritise the provision of RCHE, given the growing elderly population in Hong Kong. The Government has introduced the Elderly Services Programme Plan associated with various incentive schemes to encourage the private sector to provide RCHE in their sites/developments. Considering that the Application Site is ‘spade-ready’ under private initiatives, the Applicant is endeavoured to provide a quality living space for the elderlies at the Site and in a modern and purpose-built building. The Proposed Development with provision of not less than 141 nos. of RCHE bed space is in-line with the Government’s initiative to increase the provision of the much-needed residential care facilities for the elderlies. Not least, the current application is to take forward the approved 91-bed RCHE under TPB Ref.: A/K10/261, but to update the design with reference to the latest spatial requirement for RCHE promulgated by SWD.

4.2 The Proposed Development Will Help to Meet the Deficit of RCHE Bed Places in Ma Tau Kok

4.2.1 With reference to the TPB Paper No. 10889 for consideration by the Town Planning Board on 22.9.2023, there is a deficit (about 173 bed spaces) in the provision of RCHE bed spaces in the K10 Planning Area (i.e. where the Application Site is located). By increasing the number of RCHE bed places in Ma Tau Kok, the Proposed Development will help to meet the growing demand for eldercare services in the area. Expanding the availability of RCHE bed places within the locality would help to contribute to the community well-being by allowing seniors to age in a familiar and supportive environment close to their existing families and social networks.

4.2.2 In addition and equally important, since the more stringent spatial requirement on RCHE bedspace is in place as discussed in **Section 2.8**, it is expected that there would be a significant reduction in number of RCHE beds across the territory. The Proposed Development would help to get prepared for the rainy day by providing additional bedspaces that comply with the new minimum floor space requirement of 9.5m^2.

4.3 The Application Site is Suitable for the Proposed Development

4.3.1 The Site is currently vacant and located in an urban area predominantly occupied by medium-density residential developments scattered with RCHEs, hospitals, medical facilities and institutional uses. Given that three RCHEs are being operated in the abutting site, the proposed RCHE is considered not incompatible with the surrounding land use.

4.3.2 The Application Site is located at a convenient location and well-served by various types of public transport services, including road-based franchised bus and public light bus along Prince Edward Road West, as well as rail-based transport at MTR Sung Wong Toi Station (**Figure 2.4** refers). These services operate within 500m or about 10-15 minutes’ walk away, providing residents and visitors with convenient public transportation services.

4.3.3 There is no major change in the planning context within the area, thus the land use compatibility issue considered by TPB under the approved application should remain valid.

4.4 The Proposal Involves Amendments to the Previously Approved Application and the Development Quantum is Considered Appropriate

4.4.1 The TPB previously granted an approval for RCHE use at the Application Site on 3 January 2020 (TPB Ref. A/K10/261). As compared with the 2020 Approved Scheme, the current proposal involves an increase in the development intensity (**Table 3.1** refers), yet the proposed BH and PR of about +42.509 mPD and 5 are well within the permissible restrictions of the subject “R(B)” zone under the Approved OZP. In view of the surrounding medium-density developments in the “R(B)” zone, the proposed development parameters are considered appropriate.

4.5 The Proposal is Technically Feasible

Traffic Aspect

4.5.1 The potential traffic impact arising from the Site has been quantitatively assessed. While residential use is always permitted in the Site zoned “R(B)”, a hypothetical residential building is adopted to compare with the Proposed Development for assessing the potential traffic impact. The traffic generation of the Proposed Development is estimated to be 50% and 20% less traffic than the hypothetical residential building during the AM and PM peak hours respectively. Meanwhile, the junction capacity analysis based on 2031 design traffic flows reveals that there is sufficient capacity to accommodate the expected traffic flows generated by the Proposed Development in 2031. The TIA concluded that the Proposed Development will result in no adverse traffic impact to the surrounding road network.

Environmental Aspect

4.5.2 A Noise Impact Assessment (NIA) has been conducted to assess the potential road traffic noise and fixed noise impacts that may affect the Proposed RCHE. While the predicted road traffic noise levels at some noise sensitive receivers (NSRs) would exceed the relevant noise criteria of 55dB(A) for isolation room or 70 dB(A) for dwelling and office uses, noise conscious design of setback and mitigation measures including baffle type acoustic window have been proposed to comply with relevant guidelines. Assessment on fixed noise impact also confirmed that predicted fixed noise level at all NSRs has complied with the requirement of relevant technical memorandum under Noise Control Ordinance. It is concluded that no adverse traffic and fixed noise impact is anticipated on the Proposed Development with the implementation of the recommended mitigation measures.

4.5.3 In terms of air quality, the Prince Edward Road West, located to the north of the Application Site, is classified as a Primary Distributor and a buffer separation of at least 20m is recommended between the kerb side of the Primary Distributor and the air sensitive users according to the Chapter 9 of HKPSG. As shown in **Figure 3.2**, a 20m setback is proposed between the kerb side of Prince Edward Road West and the ward openable window to comply with the buffer separation requirement. It is anticipated that there would be no adverse air quality impact associated with the Proposed RCHE.

Sewerage Aspect

4.5.4 The Sewerage Impact Assessment ("SIA") has quantitatively assessed the potential sewerage impact by comparing the estimated sewage flow from the Proposed Development and the capacity of the existing sewerage system in the vicinity. Based on the sewerage impact assessment results, the capacity of the existing sewers will be sufficient to cater for the sewage generation from the Proposed Development and the surrounding catchment areas. Hence, the SIA concluded that adverse sewerage impacts are not anticipated.

5. CONCLUSION AND SUMMARY

5.1.1 The Applicant, Lead Engineering Limited, seeks approval from the TPB under Section 16 of the Town Planning Ordinance for Proposed Social Welfare Facility (Residential Care Home for the Elderly) at 349 Prince Edward Road West, Kowloon. The proposed development with PR 5 and BH of about +42.509mPD should be favourably considered by the TPB from a planning point of view based on the following reasons:

- The current application is to take forward the approved 91-bed RCHE under TPB Ref.: A/K10/261, but to update the design with reference to the latest spatial requirement for RCHE promulgated by SWD.

- The Proposed Development with 141 RCHE bedspaces would help to alleviate the shortage of quality RCHE services for the elderlies within the area.

- With its convenient location and good accessibility connected by both road-based and rail-based transports, the Site is suitable for RCHE use.

- The Applicant has strived to make the greatest endeavours to come up with an optimal design by incorporating building setbacks and interesting building design in responding positively to the surrounding context.

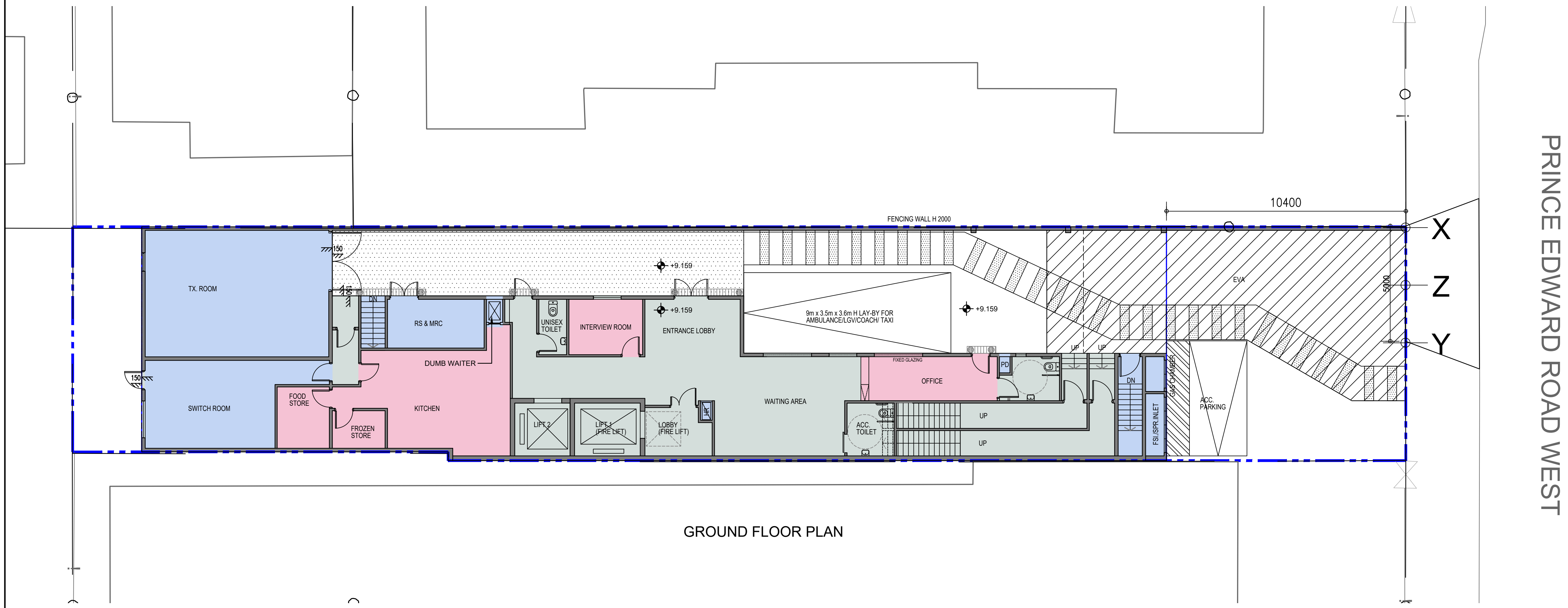
- The proposed development intensity is well within the permissible PR and BH stipulated under the Approved OZP and is considered appropriate.

- Various technical assessments have been carried out and the findings concluded that the Proposal is technically feasible without posing negative impact onto the surrounding environment and neither to the future residents.

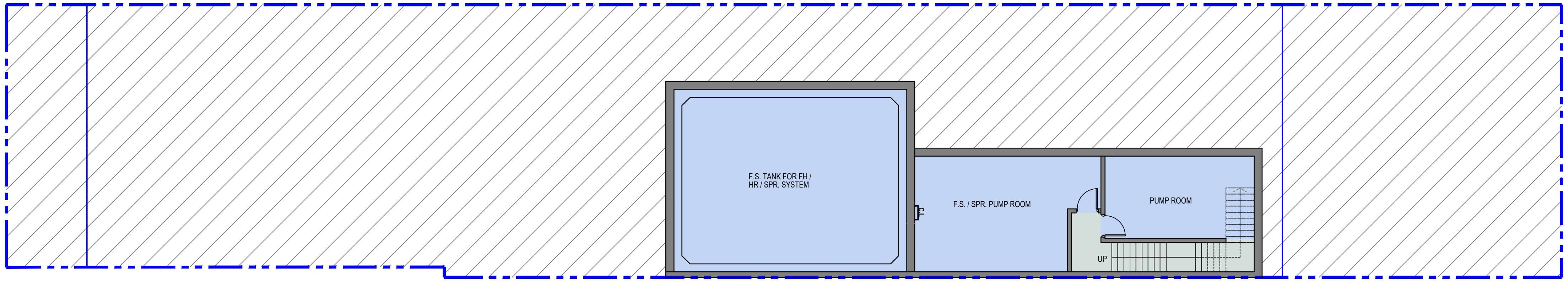
Appendix 1

Schematic Architectural Drawings

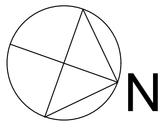
- ▬ SITE BOUNDARY
- ■ FOOTPATH
- 🟨 WARD
- 🟥 ANCILLARY AREA
- ■ COMMON / CIRCULATION SPACE
- 🟦 PLANT ROOM/ STAIRCASE TO U/G PLANT ROOM



G/F LAYOUT 1:200



B/S LAYOUT 1:200



BD REF. NO.:

FSD REF. NO.:

REVISIONS AND SUBMISSIONS:

NO.:	DATE:	DETAILS:	CHECKED:

NOTES:
1. CONTENTS ON THIS DRAWING SHOW DESIGN INTENT ONLY CONTRACTOR IS RESPONSIBLE FOR DETAILED DESIGN OF THE INTERIOR FITTING-OUT. CONTRACTOR IS REQUIRED TO SUBMIT FULL SET SHOP DRAWINGS FOR ARCHITECT'S APPROVAL PRIOR TO FABRICATION AND SITE INSTALLATION.
2. STRUCTURAL CALCULATIONS IF REQUIRED AND RELATED SUPPORTING DATA SHOULD BE SUBMITTED FOR REVIEW AND APPROVAL.
3. TRUE COLOR SAMPLES OF MATERIALS SHOULD BE SUBMITTED FOR ARCHITECT'S APPROVAL PRIOR TO PROCUREMENT.
4. ALL FITTING/ ASSEMBLY AND MATERIALS SHOULD BE DESIGN & INSTALLED TO CONTRACT DRAWINGS AND SPECIFICATION, AND IN COMPLIANCE WITH ALL RELEVANT STATUTORY REQUIREMENTS.
5. DIMENSIONS BASED ON ON SITE MEASUREMENTS.

6. FINAL MATERIALS & FINISHES OF WALL,FLOOR,CEILING,WALL FIXTURE ETC. SHOULD BE REFER TO FINISHES AND MATERIALS SCHEDULE UNDER THE SPECIFICATION PROVIDED.

CLIENT/EMPLOYER:

PROJECT ARCHITECT/AUTHORIZED PERSON:

馬海
馬海(建築顧問)有限公司
Spence Robinson Limited

PROJECT STRUCTURAL ENGINEER/
PROJECT GEO-TECHNICAL ENGINEER:

張耀新建築工程師有限公司
Wilson & Associates Ltd

PROJECT E/M ENGINEER:

PROJECT LANDSCAPE CONSULTANT:

PROJECT QUANTITY SURVEYOR:

PROJECT:
PURPOSE BUILT C&A HOME DEVELOPMENT AT
349 PRINCE EDWARD ROAD WEST

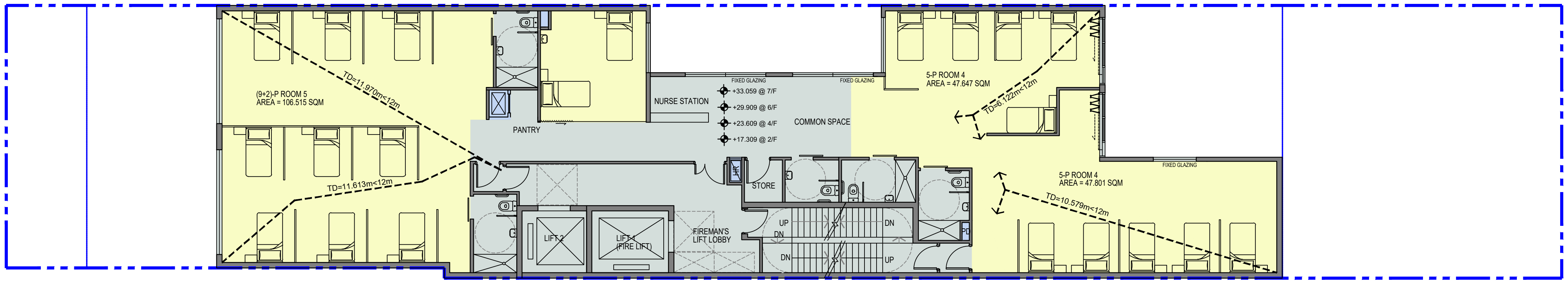
DRAWING TITLE:

GROUND FLOOR PLAN &
BASEMENT FLOOR PLAN

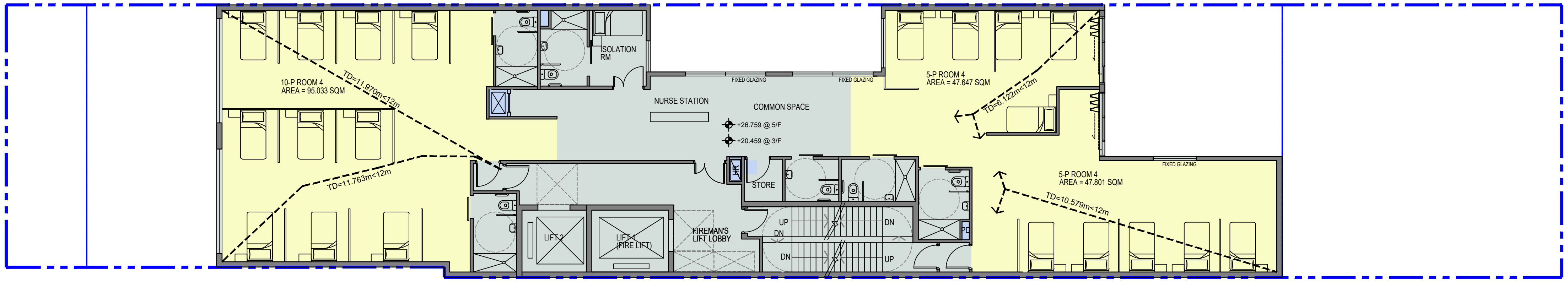
DRAWN BY: CZ
DATE: AUG-2024
CHECKED BY: CMD
APPROVED BY: KCY
SCALE: 1:200
PAPER SIZE: A3
PROJECT: PE 6170
DRAWING: GP-00
REVISION: V12

NOTES :
1. This drawing and design are copyright and no portion may be reproduced without the written permission of the Architect.
2. Use written dimensions or grid lines in preference to scaled dimensions. Measurements to existing work are to be checked on site.
3. This drawing is to be read in conjunction with the Architect's Specification and Conditions of Contract.
4. Prints not showing the last revision are to be cancelled.
5. Prints without an authorized signature in the checked and approved spaces below and after the last revision above are NOT vaild for use outside SRL.

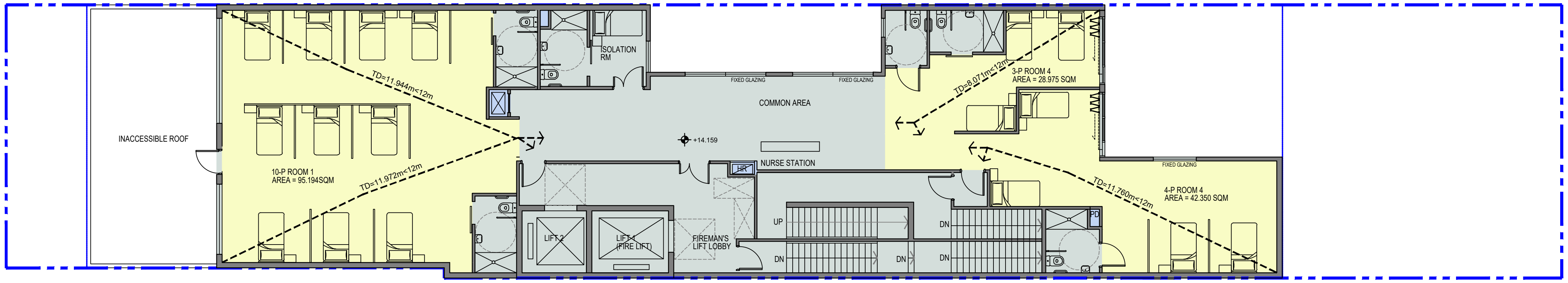
— SITE BOUNDARY
▬ FOOTPATH
🟨 WARD
▭ ANCILLARY AREA
▭ COMMON / CIRCULATION SPACE
🟦 PLANT ROOM/ STAIRCASE
TO U/G PLANT ROOM



2/F, 4/F, 6/F, 7/F LAYOUT 1:200



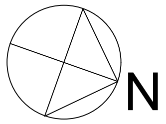
3/F, 5/F LAYOUT 1:200



1/F LAYOUT 1:200

NOS. OF BED
(9.5m²/ppl)

G/F	0
1/F	17
2/F	21
3/F	20
4/F	21
5/F	20
6/F	21
7/F	21
TOTAL	141



BD REF. NO.:
FSD REF. NO.:
REVISIONS AND SUBMISSIONS:

NO.:	DATE:	DETAILS:	CHECKED:

NOTES:
1. CONTENTS ON THIS DRAWING SHOW DESIGN INTENT ONLY CONTRACTOR IS RESPONSIBLE FOR DETAILED DESIGN OF THE INTERIOR FITTING—OUT. CONTRACTOR IS REQUIRED TO SUBMIT FULL SET SHOP DRAWINGS FOR ARCHITECT'S APPROVAL PRIOR TO FABRICATION AND SITE INSTALLATION.
2. STRUCTURAL CALCULATIONS IF REQUIRED AND RELATED SUPPORTING DATA SHOULD BE SUBMITTED FOR REVIEW AND APPROVAL.
3. TRUE COLOR SAMPLES OF MATERIALS SHOULD BE SUBMITTED FOR ARCHITECT'S APPROVAL PRIOR TO PROCUREMENT.
4. ALL FITTING/ ASSEMBLY AND MATERIALS SHOULD BE DESIGN & INSTALLED TO CONTRACT DRAWINGS AND SPECIFICATION, AND IN COMPLIANCE WITH ALL RELEVANT STATUTORY REQUIREMENTS.
5. DIMENSIONS BASED ON ON SITE MEASUREMENTS.

6. FINAL MATERIALS & FINISHES OF WALL,FLOOR,CEILING,WALL FIXTURE ETC. SHOULD BE REFER TO FINISHES AND MATERIALS SCHEDULE UNDER THE SPECIFICATION PROVIDED.

CLIENT/EMPLOYER:

PROJECT ARCHITECT/AUTHORIZED PERSON:
馬海
馬海(建築顧問)有限公司
Spence Robinson Limited

PROJECT STRUCTURAL ENGINEER/
PROJECT GEO-TECHNICAL ENGINEER:
張耀新建築工程師有限公司
Wilson & Associates Ltd

PROJECT E/M ENGINEER:

PROJECT LANDSCAPE CONSULTANT:

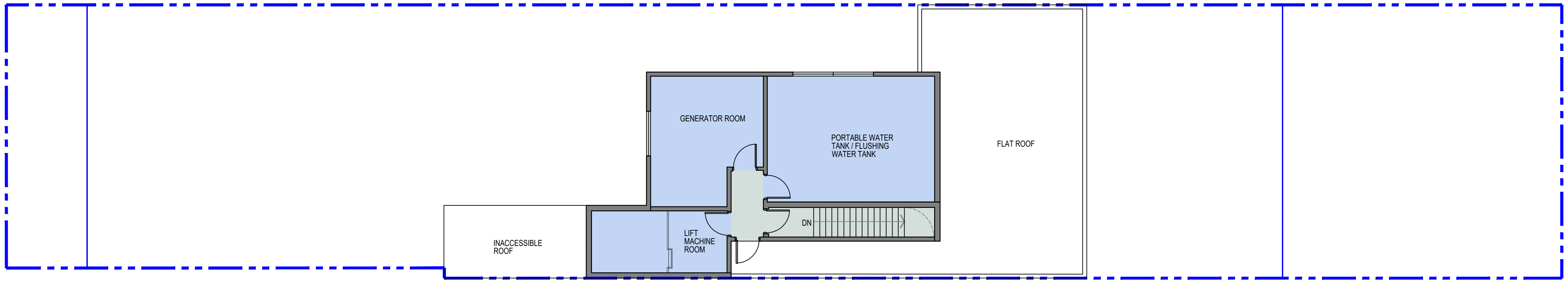
PROJECT QUANTITY SURVEYOR:

PROJECT:
PURPOSE BUILT C&A HOME DEVELOPMENT AT
349 PRINCE EDWARD ROAD WEST

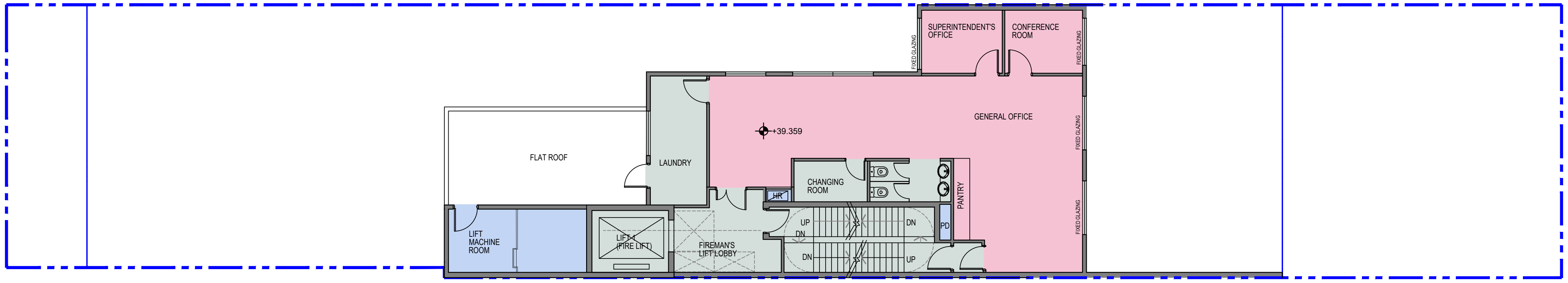
DRAWING TITLE:
FIRST FLOOR PLAN &
TYPICAL FLOOR PLAN (3/F,5/F) &
TYPICAL FLOOR PLAN (2/F,4/F,6/F& 7/F)

DRAWN BY: CZ
DATE: AUG-2024
CHECKED BY: CMD
APPROVED BY: KCY
SCALE: 1:200
PAPER SIZE: A3
PROJECT: PE 6170
DRAWING: GP-01
REVISION: V12

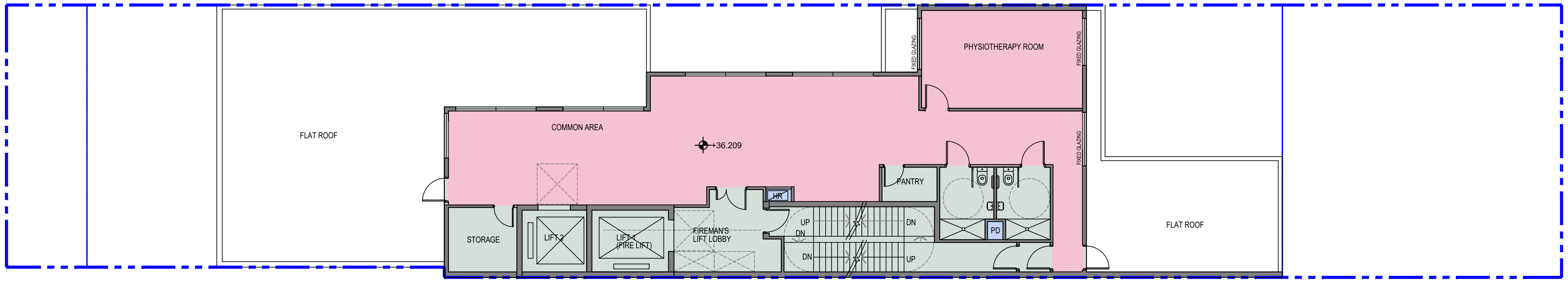
NOTES :
1. This drawing and design are copyright and no portion may be reproduced without the written permission of the Architect.
2. Use written dimensions or grid lines in preference to scaled dimensions. Measurements to existing work are to be checked on site.
3. This drawing is to be read in conjunction with the Architect's Specification and Conditions of Contract.
4. Prints not showing the last revision are to be cancelled.
5. Prints without an authorized signature in the checked and approved spaces below and after the last revision above are NOT vaild for use outside SRL.



ROOF LAYOUT 1:200



9/F LAYOUT 1:200



8/F LAYOUT 1:200

N

━	SITE BOUNDARY
▬	FOOTPATH
▭	WARD
▭	ANCILLARY AREA
▭	COMMON / CIRCULATION SPACE
▭	PLANT ROOM/ STAIRCASE TO U/G PLANT ROOM

NOS. OF BED
(9.5m²/ppl)

G/F	0
1/F	17
2/F	21
3/F	20
4/F	21
5/F	20
6/F	21
7/F	21
TOTAL	141

BD REF. NO.:

FSD REF. NO.:

REVISIONS AND SUBMISSIONS:

NO.:	DATE:	DETAILS:	CHECKED:

NOTES:

1. CONTENTS ON THIS DRAWING SHOW DESIGN INTENT ONLY CONTRACTOR IS RESPONSIBLE FOR DETAILED DESIGN OF THE INTERIOR FITTING-OUT. CONTRACTOR IS REQUIRED TO SUBMIT FULL SET SHOP DRAWINGS FOR ARCHITECT'S APPROVAL PRIOR TO FABRICATION AND SITE INSTALLATION.
2. STRUCTURAL CALCULATIONS IF REQUIRED AND RELATED SUPPORTING DATA SHOULD BE SUBMITTED FOR REVIEW AND APPROVAL.
3. TRUE COLOR SAMPLES OF MATERIALS SHOULD BE SUBMITTED FOR ARCHITECT'S APPROVAL PRIOR TO PROCUREMENT.
4. ALL FITTING/ ASSEMBLY AND MATERIALS SHOULD BE DESIGN & INSTALLED TO CONTRACT DRAWINGS AND SPECIFICATION, AND IN COMPLIANCE WITH ALL RELEVANT STATUTORY REQUIREMENTS.
5. DIMENSIONS BASED ON ON SITE MEASUREMENTS.

6. FINAL MATERIALS & FINISHES OF WALL,FLOOR,CEILING,WALL FIXTURE ETC. SHOULD BE REFER TO FINISHES AND MATERIALS SCHEDULE UNDER THE SPECIFICATION PROVIDED.

CLIENT/EMPLOYER:

PROJECT ARCHITECT/AUTHORIZED PERSON:

馬海

馬海(建築顧問)有限公司
Spence Robinson Limited

PROJECT STRUCTURAL ENGINEER/
PROJECT GEO-TECHNICAL ENGINEER:

張耀新建築工程師有限公司
Wilson & Associates Ltd

PROJECT E/M ENGINEER:

PROJECT LANDSCAPE CONSULTANT:

PROJECT QUANTITY SURVEYOR:

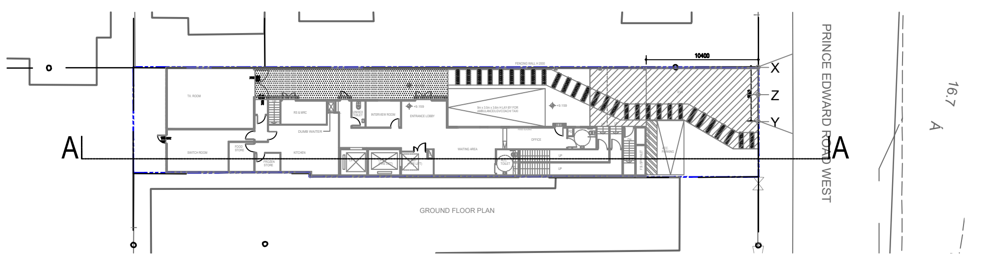
PROJECT:
PURPOSE BUILT C&A HOME DEVELOPMENT AT
349 PRINCE EDWARD ROAD WEST

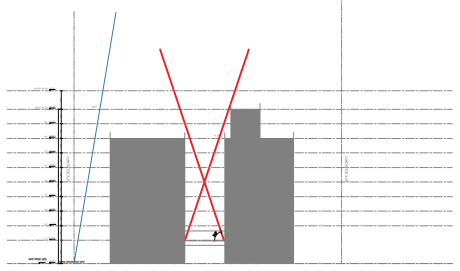
DRAWING TITLE:

8/F & 9/F FLOOR PLAN &
ROOF FLOOR PLAN

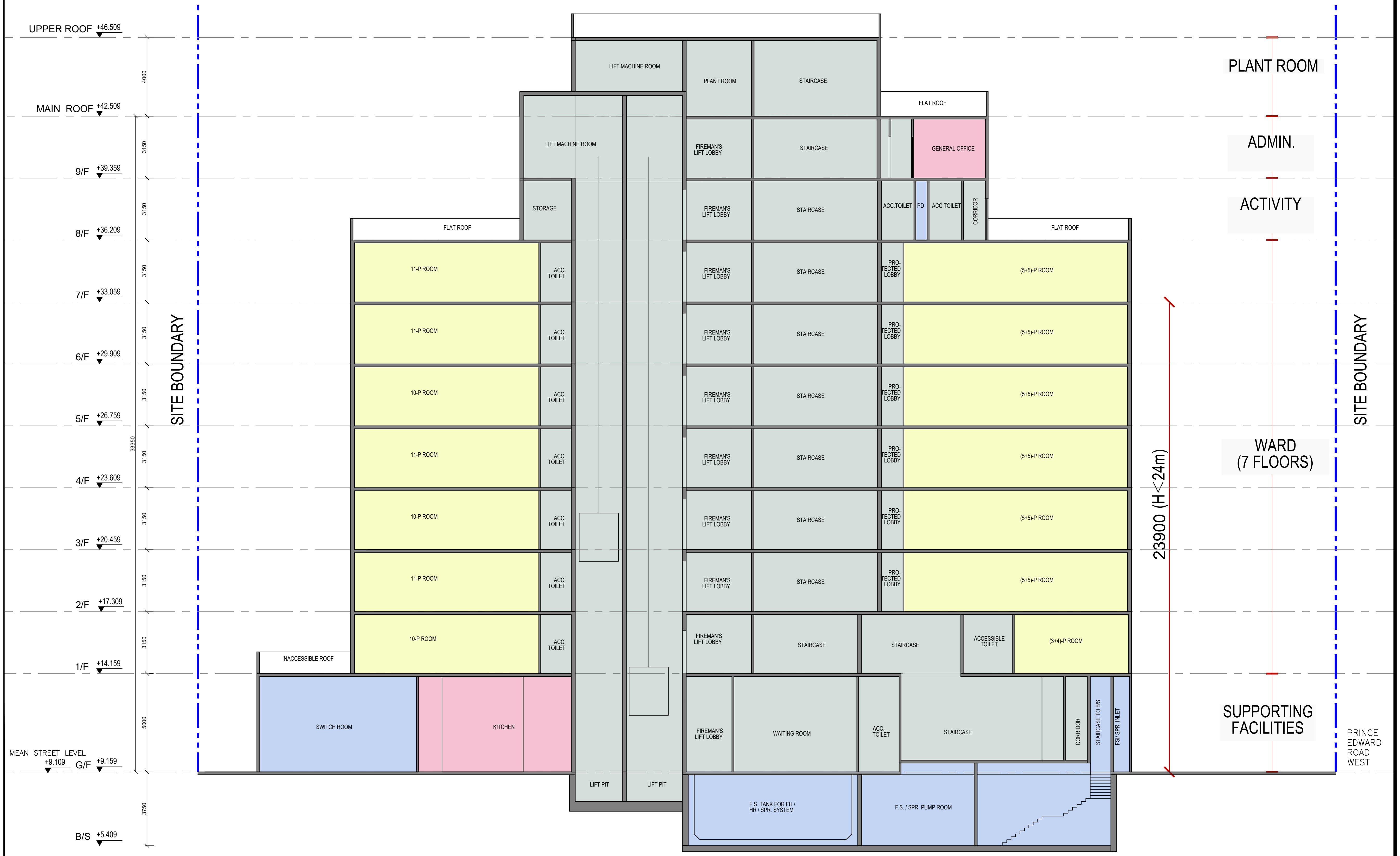
DRAWN BY: CZ	DATE: AUG-2024	
CHECKED BY: CMD	APPROVED BY: KCY	
SCALE: 1:200	PAPER SIZE: A3	
PROJECT: PE 6170	DRAWING: GP-02	REVISION: V12

NOTES :
1. This drawing and design are copyright and no portion may be reproduced without the written permission of the Architect.
2. Use written dimensions or grid lines in preference to scaled dimensions. Measurements to existing work are to be checked on site.
3. This drawing is to be read in conjunction with the Architect's Specification and Conditions of Contract.
4. Prints not showing the last revision are to be cancelled.
5. Prints without an authorized signature in the checked and approved spaces below and after the last revision above are NOT vaild for use outside SRL.





- ▬ SITE BOUNDARY
- ■ FOOTPATH
- 🟨 WARD
- 🟥 ANCILLARY AREA
- ▨ COMMON / CIRCULATION SPACE
- 🟦 PLANT ROOM/ STAIRCASE TO U/G PLANT ROOM



SECTION A-A 1:200

BD REF. NO.:

FSD REF. NO.:

REVISIONS AND SUBMISSIONS:

NO.:	DATE:	DETAILS:	CHECKED:

NOTES:
1. CONTENTS ON THIS DRAWING SHOW DESIGN INTENT ONLY CONTRACTOR IS RESPONSIBLE FOR DETAILED DESIGN OF THE INTERIOR FITTING–OUT. CONTRACTOR IS REQUIRED TO SUBMIT FULL SET SHOP DRAWINGS FOR ARCHITECT'S APPROVAL PRIOR TO FABRICATION AND SITE INSTALLATION.
2. STRUCTURAL CALCULATIONS IF REQUIRED AND RELATED SUPPORTING DATA SHOULD BE SUBMITTED FOR REVIEW AND APPROVAL.
3. TRUE COLOR SAMPLES OF MATERIALS SHOULD BE SUBMITTED FOR ARCHITECT'S APPROVAL PRIOR TO PROCUREMENT.
4. ALL FITTING/ ASSEMBLY AND MATERIALS SHOULD BE DESIGN & INSTALLED TO CONTRACT DRAWINGS AND SPECIFICATION, AND IN COMPLIANCE WITH ALL RELEVANT STATUTORY REQUIREMENTS.
5. DIMENSIONS BASED ON ON SITE MEASUREMENTS.
6. FINAL MATERIALS & FINISHES OF WALL,FLOOR,CEILING,WALL FIXTURE ETC. SHOULD BE REFER TO FINISHES AND MATERIALS SCHEDULE UNDER THE SPECIFICATION PROVIDED.

CLIENT/EMPLOYER:

PROJECT ARCHITECT/AUTHORIZED PERSON:

馬海

馬海(建築顧問)有限公司
Spence Robinson Limited

PROJECT STRUCTURAL ENGINEER/
PROJECT GEO–TECHNICAL ENGINEER:

張耀新建築工程師有限公司
Wilson & Associates Ltd

PROJECT E/M ENGINEER:

PROJECT LANDSCAPE CONSULTANT:

PROJECT QUANTITY SURVEYOR:

PROJECT:
PURPOSE BUILT C&A HOME DEVELOPMENT AT
349 PRINCE EDWARD ROAD WEST

DRAWING TITLE:
SECTION

DRAWN BY:	DATE:	
CZ	AUG-2024	
CHECKED BY:	APPROVED BY:	
CMD	KCY	
SCALE:	PAPER SIZE:	
1:200	A3	
PROJECT:	DRAWING:	REVISION:
PE 6170	GP-03	V12

NOTES :
1. This drawing and design are copyright and no portion may be reproduced without the written permission of the Architect.
2. Use written dimensions or grid lines in preference to scaled dimensions. Measurements to existing work are to be checked on site.
3. This drawing is to be read in conjunction with the Architect's Specification and Conditions of Contract.
4. Prints not showing the last revision are to be cancelled.
5. Prints without an authorized signature in the checked and approved spaces below and after the last revision above are NOT vaild for use outside SRL.

Appendix 2

Traffic Impact Assessment

Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon City

Traffic Impact Assessment

Final Report
August 2024

Prepared by: **CKM Asia Limited**

Prepared for: **Lead Engineering Limited**

Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon City

CONTENTS

Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon City

TABLES

NUMBER

FIGURES

NUMBER

1.0 INTRODUCTION

Background

1.1 The subject site is located at 349 Prince Edward Road West in Kowloon City. Figure 1.1 shows the location of the subject site.

1.2 ***On 3rd January 2020, the Town Planning Board (TPB) approved the s16 planning application (TPB No. A/K10/261) for construction of an elderly home (the "Proposed Elderly Home") with 91 beds at the subject site.***

1.3 The Applicant has engaged CKM Asia Limited, a traffic and transportation planning consultancy firm, to prepare a traffic impact assessment (TIA) for the Proposed Elderly Home with 141 beds.

Scope of the Assessment

1.4 The main objectives of this study are as follow:

- To assess the existing traffic issues in the vicinity of the subject site; and
- To ensure that adequate internal transport facilities are provided for the Proposed Elderly Home;
- To quantify the amount of traffic generated by the Proposed Elderly Home; and
- To examine the traffic impact of the Proposed Elderly Home on the local road network.

Contents of the Report

1.5 After this introduction, the remaining chapters contain the following:

chapter two – describes the existing situation;
chapter three – presents the Proposed Elderly Home;
chapter four – describes the traffic impact analysis; and
chapter five – gives the overall conclusion.

2.0 THE EXISTING SITUATION

Subject Site and Road Network

2.1 The subject site is located on the southern side of Prince Edward Road West and to the west of Junction Road.

2.2 Prince Edward Road East is classified as a Primary Distributor. It connects with the Kowloon City to the east and Mong Kok to the west. The section of Prince Edward Road East fronting the subject site has 2 – 4 westbound traffic lanes (towards Mong Kok), and 3 – 4 eastbound traffic lanes (towards Wong Tai Sin).

2.3 Junction Road is a District Distributor in Kowloon City running in north-south direction. It is a single carriageway 3-lane road connecting Prince Edward Road West and Carpenter Road.

Manual Classified Counts

2.4 Manual classified counts were conducted on 7th June 2024 (Friday) during the AM and PM peak periods at 4 junctions which are located in the vicinity of the subject site in order to establish the peak hour traffic flows. The surveyed junctions included the following:

- Prince Edward Road West / Junction Road;
- Prince Edward Road West / Forfar Road;
- Prince Edward Road West / Lomond Road; and
- Argyle Street / Lomond Street.

2.5 The traffic counts were classified by vehicle type to enable traffic flows in passenger car units (pcu) to be calculated. The locations and layouts of the surveyed junctions are shown in Figure 2.1 and Figures 2.2 – 2.5 respectively.

2.6 The AM and the PM peak hour traffic flows were found to occur at 0800 – 0900 and 1800 – 1900 hours respectively, and the peak hour traffic flows are illustrated in Figure 2.6.

Operational Performance of the Surveyed Junctions

2.7 The existing operational performance of the surveyed junctions was calculated based on the observed traffic counts and the analysis method found in Volumes 2 and 4 of Transport Planning and Design Manual (TPDM). The analysis results are summarised in Table 2.1 and detailed calculations are found in Appendix A.

TABLE 2.1 EXISTING JUNCTION OPERATIONAL PERFORMANCE

Ref.	Junction	Type of Junction	Performance Indicator (1)	AM Peak	PM Peak
J1	Prince Edward Road West / Junction Road	Signal	RC	49%	44%
J2	Prince Edward Road West / Forfar Road	Priority	RFC	0.294	0.350
J3	Prince Edward Road West / Lomond Road	Signal	RC	68%	75%
J4	Argyle Street / Lomond Street	Signal	RC	38%	47%

Note: (1) RC – Reserve Capacity RFC – Ratio-of-Flow to Capacity

2.8 The above results indicate that the surveyed junctions currently operate with capacities during the AM and PM peak hours.

Public Transport Facilities

2.9 Access to road-based and rail-based public transport services from the subject site is convenient. The Exit B of MTR Sung Wong Toi Station is located around 300m or equivalent to around 5 minutes' walk from the subject site.

2.10 In addition, numerous franchised bus and green minibus routes operate along Prince Edward Road East, Prince Edward Road West and Junction Road, within 500 metres or about 10 minutes' walk away. Details of the road-based public transport services operating close to the subject site are presented in Figure 2.7 and Table 2.2.

TABLE 2.2 ROAD-BASED PUBLIC TRANSPORT SERVICES OPERATING NEAR THE SUBJECT SITE

Route No.	Routing	Frequency (min)
KMB 1	Star Ferry – Chuk Yuen Estate	8 – 20
KMB 1A	Star Ferry – Sau Mau Ping (Central)	7 – 15
KMB 2A	Mei Foo – Lok Wah	10 – 25
KMB 2D	Tung Tau Estate – Chak On Estate	20 – 30
KMB 2X	Choi Fook – Mei Foo	20 – 30
KMB 3B	Hung Hom Ferry – Tsz Wan Shan (Central)	20 – 30
KMB 5	Star Ferry – Fu Shan	9 – 25
KMB 5A	Kai Tak (Kai Ching Estate) – Star Ferry	25 – 30
KMB 5C	Star Ferry – Tsz Wan Shan (Central)	8 – 20
KMB 5P	Star Ferry – Tsz Wan Shan (Central)	AM & PM peak
KMB 6D	Mei Foo – Ngau Tau Kok	12 – 30
KMB 6P	So Uk – Lei Yue Mun Estate	AM & PM peak
KMB 6X	Shing Tak Street – Mei Foo	PM peak
KMB 7B	Hung Hom (Hung Luen Road) Bus Terminus – Lok Fu	20 – 35
KMB 9	Tsim Sha Tsui East (Mody Road) – Choi Fook	15 – 30
KMB 10	Choi Wan – Tai Kok Tsui (Circular)	15 – 30
KMB 11	Kowloon Station – Diamond Hill Station	12 – 30
KMB 11B	Kowloon City Ferry – Kwun Tong (Tsui Ping Road)	12 – 30
KMB 11D	Lok Fu – Kwun Tong Ferry	15 – 30
KMB 11K	Hung Hom Station – Chuk Yuen Estate	20 – 35
KMB 11X	Hung Hom Station – Sau Mau Ping (Upper)	9 – 25
KMB 12A	Whampoa Garden – Cheung Sha Wan (Hoi Tat Estate)	10 – 25
KMB 13D	Tai Kok Tsui (Island Harbourview) – Po Tat	15 – 30
KMB 14	China Ferry Terminal – Lei Yue Mun Estate	12 – 30
KMB 15	Hung Hom (Hung Luen Road) – Ping Tin	12 – 30
KMB 16	Mong Kok (Park Avenue) – Lam Tin (Kwong Tin Estate)	8 – 30
KMB 16P	Mong Kok (Park Avenue) – Kwun Tong Ferry	AM & PM peak
KMB 16X	Mong Kok (Park Avenue) – Lam Tin (Kwong Tin Estate)	AM & PM peak
KMB 17	Ho Man Tin (Oi Man Estate) – Kwun Tong (Yue Man Square)	5 – 25
CTB 20	Kai Tak (Muk On Street) – Cheung Sha Wan (Hoi Tat)	12 – 30
CTB 20A	High Speed Rail West Kowloon Station – Kai Tak Cruise Terminal	25 – 30
KMB 21	Hung Hom Station – Choi Wan	20 – 30
CTB 22	Kai Tak Cruise Terminal – Kowloon Tong	20 – 35
CTB 22M	Kai Tak Cruise Terminal – To Kwa Wan	20 – 30

TABLE 2.1 ROAD-BASED PUBLIC TRANSPORT SERVICES OPERATING NEAR THE SUBJECT SITE (CONT'D)

Route No.	**Routing**	**Frequency (min)**
KMB 24	Kai Yip – Mong Kok (Circular)	20 – 30
KMB 26	Tsim Sha Tsui East – Shun Tin	8 – 25
KMB 27	Shun Tin – Mong Kok (Circular)	6 – 20
KMB 27X	Shun Tin – Olympic Station	AM & PM peak
KMB 28	Star Ferry – Lok Wah	10 – 25
KMB 42	Cheung Hong Estate – Shun Lee	10 – 25
KMB 61X	Kowloon City Ferry – Tuen Mun Central	10 – 25
KMB 75X	Kowloon City Ferry – Tai Po (Fu Shin)	10 – 25
KMB 85	Kowloon City Ferry – Fo Tan Chun Yeung Estate	20 – 30
KMB 85A	Kowloon City Ferry – Kwong Yuen	20 – 30
KMB 85B	Kowloon City Ferry – Chun Shek	AM & PM peak
KMB 85X	Hung Luen Road – Man On Shan Town Centre	9 – 30
KMB 92R	Sai Kung – Star Ferry	weekend
KMB 93K	Mong Kok East Station – Po Lam	17 – 30
KMB 95	Kowloon Station – Tsui Lam	12 – 30
KMB 98C	Mei Foo – Hang Hau (North)	10 – 25
KMB 98E	Mei Foo – Hang Hau (North)	AM & PM peak
KMB 98S	Lohas Park Station – Mei Foo	AM & PM peak
KMB / CTB 101	Kennedy Town – Kwun Tong (Yue Man Square)	4 – 20
KMB / CTB 106	Siu Sai Wan (Island Resort) – Wong Tai Sin	6 – 22
KMB / CTB 106A	Wong Tai Sin – Taikoo (Kornhill Plaza)	AM peak
KMB / CTB 106P	Siu Sai Wan (Island Resort) – Wong Tai Sin	AM & PM peak
KMB / CTB 107	Wah Kwai – Kowloon Bay	5 – 20
KMB 108	Braemar Hill – Kai Yip	10 – 30
KMB / CTB 111	Central (Macau Ferry) – Ping Shek	4 – 30
KMB / CTB 111P	Choi Fook – Central (Macau Ferry)	AM & PM peak
KMB / CTB 113	Kennedy Town (Belcher Bay) – Choi Hung	10 – 29
KMB / CTB 116	Quarry Bay – Tsz Wan Shan (Central)	4 – 18
KMB 203E	Kowloon Station – Choi Hung	15 – 30
KMB 208	Broadcast Drive – Tsim Sha Tsui East	25 – 30
KMB 213D	Sau Mau Ping (Central) – Mong Kok (Circular)	10 – 20
KMB 275X	Tai Po (Fu Shin) – Hung Hom (Hung Luen Road)	AM & PM peak
KMB 293S	Hang Hau (Ngan O Road) – Mei Foo	overnight
KMB 296C	Cheung Sha Wan (Hoi Ying Estate) – Sheung Tak	15 – 30
KMB 296P	Sheung Tak – Lai Chi Kok Station	AM & PM peak
KMB 297	Hung Hom (Hung Luen Road) – Po Lam	15 – 30
KMB 298C	Lohas Park Station – Mei Foo	AM & PM peak
KMB 298X	Hang Hau (North) (Tseung Kwan O Hospital) – Cheung Sha Wan (Kom Tsun Street)	AM & PM peak
CTB 608	Kowloon City (Shing Tak Street) – Shau Kei Wan	10 – 30
CTB 608P	Siu Sai Wan (Island Resort) – Kowloon City (Shing Tak Street)	AM peak
CTB 793	Tseung Kwan O Industrial Estate – So Uk	15 – 20
CTB 796X	Tsim Sha Tsui East – Tseung Kwan O Industrial Estate / Tseung Kwan O Station	12 – 30
CTB A22	Lam Tin Station – Airport	15 – 60
CTB E23	Airport – Tsz Wan Shan (South)	12 – 30
CTB E23A	Tsz Wan Shan (South) – Airport	20 – 30
CTB N20	Island Harbourview – Kai Tak (Muk On Street)	overnight
CTB N23	Tung Chung Station – Tsz Wan Shan (North)	overnight
KMB / CTB N121	Central (Macau Ferry) – Ngau Tau Kok	overnight
KMB N213	Tsim Sha Tsui East (Mody Road) – On Tai (West)	overnight

TABLE 2.1 ROAD-BASED PUBLIC TRANSPORT SERVICES OPERATING NEAR THE SUBJECT SITE (CONT'D)

Route No.	Routing	Frequency (min)
KMB N216	Hung Hom Station – Yau Tong	overnight
KMB N293	Mong Kok (Park Avenue) – Sheung Tak	20 – 30
CTB N796	Lohas Park – Mong Kok	20 – 30
GMB 2	Whampoa Garden – Festival Walk	10 – 25
GMB 2A	Whampoa Garden – Festival Walk	10 – 25
GMB 13	Kowloon Tong (Broadcast Drive) – Hung Hom Ferry Pier	15 – 30
GMB 17M	Prince Edward Station – Kowloon Hospital	7 – 15
GMB 25A	Kowloon Tong Station – Tung Tau Estate	15 – 20
GMB 25B	The Latitude – Kowloon Tong Station	15 – 18
GMB 25M	Tung Tau Estate – Kowloon Tong Station	6 – 8
GMB 46	Island Harbourview – Richland Gardens	3 – 15
GMB 49	Shun Tin Estate – Kowloon City Ferry Pier	25
GMB 61	Mong Kok Station – Siu Sai Wan (Island Resort)	overnight
GMB 66S	Fu Shan Estate – Mong Kok	overnight
GMB 69	Kowloon City (Lion Rock Road) – Laguna City	20 – 30
GMB 69A	Prince Edward Station – Laguna City	15 – 20
GMB 70	Island Harbourview – Diamond Hill Station	4 – 12
GMB 70A	Olympic Station – Diamond Hill Station	30 – 60
GMB 88	Kai Ching Estate – Wong Tai Sin	12 – 30
GMB 105	To Kwa Wan – Hong Sing Garden	5 – 20
GMB 110	Tiu Keng Leng Station – Kowloon City (Circular)	15 – 30

Note: KMB – Kowloon Motor Bus CTB – Citybus
GMB – Green Minibus

Pedestrian Facilities

2.11 There are good pedestrian facilities provided in the vicinity of the subject site, including footpaths, at-grade pedestrian crossings at road junctions and subways across Prince Edward Road West.

3.0 THE PROPOSED ELDERLY HOME

Development Schedule

3.1 The Proposed Elderly Home consists of 1 block with 141 beds for elderly and is targeted for completion by 2027.

Internal Transport Facilities

3.2 The Hong Kong Planning Standards and Guidelines (HKPSG) have no recommendations on the provision of internal transport facilities for elderly home. Taking into consideration the narrow site frontage along Prince Edward Road West, which is only around 10m, and to satisfy the operational needs, the following internal transport facilities, which is same as TPB No. A/K10/261**,** are recommended:

- 1 lay-by with dimensions 9m(L) × 3.5m(W) × 3.6m(H) for shared use by taxi, private car, ambulance, LGV and mini coach, and
- 1 car parking space for persons with disabilities of dimensions 5m(L) × 3.5m(W) × 2.4m(H).

3.3 A 5m wide run-in / out is proposed, and the proposed ground floor plan is shown in Figure 3.1.

3.4 In order to understand the operation and to ascertain the parking and loading / unloading needs of the Proposed Elderly Home, traffic generation survey was conducted from 0800 – 2000 hours on 7th June 2024 (Friday) at an existing elderly home (the "adjoining elderly home") located at 351 Prince Edward Road West.

3.5 The adjoining elderly home has around 135 beds, and is similar to the Proposed Elderly Home in terms of: (i) location; (ii) scale; (iii) number of beds; (iv) availability of internal transport facilities; and (v) accessibility to public transport services. The survey results are presented in Table 3.1.

TABLE 3.1 TRAFFIC GENERATED BY ADJOINING ELDERLY HOME

No.	Vehicle Type	Arrival Time (hours)	Departure Time (hours)	Duration (min)	Activity	Arrival in Peak Hour
1	LGV	08:46	08:48	2	Goods Delivery	AM peak
2	Private Car	10:22	10:30	8	Pick-up / Drop-off	
3	Goods Van	10:48	10:54	6	Goods Delivery	
4	Mini Coach	11:57	11:58	1	Pick-up / Drop-off	
5	Private Car	12:00	12:05	5	Pick-up / Drop-off	
6	Mini Coach	13:55	13:56	1	Pick-up / Drop-off	
7	Private Car	16:33	16:41	8	Pick-up / Drop-off	
8	Private Car	18:09	18:13	4	Pick-up / Drop-off	PM peak
Average				**4.4**		

3.6 Tables 3.1 show that 8 vehicle trips were generated during the survey period, and the vehicles observed were taxi, private car, goods van, LGV and mini coach. On average, these vehicles stay of only 4.4 minutes. In addition, it is noted that these vehicles did not arrive at the same time.

3.7 Based on the survey results, it can be concluded that the Proposed Elderly Home with 141 beds is expected to generate only a few vehicle trips daily. Hence, the internal transport facilities provided as shown in Figure 3.1 is considered adequate and acceptable from traffic engineering point of view.

Swept Path Analysis

3.8 The CAD-based swept path analysis programme, *Autodesk Vehicle Tracking*, was used to check the ease of manoeuvring of vehicles, and are found to have no problems. The swept path analysis drawings are found in the Appendix B.

4.0 TRAFFIC IMPACT

Design Year

4.1 The completion of the Proposed Elderly Home in 2027 and the design year adopted for the capacity analysis is 2031.

Analysis on Traffic Generation

4.2 The subject site falls within the *"Residential (Group B)"* zone in the Approved Ma Tau Kok Outline Zoning Plan (OZP) No. S/K10/30, and according to the OZP, residential use is always permitted. An extract from OZP No. S/K10/30 is attached in Appendix C.

4.3 In order to assess the potential traffic impact of the Proposed Elderly Home, a traffic generation analysis is conducted to compare the Proposed Elderly Home and a hypothetical residential building (the "Hypothetical Residential Building") at the subject site.

4.4 The traffic generation for the Proposed Elderly Home and Hypothetical Residential Building is estimated below:

(i) Proposed Elderly Home

4.5 To quantify the traffic generated by the Proposed Elderly Home, reference is made to the adjoining elderly home. The survey results are presented in Table 4.1.

TABLE 4.1 TRIP GENERATION RATE FOR ELDERLY HOME

Adjoining Elderly Home (with 135 beds)	**Unit**	**AM Peak**		**PM Peak**	
		IN	**OUT**	**IN**	**OUT**
Traffic Generation	pcu/hr	1.5	1.5	1	1
Trip Generation Rate	pcu/hr/bed	0.0111	0.0111	0.0074	0.0074

4.6 The trip generation rates presented in Table 4.1 are used to calculate the traffic generated associated with the Proposed Elderly Home, and the calculated traffic generation is presented in Table 4.2.

TABLE 4.2 PROPOSED ELDERLY HOME TRAFFIC GENERATION

Proposed Elderly Home (with 141 beds)	**Unit**	**AM Peak**		**PM Peak**	
		IN	**OUT**	**IN**	**OUT**
Traffic Generation	pcu/hr	2	2	2	2

(ii) Hypothetical Residential Building

4.7 According to the Authorised Person, the Hypothetical Residential Building has 60 flats with average flat size of around $50m^2$. Hence, trip generation rates for *"Private Housing: High-density / R(A)"* from Transport Planning and Design Manual (TPDM) are adopted and these are presented in Table 4.3.

TABLE 4.3 RESIDENTIAL TRIP GENERATION RATES FROM TPDM

Private Housing: High-density / R(A)	Unit	AM Peak		PM Peak	
		IN	OUT	IN	OUT
Trip Generation Rate	pcu/hr/flat	0.0425	0.0718	0.0370	0.0286

4.8 The trip generation rates presented in Table 4.3 are used to calculate the traffic generated associated with the Hypothetical Residential Building, and the calculated traffic generation is presented in Table 4.4.

TABLE 4.4 HYPOTHETICAL RESIDENTIAL BUILDING TRAFFIC GENERATION

Hypothetical Residential Building (with 60 flats)	Unit	AM Peak		PM Peak	
		IN	OUT	IN	OUT
Traffic Generation	pcu/hr	3	5	3	2

4.9 The comparison of traffic generation for the Proposed Elderly Home (Table 4.2) and Hypothetical Residential Building (Table 4.4) is presented in Table 4.5.

TABLE 4.5 COMPARISON OF TRAFFIC GENERATION

Development	Traffic Generation (pcu/hour)					
	AM Peak			PM Peak		
	IN	OUT	2-way	IN	OUT	2-way
Hypothetical Residential Building [a]	3	5	8	3	2	5
Proposed Elderly Home [b]	2	2	4	2	2	4
Difference [b] – [a]	**–1** **(–33%)**	**–3** **(–60%)**	**–4** **(–50%)**	**–1** **(–33%)**	**0** **(0%)**	**–1** **(–20%)**

4.10 Table 4.5 shows that the Proposed Elderly Home is expected to generate **4 and 1 pcu (2-way) less than** the Hypothetical Residential Building during the AM and PM peak hours respectively, or equivalent to **50% and 20% less traffic**. Hence, **the Proposed Elderly Home is a better-off scheme** compared to the Hypothetical Residential Building.

Planned Developments

4.11 The major planned developments in the vicinity of the Proposed Development are summarised in Table 4.6.

TABLE 4.6 DETAILS OF MAJOR PLANNED DEVELOPMENTS

Ref.	Location	Use	Development Parameter (Approx.)
A	222 Argyle Street	Hospital	around 124 beds
B	URA Project at Shing Tak Street / Ma Tau Chung Road (CBS-1:KC)	Private Housing	around 640 flats, retail GFA of around 6,449m^2
C	3 – 13 Nga Tsin Long Road	Private Housing	around 110 flats, retail GFA of around 1,190m^2
D	4 – 24 Nam Kok Road	Private Housing	around 313 flats, retail GFA of around 1,826m^2
E	URA Project at Nga Tsin Wai Road / Carpenter Road (KC-017)	Private Housing	around 4,353 flats, retail GFA of around 25,302m^2, G/IC of around 47,000m^2 and public vehicle park of around 360 spaces
F	URA Project at Kai Tak Road / Sa Po Road (KC-015)	Private Housing	around 810 flats, retail GFA of around 8,028m^2 and public vehicle park of around 300 spaces
G	Redevelopment of Kowloon City Plaza at New Kowloon Inland Lot No. 6056	Private Housing	around 850 flats, retail GFA of around 8,882m^2 and public vehicle park of around 400 spaces
H	26A – B Grampian Road and 13A – B Junction Road	Private Housing	around 72 flats
I	84 – 98 Junction Road	Private Housing	around 140 flats, retail GFA of around 1,373m^2
J	65, 73 and 75 Lion Rock Road	Private Housing	around 150 flats, retail GFA of around 640m^2
K	93 – 95 Hau Wong Road	Private Housing	around 50 flats, retail GFA of around 450m^2
L	452 – 464 Prince Edward Road West	Private Housing	domestic GFA of around 5,793m^2 and retail GFA of around 1,159m^2
M	20 – 20A Grampian Road	Private Housing	domestic GFA of around 2,168m^2
N	57A Nga Tsin Wai Road	Private Housing	around 11 flats
O	55 Nga Tsin Wai Road	Private Housing	domestic GFA of around 1,106m^2

4.12 The major planned developments listed in Table 4.6 have been included in the traffic forecast.

Traffic Forecast

4.13 The 2031 design traffic flows for capacity analysis are derived with reference to the following:

i. 2031 peak hour traffic models from the BDTM;
ii. planned developments located in the vicinity; and
iii. traffic generation of the Proposed Elderly Home.

4.14 The 2031 peak hour traffic flows without and with the Proposed Elderly Home are shown in Figures 4.1 and 4.2 respectively.

2031 Junction Capacity Analysis

4.15 The 2031 junction capacity analysis for the cases without and with the Proposed Elderly Home is summarised in Table 4.7, and detailed calculations are found in Appendix A.

TABLE 4.7 2031 JUNCTION OPERATIONAL PERFORMANCE

Ref.	**Junction**	**Performance Indicator (1)**	**Without Proposed Elderly Home**		**With Proposed Elderly Home**	
			AM Peak	**PM Peak**	**AM Peak**	**PM Peak**
J1	Prince Edward Road West / Junction Road	RC	25%	22%	25%	22%
J2	Prince Edward Road West / Forfar Road	RFC	0.363	0.419	0.364	0.419
J3	Prince Edward Road West / Lomond Road	RC	47%	55%	47%	55%
J4	Argyle Street / Lomond Street	RC	23%	32%	23%	32%

Note: (1) RC – Reserve Capacity RFC – Ratio-of-Flow to Capacity

4.16 The above results indicate that the analysed junctions are expected to operate with sufficient capacity during the peak hours in 2031. The junctions analysed have sufficient capacity to accommodate the (i) expected traffic growth; and (ii) additional traffic generated by the Proposed Elderly Home.

4.17 The traffic generated by the Proposed Elderly Home is expected to have minimal impact to the capacity of the analysed junctions. It can be concluded that the Proposed Elderly Home is acceptable from traffic engineering terms.

5.0 CONCLUSION

5.1 The subject site is located at 349 Prince Edward Road West in Kowloon City. The Applicant intends to construct an elderly home with 141 beds at the subject site.

5.2 In view of the site constraints and to satisfy the operational needs, the following internal transport facilities are proposed for the Proposed Elderly Home:

- 1 lay-by of dimensions 9m(L) × 3.5m(W) × 3.6m(H) for shared use by taxi, private car, ambulance, LGV and mini coach, and
- 1 car parking space for persons with disabilities of dimensions 5m(L) × 3.5m(W) × 2.4m(H)

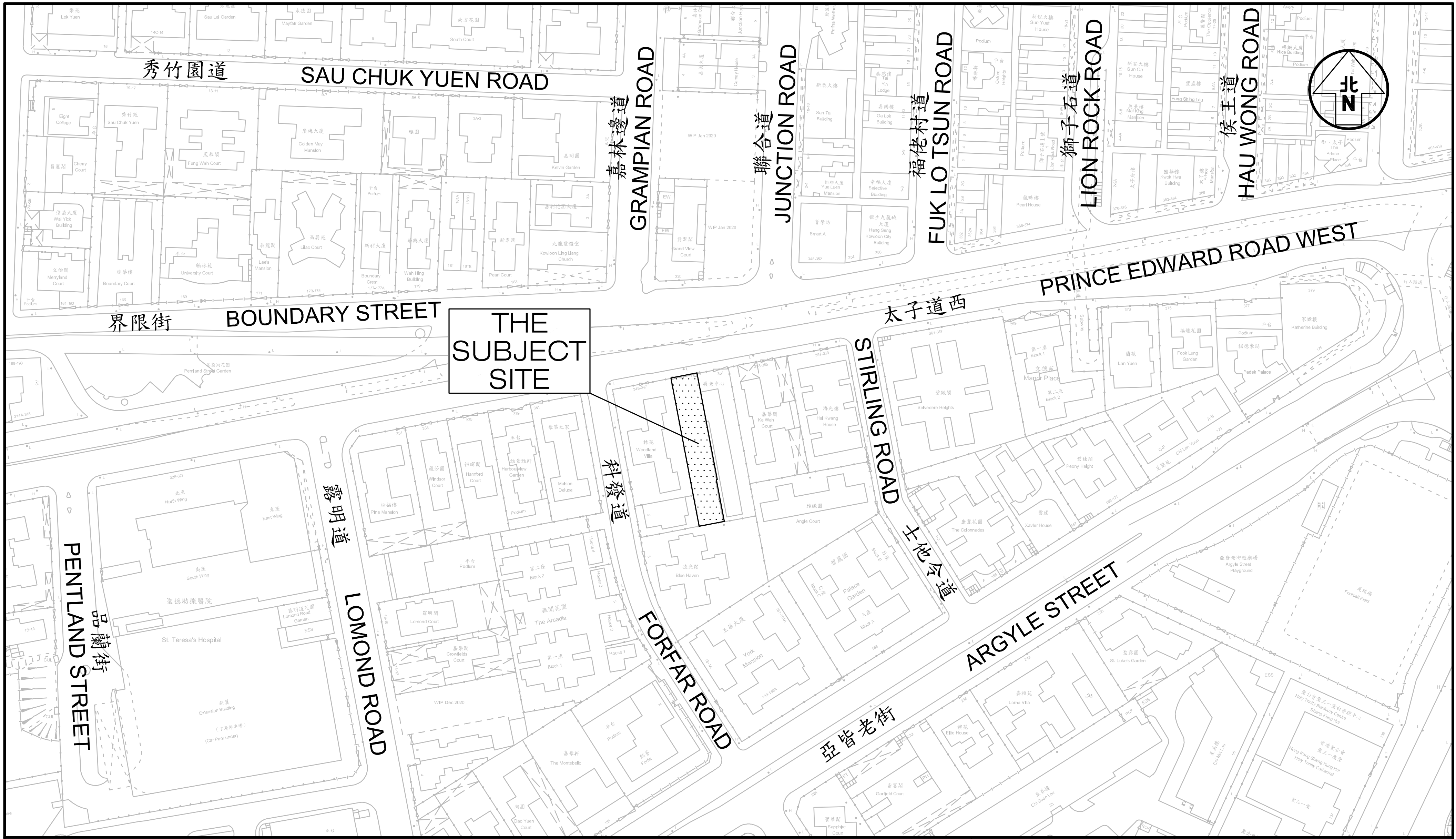
5.3 The traffic generation of the Proposed Elderly Home is estimated to be **4 and 1 pcu (2-way) less than** the Hypothetical Residential Building during the AM and PM peak hours respectively, or equivalent to **50% and 20% less traffic**. Compared to the Hypothetical Residential Development, the Proposed Elderly Home is a better-off scheme.

5.4 Manual classified counts were conducted at junctions, which are located in the vicinity in order to establish the existing traffic flows during the AM and PM peak hours. The 2031 design traffic flows are derived with reference to the latest BDTM and have taken into account the planned developments in the vicinity of the subject site.

5.5 The 2031 junction capacity analysis was undertaken for the cases without and with the Proposed Elderly Home. The junctions analysed have sufficient capacity to accommodate the expected traffic flows in 2031 and the traffic generated by the Proposed Elderly Home.

5.6 The TIA concluded that the Proposed Elderly Home will result in **no** adverse traffic impact to the surrounding road network. From traffic engineering grounds, the Proposed Elderly Home is acceptable.

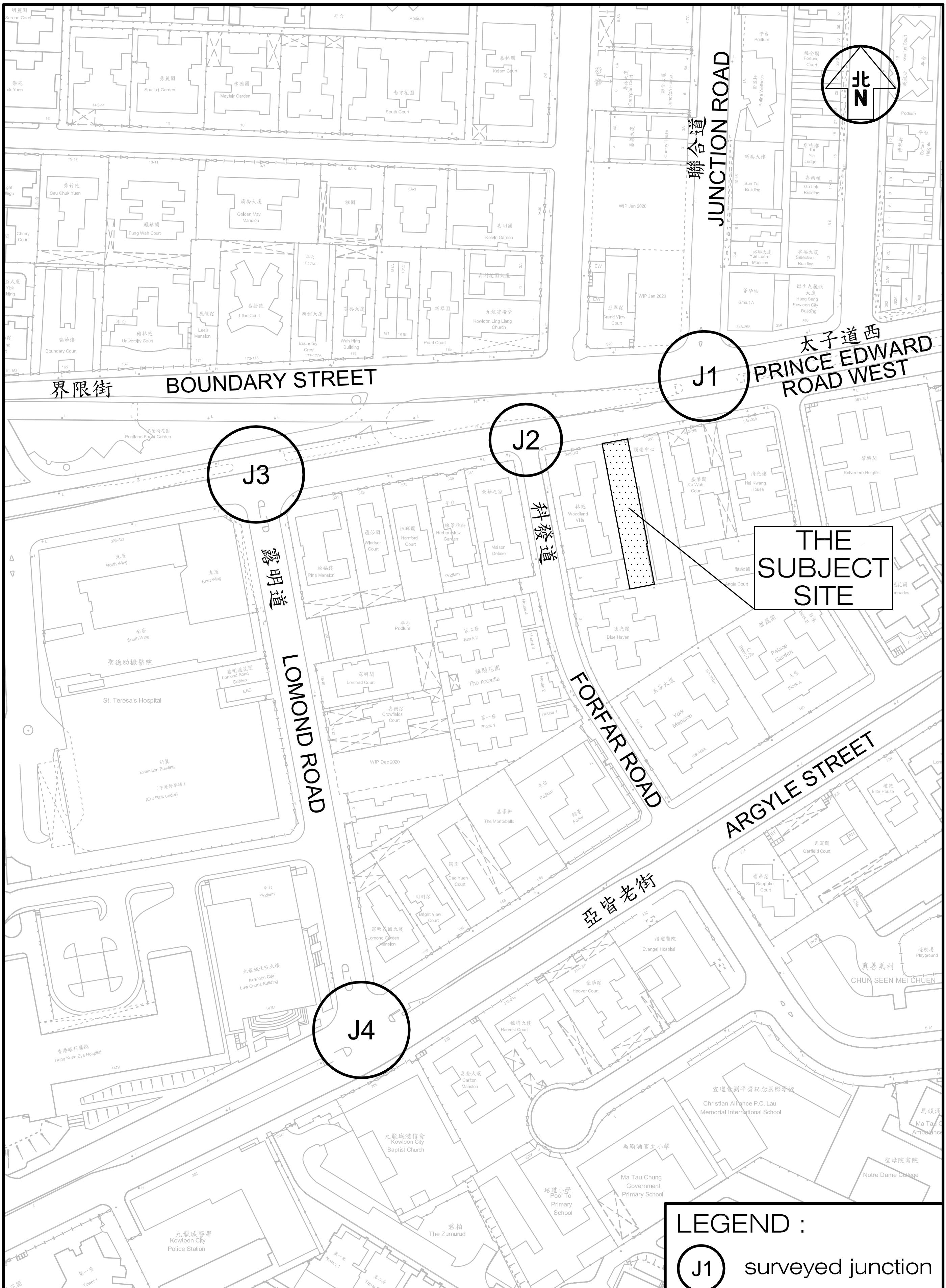
Figures



Project Title			
AMENDMENT TO THE APPROVED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY) IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY	J7350	Figure No. 1.1	Revision A
Figure Title		Designed by T H C	Drawn by C C L
LOCATION OF THE SUBJECT SITE		Checked by K C	Scale in A4 1 : 2,000
		Date 12 AUG 2024	

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road,
Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOB\J7350-J7399\J7350\Fig 1.1 RevA.dwg



Project Title

AMENDMENT TO THE APPROVED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY) IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY

Figure Title

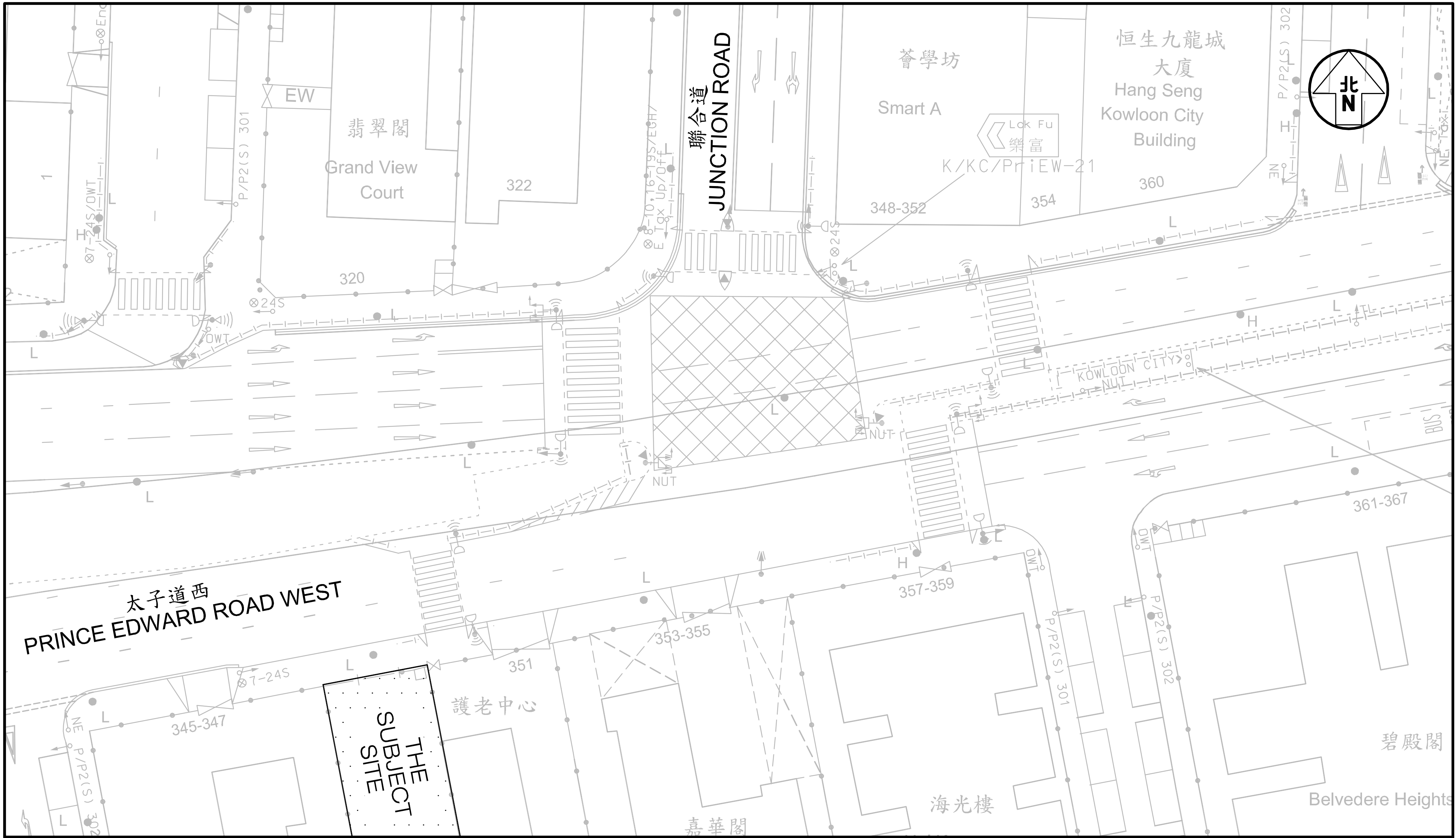
LOCATION OF THE SURVEYED JUNCTIONS

Job No.	Figure No.		Scale in A4
J7350	2.1		1 : 2,000

Designed by	Drawn by	Checked by	Revision	Date
T H C	C C L	K C	A	12 AUG 2024

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road, Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343 Email : mail@ckmasia.com.hk

T:\JOB\J7350-J7399\J7350\Fig 2.1 RevA.dwg

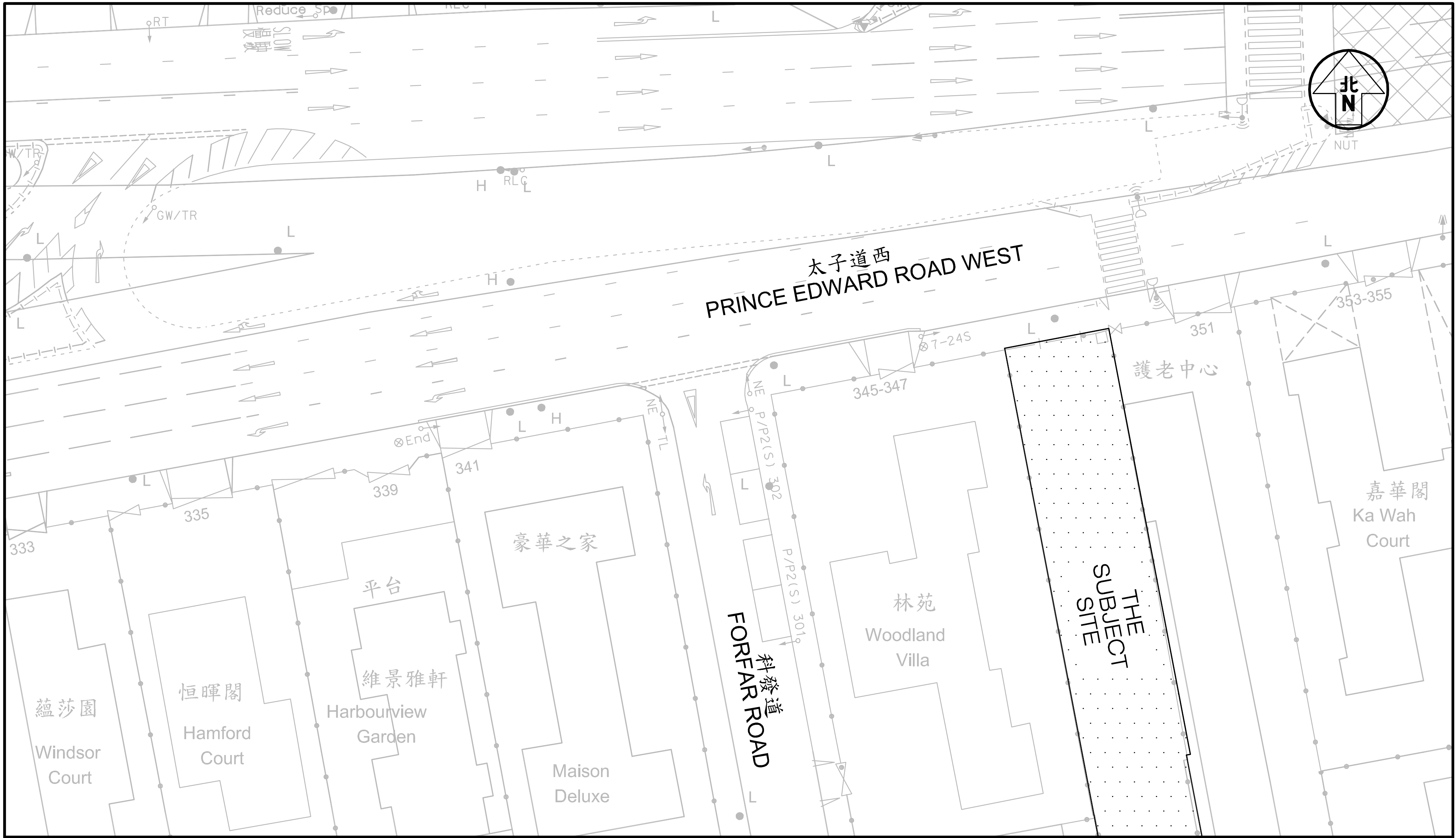


Project Title	AMENDMENT TO THE APPROVED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY) IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY	J7350	
Figure Title	(J1) JUNCTION OF PRINCE EDWARD ROAD WEST / JUNCTION ROAD		

Figure No.		Revision
2.2		A
Designed by	Drawn by	Checked by
T H C	C C L	K C
Scale in A4	Date	
1 : 500	12 AUG 2024	

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road,
Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOB\J7350-J7399\J7350\Fig 2.2 - 2.5 RevA.dwg



Project Title

AMENDMENT TO THE APPROVED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY) IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY

J7350

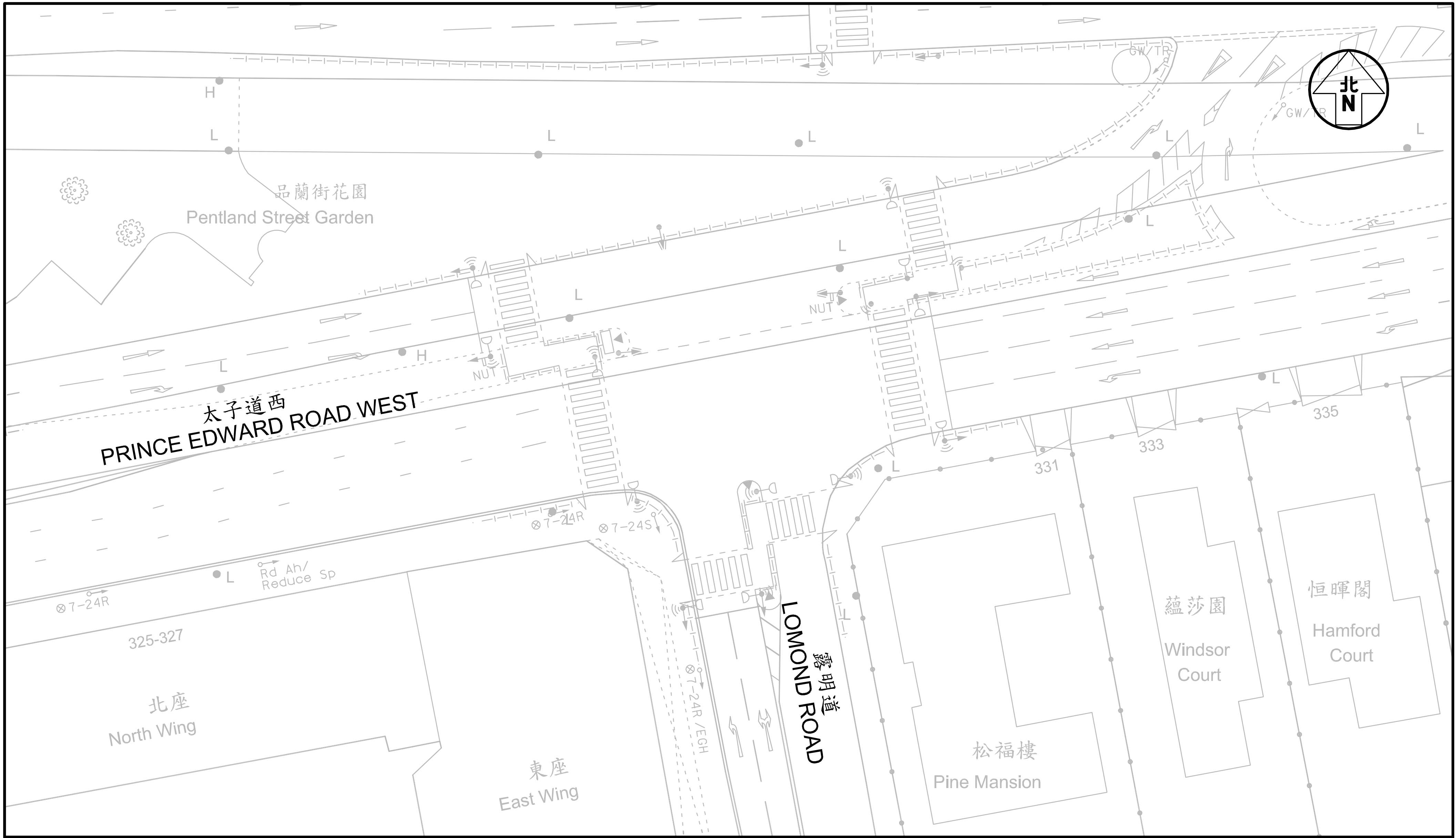
Figure Title

(J2) JUNCTION OF PRINCE EDWARD ROAD WEST / FORFAR ROAD

Figure No.		Revision
2.3		A
Designed by	Drawn by	Checked by
T H C	C C L	K C
Scale in A4	Date	
1 : 500	12 AUG 2024	

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road,
Wan Chai, Hong Kong
Tel : (852) 2520 5990   Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOB\J7350-J7399\J7350\Fig 2.2 - 2.5 RevA.dwg



Project Title

AMENDMENT TO THE APPROVED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY) IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY

J7350

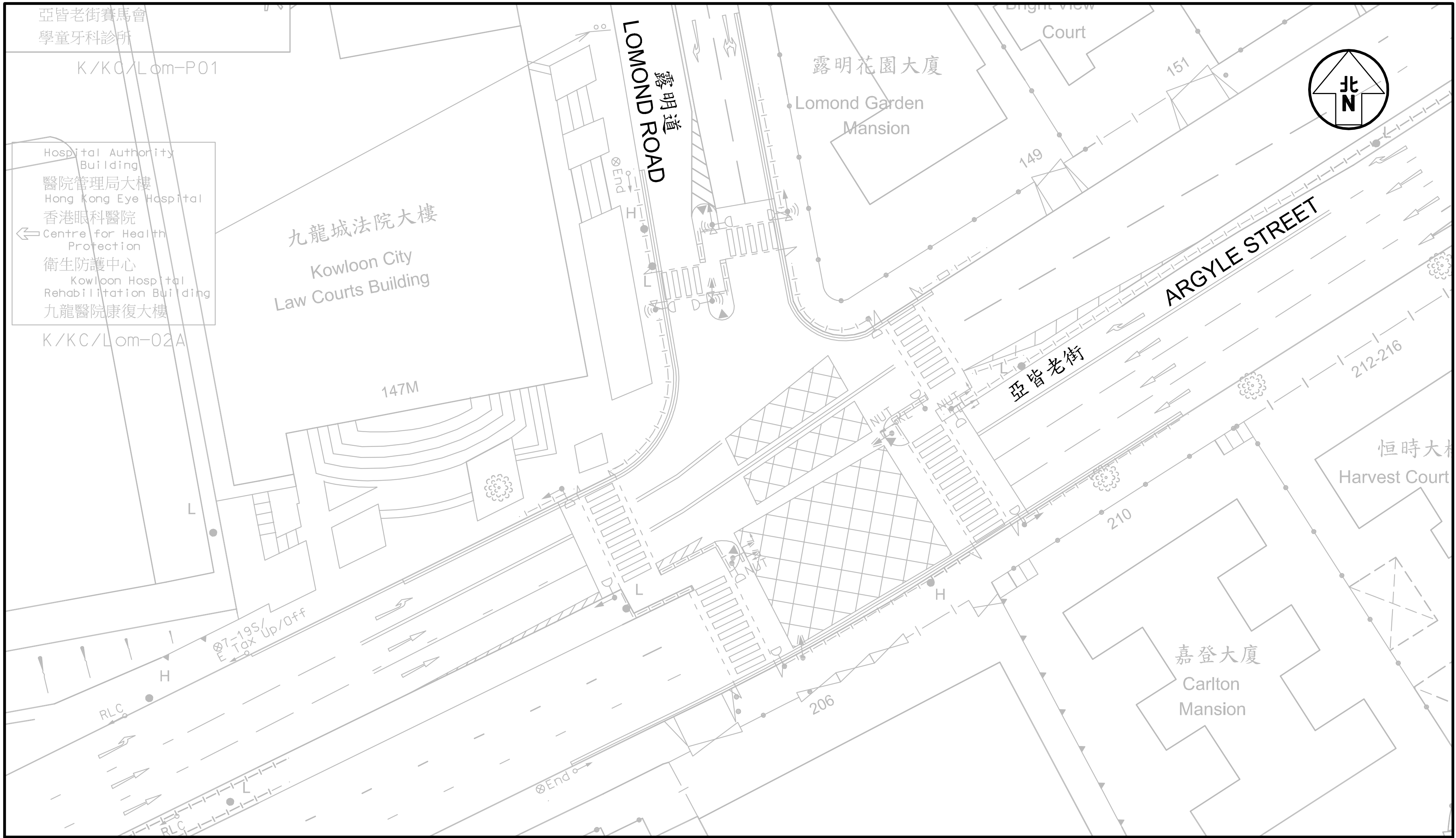
Figure Title

(J3) JUNCTION OF PRINCE EDWARD ROAD WEST / LOMOND ROAD

Figure No.		Revision
2.4		A
Designed by	Drawn by	Checked by
T H C	C C L	K C
Scale in A4	Date	
1 : 500	12 AUG 2024	

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road,
Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOB\J7350-J7399\J7350\Fig 2.2 - 2.5 RevA.dwg

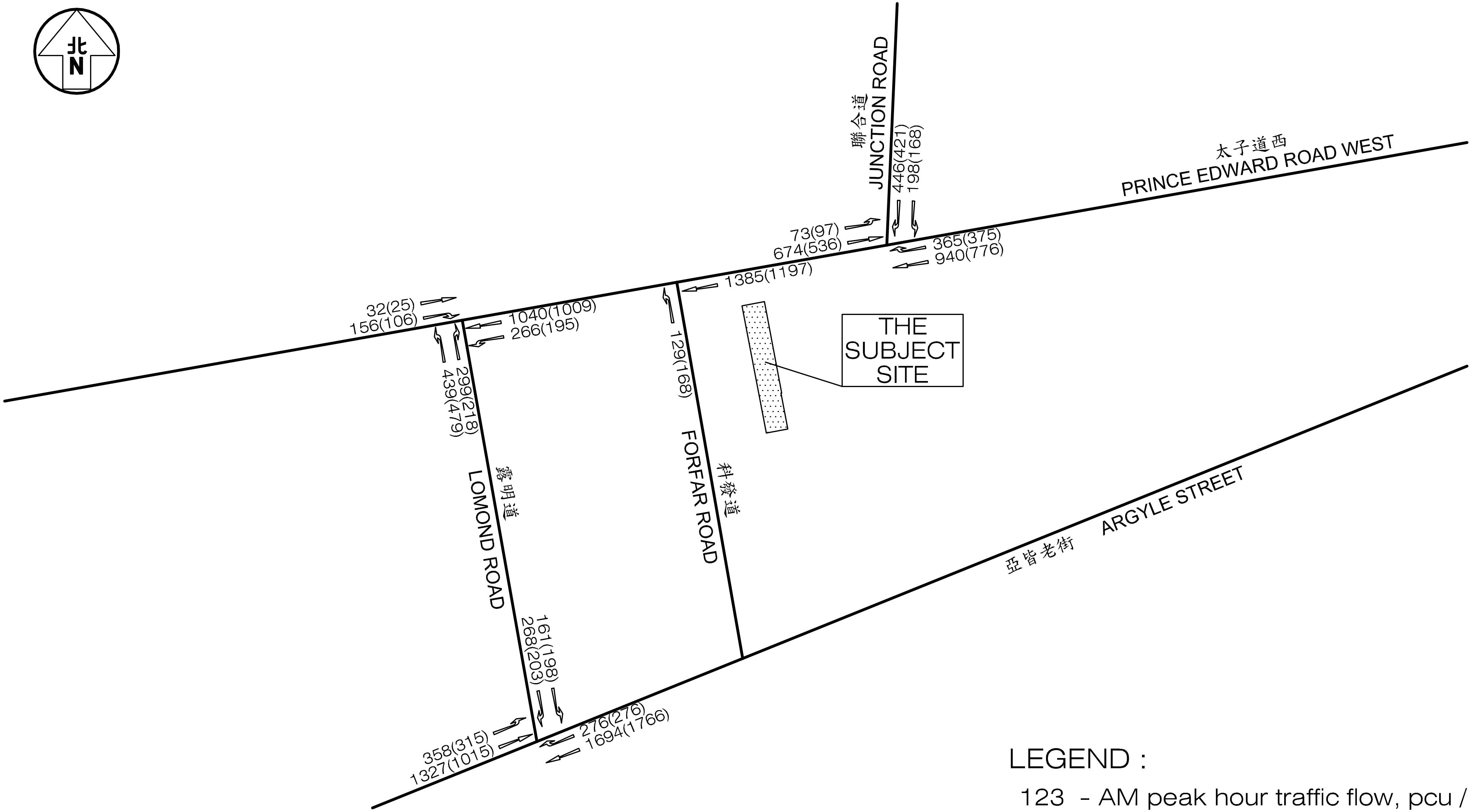


Project Title	AMENDMENT TO THE APPROVED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY) IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY J7350
Figure Title	(J4) JUNCTION OF ARGYLE STREET / LOMOND ROAD

Figure No.		Revision
2.5		A
Designed by	Drawn by	Checked by
T H C	C C L	K C
Scale in A4	Date	
1 : 500	12 AUG 2024	

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road,
Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOB\J7350-J7399\J7350\Fig 2.2 - 2.5 RevA.dwg



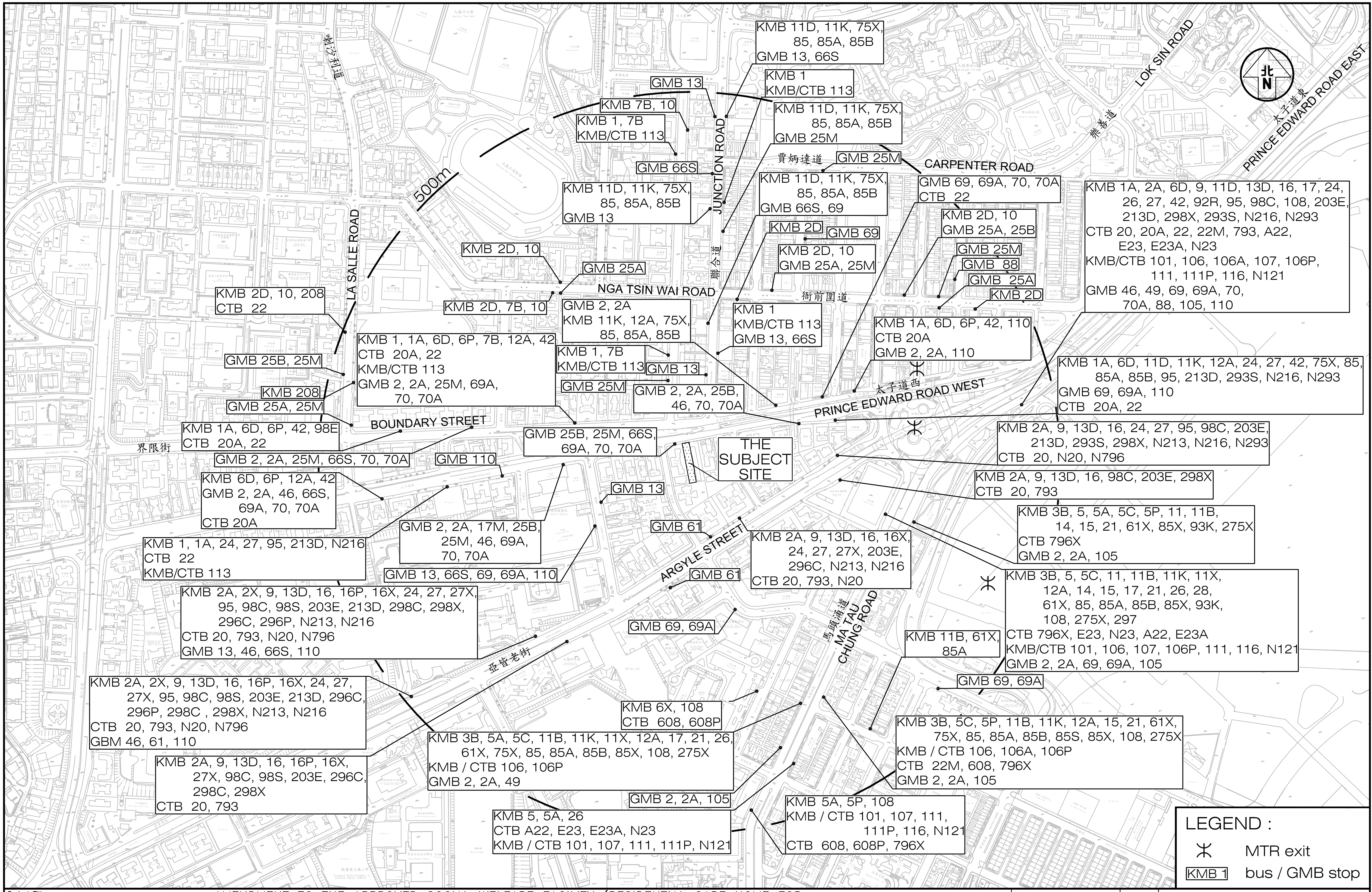
LEGEND :

123 - AM peak hour traffic flow, pcu / hr

(456) - PM peak hour traffic flow, pcu / hr

Project Title AMENDMENT TO THE APPROVED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY) IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY J7350	Figure No. 2.6	Revision A	CKM Asia Limited Traffic and Transportation Planning Consultants
Figure Title EXISTING PEAK HOUR TRAFFIC FLOWS	Designed by T H C	Drawn by C C L	Checked by K C
	Scale in A4 N.T.S.	Date 12 AUG 2024	21st Floor, Methodist House, 36 Hennessy Road, Wan Chai, Hong Kong Tel : (852) 2520 5990 Fax : (852) 2528 6343 Email : mail@ckmasia.com.hk

T:\JOB\J7350-J7399\J7350\Fig 2.1 RevA.dwg



T:\JOB\J7350-J7399\J7350\Fig 2.7 RevA.dwg

Project Title	AMENDMENT TO THE APPROVED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY) IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY J7350
Figure Title	AVAILABILITY OF PUBLIC TRANSPORT SERVICES IN THE VICINITY OF THE SUBJECT SITE

Figure No.	Revision
2.7	A

Designed by	Drawn by	Checked by
T H C	C C L	K C

Scale in A3	Date
N.T.S.	12 AUG 2024

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road
Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

Project Title
AMENDMENT TO THE APPROVED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY) IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY

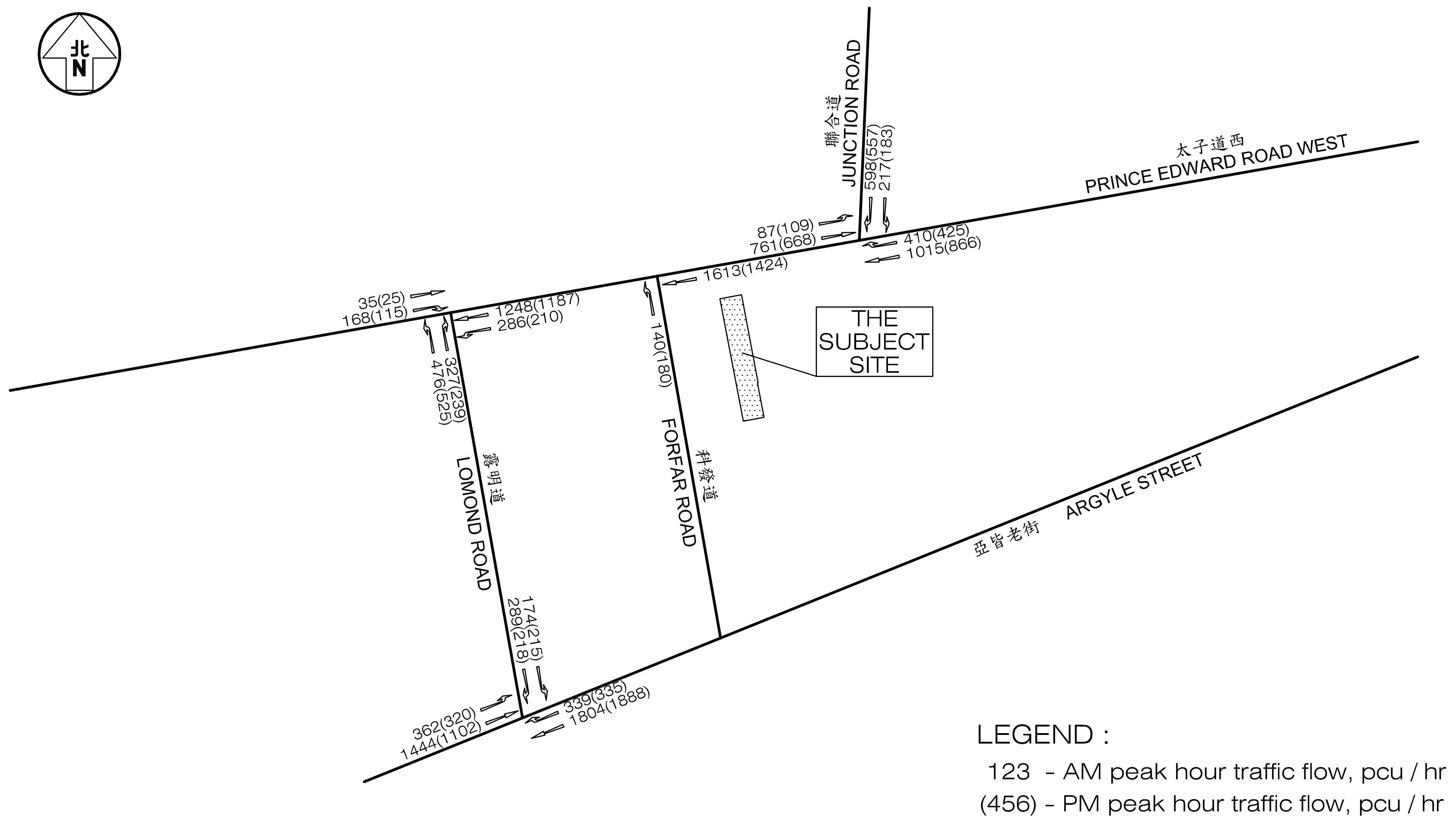
Figure Title
PROPOSED INTERNAL TRANSPORT LAYOUT

Job No.	Figure No.		Scale in A4
J7350	3.1		1 : 300

Designed by	Drawn by	Checked by	Revision	Date
T H C	C C L	K C	A	12 AUG 2024

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road, Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343 Email : mail@ckmasia.com.hk

T:\JOB\J7350-J7399\J7350\Fig 3.1 RevA.dwg



LEGEND :

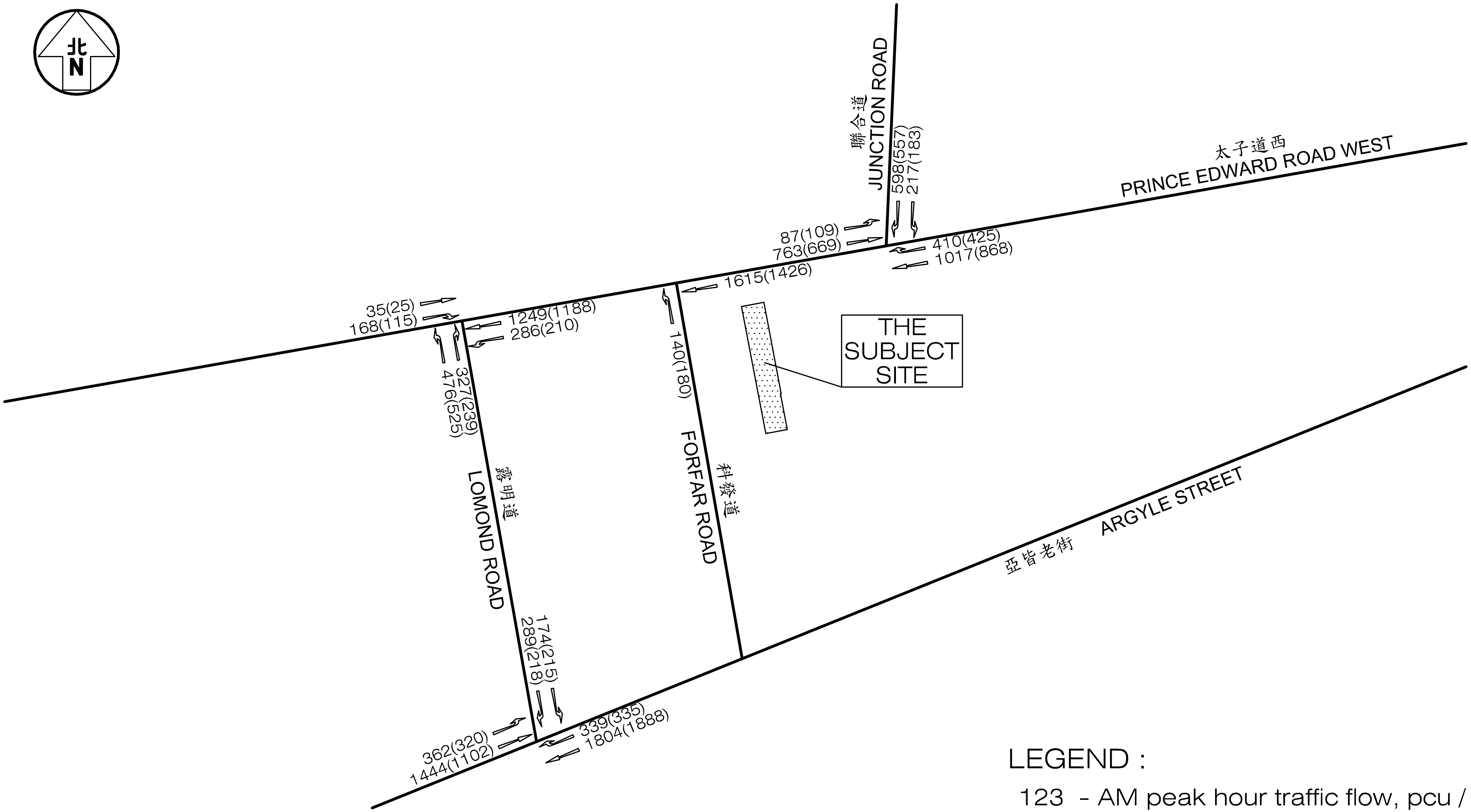
123 - AM peak hour traffic flow, pcu / hr

(456) - PM peak hour traffic flow, pcu / hr

Project Title	AMENDMENT TO THE APPROVED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY) IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY J7350
Figure Title	2031 PEAK HOUR TRAFFIC FLOWS WITHOUT THE PROPOSED ELDERLY HOME
Figure No.	4.1
Revision	A
Designed by	T H C
Drawn by	C C L
Checked by	K C
Scale in A4	N.T.S.
Date	12 AUG 2024

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road,
Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOB\J7350-J7399\J7350\Fig 4.1 - 4.2 RevA.dwg



LEGEND :

123 - AM peak hour traffic flow, pcu / hr

(456) - PM peak hour traffic flow, pcu / hr

Project Title AMENDMENT TO THE APPROVED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY) IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY J7350	Figure No. 4.2		Revision A
Figure Title 2031 PEAK HOUR TRAFFIC FLOWS WITH THE PROPOSED ELDERLY HOME	Designed by T H C	Drawn by C C L	Checked by K C
	Scale in A4 N.T.S.	Date 12 AUG 2024	

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road,
Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOB\J7350-J7399\J7350\Fig 4.1 - 4.2 RevA.dwg

Appendix A – Junction Capacity Analysis

Signal Junction Analysis

Junction: Prince Edward Road West / Junction Road Job Number: J7350

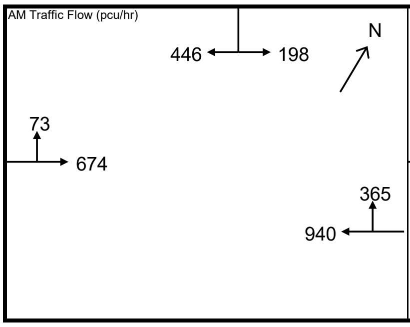
Scenario: Existing Condition R1 / P.1-1

Design Year: 2024 Designed By: Checked By: Date: 12 August 2024

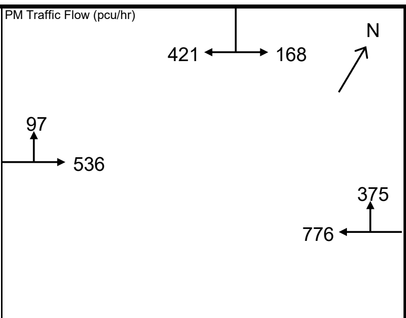
Approach		Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak					PM Peak				
							Turning %	Sat. Flow (pcu/hr)	Flow (pcu/hr)	y value	Critical y	Turning %	Sat. Flow (pcu/hr)	Flow (pcu/hr)	y value	Critical y
Prince Edward Road West EB	LT	A1	2	3.30	10.0		100	1691	73	0.043		100	1691	97	0.057	
	SA	A2	1,2	3.30				2085	225	0.108			2085	179	0.086	
	SA	A3	1,2	3.30				2085	225	0.108	0.108		2085	179	0.086	0.086
	SA	A4	1,2	3.30				2085	224	0.107			2085	178	0.085	
Prince Edward Road West WB	SA	B1	2,3	3.30				1945	453	0.233			1945	375	0.193	
	SA	B2	2,3	3.30				2085	487	0.233			2085	401	0.192	
	RT	B3	3	3.30	20.0		100	1940	365	0.188	0.188	100	1940	375	0.193	0.193
Junction Road SB	LT+RT	C1	4	3.20	10.0		100	1683	298	0.177	0.177	100	1683	272	0.162	0.162
	RT	C2	4	3.20	25.0		100	1958	346	0.177		100	1958	317	0.162	

pedestrian phase	P1	3, 4		min crossing time =	7	sec GM +	13	sec FGM =	20	sec
	P2	3		min crossing time =	5	sec GM +	9	sec FGM =	14	sec
	P3	1,4		min crossing time =	5	sec GM +	9	sec FGM =	14	sec
	P4	1		min crossing time =	7	sec GM +	5	sec FGM =	12	sec
	P5	1		min crossing time =	7	sec GM +	7	sec FGM =	14	sec

AM Traffic Flow (pcu/hr)



PM Traffic Flow (pcu/hr)

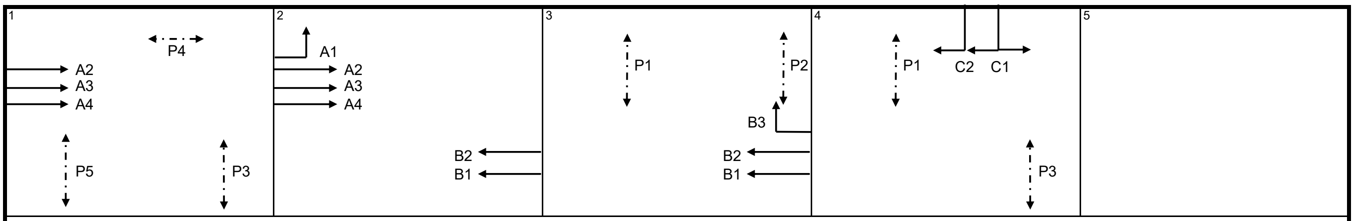


S=1940+100(W−3.25) S=2080+100(W−3.25)

S_M=S÷(1+1.5f/r) S_M=(S−230)÷(1+1.5f/r)

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.473	0.408	0.441	0.412
L (s)	12	39	12	39
C (s)	120	120	115	115
practical y	0.810	0.608	0.806	0.595
R.C. (%)	71%	49%	83%	44%

Note:



AM	G =	I/G = 5	G =	I/G =	G =	I/G = 5	G =	I/G = 5	G =	I/G =
	G = 14	I/G = 2	G =	I/G = 5	G =	I/G = 5	G =	I/G = 16	G =	I/G =
PM	G =	I/G = 5	G =	I/G =	G =	I/G = 5	G =	I/G = 5	G =	I/G =
	G = 14	I/G = 2	G =	I/G = 5	G =	I/G = 5	G =	I/G = 16	G =	I/G =

Signal Junction Analysis

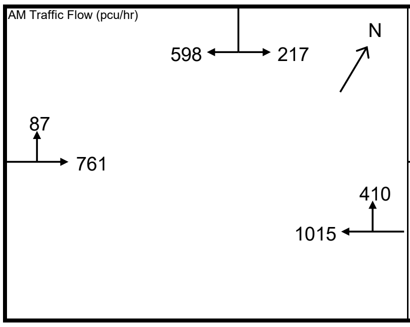
Junction: Prince Edward Road West / Junction Road Job Number: J7350

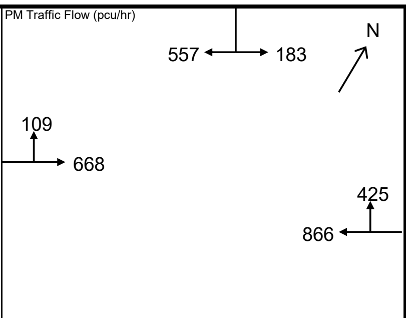
Scenario: without the Proposed Elderly Home R1 / P.1-2

Design Year: 2031 Designed By: Checked By: Date: 12 August 2024

Approach	Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak Turning %	AM Peak Sat. Flow (pcu/hr)	AM Peak Flow (pcu/hr)	AM Peak y value	AM Peak Critical y	PM Peak Turning %	PM Peak Sat. Flow (pcu/hr)	PM Peak Flow (pcu/hr)	PM Peak y value	PM Peak Critical y
Prince Edward Road West EB LT	B1	2	3.30	10.0		100	1691	87	0.051		100	1691	109	0.065	
SA	B2	1,2	3.30				2085	254	0.122			2085	223	0.107	
SA	B3	1,2	3.30				2085	254	0.122	0.122		2085	223	0.107	0.107
SA	B4	1,2	3.30				2085	253	0.121			2085	222	0.107	
Prince Edward Road West WB SA	B1	2,3	3.30				1945	490	0.252			1945	418	0.215	
SA	B2	2,3	3.30				2085	525	0.252			2085	448	0.215	
RT	B3	3	3.30	20.0		100	1940	410	0.211	0.211	100	1940	425	0.219	0.219
Junction Road SB LT+RT	C1	4	3.20	10.0		100	1683	377	0.224	0.224	100	1683	342	0.203	0.203
RT	C2	4	3.20	25.0		100	1958	438	0.224		100	1958	398	0.203	

pedestrian phase	P1	3, 4		min crossing time =	7	sec GM +	13	sec FGM =	20	sec
	P2	3		min crossing time =	5	sec GM +	9	sec FGM =	14	sec
	P3	1,4		min crossing time =	5	sec GM +	9	sec FGM =	14	sec
	P4	1		min crossing time =	7	sec GM +	5	sec FGM =	12	sec
	P5	1		min crossing time =	7	sec GM +	7	sec FGM =	14	sec



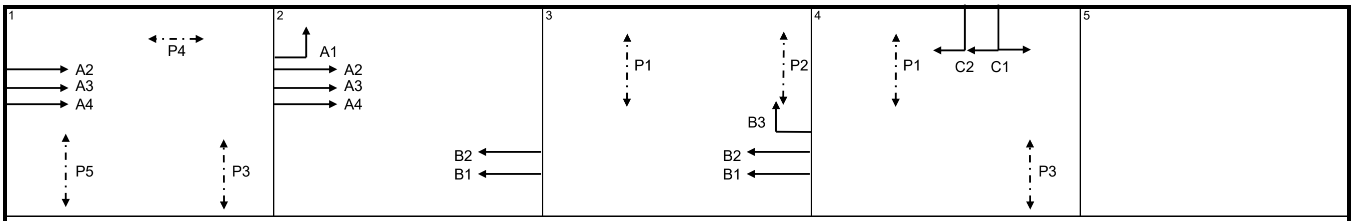


$S=1940+100(W-3.25)$ $S=2080+100(W-3.25)$

$S_M=S\div(1+1.5f/r)$ $S_M=(S-230)\div(1+1.5f/r)$

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.557	0.486	0.529	0.487
L (s)	12	39	12	39
C (s)	120	120	115	115
practical y	0.810	0.608	0.806	0.595
R.C. (%)	45%	25%	52%	22%

Note:



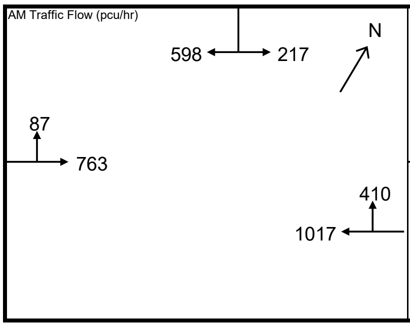
	G =		I/G =		G =		I/G =		G =		I/G =		G =		I/G =		G =		I/G =	
AM	G =		I/G =	5	G =		I/G =		G =		I/G =	5	G =		I/G =	5	G =		I/G =	
	G =	14	I/G =	2	G =		I/G =	5	G =		I/G =	5	G =		I/G =	16	G =		I/G =	
PM	G =		I/G =	5	G =		I/G =		G =		I/G =	5	G =		I/G =	5	G =		I/G =	
	G =	14	I/G =	2	G =		I/G =	5	G =		I/G =	5	G =		I/G =	16	G =		I/G =	

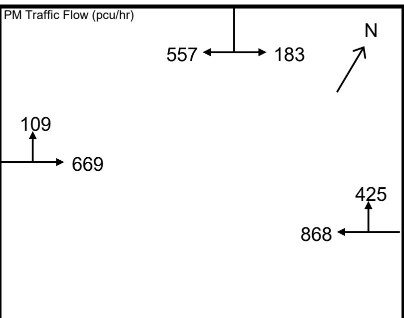
Signal Junction Analysis

Junction: Prince Edward Road West / Junction Road
Job Number: J7350
Scenario: with the Proposed Elderly Home
R1 / P.1-3
Design Year: 2031
Designed By:
Checked By:
Date: 12 August 2024

Approach	Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak Turning %	AM Peak Sat. Flow (pcu/hr)	AM Peak Flow (pcu/hr)	AM Peak y value	AM Peak Critical y	PM Peak Turning %	PM Peak Sat. Flow (pcu/hr)	PM Peak Flow (pcu/hr)	PM Peak y value	PM Peak Critical y
Prince Edward Road West EB LT	B1	2	3.30	10.0		100	1691	87	0.051		100	1691	109	0.065	
SA	B2	1,2	3.30				2085	254	0.122			2085	223	0.107	
SA	B3	1,2	3.30				2085	254	0.122	0.122		2085	223	0.107	0.107
SA	B4	1,2	3.30				2085	255	0.122			2085	223	0.107	
Prince Edward Road West WB SA	B1	2,3	3.30				1945	491	0.252			1945	419	0.215	
SA	B2	2,3	3.30				2085	526	0.252			2085	449	0.216	
RT	B3	3	3.30	20.0		100	1940	410	0.211	0.211	100	1940	425	0.219	0.219
Junction Road SB LT+RT	C1	4	3.20	10.0		100	1683	377	0.224	0.224	100	1683	342	0.203	0.203
RT	C2	4	3.20	25.0		100	1958	438	0.224		100	1958	398	0.203	

pedestrian phase	P1	3, 4		min crossing time =	7	sec GM +	13	sec FGM =	20	sec
	P2	3		min crossing time =	5	sec GM +	9	sec FGM =	14	sec
	P3	1,4		min crossing time =	5	sec GM +	9	sec FGM =	14	sec
	P4	1		min crossing time =	7	sec GM +	5	sec FGM =	12	sec
	P5	1		min crossing time =	7	sec GM +	7	sec FGM =	14	sec



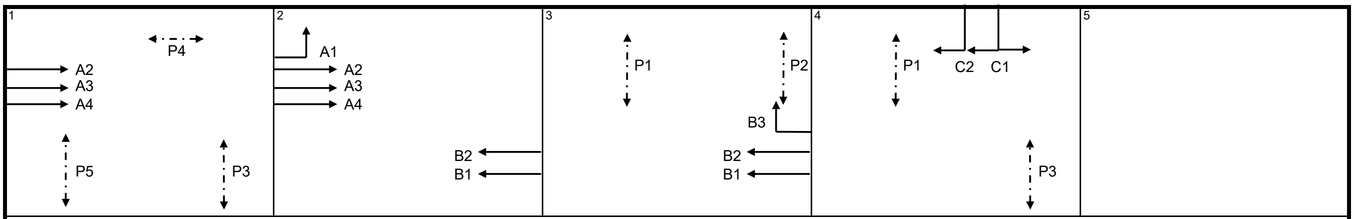


S=1940+100(W−3.25)   S=2080+100(W−3.25)

S_M=S÷(1+1.5f/r) S_M=(S−230)÷(1+1.5f/r)

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.557	0.486	0.529	0.487
L (s)	12	39	12	39
C (s)	120	120	115	115
practical y	0.810	0.608	0.806	0.595
R.C. (%)	45%	25%	52%	22%

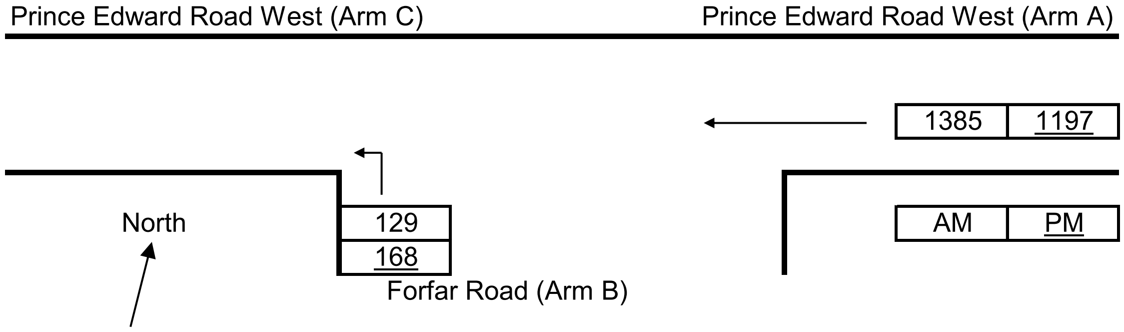
Note:



AM	G =	I/G = 5	G =	I/G =	G =	I/G = 5	G =	I/G = 5	G =	I/G =
	G = 14	I/G = 2	G =	I/G = 5	G =	I/G = 5	G =	I/G = 16	G =	I/G =
PM	G =	I/G = 5	G =	I/G =	G =	I/G = 5	G =	I/G = 5	G =	I/G =
	G = 14	I/G = 2	G =	I/G = 5	G =	I/G = 5	G =	I/G = 16	G =	I/G =

Priority Junction Analysis

Junction: Prince Edward Road West / Forfar Road R1 / P.2-1
Design Year: 2024 Job Number: J7350 Date: 12 August 2024
Scenario: Existing Condition



The predictive equations of capacity of movement are:
Q-BA = D[627 + 14W-CR - Y(0.364q-AC + 0.144q-AB + 0.229q-CA + 0.52q-CB)]
Q-BC = E[745 - Y(0.364q-AC + 0.144q-AB)]
Q-CB = F[745 - 0.364Y(q-AC + q-AB)]
The geometric parameters represented by D, E, F are:
D = [1 + 0.094(w-BA - 3.65)][1 + 0.0009(V-rBA - 120)][1 + 0.0006(V-lBA - 150)]
E = [1 + 0.094(w-BC - 3.65)][1 + 0.0009(V-rBC - 120)]
F = [1 + 0.094(w-CB - 3.65)][1 + 0.0009(V-rCB - 120)]
where Y = 1 - 0.0345W
q-AB, etc = the design flow of movement AB, etc
W = major road width
W-CR = central reserve width
w-BA, etc = lane width to vehicle
v-rBA, etc = visibility to the right for waiting vehicles in stream BA, etc
v-lBA, etc = visibility to the left for waiting vehicles in stream BA, etc

Geometry :

Input		Input		Input		Calculated	
W	11.00	V-rBA		w-BA		D	0.5332
W-CR	0.00	V-lBA		w-BC	4.00	E	1.0143
		V-rBC	100	w-CB		F	0.5860
		V-rCB				Y	0.6205

Analysis :

Traffic Flows, pcu/hr	AM	PM	Capacity, pcu/hr	AM	PM
q-CA	0	0	Q-BA	168	190
q-CB	0	0	Q-BC	438	481
q-AB	0	0	Q-CB	253	278
q-AC	1385	1197	Q-BAC	438	481
q-BA	0	0			
q-BC	129	168			
f	1.000	1.000			

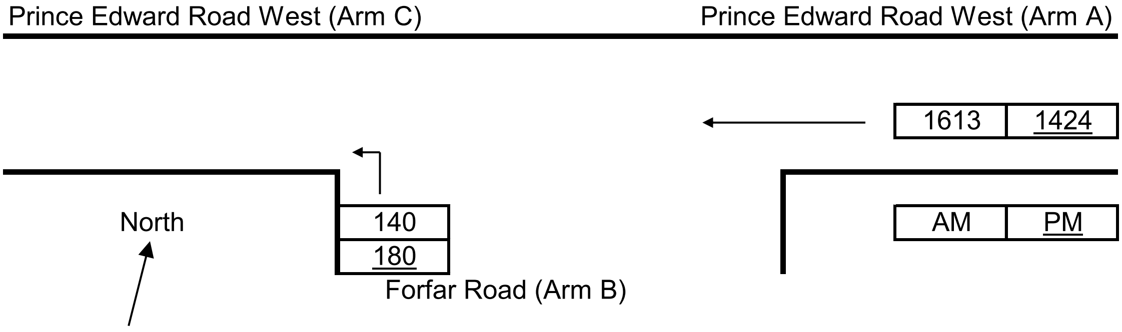
Ratio-of-flow to Capacity	AM	PM
B-A	0.000	0.000
B-C	0.294	0.350
C-B	0.000	0.000
B-AC	0.294	0.350

Priority Junction Analysis

Junction: Prince Edward Road West / Forfar Road R1 / P.2-2

Design Year: 2031 Job Number: J7350 Date: 12 August 2024

Scenario: without the Proposed Elderly Home



The predictive equations of capacity of movement are:

Q-BA = D[627 + 14W-CR - Y(0.364q-AC + 0.144q-AB + 0.229q-CA + 0.52q-CB)]

Q-BC = E[745 - Y(0.364q-AC + 0.144q-AB)]

Q-CB = F[745 - 0.364Y(q-AC + q-AB)]

The geometric parameters represented by D, E, F are:

D = [1 + 0.094(w-BA - 3.65)][1 + 0.0009(V-rBA - 120)][1 + 0.0006(V-lBA - 150)]

E = [1 + 0.094(w-BC - 3.65)][1 + 0.0009(V-rBC - 120)]

F = [1 + 0.094(w-CB - 3.65)][1 + 0.0009(V-rCB - 120)]

where Y = 1 - 0.0345W

q-AB, etc = the design flow of movement AB, etc

W = major road width

W-CR = central reserve width

w-BA, etc = lane width to vehicle

v-rBA, etc = visibility to the right for waiting vehicles in stream BA, etc

v-lBA, etc = visibility to the left for waiting vehicles in stream BA, etc

Geometry :	Input		Input		Input		Calculated		
	W	11.00	V-rBA		w-BA		D	0.5332	
	W-CR	0.00	V-lBA		w-BC	4.00	E	1.0143	
			V-rBC	100	w-CB		F	0.5860	
			V-rCB				Y	0.6205	

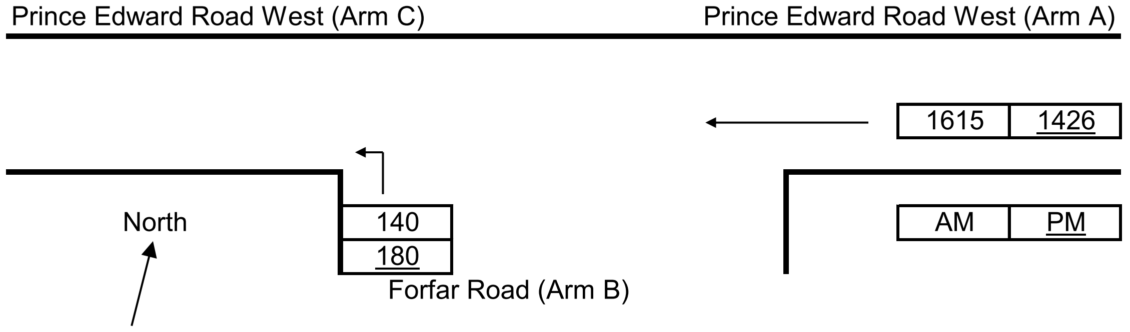
Analysis :

Traffic Flows, pcu/hr	AM	PM	Capacity, pcu/hr	AM	PM
q-CA	0	0	Q-BA	140	163
q-CB	0	0	Q-BC	386	430
q-AB	0	0	Q-CB	223	248
q-AC	1613	1424	Q-BAC	386	430
q-BA	0	0			
q-BC	140	180			
f	1.000	1.000			

Ratio-of-flow to Capacity	AM	PM
B-A	0.000	0.000
B-C	0.363	0.419
C-B	0.000	0.000
B-AC	0.363	0.419

Priority Junction Analysis

Junction: Prince Edward Road West / Forfar Road R1 / P.2-3
Design Year: 2031 Job Number: J7350 Date: 12 August 2024
Scenario: with the Proposed Elderly Home



The predictive equations of capacity of movement are:

Q-BA = D[627 + 14W-CR - Y(0.364q-AC + 0.144q-AB + 0.229q-CA + 0.52q-CB)]
Q-BC = E[745 - Y(0.364q-AC + 0.144q-AB)]
Q-CB = F[745 - 0.364Y(q-AC + q-AB)]

The geometric parameters represented by D, E, F are:

D = [1 + 0.094(w-BA - 3.65)][1 + 0.0009(V-rBA - 120)][1 + 0.0006(V-lBA - 150)]
E = [1 + 0.094(w-BC - 3.65)][1 + 0.0009(V-rBC - 120)]
F = [1 + 0.094(w-CB - 3.65)][1 + 0.0009(V-rCB - 120)]

where Y = 1 - 0.0345W
q-AB, etc = the design flow of movement AB, etc
W = major road width
W-CR = central reserve width
w-BA, etc = lane width to vehicle
v-rBA, etc = visibility to the right for waiting vehicles in stream BA, etc
v-lBA, etc = visibility to the left for waiting vehicles in stream BA, etc

Geometry :

Input		Input		Input		Calculated	
W	11.00	V-rBA		w-BA		D	0.5332
W-CR	0.00	V-lBA		w-BC	4.00	E	1.0143
		V-rBC	100	w-CB		F	0.5860
		V-rCB				Y	0.6205

Analysis :

Traffic Flows, pcu/hr	AM	PM	Capacity, pcu/hr	AM	PM
q-CA	0	0	Q-BA	140	163
q-CB	0	0	Q-BC	386	429
q-AB	0	0	Q-CB	223	248
q-AC	1615	1426	Q-BAC	386	429
q-BA	0	0			
q-BC	140	180			
f	1.000	1.000			

Ratio-of-flow to Capacity	AM	PM
B-A	0.000	0.000
B-C	0.364	0.419
C-B	0.000	0.000
B-AC	0.364	0.419

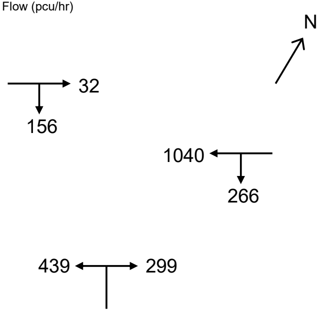
Signal Junction Analysis

Junction: Prince Edward Road West / Lomond Road
Job Number: J7350
Scenario: Existing Condition
R1 / P.3-1
Design Year: 2024
Designed By:
Checked By:
Date: 12 August 2024

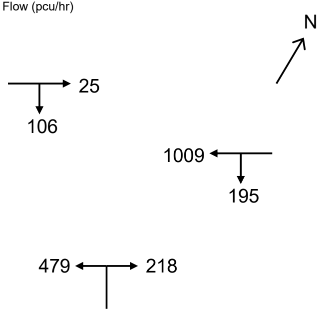
Approach	Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak Turning %	AM Peak Sat. Flow (pcu/hr)	AM Peak Flow (pcu/hr)	AM Peak y value	AM Peak Critical y	PM Peak Turning %	PM Peak Sat. Flow (pcu/hr)	PM Peak Flow (pcu/hr)	PM Peak y value	PM Peak Critical y
Lomond Road NB LT	A1	2	3.10	10.0		100	1674	348	0.208	0.208	100	1674	329	0.197	0.197
LT+RT	A2	2	3.10	15.0		100	1877	391	0.208		100	1877	368	0.196	
Prince Edward Road West EB SA	B1	3	3.30				1945	32	0.016			1945	25	0.013	
RT	B2	3	4.00	25.0		100	2033	156	0.077	0.077	100	2033	106	0.052	0.052
Prince Edward Road West WB LT	C1	1	3.10	15.0		100	1750	266	0.152		100	1750	195	0.112	
SA	C2	1	3.10				2065	347	0.168			2065	336	0.163	
SA	C3	1	3.10				2065	347	0.168	0.168		2065	336	0.163	
SA	C4	1	3.10				2065	346	0.167			2065	337	0.163	0.163

pedestrian phase	P1	1,3		min crossing time =	6	sec GM +	6	sec FGM =	12	sec
	P2	1,2		min crossing time =	5	sec GM +	7	sec FGM =	12	sec
	P3	1		min crossing time =	5	sec GM +	7	sec FGM =	12	sec
	P4	3		min crossing time =	8	sec GM +	11	sec FGM =	19	sec
	P5	2,3		min crossing time =	8	sec GM +	11	sec FGM =	19	sec
	P6	2		min crossing time =	5	sec GM +	7	sec FGM =	12	sec

AM Traffic Flow (pcu/hr)



PM Traffic Flow (pcu/hr)

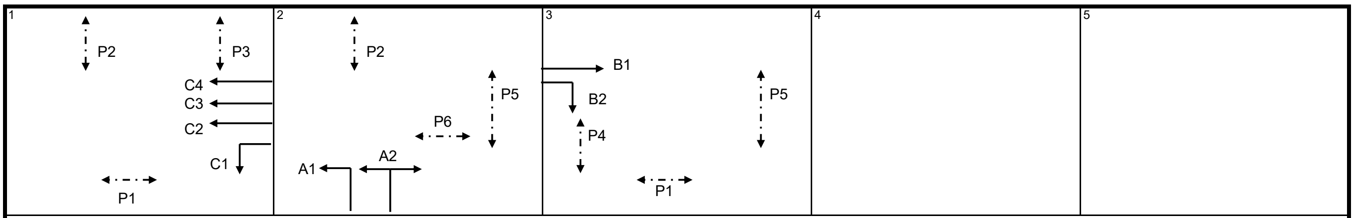


S=1940+100(W−3.25) S=2080+100(W−3.25)

S_M=S÷(1+1.5f/r) S_M=(S−230)÷(1+1.5f/r)

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.453	0.376	0.412	0.359
L (s)	16	33	16	33
C (s)	110	110	110	110
practical y	0.769	0.630	0.769	0.630
R.C. (%)	70%	68%	87%	75%

Note:



AM	G =		I/G =	6	G =		I/G =	5	G =		I/G =	8	G =		I/G =		G =		I/G =	
	G =		I/G =	6	G =		I/G =	8	G =	19	I/G =	2	G =		I/G =		G =		I/G =	
PM	G =		I/G =	6	G =		I/G =	5	G =		I/G =	8	G =		I/G =		G =		I/G =	
	G =		I/G =	6	G =		I/G =	8	G =	19	I/G =	2	G =		I/G =		G =		I/G =	

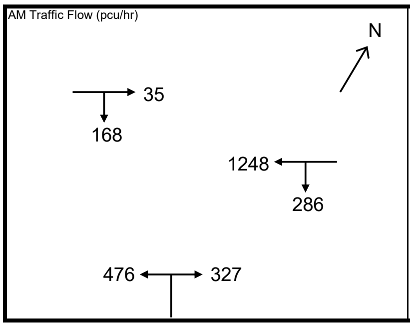
Signal Junction Analysis

Junction: Prince Edward Road West / Lomond Road
Job Number: J7350
Scenario: without the Proposed Elderly Home
R1 / P.3-2
Design Year: 2031
Designed By:
Checked By:
Date: 12 August 2024

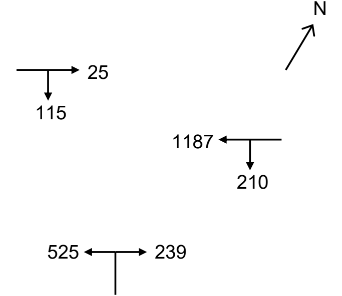
Approach	Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak					PM Peak				
						Turning %	Sat. Flow (pcu/hr)	Flow (pcu/hr)	y value	Critical y	Turning %	Sat. Flow (pcu/hr)	Flow (pcu/hr)	y value	Critical y
Lomond Road NB LT	A1	2	3.10	10.0		100	1674	378	0.226	0.226	100	1674	360	0.215	0.215
LT+RT	A2	2	3.10	15.0		100	1877	424	0.226		100	1877	404	0.215	
Prince Edward Road West EB SA	B1	3	3.30				1945	35	0.018			1945	25	0.013	
RT	B2	3	4.00	25.0		100	2033	168	0.083	0.083	100	2033	115	0.057	0.057
Prince Edward Road West WB LT	C1	1	3.10	15.0		100	1750	286	0.163		100	1750	210	0.120	
SA	C2	1	3.10				2065	416	0.201			2065	396	0.192	
SA	C3	1	3.10				2065	416	0.201			2065	396	0.192	0.192
SA	C4	1	3.10				2065	416	0.202	0.202		2065	395	0.191	

pedestrian phase	P1	1,3		min crossing time =	6	sec GM +	6	sec FGM =	12	sec	
	P2	1,2		min crossing time =	5	sec GM +	7	sec FGM =	12	sec	
	P3	1		min crossing time =	5	sec GM +	7	sec FGM =	12	sec	
	P4	3		min crossing time =	8	sec GM +	11	sec FGM =	19	sec	
	P5	2,3		min crossing time =	8	sec GM +	11	sec FGM =	19	sec	
	P6	2		min crossing time =	5	sec GM +	7	sec FGM =	12	sec	

AM Traffic Flow (pcu/hr)



PM Traffic Flow (pcu/hr)

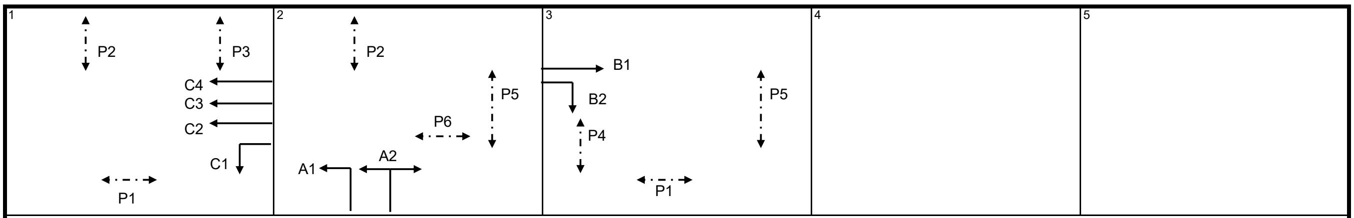


S=1940+100(W−3.25)　S=2080+100(W−3.25)

S_M=S÷(1+1.5f/r)　S_M=(S−230)÷(1+1.5f/r)

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.510	0.427	0.463	0.407
L (s)	16	33	16	33
C (s)	110	110	110	110
practical y	0.769	0.630	0.769	0.630
R.C. (%)	51%	47%	66%	55%

Note:



AM	G =	I/G = 6	G =	I/G = 5	G =	I/G = 8	G =	I/G =	G =	I/G =
	G =	I/G = 6	G =	I/G = 8	G = 19	I/G = 2	G =	I/G =	G =	I/G =
PM	G =	I/G = 6	G =	I/G = 5	G =	I/G = 8	G =	I/G =	G =	I/G =
	G =	I/G = 6	G =	I/G = 8	G = 19	I/G = 2	G =	I/G =	G =	I/G =

Signal Junction Analysis

Junction: Prince Edward Road West / Lomond Road Job Number: J7350

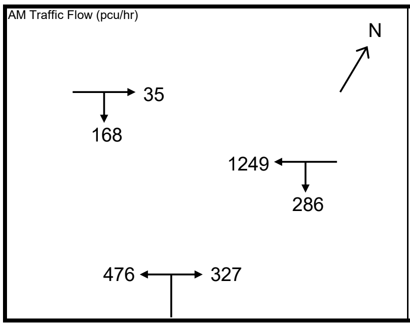
Scenario: with the Proposed Elderly Home R1 / P.3-3

Design Year: 2031 Designed By: ____________ Checked By: ____________ Date: 12 August 2024

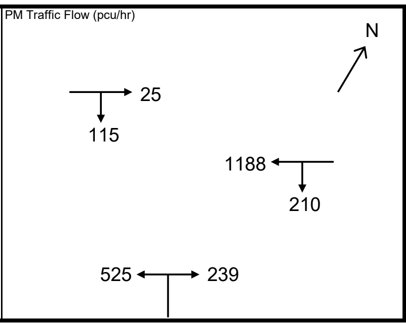
Approach		Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak Turning %	AM Peak Sat. Flow (pcu/hr)	AM Peak Flow (pcu/hr)	AM Peak y value	AM Peak Critical y	PM Peak Turning %	PM Peak Sat. Flow (pcu/hr)	PM Peak Flow (pcu/hr)	PM Peak y value	PM Peak Critical y
Lomond Road NB	LT	A1	2	3.10	10.0		100	1674	378	0.226	0.226	100	1674	360	0.215	0.215
	LT+RT	A2	2	3.10	15.0		100	1877	424	0.226		100	1877	404	0.215	
Prince Edward Road West EB	SA	B1	3	3.30				1945	35	0.018			1945	25	0.013	
	RT	B2	3	4.00	25.0		100	2033	168	0.083	0.083	100	2033	115	0.057	0.057
Prince Edward Road West WB	LT	C1	1	3.10	15.0		100	1750	286	0.163		100	1750	210	0.120	
	SA	C2	1	3.10				2065	416	0.201			2065	396	0.192	
	SA	C3	1	3.10				2065	416	0.201			2065	396	0.192	0.192
	SA	C4	1	3.10				2065	417	0.202	0.202		2065	396	0.192	

pedestrian phase	P1	1,3	min crossing time =	6	sec GM +	6	sec FGM =	12	sec
	P2	1,2	min crossing time =	5	sec GM +	7	sec FGM =	12	sec
	P3	1	min crossing time =	5	sec GM +	7	sec FGM =	12	sec
	P4	3	min crossing time =	8	sec GM +	11	sec FGM =	19	sec
	P5	2,3	min crossing time =	8	sec GM +	11	sec FGM =	19	sec
	P6	2	min crossing time =	5	sec GM +	7	sec FGM =	12	sec

AM Traffic Flow (pcu/hr)



PM Traffic Flow (pcu/hr)

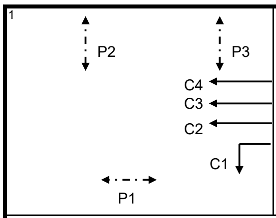


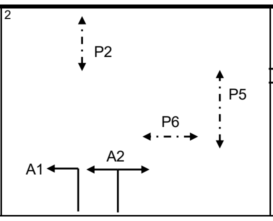
S=1940+100(W−3.25) S=2080+100(W−3.25)

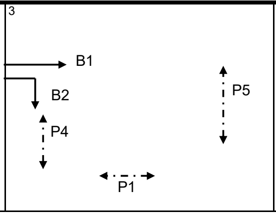
S_M=S÷(1+1.5f/r) S_M=(S−230)÷(1+1.5f/r)

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.511	0.428	0.463	0.407
L (s)	16	33	16	33
C (s)	110	110	110	110
practical y	0.769	0.630	0.769	0.630
R.C. (%)	51%	47%	66%	55%

Note:







4

5

	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =
AM		6		5		8				
		6		8	19	2				
PM		6		5		8				
		6		8	19	2				

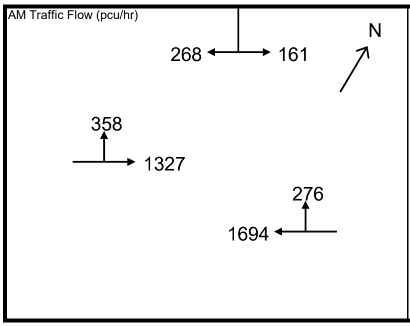
Signal Junction Analysis

Junction: Argyle Street / Lomond Road
Job Number: J7350
Scenario: Existing Condition
R1 / P.4-1
Design Year: 2024
Designed By:
Checked By:
Date: 12 August 2024

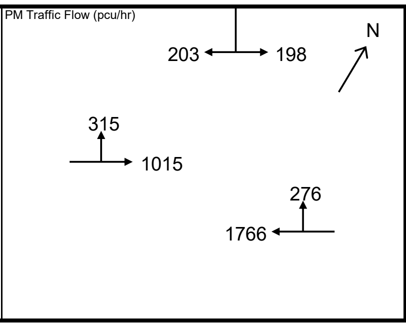
Approach		Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak Turning %	AM Peak Sat. Flow (pcu/hr)	AM Peak Flow (pcu/hr)	AM Peak y value	AM Peak Critical y	PM Peak Turning %	PM Peak Sat. Flow (pcu/hr)	PM Peak Flow (pcu/hr)	PM Peak y value	PM Peak Critical y
Argyle Street EB	LT	A1	1	3.30	15.0		100	1768	358	0.202		100	1768	315	0.178	
	SA	A2	1	3.50				2105	663	0.315			2105	508	0.241	
	SA	A3	1	3.50				2105	664	0.315	0.315		2105	507	0.241	
Lomond Road SB	LT+RT	B1	3	3.00	10.0		100	1665	202	0.121		100	1665	189	0.113	
	RT	B2	3	3.00	15.0		100	1868	227	0.122	0.122	100	1868	212	0.113	0.113
Argyle Street WB	SA	C1	1	3.30				1945	539	0.277			1945	562	0.289	0.289
	SA	C2	1	3.30				2085	577	0.277			2085	602	0.289	
	SA	C3	1	3.30				2085	578	0.277			2085	602	0.289	
	RT	C4	2	3.30	15.0		100	1895	276	0.146	0.146	100	1895	276	0.146	0.146

pedestrian phase	P1	2,3		min crossing time =	5	sec GM +	9	sec FGM =	14	sec	
	P2	2		min crossing time =	5	sec GM +	9	sec FGM =	14	sec	
	P3	3		min crossing time =	8	sec GM +	11	sec FGM =	19	sec	
	P4	2		min crossing time =	8	sec GM +	9	sec FGM =	17	sec	
	P5	1,2		min crossing time =	5	sec GM +	7	sec FGM =	12	sec	
	P6	3		min crossing time =	5	sec GM +	5	sec FGM =	10	sec	

AM Traffic Flow (pcu/hr)



PM Traffic Flow (pcu/hr)

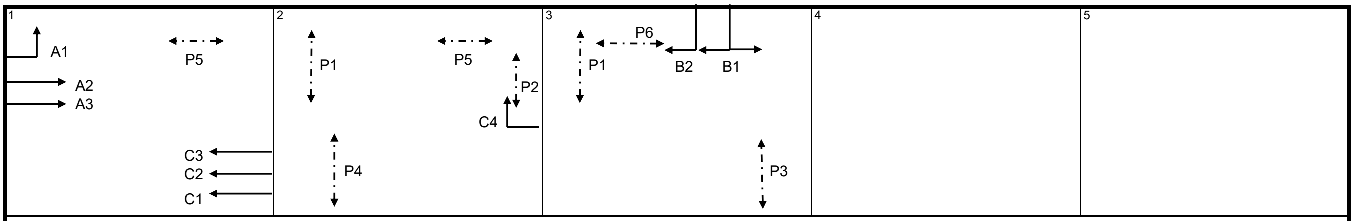


S=1940+100(W−3.25)   S=2080+100(W−3.25)

S_M=S÷(1+1.5f/r) S_M=(S−230)÷(1+1.5f/r)

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.583		0.548	
L (s)	14		14	
C (s)	130		130	
practical y	0.803		0.803	
R.C. (%)	38%		47%	

Note:



AM	G =	I/G = 5	G =	I/G = 5	G =	I/G = 7	G =	I/G =	G =	I/G =
	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =
PM	G =	I/G = 5	G =	I/G = 5	G =	I/G = 7	G =	I/G =	G =	I/G =
	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =

Signal Junction Analysis

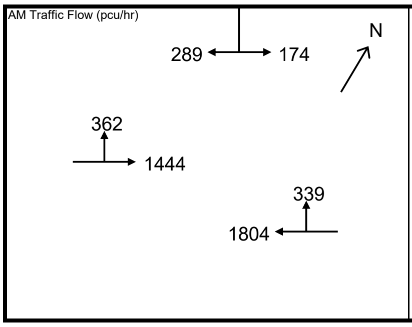
Junction: Argyle Street / Lomond Road Job Number: J7350

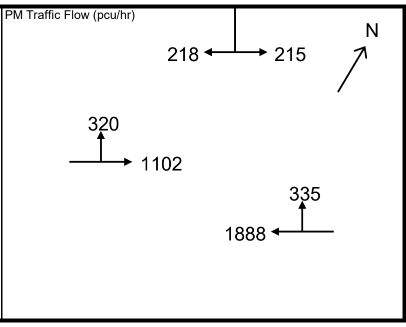
Scenario: without the Proposed Elderly Home R1 / P.4-2

Design Year: 2031 Designed By: ____________ Checked By: ____________ Date: 12 August 2024

Approach		Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak					PM Peak				
							Turning %	Sat. Flow (pcu/hr)	Flow (pcu/hr)	y value	Critical y	Turning %	Sat. Flow (pcu/hr)	Flow (pcu/hr)	y value	Critical y
Argyle Street EB	LT	A1	1	3.30	15.0		100	1768	362	0.205		100	1768	320	0.181	
	SA	A2	1	3.50				2105	722	0.343			2105	551	0.262	
	SA	A3	1	3.50				2105	722	0.343	0.343		2105	551	0.262	
Lomond Road SB	LT+RT	B1	3	3.00	10.0		100	1665	218	0.131		100	1665	204	0.123	
	RT	B2	3	3.00	15.0		100	1868	245	0.131	0.131	100	1868	229	0.123	0.123
Argyle Street WB	SA	C1	1	3.30				1945	574	0.295			1945	601	0.309	0.309
	SA	C2	1	3.30				2085	615	0.295			2085	644	0.309	
	SA	C3	1	3.30				2085	615	0.295			2085	643	0.309	
	RT	C4	2	3.30	15.0		100	1895	339	0.179	0.179	100	1895	335	0.177	0.177

pedestrian phase	P1	2,3		min crossing time =	5	sec GM +	9	sec FGM =	14	sec	
	P2	2		min crossing time =	5	sec GM +	9	sec FGM =	14	sec	
	P3	3		min crossing time =	8	sec GM +	11	sec FGM =	19	sec	
	P4	2		min crossing time =	8	sec GM +	9	sec FGM =	17	sec	
	P5	1,2		min crossing time =	5	sec GM +	7	sec FGM =	12	sec	
	P6	3		min crossing time =	5	sec GM +	5	sec FGM =	10	sec	


AM Traffic Flow (pcu/hr)

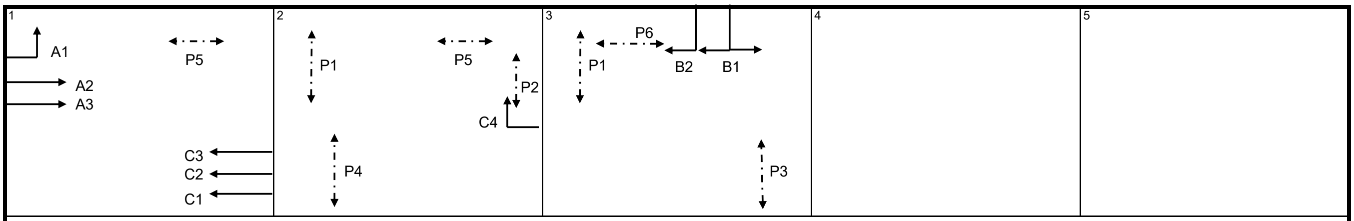

PM Traffic Flow (pcu/hr)

S=1940+100(W–3.25) S=2080+100(W–3.25)

S_M=S÷(1+1.5f/r) S_M=(S–230)÷(1+1.5f/r)

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.653		0.608	
L (s)	14		14	
C (s)	130		130	
practical y	0.803		0.803	
R.C. (%)	23%		32%	

Note:



AM	G =	I/G = 5	G =	I/G = 5	G =	I/G = 7	G =	I/G =	G =	I/G =
	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =
PM	G =	I/G = 5	G =	I/G = 5	G =	I/G = 7	G =	I/G =	G =	I/G =
	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =

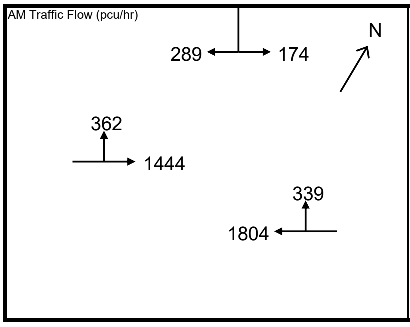
Signal Junction Analysis

Junction: Argyle Street / Lomond Road Job Number: J7350
Scenario: with the Proposed Elderly Home R1 / P.4-3
Design Year: 2031 Designed By: Checked By: Date: 12 August 2024

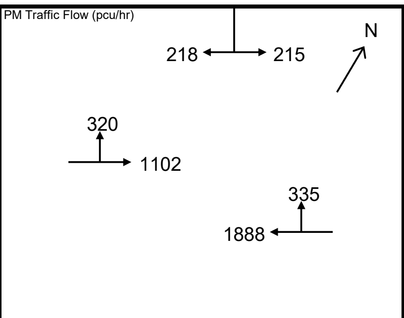
Approach		Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak Turning %	AM Peak Sat. Flow (pcu/hr)	AM Peak Flow (pcu/hr)	AM Peak y value	AM Peak Critical y	PM Peak Turning %	PM Peak Sat. Flow (pcu/hr)	PM Peak Flow (pcu/hr)	PM Peak y value	PM Peak Critical y
Argyle Street EB	LT	A1	1	3.30	15.0		100	1768	362	0.205		100	1768	320	0.181	
	SA	A2	1	3.50				2105	722	0.343			2105	551	0.262	
	SA	A3	1	3.50				2105	722	0.343	0.343		2105	551	0.262	
Lomond Road SB	LT+RT	B1	3	3.00	10.0		100	1665	218	0.131		100	1665	204	0.123	
	RT	B2	3	3.00	15.0		100	1868	245	0.131	0.131	100	1868	229	0.123	0.123
Argyle Street WB	SA	C1	1	3.30				1945	574	0.295			1945	601	0.309	0.309
	SA	C2	1	3.30				2085	615	0.295			2085	644	0.309	
	SA	C3	1	3.30				2085	615	0.295			2085	643	0.309	
	RT	C4	2	3.30	15.0		100	1895	339	0.179	0.179	100	1895	335	0.177	0.177

pedestrian phase	P1	2,3	min crossing time =	5	sec GM +	9	sec FGM =	14	sec	
	P2	2	min crossing time =	5	sec GM +	9	sec FGM =	14	sec	
	P3	3	min crossing time =	8	sec GM +	11	sec FGM =	19	sec	
	P4	2	min crossing time =	8	sec GM +	9	sec FGM =	17	sec	
	P5	1,2	min crossing time =	5	sec GM +	7	sec FGM =	12	sec	
	P6	3	min crossing time =	5	sec GM +	5	sec FGM =	10	sec	

AM Traffic Flow (pcu/hr)



PM Traffic Flow (pcu/hr)

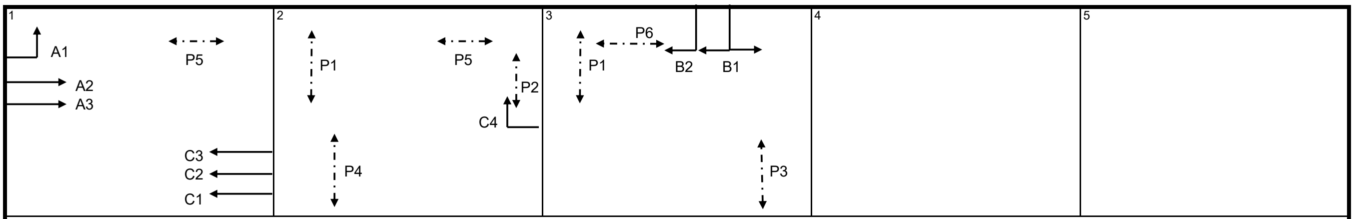


S=1940+100(W–3.25) S=2080+100(W–3.25)

S_M=S÷(1+1.5f/r) S_M=(S–230)÷(1+1.5f/r)

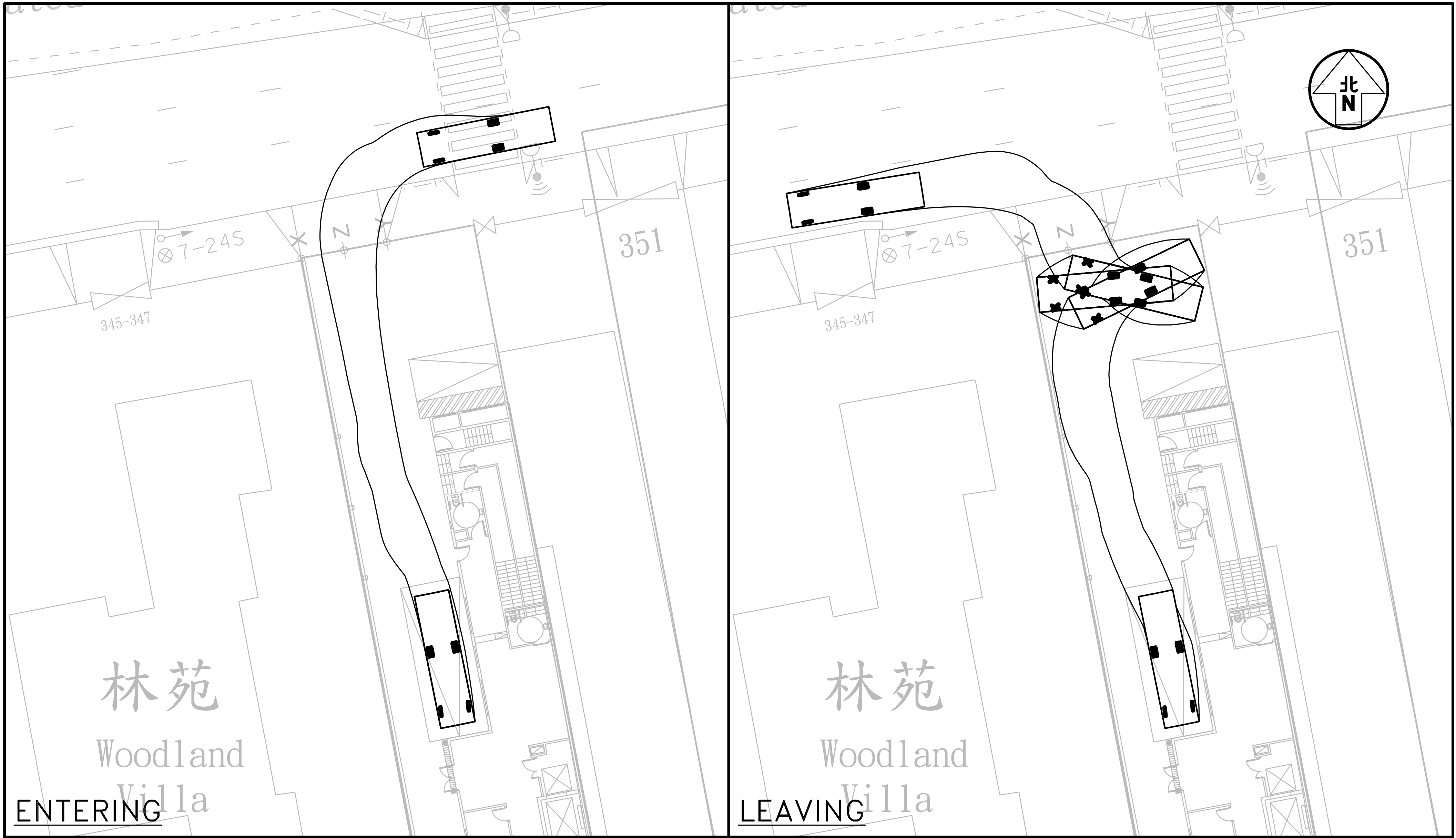
	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.653		0.608	
L (s)	14		14	
C (s)	130		130	
practical y	0.803		0.803	
R.C. (%)	23%		32%	

Note:



AM	G =	I/G = 5	G =	I/G = 5	G =	I/G = 7	G =	I/G =	G =	I/G =
	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =
PM	G =	I/G = 5	G =	I/G = 5	G =	I/G = 7	G =	I/G =	G =	I/G =
	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =

Appendix B – Swept Path Analysis



ENTERING

LEAVING

Project Title	AMENDMENT TO THE APPROVED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY) IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY
	J7350
Figure Title	SWEPT PATH OF 8m MINI COACH ENTERING AND LEAVING THE LAY-BY

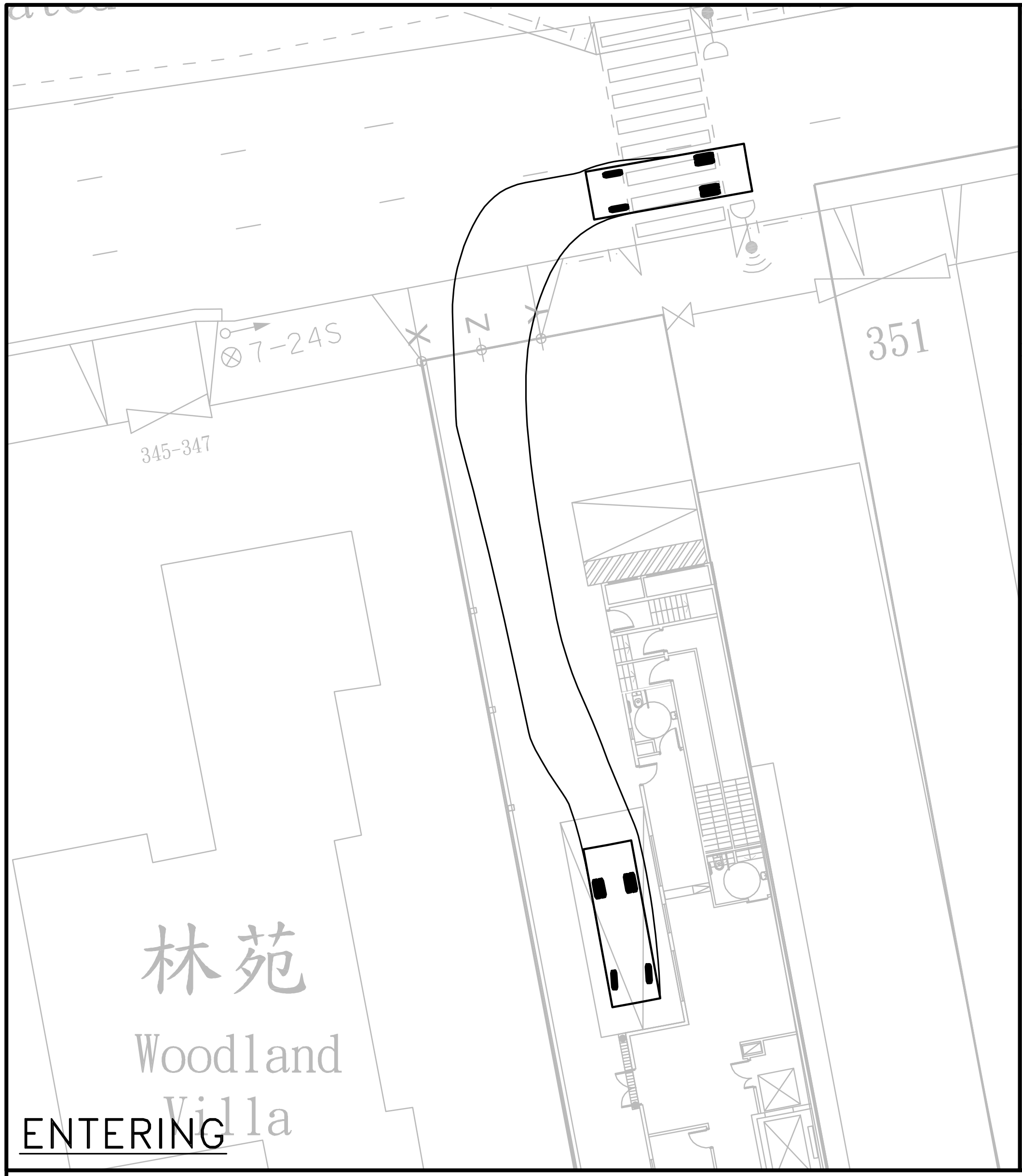
Figure No.	Revision
SP/101	A

Designed by	Drawn by	Checked by
T H C	C C L	K C

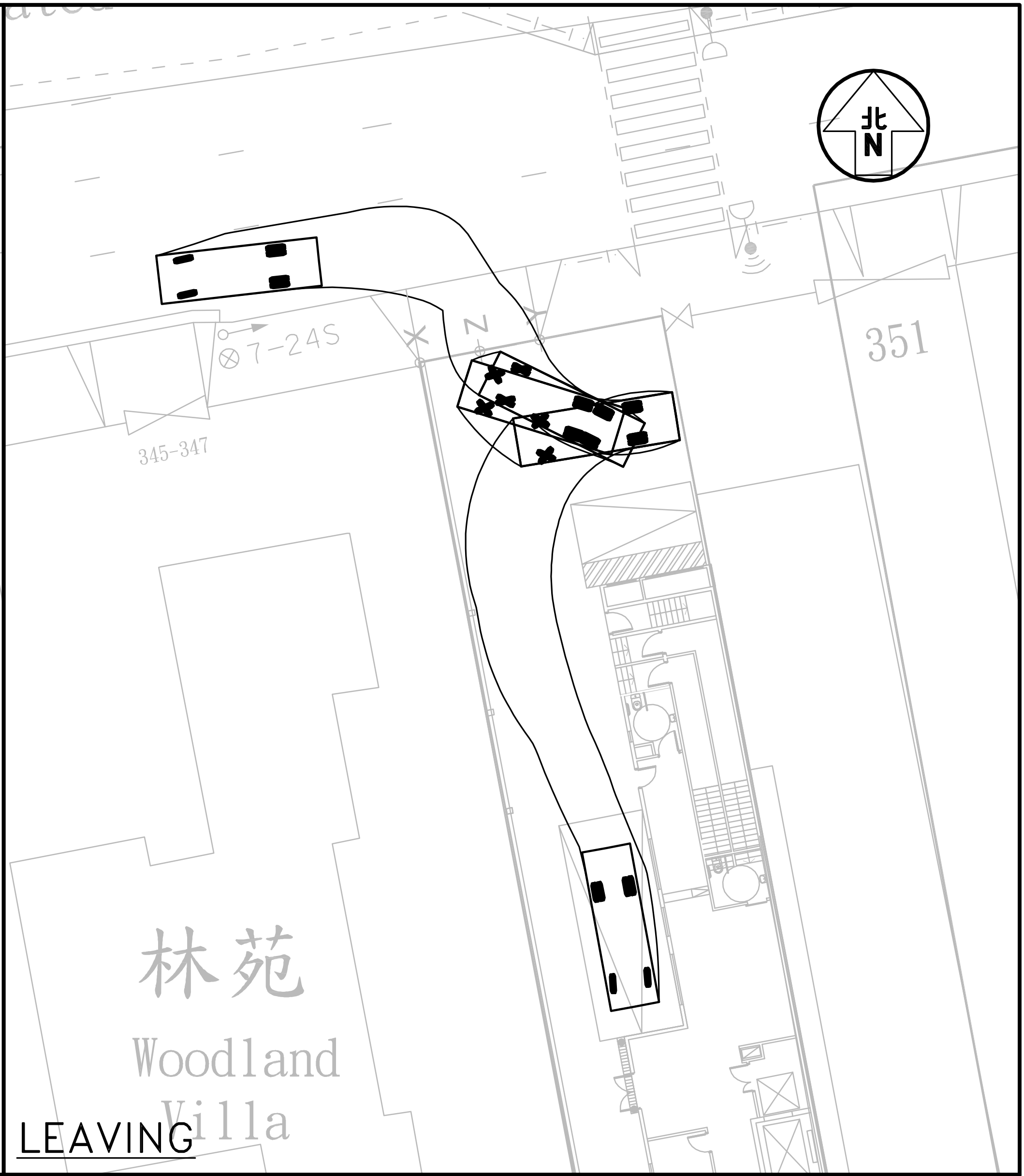
Scale in A4	Date
1 : 300	12 AUG 2024

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road,
Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOB\J7350-J7399\J7350\Fig SP_101-105 RevA.dwg



ENTERING



LEAVING

Project Title

AMENDMENT TO THE APPROVED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY) IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY

J7350

Figure Title

SWEPT PATH OF 7m LIGHT GOODS VEHICLE
ENTERING AND LEAVING THE LAY-BY

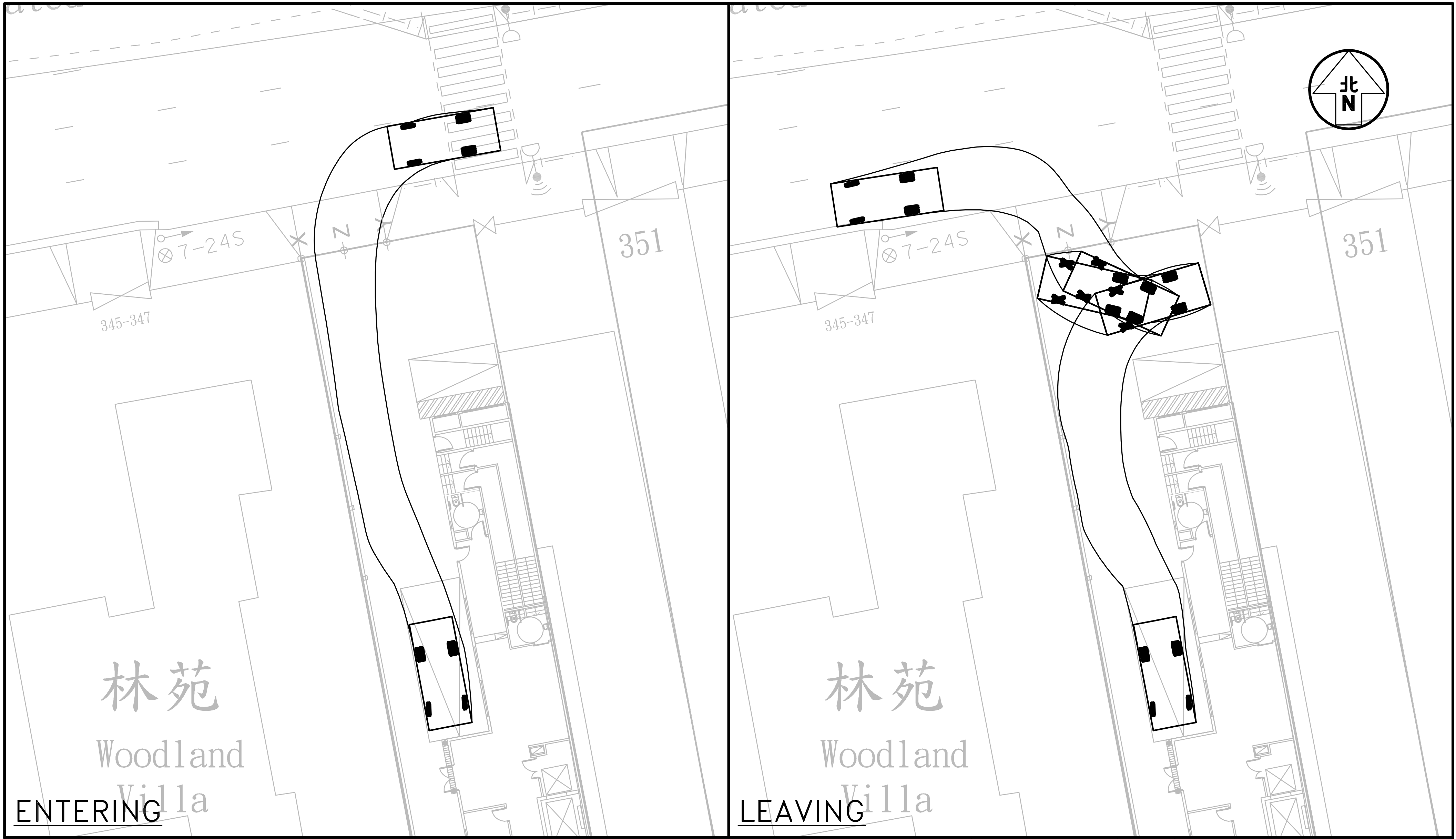
Figure No.	Revision
SP/102	A

Designed by	Drawn by	Checked by
T H C	C C L	K C

Scale in A4	Date
1 : 300	12 AUG 2024

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road,
Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOB\J7350-J7399\J7350\Fig SP_101-105 RevA.dwg



Project Title

AMENDMENT TO THE APPROVED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY) IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY

J7350

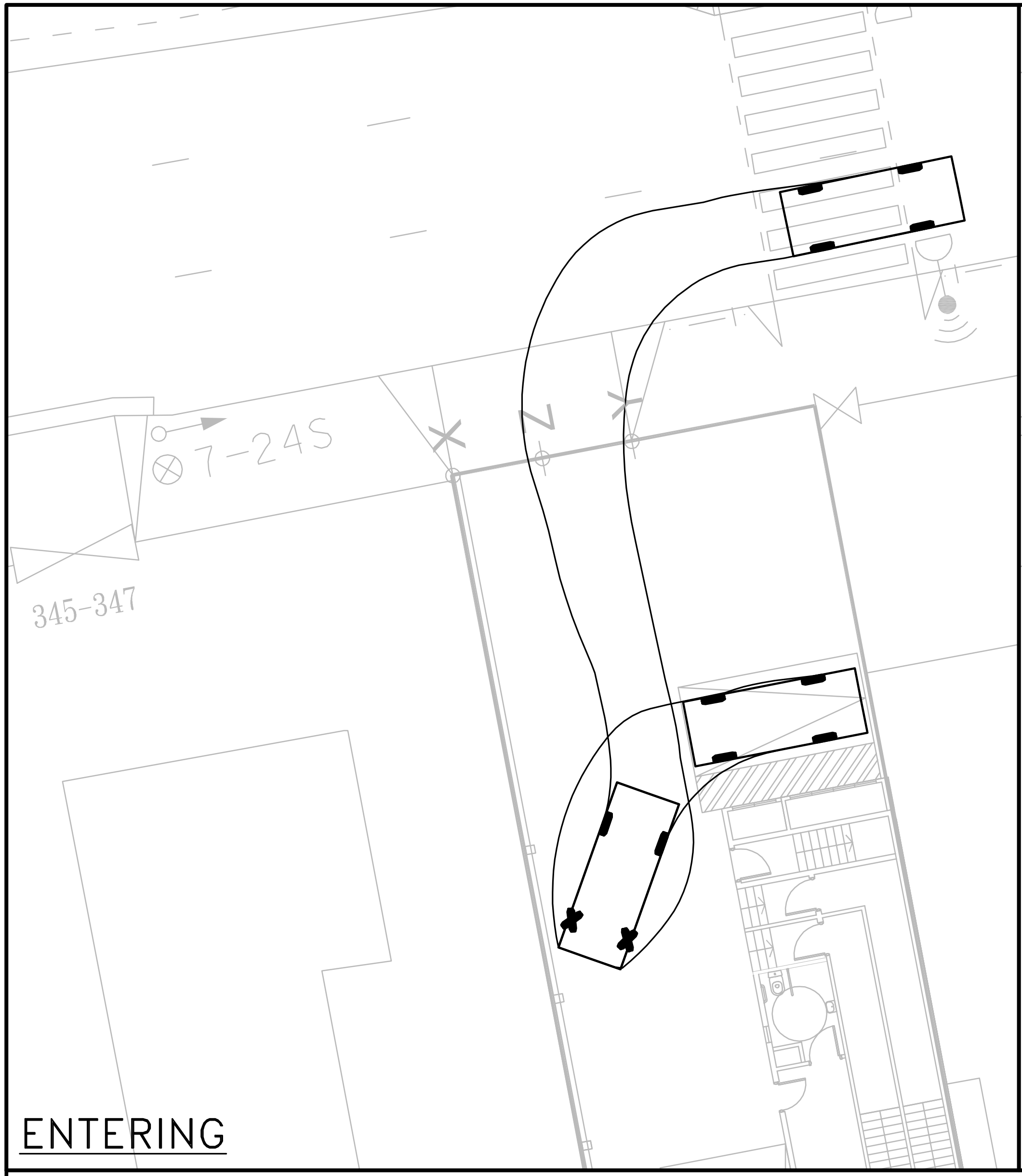
Figure Title

SWEPT PATH OF 6.5m AMBULANCE ENTERING AND LEAVING THE LAY-BY

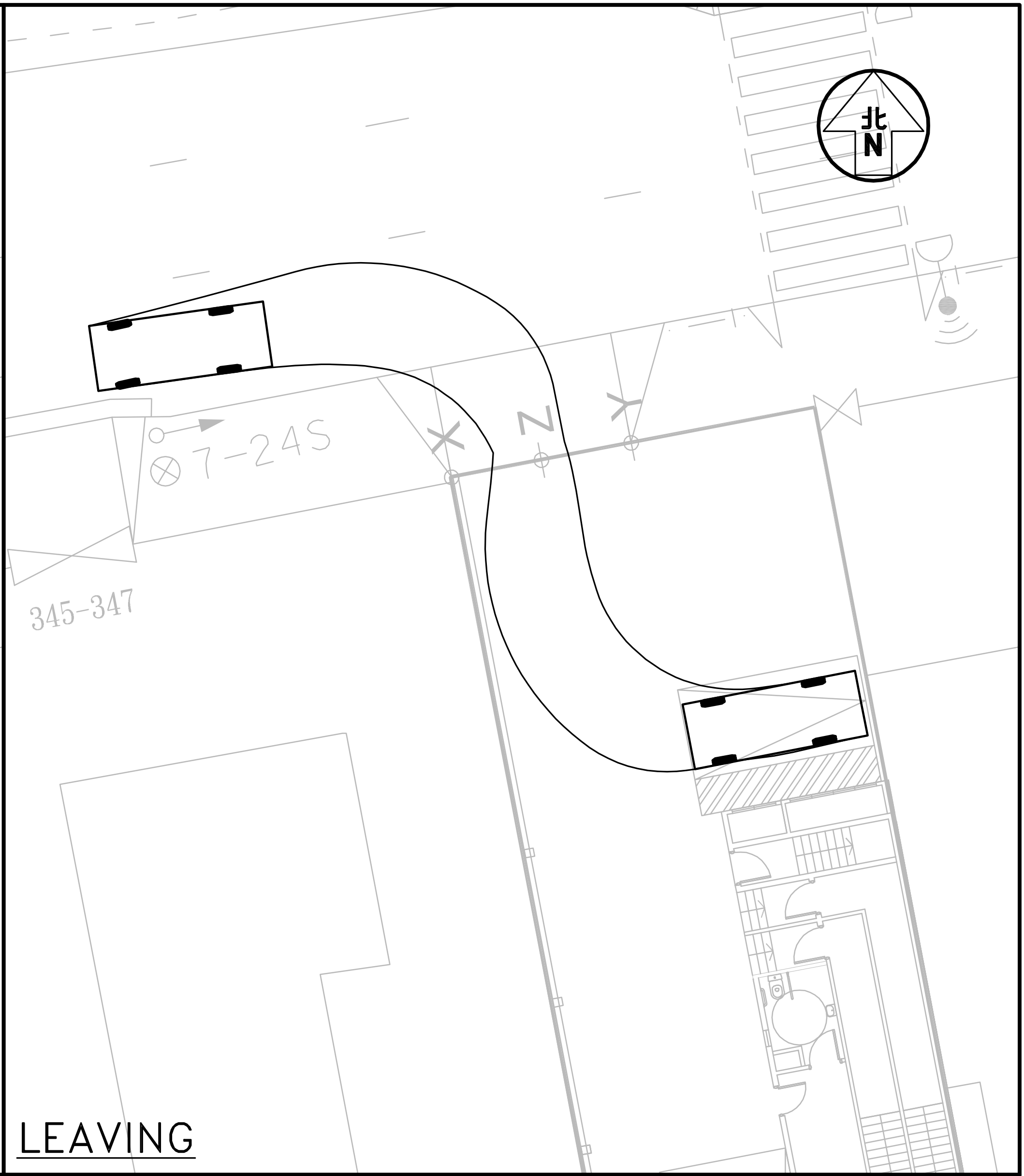
Figure No.		Revision
SP/103		A
Designed by	Drawn by	Checked by
T H C	C C L	K C
Scale in A4	Date	
1 : 300	12 AUG 2024	

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road,
Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOB\J7350-J7399\J7350\Fig SP_101-105 RevA.dwg



ENTERING



LEAVING

Project Title

AMENDMENT TO THE APPROVED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY) IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY

J7350

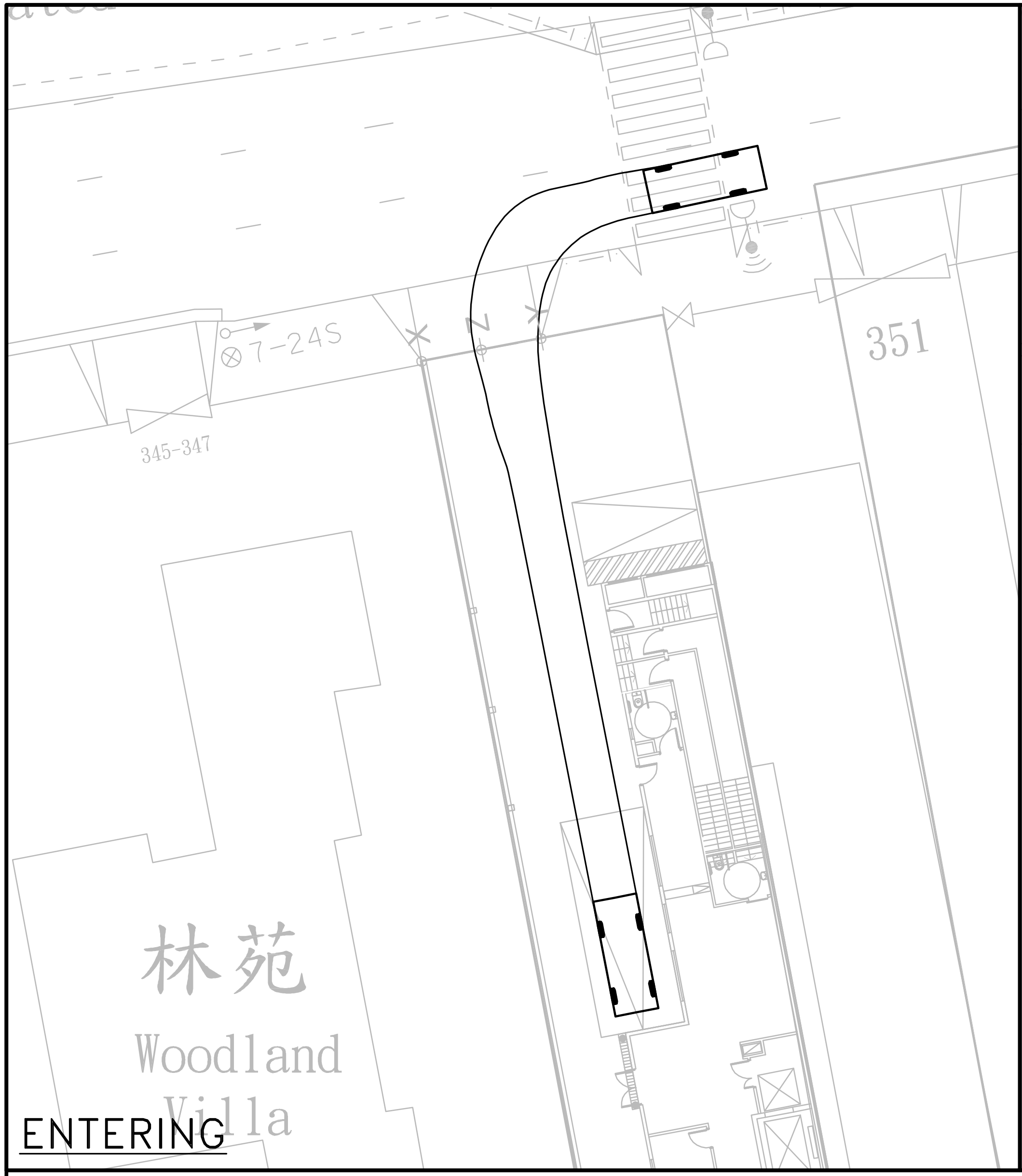
Figure Title

SWEPT PATH OF 5m PRIVATE CAR ENTERING
AND LEAVING THE CAR PARKING SPACE

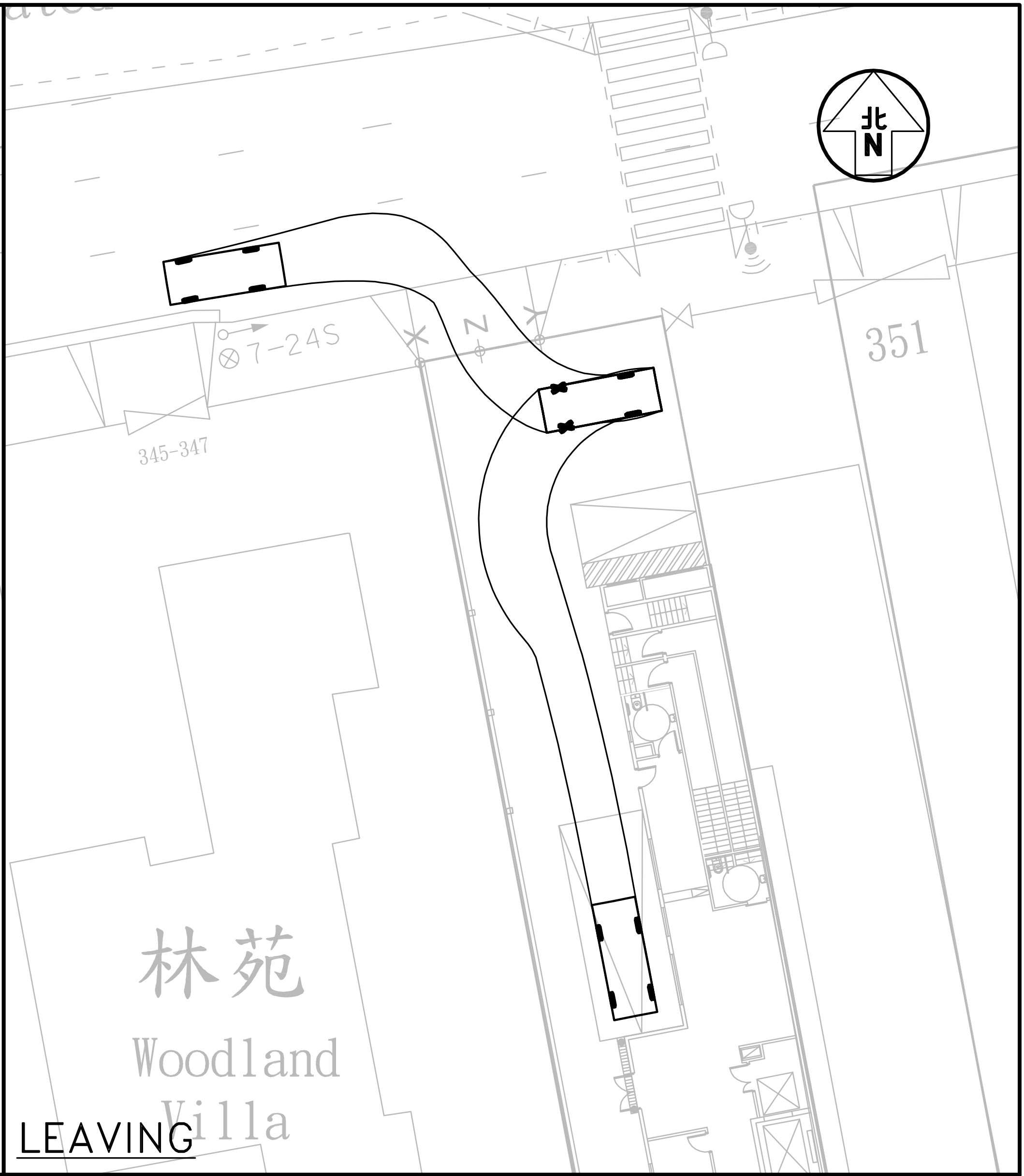
Figure No.			Revision
SP/104			A
Designed by	Drawn by		Checked by
T H C	C C L		K C
Scale in A4		Date	
1 : 200		12 AUG 2024	

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road,
Wan Chai, Hong Kong
Tel : (852) 2520 5990   Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOB\J7350-J7399\J7350\Fig SP_101-105 RevA.dwg



ENTERING



LEAVING

Project Title
AMENDMENT TO THE APPROVED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR
THE ELDERLY) IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY

J7350

Figure Title
SWEPT PATH OF 5m TAXI / PRIVATE CAR
ENTERING AND LEAVING THE LAY-BY

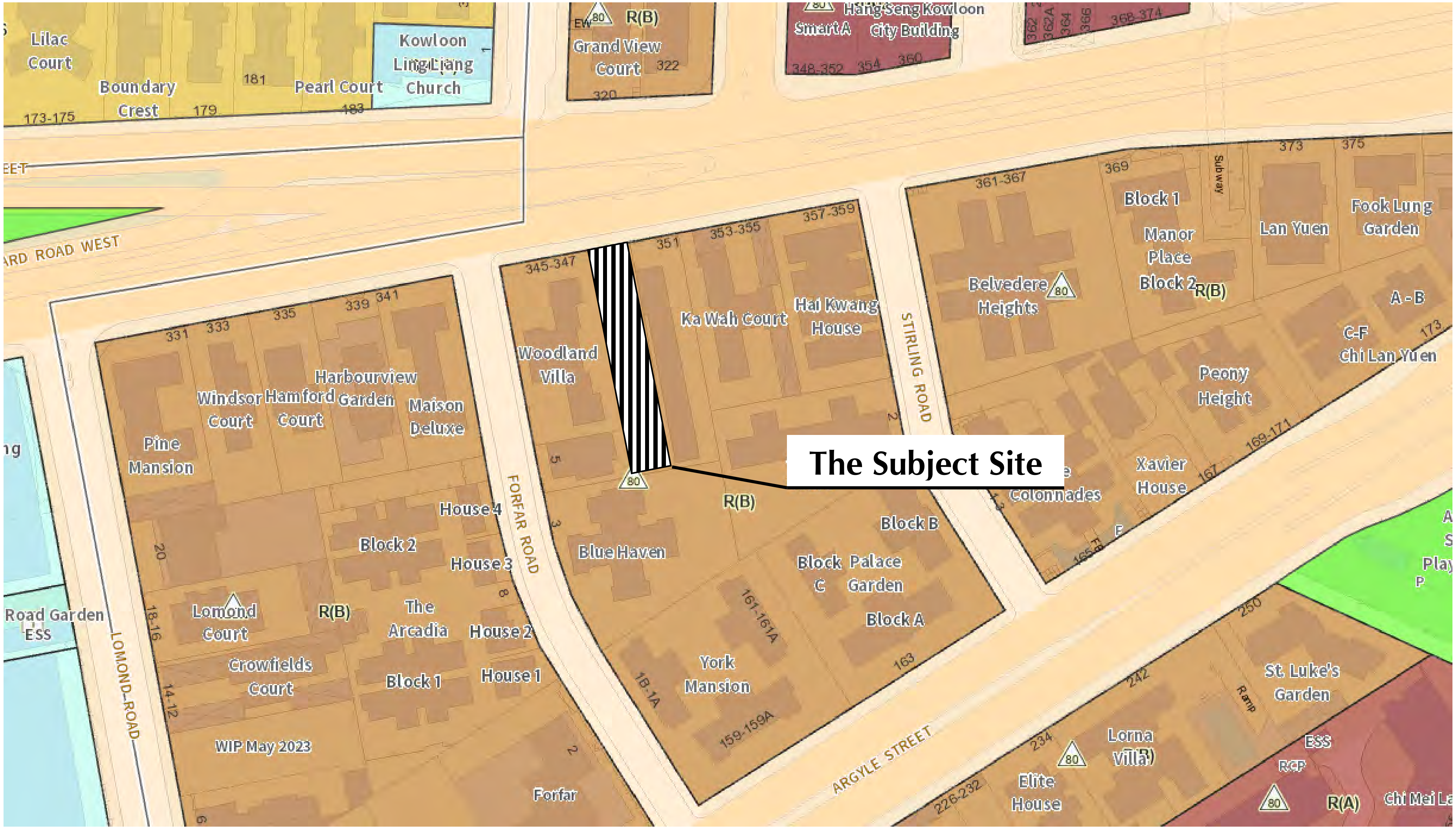
Figure No.			Revision
SP/105			A
Designed by	Drawn by	Checked by	
T H C	C C L	K C	
Scale in A4		Date	
1 : 300		12 AUG 2024	

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road,
Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOB\J7350-J7399\J7350\Fig SP_101-105 RevA.dwg

Appendix C – Extract from OZP No. S/K10/30

APPROVED MA TAU KOK OUTLINE ZONING PLAN NO. S/K10/30



RESIDENTIAL (GROUP B)

Column 1 Uses always permitted	Column 2 Uses that may be permitted with or without conditions on application to the Town Planning Board
Flat	Ambulance Depot
Government Use (Police Reporting Centre, Post Office only)	Eating Place
House	Educational Institution
Library	Government Refuse Collection Point
Residential Institution	Government Use (not elsewhere specified)
School (in free-standing purpose-designed building only)	Hospital
Social Welfare Facility (on land designated "R(B)1" only)	Hotel
Utility Installation for Private Project	Institutional Use (not elsewhere specified)
	Mass Transit Railway Vent Shaft and/or Other Structure above Ground Level other than Entrances
	Off-course Betting Centre
	Office
	Petrol Filling Station
	Place of Entertainment
	Place of Recreation, Sports or Culture
	Private Club
	Public Clinic
	Public Convenience
	Public Transport Terminus or Station
	Public Utility Installation
	Public Vehicle Park (excluding container vehicle)
	Recyclable Collection Centre
	Religious Institution
	School (not elsewhere specified)
	Shop and Services
	Social Welfare Facility (not applicable to land designated "R(B)1")
	Training Centre

Planning Intention

This zone is intended primarily for medium-density residential developments where commercial uses serving the residential neighbourhood may be permitted on application to the Town Planning Board.

(Please see next page)

Appendix 3

Noise Impact Assessment

Prepared by

Ramboll Hong Kong Limited

AMENDMENT TO THE APPROVED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY) IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON

NOISE IMPACT ASSESSMENT

Date	**27 August 2024**
Prepared by	**Vicky Shek** **Environmental Consultant**
Signed	
Approved by	**Katie Yu** **Senior Manager**
Signed	
Project Reference	**WSLPE349EI00**
Document No.	**R9501_v1.1.docx**

Disclaimer: This report is made on behalf of Ramboll Hong Kong Ltd. No individual is personally liable in connection with the preparation of this report. By receiving this report and acting on it, the client or any third party relying on it accepts that no individual is personally liable in contract, tort or breach of statutory duty (including negligence).

Ramboll Hong Kong Limited

21/F, BEA Harbour View Centre
56 Gloucester Road, Wan Chai, Hong Kong

Tel: (852) 3465 2888
Fax: (852) 3465 2899
Email: hkinfo@ramboll.com

Q:\Projects\WSLPE349EI00\04 Deliverables\01 NIA Report\R9501_v1.1.docx

CHAPTERS

TABLES

FIGURES

APPENDICES

1. INTRODUCTION

1.1 Background

1.1.1 The Application Site (hereafter referred to as the Proposed Development) at 349 Prince Edward Road East, Kowloon, is zoned as "Residential (Group B)" ("R(B)") under the Approved Ho Man Tin Outline Zoning Plan No. S/K10/30 ("the OZP") with a site area of 582.9 m^2 and maximum building height ("BH") of 80 metres above principal datum ("mPD"). This S16 application is submitted to the Town Planning Board for the amendment to the approved Social Welfare Facility (Residential Care Home for the Elderly) (Town Planning Board Ref. A/K10/261) at the Application Site.

1.1.2 Ramboll Hong Kong Ltd. has been commissioned by the Applicant to conduct this Noise Impact Assessment (NIA) for the subject Section 16 Application.

1.2 The Project Location

1.2.1 The Application Site is bounded by Prince Edward Road West to the North and is surrounded by existing elderly home and residential buildings e.g. Woodland Villa, Ka Wah Court and Blue Haven. **Figure 1.1** shows the location and the environ of the Application Site.

1.3 The Project Description

1.3.1 The Proposed Development for Residential Care Home for the Elderly (RCHE) would consist of 11 storeys with basement floor, including supporting facilities, wards, activity and administration uses. The supporting facilities are proposed on G/F and the wards are proposed on 1/F to 7/F, while areas for activity and administration are proposed on the 8/F and 9/F respectively. The E&M facilities are proposed on B1/F and R/F.

1.3.2 The main height of the tower is around 42.5 mPD. The anticipated completion year of the Proposed Development is expected to be in 2027. The layout plans of the Proposed Development is shown in **Appendix 1.1**. Major development parameters are summarised as follows:

Table 1.1 Development Parameters for Proposed Development in Application Site

Building	Residential
Zoning under OZP	"R(B)" under S/K10/30
Site Area, m^2	582.9
No. of Beds	141
No. of Storey above ground	B1/F (E&M facilities) G/F (supporting facilities) 1/F to 7/F (7 typical floors) 8/F (activity use) 9/F (office use) R/F (E&M facilities)
Main Level of Building, mPD	~42.5 (Main Roof Level)
Facilities	Ancillary Area, Common/ Circulation Space
Anticipated Completion Year	2027

1.4 Scope

1.4.1 The scope of this NIA includes road traffic noise impact and fixed noise impact assessments on the Proposed Development.

2. TRAFFIC NOISE IMPACT ASSESSMENT

2.1 Introduction

2.1.1 In this assessment, road traffic noise impact from roads within 300m radius on the Proposed Development has been assessed. Practicable environmental mitigation measures have been recommended as appropriate.

2.2 Assessment Criteria

2.2.1 According to Chapter 9 of the HKPSG which provides guidance for environmental considerations in the planning of both public and private developments and the noise standards are prescribed, the maximum allowed road traffic noise level, measured in terms of L_{10} (1 hr), at typical facade of new dwellings and office uses is recommended to be 70 dB(A) and for isolation room with potential diagnostic treatment to be 55 dB(A).

2.3 Noise Sensitive Receivers for Road Traffic Noise Assessment

2.3.1 The proposed RCHE at the Application Site is a noise sensitive receiver (NSR) of road traffic noise impact. Representative assessment points have been assigned to the rooms with prescribed window for ventilation within G/F to 7/F and 9/F of the Proposed Development. The assessment area is provided in **Figure 2.1**. The locations and details of the representative NSRs selected for assessment are provided in **Figures 2.2a to Figures 2.2e** and **Table 2.1** below, respectively.

Table 2.1 Representative NSRs for Road Traffic Noise Assessment

NSR	Description	Type of Use/ Noise Criteria dB(A)	Assessment Level, mPD
RG01	Interview Room	Office/ 70	G/F at 10.4 mPD
R101	Wards	Dwelling/ 70	1/F at 15.4 mPD
R102	Wards	Dwelling/ 70	
R103	Isolation Room	Office/ 55	
R104	Wards	Dwelling/ 70	
R105	Wards	Dwelling/ 70	
RT01	Wards	Dwelling/ 70	Typical Floors from 2/F to 7/F at 18.5 mPD to 34.3 mPD
RT02	Wards	Dwelling/ 70	
RT03	Wards	Dwelling/ 70	
RT04a	Wards	Dwelling/ 70	
RT04b	Isolation Room	Office/ 55	
RT05	Wards	Dwelling/ 70	
RT06	Wards	Dwelling/ 70	
R901	General Office	Office/ 70	9/F at 40.6 mPD
R902	General Office	Office/ 70	

2.4 Assessment Methodology

2.4.1 As discussed in **Section 2.2**, according to HKPSG, the standard for road traffic noise level expressed in terms of L_{10}(1 hr) at the typical façades of the Proposed

Development is recommended to be 70 dB(A) for dwellings and office uses and 55 dB(A) for isolation room. The assessment is based on the prediction of the maximum L_{10} (1 hr) traffic noise level at NSRs of the Proposed Development due to the projected traffic on the adjacent road network for year 2042, which is considered as the maximum traffic projections within 15 years upon occupation of the Proposed Development in 2027. Traffic data was predicted by the project traffic consultant. Details of information on peak hour traffic volume and percentage of heavy vehicle of the road network within the 300m assessment area provided by the Project traffic consultant is presented in **Appendix 2.1**, which represents the worst-case scenario of the projected traffic flows.

2.4.2 The UK Department of Transport's procedures - “Calculation of Road Traffic Noise” (CRTN) has been used in the prediction of the road traffic noise at the representative NSRs of the Proposed Development within the Application Site. The existing topographic details, such as the existing houses and structures near the Application Site, have been considered in the assessment.

2.4.3 The noise prediction has been carried out using the *Road Noise Module 2.7.2 of Noise Map Enterprise Edition* software, which is a computerised model developed on the basis of the U.K. Department of Transport’s CRTN procedures, and is acceptable to the EPD.

2.5 Prediction and Evaluation of Noise Impacts

2.5.1 An assessment on the road traffic noise level at the NSRs based on the above traffic flow data has been conducted. Noise mitigation measure which has already been incorporated in the design of the layout, and considered in the unmitigated scenario include the setback of RCHE block from the site boundary. The Proposed Development is also partially shielded by other surrounding existing buildings in the area.

2.5.2 A summary of the predicted road traffic noise levels at the representative NSRs is provided in **Table 2.2**. The predicted road traffic noise levels at some NSRs would exceed the relevant noise criteria of 70 dB(A) by up to 6 dB(A).The detailed unmitigated results are provided in **Appendix 2.2**.

Table 2.2 Summary of Predicted Unmitigated Road Traffic Noise Levels at Representative NSRs (AM and PM peaks)

NSR	Predicted Road Traffic Noise Level, $L_{10\ (1\text{-hour})}$, dB(A) (Unmitigated)	
	AM	PM
RG01	70	69
R101	76	76
R102	75	75
R103	49	49
R104	59	57
R105	61	60
RT01	75 - 76	75 - 76
RT02	75	74 - 75
RT03	50 - 51	49 – 50
RT04a	55 - 56	55
RT04b	49	48 - 49
RT05	59 - 63	58 – 62
RT06	61 - 63	60 – 62

NSR	Predicted Road Traffic Noise Level, $L_{10\ (1\text{-hour})}$, dB(A) (Unmitigated)	
	AM	PM
R901	57	56
R902	57	56

[1] Bolded values exceed the noise criteria of 55 dB(A) or 70 dB(A).

2.5.3 To mitigate the traffic noise impact, baffle type acoustic window are proposed in order to alleviate the noise levels to comply with the noise criteria.

Baffle Type Acoustic Balcony

2.5.4 Innovative noise mitigation measures are being explored in recent years. It is noted that EPD has published *ProPECC PN5/23 Application of Innovative Noise Mitigation Designs in Planning Private Residential Developments against Road Traffic Noise Impact*. According to EPD's website regarding innovative noise mitigation design and measures (http://www.epd.gov.hk/epd/Innovative/greeny/eng/index.html), different balconies and special design window systems have been implemented in public rental housing, private residential and hostel developments.

2.5.5 As the acoustic window design in ProPECC PN5/23 cannot be adopted in the Proposed Development, the design of acoustic window is drawn from another reference case with a more applicable design to suit the Proposed Development. The acoustic window (baffle type) from a reference case, i.e. approved planning application A/K22/29, is proposed to be equipped at the wards on the first floor to seventh floor of the RCHE which are directly facing Prince Edward Road West. The location of these acoustic window (baffle type) has been indicated in **Figure 2.3a** and **Figure 2.3b**.

2.5.6 According to the EA report of the approved planning application A/K22/29, a sound attenuation performance of 8.8 dB(A) can be achieved to a room of 38.3m^2 in area by an acoustic window (baffle type) with an outer opening size of 3.2m^2, 100mm gap width and 275mm overlapping width. The relevant pages of the said report have been extracts in **Appendix 2.5**.

2.5.7 For the proposed acoustic window (baffle type), the outer window opening shall be equal or smaller than 3.2m^2, the overlapping width shall be larger or equal to 275mm, while 100mm gap width shall be provided. The indicative design of the proposed acoustic window (baffle type) can be referred to **Figure 2.4**. Furthermore, the room sizes of the wards at the RCHE proposed with acoustic window (baffle type) range from around 29m^2 to 47.7m^2. In theory, the smaller the room size designed, the less will be the sound attenuation after adjustment. The sound attenuation for individual ward has been adjusted based on comparison of room size of the case in this Proposed Development and the reference case. Sound attenuation of the baffle type acoustic window adopted for the Proposed Development is estimated based on the reference project and presented in **Appendix 2.4.** The acoustic window (baffle type) is expected to provide at least 7.6 dB(A) of sound attenuation for the dormitories that are smaller in size than the reference case, after adjusting the sound attenuation. Meanwhile, the room sizes of the dormitories at the RCHE proposed with the acoustic window (baffle type) are larger than the one used in the reference case (A/K22/29). Therefore, the sound attenuation performance of the proposed acoustic window (baffle type) is not expected to be less than the reference case, which is equivalent to 8.8 dB(A). As a conservative approach, an 8.8 dB(A) sound reduction will be used for the wards with a room size larger than the reference case in this assessment.

2.5.8 Under the mitigated scenario, there is no exceedance of the noise criteria at the representative NSRs. The summary of the road traffic noise impact assessment results is presented in **Table 2.3**, and the details are presented in **Appendix 2.3**.

Table 2.3 Summary of Predicted Mitigated Road Traffic Noise Levels at Representative NSRs (AM and PM peaks)

NSR	Predicted Road Traffic Noise Level, $L_{10\ (1\text{-hour})}$, dB(A) (Unmitigated)	
	AM	PM
RG01	70	69
R101	69	68
R102	67	66
R103	49	49
R104	59	57
R105	61	60
RT01	67	66 - 67
RT02	66 - 67	65 - 66
RT03	50 - 51	49 – 50
RT04a	55 - 56	55
RT04b	49	48 - 49
RT05	59 - 63	58 – 62
RT06	61 - 63	60 – 62
R901	57	56
R902	57	56

2.6 Conclusion

2.6.1 Noise impacts due to road traffic within 300m radius from the Application Site have been assessed. With the implementation of the proposed noise mitigation measures in the form of baffle type acoustic window, the predicted traffic noise levels at all representative NSRs within the Application Site would comply with the noise criterion of 55 dB(A) for isolation room or 70 dB(A) for dwelling and office uses. No adverse traffic noise impact on the Proposed Development is anticipated.

3. FIXED NOISE IMPACT ASSESSMENT

3.1 Introduction

3.1.1 In this assessment, potential noise impacts arising from the nearby fixed noise sources within 300m radius on the Proposed Development has been assessed by general acoustic principle and Technical Memorandum for the Assessment of Noise from Places Other Than Domestic Premises, Public Places or Construction Sites (IND-TM). Practicable environmental mitigation measures would be recommended, where necessary.

3.2 Government Legislation and Standards

Noise Control Ordinance (NCO)

3.2.1 The Noise Control Ordinance (NCO) provides the statutory framework for the control of fixed plant. The Technical Memorandum for the Assessment of Noise from Places other than Domestic Premises, Public Places or Construction Sites (IND-TM) sets the criteria, Acceptable Noise Level (ANL), for governing noise from existing fixed plant / industrial noise sources.

Hong Kong Planning Standards and Guidelines (HKPSG)

3.2.2 The NCO requires that noise impacts from existing fixed noise sources shall comply with the Acceptable Noise Levels (ANL) laid down in Table 2 of IND-TM, which is influenced by the Area Sensitivity Rating (ASR) determined by the type of area containing the NSR.

3.2.3 The Application Site is located in an urban area not affected by an Influencing Factor defined by the IND-TM. An ASR of “B” has been adopted to the Proposed Development with 65 dB(A) as the noise criteria for day and evening time, and 55 dB(A) for night time. The ANL for ASRs “B” is depicted in **Table 3.1**.

Table 3.1 Relevant Noise Standard for Fixed Noise Sources

	Criteria in Relevant Time Periods	Acceptable Noise Level (ANL)
“B”	Day and Evening (07:00 – 23:00)	65 dB(A)
	Night (23:00 – 07:00)	55 dB(A)

3.2.4 The ASRs proposed in this NIA are intended for assessment only. Nothing in the NIA shall bind the Noise Control Authority in the context of enforcement against any of the fixed plant / industrial noise sources identified and assessed in the future under the NCO.

3.2.5 Since the observed fixed noise sources (**Section 3.3** refers) are existing uses, the ANL criteria is relevant and has been adopted.

3.3 Identification of Potential Noise Impacts

Fixed Noise Sources

3.3.1 Within 300m radius from the boundary of the Application Site, ventilation equipment, including chillers and Variable Refrigerant Volume (VRV) have been identified as the potential fixed noise sources. The locations of the existing fixed noise sources are indicated in **Figure 3.1 to Figure 3.4**. The type and number of equipment adopted for the assessment were based on site observation. The noise assessment assumed all equipment will be operating simultaneously and continuously as a worst-case scenario. The sound power level of the noise sources was referenced from product catalogues. The details of the fixed noise sources are presented in **Appendix 3.1**.

3.4 Noise Sensitive Receivers for Fixed Noise Assessment

3.4.1 Representative assessment points have been assigned to the wards of the Proposed Development overlooking the industrial noise sources. The NSRs are selected at 1m away from the façade of openable window for ventilation purpose. The locations and details of the representative NSRs selected for assessment are provided in **Figure 3.5** and **Table 3.2** below, respectively.

Table 3.2 Representative NSRs for Fixed Noise Assessment

NSR	Description
FN01	Ward
FN02	Ward
FN03	Ward
FN04	Ward
FN05	Ward

3.5 Assessment Methodology

3.5.1 As the premises were not accessible for site measurement, information such as types of noise source and Sound Power Levels (SWLs) of noisy equipment were referenced from representative catalogues available in the market (**Appendix 3.1** refers). The potential type of noise sources and SWLs were assumed to be same as other facilities of similar operation.

3.5.2 To predict the noise level at the future noise sensitive uses, the following correction factors have been accounted for:

- Distance correction: based on the shortest horizontal distance between the identified noise sources and the NSR, the distance correction is projected based on standard acoustical principle for point source;
- Although it is unlikely that all the identified fixed noise sources will be in operation simultaneously, to be conservative, it has been assumed that all the identified noise sources are in operation at the same time, which also represents a worst-case scenario. Noise sources are assumed to operate continuously instead of in occasion as observed onsite and all noise sources are regarded as point source;
- Façade correction: a +3dB(A) correction is applied to account for noise reflection from façade.

3.5.3 Corrected Noise Level (CNL) at the representative NSRs of the Proposed Development can be calculated by applying the above corrections to the measured SWL of the noise sources in accordance with the following formula:

$$\mathbf{CNL = SWL + C_{dist} + C_{fac} + C}_{bar}$$

Where,

CNL is the corrected noise level at the Assessment Point in dB(A)

SWL is the sound power level of the fixed plant in dB(A)

C_{dist} is the distance correction in dB(A) in accordance with the Technical Memorandum on Noise from Construction Works Other than Percussive Piling

C_{fac} is façade correction, +3 dB(A)

C_{bar} is screening correction, -5 dB(A) for partial screening and -10 dB(A) for complete screening by structure

3.6 Prediction and Evaluation of Noise Impacts

Fixed Noise Assessment Results

3.6.1 Based on the assumptions mentioned above and information of noise sources in **Section 3.3**, noise level estimation for the selected NSRs at the Application Site has been conducted. The predicted industrial noise levels at the representative NSRs are summarised in **Table 3.3**. The details are presented in **Appendix 3.2**.

Table 3.3 Predicted Unmitigated Fixed Noise Levels at Representative NSRs

NSR[1]	**Predicted Unmitigated Noise Level, dB(A)**	
	Day and Evening (07:00 – 23:00)	**Night (23:00 – 07:00)**
FN01	51	47
FN02	53	47
FN03	53	47
FN04	53	47
FN05	52	46
Criteria	**65**	**55**

Notes:

[1] The assessment only includes NSRs which reply on opened windows for ventilation.

3.6.2 Based on the proposed layout, the calculated fixed noise levels at all NSRs comply with the noise criteria. No adverse fixed noise impact is anticipated at the Application Site.

3.7 Conclusion

3.7.1 Noise impacts due to existing fixed noise sources within 300m radius of the Application Site have been examined. Based on the proposed layout, no adverse fixed noise impact on the Proposed Development is anticipated.

4. OVERALL CONCLUSION

4.1.1 The potential road traffic noise and fixed noise impacts that may affect the Proposed Development have been assessed.

4.1.2 With noise conscious design of setback as well as mitigation measures including baffle type acoustic window, full compliance of the relevant guidelines under HKPSG recommended criteria of 55 dB(A) for isolation room or 70 dB(A) for dwelling and office uses can be achieved at all noise sensitive, it is anticipated that the Proposed Development will not subject to adverse traffic noise impact.

4.1.3 Fixed noise sources in the vicinity of the Proposed Development have been identified. Assessment on fixed noise impact at representative noise sensitive receivers has been conducted. It is confirmed that the predicted fixed noise level at all NSRs comply with the requirement of relevant technical memorandum under Noise Control Ordinance.

4.1.4 It can be concluded that no adverse traffic and fixed noise impact is anticipated on the Proposed Development with the implementation of the recommended mitigation measures.

Figures

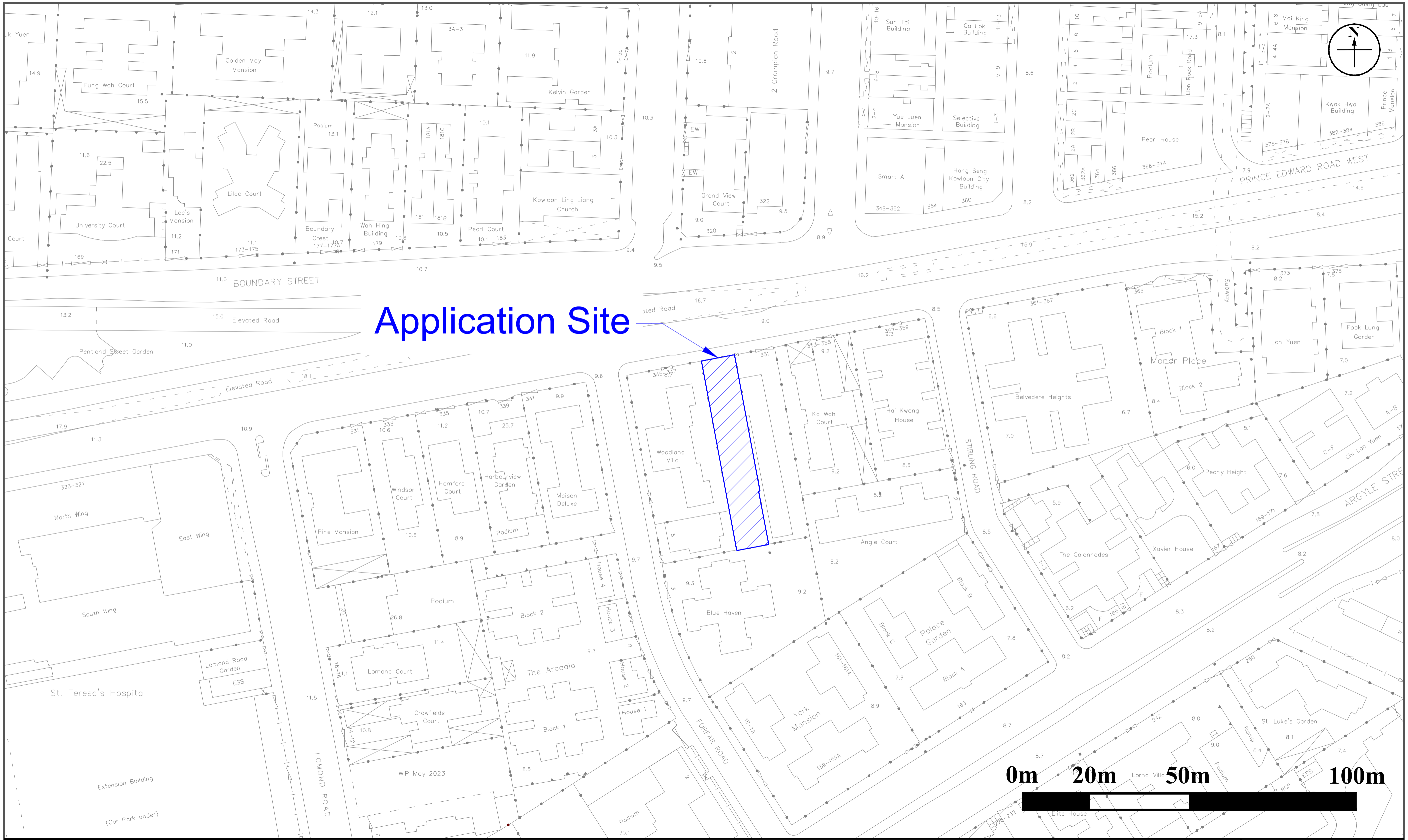


Figure: 1.1

Title: Application Site & Its Environ

Project: Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon

RAMBOLL

Drawn by: VS

Checked by: KY

Rev.: 1.1

Date: Aug 2024

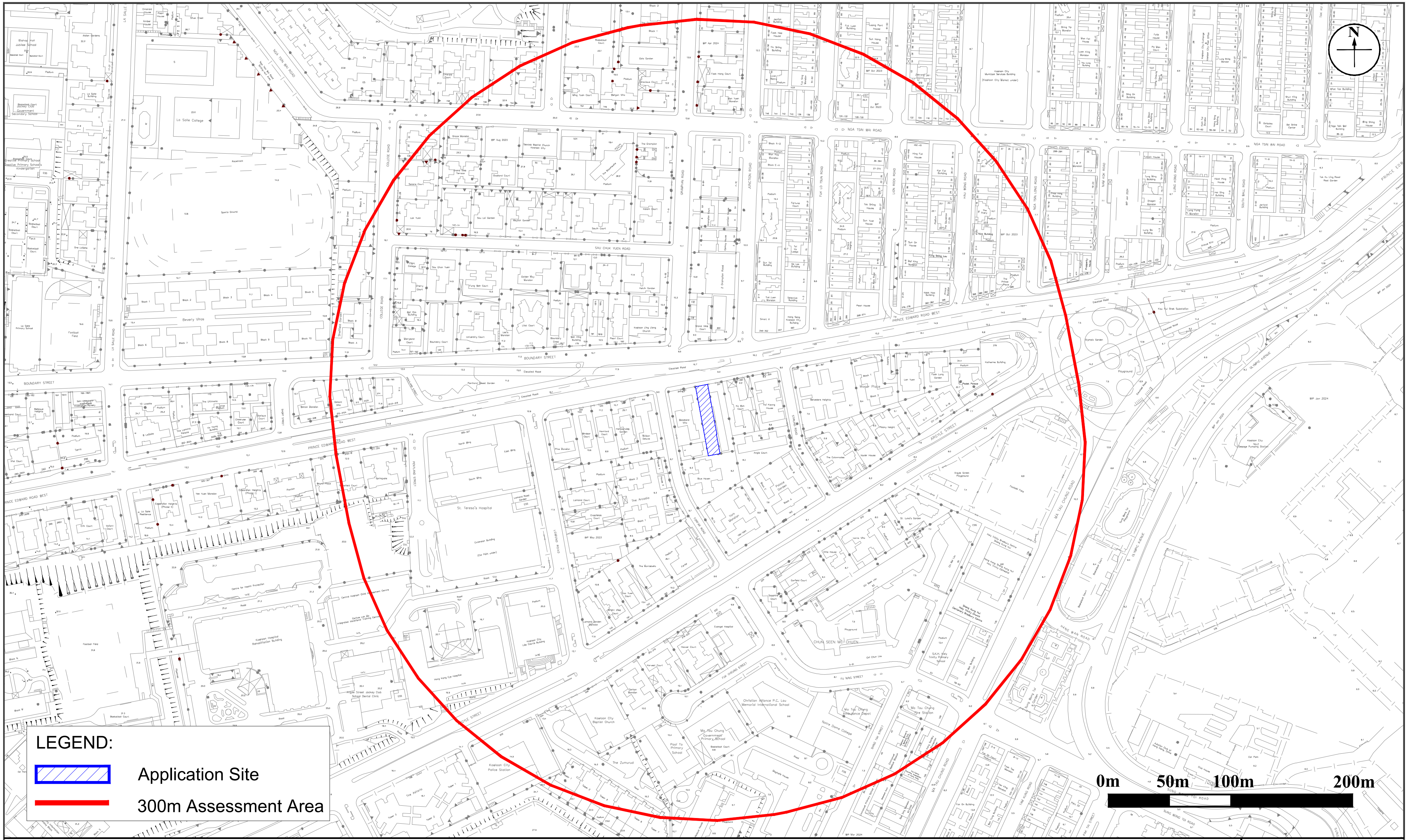
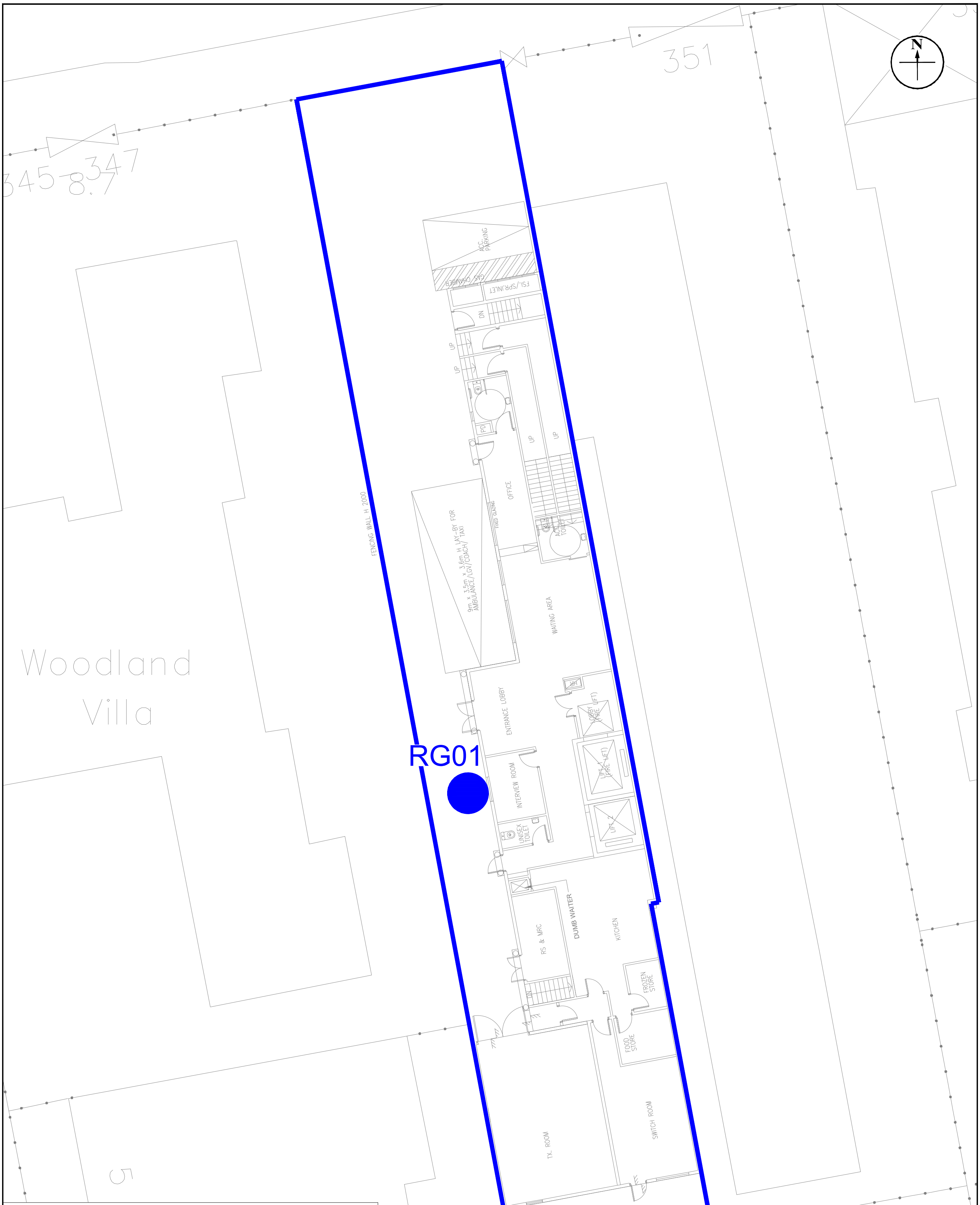


Figure: 2.1

Title: Traffic Noise Assessment Area

Project: Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon

Drawn by: VS
Checked by: KY
Rev.: 1.1
Date: Aug 2024



Legend:

▭	Site Boundary
●	Representative NSRs for TNIA

Figure:	2.2a	RAMBOLL
Title:	Representative NSRs for Traffic Noise Impact Assessment (G/F)	Drawn by: VS Checked by: KY
Project:	Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon	Rev.: 1.1 Date: Aug 2024

Figure: 2.2b

Title: Representative NSRs for Traffic Noise Impact Assessment (1/F)

Project: Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon

RAMBOLL

Drawn by: VS

Checked by: KY

Rev.: 1.1

Date: Aug 2024

Figure: 2.2c

Title: Representative NSRs for Traffic Noise Impact Assessment
(Typical Floors - 2/F, 4/F, 6/F & 7/F)

Project: Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon

RAMBOLL

Drawn by: VS
Checked by: KY
Rev.: 1.1
Date: Aug 2024

Legend:

▭ Site Boundary

● Representative NSRs for TNIA

Figure: 2.2d

Title: Representative NSRs for Traffic Noise Impact Assessment (Typical Floors - 3/F & 5/F)

Project: Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon

RAMBOLL

Drawn by: VS

Checked by: KY

Rev.: 1.1

Date: Aug 2024

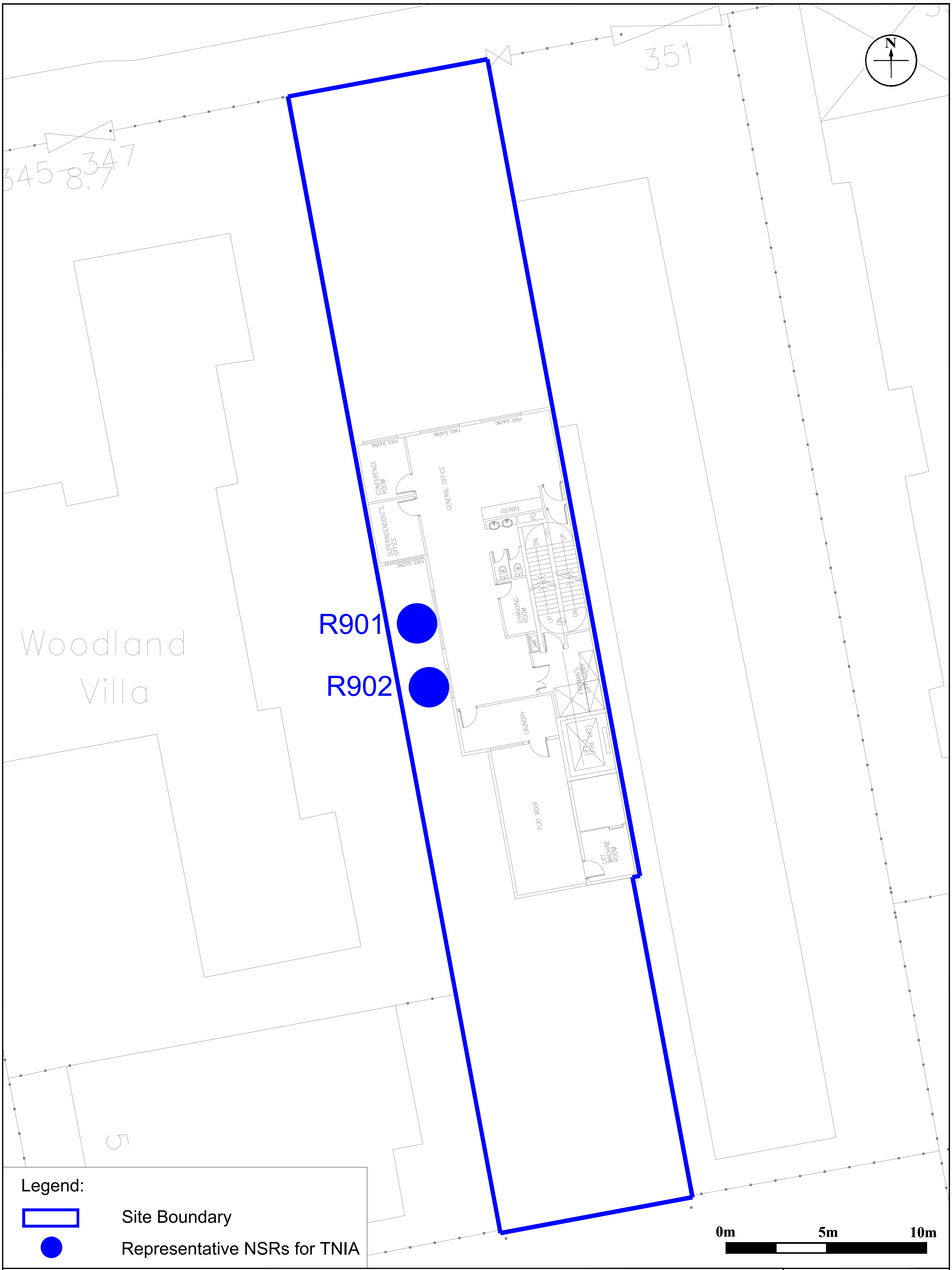


Figure: 2.2e

Title: Representative NSRs for Traffic Noise Impact Assessment (9/F)

Project: Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon

RAMBOLL

Drawn by: VS
Checked by: KY
Rev.: 1.1
Date: Aug 2024

Figure: 2.3a

Title: Proposed Noise Mitigation Measures for Traffic Noise Impact Assessment (1/F)

Project: Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon

RAMBOLL

Drawn by: VS
Checked by: KY
Rev.: 1.1
Date: Aug 2024

Legend:

▭	Site Boundary
●	Representative NSRs for TNIA
🟩	Acoustic Window (Baffle Type)

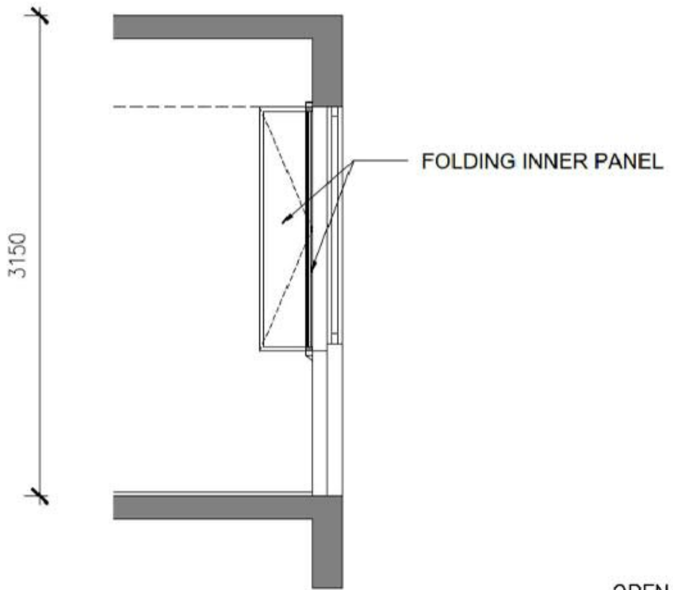
Figure: 2.3b

Title: Proposed Noise Mitigation Measures for Traffic Noise Impact Assessment (Typical Floors - 2/F to 7/F)

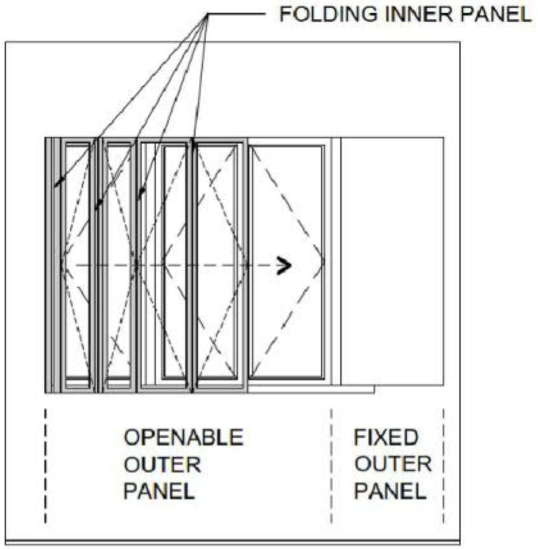
Project: Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon

RAMBOLL

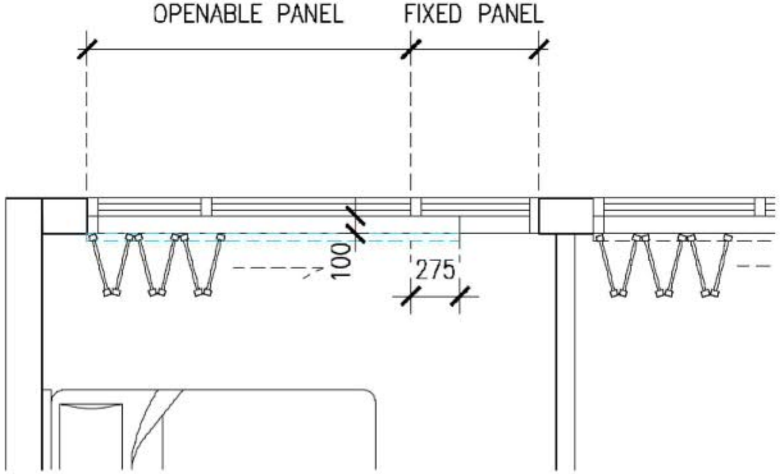
Drawn by: VS
Checked by: KY
Rev.: 1.1
Date: Aug 2024



SECTION 1:50



ELEVATION (VIEW FROM INSIDE) 1:50



PLAN 1:50

Figure: 2.4

Title: Indicative Design of Baffle Type Acoustic Window

Project: Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon

Drawn by: VS
Checked by: KY
Rev.: 1.1
Date: Aug 2024

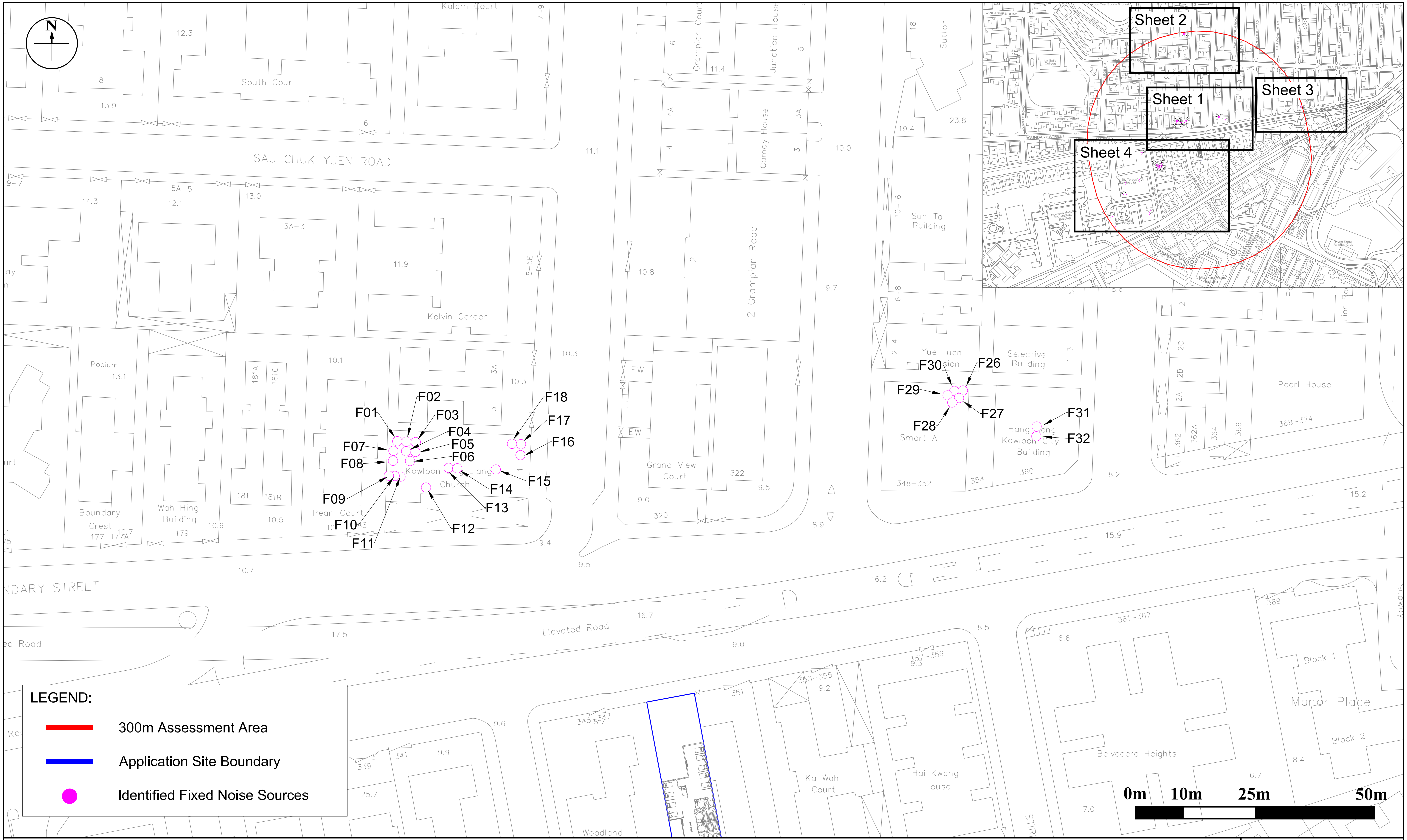


Figure: 3.1

Title: Location of Fixed Noise Sources (Sheet 1 of 4)

Project: Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon

RAMBOLL

Drawn by: EC

Checked by: KY

Rev.: 1.1

Date: Aug 2024

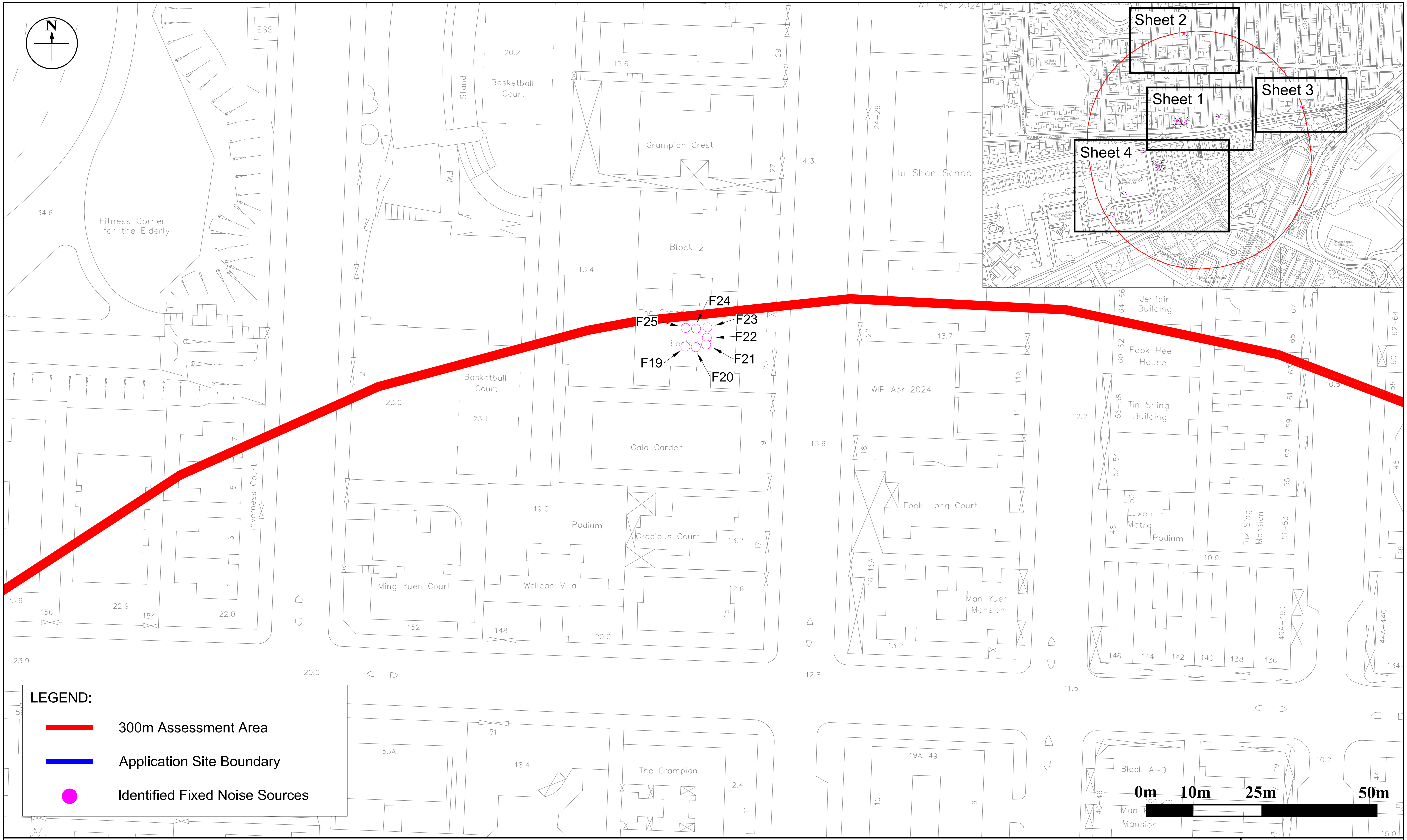


Figure: 3.2

Title: Location of Fixed Noise Sources (Sheet 2 of 4)

Project: Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon

RAMBOLL

Drawn by: EC

Checked by: KY

Rev.: 1.1

Date: Aug 2024

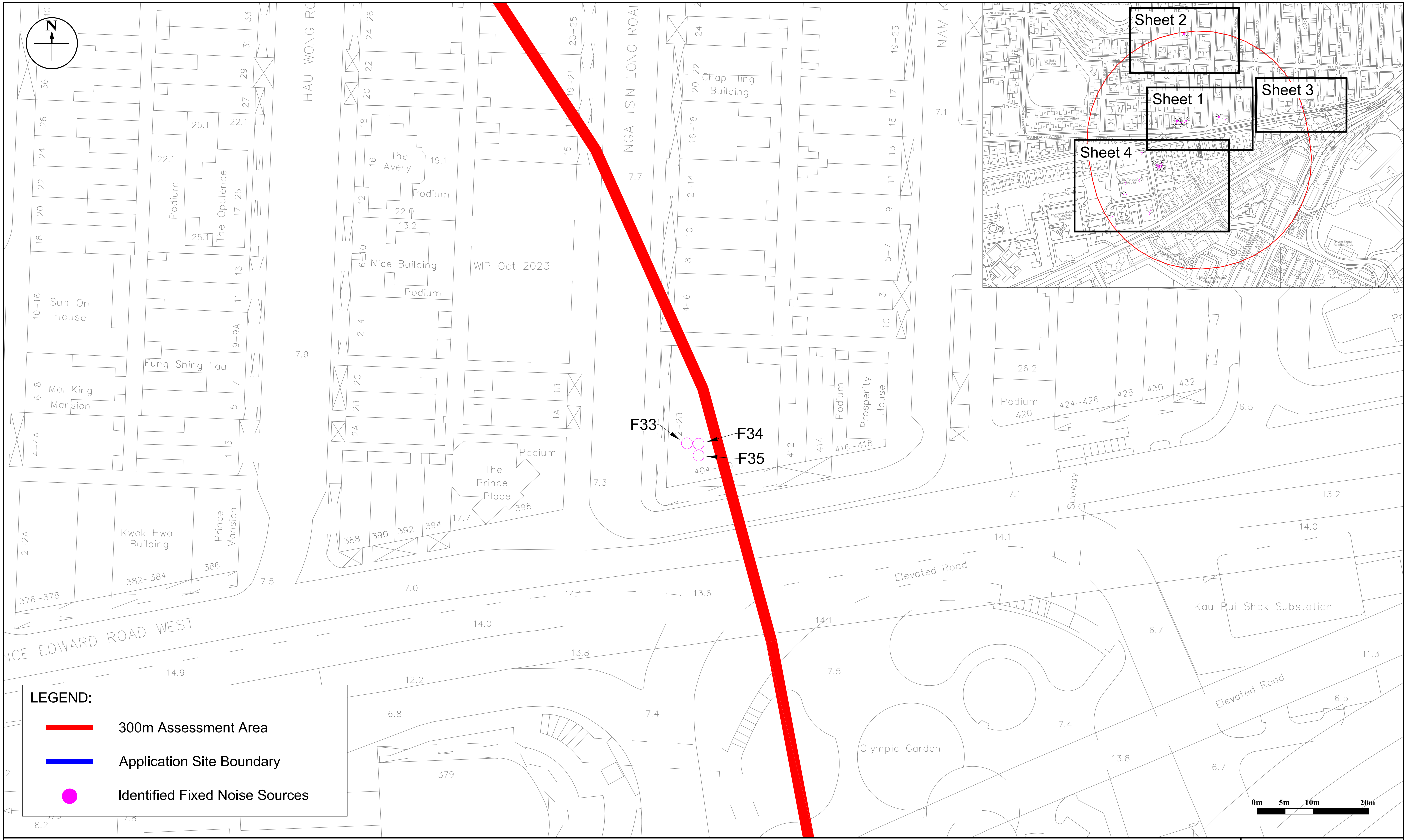


Figure: 3.3

Title: Location of Fixed Noise Sources (Sheet 3 of 4)

Project: Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon

RAMBOLL

Drawn by: EC

Checked by: KY

Rev.: 1.1

Date: Aug 2024

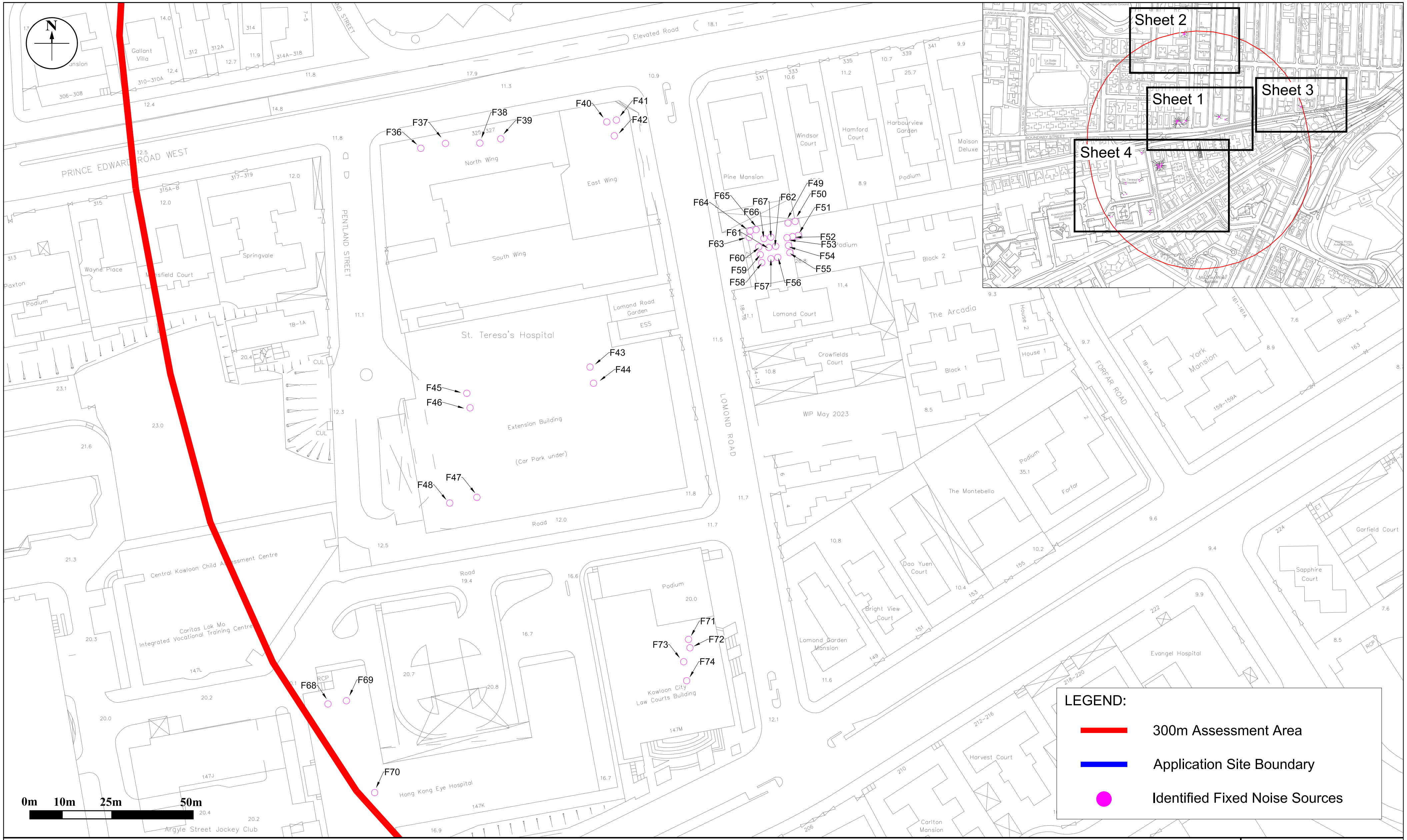


Figure:	3.4	RAMBOLL	
Title:	Location of Fixed Noise Sources (Sheet 4 of 4)	Drawn by:	EC
		Checked by:	KY
Project:	Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon	Rev.:	1.1
		Date:	Aug 2024

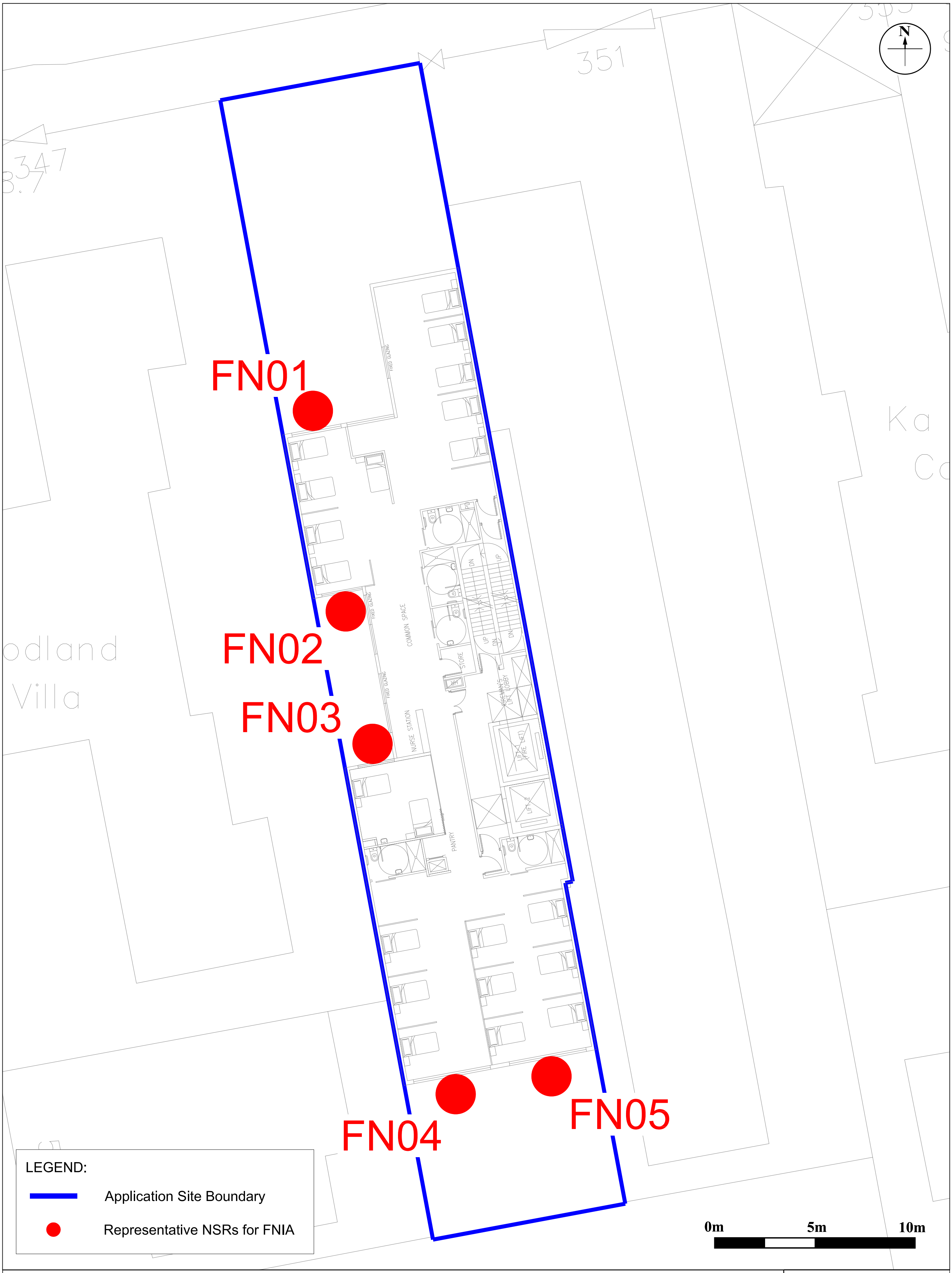


Figure: 3.5

Title: Location of Representative Noise Sensitive Receivers for Fixed Noise Impact Assessment

Project: Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon

RAMBOLL

Drawn by: EC
Checked by: KY
Rev.: 1.1
Date: Aug 2024

Appendices

Appendix 1.1

Detailed Layout of the Proposed Development

— SITE BOUNDARY

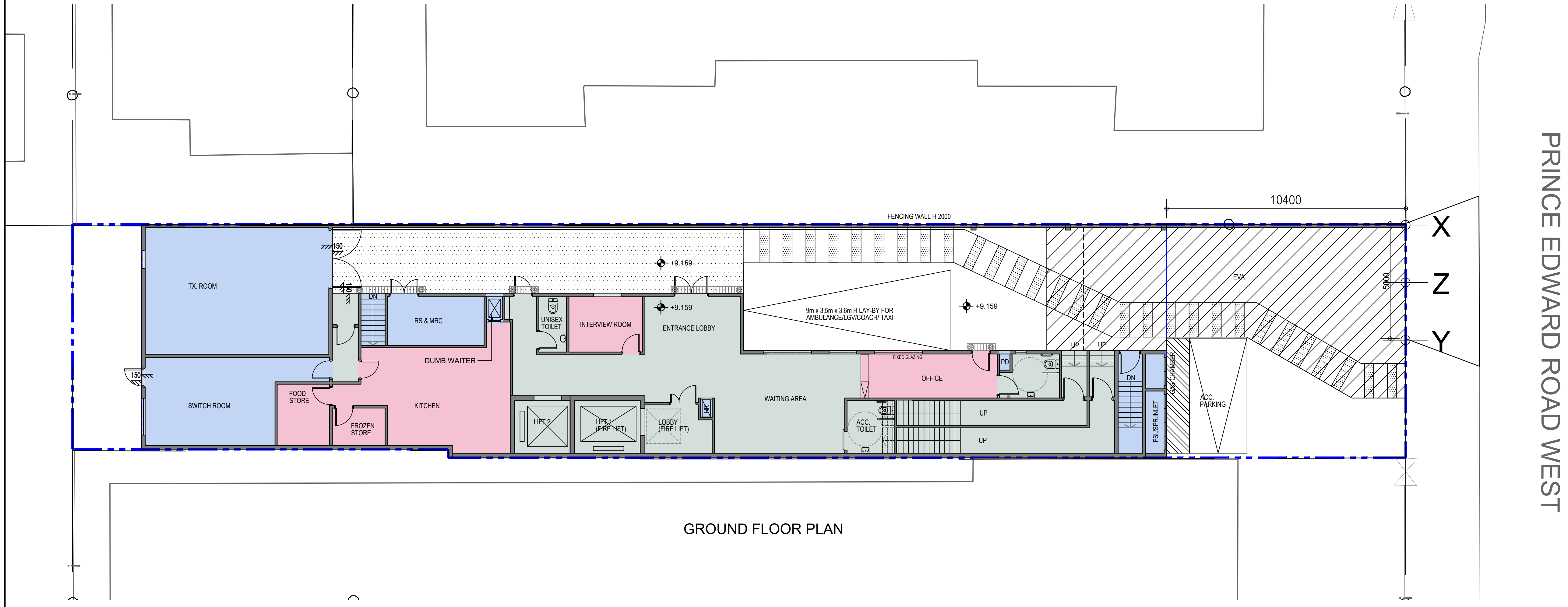
■ FOOTPATH

🟨 WARD

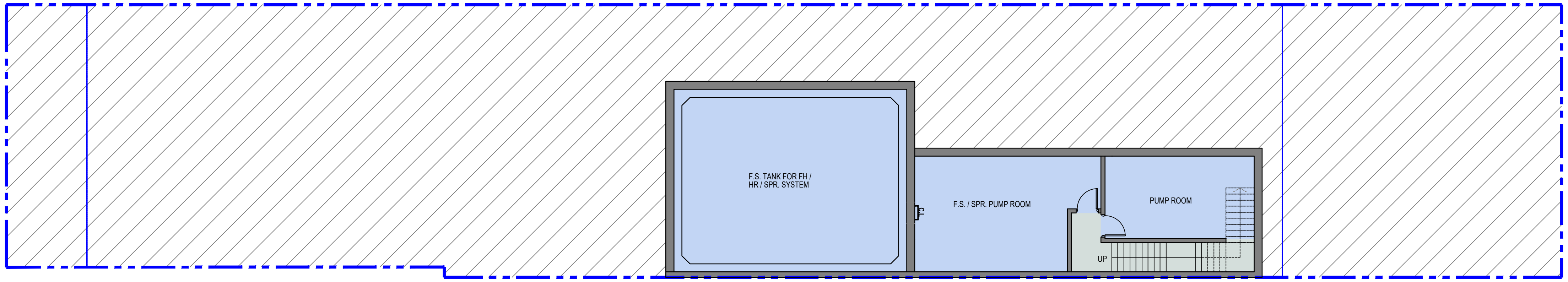
🟥 ANCILLARY AREA

⬜ COMMON / CIRCULATION SPACE

🟦 PLANT ROOM/ STAIRCASE
TO U/G PLANT ROOM



G/F LAYOUT 1:200



B/S LAYOUT 1:200

N

BD REF. NO.:

FSD REF. NO.:

REVISIONS AND SUBMISSIONS:

NO.:	DATE:	DETAILS:	CHECKED:

NOTES:
1. CONTENTS ON THIS DRAWING SHOW DESIGN INTENT ONLY CONTRACTOR IS RESPONSIBLE FOR DETAILED DESIGN OF THE INTERIOR FITTING–OUT. CONTRACTOR IS REQUIRED TO SUBMIT FULL SET SHOP DRAWINGS FOR ARCHITECT'S APPROVAL PRIOR TO FABRICATION AND SITE INSTALLATION.
2. STRUCTURAL CALCULATIONS IF REQUIRED AND RELATED SUPPORTING DATA SHOULD BE SUBMITTED FOR REVIEW AND APPROVAL.
3. TRUE COLOR SAMPLES OF MATERIALS SHOULD BE SUBMITTED FOR ARCHITECT'S APPROVAL PRIOR TO PROCUREMENT.
4. ALL FITTING/ ASSEMBLY AND MATERIALS SHOULD BE DESIGN & INSTALLED TO CONTRACT DRAWINGS AND SPECIFICATION, AND IN COMPLIANCE WITH ALL RELEVANT STATUTORY REQUIREMENTS.
5. DIMENSIONS BASED ON ON SITE MEASUREMENTS.

6. FINAL MATERIALS & FINISHES OF WALL,FLOOR,CEILING,WALL FIXTURE ETC. SHOULD BE REFER TO FINISHES AND MATERIALS SCHEDULE UNDER THE SPECIFICATION PROVIDED.

CLIENT/EMPLOYER:

PROJECT ARCHITECT/AUTHORIZED PERSON:

馬海

馬海(建築顧問)有限公司
Spence Robinson Limited

PROJECT STRUCTURAL ENGINEER/
PROJECT GEO–TECHNICAL ENGINEER:

張耀新建築工程師有限公司
Wilson & Associates Ltd

PROJECT E/M ENGINEER:

PROJECT LANDSCAPE CONSULTANT:

PROJECT QUANTITY SURVEYOR:

PROJECT:
PURPOSE BUILT C&A HOME DEVELOPMENT AT
349 PRINCE EDWARD ROAD WEST

DRAWING TITLE:

GROUND FLOOR PLAN &
BASEMENT FLOOR PLAN

DRAWN BY: CZ

DATE: AUG-2024

CHECKED BY: CMD

APPROVED BY: KCY

SCALE: 1:200

PAPER SIZE: A3

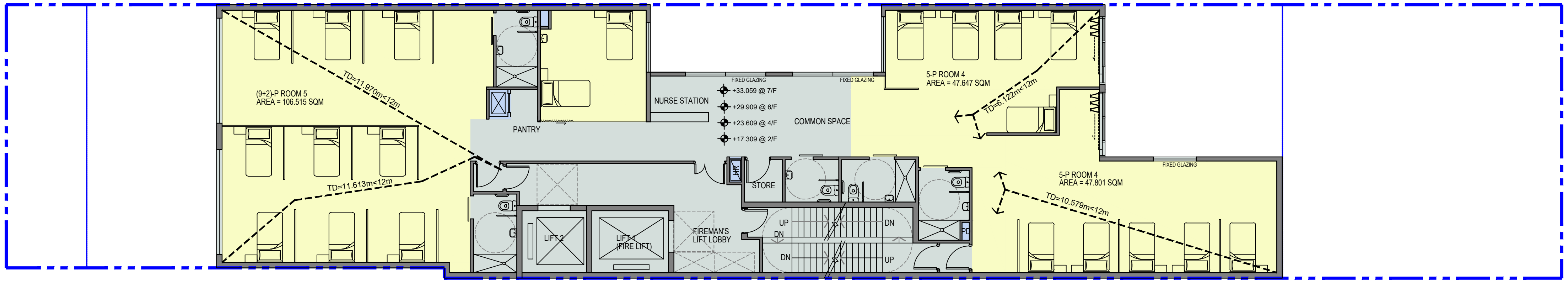
PROJECT: PE 6170

DRAWING: GP-00

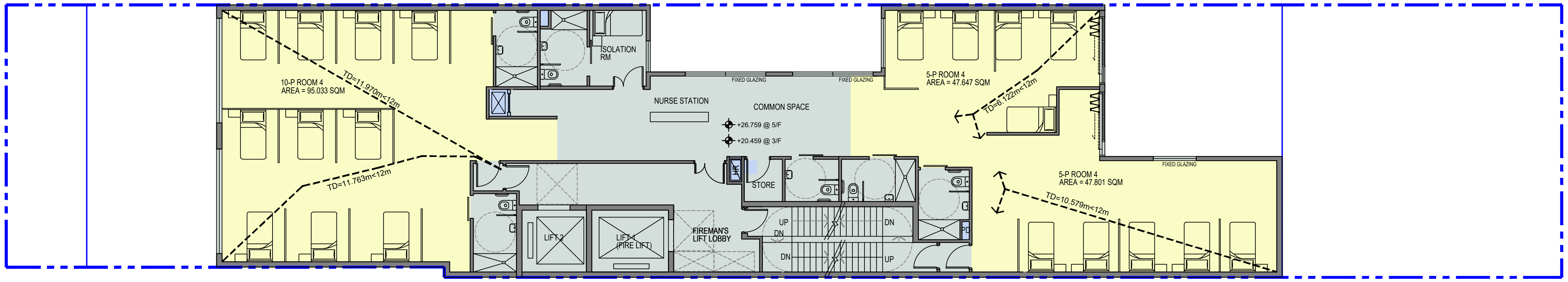
REVISION: V12

NOTES :
1. This drawing and design are copyright and no portion may be reproduced without the written permission of the Architect.
2. Use written dimensions or grid lines in preference to scaled dimensions. Measurements to existing work are to be checked on site.
3. This drawing is to be read in conjunction with the Architect's Specification and Conditions of Contract.
4. Prints not showing the last revision are to be cancelled.
5. Prints without an authorized signature in the checked and approved spaces below and after the last revision above are NOT vaild for use outside SRL.

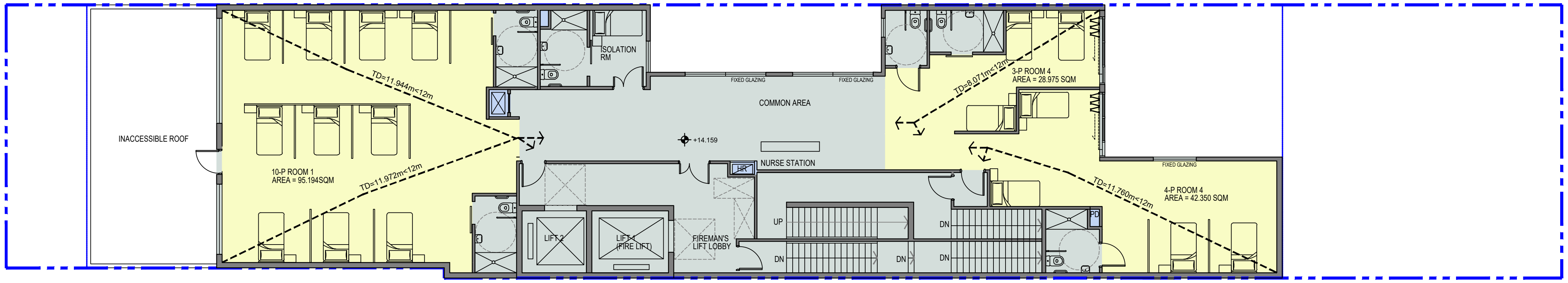
- ▬ SITE BOUNDARY
- ▬ FOOTPATH
- ▭ WARD
- ▭ ANCILLARY AREA
- ▭ COMMON / CIRCULATION SPACE
- ▭ PLANT ROOM/ STAIRCASE TO U/G PLANT ROOM



2/F, 4/F, 6/F, 7/F LAYOUT 1:200



3/F, 5/F LAYOUT 1:200



1/F LAYOUT 1:200

N

NOS. OF BED
(9.5m²/ppl)

G/F	0
1/F	17
2/F	21
3/F	20
4/F	21
5/F	20
6/F	21
7/F	21
TOTAL	141

BD REF. NO.:
FSD REF. NO.:
REVISIONS AND SUBMISSIONS:

NO.:	DATE:	DETAILS:	CHECKED:

NOTES:
1. CONTENTS ON THIS DRAWING SHOW DESIGN INTENT ONLY CONTRACTOR IS RESPONSIBLE FOR DETAILED DESIGN OF THE INTERIOR FITTING-OUT. CONTRACTOR IS REQUIRED TO SUBMIT FULL SET SHOP DRAWINGS FOR ARCHITECT'S APPROVAL PRIOR TO FABRICATION AND SITE INSTALLATION.
2. STRUCTURAL CALCULATIONS IF REQUIRED AND RELATED SUPPORTING DATA SHOULD BE SUBMITTED FOR REVIEW AND APPROVAL.
3. TRUE COLOR SAMPLES OF MATERIALS SHOULD BE SUBMITTED FOR ARCHITECT'S APPROVAL PRIOR TO PROCUREMENT.
4. ALL FITTING/ ASSEMBLY AND MATERIALS SHOULD BE DESIGN & INSTALLED TO CONTRACT DRAWINGS AND SPECIFICATION, AND IN COMPLIANCE WITH ALL RELEVANT STATUTORY REQUIREMENTS.
5. DIMENSIONS BASED ON ON SITE MEASUREMENTS.
6. FINAL MATERIALS & FINISHES OF WALL,FLOOR,CEILING,WALL FIXTURE ETC. SHOULD BE REFER TO FINISHES AND MATERIALS SCHEDULE UNDER THE SPECIFICATION PROVIDED.

CLIENT/EMPLOYER:

PROJECT ARCHITECT/AUTHORIZED PERSON:
馬海
馬海(建築顧問)有限公司
Spence Robinson Limited

PROJECT STRUCTURAL ENGINEER/
PROJECT GEO-TECHNICAL ENGINEER:
張耀新建築工程師有限公司
Wilson & Associates Ltd

PROJECT E/M ENGINEER:

PROJECT LANDSCAPE CONSULTANT:

PROJECT QUANTITY SURVEYOR:

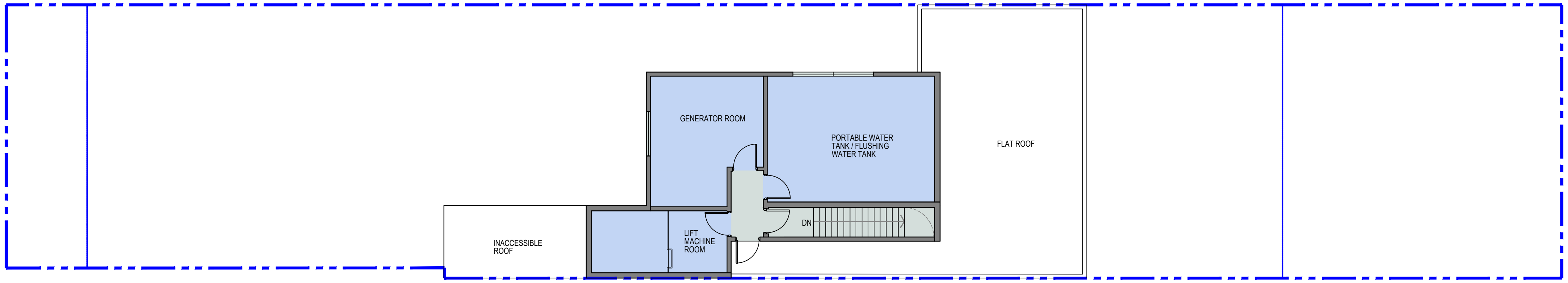
PROJECT:
PURPOSE BUILT C&A HOME DEVELOPMENT AT
349 PRINCE EDWARD ROAD WEST

DRAWING TITLE:
FIRST FLOOR PLAN &
TYPICAL FLOOR PLAN (3/F,5/F) &
TYPICAL FLOOR PLAN (2/F,4/F,6/F& 7/F)

DRAWN BY: CZ	DATE: AUG-2024	
CHECKED BY: CMD	APPROVED BY: KCY	
SCALE: 1:200	PAPER SIZE: A3	
PROJECT: PE 6170	DRAWING: GP-01	REVISION: V12

NOTES :
1. This drawing and design are copyright and no portion may be reproduced without the written permission of the Architect.
2. Use written dimensions or grid lines in preference to scaled dimensions. Measurements to existing work are to be checked on site.
3. This drawing is to be read in conjunction with the Architect's Specification and Conditions of Contract.
4. Prints not showing the last revision are to be cancelled.
5. Prints without an authorized signature in the checked and approved spaces below and after the last revision above are NOT vaild for use outside SRL.

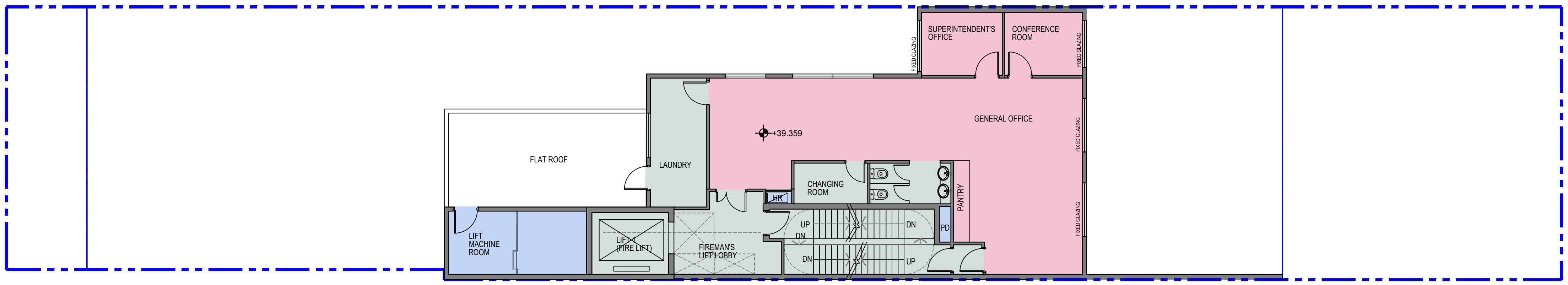
- ▬ SITE BOUNDARY
- ▬ FOOTPATH
- 🟨 WARD
- ▨ ANCILLARY AREA
- ▨ COMMON / CIRCULATION SPACE
- 🟦 PLANT ROOM/ STAIRCASE TO U/G PLANT ROOM



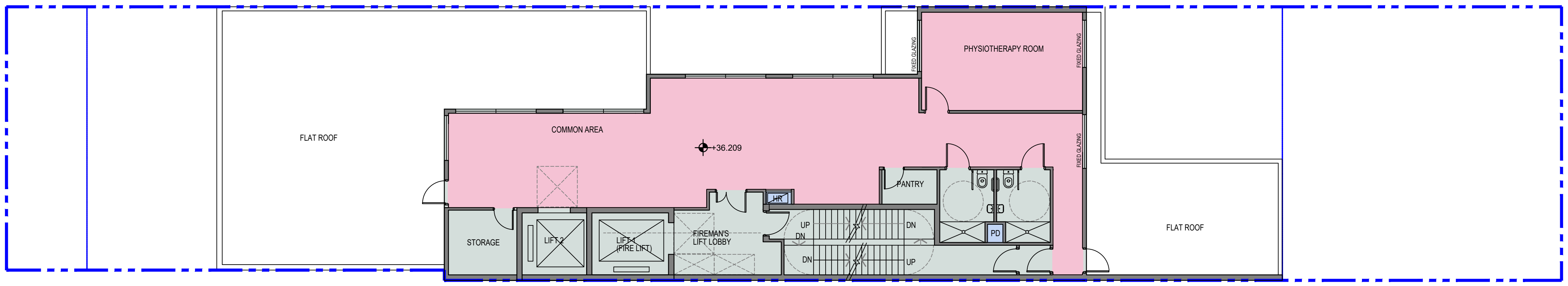
ROOF LAYOUT 1:200

NOS. OF BED (9.5m²/ppl)

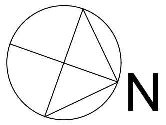
G/F	0
1/F	17
2/F	21
3/F	20
4/F	21
5/F	20
6/F	21
7/F	21
TOTAL	141



9/F LAYOUT 1:200



8/F LAYOUT 1:200



BD REF. NO.:
FSD REF. NO.:
REVISIONS AND SUBMISSIONS:

NO.:	DATE:	DETAILS:	CHECKED:

NOTES:
1. CONTENTS ON THIS DRAWING SHOW DESIGN INTENT ONLY CONTRACTOR IS RESPONSIBLE FOR DETAILED DESIGN OF THE INTERIOR FITTING–OUT. CONTRACTOR IS REQUIRED TO SUBMIT FULL SET SHOP DRAWINGS FOR ARCHITECT'S APPROVAL PRIOR TO FABRICATION AND SITE INSTALLATION.
2. STRUCTURAL CALCULATIONS IF REQUIRED AND RELATED SUPPORTING DATA SHOULD BE SUBMITTED FOR REVIEW AND APPROVAL.
3. TRUE COLOR SAMPLES OF MATERIALS SHOULD BE SUBMITTED FOR ARCHITECT'S APPROVAL PRIOR TO PROCUREMENT.
4. ALL FITTING/ ASSEMBLY AND MATERIALS SHOULD BE DESIGN & INSTALLED TO CONTRACT DRAWINGS AND SPECIFICATION, AND IN COMPLIANCE WITH ALL RELEVANT STATUTORY REQUIREMENTS.
5. DIMENSIONS BASED ON ON SITE MEASUREMENTS.
6. FINAL MATERIALS & FINISHES OF WALL,FLOOR,CEILING,WALL FIXTURE ETC. SHOULD BE REFER TO FINISHES AND MATERIALS SCHEDULE UNDER THE SPECIFICATION PROVIDED.

CLIENT/EMPLOYER:

PROJECT ARCHITECT/AUTHORIZED PERSON:
馬海
馬海(建築顧問)有限公司
Spence Robinson Limited

PROJECT STRUCTURAL ENGINEER/
PROJECT GEO–TECHNICAL ENGINEER:
張耀新建築工程師有限公司
Wilson & Associates Ltd

PROJECT E/M ENGINEER:

PROJECT LANDSCAPE CONSULTANT:

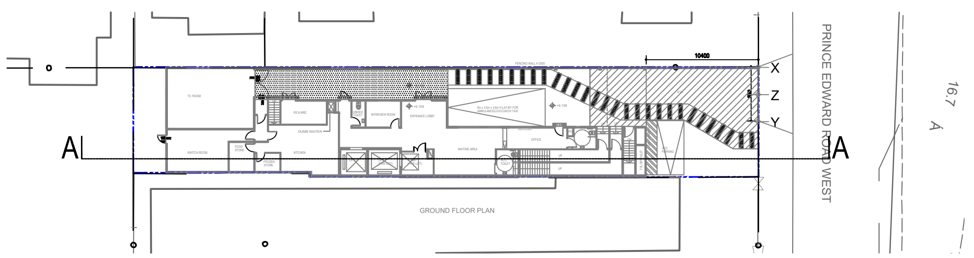
PROJECT QUANTITY SURVEYOR:

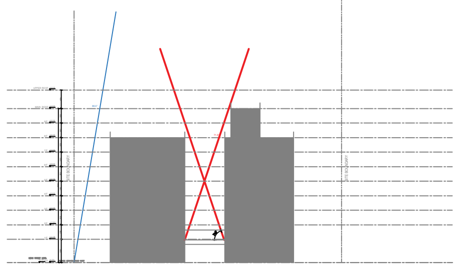
PROJECT:
PURPOSE BUILT C&A HOME DEVELOPMENT AT
349 PRINCE EDWARD ROAD WEST

DRAWING TITLE:
8/F & 9/F FLOOR PLAN &
ROOF FLOOR PLAN

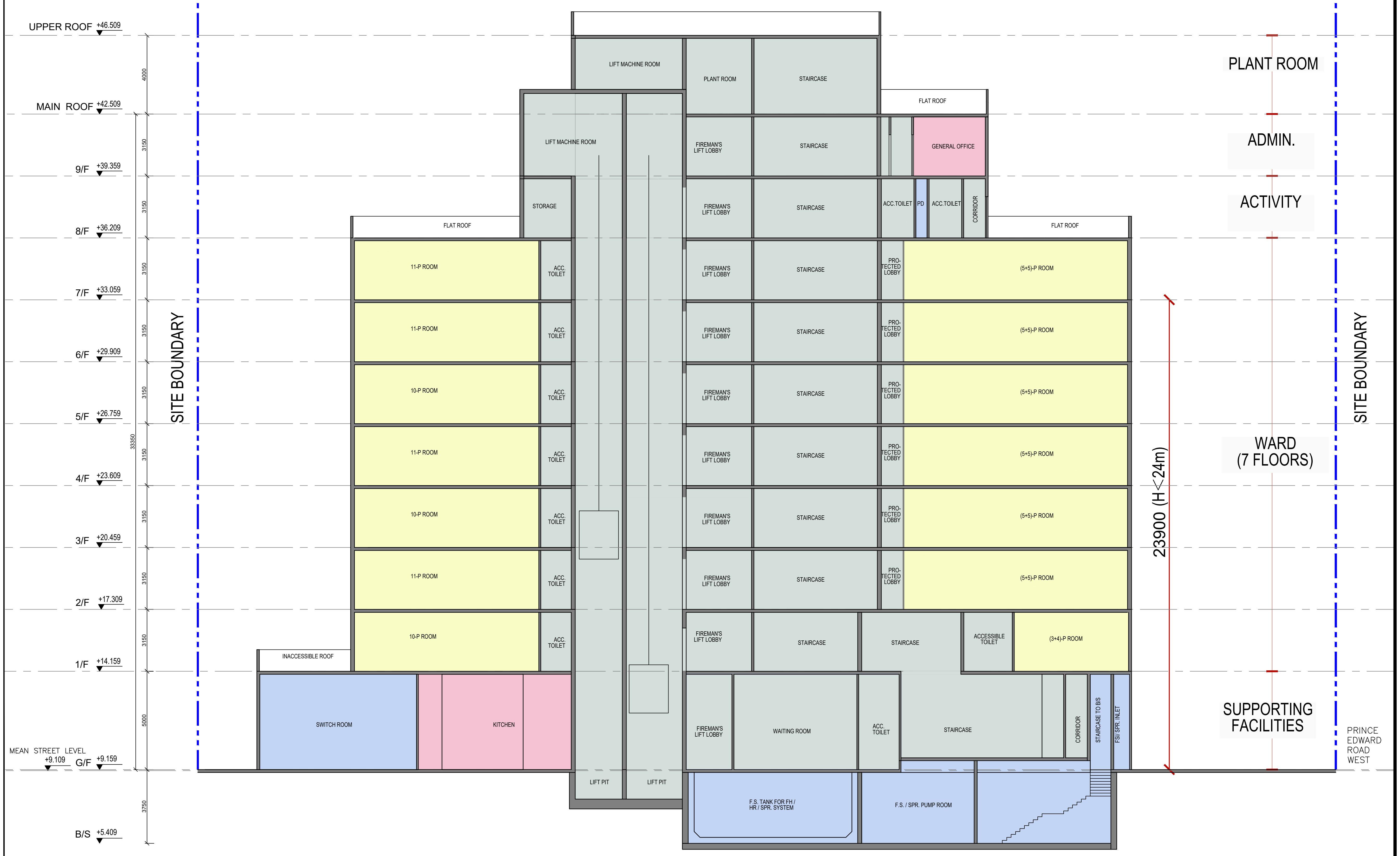
DRAWN BY: CZ
DATE: AUG-2024
CHECKED BY: CMD
APPROVED BY: KCY
SCALE: 1:200
PAPER SIZE: A3
PROJECT: PE 6170
DRAWING: GP-02
REVISION: V12

NOTES :
1. This drawing and design are copyright and no portion may be reproduced without the written permission of the Architect.
2. Use written dimensions or grid lines in preference to scaled dimensions. Measurements to existing work are to be checked on site.
3. This drawing is to be read in conjunction with the Architect's Specification and Conditions of Contract.
4. Prints not showing the last revision are to be cancelled.
5. Prints without an authorized signature in the checked and approved spaces below and after the last revision above are NOT vaild for use outside SRL.





- SITE BOUNDARY
- ■ FOOTPATH
- 🟨 WARD
- 🟥 ANCILLARY AREA
- ▨ COMMON / CIRCULATION SPACE
- 🟦 PLANT ROOM/ STAIRCASE TO U/G PLANT ROOM



SECTION A-A 1:200

BD REF. NO.:
FSD REF. NO.:
REVISIONS AND SUBMISSIONS:

NO.:	DATE:	DETAILS:	CHECKED:

NOTES:
1. CONTENTS ON THIS DRAWING SHOW DESIGN INTENT ONLY CONTRACTOR IS RESPONSIBLE FOR DETAILED DESIGN OF THE INTERIOR FITTING-OUT. CONTRACTOR IS REQUIRED TO SUBMIT FULL SET SHOP DRAWINGS FOR ARCHITECT'S APPROVAL PRIOR TO FABRICATION AND SITE INSTALLATION.
2. STRUCTURAL CALCULATIONS IF REQUIRED AND RELATED SUPPORTING DATA SHOULD BE SUBMITTED FOR REVIEW AND APPROVAL.
3. TRUE COLOR SAMPLES OF MATERIALS SHOULD BE SUBMITTED FOR ARCHITECT'S APPROVAL PRIOR TO PROCUREMENT.
4. ALL FITTING/ ASSEMBLY AND MATERIALS SHOULD BE DESIGN & INSTALLED TO CONTRACT DRAWINGS AND SPECIFICATION, AND IN COMPLIANCE WITH ALL RELEVANT STATUTORY REQUIREMENTS.
5. DIMENSIONS BASED ON ON SITE MEASUREMENTS.

6. FINAL MATERIALS & FINISHES OF WALL,FLOOR,CEILING,WALL FIXTURE ETC. SHOULD BE REFER TO FINISHES AND MATERIALS SCHEDULE UNDER THE SPECIFICATION PROVIDED.

CLIENT/EMPLOYER:

PROJECT ARCHITECT/AUTHORIZED PERSON:
馬海
馬海(建築顧問)有限公司
Spence Robinson Limited

PROJECT STRUCTURAL ENGINEER/
PROJECT GEO-TECHNICAL ENGINEER:
張耀新建築工程師有限公司
Wilson & Associates Ltd

PROJECT E/M ENGINEER:

PROJECT LANDSCAPE CONSULTANT:

PROJECT QUANTITY SURVEYOR:

PROJECT:
PURPOSE BUILT C&A HOME DEVELOPMENT AT
349 PRINCE EDWARD ROAD WEST

DRAWING TITLE:
SECTION

DRAWN BY: CZ
DATE: AUG-2024
CHECKED BY: CMD
APPROVED BY: KCY
SCALE: 1:200
PAPER SIZE: A3
PROJECT: PE 6170
DRAWING: GP-03
REVISION: V12

NOTES :
1. This drawing and design are copyright and no portion may be reproduced without the written permission of the Architect.
2. Use written dimensions or grid lines in preference to scaled dimensions. Measurements to existing work are to be checked on site.
3. This drawing is to be read in conjunction with the Architect's Specification and Conditions of Contract.
4. Prints not showing the last revision are to be cancelled.
5. Prints without an authorized signature in the checked and approved spaces below and after the last revision above are NOT vaild for use outside SRL.

Appendix 2.1

Traffic Forecast

TABLE 1 – PEAK HOUR TRAFFIC FLOW AND VEHICLE COMPOSITION

YEAR 2042 TRAFFIC FORECAST

Date : 29 July 2024 **Job No.: J7350**

Link ID	Road Section	From Road	To Road	Speed Limit (km/hr)	AM Peak Hour		
					Traffic Flows (veh/hr)	Vehicle Composition	
						LV	HV
L029	Ma Tau Chung Road (NB)	Ma Tau Chung Road	Kowloon City Roundabout	50	1,250	70%	30%
L030	Ma Tau Chung Road Flyover (NB)	Ma Tau Chung Road	Prince Edward Road East	50	1,200	78%	22%
L031	Ma Tau Chung Road Flyover (SB)	Prince Edward Road East	Ma Tau Chung Road	50	1,000	78%	22%
L032	Ma Tau Chung Road (SB)	Kowloon City Roundabout	Hang Wan Road	50	1,250	68%	32%
L035	Ma Tau Chung Road (NB)	Sung Wong Toi Road	Ma Tau Chung Road Flyover	50	2,400	74%	26%
L036	Ma Tau Chung Road (SB)	Hang Wan Road	Sung Wong Toi Road	50	1,650	72%	28%
L037	Fu Ning Street (EB)	Shing Tak Street	Ma Tau Chung Road	50	50	0%	100%
L038	Fu Ning Street (WB)	Ma Tau Chung Road	Shing Tak Street	50	700	83%	17%
L039	Access Road to Chun Seen Mei Chuen (NB)	Fu Ning Street	Cul de sac	50	50	87%	13%
L040	Access Road to Chun Seen Mei Chuen (SB)	Cul de sac	Fu Ning Street	50	50	73%	27%
L041	Fu Ning Street (EB)	Fuk Cheung Street	Shing Tak Street	50	250	86%	14%
L042	Fu Ning Street (WB)	Shing Tak Street	Fuk Cheung Street	50	600	83%	17%
L043	Shing Tak Street (NB)	Ma Tau Kok Road	Fu Ning Street	50	50	0%	100%
L044	Shing Tak Street (SB)	Fu Ning Street	Ma Tau Kok Road	50	350	84%	16%
L501	Grampian Road (NB)	Nga Tsin Wai Road	Dumbarton Road	50	300	72%	28%
L502	Grampian Road (SB)	Dumbarton Road	Nga Tsin Wai Road	50	150	84%	16%
L503	Grampian Road (NB)	Sau Chuk Yuen Road	Nga Tsin Wai Road	50	600	68%	32%
L504	Junction Road (NB)	Nga Tsin Wai Road	Carpenter Road	50	300	70%	30%
L505	Junction Road (SB)	Carpenter Road	Nga Tsin Wai Road	50	800	75%	25%
L524	Inverness Road (NB)	Nga Tsin Wai Road	Dumbarton Road	50	350	84%	16%
L525	Inverness Road (SB)	Dumbarton Road	Nga Tsin Wai Road	50	250	89%	11%
L526	Fuk Lo Tsun Road (NB)	Nga Tsin Wai Road	Carpenter Road	50	250	75%	25%
L527	Lion Rock Road (SB)	Carpenter Road	Nga Tsin Wai Road	50	350	84%	16%
L530	Nga Tsin Wai Road (EB)	Inverness Road	Grampian Road	50	350	89%	11%
L531	Nga Tsin Wai Road (WB)	Grampian Road	Inverness Road	50	700	83%	17%
L532	Nga Tsin Wai Road (EB)	Grampian Road	Junction Road	50	550	77%	23%
L533	Nga Tsin Wai Road (WB)	Junction Road	Grampian Road	50	500	84%	16%
L534	Nga Tsin Wai Road (EB)	Junction Road	Fuk Lo Tsun Road	50	750	80%	20%
L535	Nga Tsin Wai Road (WB)	Fuk Lo Tsun Road	Junction Road	50	450	84%	16%
L536	Nga Tsin Wai Road (EB)	Fuk Lo Tsun Road	Lion Rock Road	50	300	70%	30%
L537	Nga Tsin Wai Road (WB)	Lion Rock Road	Fuk Lo Tsun Road	50	550	84%	16%
L538	Nga Tsin Wai Road (EB)	Lion Rock Road	Hau Wong Road	50	400	73%	27%
L539	Nga Tsin Wai Road (WB)	Hau Wong Road	Lion Rock Road	50	550	83%	17%
L546	Nga Tsin Wai Road (EB)	College Road	Inverness Road	50	450	86%	14%
L547	Nga Tsin Wai Road (WB)	Inverness Road	College Road	50	700	83%	17%
L548	College Road (NB)	Sau Chuk Yuen Road	Nga Tsin Wai Road	50	250	80%	20%
L549	College Road (SB)	Nga Tsin Wai Road	Sau Chuk Yuen Road	50	300	92%	8%
L550	Sau Chuk Yuen Road (EB)	College Road	Grampian Road	50	200	96%	4%
L551	Grampian Road (NB)	Boundary Street	Sau Chuk Yuen Road	50	450	57%	43%
L552	Junction Road (NB)	Prince Edward Road West	Nga Tsin Wai Road	50	500	77%	23%
L553	Junction Road (SB)	Nga Tsin Wai Road	Prince Edward Road West	50	750	76%	24%
L554	Fuk Lo Tsun Road (SB)	Nga Tsin Wai Road	Prince Edward Road West	50	300	95%	5%
L555	Lion Rock Road (SB)	Nga Tsin Wai Road	Prince Edward Road West	50	250	83%	17%
L556	Hau Wong Road (NB)	Prince Edward Road West	Nga Tsin Wai Road	50	400	91%	9%
L557	Nga Tsin Long Road (NB)	Nga Tsin Wai Road	Nga Tsin Wai Road	50	100	86%	14%
L562	College Road (NB)	Boundary Street	Sau Chuk Yuen Road	50	300	84%	16%
L563	College Road (SB)	Sau Chuk Yuen Road	Boundary Street	50	200	90%	10%
L564	Boundary Street (EB)	Short Street	College Road	50	850	63%	37%
L565	Boundary Street (EB)	Short Street	Pentland Street	50	1,700	81%	19%
L566	Pentland Street (SB)	Boundary Street	Prince Edward Road West	50	150	95%	5%
L567	Boundary Street Flyover (EB)	Pentland Street	Prince Edward Road East	50	1,550	80%	20%
L568	Boundary Street (EB)	College Road	Prince Edward Road East	50	700	60%	40%
L569	Slip Road of Prince Edward Road West (EB)	Prince Edward Road East	Boundary Street	50	250	82%	18%
L570	Boundary Street (EB)	Slip Road of Prince Edward Road	Grampian Road	50	1,300	72%	28%
L571	Prince Edward Road West (EB)	Grampian Road	Junction Road	50	900	80%	20%
L572	Prince Edward Road West (EB)	Junction Road	Fuk Lo Tsun Road	50	1,000	78%	22%
L573	Prince Edward Road West (EB)	Fuk Lo Tsun Road	Lion Rock Road	50	1,300	82%	18%
L574	Prince Edward Road West (EB)	Lion Rock Road	Hau Wong Road	50	1,550	82%	18%
L575	Prince Edward Road West (EB)	Hau Wong Road	Kowloon City Roundabout	50	1,150	79%	21%
L576	Kowloon City Roundabout (EB)	Prince Edward Road West	Prince Edward Road West	50	2,350	74%	26%
L577	Prince Edward Road West Flyover (WB)	Prince Edward Road East	Slip Road of Prince Edward Road	50	1,900	78%	22%
L578	Kowloon City Roundabout (NB)	Prince Edward Road West	Prince Edward Road West	50	1,250	70%	30%
L579	Slip Road of Prince Edward Road West (WB)	Kowloon City Roundabout	Prince Edward Road West	50	1,100	71%	29%
L580	Slip Road of Prince Edward Road West (WB)	Prince Edward Road West Flyover	Prince Edward Road West	50	600	78%	22%
L581	Prince Edward Road West (WB)	Slip Road of Prince Edward Road	Stirling Road	50	1,650	74%	26%
L582	Prince Edward Road West (WB)	Stirling Road	Junction Road	50	1,400	73%	27%
L583	Prince Edward Road West (WB)	Junction Road	Forfar Road	50	1,600	73%	27%
L584	Prince Edward Road West (WB)	Forfar Road	Slip Road of Prince Edward Road	50	1,700	72%	28%
L585	Prince Edward Road West (WB)	Slip Road of Prince Edward Road	Lomond Road	50	1,500	71%	29%
L586	Prince Edward Road West (EB)	Lomond Road	Boundary Street	50	400	88%	12%
L587	Prince Edward Road West (WB)	Lomond Road	Pentland Street	50	1,650	69%	31%
L588	Prince Edward Road West (EB)	Pentland Street	Lomond Road	50	250	90%	10%
L589	Prince Edward Road West (EB)	Short Street	Pentland Street	50	100	83%	17%
L590	Prince Edward Road West Flyover (WB)	Slip Road of Prince Edward Road	Prince Edward Road West	50	1,350	78%	22%
L591	Prince Edward Road West (WB)	Pentland Street	Prince Edward Road West	50	1,550	68%	32%
L592	Pentland Street (NB)	Cul de sac	Prince Edward Road West	50	150	94%	6%
L593	Pentland Street (SB)	Prince Edward Road West	Cul de sac	50	250	96%	4%
L594	Lomond Road (NB)	Access Road to Hong Kong Eye	Prince Edward Road West	50	800	80%	20%
L595	Lomond Road (SB)	Prince Edward Road West	Access Road to Hong Kong Eye	50	500	87%	13%
L596	Access Road to Hong Kong Eye Hospital (EB)	Cul de sac	Lomond Road	50	350	83%	17%
L597	Access Road to Hong Kong Eye Hospital (WB)	Lomond Road	Cul de sac	50	250	91%	9%
L598	Lomond Road (NB)	Argyle Street	Access Road to Hong Kong Eye	50	700	83%	17%

TABLE 1 – PEAK HOUR TRAFFIC FLOW AND VEHICLE COMPOSITION

YEAR 2042 TRAFFIC FORECAST

Date : 29 July 2024 **Job No.: J7350**

Link ID	Road Section	From Road	To Road	Speed Limit (km/hr)	AM Peak Hour		
					Traffic Flows (veh/hr)	Vehicle Composition	
						LV	HV
L599	Lomond Road (SB)	Access Road to Hong Kong Eye	Argyle Street	50	500	87%	13%
L600	Argyle Street (EB)	Tin Kwong Road	Lomond Road	50	1,650	70%	30%
L601	Argyle Street (WB)	Lomond Road	Tin Kwong Road	50	2,100	82%	18%
L602	Argyle Street (WB)	Fu Ning Street	Lomond Road	50	2,150	81%	19%
L603	Argyle Street (EB)	Lomond Road	Forfar Road	50	1,500	69%	31%
L604	Forfar Road (NB)	Argyle Street	Prince Edward Road West	50	150	54%	46%
L605	Fuk Cheung Street (EB)	Cul de sac	Fu Ning Street	50	100	69%	31%
L606	Fuk Cheung Street (WB)	Fu Ning Street	Cul de sac	50	100	73%	27%
L607	Fu Ning Street (NB)	Fuk Cheung Street	Argyle Street	50	600	82%	18%
L608	Fu Ning Street (SB)	Argyle Street	Fuk Cheung Street	50	250	85%	15%
L609	Argyle Street (WB)	Argyle Street Flyover	Fu Ning Street	50	1,800	81%	19%
L610	Argyle Street (EB)	Forfar Road	Stirling Road	50	1,350	70%	30%
L611	Stirling Road (SB)	Prince Edward Road West	Argyle Street	50	250	77%	23%
L612	Argyle Street (EB)	Stirling Road	Argyle Street Flyover	50	1,600	71%	29%
L613	Argyle Street (WB)	Kowloon City Roundabout	Argyle Street	50	350	70%	30%
L614	Argyle Street (EB)	Argyle Street	Kowloon City Roundabout	50	400	75%	25%
L615	Kowloon City Roundabout (NB)	Ma Tau Chung Road	Argyle Street	50	2,300	70%	30%
L616	Kowloon City Roundabout (NB)	Argyle Street	Argyle Street	50	1,950	70%	30%
L617	Argyle Street Flyover (WB)	Prince Edward Road West	Argyle Street	50	1,450	84%	16%
L618	Argyle Street Flyover (EB)	Argyle Street	Prince Edward Road West	50	1,250	70%	30%
L619	Kowloon City Roundabout (NB)	Argyle Street	Prince Edward Road West	50	2,300	71%	29%

Note: "LV" includes motorcycle, private car and taxi
"HV" includes light / medium / heavy goods vehicle, public / private light bus, non-franchised bus and franchised bus

TABLE 1 – PEAK HOUR TRAFFIC FLOW AND VEHICLE COMPOSITION

YEAR 2042 TRAFFIC FORECAST

Date : 29 July 2024 **Job No.: J7350**

Link ID	Road Section	From Road	To Road	Speed Limit (km/hr)	PM Peak Hour		
					Traffic Flows (veh/hr)	Vehicle Composition	
						LV	HV
L029	Ma Tau Chung Road (NB)	Ma Tau Chung Road	Kowloon City Roundabout	50	1,250	72%	28%
L030	Ma Tau Chung Road Flyover (NB)	Ma Tau Chung Road	Prince Edward Road East	50	1,250	82%	18%
L031	Ma Tau Chung Road Flyover (SB)	Prince Edward Road East	Ma Tau Chung Road	50	1,000	80%	20%
L032	Ma Tau Chung Road (SB)	Kowloon City Roundabout	Hang Wan Road	50	1,200	74%	26%
L035	Ma Tau Chung Road (NB)	Sung Wong Toi Road	Ma Tau Chung Road Flyover	50	2,450	77%	23%
L036	Ma Tau Chung Road (SB)	Hang Wan Road	Sung Wong Toi Road	50	1,700	75%	25%
L037	Fu Ning Street (EB)	Shing Tak Street	Ma Tau Chung Road	50	50	0%	100%
L038	Fu Ning Street (WB)	Ma Tau Chung Road	Shing Tak Street	50	750	88%	12%
L039	Access Road to Chun Seen Mei Chuen (NB)	Fu Ning Street	Cul de sac	50	50	95%	5%
L040	Access Road to Chun Seen Mei Chuen (SB)	Cul de sac	Fu Ning Street	50	50	96%	4%
L041	Fu Ning Street (EB)	Fuk Cheung Street	Shing Tak Street	50	150	87%	13%
L042	Fu Ning Street (WB)	Shing Tak Street	Fuk Cheung Street	50	650	89%	11%
L043	Shing Tak Street (NB)	Ma Tau Kok Road	Fu Ning Street	50	50	0%	100%
L044	Shing Tak Street (SB)	Fu Ning Street	Ma Tau Kok Road	50	200	85%	16%
L501	Grampian Road (NB)	Nga Tsin Wai Road	Dumbarton Road	50	250	78%	22%
L502	Grampian Road (SB)	Dumbarton Road	Nga Tsin Wai Road	50	100	63%	37%
L503	Grampian Road (NB)	Sau Chuk Yuen Road	Nga Tsin Wai Road	50	600	78%	22%
L504	Junction Road (NB)	Nga Tsin Wai Road	Carpenter Road	50	350	74%	26%
L505	Junction Road (SB)	Carpenter Road	Nga Tsin Wai Road	50	700	80%	20%
L524	Inverness Road (NB)	Nga Tsin Wai Road	Dumbarton Road	50	200	79%	21%
L525	Inverness Road (SB)	Dumbarton Road	Nga Tsin Wai Road	50	200	88%	12%
L526	Fuk Lo Tsun Road (NB)	Nga Tsin Wai Road	Carpenter Road	50	250	91%	9%
L527	Lion Rock Road (SB)	Carpenter Road	Nga Tsin Wai Road	50	400	89%	11%
L530	Nga Tsin Wai Road (EB)	Inverness Road	Grampian Road	50	200	81%	19%
L531	Nga Tsin Wai Road (WB)	Grampian Road	Inverness Road	50	600	85%	15%
L532	Nga Tsin Wai Road (EB)	Grampian Road	Junction Road	50	450	76%	24%
L533	Nga Tsin Wai Road (WB)	Junction Road	Grampian Road	50	450	87%	13%
L534	Nga Tsin Wai Road (EB)	Junction Road	Fuk Lo Tsun Road	50	650	80%	20%
L535	Nga Tsin Wai Road (WB)	Fuk Lo Tsun Road	Junction Road	50	500	83%	17%
L536	Nga Tsin Wai Road (EB)	Fuk Lo Tsun Road	Lion Rock Road	50	300	67%	33%
L537	Nga Tsin Wai Road (WB)	Lion Rock Road	Fuk Lo Tsun Road	50	650	83%	17%
L538	Nga Tsin Wai Road (EB)	Lion Rock Road	Hau Wong Road	50	350	71%	29%
L539	Nga Tsin Wai Road (WB)	Hau Wong Road	Lion Rock Road	50	650	83%	17%
L546	Nga Tsin Wai Road (EB)	College Road	Inverness Road	50	300	79%	21%
L547	Nga Tsin Wai Road (WB)	Inverness Road	College Road	50	700	86%	14%
L548	College Road (NB)	Sau Chuk Yuen Road	Nga Tsin Wai Road	50	200	75%	25%
L549	College Road (SB)	Nga Tsin Wai Road	Sau Chuk Yuen Road	50	150	90%	10%
L550	Sau Chuk Yuen Road (EB)	College Road	Grampian Road	50	100	92%	8%
L551	Grampian Road (NB)	Boundary Street	Sau Chuk Yuen Road	50	500	76%	24%
L552	Junction Road (NB)	Prince Edward Road West	Nga Tsin Wai Road	50	550	81%	19%
L553	Junction Road (SB)	Nga Tsin Wai Road	Prince Edward Road West	50	700	79%	21%
L554	Fuk Lo Tsun Road (SB)	Nga Tsin Wai Road	Prince Edward Road West	50	300	86%	14%
L555	Lion Rock Road (SB)	Nga Tsin Wai Road	Prince Edward Road West	50	350	89%	11%
L556	Hau Wong Road (NB)	Prince Edward Road West	Nga Tsin Wai Road	50	350	93%	7%
L557	Nga Tsin Long Road (NB)	Nga Tsin Wai Road	Nga Tsin Wai Road	50	150	86%	14%
L562	College Road (NB)	Boundary Street	Sau Chuk Yuen Road	50	200	76%	24%
L563	College Road (SB)	Sau Chuk Yuen Road	Boundary Street	50	100	88%	13%
L564	Boundary Street (EB)	Short Street	College Road	50	900	75%	25%
L565	Boundary Street (EB)	Short Street	Pentland Street	50	1,550	86%	14%
L566	Pentland Street (SB)	Boundary Street	Prince Edward Road West	50	150	92%	8%
L567	Boundary Street Flyover (EB)	Pentland Street	Prince Edward Road East	50	1,450	85%	15%
L568	Boundary Street (EB)	College Road	Prince Edward Road East	50	800	76%	24%
L569	Slip Road of Prince Edward Road West (EB)	Prince Edward Road East	Boundary Street	50	200	77%	23%
L570	Boundary Street (EB)	Slip Road of Prince Edward Road	Grampian Road	50	1,300	79%	21%
L571	Prince Edward Road West (EB)	Grampian Road	Junction Road	50	800	81%	19%
L572	Prince Edward Road West (EB)	Junction Road	Fuk Lo Tsun Road	50	850	80%	20%
L573	Prince Edward Road West (EB)	Fuk Lo Tsun Road	Lion Rock Road	50	1,150	82%	18%
L574	Prince Edward Road West (EB)	Lion Rock Road	Hau Wong Road	50	1,450	84%	16%
L575	Prince Edward Road West (EB)	Hau Wong Road	Kowloon City Roundabout	50	1,150	81%	19%
L576	Kowloon City Roundabout (EB)	Prince Edward Road West	Prince Edward Road West	50	2,400	76%	24%
L577	Prince Edward Road West Flyover (WB)	Prince Edward Road East	Slip Road of Prince Edward Road	50	1,800	81%	19%
L578	Kowloon City Roundabout (NB)	Prince Edward Road West	Prince Edward Road West	50	1,250	72%	28%
L579	Slip Road of Prince Edward Road West (WB)	Kowloon City Roundabout	Prince Edward Road West	50	1,150	74%	26%
L580	Slip Road of Prince Edward Road West (WB)	Prince Edward Road West Flyover	Prince Edward Road West	50	400	81%	19%
L581	Prince Edward Road West (WB)	Slip Road of Prince Edward Road	Stirling Road	50	1,500	76%	24%
L582	Prince Edward Road West (WB)	Stirling Road	Junction Road	50	1,350	75%	25%
L583	Prince Edward Road West (WB)	Junction Road	Forfar Road	50	1,500	75%	25%
L584	Prince Edward Road West (WB)	Forfar Road	Slip Road of Prince Edward Road	50	1,650	75%	25%
L585	Prince Edward Road West (WB)	Slip Road of Prince Edward Road	Lomond Road	50	1,450	75%	25%
L586	Prince Edward Road West (EB)	Lomond Road	Boundary Street	50	300	90%	10%
L587	Prince Edward Road West (WB)	Lomond Road	Pentland Street	50	1,750	75%	25%
L588	Prince Edward Road West (EB)	Pentland Street	Lomond Road	50	200	94%	6%
L589	Prince Edward Road West (EB)	Short Street	Pentland Street	50	50	95%	5%
L590	Prince Edward Road West Flyover (WB)	Slip Road of Prince Edward Road	Prince Edward Road West	50	1,400	81%	19%
L591	Prince Edward Road West (WB)	Pentland Street	Prince Edward Road West	50	1,750	75%	25%
L592	Pentland Street (NB)	Cul de sac	Prince Edward Road West	50	200	99%	1%
L593	Pentland Street (SB)	Prince Edward Road West	Cul de sac	50	200	98%	2%
L594	Lomond Road (NB)	Access Road to Hong Kong Eye	Prince Edward Road West	50	800	86%	14%
L595	Lomond Road (SB)	Prince Edward Road West	Access Road to Hong Kong Eye	50	400	93%	7%
L596	Access Road to Hong Kong Eye Hospital (EB)	Cul de sac	Lomond Road	50	300	75%	25%
L597	Access Road to Hong Kong Eye Hospital (WB)	Lomond Road	Cul de sac	50	100	93%	7%
L598	Lomond Road (NB)	Argyle Street	Access Road to Hong Kong Eye	50	700	87%	13%

TABLE 1 – PEAK HOUR TRAFFIC FLOW AND VEHICLE COMPOSITION

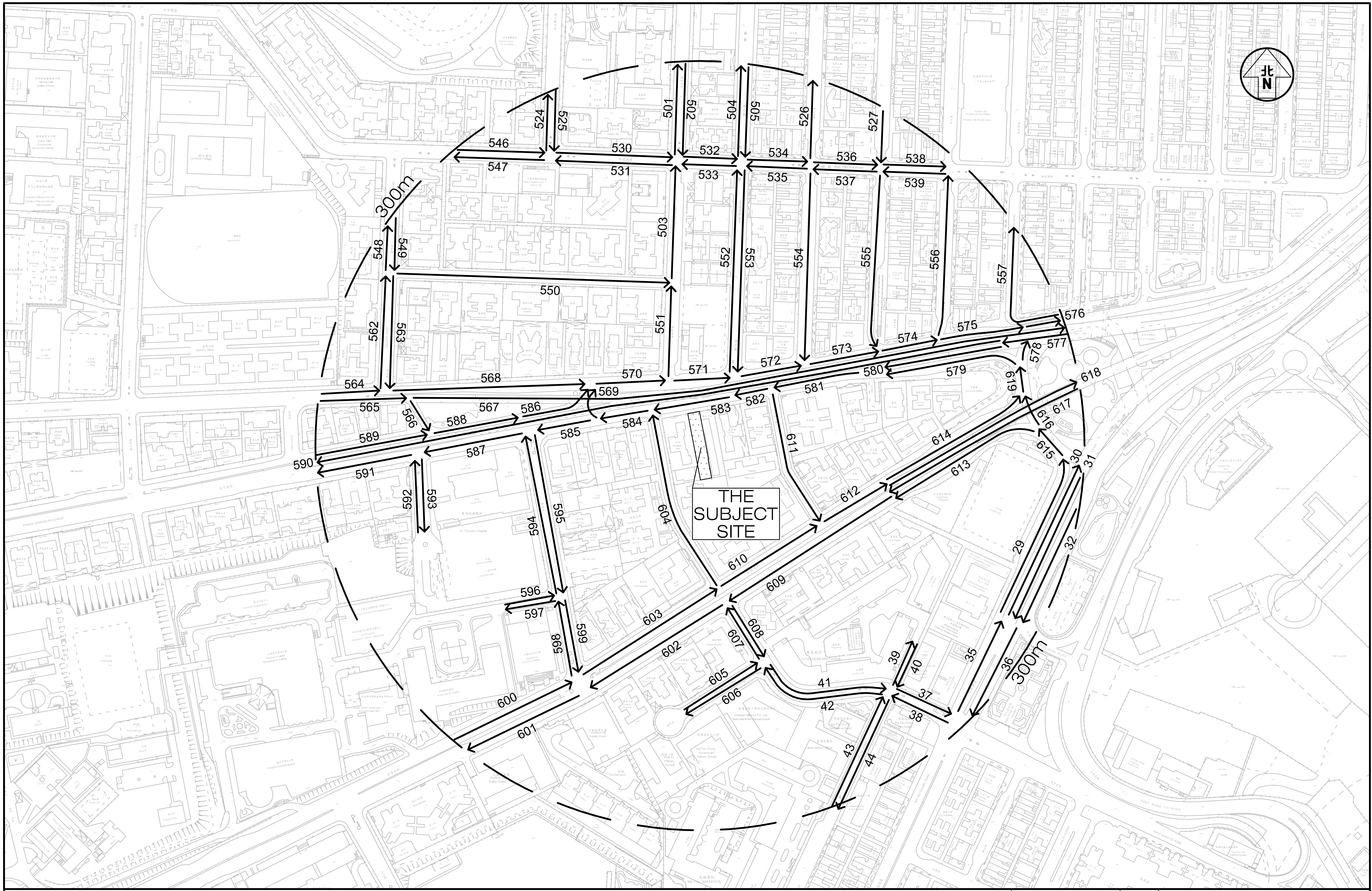
YEAR 2042 TRAFFIC FORECAST

Date : 29 July 2024 **Job No.: J7350**

Link ID	Road Section	From Road	To Road	Speed Limit (km/hr)	PM Peak Hour		
					Traffic Flows (veh/hr)	Vehicle Composition	
						LV	HV
L599	Lomond Road (SB)	Access Road to Hong Kong Eye	Argyle Street	50	500	85%	15%
L600	Argyle Street (EB)	Tin Kwong Road	Lomond Road	50	1,350	76%	24%
L601	Argyle Street (WB)	Lomond Road	Tin Kwong Road	50	2,250	89%	11%
L602	Argyle Street (WB)	Fu Ning Street	Lomond Road	50	2,350	89%	11%
L603	Argyle Street (EB)	Lomond Road	Forfar Road	50	1,250	73%	27%
L604	Forfar Road (NB)	Argyle Street	Prince Edward Road West	50	200	79%	21%
L605	Fuk Cheung Street (EB)	Cul de sac	Fu Ning Street	50	100	91%	9%
L606	Fuk Cheung Street (WB)	Fu Ning Street	Cul de sac	50	50	83%	17%
L607	Fu Ning Street (NB)	Fuk Cheung Street	Argyle Street	50	700	90%	10%
L608	Fu Ning Street (SB)	Argyle Street	Fuk Cheung Street	50	150	85%	15%
L609	Argyle Street (WB)	Argyle Street Flyover	Fu Ning Street	50	1,800	88%	12%
L610	Argyle Street (EB)	Forfar Road	Stirling Road	50	1,050	72%	28%
L611	Stirling Road (SB)	Prince Edward Road West	Argyle Street	50	200	82%	18%
L612	Argyle Street (EB)	Stirling Road	Argyle Street Flyover	50	1,250	73%	27%
L613	Argyle Street (WB)	Kowloon City Roundabout	Argyle Street	50	300	77%	23%
L614	Argyle Street (EB)	Argyle Street	Kowloon City Roundabout	50	300	73%	27%
L615	Kowloon City Roundabout (NB)	Ma Tau Chung Road	Argyle Street	50	2,350	73%	27%
L616	Kowloon City Roundabout (NB)	Argyle Street	Argyle Street	50	2,100	73%	27%
L617	Argyle Street Flyover (WB)	Prince Edward Road West	Argyle Street	50	1,550	90%	10%
L618	Argyle Street Flyover (EB)	Argyle Street	Prince Edward Road West	50	950	74%	26%
L619	Kowloon City Roundabout (NB)	Argyle Street	Prince Edward Road West	50	2,400	73%	27%

Note: "LV" includes motorcycle, private car and taxi

"HV" includes light / medium / heavy goods vehicle, public / private light bus, non-franchised bus and franchised bus



Project Title

PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY) AT
349 PRINCE EDWARD ROAD WEST, KOWLOON

J7350

Figure No.
TNIA/PERW

Revision
A

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road
Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

Figure Title

LOCATION OF TRAFFIC DATA FOR TRAFFIC NOISE IMPACT ASSESSMENT

Designed by	Drawn by	Checked by
Y C K	C C L	T H C

Scale in A3	Date
1 : 3,000	26 JUL 2024

T:\JOB\J7350-J7399\J7350\Fig TNIA_PERW RevA.dwg

Appendix 2.2

Traffic Noise Impact Assessment Results

(Unmitigated Scenario)

Appendix 2.2 - Predicted Road Traffic Noise Levels at Representative NSRs For Year 2042 AM Peak Hour (Unmitigated Scenario)

RCHE - G/F

	NSR	RG01
Floor	**mPD**	L10 1-hour, dB(A)
G/F	10.4	70
Noise Criteria		70
Compliance ?		Yes

RCHE - 1/F

	NSR	R101	R102	R103	R104	R105
Floor	**mPD**	L10 1-hour, dB(A)				
1/F	15.4	76	75	49	59	61
Noise Criteria		70	70	55	70	70
Compliance ?		No	No	Yes	Yes	Yes

RCHE - Typical Floors (2/F-7/F)

	NSR	RT01	RT02	RT03	RT04a	RT04b	RT05	RT06
Floor	**mPD**	L10 1-hour, dB(A)						
2/F	18.5	76	75	50	55	-	59	61
3/F	21.7	76	75	50	-	49	60	61
4/F	24.8	76	75	50	55	-	61	62
5/F	28.0	76	75	50	-	49	62	62
6/F	31.1	76	75	50	55	-	62	62
7/F	34.3	75	75	51	56	-	63	63
Max. Level,dB(A)		76	75	51	56	49	63	63
Noise Criteria		70	70	70	70	55	70	70
Compliance ?		No	No	Yes	Yes	Yes	Yes	Yes

RCHE - 9/F

	NSR	R901	R902
Floor	**mPD**	L10 1-hour, dB(A)	
9/F	40.6	57	57
Noise Criteria		70	70
Compliance ?		Yes	Yes

Compliance Rate

No. of units counted with noise exceedance:	14
Total no. of units at Application Site	30
Compliance Rate (%):	53.3%

Appendix 2.2 - Predicted Road Traffic Noise Levels at Representative NSRs For Year 2042 PM Peak Hour (Unmitigated Scenario)

RCHE - G/F

	NSR	RG01
Floor	**mPD**	L10 1-hour, dB(A)
G/F	10.4	69
Noise Criteria		70
Compliance ?		Yes

RCHE - 1/F

	NSR	R101	R102	R103	R104	R105
Floor	**mPD**	L10 1-hour, dB(A)				
1/F	15.4	76	75	49	57	60
Noise Criteria		70	70	55	70	70
Compliance ?		No	No	Yes	Yes	Yes

RCHE - Typical Floors (2/F-7/F)

	NSR	RT01	RT02	RT03	RT04a	RT04b	RT05	RT06
Floor	**mPD**	L10 1-hour, dB(A)						
2/F	18.5	76	75	49	55	-	58	60
3/F	21.7	76	75	49	-	48	58	60
4/F	24.8	75	74	49	55	-	60	60
5/F	28.0	75	74	49	-	49	61	61
6/F	31.1	75	74	49	55	-	61	61
7/F	34.3	75	74	50	55	-	62	62
Max. Level,dB(A)		76	75	50	55	49	62	62
Noise Criteria		70	70	70	70	55	70	70
Compliance ?		No	No	Yes	Yes	Yes	Yes	Yes

RCHE - 9/F

	NSR	R901	R902
Floor	**mPD**	L10 1-hour, dB(A)	
9/F	40.6	56	56
Noise Criteria		70	70
Compliance ?		Yes	Yes

Compliance Rate

No. of units counted with noise exceedance:	14
Total no. of units at Application Site	30
Compliance Rate (%):	53.3%

Appendix 2.3

Traffic Noise Impact Assessment Results

(Mitigated Scenario)

Appendix 2.3 - (AM Peak) Predicted Road Traffic Noise Reduction Level (L10, dB(A)) during <u>AM Peak Hour</u> of <u>Year 2042</u> with Noise Mitigation Measures at Proposed Development - Mitigated Scenario

		RG01	R101	R102	R103	R104	R105	RT01	RT02	RT03	RT04a	RT04b	RT05	RT06	R901	R902
Noise Mitigation		-	Acw	Acw	-	-	-	Acw	Acw	-	-	-	-	-	-	-
Floor	mPD	L10 1-hour, dB(A)														
G/F	10.4	-	/					/							/	
1/F	15.4	/	7.6	8.8	-	-	-									
2/F	18.5		/					8.8	8.8	-	-	-	-	-		
3/F	21.7							8.8	8.8	-	-	-	-	-		
4/F	24.8							8.8	8.8	-	-	-	-	-		
5/F	28							8.8	8.8	-	-	-	-	-		
6/F	31.1							8.8	8.8	-	-	-	-	-		
7/F	34.3							8.8	8.8	-	-	-	-	-		
9/F	40.6							/							-	-

Noise mitigation measures:	Baffle Type Acoustic Window (Acw)

**Please refer to Appendix 2.4 for the above calculated noise reduction level for Baffle Type Acoustic Window.

Appendix 2.3 - (AM Peak) Predicted Road Traffic Noise Reduction Level (L10, dB(A)) during AM Peak Hour of Year 2042 with Noise Mitigation Measures at Proposed Development - Mitigated Scenario

		RG01	R101	R102	R103	R104	R105	RT01	RT02	RT03	RT04a	RT04b	RT05	RT06	R901	R902
Noise Mitigation		-	Acw	Acw	-	-	-	Acw	Acw	-	-	-	-	-	-	-
Floor	mPD	L10 1-hour, dB(A)														
G/F	10.4	70	/					/							/	
1/F	15.4	/	69	67	49	59	61									
2/F	18.5		/					67	67	50	55	-	59	61		
3/F	21.7							67	66	50	-	49	60	61		
4/F	24.8							67	66	50	55	-	61	62		
5/F	28							67	66	50	-	49	62	62		
6/F	31.1							67	66	50	55	-	62	62		
7/F	34.3							67	66	51	56	-	63	63		
9/F	40.6							/							57	57
Max. Level,dB(A)		70	69	67	49	59	61	67	67	51	56	49	63	63	57	57
Noise Criteria		70	70	70	55	70	70	70	70	70	70	55	70	70	70	70
Compliance?		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

**The predicted noise level is not the actual noise level at the external facade after the application of baffle type acoustic window . These predicted noise levels are the equivalent noise levels at 1m from the external facade after accounting the reduction in noise levels inside the flat offered by the proposed baffle type acoustic window.

Compliance Rate

No. of units counted with noise exceedance:	0
Total no. of units at Subject Site	30
Compliance Rate (%):	100.0%

Appendix 2.4

Estimation of Maximum Allowed Sound Attenuation of Baffle Type Acoustic Window

Appendix 2.4 - Estimation of Maximum Allowed Sound Attenuation of Baffle Type Acoustic Window

Table of Major Parameters and Room Size of Proposed Development and Corresponding Reference Case, and Sound Attenuation Adjustment

Floor	Room	NSR IDs	Window/ Door	Proposed Development						Reference Case							Adjustment: 10xlog(RA / RAref) (adjust downward only), dB(A) (RAref)	Adjusted sound attenuation, dB(A)
				Outer opening area, m2	Inner opening area, m2	Air gap, m	Overlapping length, m	MPA applied? ***	Room area (RA), m2	Outer opening area, m2	Inner opening area, m2	Air gap, m	Overlapping length, m	MPA applied?	Room area (RAref), m2	Ref. sound attenuation, dB(A)		
1/F	Ward	R101	Window	2.33	1.12	0.1	0.275	No	28.98	3.2	3.8	0.1	0.275	No	38.3	8.8	-1.2	7.6
1/F	Ward	R102	Window	3.18	0.12	0.1	0.275	No	42.35	3.2	3.8	0.1	0.275	No	38.3	8.8	0.0	8.8
2/F-7-F	Ward	RT01	Window	2.33	1.12	0.1	0.275	No	47.65	3.2	3.8	0.1	0.275	No	38.3	8.8	0.0	8.8
2/F-7-F	Ward	RT02	Window	3.18	0.12	0.1	0.275	No	47.80	3.2	3.8	0.1	0.275	No	38.3	8.8	0.0	8.8

The dimensions of major parameters for the proposed baffle type acoustic window for the Proposed Development as shown in the above table, are subject to detailed design stage.

Appendix 2.5

Extracted Pages from Approved Planning Application A/K22/29

3.7 Proposed Noise Mitigation Measures

3.7.1 The following noise mitigation measures are considered and incorporated in the MLP.

a. Acoustic Window (Baffle Type)

According to a precedent case of redevelopment of ex-North Point Estate site to comprehensive development with residential uses (hereinafter referred to as the "Reference Case" for simplicity's sake), acoustic windows (baffle type) are adopted for flats facing roads (Island Eastern Corridor) for the purpose of reducing road traffic noise impact. According to onsite noise measurement, such innovate acoustic window system (opening size of 3.2m^2; 100mm gap; 275mm overlapping) at living room area (about 38.3m^2) can reduce noise level by 8.8 dB(A).

Acoustic window (baffle type) refers to the type of window that has an inner glass panel behind an outer window, both readily openable, for creating an air gap for the supply of fresh air with noise mitigation effect (see **Appendix 3.5**). It comprises two glazing:

i. The outer window opening; and
ii. The inner panel.

The "designed setting" to reduce noise entry to indoor area is that the inner panel is installed behind the outer window opening so that noise outside cannot pass through the opening window and enter indoor area directly. Noise needs to pass through the gap between the inner panel and outer façade in order to enter indoor area. The design can enable natural ventilation through the gap between the outer façade and inner sliding panel on one hand (although extent of natural ventilation may be inferior to the case without the inner sliding panel behind) and prevent most noise from entering indoor environment on the other hand.

In the Proposed Development, the configurations of the optimised acoustic windows design are shown in **Appendix 3.5**. With the optimised configurations, the noise reduction effectiveness of the acoustic windows in this Proposed Development (i.e. opening size and gap not more than Reference Case; overlapping not less than Reference Case) should not be worse than the Reference Case, it is anticipated that the proposed acoustic window (Baffle Type) should have at least the same noise reduction performance when noise enters from outdoor to indoor area.

The sound attenuation performance of acoustic window is determined with reference to the redevelopment project of ex-North Point Estate. The noise reduction of enhanced acoustic balcony without MPA applied at living room of reference case reaches 8.8 dB(A) (For living room of 38.3m^2, with outer opening of about 3.2m^2, air gap of 100mm and overlapping length of 275mm). The outer window opening of dormitory is around 3.14 m^2, which is smaller than that of the reference case of 3.2m^2. In addition, air gap of 100mm and overlapping length of 375mm will be provided which is no worse than the reference case (see **Appendix 3.5**).

It is noted that the room size of typical dormitories is ranged from approximately 40 m^2 to 50m^2, which is larger than the living room of 38.3m^2 in reference case. Therefore, the base case of RCHE supposed with larger window opening will even perform worse, leading to higher noise reduction of the acoustic window system. Therefore, the maximum sound reduction performance of the acoustic window applied at typical dormitories should not be less than that in reference case, which is equivalent to 8.8 dB(A).

As for the Staff Dormitory/ Sleep-in Room at 3/F, its room size is around 25m^2, which is smaller than the living room area of the reference case. It is considered that the amount of sound energy that can enter to room indoors should be proportional to the area of the window opening and in turn correlated to the room size. Therefore, an adjustment on the sound attenuation of acoustic window is made using ratio of room size of Staff Dormitory and Reference Case (which represents the ratio of sound energy that can enter indoor area) and then converted to decibel scale using 10 x log function. In this case, the sound attenuation of acoustic window in staff dormitory is determined as 6.9 dB(A) (i.e. 8.8 + 10 x log(25/38.3)), which is higher than the required noise reduction by 0.4 dB(A).

For Isolation/ Quiet Room, acoustic window (Baffle Type) is proposed where noise exceedance is found (with maximum of 2 dBA exceedance). It is noted that the room size of these room is ranged from around 9m^2 to 10m^2, which is larger than the bedroom in reference case (room size of about 6.8m^2 with outer opening of about 0.7 m^2 and noise reduction performance of 6.9 dB(A)). Same principle for dormitories applies to these Isolation/ Quiet Room should not be worse than that of the reference case and can attain the noise reduction of maximum 6.9 dB(A).

b. Fixed Glazing

For some locations where ventilation opening is not necessary but exposing to the major road traffic noise source that possibly lead to noise exceedance, they will be dedicated as fixed glazing.

3.7.2 **Figure 3.2** shows the proposed noise mitigation measures.

3.8 Assessment Result with Proposed Noise Mitigation Measures

3.8.1 The predicted road traffic noise levels at the selected representative NSRs based on the noise mitigation measures discussed above were assessed.

3.8.2 The result in **Appendix 3.4** indicated no non-compliance of road traffic noise standard is found with the proposed noise mitigation measures in place.

3.9 Conclusion

3.9.1 Road traffic noise impact assessment has been carried out for the proposed development.

3.9.2 Practical and effective noise mitigation measures have been explored which include and acoustic window (baffle type) and fixed glazing. With the proposed noise mitigation measures in place, the road traffic noise level can comply with relevant standards.

Appendix 3.1

Inventory of Potential Fixed Noise Sources

Noise Source ID	Description of Noise Sources	Sources	SWL, dB(A), L_{eq} (30 min)				Source Location			Directivity Factor (Q)	No. of Plant
		Existing/ Planned	Daytime & Evening Time (0700-2300)	Ref	Nighttime (2300-0700)	Ref	X	Y	Z, mPD		
F01	VRV at the roof of Kowloon Ling Liang Church	Existing	71	[21]	OFF	[21]	837213.04	820947.14	0.0	2	1
F02	VRV at the roof of Kowloon Ling Liang Church	Existing	71	[21]	OFF	[21]	837214.96	820947.08	0.0	2	1
F03	VRV at the roof of Kowloon Ling Liang Church	Existing	71	[21]	OFF	[21]	837216.91	820946.96	0.0	2	1
F04	VRV at the roof of Kowloon Ling Liang Church	Existing	71	[21]	OFF	[21]	837214.89	820945.05	0.0	2	1
F05	VRV at the roof of Kowloon Ling Liang Church	Existing	71	[21]	OFF	[21]	837216.86	820944.91	0.0	2	1
F06	VRV at the roof of Kowloon Ling Liang Church	Existing	71	[22]	OFF	[22]	837215.72	820942.99	0.0	2	1
F07	VRV at the roof of Kowloon Ling Liang Church	Existing	66	[23]	OFF	[23]	837212.22	820945.13	0.0	2	1
F08	VRV at the roof of Kowloon Ling Liang Church	Existing	66	[23]	OFF	[23]	837212.14	820943.05	0.0	2	1
F09	Condensing Unit at the roof of Kowloon Ling Liang Church	Existing	57	[19]	OFF	[19]	837211.27	820939.92	0.0	2	1
F10	Condensing Unit at the roof of Kowloon Ling Liang Church	Existing	57	[19]	OFF	[19]	837212.50	820939.85	0.0	2	1
F11	VRV at the roof of Kowloon Ling Liang Church	Existing	68	[18]	OFF	[18]	837213.72	820939.72	0.0	2	1
F12	VRV at the roof of Kowloon Ling Liang Church	Existing	58	[13]	OFF	[13]	837219.06	820937.44	0.0	2	1
F13	Condensing Unit at the roof of Kowloon Ling Liang Church	Existing	57	[19]	OFF	[19]	837223.80	820941.55	0.0	2	1
F14	Condensing Unit at the roof of Kowloon Ling Liang Church	Existing	57	[19]	OFF	[19]	837225.61	820941.47	0.0	2	1
F15	Air Conditioner at the roof of Kowloon Ling Liang Church	Existing	67	[20]	OFF	[20]	837233.69	820941.23	0.0	2	1
F16	VRV at the roof of Kowloon Ling Liang Church	Existing	68	[24]	OFF	[24]	837238.86	820944.23	0.0	2	1
F17	VRV at the roof of Kowloon Ling Liang Church	Existing	68	[24]	OFF	[24]	837238.98	820946.53	0.0	2	1
F18	VRV at the roof of Kowloon Ling Liang Church	Existing	68	[24]	OFF	[24]	837237.10	820946.61	0.0	2	1
F19	Chiller at the roof of The Grandeur (Block 1)	Existing	68	[24]	OFF	[24]	837231.03	821184.01	0.0	2	1
F20	Chiller at the roof of The Grandeur (Block 1)	Existing	68	[24]	OFF	[24]	837233.30	821183.90	0.0	2	1
F21	Chiller at the roof of The Grandeur (Block 1)	Existing	68	[24]	OFF	[24]	837235.54	821184.46	0.0	2	1
F22	Chiller at the roof of The Grandeur (Block 1)	Existing	68	[24]	OFF	[24]	837235.70	821185.93	0.0	2	1
F23	Chiller at the roof of The Grandeur (Block 1)	Existing	68	[24]	OFF	[24]	837235.81	821188.20	0.0	2	1
F24	Chiller at the roof of The Grandeur (Block 1)	Existing	68	[24]	OFF	[24]	837233.35	821187.91	0.0	2	1
F25	Chiller at the roof of The Grandeur (Block 1)	Existing	68	[24]	OFF	[24]	837231.09	821188.08	0.0	2	1
F26	Cooling Tower at the roof of Smart A	Existing	82	[1]	OFF	[1]	837331.64	820957.79	0.0	2	1
F27	Chiller at the roof of Smart A	Existing	83	[8]	OFF	[8]	837330.83	820956.20	0.0	2	1
F28	Chiller at the roof of Smart A	Existing	83	[8]	OFF	[8]	837329.41	820955.25	0.0	2	1
F29	Chiller at the roof of Smart A	Existing	83	[8]	OFF	[8]	837328.42	820956.74	0.0	2	1
F30	Chiller at the roof of Smart A	Existing	83	[8]	OFF	[8]	837329.83	820957.69	0.0	2	1
F31	Chiller at the roof of Hang Seng Kowloon City Building	Existing	92	[11]	OFF	[11]	837347.09	820950.24	0.0	2	1
F32	Chiller at the roof of Hang Seng Kowloon City Building	Existing	92	[11]	OFF	[11]	837347.05	820948.18	0.0	2	1
F33	Cooling Tower at the roof of 404-410 Nga Tsin Long Road	Existing	82	[1]	OFF	[1]	837554.55	820985.74	0.0	2	1
F34	Cooling Tower at the roof of 404-410 Nga Tsin Long Road	Existing	84	[2]	OFF	[2]	837556.64	820985.65	0.0	2	1
F35	Cooling Tower at the roof of 404-410 Nga Tsin Long Road	Existing	91	[3]	OFF	[3]	837556.65	820983.54	0.0	2	1
F36	Cooling Tower at the roof of St.Teresa Hospital (North Wing)	Existing	OFF	[4]	OFF	[4]	837057.24	820849.86	0.0	2	1
F37	Cooling Tower at the roof of St.Teresa Hospital (North Wing)	Existing	86	[4]	OFF	[4]	837064.78	820851.35	0.0	2	1
F38	Cooling Tower at the roof of St.Teresa Hospital (North Wing)	Existing	86	[4]	86	[4]	837075.31	820851.44	0.0	2	1
F39	Cooling Tower at the roof of St.Teresa Hospital (North Wing)	Existing	86	[4]	86	[4]	837081.72	820852.75	0.0	2	1
F40	Chiller at the roof of St.Teresa Hospital (East Wing)	Existing	98	[10]	OFF	[10]	837114.21	820857.93	0.0	2	1
F41	Chiller at the roof of St.Teresa Hospital (East Wing)	Existing	98	[10]	98	[10]	837117.13	820858.51	0.0	2	1
F42	Chiller at the roof of St.Teresa Hospital (East Wing)	Existing	OFF	[10]	OFF	[10]	837116.49	820853.68	0.0	2	1
F43	Chiller at the roof of St.Teresa Hospital (Extension Building)	Existing	85	[12]	85	[12]	837109.05	820782.82	0.0	2	1
F44	Chiller at the roof of St.Teresa Hospital (Extension Building)	Existing	85	[12]	85	[12]	837110.13	820777.87	0.0	2	1
F45	Chiller at the roof of St.Teresa Hospital (Extension Building)	Existing	85	[12]	85	[12]	837071.33	820774.80	0.0	2	1
F46	Chiller at the roof of St.Teresa Hospital (Extension Building)	Existing	85	[12]	85	[12]	837072.30	820770.34	0.0	2	1
F47	Chiller at the roof of St.Teresa Hospital (Extension Building)	Existing	98	[9]	98	[9]	837074.42	820742.90	0.0	2	1
F48	Chiller at the roof of St.Teresa Hospital (Extension Building)	Existing	98	[9]	98	[9]	837066.10	820741.17	0.0	2	1
F49	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	72	[17]	72	[17]	837169.72	820826.96	0.0	2	1
F50	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	70	[16]	70	[16]	837171.90	820827.47	0.0	2	1
F51	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	70	[16]	70	[16]	837172.81	820823.15	0.0	2	1
F52	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	70	[16]	70	[16]	837171.13	820822.82	0.0	2	1
F53	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	70	[16]	70	[16]	837169.41	820822.47	0.0	2	1
F54	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	72	[17]	72	[17]	837169.86	820820.07	0.0	2	1
F55	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	72	[17]	72	[17]	837170.27	820817.88	0.0	2	1
F56	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	68	[14]	68	[14]	837166.58	820816.43	0.0	2	1
F57	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	71	[15]	71	[15]	837164.49	820816.02	0.0	2	1
F58	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	72	[17]	72	[17]	837161.68	820814.84	0.0	2	1
F59	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	70	[16]	70	[16]	837161.20	820817.27	0.0	2	1
F60	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	72	[17]	72	[17]	837160.74	820819.64	0.0	2	1
F61	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	72	[17]	72	[17]	837163.84	820819.49	0.0	2	1

Noise Source ID	Description of Noise Sources	Sources	SWL, dB(A), L_{eq} (30 min)				Source Location			Directivity Factor (Q)	No. of Plant
		Existing/ Planned	Daytime & Evening Time (0700-2300)	Ref	Nighttime (2300-0700)	Ref	X	Y	Z, mPD		
F62	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	72	[17]	72	[17]	837165.93	820819.85	0.0	2	1
F63	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	72	[17]	72	[17]	837157.84	820822.57	0.0	2	1
F64	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	70	[16]	70	[16]	837158.12	820824.51	0.0	2	1
F65	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	70	[16]	70	[16]	837159.94	820824.91	0.0	2	1
F66	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	72	[17]	72	[17]	837162.33	820822.22	0.0	2	1
F67	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	70	[16]	70	[16]	837164.48	820822.63	0.0	2	1
F68	Chiller at the roof of Hong Kong Eye Hospital	Existing	97	[7]	97	[7]	837028.79	820679.62	0.0	2	1
F69	Chiller at the roof of Hong Kong Eye Hospital	Existing	97	[7]	97	[7]	837034.44	820680.60	0.0	2	1
F70	Chiller at the roof of Hong Kong Eye Hospital	Existing	96	[9]	96	[9]	837043.09	820652.45	0.0	2	1
F71	Cooling Tower at the roof of Kowloon City Law Courts Building	Existing	92	[5]	OFF	[5]	837139.21	820699.38	0.0	2	1
F72	Cooling Tower at the roof of Kowloon City Law Courts Building	Existing	92	[5]	OFF	[5]	837139.68	820696.82	0.0	2	1
F73	Chiller at the roof of Kowloon City Law Courts Building	Existing	94	[6]	OFF	[6]	837137.74	820692.56	0.0	2	1
F74	Chiller at the roof of Kowloon City Law Courts Building	Existing	94	[6]	OFF	[6]	837138.67	820686.74	0.0	2	1

Notes:

[1] The noise level is referenced to Ryowo FT-20.
[2] The noise level is referenced to Ryowo FT-25.
[3] The noise level is referenced to Ryowo FT-50.
[4] The noise level is referenced to Ryowo FC-300.
[5] The noise level is referenced to Ryowo FWS-127-7.5.
[6] The noise level is referenced to Trane CGAM 70.
[7] The noise level is referenced to Trane RTAC 300 .
[8] The noise level is referenced to York YLCA 0080 T-TP.
[9] The noise level is referenced to York YLAA 0485SE.
[10] The noise level is referenced to York YCAS 0835 EB.
[11] The noise level is referenced to Carrier 30RB 090R.
[12] The noise level is referenced to McQuay MCS135.1.
[13] The noise level is referenced to Mitsubishi FDC125VS.
[14] The noise level is referenced to Mitsubishi FDC400KXE6.
[15] The noise level is referenced to Mitsubishi FDC450KXE6.
[16] The noise level is referenced to Mitsubishi FDC504KXE6.
[17] The noise level is referenced to Mitsubishi FDC560KXE6.
[18] The noise level is referenced to Daikin RU08K.
[19] The noise level is referenced to Daikin R50GV1.
[20] The noise level is referenced to Daikin R125FU.
[21] The noise level is referenced to Daikin RUXYQ12AB.
[22] The noise level is referenced to Daikin RXYQ216PBYD.
[23] The noise level is referenced to Daikin RXYQ72PBYD.
[24] The noise level is referenced to Daikin RXYQ96PBYD.

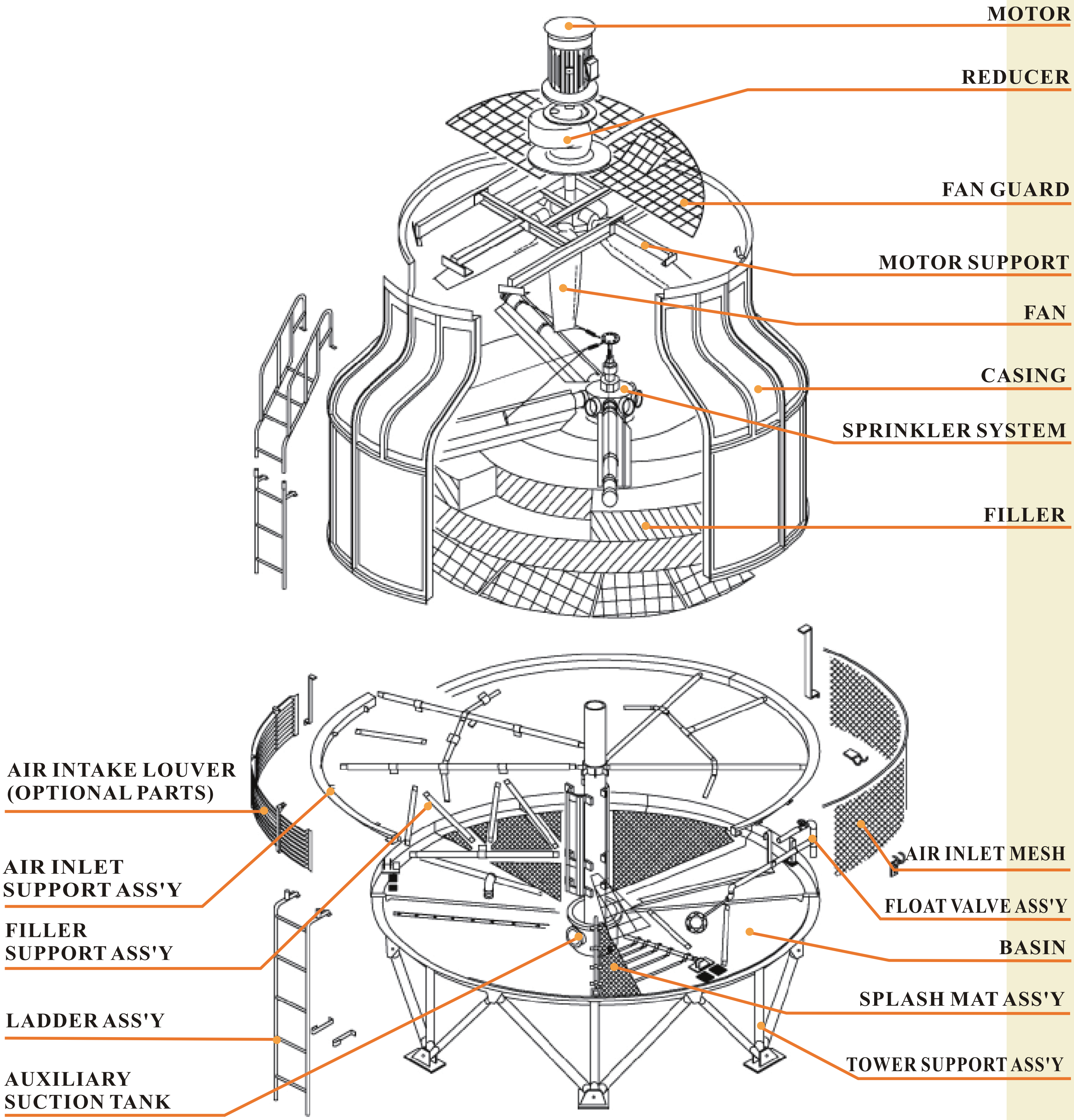
Catalogue of Ryowo FT-20, FT-25, FT-50

菱和
ryowo™

FRP COUNTER FLOW FT SERIES

COOLING TOWER

STRUCTURE



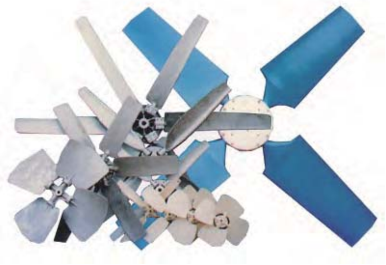
PRINCIPLE OF OPERATION

Hot water is distributed over the filler through the low velocity automatic sprinkler system and is mixed with the upward draft of ambient air causing evaporation and thus heat is removed from the water. The cooled water falls into the basin and is pumped to the heat sources for recirculation.

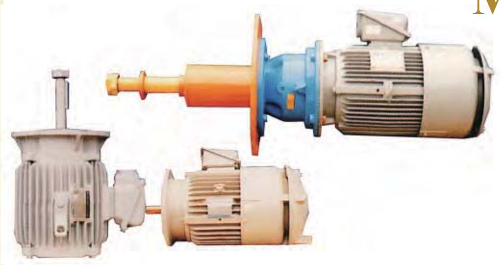
COMPONENT FUNCTION & FEATURE

AXIAL FAN

All fans are induced-draft axial type with adjustable pitch. Material chosen are non-corrosion of plastic, FRP or alu-minium alloy. The high efficiency design ensures low running cost and the lowest possible noise level . Fan blade pitches is factory set and balanced.



MOTOR



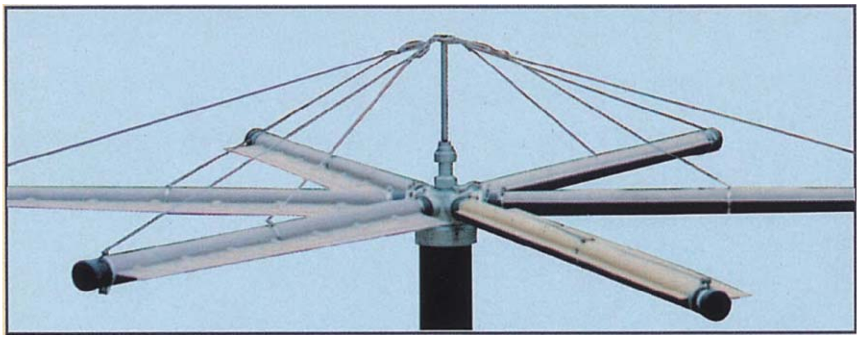
The motors, totally enclosed, fan cooled flange type, 380V/ 3ph/ 50 Hz, induction weather proof, are specially designed for RYOWO. Motors from 5.5 kw and up are Y- start and below are direct-on-line start.

TRANSMISSION SYSTEM

The fans of small models are designed to be driven by low speed motor of 6,8,10 or 12 poles which can minimise the numbers of transmission parts used. For large models, the fans are vee-belt or gear driven with 4 poles motors so the speed of fans can be adjustable to suit various application.

SPRINKLER SYSTEM

Automatic rotary sprinkler system with rotary head and sprinkler pipe distributes the hot water over the entire face area of the filler. Sprinkler pipes are non-clogging, require low-pressure to operate, and assures uniform water flow with minimal operating pump head. The F.R.P. eliminators attached to sprinkler pipes are specifically designed for Low pre Ssure drop and minimises the drift loss of water.

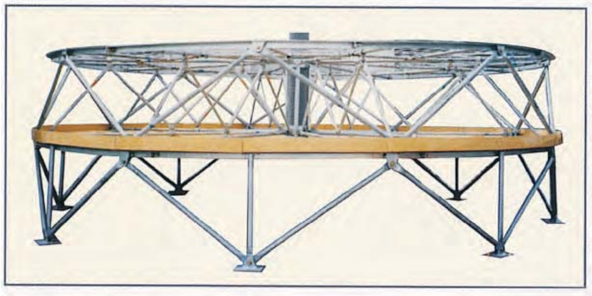


COMPONENT FUNCTION & FEATURE

CASING & BASIN

F.R.P. (fibreglass reinforced polyester) formed casings are durable, non-corrosive, weather-proof, and light weight. Cylindrical form is shaped to fully withstand wind pressure, vibration and such F.R.P. casings obliviate need for painting, reduce maintenance costs and guarantee long dependable service.

Bowl-shape basins are also made from F.R.P. with built in socket or flanged outlets for piping connections. For large models, a F.R.P. aux. suction tank is employed and fitted with piping flanges or sockets.



STEEL STRUCTURE

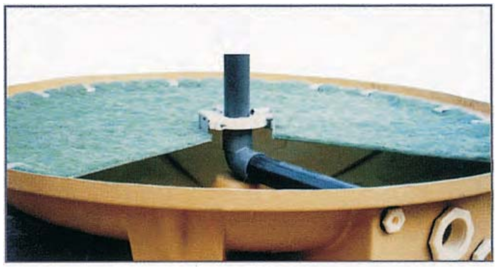
All supporting steel members are hot-dip galvanized to minimise rusting and corrosion ensuring long service life even in corrosive atmosphere. The stainless hardware members are also available upon request.

FILLER

High performance RYOWO V-30 film filler is the heart of the tower. The specially formed PVC sheets maximize the air/water contact area and minimise air pressure drop to assure efficient heat transfer while keeping fan power requirement low. It is virtually immune to corrosion and decay.

Eliminator

Specially made drift eliminator consisted of 2 types of sheets forms a “v” shape path for the transmission of the cooling tower discharge air stream. The small water droplets in the stream impact the surfaces of the drift eliminator sheets and are separated from the stream such that the drift loss ratio maintain at less than 0.001% of circulating water flow rate.



SPLASH MAT (LOW NOISE MODELS)

Specially designed noise absorbing splash mat is provided for low noise models on the water basin to minimise the unpleasant water dripping noise in the basin.

SPECIFICATION FOR FT SERIES

SPECIFICATION FOR FT SERIES

ITEM	MODEL			FT-8	FT-10	FT-15	FT-20	FT-25	FT-30	FT-40	FT-50	FT-60	FT-80	FT-100	FT-125	FT-150	FT-175	FT-200	FT-225	FT-250	FT-300	FT-350	FT-400	FT-500	FT-600	FT-700	FT-800	FT-1000
Capacity	27 ℃ WB	Circulating water flow rate	m^3/ hr	6.2	7.8	11.7	15.6	19.5	23.4	31.2	39.1	46.9	62.5	78.1	97.7	117.2	136.7	156.2	175.8	195.3	234.4	273.4	312.5	390.6	468.7	546.8	625.0	781.2
		Make-up water (Approx.)	m^3/ hr	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.6	0.7	0.9	1.1	1.4	1.7	2.0	2.2	2.5	2.8	3.4	3.9	4.5	5.6	6.7	7.8	8.9	11.2
	28 ℃ WB	Circulating water flow rate	m^3/ hr	5.6	7.4	10.6	14.4	17.8	21.5	28.7	36.3	42.5	58.8	70.6	88.2	107.5	125.0	142.5	160.0	176.2	212.5	250.0	287.5	337.5	431.2	512.4	575.0	718.7
		Make-up water (Approx.)	m^3/ hr	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.6	0.8	1.0	1.3	1.5	1.8	2.0	2.3	2.5	3.0	3.6	4.1	4.8	6.2	7.3	8.2	10.3
		Air flow rate (Approx.)	m^3/ min	70	85	140	160	230	280	330	420	450	700	830	950	1150	1200	1250	1600	1750	2000	2200	2450	2700	3500	3750	5000	5400
		Hot water temperature	℃									37																
		Cold water temperature	℃									32																
Overall Dimension	Diameter (ϕ)		mm	920	920	1160	1160	1490	1660	1660	1890	2100	2100	2900	2900	2900	3310	3310	3960	3960	4360	4760	4760	5600	6600	6600	7600	7600
	Height (H)		mm	1560	1700	1585	1835	1945	1885	2035	2110	2300	2475	2910	3110	3110	3300	3450	3920	3920	3990	4195	4255	4590	5310	5510	5660	5860
	Height (w/o motor) (m)		mm	1390	1530	1395	1645	1760	1720	1785	1860	1980	2155	2590	2790	2790	2880	3030	3300	3300	3290	3495	3495	3830	4470	4670	4720	4940
Material	Air inlet mesh											PVC																
	Basin											FRP																
	Casing											FRP																
	Eliminator											FRP																
	Fan						ABS Plastic					FRP					Aluminium alloy								FRP			
	Filler											PVC																
	Motor support											Steel (Hot-dip galvanized)																
	Sprinkler head						ABS Plastic							Aluminium alloy														
	Sprinkler pipe											PVC pipe																
	Stand pipe											PVC pipe																
	Structure											Steel (Hot-dip galvanized)																
Fan	TYPE											Axial-flow																
	Diameter		mm	550	640			770		930		1200		1500			1800		2400				3000		3400		3700	
	Speed		rpm					970				750					600		450				375		314			
	Driven type											Direct driven							Belt driven						Gear driven			
Motor	TYPE											Totally enclosed fan cooled outdoor 3 phase induction motor																
	Power source											380V / 3 / 50Hz																
	Rated output		kw	0.18		0.37		0.75		1.5				2.2			3.7		5.5		7.5		11		15		22	
	No of pole		Pole				6					8					10		4									
Distribution System	TYPE											Automatic sprinkler system																
	Inlet dia		mm	40		50		80				100		125		150			200					250			300	
	Outlet dia			15		20					40			65					75					100	75		100	
	No of outlet						4					6		4					6						8		10	
Piping	Inlet		mm	40		50		80				100		125		150			200					250			300	
	Outlet		mm	40		50		80				100		125		150			200					250			300	
	Drain		mm					25						50					80					100				
	Overflow		mm					25						50					80					100				
	Float valve		mm					15				20					25		32					50			80	
	Manual make-up		mm					15						20			25		32					50			80	
Weight	Dry weight		Kg	56	65	75	85	105	130	150	180	250	270	500	540	580	870	900	1300	1350	1550	1720	2050	2450	3950	4050	4700	4900
	Operating weight		Kg	140	150	200	210	290	370	390	550	840	860	1600	1640	1680	2170	2200	2700	2750	3350	3720	3950	6150	9350	9450	11900	12100
Noise Level	Sound pressure level		dBA	45.5	47	48	50	52	54	58	59	58	59	61	61.5	62	62	62	63	63	64	64.5	61.5	62	65	66	73	74

NOTE : Nominal cooling capacity is based on 13 ℓ / min / RT (1 RT=3,900 Kcal / hr) at 37°C inlet water tpmperature, 32°C outlet water temperature and 27°C ambient wet bulb temperature.

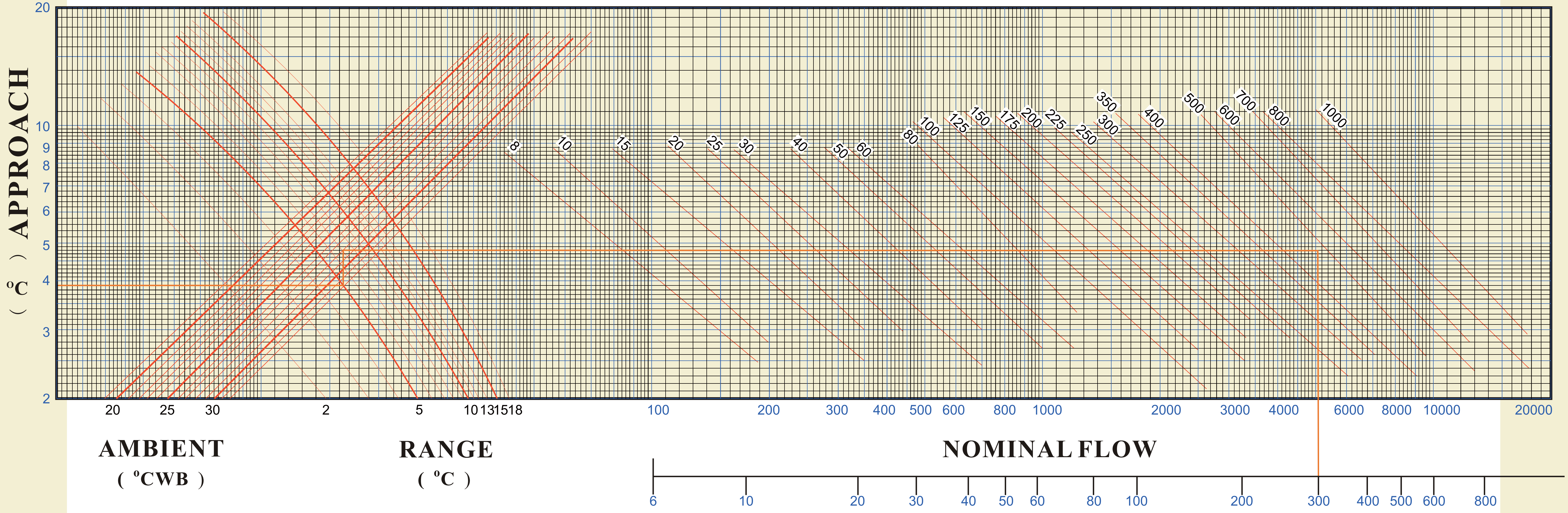
The SPLs are measured 16m horizontally from the edge of the tower at 1.5m above the foundation level.

Pump head is obtained by adding resistance of piping/condenser and the tower height(H).

The unit dimension in this catalogue is metric. Specifications listed in this catalogue are subject to change without further noticefor technical improvement of our products.

FT OR FT/LN SERIES QUICK SELECTION TABLE

(20°CWB~30°CWB)



EXAMPLE:

RATE :300m³/hr

INLET WATER TEMP:37°C

OUTLET WATER TEMP :32°C

WET BULB TEMP :28°C

RANGE: INLET WATER TEMP-OUTLET WATER TEMP

: 37°C - 32°C = 5°C

APPROACH: OUTLET WATER TEMP -WET BULB TEMP

: 37°C - 32°C = 5°C

TOWER SELECTED: FT - 500 OR FT/LN - 500

COOLING TOWER	CT							
NOMINAL FLOW	m³/hr							
INLET WATER	HWT°C							
OUTLET WATER	CWT°C							
AMBIENT WB	WB°C							
RANGE	(HWT-CWT)°C							
APPROACH	(CWT-WB)°C							
MODEL								

SPECIFICATION FOR FT/LN(LOW NOISE TYPE)

SPECIFICATION FOR FT/LN(LOW NOISE TYPE)

ITEM	MODEL			FT/LN 8	FT/LN 10	FT/LN 15	FT/LN 20	FT/LN 25	FT/LN 30	FT/LN 40	FT/LN 50	FT/LN 60	FT/LN 80	FT/LN 100	FT/LN 125	FT/LN 150	FT/LN 175	FT/LN 200	FT/LN 225	FT/LN 250	FT/LN 300	FT/LN 350	FT/LN 400	FT/LN 500	FT/LN 600	FT/LN 700	FT/LN 800	FT/LN 1000
Capacity	27 ℃ WB	Circulating water flow rate	m^3/ hr	6.2	7.8	11.7	15.6	19.5	23.4	31.2	39.1	46.9	62.5	78.1	97.7	117.2	136.7	156.2	175.8	195.3	234.4	273.4	312.5	390.6	468.7	546.8	625.0	781.2
		Make-up water (Approx.)	m^3/ hr	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.6	0.7	0.9	1.1	1.4	1.7	2.0	2.2	2.5	2.8	3.4	3.9	4.5	5.6	6.7	7.8	8.9	11.2
	28 ℃ WB	Circulating water flow rate	m^3/ hr	5.6	7.1	10.6	14.4	17.8	21.5	28.7	36.3	42.5	58.8	70.6	88.2	107.5	125.0	142.5	160.0	176.2	212.5	250.0	287.5	337.5	431.2	512.4	575.0	718.7
		Make-up water (Approx.)	m^3/ hr	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.6	0.8	1.0	1.3	1.5	1.8	2.0	2.3	2.5	3.0	3.6	4.1	4.8	6.2	7.3	8.2	10.3
	Air flow rate (Approx.)		m^3/ min	70	85	140	160	230	280	330	420	450	700	830	950	1150	1200	1250	1600	1750	2000	2200	2450	2700	3500	3750	5000	5400
	Hot water temperature		℃	37																								
	Cold water temperature		℃	32																								
Overall Dimension	Diameter		mm	920	1160	1160	1490	1660	1660	1890	1890	2100	2100	2900	2900	2900	3310	3310	3960	3960	4360	4760	4760	5600	6600	6600	7600	7600
	Height (H)		mm	1755	1620	1870	1945	1885	2145	2220	2220	2340	2515	3060	3260	3260	3450	3600	3920	3920	3990	4195	4255	4590	5310	5510	5660	5860
	Height (w/o motor) (m)		mm	1530	1395	1645	1760	1720	1785	1860	1860	1980	2155	2590	2790	2790	2880	3030	3300	3300	3290	3495	3495	3830	4470	4670	4720	4940
Material	Air inlet mesh			PVC																								
	Basin			FRP																								
	Casing			FRP																								
	Eliminator			FRP																								
	Fan			ABS Plastic					Aluminium alloy																FRP			
	Filler			PVC																								
	Motor support			Steel (Hot-dip galvanized)																								
	Sprinkler head			ABS Plastic										Aluminium alloy														
	Sprinkler pipe			PVC pipe																								
	Stand pipe			PVC pipe																								
	Structure			Steel (Hot-dip galvanized)																								
	Splash mat			Nylon																								
Fan	TYPE			Axial-flow																								
	Diameter		mm	640		770			930			1200		1500			1800		2400				3000		3400		3700	
	Speed		rpm	750					600			500		440			375						314		257			
	Driven type			Direct driven										Belt driven											Gear driven			
Motor	TYPE			Totally enclosed fan cooled outdoor 3 phase induction motor																								
	Power source			380V / 3 / 50Hz																								
	Rated output		kw	0.2		0.37			1.1			1.5		3.7					5.5		7.5		11		15		22	
	No of pole		Pole	8					10			12		4														
Distribution System	TYPE			Automatic sprinkler system																								
	Inlet dia		mm	40	50		80					100		125		150			200					250			300	
	Outlet dia			15	20		40							65					75					100	75		100	
	No of outlet			4								6		4					6						8		10	
Piping	Inlet		mm	40	50		80					100		125		150			200					250			300	
	Outlet		mm	40	50		80					100		125		150			200					250			300	
	Drain		mm	25										50					80					100				
	Overflow		mm	25										50					80					100				
	Float valve		mm	15								20					25		32					50			80	
	Manual make-up		mm	15										20			25		32					50			80	
Weight	Dry weight		Kg	80	85	100	125	145	240	280	290	380	400	600	640	680	970	1000	1400	1450	1700	1920	2250	2650	4250	4350	5100	5300
	Operating weight		Kg	160	205	220	290	375	470	625	635	970	990	1700	1740	1780	2270	2300	2800	2850	3500	3920	4250	6350	9650	9750	12300	12500
Noise Level	Sound pressure level		dBA	40	41	42.5	43.5	44.5	46	47	48	48	49.5	52	52.5	53	54	54.5	55	55	56	57	58	60	62	62.5	65	66

GUARANTEE:

All components are guaranteed against defective material for a period of one (1) year.

When return to RYOWO with transportation prepaid , all parts found by factory inspection to be defective will be repaired replaced without charge , FOB HONG KONG.

No liability will be assumed for loss or damage resulting from misuse of products.

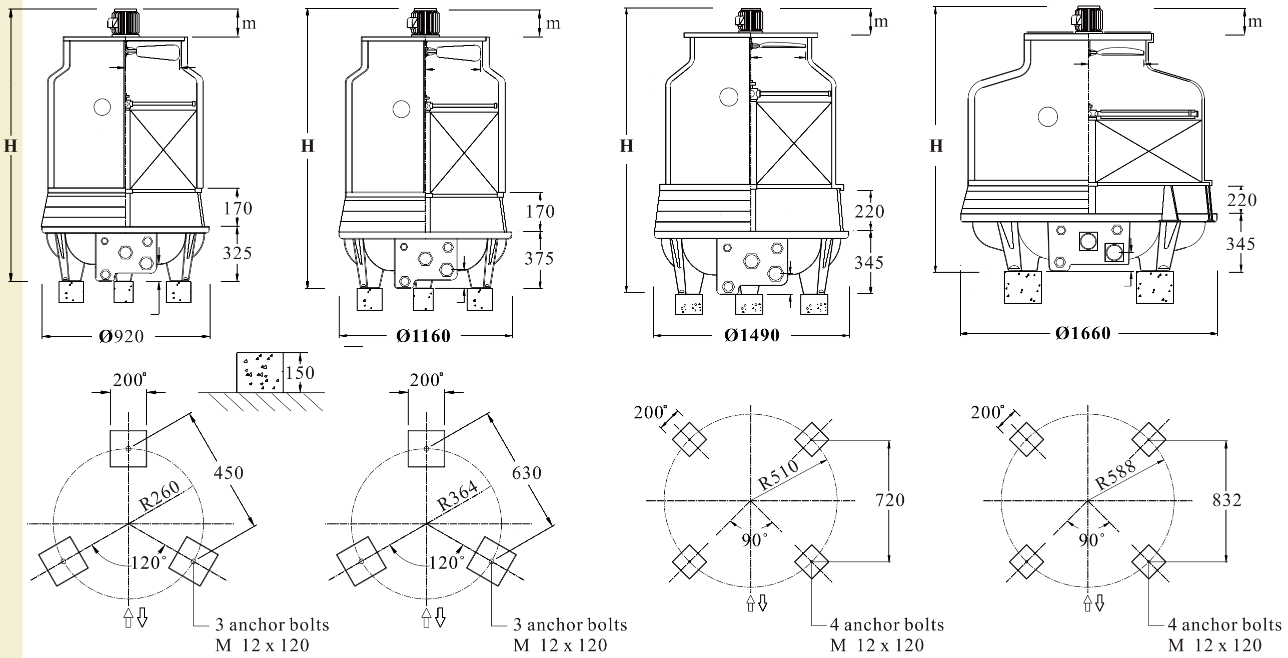
APPLICATION

For inquiry on RYOWO cooling towers , please contact local agents and specify the following conditions:

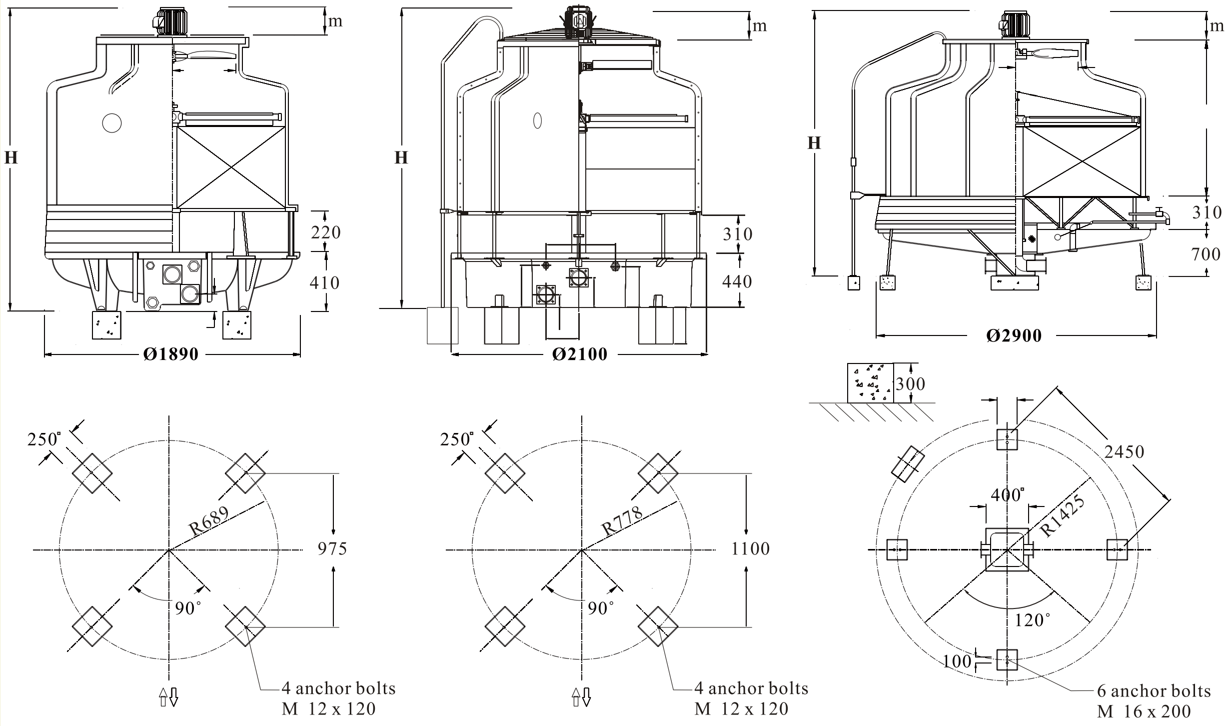
a). Circulating water flow
b). Inlet water temperature
c). outlet water temperature
d). ambient wet bulb temperature
e). power sources-voltage & frequency

TOWER FOUNDATION

FT-8 10 FT/LN-8 FT-15·20 FT/LN-10 15 FT-25 FT/LN-20 FT-30 40 FT/LN-25 30

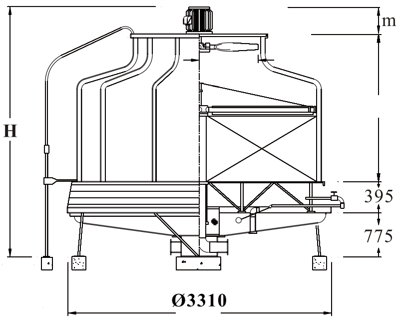


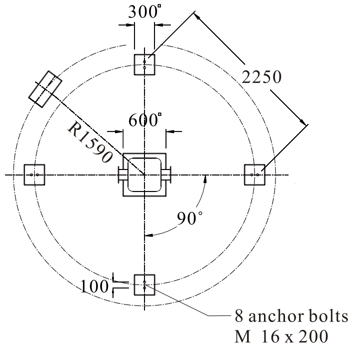
FT-50 FT/LN-40·50 FT · FT/LN-60·80 FT · FT/LN-100 · 125·150



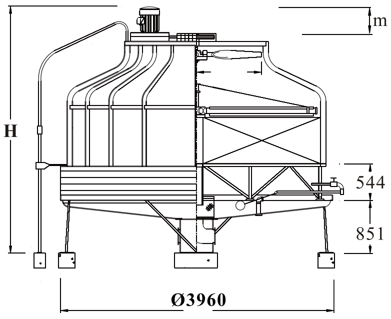
TOWER FOUNDATION

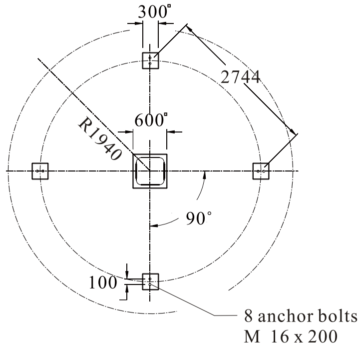
FT· FT/LN-175· 200



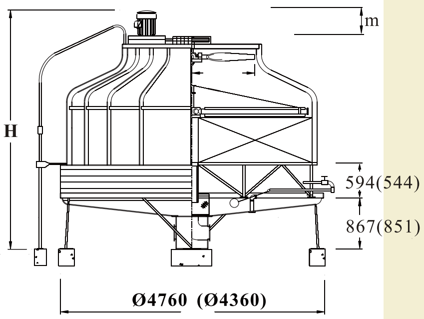


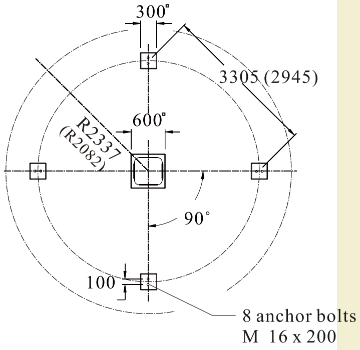
FT· FT/LN-225·250



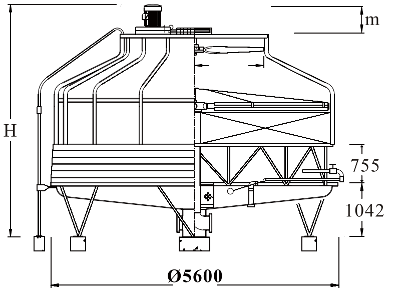


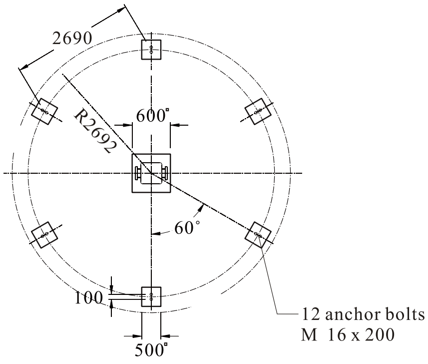
FT· FT/LN-(300) ·350·400



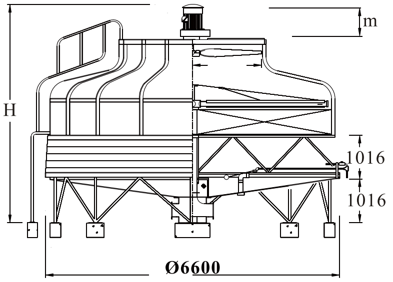


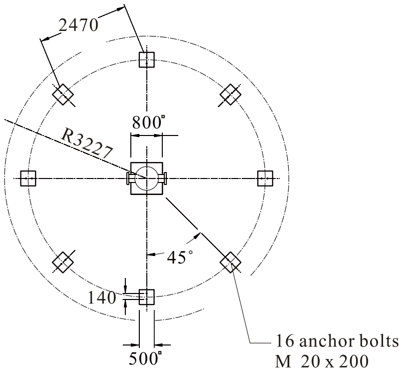
FT· FT/LN- 500



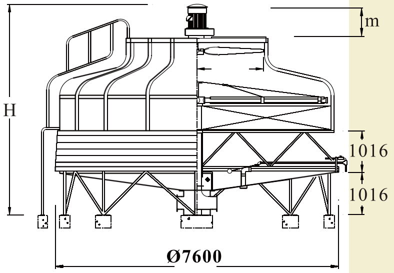


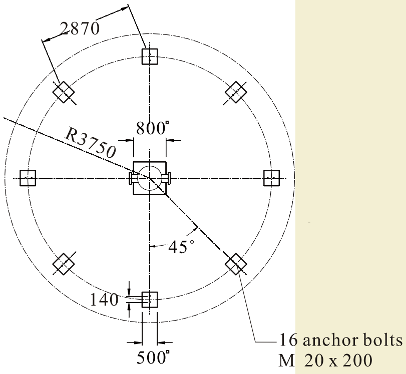
FT· FT/LN-600 · 700





FT· FT/LN-800 · 1000





AVAILABLE OPTIONAL ACCESSORIES

DISCHARGE HOOD

This option is available on small models. It provides another direction of discharge air leaving the tower. It is made of F.R.P. with services door and wiring mesh on the air outlet.

HIGH TEMPERATURE FILLER

For high temperature operation such as waste water treatment , P.P. filler can withstand up to 80℃inlet water. (Special arrangement should be made for other components, please contact us for details.)

STAINLESS STEEL COMPONENTS

As an option, we can provide type 304 stainless steel major steel members, bolts and nuts.

TWO-SPEED MOTOR

As an option, two-speed motor can be provided in 4P/6P single winding configeration. A considerable reduction in noise and energy management can be achieved.

F.R.P. AIR INLET LOUVER

Inlet louver constructed of F.R.P. material can be provided, which matches the rest of tower and prevents water splashing out from the tower.

BASIN HEATERS

Electric immersion heaters with thermostat and control box are available to keep the basin water from freezing in sub-zero weather.

BODY COLOR

Cooling tower installed on the roof of building may be barely noticeable from the ground, and a colored cooling tower matching to building color will make it "good look".

JOB REFERENCES

FT/LN-600 X 11
Hotel Lisboa, Macau

FT-400 X 2
Bank of China, Shen Zhen

FT-1000 X 3
FT-500 X 10

CITIC Plaza, Guangzhou

FT/LN-300 X 6
Hong Kong University

FT-200 X 2
Miami University, U.S.A

Catalogue of Ryowo FC-300

菱和
ryowo™

FRP

CROSS FLOW FC SERIES

COOLING TOWER

COMPONENT FUNCTION & GRSYTR

LOW NOISE FAN

Airfoil-shaped blades are totally fabricated from fiberglass rainforced polyester (FRP) with an additional epoxy coating for the resistance of ultra violet ray and acid rain corrosion. The hubs are of cast aluminum alloy.

Blades with large chord are axial type with adjustable pitch for permitting maximum utilization of rated horsepower and optimum performance. The aerodynamic shape together with the lower tip speed ensure a lower noise level.

MOTOR AND DRIVE

The fan motors are totally enclosed fan cooled (TEFC) foot mounted with weatherproof Ip44 Class E insulation. The motors are mounted on an adjustable base located inside the fan stack ensuring lower noise level.

The fans are vee-belt driven and are located in the bottle neck of fan stack ensuring free and smooth air discharge and high efficiency with low energy consumption. (Ip54 Motor can be provided upon request)

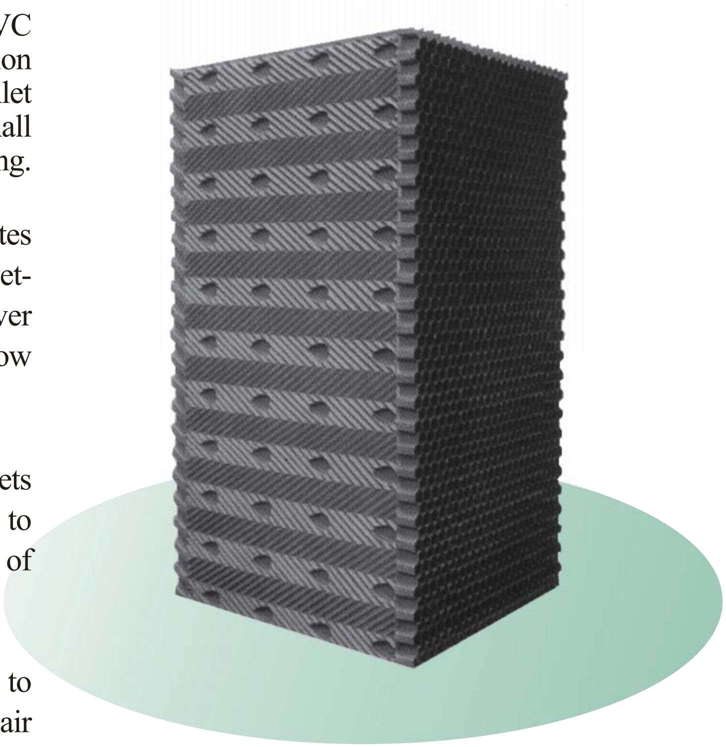
3 IN 1 FILLER

Filler is vacuum-formed of 0.4mm thickness PVC film with excellent chemical and high distortion resistance, and is suitable for operation with inlet water temperature up to 55°C. Its compact small package design is easier to taking out for cleaning.

The special configuration of the filler incorporates the function of drift eliminator, louver and wet-deck surface. The honeycomb shaped louver feature contributes minimum resistance to airflow and prevent the ingress of foreign matters.

The drift eliminator feature prevents water droplets from escaping in the exhaust air stream so as to ensure the drift loss to be less than 0.0005% of Circulating water flow rate.

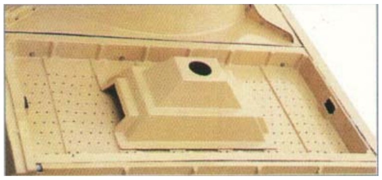
The wet-deck surfaces are special designed to provide maximum air/water contact and low air pressure drop to ensure high efficient heat transfer.

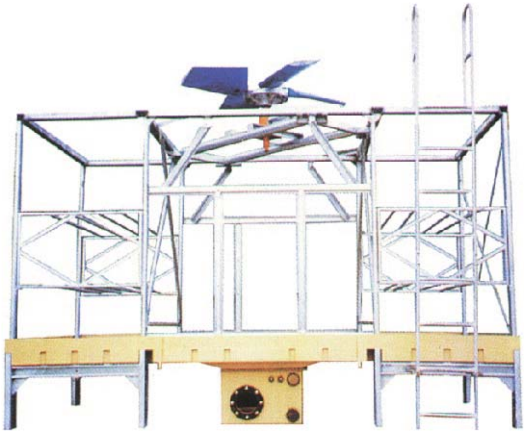


DESIGN FEATURES

DISTRIBUTION SYSTEM

FRP open type gravity flow hot water distribution trays are non-corrosive and long life, and are specially designed for nonclogging operation and ease of inspection. A distribution cap is attached on top and prevents water from splashing out, and a redistribution layer of PVC mesh is placed on top of the filler to provide full coverage of the filler by gravity feed.





STEEL STRUCTURE

All supporting steel members are hot-dip galvanize to minimize rusting and corrosion ensuring long service life even in corrosive atmosphere. The stainless hardware members are also available upon request.

CASING AND BASIN

Casing and basin are made of FRP which excels in corrosion, chemical and weather resistance. It is light weight and easy to assemble and obviates need of painting, and thus reduces maintenance costs and guarantees long dependable service.

FAN STACK

Fan stack are made of FRP. The special aerodynamic design as well as the location of fan provide more than 10% of motor power saving. Furthermore, because of the longer stack, it can discharge the hot moist air away from the tower so as to mini-mize the chance of re-cirulation.

INSPECTION DOOR

Inspection doors are furnished to provide convenient access to the interior for inspection, maintenance, adjustment of float valve, cleaning of the lift-out strainer and flushing of sump.

SPECIFICATION

ITEM	MODER			ONE CELL							TWO CELLS					THREE CELLS			FOUR CELLS		
				FC-100	FC-125	FC-150	FC-175	FC-200	FC-225	FC-250	FC-300	FC-350	FC-400	FC-450	FC-500	FC-600	FC-675	FC-750	FC-800	FC-900	FC-1000
Capacity	27°C WB	circulating water flow rate	m^3/hr	78.0	97.5	117.0	136.5	156.0	175.5	195.0	234.0	273.0	312.0	351.0	390.0	468.0	526.5	585.0	624.0	702.0	780.0
		make-up water(approx.)	m^3/hr	1.1	1.4	1.7	2.0	2.2	2.5	2.8	3.3	3.9	4.5	5.0	5.6	6.7	7.5	8.4	8.9	10.0	11.2
	28°C WB	circulating water flow rate	m^3/hr	70	88	105	123	140	158	175	210	245	280	315	350	420	473	525	560	630	700
		make-up water(approx.)	m^3/hr	1.0	1.3	1.5	1.8	2.0	2.3	2.5	3.0	3.5	4.0	4.5	5.0	6.0	6.8	7.5	8.0	9.0	10.0
	Air flow rate(Approx.)		m^3/min	630	800	960	1135	1285	1460	1660	1920	2270	2570	2920	3320	3855	4380	4950	5140	5840	6640
	Hot water temperature		°C	37																	
	Cold water temperature		°C	32																	
Overall Dimension	Width		mm	1650		2000		2300	2600		4000		4600	5200		6900	7800		9200	10400	
	Length		mm	3650		4000		4300	4400		4000		4300	4400		4300	4400		4300	4400	
	Height		mm	3400																	
Material	Casing			FRP																	
	Steel structure			Steel (hot-dip galvanized)																	
	Filler			PVC																	
	Distribution tray			FRP																	
	Cold water basin			FRP																	
	Sump tank			FRP																	
	Fan			Blade : FRP , Hub : Aluminum Cast alloy																	
	Fan stack			FRP																	
Fan Assembly	Fan	TYPE		Axial-flow																	
		Diameter X Nos.	∅ mm	1400 x 1		1600 x 1		1800 X1	2000 x 1		1600 x 2		1800 X1	2000 x 2		1800 X3	2000 x 3		1800 X 4	2000 x 4	
		Number of blades		4																	
		Fan speed(Approx.)	rpm	470	540	375	420	420	335	370	375	420	420	335	370	420	335	370	420	335	370
		Drive system		V-belt drive																	
	Motor	TYPE		Totally enclosed fan cooled outdoor 3 phase induction motor 4 poles																	
		Power source		380V / 3 / 50Hz																	
		Rated output	Kw	2.2 x 1	3.7 x 1		5.5 x 1			7.5 x 1	3.7 x 2	5.5 x 2			7.5 x 2	5.5 x 3		7.5 x 3	5.5 x 4		7.5 x 4
		Quantity		1							2					3			4		
Distribution System				Open gravity + redistribution layer																	
Piping Dimension	Hot water inlet pipe		mm	∅100 x 2				∅125 x 2			∅100 x 4		∅125 x 4			∅125 x 6			∅125 x 8		
	Cold water outlet pipe		mm	∅125 x 1		∅150 x 1			∅200 x 1				∅250 x 1			∅200 x 2			∅250 x 2		
	Drain pipe		mm	∅50 x 1		∅50 x 1			∅50 x 1							∅50 x 2					
	Overflow pipe		mm	∅50 x 1		∅50 x 1			∅80 x 1							∅80 x 2					
	Float valve		mm	∅25 x 1					∅40 x 1				∅40 x 1			∅40 x 2			∅40 x 2		
	Manual make-up		mm	∅25 x 1					∅40 x 1				∅40 x 1			∅40 x 2			∅40 x 2		
Make-up	Evaporation loss(Approx.)		%	Approx 0.83																	
	Drift loss		%	Less than 0.005																	
Weight	Net weight		kg	970	985	1160	1205	1345	1390	1450	2270	2360	2640	2730	2850	3985	4120	4300	5280	5460	5700
	Operating weight		kg	2475	2490	2975	3020	3450	3750	3810	5455	5545	6400	7000	7120	9850	10755	10935	12800	14005	14245
Noise Level	Measuring point D=1.13$\sqrt{LxW}$		dBA	64	65	65	66	66	66	67	67	68	68	69	70	70	71	71	72	73	73

ITEM	MODER			ONE CELL					TWO CELLS				THREE CELLS			FOUR CELLS		FIVE CELLS	
				FC/LN-100	FC/LN-125	FC/LN-150	FC/LN-175	FC/LN-200	FC/LN-250	FC/LN-300	FC/LN-350	FC/LN-400	FC/LN-450	FC/LN-500	FC/LN-600	FC/LN-700	FC/LN-800	FC/LN-900	FC/LN-1000
Capacity	27°C WB	circulating water flow rate	m^3/hr	78.0	97.5	117.0	136.5	156.0	195.0	234.0	273.0	312.0	351.0	390.0	468.0	546.0	624.0	702.0	780.0
		make-up water(approx.)	m^3/hr	1.1	1.4	1.7	2.0	2.2	2.8	3.3	3.9	4.5	5.0	5.6	6.7	7.8	8.9	10.0	11.2
	28°C WB	circulating water flow rate	m^3/hr	70	88	105	123	140	175	210	245	280	315	350	420	490	560	630	700
		make-up water(approx.)	m^3/hr	1.0	1.3	1.5	1.8	2.0	2.5	3.0	3.5	4.0	4.5	5.0	6.0	7.0	8.0	9.0	10.0
	Air flow rate(Approx.)		m^3/min	530	680	830	980	1100	1360	1660	1960	2200	2490	2940	3300	3920	4400	4900	5500
	Hot water temperature		°C	37															
	Cold water temperature		°C	32															
Overall Dimension	Width		mm	2000		2300		2600	4000	4600		5200	6900		7800	9200	10400	11500	13000
	Length		mm	4000		4300		4400	4000	4300		4400	4300		4400	4300	4400	4300	4400
	Height		mm	3700															
Material	Casing			FRP															
	Steel structure			Steel (hot-dip galvanized)															
	Filler			PVC															
	Distribution tray			FRP															
	Cold water basin			FRP															
	Sump tank			FRP															
	Fan			Blade : FRP , Hub : Aluminum Cast alloy															
	Fan stack			FRP															
Fan Assembly	Fan	TYPE		Axial-flow															
		Diameter X Nos.	∅ mm	1600 x 1		1800 x 1		2000 x 1	1600 x 2	1800 x 2		2000 x 2	1800 x 3		2000 x 3	1800 x 4	2000 x 4	1800 x 5	2000 x 5
		Number of blades		4															
		Fan speed(Approx.)	rpm	270	340	300	360	310	340	300	360	310	300	360	310	360	310	360	310
		Drive system		V-belt drive															
	Motor	TYPE		Totally enclosed fan cooled outdoor 3 phase induction motor 4 poles															
		Power source		380V / 3 / 50Hz															
		Rated output	Kw	1.5 x 1	2.2 x 1		3.7 x 1		2.2 x 2		3.7 x 2		2.2 x 3	3.7 x 3		3.7 x 4		3.7 x 5	
		Quantity		1					2				3			4		5	
Distribution System				Open gravity + redistribution layer															
Piping Dimension	Hot water inlet pipe		mm	∅100 x 2				∅125 x 2	∅100 x 4			∅125 x 4	∅100 x 6		∅125 x 6	∅100 x 8	∅125 x 8	∅125 x 10	
	Cold water outlet pipe		mm	∅125 x 1		∅150 x 1			∅200 x 1			∅250 x 1	∅200 x 2				∅250 x 2	∅200 x 3	
	Drain pipe		mm	∅50 x 1		∅50 x 1			∅50 x 1				∅50 x 2						
	Overflow pipe		mm	∅50 x 1		∅50 x 1			∅80 x 1				∅80 x 2						
	Float valve		mm	∅25 x 1					∅40 x 1				∅40 x 2					∅40 x 2	
	Manual make-up		mm	∅25 x 1					∅40 x 1				∅40 x 2					∅40 x 2	
Make-up	Evaporation loss(Approx.)		%	Approx 0.83															
	Drift loss		%	Less than 0.005															
Weight	Net weight		kg	1080	1120	1240	1260	1530	2230	2450	2470	2880	3700	3800	4550	5000	6050	6100	7550
	Operating weight		kg	2250	2340	2640	2730	3170	4340	4920	5090	5910	7560	7820	9080	10180	11820	12910	14990
Noise Level	Measuring point D=1.13$\sqrt{LxW}$		dBA	60	61	62	63	64	65	65	66	66	67	68	68	69	70	71	71

Note: Nominal cooling capacity is based on 131 / min/ RT(1RT=3,900 Kcal /hr) at 37 °C hot water in, 32°C cold water out 27°C ambient wet bulb. The SPLs are measured 1.13$\sqrt{WxL}$ horizontally away from air intake side of the tower at 1.5m above the foundation level. Pump head of the cooling tower is approximate equal to the height of tower(H). Dimension shown in this catalogue is metric sized and specifications are subject to change without further notice for technical improvement of our products.

GUARANTEE:

All components are guaranteed against defective material for a period of one(1) year. When return to RYOWO with transportation prepaid, all parts found by factory inspection to be defective will be repaired or replaced without charge, FOB Hong Kong or FOB ShenZhen, PRC. No liability will be assumed for loss or damage resulting form misuse of our products.

FC&FC/LN SERIES QUICK SELECTION TABLE

UNIT ： m^3/hr ℃

WET BULB 濕球(℃)	RANGE 溫差(℃)	APPROACH 冷幅	HWT 進水溫(℃)	CWT 出水溫(℃)	FC • FC/LN 100	FC • FC/LN 125	FC • FC/LN 150	FC • FC/LN 175	FC • FC/LN 200	FC • FC/LN 225	FC • FC/LN 250	FC • FC/LN 300	FC • FC/LN 350	FC • FC/LN 400	FC • FC/LN 450	FC • FC/LN 500	FC • FC/LN 600	FC • FC/LN 675	FC • FC/LN 750	FC • FC/LN 800	FC • FC/LN 900	FC • FC/LN 1000
26	3	3	32	29	60.2	75.3	90.4	105.6	120.5	135.7	150.6	180.7	211.3	241.0	271.6	301.3	361.4	407.3	451.8	481.9	543.1	602.4
		5	34	31	100.5	125.6	150.7	176.2	200.9	226.4	251.1	301.4	352.3	401.8	452.8	502.3	602.7	679.3	753.4	803.6	905.6	1.004.5
	4	3	33	29	54.2	67.7	81.3	95.0	108.4	122.2	135.5	162.6	190.1	216.8	244.3	271.0	325.1	366.4	406.4	433.5	488.5	541.9
		5	35	31	88.7	110.9	133.1	155.7	177.5	200.0	221.9	266.3	311.3	355.1	400.1	443.8	532.6	600.2	665.8	710.1	800.3	887.6
	5	3	34	29	46.3	57.8	69.4	81.1	92.6	104.2	115.7	138.8	162.3	185.0	208.6	231.3	277.6	312.8	347.0	370.1	417.1	462.6
		5	36	31	74.3	92.9	111.5	130.3	148.6	167.5	185.8	222.9	260.6	297.2	334.9	371.5	445.8	502.4	557.3	594.4	669.8	743.0
		6	37	32	89.2	111.5	133.7	156.4	178.4	201.0	223.0	267.5	312.8	356.7	401.9	445.9	535.1	602.9	668.8	713.4	804.0	891.7
		7	38	33	105.5	131.9	158.3	185.0	211.1	237.8	263.8	316.6	370.1	422.1	475.6	527.6	633.1	713.5	791.4	844.1	951.4	1.055.2
		10	41	36	162.1	202.6	243.1	284.3	324.2	365.3	405.2	486.2	568.5	648.4	730.6	810.4	972.5	1.096.0	1.215.6	1.296.7	1.461.2	1.620.8
	6	4	36	30	54.2	67.7	81.3	95.0	108.4	122.2	135.5	162.6	190.1	216.8	244.3	271.0	325.1	366.4	406.4	433.5	488.5	541.9
		5	37	31	64.5	80.6	96.8	113.1	128.9	145.4	161.2	193.4	226.2	258.0	290.8	322.5	386.9	436.0	483.7	515.9	581.4	644.9
		7	39	33	90.7	113.3	136.0	159.0	181.3	204.3	226.6	271.9	317.9	362.6	408.6	453.2	543.8	612.9	679.9	725.2	817.2	906.5
		10	42	36	137.8	172.3	206.8	241.7	275.6	310.6	344.6	413.4	483.4	551.2	621.2	689.0	826.9	931.8	1.033.6	1.102.4	1.242.4	1.378.1
	7	5	38	31	58.0	72.5	86.9	101.6	115.9	130.6	144.8	173.8	203.3	231.8	261.2	289.8	347.7	391.9	434.6	463.6	522.4	579.5
		7	40	33	80.8	101.0	121.3	141.8	161.6	182.2	202.1	242.5	283.6	323.3	364.4	404.2	485.0	545.5	606.3	646.7	728.8	808.4
		10	43	36	122.8	153.5	184.3	215.5	245.7	276.9	307.1	368.6	430.9	491.4	553.8	614.3	737.1	830.6	921.4	982.8	1.107.5	1.228.5
	9	5	40	31	48.2	60.2	72.2	84.4	96.2	108.5	120.4	144.4	168.9	192.6	217.0	240.7	288.8	325.5	361.1	385.1	434.0	481.4
		7	42	33	66.3	82.9	99.4	116.3	132.6	149.4	165.7	198.9	232.5	265.1	298.8	331.5	397.7	448.3	497.2	530.3	597.6	662.9
		10	45	36	100.5	125.6	150.7	176.2	200.9	226.4	251.1	301.4	352.3	401.8	452.8	502.3	602.7	679.3	753.4	803.6	905.6	1.004.5
27	3	3	33	30	65.4	81.8	98.1	114.7	130.8	147.4	163.5	196.1	229.4	261.5	294.8	326.9	392.3	442.1	490.4	523.1	589.5	653.9
		5	35	32	103.3	129.1	154.9	181.1	206.5	232.7	258.1	309.7	362.1	413.0	465.4	516.2	619.4	698.0	774.2	825.8	930.7	1.032.4
		7	37	34	155.0	193.8	232.6	271.9	310.1	349.4	387.6	465.1	543.8	620.2	698.9	775.3	930.4	1.048.4	1.162.9	1.240.4	1.397.9	1.550.5
	4	3	34	30	58.0	72.5	86.9	101.6	115.9	130.6	144.8	173.8	203.3	231.8	261.2	289.8	347.7	391.9	434.6	463.6	522.4	579.5
		5	36	32	92.0	115.1	138.1	161.4	184.1	207.4	230.1	276.1	322.9	368.1	414.8	460.2	552.2	622.3	690.3	736.3	829.7	920.3
		7	38	34	134.9	168.7	202.4	236.6	269.9	304.1	337.4	404.8	473.4	539.8	608.3	674.8	809.7	912.4	1.012.1	1.079.6	1.216.6	1.349.5
	5	3	35	30	48.5	60.7	72.8	85.1	97.1	109.4	121.4	145.7	170.3	194.2	218.9	242.8	291.3	328.3	364.1	388.4	437.8	485.5
		4	36	31	63.5	79.4	95.3	111.4	127.0	143.2	158.8	190.5	222.8	254.0	286.3	317.6	381.1	429.4	476.3	508.1	572.5	635.1
		5	37	32	78.0	97.5	117.0	136.5	156.0	175.5	195.0	234.0	273.0	312.0	351.0	**390.0**	468.0	526.5	585.0	624.0	702.0	780.0
		6	38	33	94.3	117.9	141.5	165.4	188.6	212.6	235.9	283.0	330.8	377.3	425.2	471.6	565.9	637.8	707.5	754.6	850.4	943.3
		7	39	34	112.6	140.7	168.8	197.4	225.1	253.7	281.3	337.6	394.8	450.2	507.4	562.8	675.4	761.0	844.1	900.4	1.014.7	1.125.5
		8	40	35	132.7	165.8	199.0	232.6	265.3	299.0	331.7	398.0	465.4	530.6	598.0	663.3	795.9	896.9	994.9	1.061.3	1.196.0	1.326.6
		10	42	37	171.4	214.3	257.1	300.6	342.8	386.3	428.5	514.2	601.2	685.6	772.6	857.0	1.028.5	1.159.0	1.285.5	1.371.2	1.545.2	1.714.0
	6	3	36	30	42	52.5	63.0	73.7	84.0	94.7	105.1	126.1	147.4	168.1	189.4	210.1	252.1	284.0	315.1	336.1	378.8	420.1
		5	38	32	67.7	84.7	101.6	118.9	135.5	152.7	169.4	203.3	237.7	271.1	305.5	338.8	406.6	458.2	508.2	542.1	610.9	677.6
		7	40	34	98.1	122.6	147.1	172.0	196.1	221.0	245.2	294.2	344.0	392.3	442.1	490.4	588.5	663.2	735.6	784.7	884.3	980.8
		9	42	36	131.3	164.1	196.9	230.2	262.6	295.9	328.2	393.8	460.4	525.1	591.7	656.3	787.6	887.6	984.5	1.050.1	1.183.4	1.312.7
		10	43	37	148.5	185.6	222.8	260.5	297.0	334.7	371.3	445.5	521.0	594.1	669.5	742.6	891.1	1.004.2	1.113.9	1.188.1	1.338.9	1.485.2
	7	5	39	32	61.3	76.6	91.9	107.4	122.4	138.0	153.1	183.7	214.7	244.9	275.9	306.1	367.3	413.9	459.2	489.8	551.9	612.2
		7	41	34	86.9	108.6	130.3	152.4	173.8	195.8	217.3	260.7	304.7	347.6	391.6	434.5	521.3	587.5	651.6	695.1	783.3	868.9
		9	43	36	116.8	146.0	175.3	204.8	233.6	263.3	292.0	350.4	409.7	467.2	526.5	584.0	700.8	789.8	876.0	934.4	1.053.0	1.168.0
		10	44	37	131.3	164.1	196.9	230.2	262.6	295.9	328.2	393.8	460.4	525.1	591.7	656.3	787.6	887.6	984.5	1.050.1	1.183.4	1.312.7
	8	6	41	33	65.9	82.4	98.8	115.6	131.8	148.5	164.8	197.6	231.1	263.5	296.9	329.4	395.3	445.4	494.1	527.0	593.9	658.8
		8	43	35	91.6	114.5	137.3	160.6	183.1	206.3	228.8	274.6	321.1	366.2	412.6	457.7	549.2	619.0	686.6	732.4	825.3	915.4
		10	45	37	118.6	148.3	177.9	208.0	237.2	267.3	296.5	355.8	416.0	474.4	534.6	593.0	711.6	801.9	889.5	948.8	1.069.3	1.186.0
	9	6	42	33	59.7	74.6	89.6	104.8	119.5	134.7	149.4	179.3	209.6	239.0	269.3	298.8	358.5	404.0	448.1	478.0	538.6	597.5
		8	44	35	83.1	103.9	124.7	145.8	166.3	187.4	207.8	249.4	291.6	332.5	374.8	415.7	498.8	562.0	623.5	665.0	749.4	831.2
		10	46	37	107.4	134.3	161.1	188.4	214.3	242.0	268.6	322.3	376.7	429.6	484.1	537.0	644.4	726.2	805.6	859.3	968.3	1.074.0
	10	6	43	33	57.5	71.9	86.2	100.8	115.0	129.5	143.6	172.4	201.6	229.9	259.0	287.3	344.8	388.5	430.9	459.7	518.0	574.6
		8	45	35	78.5	98.1	117.7	137.6	157.0	176.9	196.1	235.4	275.3	313.9	353.8	392.3	470.8	530.5	588.5	627.7	707.4	784.7
		10	47	37	100.9	126.1	151.3	176.9	201.7	227.3	252.2	302.6	353.8	403.4	454.6	504.3	605.2	682.0	756.5	806.9	909.3	1.008.6
28	3	3	34	31	68.6	85.8	103.0	120.4	137.3	154.7	171.7	206.0	240.8	274.6	309.5	343.3	412.0	464.3	514.9	549.2	619.0	686.6
		5	36	33	113.9	142.4	170.9	199.8	227.9	256.8	284.9	341.8	399.7	455.8	513.6	569.7	683.6	770.4	854.6	911.6	1.027.3	1.139.4
	4	3	35	31	60.7	75.9	91.1	106.5	121.5	136.9	151.9	182.2	213.0	242.9	273.8	303.7	364.4	410.6	455.5	485.8	547.5	607.3
		5	37	33	99.5	124.4	149.2	174.5	199.0	224.2	248.6	298.4	349.0	397.9	448.4	497.4	596.9	672.5	746.0	795.8	896.8	994.7
		8	40	36	169.1	211.4	253.7	296.6	338.2	381.1	422.8	507.4	593.2	676.4	762.3	845.6	1.014.7	1.143.5	1.268.3	1.352.9	1.524.7	1.691.1
	5	3	36	31	50.9	63.7	76.4	89.3	101.9	114.7	127.3	152.8	178.6	203.7	229.6	254.6	305.5	344.3	381.9	407.3	459.1	509.2
		4	37	32	66.3	82.9	99.4	116.3	132.6	149.4	165.7	198.9	232.5	265.1	298.8	331.5	397.7	448.3	497.2	530.3	597.6	662.9
		5	38	33	82.6	103.3	72.2	144.9	165.3	186.2	206.6	247.9	289.9	330.5	372.5	413.2	495.8	558.8	619.7	661.1	745.0	826.4
		6	39	34	98.6	123.2	99.4	172.9	197.2	222.2	246.5	295.7	345.7	394.3	444.4	492.9	591.5	666.5	739.3	788.6	888.7	985.7
		7	40	35	117.2	146.5	150.7	205.6	234.4	264.2	293.0	351.7	411.1	468.8	528.4	586.1	703.3	792.5	879.1	937.7	1.056.7	1.172.1
		9	42	37	157.4	196.8	98.1	276.1	314.9	354.8	393.6	472.3	552.2	629.7	709.6	787.1	944.6	1.064.5	1.180.7	1.259.4	1.419.2	1.574.2
	6	4	38	32	58.0	72.5	154.9	101.6	115.9	130.6	144.8	173.8	203.3	231.8	261.2	289.8	347.7	391.9	434.6	463.6	522.4	579.5
		6	40	34	85.9	107.3	232.6	150.7	171.8	193.6	214.8	257.7	301.4	343.6	387.2	429.5	515.5	580.9	644.3	687.2	774.5	859.1
		8	42	36	119.6	149.5	86.9	209.8	239.2	269.5	299.0	358.7	419.5	478.3	539.0	598.0	717.5	808.6	896.8	956.6	1.078.0	1.195.8
		10	44	38	153.2	191.5	138.1	268.7	306.3	345.2	383.0	459.5	537.2	612.7	690.5	765.9	919.0	1.035.7	1.148.8	1.225.4	1.380.9	1531.7
	7	5	40	33	64.5	80.6	202.4	113.1	128.9	145.4	161.2	193.4	226.2	258.0	290.8	322.5	386.9	436.0	483.7	515.9	581.4	644.9
		7	42	35	91.6	114.5	72.8	85.1	183.1	206.3	228.8	274.6	321.1	366.2	412.6	457.7	549.2	619.0	686.6	732.4	825.3	915.4
		10	45	38	137.3	171.7	95.3	111.4	274.6	309.5	343.3	412.0	481.7	549.2	619.0	686.6	823.9	928.4	1.029.9	1.098.5	1.238.0	1.373.2
	8	5	41	33	58.9	73.6	117.0	136.5	117.7	132.7	147.1	176.6	206.4	235.4	265.3	294.2	353.1	397.9	441.4	470.8	530.5	588.5
		7	43	35	83.1	103.9	141.5	165.4	166.3	187.4	207.8	249.4	291.6	332.5	374.8	415.7	498.8	562.0	623.5	665.0	749.4	831.2
		10	46	38	124.3	155.3	168.8	197.4	248.5	280.0	310.6	372.7	435.8	497.0	560.0	621.2	745.4	840.1	931.8	993.9	1.120.0	1.242.4
	9	5	42	33	55.1	68.9	199.0	232.6	110.2	124.2	137.8	165.3	193.2	220.4	248.3	275.5	330.5	372.5	413.2	440.8	496.6	550.9
		8	45	36	89.6	112.1	257.1	300.6	179.3	202.1	224.2	269.0	314.5	358.6	404.2	448.4	538.0	606.3	672.5	717.4	808.4	896.6
		10	47	38	116.8	146.0	63.0	73.7	233.6	263.3	292.0	350.4	409.7	467.2	526.5	584.0	700.8	789.8	876.0	934.4	1.053.0	1.168.0
	10	5	43	33	51.4	64.7	101.6	118.9	102.8	115.9	128.5	154.3	180.3	205.7	231.8	257.1	308.5	247.6	385.6	411.3	463.5	514.1
		10	48	38	107.0	133.7	101.6	118.9	214.0	241.1	267.5	321.0	375.3	428.0	482.3	535.0	641.9	723.4	802.4	856.0	964.6	1.069.9

EXAMPLE:

WATER FLOW RATE	: 390m³/hr
INLET WATER TEMP	: 37℃
OUTLET WATER TEMP	: 32℃
WET BULB TEMP	: 27℃

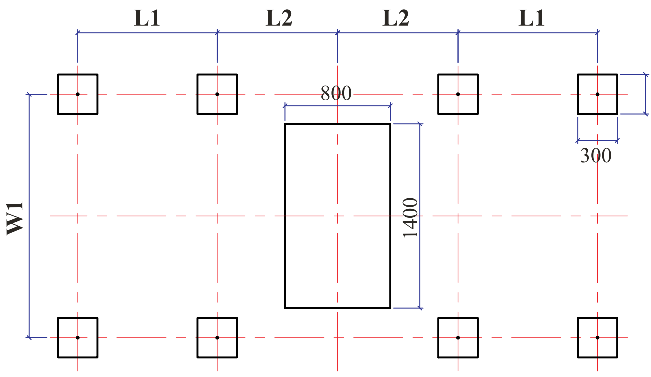
RANGE : INLET WATER TEMP-OUTLET WATER TEMP
: 37℃-32℃=5℃

APPROACH : OUTLET WATER TEMP-WET BULB TEMP
: 32℃-27℃=5℃

TOWER SELECTED : **FC OR FC/LN-500**

FOUNDATION

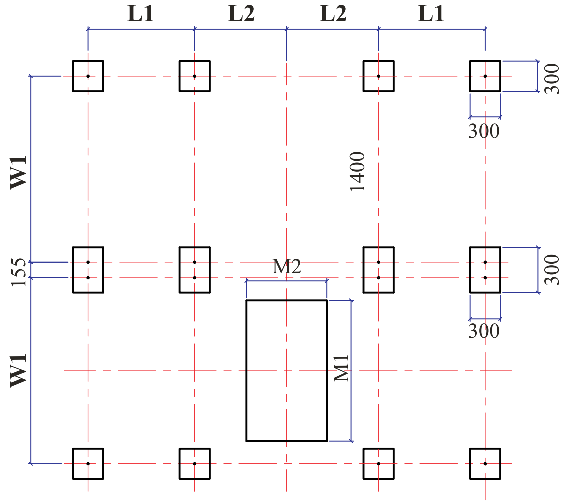
MODEL : FC 100,125,150,175,200,225,250 . FC/LN 100,125,150,175,200



MODEL	FC						
	100	125	150	175	200	225	250
L1	1060	1060	1060	1060	1060	1060	1060
L2	740	740	915	915	1065	1115	1115
W1	1500	1500	1850	1850	2150	2450	2450

MODEL	FC / LN				
	100	125	150	175	200
L1	1060	1060	1060	1060	1060
L2	915	915	1065	1115	1115
W1	1850	1850	2150	2450	2450

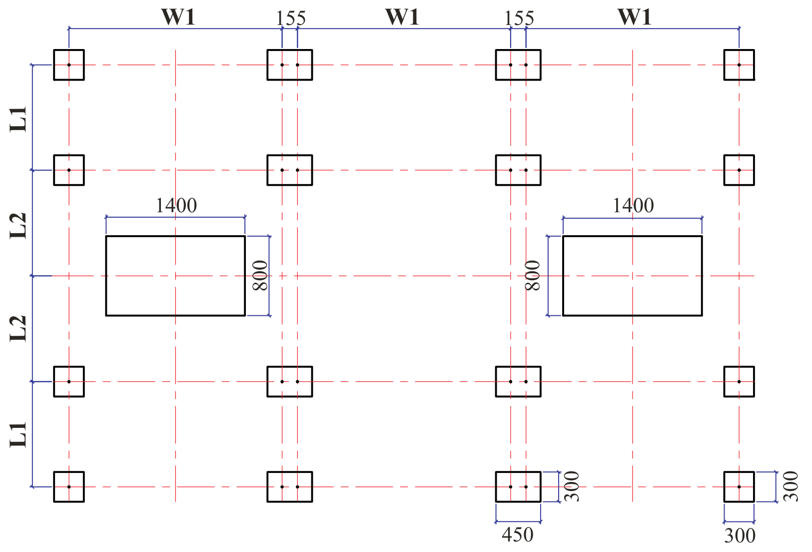
TWO CELLS MODEL : FC 300,350,400,450,500 . FC/LN 250,300,350,400



MODEL	FC				
	300	350	400	450	500
L1	1060	1060	1060	1060	1060
L2	915	915	1065	1115	1115
W1	1850	1850	2150	2450	2450

MODEL	FC / LN			
	250	300	350	400
L1	1060	1060	1060	1060
L2	915	1065	1065	1115
W1	1850	2150	2150	2450

THREE CELLS MODEL : FC 600,675,750 . FC/LN 450,500,600

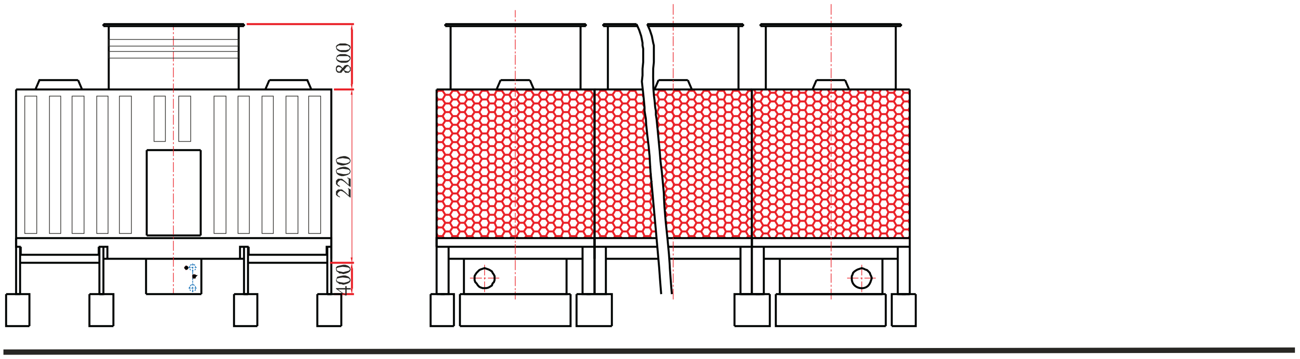


MODEL	FC		
	600	675	750
L1	1060	1060	1060
L2	1065	1115	1115
W1	2150	2450	2450

MODEL	FC		
	450	500	600
L1	1060	1060	1060
L2	1065	1065	1115
W1	2150	2150	2450

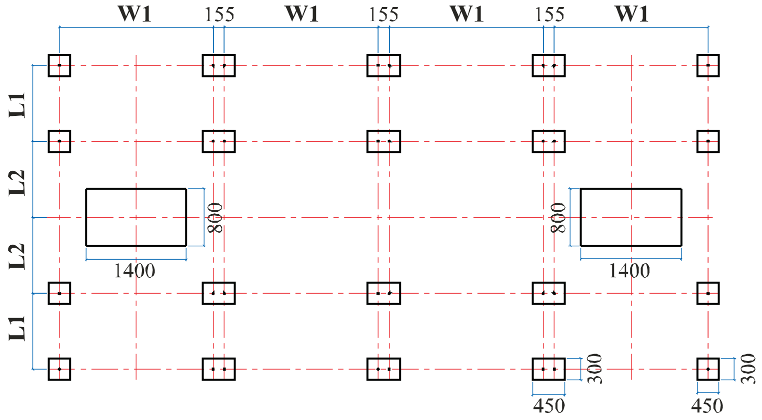
FOUNDATION

3~5 CELLS



- Water outlet at air inlet side

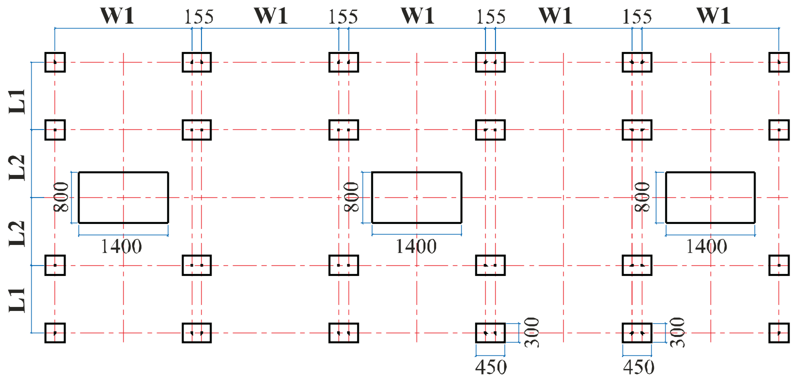
FOUR CELLS MODEL: FC800,900,1000. FC/LN 700,800



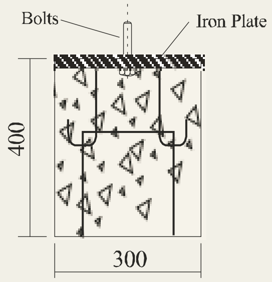
MODEL	FC		
	800	900	1000
L1	1060	1060	1060
L2	1065	1115	1115
W1	2150	2450	2450

MODEL	FC / LN	
	700	800
L1	1060	1060
L2	1065	1115
W1	2150	1115

FIVE CELLS MODEL: FC/LN 900,1000



MODEL	FC / LN	
	900	1000
L1	1060	1060
L2	1065	1115
W1	2150	2450



NOTES: 1. Bolts required are M16 x 100.
2. The direction of water outlet can be changed upon request.
3. The above drawing are for reference. Do not scale drawing. All dimendions are in mm.
* 4. For FC/LN only.

AVAILABLE OPTIONAL ACCESSORIES

AIR INTAKE LOUVER

Air intake louver constructed of F.R.P. material can be provided, which matches the rest of thetower. Stainless steel made air inlet screen can also be provided .

BASIN HEATERS

Electric immersion heaters with thermostat and control box are available to keep the basin water fromfreezing in sub-zero weather when the tower is turned off.

DISTRIBUTION TRAY COVER

FRP made covers are available in easily removable sections to facilitate the cleaning of trays to prevent the accumulation of leaves, debris and algae in the hot water distribution trays. For snowing area, distribution tray covers are strongly recommended.

HIGH TEMPERATURE FILLER

An optional high temperature Filler is available for towers operating above 55°C and can increase the allowable entering water temperature to 65°C.

HAND RAIL

Galv. Steel tubing handrails are available to provide safe walkways between cells on multicells towers.

STAINLESS STEEL HARDWARE

As an alternative, all primary steel components, bolts & nuts can be provided with a stainless steel SS 304 Material.(This does not include bearing box and motors).

BODY COLOR

Cooling tower installed on the roof of building may be barely noticeable from the ground, and a colored cooling tower matching to building color will make it " good look ".

RYOWO (HOLDING) CO .,LTD.

Rm. 1218, Angyle Centre 1,
688 Nathan Rd., MongKok,
Kowloon, Hong Kong

Tel : (852) 23918381
Fax: (852) 27893802

Http://www.ryowo.com
e-mail: ryinfo@ryowo.com

DONGGUAN RYOWO COOLING TOWER CO., LTD.

No.263 MeiJing Road West,Dalang,Dongguan,Guangdong,PRC

Tel : (86)-769 89399698
(86)-769 89399699
Fax: (86)-769 82973398
Postal Code: 523795

ryowo™

COOLING TOWER MANUFACTURER SINCE 1978

Catalogue of Ryowo FWS-127-7.5

菱和
ryowo™

RYOWO COOLING TOWER

FWS SERIES

Low Noise Cross Flow Type

CTI CERTIFIED

bsi. ANAB ACCREDITED

ISO 9001 : 2008 FM 601004

The ryowo™ Group is the pioneer and manufacturer of fiberglass-reinforced polyester (FRP) cooling towers in Hong Kong.

We offer a full range of product lines in FRP, stainless steel and galvanized steel water-cooling towers. With our vital production station, Dongguan RYOWO Cooling Tower Company Limited, we manufacture, market and service a full range of water-cooling towers. Over 90% of the cooling tower parts are from our own factory and, as a result, control of cost and quality are ensured.

RYOWO has been a member of the Cooling Technology Institute since 1982. With our own R&D department and testing facilities, we have six lines of product which are CTI-201 certified.

In 2004, our R & D department successfully developed a CTI STD-20l rated product line, the FWS series, the highest standard of water-cooling towers with guaranteed cooling capacity. In order to expand the application of our cooling towers, we developed the integrated drift eliminator, and used the super low noise fan as an option in this series.

FWS

Low Noise Cross Flow Type

CTI CERTIFIED

MANUFACTURER'S PUBLISHED THERMAL PERFORMANCE IS CERTIFIED BY THE COOLING TOWER INSTITUTE UNDER THE PROVISIONS OF STD-201(11)

CERTIFICATION VALIDATION NUMBER

04-27-01

THE COOLING TOWER YOU CAN RELY ON

MODEL DESIGNATION

FWS-300-15-AS /L

STD 201 Certified Line — FWS

Model Nos — 300-15

/E is for integrated drift eliminator

/AE is for additional drift eliminator

/L is for additional louver installed in front of air inlet face

/SLF is for super low noise fan

GI for FRP Casing & Basin, HDG Structure

SS for FRP Casing & Basin, SS Structure

AG for HDG Casing, Basin & Structure

AS for SS Casing, Basin, SS Structure

There are a total of 71 models for the FWS series with 15 different configurations to meet various requirements and provide a high degree of flexibility.

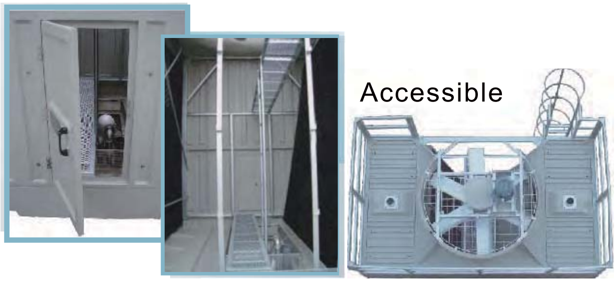
High flexible

All FWS models can be fitted with RYOWO special integrated drift eliminators to achieve drift loss less than 0.001% and equipped with OSHA handrail and caged ladder to comply with requirement.

Factory assembled

Most FWS cooling towers can be factory assembled and delivered to site.

Complied with OSHA requirement



Accessible

Super low noise fan to reduce the sound power level, maintaining the same thermal performance.

FRP / HDG / SS MATERIAL ARE AVAILABLE

All Hot dip galvanized

All Stainless steel

FRP Casing + SS Basin

The standard FWS cooling towers are made of FRP casing & basin with hot dip galvanized structure. Optional stainless steel casing & basin and structure can also be provided upon request.

3 SPECIFICATION

Model	Nominal Water Flow	Dimension				Fan	Fan	Piping					Sound Power	Weight	
	M^3/hr	L mm	W mm	h mm	H mm	Motor kW	Dia mm	In mm	Out mm	Fv mm	Of mm	Dr mm	Level	Dry kgs	Wet kgs
FWS-94-3.7	94	4000	2000	4125	4625	3.7	1600	100x2	150	25	50	50	88	1335	2300
FWS-94-5.5	107				4705	5.5							91	1385	2350
FWS-94-7.5	119				4745	7.5							93	1400	2365
FWS-127-5.5	127	4400	2300	4125	4705	5.5	1800	100x2	150	25	50	50	90	1570	3000
FWS-127-7.5	141				4745	7.5							92	1585	3015
FWS-127-11	160				4825	11							94	1650	3080
FWS-169-7.5	169	4400	2600	4125	4745	7.5	2000	125x2	200	25	50	50	92	1690	3700
FWS-169-11	192				4825	11							94	1760	3770
FWS-169-15	213				4870	15							95	1770	3780
FWS-200-7.5	190	4600	2600	4145	4785	7.5	2400	125x2	200	40	80	50	91	2195	4000
FWS-200-11	215				4865	11							93	2250	4055
FWS-200-15	235				4910	15							95	2255	4060
FWS-250-7.5	210	4800	3200	4345	4985	7.5	2400	125x2	200	40	80	50	90	2890	5000
FWS-250-11	240				5065	11							93	2945	5055
FWS-250-15	265				5110	15							94	2950	5060
FWS-275-7.5	225	5200	3200	4145	4785	7.5	2900	150x2	200	40	80	50	89	3050	5160
FWS-275-11	255				4865	11							92	3105	5215
FWS-275-15	285				5910	15							94	3110	5220
FWS-300-7.5	235	6000	3200	4345	4895	7.5	2400	150x2	200	40	80	50	89	3310	6500
FWS-300-11	270				5065	11							91	3365	6555
FWS-300-15	300				5110	15							93	3370	6560
FWS-300-18.5	320				5175	18.5							94	3410	6600
FWS-300-22	340				5215	22							95	3470	6660
FWS-330-7.5	260	6300	3200	4145	4785	7.5	2900	150x2	250	50	80	50	88	3405	6595
FWS-330-11	300				4865	11							91	3460	6650
FWS-330-15	330				4910	15							93	3465	6655
FWS-330-18.5	350				5175	18.5							94	3505	6695
FWS-330-22	375				5215	22							95	3565	6755
FWS-350-7.5	275	5400	3600	5425	6065	7.5	3000	150x2	250	50	80	50	89	3580	6770
FWS-350-11	315				6145	11							91	3635	6825
FWS-350-15	350				6190	15							93	3640	6830
FWS-350-18.5	375				6255	18.5							94	3680	6870
FWS-350-22	400				6295	22							95	3740	6930
FWS-400-7.5	285	6600	3600	4345	4985	7.5	3000	125x4	250	50	80	50	87	3630	7000
FWS-400-11	325				5065	11							89	3685	7055
FWS-400-15	360				5110	15							91	3690	7060
FWS-400-18.5	385				5135	18.5							92	3730	7100
FWS-400-22	410				5195	22							93	3790	7160
FWS-400-30	450				5255	30							94	3820	7185
FWS-500-7.5	305	6000	4200	5355	5990	7.5	3400	125x4	250	50	80	50	87	4230	8000
FWS-500-11	345				6070	11							90	4285	8055
FWS-500-15	385				6115	15							91	4290	8060
FWS-500-18.5	410				6180	18.5							93	4325	8100
FWS-500-22	435				6220	22							94	4390	8120
FWS-500-30	485				6280	30							95	4415	8145
FWS-550-7.5	315	6600	3600	5355	5990	7.5	3000	125x4	250	50	80	50	87	4350	8080
FWS-550-11	360				6070	11							89	4405	8135
FWS-550-15	400				6115	15							91	4410	8140
FWS-550-18.5	430				6180	18.5							92	4450	8180
FWS-550-22	455				6220	22							94	4510	8240
FWS-550-30	500				6280	30							95	4535	8275
FWS-600-11	435	7000	4200	5500	6255	11	3700	150x4	300	50	80	50	89	5015	9000
FWS-600-15	485				6300	15							91	5020	9005
FWS-600-18.5	520				6365	18.5							92	5060	9045
FWS-600-22	550				6405	22							94	5120	9085
FWS-600-30	610				6465	30							95	5140	9110
FWS-600-37	650				6485	37							96	5330	9300
FWS-700-11	515	7000	5000	5500	6255	11	3700	150x4	300	50	80	50	89	5650	12000
FWS-700-15	570				6300	15							91	5655	12005
FWS-700-18.5	610				6365	18.5							92	5690	12055
FWS-700-22	645				6405	22							93	5755	12120
FWS-700-30	720				6465	30							95	5780	12145
FWS-700-37	765				6485	37							96	5970	12335
FWS-800-11	555	7500	5000	6400	7155	11	4200	150x4	300	50	80	50	88	6905	14880
FWS-800-15	615				7200	15							90	6910	14885
FWS-800-18.5	655				7265	18.5							91	6945	14920
FWS-800-22	695				7305	22							93	7010	14985
FWS-800-30	760				7365	30							95	7035	15010
FWS-800-37	820				7385	37	4200	150x4	350	50	80	50	98	7225	15200
FWS-800-45	880				7405	45							99	7255	15230
FWS-800-55	940				7495	55							100	7365	15340

Notes:

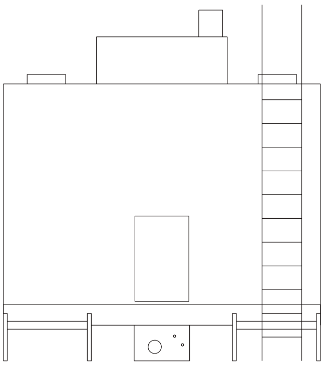
1/CTI Certification applies to the operation with the Wet Bulb Temp. between 12.8℃ and 32.2℃, Max. Entering Water Temp. 51.7℃, Min. Range of 2.2℃ and Min. Approach of 2.8℃.

2/The nominal water flows are based upon 37℃ HWT, 32℃ CWT, 28℃ WBT, 32℃ DBT and 101.3 kPa Barometric pressure.

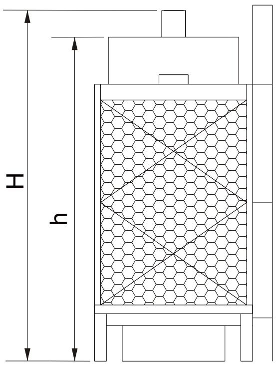
3/Sound Power Level is in dBA re 10^{-12} Watt.

4/Data and specifications are subjected to change without prior notice.

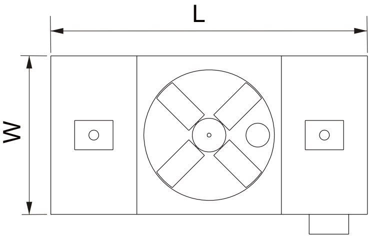
TOWER SCHEMATIC



Casing Panel

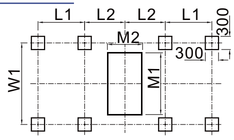


Air Intake

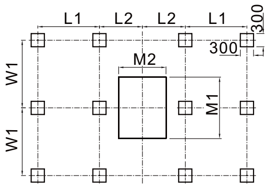


Top view

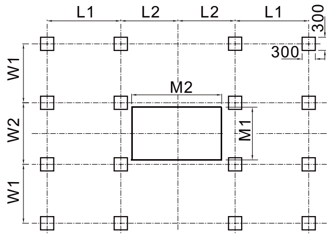
FWS 94 / 127 / 169 / 200



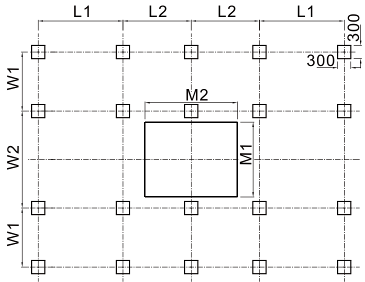
FWS 250 / 275 / 300 / 330 / 350 / 400 / 550



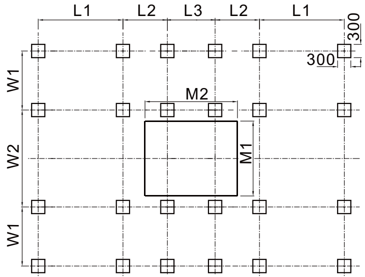
FWS 500



FWS 600 / 700



FWS 800



Model	L1	L2	L3	W1	W2	M1	M2
FWS 94 3 7	1060	915		1850		1400	800
FWS 94 5 5	1060	915		1850		1400	800
FWS 94 7 5	1060	915		1850		1400	800
FWS 127 5 5	1060	1115		2150		1400	800
FWS 127 7 5	1060	1115		2150		1400	800
FWS 127 11	1060	1115		2150		1400	800
FWS 169 7 5	1060	1115		2450		1400	800
FWS 169 11	1060	1115		2450		1400	800
FWS 169 15	1060	1115		2450		1400	800
FWS 200 7 5	1400	875		2450		1400	1100
FWS 200 11	1400	875		2450		1400	1100
FWS 200 15	1400	875		2450		1400	1100
FWS 250 7 5	1400	975		1540		1400	1100
FWS 250 11	1400	975		1540		1400	1100
FWS 250 15	1400	975		1540		1400	1100
FWS 275 7 5	1400	1175		1540		1400	1100
FWS 275 11	1400	1175		1540		1400	1100
FWS 275 15	1400	1175		1540		1400	1100
FWS 300 7 5	1848	1127		1540		1400	1100
FWS 300 11	1848	1127		1540		1400	1100
FWS 300 15	1848	1127		1540		1400	1100
FWS 300 18 5	1848	1127		1540		1400	1100
FWS 300 22	1848	1127		1540		1400	1100
FWS 330 7 5	1848	1277		1540		1400	1100
FWS 330 11	1848	1277		1540		1400	1100
FWS 330 15	1848	1277		1540		1400	1100
FWS 330 18 5	1848	1277		1540		1400	1100
FWS 330 22	1848	1277		1540		1400	1100
FWS 350 7 5	1675	1000		1740		2100	1200
FWS 350 11	1675	1000		1740		2100	1200
FWS 350 15	1675	1000		1740		2100	1200
FWS 350 18 5	1675	1000		1740		2100	1200
FWS 350 22	1675	1000		1740		2100	1200
FWS 400 7 5	1925	1350		1740		1400	1100
FWS 400 11	1925	1350		1740		1400	1100
FWS 400 15	1925	1350		1740		1400	1100
FWS 400 18 5	1925	1350		1740		1400	1100
FWS 400 22	1925	1350		1740		1400	1100
FWS 400 30	1925	1350		1740		1400	1100
FWS 500 7 5	1675	1300		1340	1400	1300	2100
FWS 500 11	1675	1300		1340	1400	1300	2100
FWS 500 15	1675	1300		1340	1400	1300	2100
FWS 500 18 5	1675	1300		1340	1400	1300	2100
FWS 500 22	1675	1300		1340	1400	1300	2100
FWS 500 30	1675	1300		1340	1400	1300	2100
FWS 550 7 5	1925	1350		1740		2100	1300
FWS 550 11	1925	1350		1740		2100	1300
FWS 550 15	1925	1350		1740		2100	1300
FWS 550 18 5	1925	1350		1740		2100	1300
FWS 550 22	1925	1350		1740		2100	1300
FWS 550 30	1925	1350		1740		2100	1300
FWS 600 11	1925	1550		1340	1400	1300	2100
FWS 600 15	1925	1550		1340	1400	1300	2100
FWS 600 18 5	1925	1550		1340	1400	1300	2100
FWS 600 22	1925	1550		1340	1400	1300	2100
FWS 600 30	1925	1550		1340	1400	1300	2100
FWS 600 37	1925	1550		1340	1400	1300	2100
FWS 700 11	1925	1550		1340	2200	1300	2100
FWS 700 15	1925	1550		1340	2200	1300	2100
FWS 700 18 5	1925	1550		1340	2200	1300	2100
FWS 700 22	1925	1550		1340	2200	1300	2100
FWS 700 30	1925	1550		1340	2200	1300	2100
FWS 700 37	1925	1550		1340	2200	1300	2100
FWS 800 11	2050	1090	1170	1340	2200	1300	2100
FWS 800 15	2050	1090	1170	1340	2200	1300	2100
FWS 800 18 5	2050	1090	1170	1340	2200	1300	2100
FWS 800 22	2050	1090	1170	1340	2200	1300	2100
FWS 800 30	2050	1090	1170	1340	2200	1300	2100
FWS 800 37	2050	1090	1170	1340	2200	1300	2100
FWS 800 45	2050	1090	1170	1340	2200	1300	2100
FWS 800 55	2050	1090	1170	1340	2200	1300	2100

Notes:

1/The footing dimensions are for preliminary layout only. For detail footing drawing, please consult RYOWO engineers.

2/Dimensions are in mm.

5 MODEL SELECTION

Model	Temp.	Water flow rate at indicated HWT, CWT & WBT (M^3/HR)											
	HWT °C	33	33	37	33	32	37	35	34	33	37	36	35
	CWT °C	28	27	32	28	27	32	30	29	28	32	31	30
	WBT °C	23	23	24	24	24	25	25	25	25	26	26	26
FWS-94-3.7		88	66	142	77	62	131	97	81	65	119	101	85
FWS-94-5.5		100	75	161	88	71	149	110	92	74	135	115	96
FWS-94-7.5		111	84	179	97	79	165	122	102	82	150	128	107
FWS-127-5.5		119	89	192	104	84	177	131	109	88	161	137	114
FWS-127-7.5		132	99	213	115	93	196	145	121	98	178	152	127
FWS-127-11		150	112	242	131	106	223	164	137	111	202	173	144
FWS-169-7.5		158	119	254	138	112	234	174	145	117	213	182	152
FWS-169-11		179	135	288	157	127	266	197	165	133	242	207	173
FWS-169-15		199	150	320	174	141	295	219	183	148	268	229	192
FWS-200-7.5		176	129	295	152	121	270	195	160	127	244	206	169
FWS-200-11		199	146	334	172	136	306	221	182	144	276	233	191
FWS-200-15		218	160	365	188	149	334	242	198	157	302	255	209
FWS-250-7.5		194	143	325	169	134	298	216	178	141	269	227	187
FWS-250-11		222	163	371	193	153	340	246	203	161	308	260	214
FWS-250-15		245	180	410	213	169	376	272	224	178	340	287	236
FWS-275-7.5		208	153	348	181	143	319	231	190	151	288	243	200
FWS-275-11		236	174	394	205	162	361	262	216	171	327	276	227
FWS-275-15		264	194	441	229	181	404	293	241	191	365	308	254
FWS-300-7.5		217	162	357	189	151	328	240	199	159	298	253	210
FWS-300-11		250	186	410	217	174	377	276	229	183	343	291	241
FWS-300-15		277	206	456	242	193	419	307	254	204	381	323	268
FWS-300-18.5		291	217	478	254	203	440	322	267	214	400	339	281
FWS-300-22		305	227	501	266	213	461	338	280	224	419	355	295
FWS-330-7.5		240	179	395	209	168	363	266	220	176	330	280	232
FWS-330-11		277	206	456	242	193	419	307	254	204	381	323	268
FWS-330-15		305	227	501	266	213	461	338	280	224	419	355	295
FWS-330-18.5		323	241	532	282	226	489	358	297	237	444	377	312
FWS-330-22		342	254	562	298	238	517	379	314	251	470	399	330
FWS-350-7.5		254	189	419	221	177	386	282	233	186	350	297	245
FWS-350-11		291	216	480	254	202	442	323	267	213	401	340	281
FWS-350-15		324	240	534	282	225	491	358	297	237	445	377	312
FWS-350-18.5		347	257	572	302	241	526	384	318	254	477	404	335
FWS-350-22		370	274	610	322	257	561	410	339	271	509	431	357
FWS-400-7.5		263	196	433	230	184	398	292	242	193	362	307	254
FWS-400-11		300	223	494	262	209	454	333	276	221	413	350	290
FWS-400-15		333	247	547	290	232	503	368	305	244	457	388	321
FWS-400-18.5		356	265	585	310	248	538	394	326	261	489	415	344
FWS-400-22		379	282	623	330	264	573	419	348	278	520	442	366
FWS-400-30		416	309	684	362	290	629	460	382	305	571	485	402
FWS-500-7.5		282	209	465	245	196	428	312	258	206	388	329	272
FWS-500-11		319	237	526	278	222	484	353	292	233	439	372	308
FWS-500-15		356	264	587	310	247	540	394	326	261	490	415	344
FWS-500-18.5		379	281	625	330	263	575	420	347	277	522	442	366
FWS-500-22		402	298	663	350	279	610	445	369	294	553	469	388
FWS-500-30		448	333	740	390	312	680	497	411	328	617	523	433
FWS-550-7.5		291	218	473	254	205	436	322	268	215	397	338	282
FWS-550-11		332	249	541	291	234	498	367	306	246	454	387	322
FWS-550-15		369	277	601	323	260	554	408	340	273	504	430	358
FWS-550-18.5		397	298	646	347	279	595	439	365	294	542	462	384
FWS-550-22		420	315	683	367	295	630	464	387	311	574	489	407
FWS-550-30		461	346	751	404	325	692	510	425	342	631	537	447
FWS-600-11		401	301	653	351	282	602	444	370	297	549	467	389
FWS-600-15		448	336	728	392	315	672	495	412	332	612	521	434
FWS-600-18.5		480	360	781	420	338	720	531	442	355	656	558	465
FWS-600-22		508	381	826	444	357	762	561	467	376	694	591	492
FWS-600-30		563	422	916	493	396	845	623	518	417	769	655	545
FWS-600-37		600	450	976	525	422	900	663	552	444	820	698	581
FWS-700-11		475	356	774	416	334	713	526	437	352	649	553	460
FWS-700-15		526	394	856	460	370	789	582	484	390	719	612	510
FWS-700-18.5		563	422	916	493	396	845	623	518	417	769	655	545
FWS-700-22		595	446	969	521	419	893	658	548	441	813	693	577
FWS-700-30		664	498	1081	581	468	997	735	612	492	908	773	644
FWS-700-37		706	529	1149	618	497	1059	781	650	523	965	822	684
FWS-800-11		512	386	828	449	362	764	566	472	381	697	595	497
FWS-800-15		567	427	917	497	401	847	627	523	422	772	659	550
FWS-800-18.5		604	455	977	530	427	902	667	557	450	823	702	586
FWS-800-22		641	483	1037	562	454	957	708	591	477	873	745	622
FWS-800-30		701	528	1134	615	496	1046	774	646	522	954	815	680
FWS-800-37		756	570	1223	663	535	1129	836	697	563	1030	879	734
FWS-800-45		811	611	1312	712	574	1212	897	748	604	1105	943	787
FWS-800-55		867	653	1402	760	613	1294	958	799	646	1180	1008	841

Notes:

1/CTI Certification applies to the operation with the Wet Bulb Temp. between 12.8℃ and 32.2℃, Max. Entering Water Temp. 51.7℃, Min. Range of 2.2℃ and Min. Approach of 2.8℃.

2/This table is for quick selection only. For more precise selection, please consult RYOWO engineers.

Model	Temp.	Water flow rate at indicated HWT, CWT & WBT (M^3/HR)											
	HWT °C	34	38	37	36	35	39	38	37	36	39	38	37
	CWT °C	29	33	32	31	30	34	33	32	31	34	33	32
	WBT °C	26	27	27	27	27	28	28	28	28	29	29	29
FWS-94-3.7		68	125	106	89	72	131	112	94	75	117	98	79
FWS-94-5.5		78	142	121	101	82	149	127	107	86	133	111	90
FWS-94-7.5		87	158	135	112	91	166	141	119	95	148	124	100
FWS-127-5.5		92	169	144	120	97	177	151	127	102	158	132	107
FWS-127-7.5		102	187	160	133	107	196	168	141	113	176	147	118
FWS-127-11		116	212	181	151	122	223	190	160	128	200	166	134
FWS-169-7.5		123	223	191	160	129	234	200	169	136	210	176	142
FWS-169-11		140	254	217	181	147	266	228	192	154	239	200	162
FWS-169-15		155	282	241	201	163	295	252	213	171	265	222	179
FWS-200-7.5		134	257	217	178	141	271	229	190	149	241	198	157
FWS-200-11		152	291	245	202	160	307	259	215	169	273	225	178
FWS-200-15		166	318	268	221	175	336	283	235	184	298	246	195
FWS-250-7.5		149	284	239	197	157	299	252	210	165	266	219	174
FWS-250-11		170	324	274	225	179	342	289	240	189	304	251	199
FWS-250-15		187	358	302	249	198	377	319	265	208	336	277	220
FWS-275-7.5		159	304	257	211	168	321	271	225	177	285	235	187
FWS-275-11		180	345	291	239	190	363	307	255	201	323	266	212
FWS-275-15		202	385	325	268	213	406	343	285	224	361	298	237
FWS-300-7.5		168	314	267	221	177	331	281	235	187	296	245	197
FWS-300-11		193	361	306	254	203	380	323	270	214	340	282	226
FWS-300-15		214	401	340	282	226	422	358	300	238	378	313	251
FWS-300-18.5		225	421	357	296	237	443	376	315	250	397	329	264
FWS-300-22		236	441	374	310	249	465	394	330	262	416	345	276
FWS-330-7.5		186	347	295	245	196	366	311	260	206	327	272	218
FWS-330-11		214	401	340	282	226	422	358	300	238	378	313	251
FWS-330-15		236	441	374	310	249	465	394	330	262	416	345	276
FWS-330-18.5		250	468	397	329	264	493	418	350	278	441	366	293
FWS-330-22		264	494	420	348	279	521	442	370	294	466	386	310
FWS-350-7.5		196	368	312	259	207	388	329	275	218	347	287	230
FWS-350-11		225	422	358	296	237	445	377	315	250	397	329	263
FWS-350-15		250	469	397	329	263	494	419	350	277	441	366	292
FWS-350-18.5		267	502	426	353	282	529	449	375	297	473	392	313
FWS-350-22		285	536	454	376	301	565	479	400	317	504	418	334
FWS-400-7.5		204	381	323	268	215	401	341	285	226	359	298	239
FWS-400-11		232	434	369	306	245	458	388	325	258	409	339	272
FWS-400-15		257	481	408	339	271	507	430	360	286	453	376	301
FWS-400-18.5		275	515	437	362	290	542	460	385	306	485	402	322
FWS-400-22		293	548	465	386	309	577	490	410	325	516	428	343
FWS-400-30		322	601	510	423	339	633	538	450	357	567	470	377
FWS-500-7.5		217	409	346	287	229	431	365	305	242	385	319	255
FWS-500-11		246	462	392	324	259	487	413	345	273	435	360	288
FWS-500-15		274	516	437	362	289	543	461	385	305	486	402	322
FWS-500-18.5		292	549	466	385	308	579	491	410	325	517	428	343
FWS-500-22		310	583	494	409	327	614	521	435	345	549	454	363
FWS-500-30		346	650	551	456	364	685	580	485	384	612	507	405
FWS-550-7.5		227	418	356	296	239	440	375	315	252	395	329	265
FWS-550-11		259	478	407	339	273	503	428	360	287	451	376	303
FWS-550-15		288	531	452	376	303	559	476	400	319	501	418	337
FWS-550-18.5		309	571	486	405	326	601	512	430	343	539	449	362
FWS-550-22		327	604	514	428	345	636	541	455	363	570	475	383
FWS-550-30		360	664	565	471	379	699	595	500	399	627	522	421
FWS-600-11		313	577	492	409	330	608	518	435	347	545	454	366
FWS-600-15		349	644	548	456	368	678	577	485	387	608	506	408
FWS-600-18.5		374	690	588	489	394	726	619	520	415	652	543	438
FWS-600-22		396	730	622	518	417	768	655	550	439	689	574	463
FWS-600-30		439	810	689	574	462	852	726	610	487	765	637	513
FWS-600-37		468	863	735	612	493	908	774	650	519	815	679	547
FWS-700-11		371	683	582	485	390	719	613	515	411	646	538	433
FWS-700-15		410	756	644	537	432	796	678	570	455	714	595	480
FWS-700-18.5		439	810	689	574	462	852	726	610	487	765	637	513
FWS-700-22		464	856	729	607	489	901	768	645	515	808	674	543
FWS-700-30		518	955	814	678	546	1006	857	720	575	902	752	606
FWS-700-37		551	1015	865	720	580	1069	910	765	611	959	799	644
FWS-800-11		401	733	626	523	422	772	659	555	445	694	580	469
FWS-800-15		445	813	694	579	468	855	730	615	493	769	642	519
FWS-800-18.5		473	865	739	617	498	911	778	655	525	819	684	553
FWS-800-22		502	918	784	655	529	966	825	695	557	869	726	587
FWS-800-30		549	1004	857	716	578	1057	902	760	609	950	794	642
FWS-800-37		593	1083	925	772	624	1140	973	820	657	1025	856	692
FWS-800-45		636	1163	993	829	670	1224	1045	880	705	1100	919	743
FWS-800-55		679	1242	1060	885	715	1307	1116	940	753	1175	982	794

Notes:

1/CTI Certification applies to the operation with the Wet Bulb Temp. between 12.8℃ and 32.2℃, Max. Entering Water Temp. 51.7℃, Min. Range of 2.2℃ and Min. Approach of 2.8℃.

2/This table is for quick selection only. For more precise selection, please consult RYOWO engineers.


The Hong Kong
Polytechnic University


City University of
Hong Kong


The University of
Hong Kong


The Ritz-Carlton Hotel

FWS series


Kai Tak Cruise Terminal


Studio City, Macau


Mega Box


Galaxy Casino & Resort, Macau

RYOWO (HOLDING) CO., LTD.

Head Office:
Rm. 1218, Argyle Centre 1,688 Nathan Rd. MongKok,Kowloon,
Hong Kong.
Tel : (852) 23918381 Web site: http://www.ryowo.com
Fax: (852) 27893802 E-mail : ryinfo@ryowo.com

Factory:
4/F., Flat A, Tuen Mun Ind. Ctr.,TMTL 76, NT., Hong Kong

DONGGUAN RYOWO COOLING TOWER CO., LTD.

No.263 MeiJing Road West,Dalang,Dongguan,Guangdong,PRC

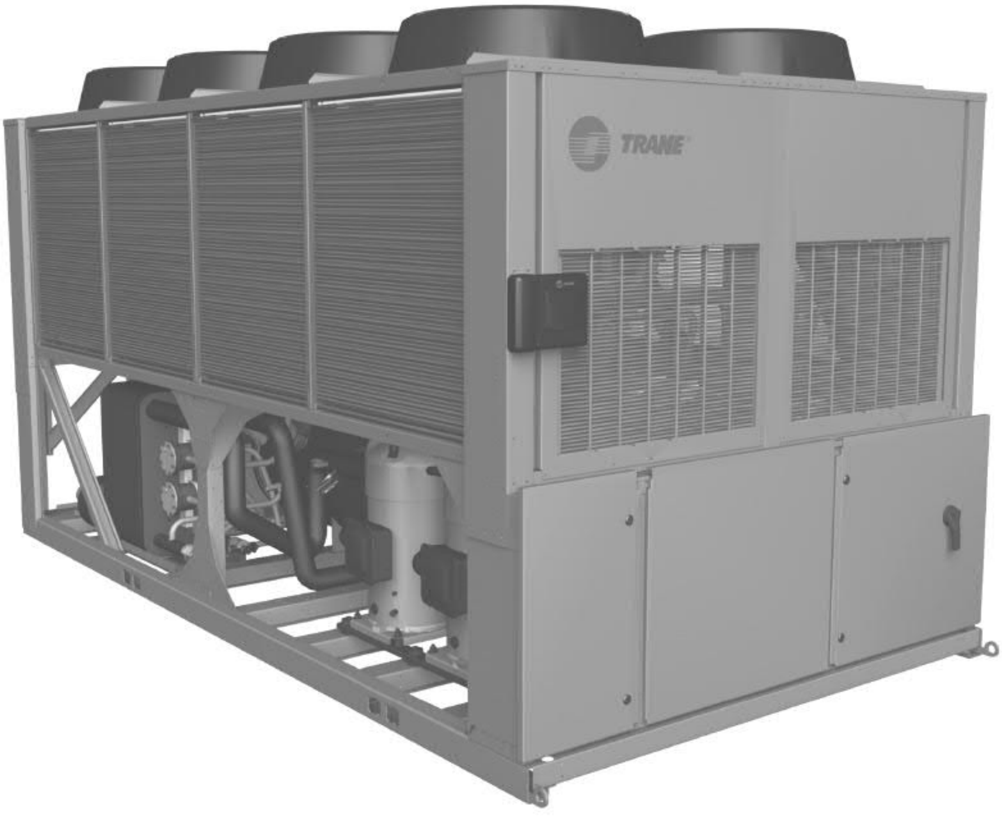
Tel : (86)-769 89399698 (86)-769 89399699
Fax: (86)-769 82973398 Postal Code: 523795

ryowo™ COOLING TOWER MANUFACTURER SINCE 1978

Catalogue of Trane CGAM 70

Installation
Operation
Maintenance

AquaStream™ 3G air-cooled liquid chillers
Models CGAM



September 2011

CG-SVX19C-E4

Contents

General information

Foreword

These instructions are given as a guide to good practice in the installation, start-up, operation, and maintenance by the user, of Trane CGAM chillers. They do not contain full service procedures necessary for the continued successful operation of this equipment. The services of a qualified technician should be employed through the medium of a maintenance contract with a reputable service company. Read this manual thoroughly before unit start-up.

Units are assembled, pressure tested, dehydrated, charged and run tested before shipment.

Warnings and cautions

Warnings and Cautions appear at appropriate sections throughout this manual. Your personal safety and the proper operation of this machine require that you follow them carefully. The constructor assumes no liability for installations or servicing performed by unqualified personnel.

WARNING!: Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION!: Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices or for equipment or property-damage-only accidents.

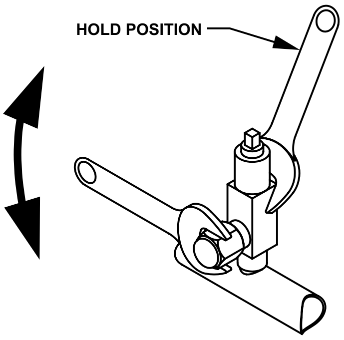
Safety recommendations

To avoid death, injury, equipment or property damage, the following recommendations should be observed during maintenance and service visits:

1. The maximum allowable pressures for system leak testing on low and high pressure side are given in the chapter “Installation”. Always provide a pressure regulator.
2. Disconnect the main power supply before any servicing on the unit.
3. Service work on the refrigeration system and the electrical system should be carried out only by qualified and experienced personnel.

Proper servicing of the service valves is required. Use a backup wrench as shown in Figure 1 when loosening or tightening the service valve cap.

Figure 1 - Servicing of service valves



Reception

On arrival, inspect the unit before signing the delivery note.

Reception in France only:

In case of visible damage: The consignee (or the site representative) must specify any damage on the delivery note, legibly sign and date the delivery note, and the truck driver must countersign it. The consignee (or the site representative) must notify Trane Epinal Operations - Claims team and send a copy of the delivery note. The customer (or the site representative) should send a registered letter to the last carrier within 3 days of delivery.

Note: for deliveries in France, even concealed damage must be looked for at delivery and immediately treated as visible damage.

Reception in all countries except France:

In case of concealed damage: The consignee (or the site representative) must send a registered letter to the last carrier within 7 days of delivery, claiming for the described damage. A copy of this letter must be sent to Trane Epinal Operations - Claims team.

Warranty

Warranty is based on the general terms and conditions of the manufacturer. The warranty is void if the equipment is repaired or modified without the written approval of the manufacturer, if the operating limits are exceeded or if the control system or the electrical wiring is modified. Damage due to misuse, lack of maintenance or failure to comply with the manufacturer’s instructions or recommendations is not covered by the warranty obligation. If the user does not conform to the rules of this manual, it may entail cancellation of warranty and liabilities by the manufacturer.

General information

The following pictograms can be found on the unit. Take necessary precautions to avoid damage and injury.

Figure 2 - Warning pictograms

1 = Risk that unit is powered up
2 = Risk hazard due to fan rotation
3 = Risk hazard of burns on compressors or refrigeration piping
4 = Unit contains refrigerant gas. See specific warnings.
5 = Risk of residual voltage when speed drive or softstarter options are present
6 = Unit under pressure
7 = Risk to cut, particularly on heat exchanger fins
8 = Read instructions before installation
9 = Disconnect all electric power before servicing
10 = Read technical instructions

Refrigerant

The refrigerant provided by the manufacturer meets all the requirements of our units. When using recycled or reprocessed refrigerant, it is advisable to ensure its quality is equivalent to that of a new refrigerant. For this, it is necessary to have a precise analysis made by a specialized laboratory. If this condition is not respected, the manufacturer warranty could be cancelled.

Environmental Protection / Compliance with F-Gas regulation

This equipment contains a fluorinated gas covered by the Kyoto Protocol [or an ozone depleting substance covered by Montreal Protocol].The type and quantity of refrigerant per circuit is indicated on the product nameplate. The Global Warming Potential of the refrigerant implemented in Trane Air Conditioning and Refrigeration Equipment is presented in the table by type of refrigerant.

Refrigerant type	GWP (1) value
R134a	1 300
R407C	1 653
R410A	1 975
R404A	3 784
R22 (2)	1 780

The operator (contractor or end user) must check local environmental regulations impacting installation, operation and disposal of the equipment; in particular need to recover environmentally harmful substances (refrigerant, oil, antifreeze agents, etc.) Do not vent into the atmosphere any refrigerant. The handling of refrigerant shall be fulfilled by a qualified service engineer.

(1) GWP = global warming potential
(2) Covered by Montreal Protocol

Maintenance contract

It is strongly recommended that you sign a maintenance contract with your local Service Agency. This contract provides regular maintenance of your installation by a specialist in our equipment. Regular maintenance ensures that any malfunction is detected and corrected in good time and minimizes the possibility that serious damage will occur. Finally, regular maintenance ensures the maximum operating life of your equipment. We would remind you that failure to respect these installation and maintenance instructions may result in immediate cancellation of the warranty.

Training

To assist you in obtaining the best use of it and maintaining it in perfect operating condition over a long period of time, the manufacturer has at your disposal a refrigeration and air conditioning service school. The principal aim of this is to give operators and technicians a better knowledge of the equipment they are using, or that is under their charge. Emphasis is particularly given to the importance of periodic checks on the unit operating parameters as well as on preventive maintenance, which reduces the cost of owning the unit by avoiding serious and costly breakdown.

Model number

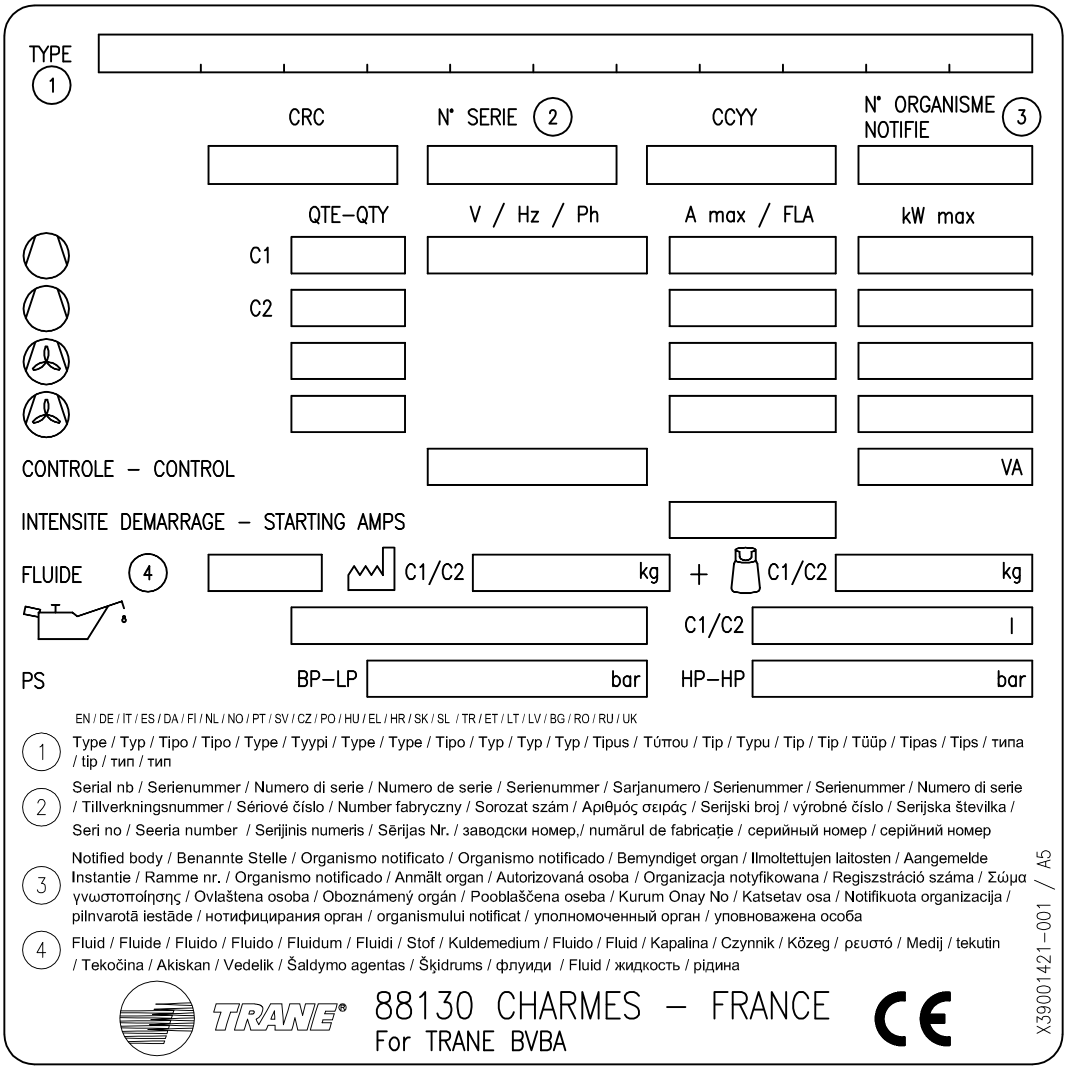
Unit nameplate

The unit nameplates are applied to the exterior surface of the control panel door. A compressor nameplate is located on each compressor.

The unit nameplate provides the following information:

- Unit model and size descriptor.
- Unit serial number
- Identifies unit electrical requirements.
- Lists correct operating charges of R410A and refrigerant oil.
- Lists unit test pressures

Figure 3 - Unit nameplate



EN / DE / IT / ES / DA / FI / NL / NO / PT / SV / CZ / PO / HU / EL / HR / SK / SL / TR / ET / LT / LV / BG / RO / RU / UK

① Type / Typ / Tipo / Tipo / Type / Tyypi / Type / Type / Tipo / Typ / Typ / Typ / Tipus / Τύπου / Tip / Typu / Tip / Tip / Tüüp / Tipas / Tips / типа / tip / тип / тип

② Serial nb / Serienummer / Numero di serie / Numero de serie / Serienummer / Sarjanumero / Serienummer / Serienummer / Numero di serie / Tillverkningsnummer / Sériové číslo / Number fabryczny / Sorozat szám / Αριθμός σειράς / Serijski broj / výrobné číslo / Serijska številka / Seri no / Seeria number / Serijinis numeris / Sērijas Nr. / заводски номер,/ numărul de fabricație / серийный номер / серійний номер

③ Notified body / Benannte Stelle / Organismo notificato / Organismo notificado / Bemyndiget organ / Ilmoltettujen laitosten / Aangemelde Instantie / Ramme nr. / Organismo notificado / Anmält organ / Autorizovaná osoba / Organizacja notyfikowana / Regiszstráció száma / Σώμα γνωστοποίησης / Ovlaštena osoba / Oboznámený orgán / Pooblaščena oseba / Kurum Onay No / Katsetav osa / Notifikuota organizacija / pilnvarotā iestāde / нотифицирания орган / organismului notificat / уполномоченный орган / уповноважена особа

④ Fluid / Fluide / Fluido / Fluido / Fluidum / Fluidi / Stof / Kuldemedium / Fluido / Fluid / Kapalina / Czynnik / Közeg / ρευστό / Medij / tekutin / Tekočina / Akiskan / Vedelik / Šaldymo agentas / Šķidrums / флуиди / Fluid / жидкость / рідина

Model number

Digit 1-4 — Chiller Model

CGAM = Air-Cooled Scroll Packaged Chiller

Digit 5-7 — Unit Nominal Tonnage

020 = 20 Tons
023 = 23 Tons
026 = 26 Tons
030 = 30 Tons
035 = 35 Tons
039 = 39 Tons
040 = 40 Tons
045 = 45 Tons
046 = 46 Tons
050 = 50 Tons
052 = 52 Tons
060 = 60 Tons
070 = 70 Tons
080 = 80 Tons
090 = 90 Tons
100 = 100 Tons
110 = 110 Tons
120 = 120 Tons
140 = 140 Tons
150 = 150 Tons
160 = 160 Tons
170 = 170 Tons

Digit 8 — Unit Voltage

E = 400 Volt 50 Hz 3 Phase

Digit 9 — Manufacturing Plant

1 = Epinal, France

Digit 10-11 — Design Sequence

A-Z =Factory/ABU Assigned

Digit 12 — Unit Type

1 = Standard Efficiency/ Performance
2 = High Efficiency/Performance

Digit 13 — Agency Listing

B = CE Certification (EUR)

Digit 14 — Pressure Vessel Code

4 = Europe Standard

Digit 15 — Unit Application

A = Standard Ambient (32-115F/0-46C)
B = High Ambient (up to-52C)
C = Low Ambient (0 to 115/-18 to 46C)
D = Wide Ambient (-18 to 52C)

Digit 16 — Refrigerant Isolation Valves

1 = No Isolation Valves

Digit 17

A

Digit 18 — Freeze Protection (Factory-Installed Only)

X = Without Freeze Protection
2 = With Freeze Protection (CH530 Control)

Digit 19 — Insulation

A = Factory Insulation - All Cold Parts

Digit 20 — Factory Charge

1 = Full Factory Refrigerant Charge (HFC-410A)

Digit 21 — Evaporator Application

A = Standard Cooling (5.5 to 18°C)
B = Low Temperature Processing (lower than 5.5°C)
C = Ice-Making - hardwired interface (-7 to 18°C)

Digit 22 — Water Connection (Evap)

1 = Grooved Pipe Connection
2 = Grooved Pipe with Flange Adapter

Digit 23 — Condenser Fin Material

A = Lanced Aluminum Fins
B = Non-Lanced Aluminum Fins
E = Non-Lanced Aluminum Fins w/ Pre-Coat (Black Epoxy)

Digit 24 — Condenser Heat Recovery

X = No Heat Recovery
2 = Partial Heat Recovery w/o Fan Control
3 = Full Heat Recovery

Digit 25

X

Digit 26 — Starter Type

A = Across the Line Starter/Direct on Line
B = Solid State Soft Starter
C = Across the Line Starter/Power Factor Correction

Digit 27 — Incoming Power Line Connection

1 = Single Point Power Connection

Digit 28 — Power Line Connection Type

B = Disconnect Switch

Digit 29 — Enclosure Type

2 = IP54 Protection

Digit 30 — Unit Operator Interface

A = Dyna-View/English
B = Dyna-View/Spanish-Spain
D = Dyna-View/French
E = Dyna-View/German
F = Dyna-View/Dutch
G = Dyna-View/Italian
J = Dyna-View/Portuguese-Portugal
R = Dyna-View/Russian
T = Dyna-View/Polish
U = Dyna-View/Czech
V = Dyna-View/Hungarian
W = Dyna-View/Greek
Y = Dyna-View/Romanian
Z = Dyna-View/Swedish

Model number

Digit 31 — Remote Interface (digital comm)

X = No Remote Digital Communication
1 = LonTalk LCI-C Interface with Modbus Interface
2 = LonTalk/Tracer Summit Interface
3 = Time of Day Scheduling
4 = BACNet Interface

Digit 32 — Ext. Chilled/Hot Water and Curr. Demand Limit Setpoint

X = No Ext. Chilled Water Setpoint
A = Ext Chilled Water and Demand Limit Setpoint - 4-20mA
B = Ext Chilled Water and Demand Limit Setpoint - 2-10Vdc
C = Auxiliary setpoint

Digit 33 —% Capacity

X = Without % Capacity
1 = With % Capacity

Digit 34 — Programmable Relays

X = No Programmable Relays
A = Programmable Relays

Digit 35 — Pump Type

X = No Pumps and no Contactors
1 = No Pumps w/ Single Contactors
2 = No Pumps w/ Dual Contactors
3 = No Pumps w/ Single Contactors Single High Head Pump
4 = No Pumps w/ Dual Contactors Dual High Head Pump
5 = Single Standard Head Pump
6 = Single High Head Pump
7 = Dual Standard Head Pump
8 = Dual High Head Pump

Digit 36 — Pump Flow Control

X = No Pump Flow Control
A = Pump Flow Controlled by Triple Duty Valve
B = Pump Flow Controlled by Variable Speed Drive

Digit 37 — Buffer Tank

X = No Tank
1 = With Tank

Digit 38 — Short Circuit Rating

A = Default A Short Circuit Rating

Digit 39 — Installation Accessories

1 = Elastomeric Isolators
4 = Neoprene Pads

Digit 40 — Water Strainer

X = No Strainer
A = With Water Strainer Factory-Installed

Digit 41 — Sound Attenuator Package

1 = Compact
3 = Super Quiet
4 = Super Quiet with Night Noise Setback
5 = Comprehensive Acoustic Package

Digit 42 — Appearance Options

X = No Appearance Options
A = Architectural Louvered Panels
B = Half Louvers
C = Access Guards
D = Access Guards and Half Louvers

Digit 43

X

Digit 44 — Label and Literature Language

A = Bulgarian
B = Spanish and English
C = German
D = English
E = French
H = Dutch SI (Hollandais)
J = Italian
L = Danish
M = Swedish
N - Norwegian
P = Polish
R = Russian
T = Czech
U = Greek
V = Portuguese
Y = Romanian
Z = Serbian
1 = Slovak
2 = Croatian
3 = Hungarian

Digit 45 — Enhanced phase monitoring

X = Not installed
1 = Installed

Digit 46 — Shipping Package

X = No Skid (Standard)
A = Unit Containerization Package

Digit 47

X

Digit 48 — Flow switch setpoint

C = Setpoint 15
F = Setpoint 35
H = Setpoint 45
L = Setpoint 60

Digit 49

X

Digit 50 — Specials

X = None
S = Special

Notes:

1. If a digit is not defined it may be held for future use.

Model number

The compressor nameplate provides the following information:

- Compressor model number.
- Compressor serial number.
- Compressor electrical characteristics.
- Utilization range.
- Recommended refrigerant.

Model Number Coding System

The model numbers for the unit and the compressors are comprised of numbers and letter which represent features of the equipment. Each position, or group of positions, in the number is used to represent a feature. For example, Unit Voltage, contains the letter “E”. From the chart, it can be seen that an “E” in this position means that the unit voltage is 400/50/3.

Compressor Model Number (located on compressor nameplate)

Digit 1,2,3,4

CSHD - Light Commercial

CSHN - Commercial

Digit 5,6,7 – Capacity- 60 Hz ARI KBtu/Hr (approximate)

125 - CSHD

161 - CSHD

184 - CSHN

250 - CSHN

315 - CSHN

374 - CSHN

Digit 8 – Voltage

J - 200-230/3/60

K - 460/3/60-400/3/50

F - 230/3/50

D - 575/3/60

X - 380/3/60

Y - 200/3/50 (CSHD 125 only)

Digit 9 – Unloading

(0 – no unloading)

Digit 10 – Design Sequence

Digit 11 – Protection Module Voltage

0 - Int Line Break- CSHD

A - 115 VAC

B - 230 VAC

H - 24 VAC

K - 115/230 VAC – CSHN

Digit 12 – Basic Compressor Variation

M - Suction & Discharge Tube, oil equalizer with seal nut, Grade 32 POE oil

Unit description

Units are scroll type, air-cooled, liquid chillers, designed for installation outdoors. The units have one or two independent refrigerant circuits, two or more compressors per circuit. Units are packaged with an evaporator and condenser.

Note: Each unit is a completely assembled, hermetic package that is factory-piped, wired, leak-tested, dehydrated, charged and tested for proper control operations prior to shipment. The chilled water inlet and outlet openings are covered for shipment.

Units feature Trane's exclusive Adaptive Control logic with CH530 controls. It monitors the control variables that govern the operation of the chiller unit. Adaptive Control logic can correct these variables, when necessary, to optimize operational efficiencies, avoid chiller shutdown, and keep producing chilled water.

Each refrigerant circuit is provided with filter, sight glass, electronic expansion valve, and charging valves.

The evaporator is a brazed plate and frame heat exchanger which is equipped with water drain and vent connections. The condenser is an air-cooled fin coil.

The condensers are available in three configurations depending on the tonnage of the unit. Units may be referred to the size by the condenser configuration. The three configurations are slant, V and W.

Accessory/options information

Check all the accessories and loose parts which are shipped with the unit against the original order. Included in these items will be rigging diagrams, electrical diagrams, and service literature, which are placed inside the control panel and/or starter panel for shipment. Also check for optional components, such as flange adapters and isolators.

The unit isolators and the flange adapter ship on brackets attached to the frame of the unit.

Pre-installation

Inspection checklist

When the unit is delivered, verify that it is the correct unit and that it is properly equipped. Compare the information which appears on the unit nameplate with the ordering and submittal information.

Inspect all exterior components for visible damage. Report any apparent damage or material shortage to the carrier and make a “unit damage” notation on the carrier’s delivery receipt. Specify the extent and type of damage found and notify the appropriate Trane Sales Office. Do not proceed with installation of a damaged unit without sales office approval.

Mandatory Start-up Checklist

***This checklist is not intended to be a substitution for the contractors installation instruction. This checklist is intended to be a guide for the Trane technician just prior to unit ‘start-up’. Many of the recommended checks and actions could expose the technician to electrical and mechanical hazards. Refer to the appropriate sections in the unit manual for appropriate procedures, component specifications and safety instructions.

Except where noted; it is implied that the technician is to use this checklist for inspection / verification of prior task completed by the general contractor at installation.

1. Unit clearances adequate for service and to avoid air recirculation, etc.
2. Unit exterior inspected
3. Crankcase heaters working for 24 hours prior to arrival of Trane technician performing start up
4. Correct voltage supplied to unit and electric heaters (imbalance not to exceed 2%)
5. Unit power phasing (A-B-C sequence) proper for compressor rotation
6. Copper power wiring meets sizing requirement in job submittal
7. Unit properly grounded
8. All automation and remote controls installed/wired
9. All wiring connections tight
10. Prove chilled water side Interlock and Interconnecting Wiring Interlock and externals (chilled water pump)
11. Field installed control wiring landed on correct terminals (external start/stop, emergency stop, chilled water reset…)
12. Shipping hardware for compressors removed
13. Verify all refrigerant and oil valves are open/back seated
14. Compressor oil levels (1/2 -3/4 high in glass) proper
15. Verify chilled water strainer is clean and free of debris and evaporator chilled water circuits are filled
16. Close the fused-disconnect switch(es) that supplies power to the chilled water pump starter
17. Start the chilled water pump to begin circulation of the water. Inspect piping for leaks and repair as necessary
18. With water circulating through the system, adjust water flow and check water pressure drop through evaporator
19. Adjust the chilled water flow switch for proper operation
20. Return chilled water pump to auto
21. Verify all CH530 Menu Items on DynaView and KestrelView
22. Fan amperages within nameplate specs
23. All panels/doors secured prior to start-up
24. All coil fins inspected and straightened
25. Rotate fans before starting unit to inspect for potential audible and visual signs of rubbing. Start unit
26. Press AUTO key. The unit will start if the chiller control calls for cooling and the safety interlocks are closed
27. Check the EXV sight glasses after sufficient time has elapsed allowing entering and leaving water to stabilize
28. Check the evaporator and the condenser refrigerant pressure under Refrigerant Report on CH530 TechView
29. Confirm Superheat and subcooling values are normal
30. Compressor operation normal and within amperage rating
31. Operating log completed
32. Press stop key
33. Inspect fans again after being under load to ensure no signs or rubbing exist
34. Verify the chilled water pump runs for at least 1 minute after the chiller is commanded to stop (for normal chilled water systems)

Unit storage

If the chiller is to be stored for more than one month prior to installation, observe the following precautions:

- Store the chiller in a dry, vibration-free, secure area.
- Units charged with refrigerant should not be stored where temperatures exceed 68°C.
- At least every three months, attach a gauge and manually check the pressure in the refrigerant circuit. If the refrigerant pressure is below 13 bar at 20°C (or 10 bar at 10°C), call a qualified service organization and the appropriate Trane sales office.

Installation requirements and contractor responsibilities

A list of the contractor responsibilities typically associated with the unit installation process is provided.

Pre-installation

Type of requirement	Trane-supplied Trane-installed	Trane-supplied Field-installed	Field-supplied Field-installed
Foundation			Meet foundation requirements
Rigging			• Safety chains • Clevis connectors • Lifting beams
Isolation		Isolation pads or neoprene isolators (optional)	Isolation pads or neoprene isolators (optional)
Electrical	• Disconnect switch • Unit mounted starter		• Wiring sizes per submittal and local codes and regulations • Terminal lugs • Ground connection(s) • BAS wiring (optional) • Control voltage wiring • Chilled water pump contactor and wiring including interlock • Option relays and wiring
Water piping	• Flow switch • Water strainer (option)		• Taps for thermometers and gauges • Thermometers • Water flow pressure gauges • Isolation and balancing valves in water piping • Vents and drain • Pressure relief valves
Insulation	• Insulation		• Insulation
Water piping connection components	• Grooved pipe	• Flange adapters	

General Data

Table 2 - CGAM - Standard Efficiency Compact - DUPLEX V units

Size		**40**	**46**	**52**	**60**	**70**	**80**	**90**	**100**
Eurovent Performances (1)									
Net capacity	(kW)	110.6	127.6	143.6	159.7	186.8	222.1	249.0	274.5
Total power input	(kW)	40.3	43.8	50.2	58.7	67.9	78.7	87.9	100.5
EER		2.75	2.92	2.86	2.72	2.75	2.82	2.83	2.73
Main power supply		400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
Sound power level	(dBA)	90.9	90.8	91.1	91.8	93.6	95.6	94.7	93.7
System Data									
Refrigerant circuit	#	2	2	2	2	2	2	2	2
Capacity steps	%	25-50-75-100	21-43-71-100	25-50-75-100	25-50-75-100	21-43-71-100	25-50-75-100	22-44-72-100	25-50-75-100
Units Amps (2)									
Maximum amps	(A)	96.0	106.0	116.0	137.5	156.0	182.4	205.3	228.2
Start-up amps - standard unit	(A)	217.9	238.9	248.9	267.0	331.3	357.6	414.1	437.0
Start-up amps - with soft starter option	(A)	145.9	168.9	178.9	214.0	255.3	281.6	333.1	356.0
Short circuit unit capacity	(kA)	15	15	15	15	15	15	15	15
Min supply cable size	(mm²)	95	95	95	95	150	150	185	185
Max supply cable size	(mm²)	150	150	150	150	240	240	240	240
Compressor									
Number	#	4	4	4	4	4	4	4	4
Type		Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
Model		CSHD125& CSHD125	CSHD125& CSHD161	CSHD161& CSHD161	CSHN184& CSHN184	CSHN184& CSHN250	CSHN250& CSHN250	CSHN250& CSHN315	CSHN315& CSHN315
Motor RPM	(rpm)	2900	2900	2900	2900	2900	2900	2900	2900
Power factor	#	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Sump heater per circuit	(W)	160&160	160&160	160&160	160&160	160&160	160&160	160&160	160&160
Evaporator									
Quantity	#	1	1	1	1	1	1	1	1
Type		BPHE	BPHE	BPHE	BPHE	BPHE	BPHE	BPHE	BPHE
Water volume/storage (total)	(L)	9.1	10.5	14.3	15.6	18.9	24.0	26.5	32.4
Antifreeze heater	(W)	120	180				240		
Min. flow	(L/Sec)	2.6	3.0	3.4	3.7	4.4	5.2	5.8	6.5
Max. flow	(L/Sec)	7.7	8.9	10.1	11.2	13.1	15.6	17.5	19.4
Pump Package (Option Standard Head)									
Nb Pump Set	#	1	1	1	1	1	1	1	1
Motor RPM	(rpm)	2890	2890	2890	2890	2890	2890	2890	2890
Pump power (single / dual) - standard head	(kW)	3.0	4.0	4.0	4.0	5.5	5.5	5.5	5.5
Rated amps (single / dual) - standard head	(A)	6.1	7.59	7.59	7.59	10.6	10.6	10.6	10.6
Pump power (single / dual) - high head	(kW)	5.5	5.5	5.5	7.5	7.5	7.5	7.5	7.5
Rated amps (single / dual) - high head	(A)	10.6	10.6	10.6	13.8	13.8	13.8	13.8	13.8
Hydraulic Module Components									
Expansion tank volume	(L)	25	25	25	25	25	25	25	25
User volume expansion capacity	(L)	380	380	380	380	380	380	380	380

General Data

Size		40	46	52	60	70	80	90	100
Max. Water-side pressure without pump	(kPa)	1000	1000	1000	1000	1000	1000	1000	1000
Max. Water-side pressure with pump	(kPa)	400							
Antifreeze heater	(W)	910							
Water tank volume	(L)	515	515	515	515	515	515	515	515
Water tank antifreeze heater	(W)	800							
Condenser									
Type		Fin and Tube	Fin and Tube	Fin and Tube	Fin and Tube	Fin and Tube	Fin and Tube	Fin and Tube	Fin and Tube
Qty of coils	#	2	2	2	2	2	2	2	2
Fan									
Type		Propeller	Propeller	Propeller	Propeller	Propeller	Propeller	Propeller	Propeller
Quantity per circuit	#	2	2	2	2	2	3	3	3
Diameter	(mm)	732	732	732	732	732	732	732	732
Drive type		Direct	Direct	Direct	Direct	Direct	Direct	Direct	Direct
Airflow per fan	(m3/h)	13485	16114	16122	16129	17638	16088	17189	17195
Static pressure	(Pa)	0	0	0	0	0	0	0	0
Motor rpm	#	920	920	920	920	920	920	920	920
Unit Water Connection									
Chilled water	(mm)	65	65	65	80	80	80	80	80
Type (standard)		Grooved	Grooved	Grooved	Grooved	Grooved	Grooved	Grooved	Grooved
Dimensions									
Unit length with buffer tank	(mm)	3416	3416	3416	3416	3416	4330	4330	4330
Unit length without buffer tank	(mm)	2905	2905	2905	2905	2905	3819	3819	3819
Unit width	(mm)	2266	2266	2266	2266	2266	2266	2266	2266
Unit height	(mm)	2150	2150	2150	2150	2150	2150	2150	2150
Weight									
Operating weight(3)	(kg)	1503	1545	1571	1753	1794	2053	2185	2302
Shipping weight(3)	(kg)	1471	1512	1534	1715	1753	2007	2136	2248
Additional weight (single pump standard head)	(kg)	171	177	176	177	184	186	187	186
Additional weight (dual pump standard head)	(kg)	209	221	221	221	235	236	237	237
Additional weight (single pump high head)	(kg)	179	179	178	220	220	221	222	222
Additional weight (dual pump high head)	(kg)	226	226	225	317	316	318	318	319
Additional shipping weight (buffer tank)	(kg)	381	380	381	381	382	381	382	381
Refrigerant & Oil Charge									
Refrigerant Charge (Circuit 1/Circuit 2)	(kg)	10.9/10.9	13.2/13.2	13.2/13.2	16.3/16.3	18.1/18.1	20/20	21.8/21.8	23.6/23.6
Oil Charge (Circuit 1/Circuit 2)	(L)	6.6 / 6.6	6.6 / 6.6	6.6 / 6.6	13.4 / 13.4	13.4 / 13.4	13.4 / 13.4	13.4 / 13.4	13.4 / 13.4

(1) Eurovent Conditions (Evap. 12°C/7°C - Air. 35°C)
(2) amps for base unit without pump package, without freeze protection
(3) without pump package

Catalogue of Trane RTAC 300

Air-cooled helical-rotary chillers Series R™

412 - 1451 kW

RTAC

Customer benefits

- Reliability: Trane helical-rotary compressor with only 3 moving parts
- Eurovent certified class A
- Ease of installation: wide choice of hydraulic modules
- Reliability: main components designed and manufactured by Trane
- Advanced Adaptive Control™ to keep chiller online in extreme operating conditions
- Optional remote monitoring by Trane Intelligent Services
- Single power supply connection
- Exact load matching

Main features

- Rental crash frame
- Integral hydraulic module (pumps)
- Compact design: reduced footprint and low profile design
- Falling film evaporator - high COP
- Two acoustic packages: SN and LN
- Wide operating map: airside and waterside
- Easy customized couple connections

Chiller model	**RTAC 120**	**RTAC 200**	**RTAC 300**	**RTAC 400**
Cooling capacity	412	737	1077	1451
Power input (kW)	135	232.90	370	498
Refrigerant type	R134a	13	R134a	R134a
Minimum chiller load (%)	30	17	13	10
Qty. of compressors	2	2	3	4
Number of refrigerant circuits	2	2	2	2
Power supply (V/Ph/Hz)	400/3/50	400/3/50	400/3/50	100/3/50
Max. amps (A)	390	562	844	1096
Starting amps (A)	410	594	813	1002
Length (mm)	5041	5960	10058	12244
Width (mm)	2260	2260	2250	2250
Height (mm)	2411	2381	2530	2530
Weight (kg)	4506	5590	9375	11929
Sound pressure level 10 m free field dB(A)	65	68	69	81

Cooling capacity and power input at Eurovent conditions:
12/7°C entering/leaving water temperature and 35°C ambient temperature according to EN 14-511

Trane® is a brand of Ingersoll Rand®. Ingersoll Rand (NYSE:IR) advances the quality of life by creating comfortable, sustainable and efficient environments. Our people and our family of brands—including Ingersoll Rand®, Trane®,
Thermo King® and Club Car® — work together to enhance the quality and comfort of air in homes and buildings; transport and protect food and perishables; and increase industrial productivity and efficiency. We are a global business committed to a world of sustainable progress and enduring results.

We are committed to using environmentally conscious print practices that reduce waste.

Catalogue of York YLCA 0080 T-TP

Return to Content

ECOFRIO v2
Air cooled chiller / heat pump

YLCA / YLHA 0040 to 0150

A complete range from 39.6 kW up to 151 kW

The **YORK YLCA/YLHA** air-cooled chillers and heat pumps represents the right solution for any kind of installation.

With thousands of units installed all around Europe and Africa, used for different applications and in different climate conditions are one of the most flexible and reliable scroll type chillers in the market.

The standard product configuration and the different options and accessories selectable by the customer make these units ideal where a compact, and high performance unit is required.

Features

YLCA/YLHA 0040 to 0080

- 2 capacity steps (1 for size 40)
- LWT & RWT Control
- Plate heat exchanger
- Condenser fins (blue fin)
- Pressostatic LAK (-18°C)

YLCA/YLHA 0100 to 0150

- Same features as YLCA/YLHA 40 to 80
- 4 capacity steps
- High efficiency at full and partial load
- Reduced noise levels
- 1/4 turn lock for easy access

Options / Accessories

- Unit without pack
- BMS Communication (Carel and Modbus protocol)
- Remote control
- Remote terminal
- Water filter (unit without Hydro Pack)
- Flow switch (unit without Hydro Pack)
- Low noise version
- Dual pump version
- Antivibration mountings
- Condenser protection grille

Low noise version with special insulation in the compressor chamber.

Special coating on the condenser fins for improved corrosion protection.

Pump built-in for space saving and easy installation.

Return to Content

ECOFRIO v2

YLCA / YLHA 0040 to 0150

Technical features

T Three phases supply **P** Hydro Pack **H** Heat pump

Model			**YLCA / YLHA**						
			0040 T-TP	**0050 T-TP**	**0060 T-TP**	**0080 T-TP**	**0100 T-TP**	**0120 T-TP**	**0150 T-TP**
Performance	Cooling capacity c/o units (1)	kW	39.3	51.8	60.1	77	100.3	118.5	150.5
	Total Input Power (1) (3)	kW	13.69	18.3	20.03	27.11	34.47	40.44	54.14
	EER (1)		2.87	2.83	3	2.84	2.91	2.93	2.78
	ESEER (1)		3.15	3.18	3.3	3.15	3.74	3.83	3.66
	Cooling capacity h/p units (1)	kW	37.6	51.2	60.1	71.7	95.4	113.6	144.5
	Heating capacity h/p units (1)	kW	38.8	52.8	60	75.2	104.6	120	150.5
	Total Input Power cool/heat mode (1)	kW	13.48 / 12.81	17.65 / 18.21	20.03 / 20.2	26.46 / 26.86	36.14 / 37.76	43.69 / 40	51.06 / 53.94
	EER / COP (1)		2.79 / 3.03	2.93 / 2.9	3 / 2.97	2.71 / 2.8	2.64 / 2.77	2.6 / 3	2.83 / 2.79
	ESEER (1)		3.15	3.18	3.29	2.91	3.39	3.43	3.73
	Capacity steps	%	0 / 100	0-50-100			0-25-50-75-100		
	Sound power level STD / LN	dB(A)	78 / 73	81 / 76	87 / 77	83 / 79	82 / 78	82 / 78	84 / 80
Compressor	Type		Scroll						
	Quantity		1	2			4		
Air side heat exchanger	Fans quantity		2			3	4		
	Working ambient temp. cool. / heat. mode		-18°C ~ 46°C / -10°C ~ 20°C						
Water side heat exchanger	Type		Single Plate Heat Exchanger				Dual Plate Heat Exchanger		
	Unit water volume (2)	Litres	131	188	194	285	193	195	214
	Pump Type		Multistage horizontal pumps						
	Nominal water flow	l/h	6 820	8 960	10 400	13 350	17 600	20 470	25 970
	Available pressure (1) (2)	kPa	105	108	158	123	187	202	186
	Pressure drop (1) (3)	kPa	75	39	50	63	59	33	27
	Working range water leaving temperature cooling / heating (4)		-5°C ~ 15°C / 30°C ~ 50°C						
	Water connections (2)	inch	1 1/4"	2"			2 1/2"		
Dimensions & Weight	Height / Width / Depth	mm	1573/1500/822	1600 / 1011 / 2104		1600/1118/2944	2190 / 1101 / 3416		2263/1101/3770
	Weight without pack / pack c/o	kg	340 / 380	524 / 580	555 / 611	715 / 785	1 124 / 1 220	1 190 / 1 286	1 415 / 1 503
	Weight without pack / pack h/p	kg	337 / 397	537 / 593	568 / 624	735 / 805	1 154 / 1 250	1 220 / 1 316	1 445 / 1 703
Electrical features	Voltage / Phases / Frequency	V/ph/hz	400 / 3 / 50+N+E						
	Maximum Unit current	A	33	46.2	49.2	70.5	80	108	120

YLCA: Cooling only units models. YLHA: Air to water heat pump models.
(1) net values at Eurovent nominal conditions (2) version P with hydro kit with filter (3) version without hydro kit (4) below 6°C with glycol
Nominal conditions: Cooling capacities in kW given for 7°C water leaving temperature Δt 5°C and 35°C ambient temperature
Heating capacities in kW given for 45°C water leaving temperature and 7°C ambient temperature

Compatibility table / Codes

Model	**0040 TP**	**0050 TP**	**0060 TP**	**0080 TP**	**0100 TP**	**0120 TP**	**0150 TP**
YLCA Cooling only unit (Pack included)	S668554084	S668525182	S668526182	S668528182	S668521182	S668551156	S668551507
YLHA Heat pump unit (Pack included)	S668654084	S668625182	S668626182	S668628182	S668621182	S668651156	S668651506

Model	**0040 T**	**0050 T**	**0060 T**	**0080 T**	**0100 T**	**0120 T**	**0150 T**
YLCA Cooling only unit (without Pack)	S668554080	S668525180	S668526180	S668528180	S668521180	S668551154	S668551503
YLHA Heat pump unit (without Pack)	S668654080	S668625180	S668626180	S668628180	S668621180	S668651154	S668651504

Use this unit code when a factory fitted option is NOT required

Accessories (Supplied loose)

AVM mounting	S613029002	S613026080		S613028180	S613021580		
Mechanical flow switch	S611992021						
Water Filter *	S611300150	S611300170			S611300190		
Remote control	S613802011						
Remote terminal	S613802231				-		
Cable for remote connection of the terminal	-				S613802241		
B.M.S. Communication	S613802041				S613802051		

Model	**0040 TP**	**0050 TP**	**0060 TP**	**0080 TP**	**0100 TP**	**0120 TP**	**0150 TP**
YLCA Cooling only unit (Pack included)	S668000226	S668000247	S668000251	S668000255	S668000259	S668000107	S668000111
YLHA Heat pump unit (Pack included)	S668000228	S668000248	S668000252	S668000256	S668000260	S668000131	S668000135

Model	**0040 T**	**0050 T**	**0060 T**	**0080 T**	**0100 T**	**0120 T**	**0150 T**
YLCA Cooling only unit (without Pack)	S668000038	S668000245	S668000249	S668000253	S668000257	S668000105	S668000109
YLHA Heat pump unit (without Pack)	S668000039	S668000246	S668000250	S668000254	S668000258	S668000129	S668000133

Use this unit code when a factory fitted option is required

Options (Factory fitted)

Low Noise version	S613990550	S613990650		S613990850	S613991050	S613991285	S613991584
Softstart	S606744692	S606744693			S606744694		
Dual pumps **	-	S613990540	S613990640	S613990840	S613991040	S613991286	S613991585
Condenser protection grille	S613995090	S613995091		S613995092	S613995093		S613995094

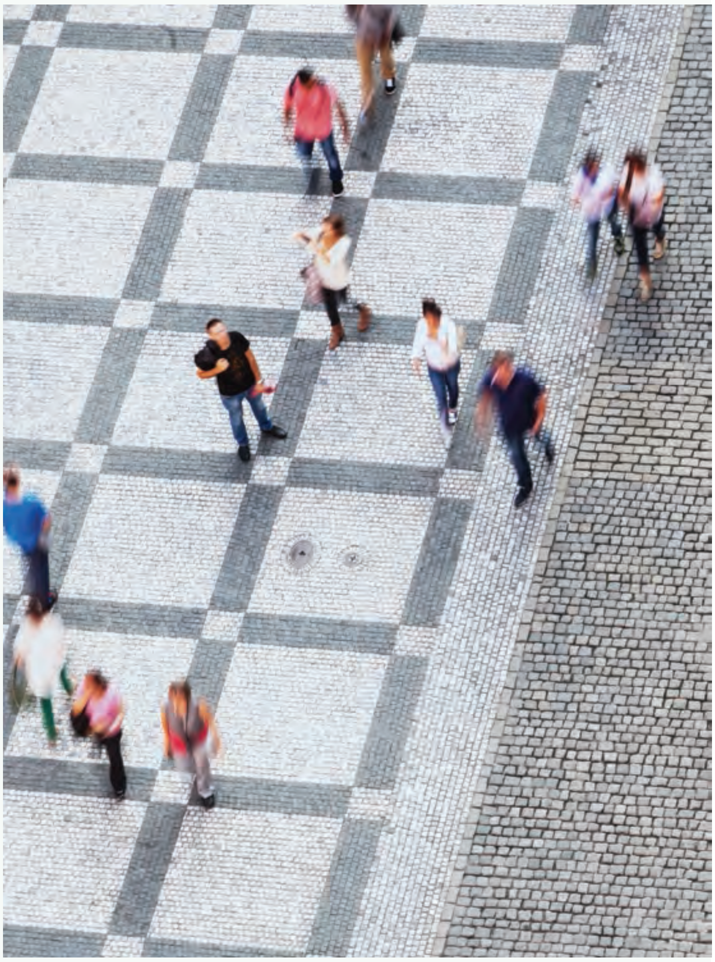
** included with unit version "P" only for unit without pack. Filter size: 2" for YLCA 40-50-60-80 and 2 1/2" for YLHA 100-120-150.*
*** Dual pump option has to be ordered with units with hydrokit.*

EUROVENT CERTIFIED PERFORMANCE

Catalogue of York YLAA 0485SE

INSTALL CONFIDENCE

Catalogue Content



YORK® Commercial & Industrial HVAC 2016

Johnson Controls

A more comfortable, safe and sustainable world

Johnson
Controls

Solutions for your success

Every building is unique in design and technical requirements.

Our customers always receive customised building solutions to meet their individual needs.

Johnson Controls can handle many challenges with its innovative and flexible solutions. From A to Z, from consulting to planning, installation, maintenance (service, inspection and repair) and modernisation – Johnson Controls supports customers throughout the entire life cycle of a building.

AIR CONDITIONING SOLUTIONS

- Chillers & fan coils
- Absorption chillers
- Cooling towers
- Dry coolers
- Air Handling Units

BUILDING AUTOMATION

- Monitoring, control and optimisation
- Standardised communication protocols

SECURITY SOLUTIONS

- Identity management
- Facility zoning
- Video surveillance systems
- Alarm systems

Our well thought-out solutions guarantee a high level of comfort and energy efficiency.

The majority of our products are already rated as Class A for Energy Efficiency, with high levels of compatibility and flexibility allowing for future additions to be carried out without difficulty.

External systems can be easily integrated using BACnet® or proprietary solutions.

Our service team is available to you 24 hours a day with one of the largest service networks in Europe.

AIR CONDITIONING SOLUTIONS

- Air systems
- VRF systems
- Roof-top air-conditioners
- Minisplits

ROOM CONTROL

- Integration of HVAC controls with lighting and automatic blinds

SERVICE & SOLUTIONS

- Maintenance solutions
- Modernisation solutions
- Energy performance contract solutions
- Renewable energy solutions

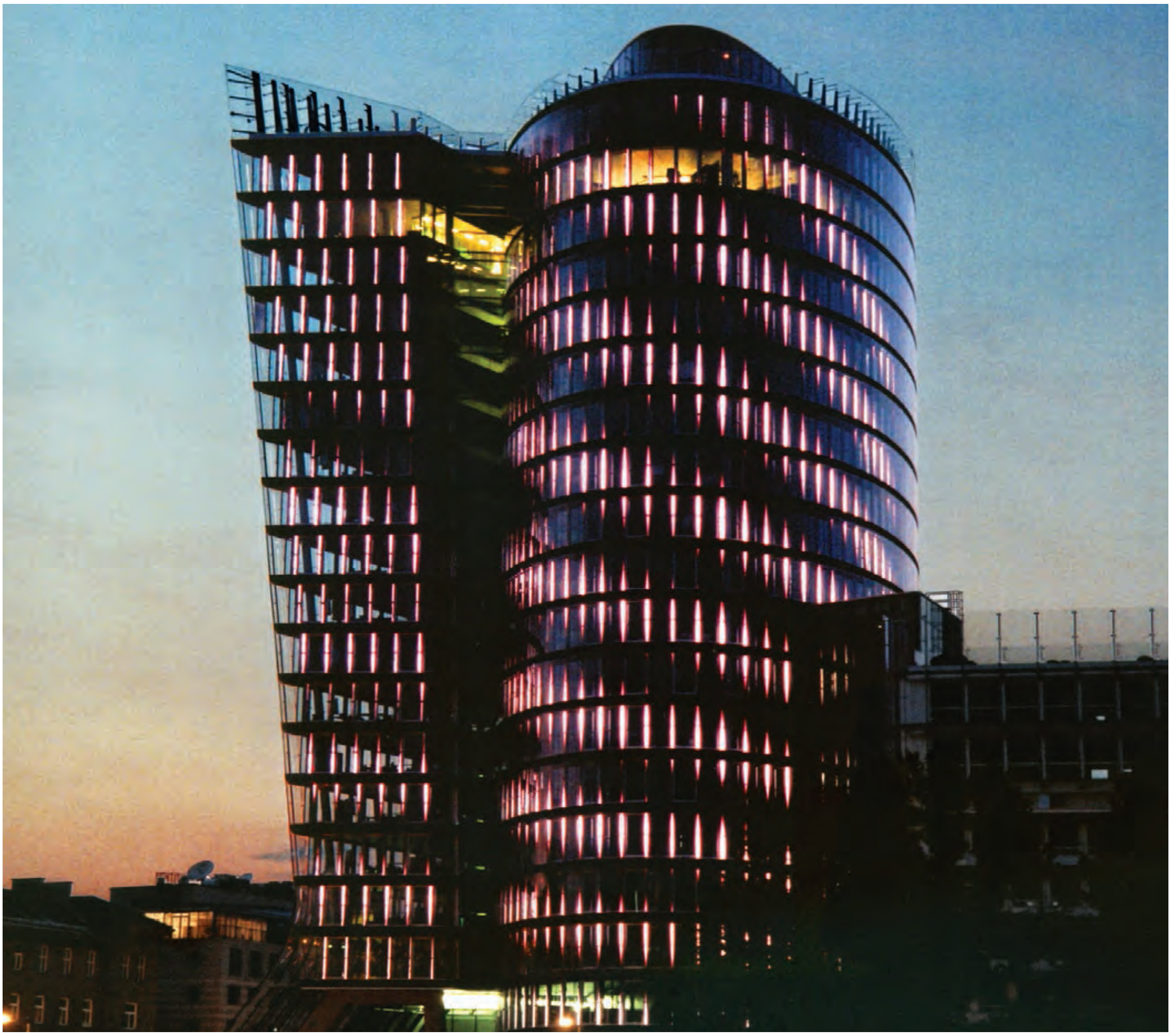
ENERGY MANAGEMENT

- Energy monitoring
- Real time consumption Mgmt
- Continuous commissioning

Reference sites

Our commitment to sustainability and energy efficiency dates back to 1885, with Warren Johnson's invention of the first electric room thermostat. Since then our focus has always been to increase a building's efficiency and operational performance.

The following sites represent building solutions we have developed for our customers based on wide-ranging cross industrial experience in HVAC&R equipment, controls, fire and security systems, and services for commercial and industrial buildings.

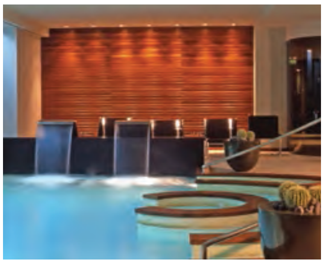


7

1

3

5



8

2

4

6

1

First building in Austria to be awarded a Green Building Certificate

Johnson Controls Metasys® Building Automation System helps UNIQA Towers in Vienna achieve a Green Building Certificate for energy efficiency.

2

The Gregor Mendel Institute

State-of-the-art technologies for world-class research.

3

Cisco. UK

Smart+Connected Communities installation designed to save energy costs and improves performance.

4

Fiserv (Europe) Ltd

Utilising latest developments in chiller's technology delivers energy savings and ongoing cost reductions for Fiserv.

5

THI GROUP

Solutions for the hospitality industry.

6

British Embassy. Berlin

Full Lifecycle Solution for British Governement's first Private Finance Initiative outside the UK.

7

IBM Headquarters

Adding value and conserving energy from the inside out.

8

Cologne Convention Center

The centrifugal chillers and the building automation system are indispensable in creating and managing an optimal indoor environment.

Catalogue content

Page

Chillers & Heat Pumps

Page

Air Handling Systems & Terminal Devices

Packaged Equipment & Large Split Systems

Comprehensive Solutions

Chillers & Heat Pumps

SCROLL COMPRESSOR CHILLERS AND HEAT PUMPS

SCREW COMPRESSOR CHILLERS AIR-COOLED & WATER-COOLED

CENTRIFUGAL COMPRESSOR CHILLERS WATER-COOLED

ABSORPTION CHILLERS AND HEAT PUMPS

CENTRAL PLANT OPTIMISATION™ 10

Return to Content

ECOFRIO v2 / ECOFRIO v2 Plus Air cooled chiller / heat pump

YLCA 0012 to 0027 / YLHA 0012 to 0027 Plus

A complete range from 12 kW up to 25.8 kW

The **YORK YLCA/YLHA** air-cooled chillers and heat pumps represents the right solution for any kind of installation.

With thousand. of units installed all around Europe and Africa, used for different applications and in different climate conditions are one of the most flexible and reliable scroll type chillers in the market.

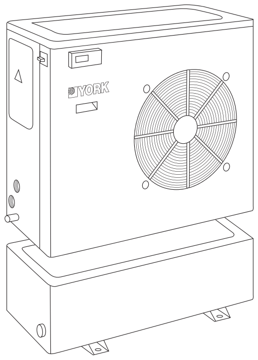
The standard product configuration and the different options and accessories selectable by the customer make these units ideal where a compact, and high performance unit is required.

Features

- Scroll compressor units
- Very compact units
- High efficiency units
- Leaving and return water temperature control
- Hydro pack standard
- Buffer tank supresion function
- Dynamic set point function
- Fan speed control as standard
- Coated condenser fins as standard (blue fin)
- Flow switch and water filter included

Options / Accessories

- Condenser copper fins
- BMS Communication (Carel and Modbus protocol)
- Remote control / Remote terminal
- High pressure fans
- External buffer tank
- Tray cable heater (YLHA Plus)
- Condenser protection grill



External Buffer tank in accessories

Return to Content

ECOFRIO v2 / ECOFRIO v2 Plus

YLCA 0012 to 0027 / YLHA 0012 to 0027 Plus

Technical features

T Three phases supply **C** Hydro Pack

Model			**YLCA G1**				**YLHA PLUS G1**			
			0012 TC	**0015 TC**	**0020 TC**	**0027 TC**	**0012 TC**	**0015 TC**	**0020 TC**	**0027 TC**
Performance	Cooling capacity (1)	kW	12.6	14.8	19.9	26.2	12.2	14.1	19.8	26.4
	Total Input Power (1)	kW	4.32	5.9	6.96	9.26	4.31	5.62	7.07	9.07
	EER (1)		2.92	2.51	2.86	2.83	2.83	2.51	2.8	2.91
	ESEER		3.07	2.87	3.66	3.07	3.05	2.77	3.27	3.24
	Heating capacity (1)	kW	-	-	-	-	12.2	15.8	19.8	25.7
	Total Input Power (1)	kW	-	-	-	-	4.31	5.32	6.64	8.77
	COP (1)		-	-	-	-	2.83	2.97	2.98	2.93
	Heating capacity (2)	kW	-	-	-	-	12.6	16.4	20.5	26.8
	COP (2)		-	-	-	-	3.86	4.0	3.79	3.8
	Capacity steps	%	0 / 100							
	Sound power level	dB(A)	73	73	74	78	73	73	74	78
	Sound pressure level at 10 m	dB(A)	43	43	44	48	43	43	44	48
Compressor	Type		Scroll							
	Quantity		1							
Air side heat exchanger	Fans quantity		2							
	Working ambient temp. cool / heat mode		(5) (-18°C) -10°C ~ 46°C		-18°C ~ 46°C		-18°C ~ 46°C / -15°C ~ 20°C			
Water side heat exchanger	Type		Plate Heat Exchanger							
	Unit water volume	Litres	1.5	2	2.8	3.2	1.5	2	2.8	3.2
	Pump Type		Multi stage							
	Nominal water flow in cooling	l/h	2 065	2 530	3 360	4 405	1 980	2 375	3 335	4 440
	Available pressure (1) (3)	kPa	115	152	134	191	118	160	130	191
	Working water leaving temp. cooling/heating mode (4)	°C	-5°C to 15°C / 30°C to 50°C							
	Water connections	inch	1″	1 1/4″			1″	1 1/4″		
Dimensions & Weight	Height / Width / Depth	mm	1 270 / 905 / 460		1270/1430/502	1270/1876/502	1 270 / 905 / 460		1270/1430/502	1270/1876/502
	Weight	kg	146	160	220	290	150	164	235	330
Electrical features	Voltage / Phases / Frequency	V/ph/hz	400-3-50+N+E							
	Maximum Unit current	A	11.6	15.8	18.1	23	11.6	12.4	15.5	21

(1) net values at Nominal conditions (2) net values at floor heating conditions (3) with filter (4) below 6°C with glycol (5) -18°C with LAK option
Nominal conditions: Cooling capacities for 7°C water leaving temperature Δt 5°C and 35°C ambient temperature
Heating capacities for 45°C water leaving temperature Δt 5°C and 7°C ambient temperature
Floor heating conditions: Heating capacities for 35°C water leaving temperature Δt 5°C and 7°C ambient temperature

Compatibility table / Codes

YLCA Model	**0012 TC**	**0015 TC**	**0020 TC**	**0027 TC**				
Cooling only units (Pack included)	S668551282	S668551582	S668552082	S668552782				
YLHA Plus Model					**0012 TC**	**0015 TC**	**0020 TC**	**0027 TC**
Heat pump units (Pack included)					S668651285	S668651585	S668652085	S668652785

Use this unit code when a factory fitted option is NOT required

Accessories (Supplied loose)

Water tank	30 Liters	S613990300		-		S613990300		-	
	115 Liters	-		S613991150		-		S613991150	
Water tank + heater	30 L + 4.5 kW (3~)	-				S613990305	-		
	30 L + 6 kW (3~)	-				S613990306		-	
	115 L + 10.5 kW (3~)	-						S613991151	
Remote control		S613802011							
Remote terminal		S613802231							
BMS Communication		S613802041							
Anti vibration mounting		S613029001		S613029002		S613029001		S613029002	
Compressor heater		S613760322		STANDARD		S613760322		STANDARD	
Tray cable heater		-				S611080788		-	

YLCA Model	**0012 TC**	**0015 TC**	**0020 TC**	**0027 TC**				
Cooling only units (Pack included)	S668000010	S668000012	S668000014	S668000016				
YLHA Plus Model					**0012 TC**	**0015 TC**	**0020 TC**	**0027 TC**
Heat pump units (Pack included)					S668000239	S668000242	S668000243	S668000244

Use this unit code when a factory fitted option is required

Options (Factory fitted)

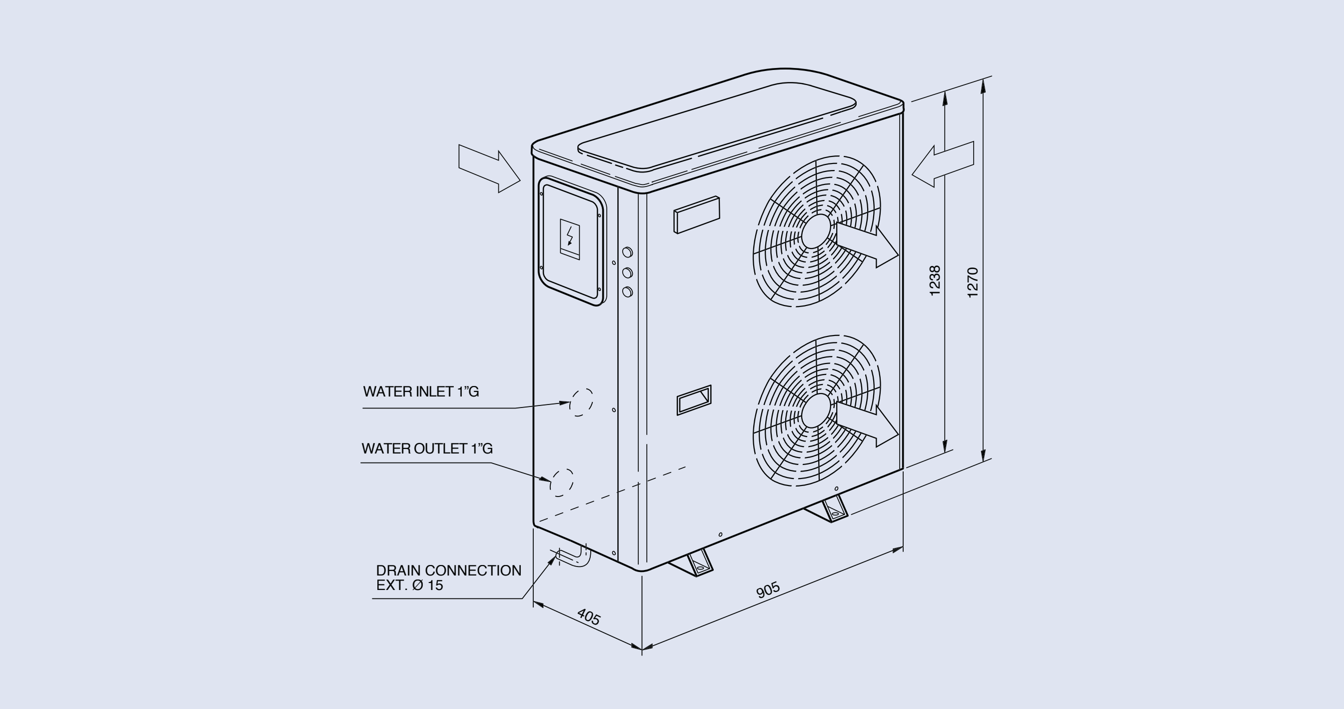
High pressure fans	S611991083			S611991085	S611991083			S611991085
Condenser protection grill	S613995085		S613995086	S613995087	S613995085		S613995086	S613995087
LAK -18°C	S613112083		STANDARD					

Manufacturer reserves the rights to change specifications without prior notice.

Return to Content

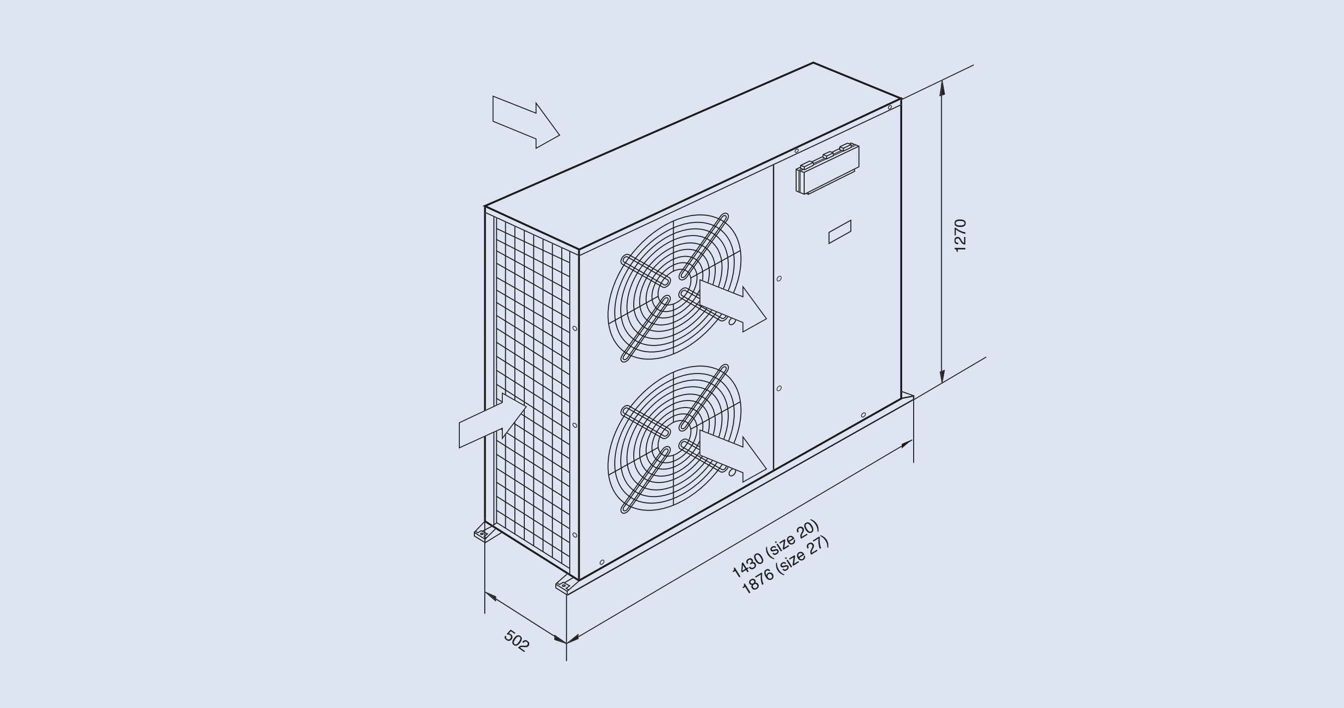
Dimensions, hydraulic connections and space requirements

YLCA-YLHA PLUS 0012/0015 TC



All dimensions in mm. Drawings not a scale.

YLCA-YLHA PLUS 0020/0027 TC

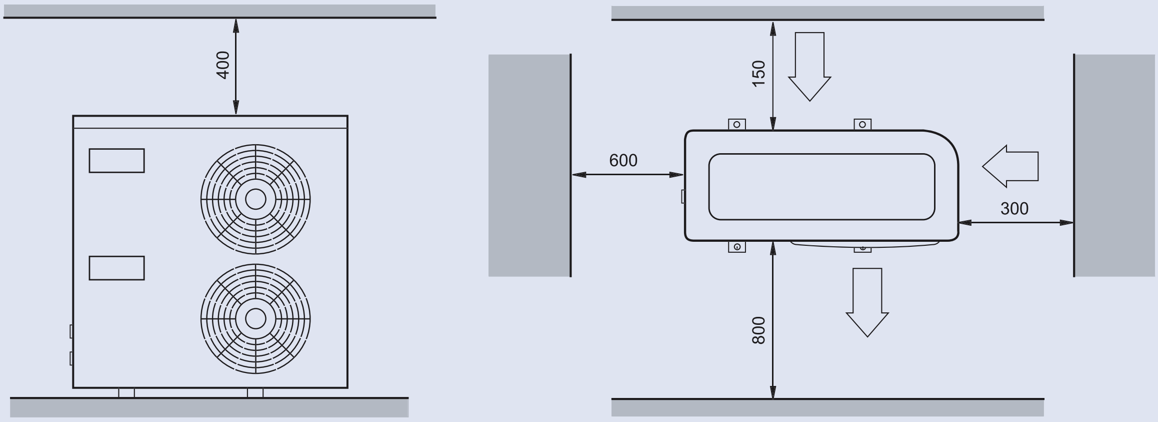


All dimensions in mm. Drawings not a scale.

Return to Content

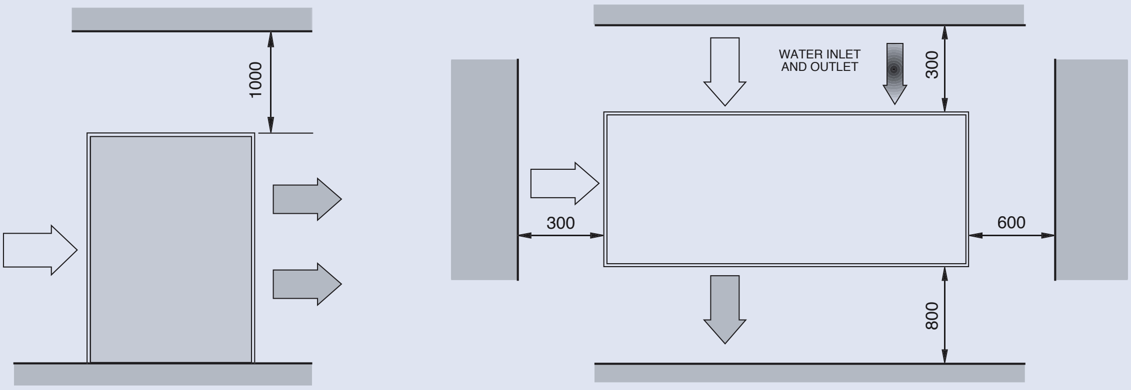
YLCA-YLHA PLUS 0012 to 0027

Models YLCA-YLHA PLUS 0012/0015



All dimensions in mm. Drawings not a scale.

Models YLCA-YLHA PLUS 0020/0027



All dimensions in mm. Drawings not a scale.

ECOFRIO v2
Air cooled chiller / heat pump

YLCA / YLHA 0040 to 0150

A complete range from 39.6 kW up to 151 kW

The **YORK YLCA/YLHA** air-cooled chillers and heat pumps represents the right solution for any kind of installation.

With thousands of units installed all around Europe and Africa, used for different applications and in different climate conditions are one of the most flexible and reliable scroll type chillers in the market.

The standard product configuration and the different options and accessories selectable by the customer make these units ideal where a compact, and high performance unit is required.

Features

YLCA/YLHA 0040 to 0080

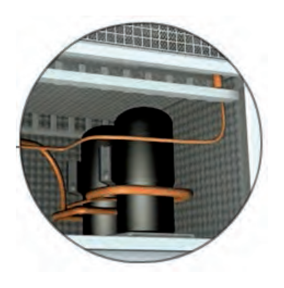
- 2 capacity steps (1 for size 40)
- LWT & RWT Control
- Plate heat exchanger
- Condenser fins (blue fin)
- Pressostatic LAK (-18°C)

YLCA/YLHA 0100 to 0150

- Same features as YLCA/YLHA 40 to 80
- 4 capacity steps
- High efficiency at full and partial load
- Reduced noise levels
- 1/4 turn lock for easy access

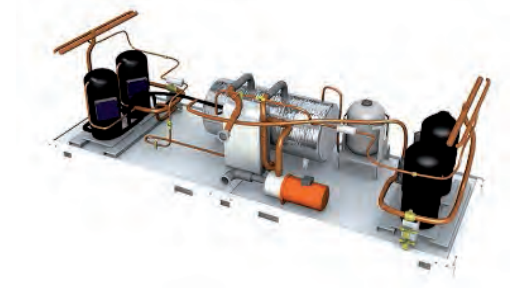
Options / Accessories

- Unit without pack
- BMS Communication (Carel and Modbus protocol)
- Remote control
- Remote terminal
- Water filter (unit without Hydro Pack)
- Flow switch (unit without Hydro Pack)
- Low noise version
- Dual pump version
- Antivibration mountings
- Condenser protection grille



Low noise version with special insulation in the compressor chamber.

Special coating on the condenser fins for improved corrosion protection.



Pump built-in for space saving and easy installation.

Return to Content

ECOFRIO v2

YLCA / YLHA 0040 to 0150

Technical features

T Three phases supply **P** Hydro Pack **H** Heat pump

Model			**YLCA / YLHA**						
			0040 T-TP	**0050 T-TP**	**0060 T-TP**	**0080 T-TP**	**0100 T-TP**	**0120 T-TP**	**0150 T-TP**
Performance	Cooling capacity c/o units (1)	kW	39.3	51.8	60.1	77	100.3	118.5	150.5
	Total Input Power (1) (3)	kW	13.69	18.3	20.03	27.11	34.47	40.44	54.14
	EER (1)		2.87	2.83	3	2.84	2.91	2.93	2.78
	ESEER (1)		3.15	3.18	3.3	3.15	3.74	3.83	3.66
	Cooling capacity h/p units (1)	kW	37.6	51.2	60.1	71.7	95.4	113.6	144.5
	Heating capacity h/p units (1)	kW	38.8	52.8	60	75.2	104.6	120	150.5
	Total Input Power cool/heat mode (1)	kW	13.48 / 12.81	17.65 / 18.21	20.03 / 20.2	26.46 / 26.86	36.14 / 37.76	43.69 / 40	51.06 / 53.94
	EER / COP (1)		2.79 / 3.03	2.93 / 2.9	3 / 2.97	2.71 / 2.8	2.64 / 2.77	2.6 / 3	2.83 / 2.79
	ESEER (1)		3.15	3.18	3.29	2.91	3.39	3.43	3.73
	Capacity steps	%	0 / 100	0-50-100			0-25-50-75-100		
	Sound power level STD / LN	dB(A)	78 / 73	81 / 76	87 / 77	83 / 79	82 / 78	82 / 78	84 / 80
Compressor	Type		Scroll						
	Quantity		1	2			4		
Air side heat exchanger	Fans quantity		2			3	4		
	Working ambient temp. cool. / heat. mode		-18°C ~ 46°C / -10°C ~ 20°C						
Water side heat exchanger	Type		Single Plate Heat Exchanger				Dual Plate Heat Exchanger		
	Unit water volume (2)	Litres	131	188	194	285	193	195	214
	Pump Type		Multistage horizontal pumps						
	Nominal water flow	l/h	6 820	8 960	10 400	13 350	17 600	20 470	25 970
	Available pressure (1) (2)	kPa	105	108	158	123	187	202	186
	Pressure drop (1) (3)	kPa	75	39	50	63	59	33	27
	Working range water leaving temperature cooling / heating (4)		-5°C ~ 15°C / 30°C ~ 50°C						
	Water connections (2)	inch	1 1/4"	2"			2 1/2"		
Dimensions & Weight	Height / Width / Depth	mm	1573/1500/822	1600 / 1011 / 2104		1600/1118/2944	2190 / 1101 / 3416		2263/1101/3770
	Weight without pack / pack c/o	kg	340 / 380	524 / 580	555 / 611	715 / 785	1 124 / 1 220	1 190 / 1 286	1 415 / 1 503
	Weight without pack / pack h/p	kg	337 / 397	537 / 593	568 / 624	735 / 805	1 154 / 1 250	1 220 / 1 316	1 445 / 1 703
Electrical features	Voltage / Phases / Frequency	V/ph/hz	400 / 3 / 50+N+E						
	Maximum Unit current	A	33	46.2	49.2	70.5	80	108	120

YLCA: Cooling only units models. YLHA: Air to water heat pump models.
(1) net values at Eurovent nominal conditions (2) version P with hydro kit with filter (3) version without hydro kit (4) below 6°C with glycol
Nominal conditions: Cooling capacities in kW given for 7°C water leaving temperature Δt 5°C and 35°C ambient temperature
Heating capacities in kW given for 45°C water leaving temperature and 7°C ambient temperature

Compatibility table / Codes

Model	**0040 TP**	**0050 TP**	**0060 TP**	**0080 TP**	**0100 TP**	**0120 TP**	**0150 TP**
YLCA Cooling only unit (Pack included)	S668554084	S668525182	S668526182	S668528182	S668521182	S668551156	S668551507
YLHA Heat pump unit (Pack included)	S668654084	S668625182	S668626182	S668628182	S668621182	S668651156	S668651506

Model	**0040 T**	**0050 T**	**0060 T**	**0080 T**	**0100 T**	**0120 T**	**0150 T**
YLCA Cooling only unit (without Pack)	S668554080	S668525180	S668526180	S668528180	S668521180	S668551154	S668551503
YLHA Heat pump unit (without Pack)	S668654080	S668625180	S668626180	S668628180	S668621180	S668651154	S668651504

Use this unit code when a factory fitted option is NOT required

Accessories (Supplied loose)

AVM mounting	S613029002	S613026080		S613028180	S613021580		
Mechanical flow switch	S611992021						
Water Filter *	S611300150	S611300170			S611300190		
Remote control	S613802011						
Remote terminal	S613802231				-		
Cable for remote connection of the terminal	-				S613802241		
B.M.S. Communication	S613802041				S613802051		

Model	**0040 TP**	**0050 TP**	**0060 TP**	**0080 TP**	**0100 TP**	**0120 TP**	**0150 TP**
YLCA Cooling only unit (Pack included)	S668000226	S668000247	S668000251	S668000255	S668000259	S668000107	S668000111
YLHA Heat pump unit (Pack included)	S668000228	S668000248	S668000252	S668000256	S668000260	S668000131	S668000135

Model	**0040 T**	**0050 T**	**0060 T**	**0080 T**	**0100 T**	**0120 T**	**0150 T**
YLCA Cooling only unit (without Pack)	S668000038	S668000245	S668000249	S668000253	S668000257	S668000105	S668000109
YLHA Heat pump unit (without Pack)	S668000039	S668000246	S668000250	S668000254	S668000258	S668000129	S668000133

Use this unit code when a factory fitted option is required

Options (Factory fitted)

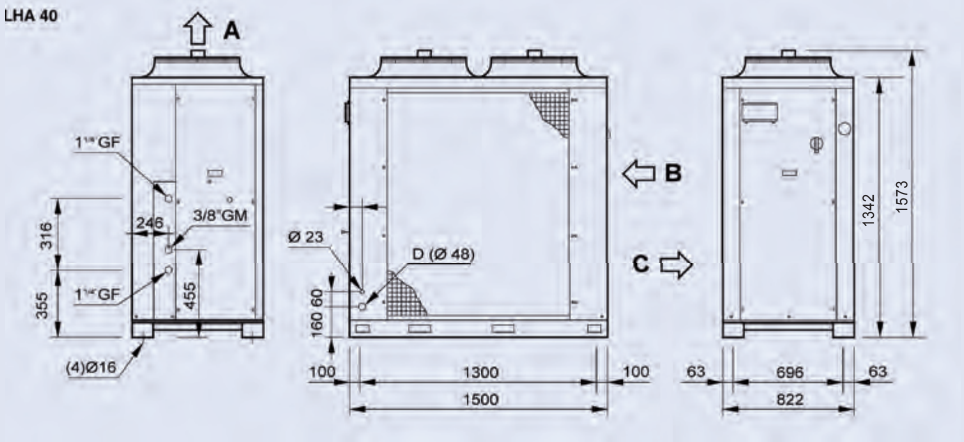
Low Noise version	S613990550	S613990650		S613990850	S613991050	S613991285	S613991584
Softstart	S606744692	S606744693			S606744694		
Dual pumps **	-	S613990540	S613990640	S613990840	S613991040	S613991286	S613991585
Condenser protection grille	S613995090	S613995091		S613995092	S613995093		S613995094

** included with unit version "P" only for unit without pack. Filter size: 2" for YLCA 40-50-60-80 and 2 1/2" for YLHA 100-120-150.*
*** Dual pump option has to be ordered with units with hydrokit.*

Return to Content

Dimensions and hydraulic connections

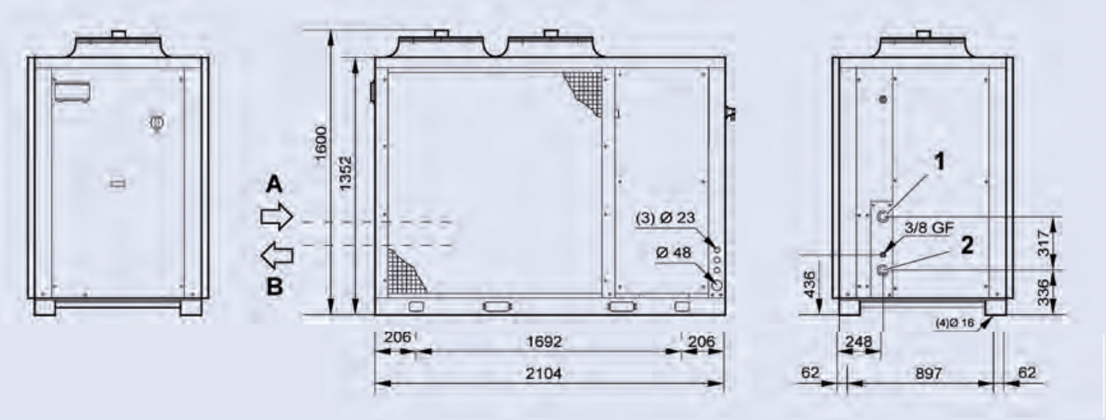
YLCA-YLHA 0040 T-TP



All dimensions in mm. Drawings not a scale.

Unit	A	B	C
YLCA/YLHA 0040	Air outlet	Water inlet	Water outlet

YLCA-YLHA 0050 and 0060 T-TP

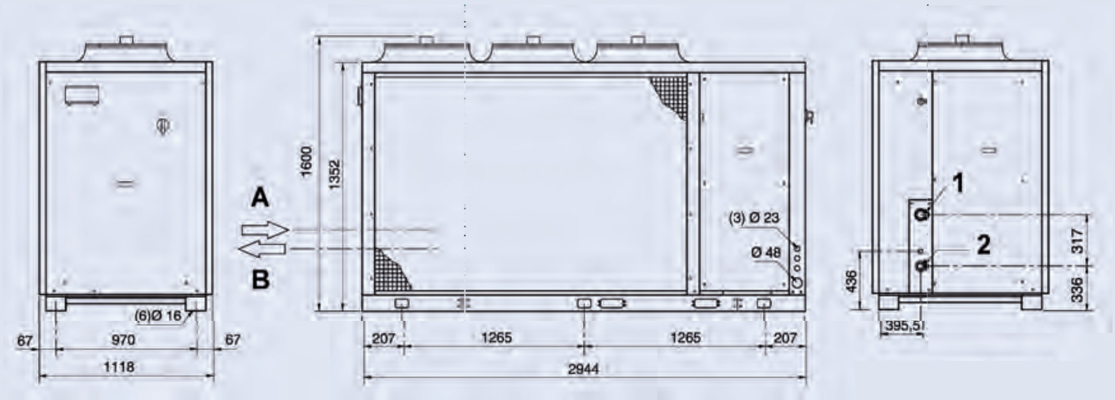


All dimensions in mm. Drawings not a scale.

Unit	A	B	1	2
YLCA/YLHA 0050-0060	Water inlet	Water outlet	2" GF (Inlet)	2" GF (Outlet)

YLCA / YLHA 0040 to 0150

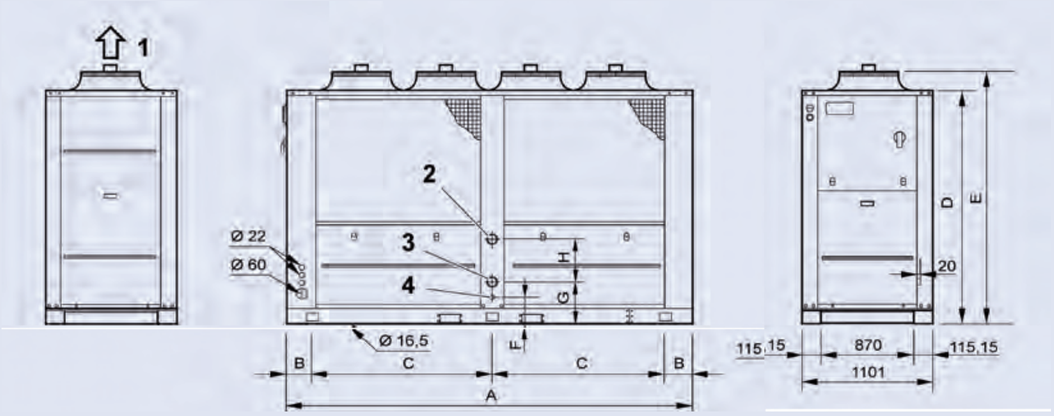
YLCA-YLHA 0080 T-TP



All dimensions in mm. Drawings not a scale.

Unit	A	B	1	2
YLCA/YLHA 0080	Water inlet	Water outlet	2" GF (Inlet)	2" GF (Outlet)

YLCA-YLHA 0100, 0120 and 0150 T-TP



Unit	1	2	3	4	A	B	C	D	E	F	G
YLCA/YLHA 0100-0120	Air outlet	Water outlet Ø2 1/2" G	Water inlet Ø2 1/2" G	Drain Ø 20 x 20	3 416	182	1 525	1 942	2 190	199	289
YLCA/YLHA 0150					3 770	255	1 630	1 993	2 263	145	211

All dimensions in mm. Drawings not a scale.

Return to Content

YLCD-YLHD
Air cooled chiller / heat pump

YLCD-YLHD 0025 to 0150

A complete range from 24 kW up to 145 kW

The new **YORK YLCD/YLHD** air-cooled chillers and heat pumps with powered fans are ideal solution for units to be installed in technical rooms or in louvered/hidden spaces on the roof.

Sharing the reliable and proven designed with YLCA/YLHA, these new units using R-410a aims to help the installer and the user to help to find solutions for special and difficult installations.

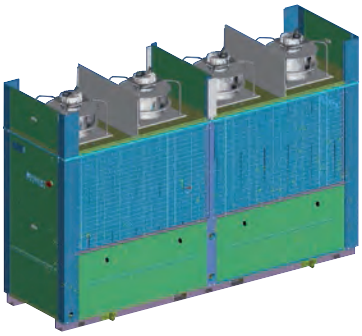
The bigger sizes (from 100 to 150 kW) utilize new EC Inverter radial fans, that will keep always the right performance for the unit at any outdoor condition.

Features

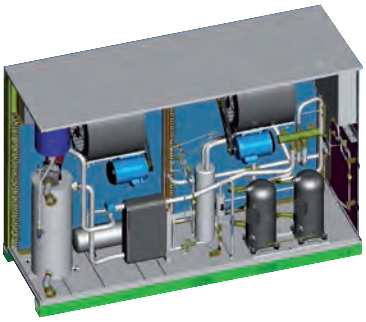
- Centrifugal or radial fans
- Scroll compressor
- Vertical and horizontal discharge
- Integrated Hydro kit (P versions)
- LAK (-18°C) standard (sizes 100-150)
- Flow switch standard

Options / Accessories

- Vertical Discharge kit (sizes 25 to 70)
- Low Noise (sizes 100 to 150)
- Dual Water Pumps (sizes 100 to 150)
- Water filter and water flow switch
- Antivibration mounting
- Remote control and remote terminal
- BMS communication (Carel and Modbus protocol)



EC Radial Fans (sizes 100 to 150), using new high efficiency ventilation technology to improve the overall performance.



Integrated Hydrokit, shared with YLCA/YLHA product platform, for a compact and quick installation.

Return to Content

Air cooled chiller & heat pump

YLCD-YLHD 0025 to 0150

Technical features

T Three phases supply **C/P** Hydro Pack **H** Heat pump

Models			YLCD / YLHD					
			0025 TC	0040 T-TP	0070 T-TP	0100 T-TP	0120 T-TP	0150 T-TP
Performance	Cooling capacity c/o units (1)	kW	24.6	39.8	69.5	98.4	118.5	144.5
	Total Input Power (1)	kW	8.45	15.13	27.36	37.41	44.72	56.67
	EER (1)		2.91	2.63	2.54	2.63	2.65	2.55
	Cooling capacity h/p units (1)	kW	23.6	39.8	67.5	95.4	116.5	142.5
	Heating capacity h/p units (1)	kW	23.4	43.2	72.5	104.6	120.1	159.5
	Total Input Power cool/heat mode (1)	kW	8.14 / 8.18	15.13 / 15.6	26.57 / 26.46	36.27 / 37.63	42.21 / 43.2	60.13 / 59.07
	EER / COP (1)		2.9 / 2.86	2.63 / 2.77	2.54 / 2.74	2.63 / 2.78	2.76 / 2.78	2.37 / 2.7
	Capacity steps	%	100	50-100		25-50-75-100		
	Sound power level	dB(A)	81	83	86	86	86	87
Compressor	Type		Scroll					
	Quantity		1	2	2	4	4	4
Air side heat exchanger	Fans quantity		1	2	2	4	4	4
	Nominal air flow	m^3/h	8 100	18 000	23 000	36 000		48 000
	Nominal static pressure	Pa	100		150	200		
	Working ambient temp. cool. / heat. mode		(4) (-18°C) ~ 46°C / -10°C ~ 20°C			-18°C ~ 46°C / -10°C ~ 20°C		
Water side heat exchanger	Type		Single plate heat exchanger			Dual plate heat exchanger		
	Unit water volume	Litres	32	84	92	193	195	214
	Pump Type		Multistage horizontal pump					
	Nominal water flow	l/h	4 300	6 880	12 040	17 030	20 470	24 940
	Available pressure (1) (2)	kPa	208	105	120	187	202	186
	Pressure drop (1) (3)	kPa	-	31	53	54	32	24.5
	Working range water leaving temperature cooling / heating (5)		-5°C ~ 15°C / 30°C ~ 50°C					
	Water connections	inch	1-1/4"	2"		2-1/2"		
Dimensions & Weight	Height	mm	1 526	1 794	1 794	2 460	2 460	2 480
	Width	mm	1 740	2 659	2 659	3 466	3 416	3 768
	Depth	mm	785	897	897	1 101	1 101	1 101
	Weight without pack / pack c/o	kg	- / 390	730 / 770	740 / 780	1 264 / 1 360	1 264 / 1 360	1 680 / 1 776
	Weight without pack / pack h/p	kg	- / 400	750 / 790	760 / 800	1 284 / 1 380	1 284 / 1 380	1 700 / 1 796
El. supply	Voltage / Phases / Frequency	V/ph/hz	400 / 3 / 50 + N + E					

YLCD: Cooling only units models. YLHD: Air to water heat pump models.
(1) net values at Eurovent nominal conditions (2) version P with hydro kit with filter (3) version without hydro kit (4) -18°C with LAK option (5) below 6°C with glycol
Nominal conditions: Cooling capacities in kW given for 7°C water leaving temperature Δt 5°C and 35°C ambient temperature
Heating capacities in kW given for 45°C water leaving temperature and 7°C ambient temperature

Compatibility table / Codes

Models	**-**	**0040 T**	**0070 T**	**0100 T**	**0120 T**	**0150 T**
Cooling only unit YLCD	-	S668594083	S668597083	S668591083	S668591283	S668591583
Heat pump unit YLHD	-	S668574083	S668577083	S668571083	S668571283	S668571583
Models	**0025 TC**	**0040 TP**	**0070 TP**	**0100 TP**	**0120 TP**	**0150 TP**
Cooling only unit YLCD	S668592580	S668594080	S668597080	S668591080	S668591280	S668591580
Heat pump unit YLHD	S668572580	S668574080	S668577080	S668571080	S668571280	S668571580

Use this unit code when a factory fitted option is NOT required

Accessories (Supplied loose)

AVM mounting	S613029002		S613028180	S613021580		
Flow switch	S611992021					
Remote control	S613802011					
Remote terminal	S613802231			-		
Cable for remote connection of the terminal	-			S613802241		
B.M.S. Communication	S613802041			S613802051		

Models	**-**	**0040 T**	**0070 T**	**0100 T**	**0120 T**	**0150 T**
Cooling only unit YLCD	-	S668000264	S668000268	S668000272	S668000276	S668000280
Heat pump unit YLHD	-	S668000266	S668000270	S668000274	S668000278	S668000282
Models	**0025 TC**	**0040 TP**	**0070 TP**	**0100 TP**	**0120 TP**	**0150 TP**
Cooling only unit YLCD	S668000262	S668000265	S668000269	S668000273	S668000277	S668000281
Heat pump unit YLHD	S668000263	S668000267	S668000271	S668000275	S668000279	S668000283

Use this unit code when a factory fitted option is required

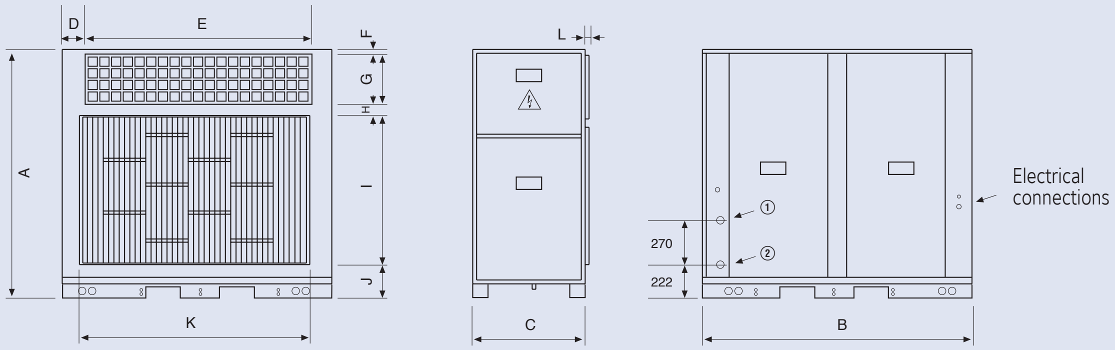
Options (Factory fitted)

Low noise	NA	S613990550	NA	S613991050	S613991285	S613991584
Dual pump	NA	NA	NA	S613991040	S613991286	S613991585
Coil guard net	Standard			S613995093		S613995094
Low Ambient Kit	S613114085	S613111084		Standard		
Soft start	S606744692	S606744693		S606744694		
Vertical air discharge	S612828405	S612828205		Standard		
Copper/copper condenser	Contact Johnson Controls					

Return to Content

Dimensions and hydraulic connections

YLCD / YLHD 0025 TC

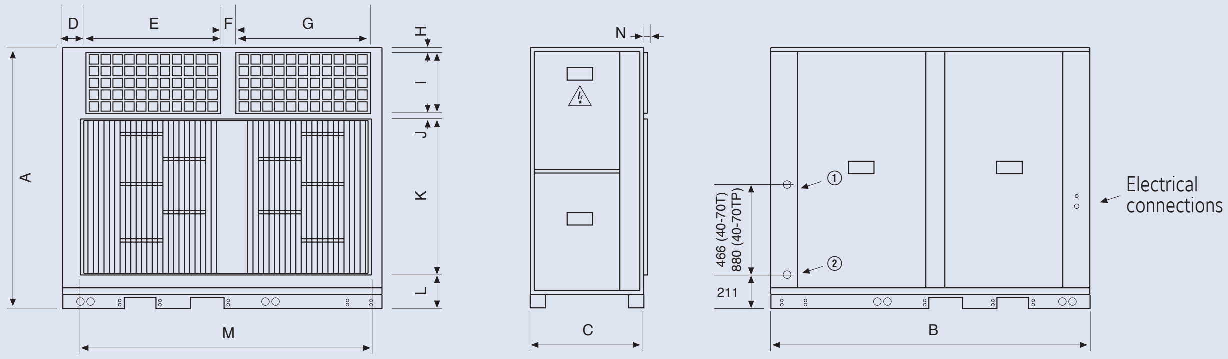


① Water outlet, 1-1/4" Gas F
② Water inlet, 1-1/4" Gas F

All dimensions in mm. Drawings not a scale.

Unit	A	B	C	D	E	F	G	H	I	J	K	L
YLCD/YLHD 0025 TC	1 526	1 740	785	151	1436	30	324	37	994	141	1476	24

YLCD / YLHD 0040-0070 T/TP



① Water outlet, 2" Gas F
② Water inlet, 2" Gas F

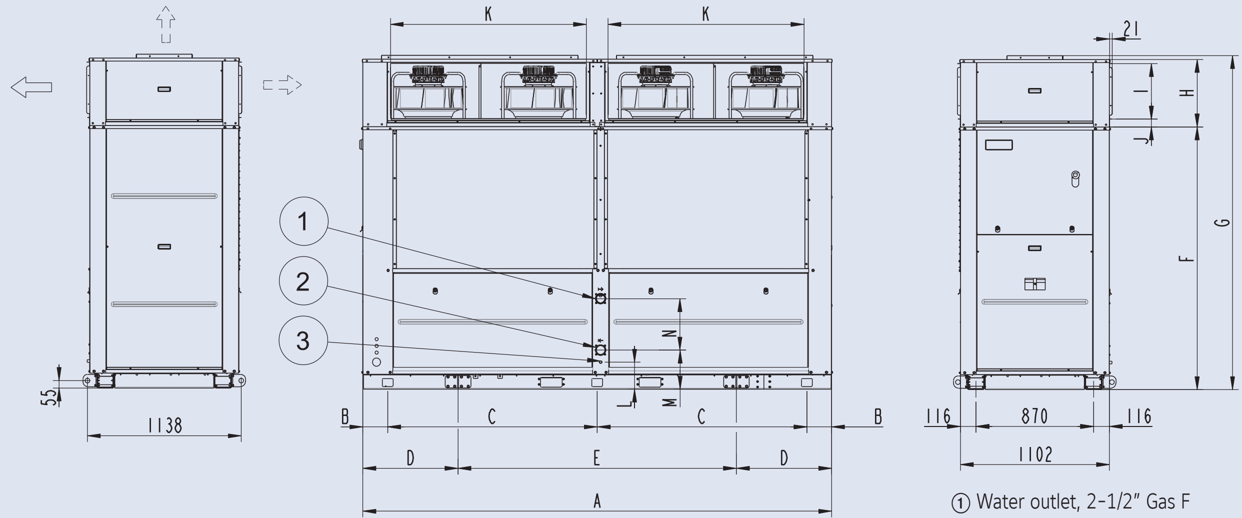
All dimensions in mm. Drawings not a scale.

Unit	A	B	C	D	E	F	G	H	I	J	K	L	M	N
YLCD/YLHD 0040 T/TP	1 794	2658	897	148	1155	95	1155	30	389	37	1 200	138	2479	23
YLCD/YLHD 0070 T/TP	1 794	2658	897	148	1155	95	1155	30	389	37	1 200	138	2479	23

Return to Content

YLCD-YLHD 0025 to 0150

YLCD / YLHD 0100-0120 T/TP

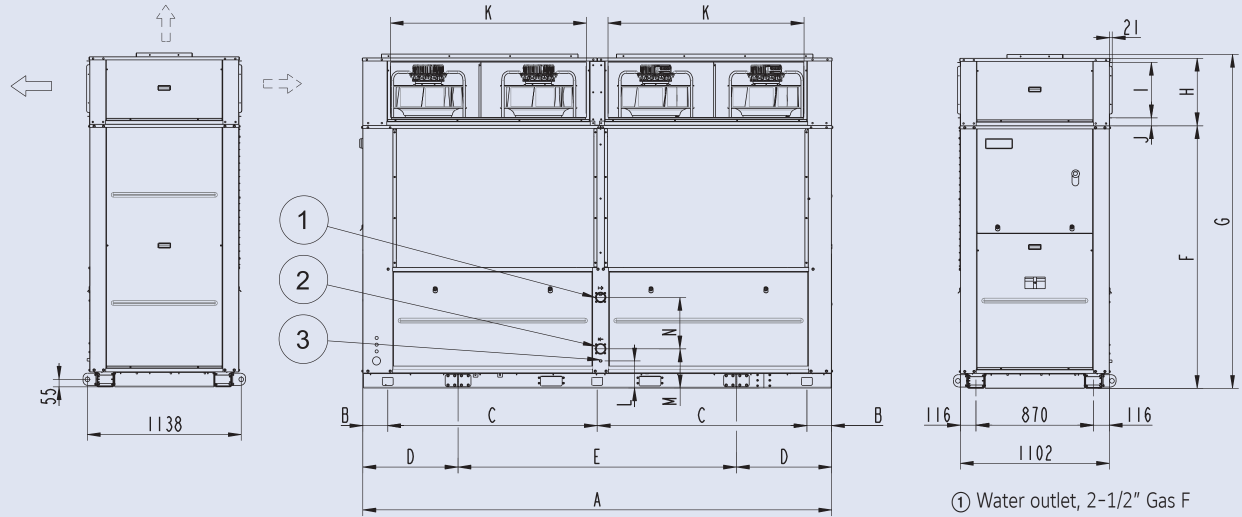


① Water outlet, 2-1/2" Gas F
② Water inlet, 2-1/2" Gas F
③ Diameter drain tube, 20 mm

All dimensions in mm. Drawings not a scale.

Unit	A	B	C	D	E	F	G	H	I	J	K	L	M	N
YLCD/YLHD 0100 T/TP	3 466	183	1 550	704	2 058	1 942	2 460	500	410	59	1 450	200	290	380
YLCD/YLHD 0120 T/TP	3 416	183	1 525	604	2 208	1 942	2 460	500	418	55	1 438	200	290	380

YLCD / YLHD 0150 T/TP



① Water outlet, 2-1/2" Gas F
② Water inlet, 2-1/2" Gas F
③ Diameter drain tube, 20 mm

All dimensions in mm. Drawings not a scale.

Unit	A	B	C	D	E	F	G	H	I	J	K	L	M	N
YLCD/YLHD 0150 T/TP	3 768	254	1 630	605	2 558	1 992	2 480	470	386	55	1 617	410	210	458

Return to Content

YCAE
Modular air cooled scroll chiller / heat pump

YCAE 065R/S to 0100R/S (CE version)

A complete range from 64 kW up to 99 kW

NEW

Features

Up to 8 modules in one water system; each module can be operated separately. Built-in main water pipe makes it easy to install in the field

Ability to configure modular chillers to fit the space
Installation flexibility for modular chillers will allow you to use all the available space. Many different possible configurations (linear, parallel, star, etc).

Ability to add more modular chillers in the future
Buildings being constructed or occupied in phases do not need the full cooling/heating capacity at the start. Modular chillers allow you to stage the investment by combining modules to obtain the required capacity.

Ability to stock a few models and cover large range
Modular chillers are your solution. Limited numbers of module configurations allow the distribution channel to keep modules in stock.

Quick and easy module combination
Connecting the water piping and cables, installing the sensors and bringing power to the modular(s) makes installation quick and easy.

Full redundancy – Easy parts management
Modularity and the central controller allows you to decide the quantity of modules active at anytime. In the event of maintenance other modules in the system will continue to operate ensuring minimal capacity loss.

Small modules, small components, low noise
Modularity design is based on low capacity modules installed together. Components are carefully selected based on its performance, reliability and low sound attributes. When comparing modular systems with standard chillers, modular chillers provide a lower noise level.

Very easy and intuitive central controller
Modular units, which can manage up to 8 modules per system, are controlled with a single central controller. Central controller sequence enables the units to even out the run hours and prolong the life of the chiller.

Intelligent defrost - For heat pumps
For our air to water heat pumps, defrost must occur. The central controller optimizes the sequencing of the defrost cycle allowing only one module to defrost at a time. This allows the remaining modules to continue to provide heating.

Return to Content

Modular air cooled scroll chiller / heat pump

YCAE 065R/S to 0100R/S

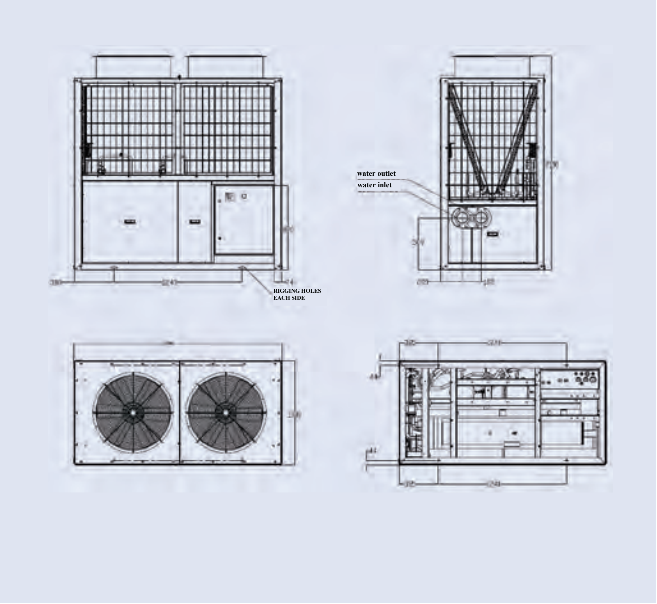
Technical features

Model			YCAE065SME53	YCAE065RME53	YCAE100SME53	YCAE100RME53
Cooling capacity		kW	64.1	64.1	99	99
Heating capacity		kW	-	70	-	103
EER / COP			3.05 / -	3.05 / 3.39	3.16 / -	3.16 / 3.2
ESEER			3.32	3.32	3.65	3.65
Refrigerant charge		kg	2 x 9	2 x 9	3 x 10.5	3 x 10.5
Sound power level		dB(A)	83	83	85	85
Capacity adjustment		%	0, 50, 100	0, 50, 100	0, 33, 66, 100	0, 33, 66, 100
Compressor	Type		Scroll	Scroll	Scroll	Scroll
	No.		2	2	3	3
Power input	Cooling	kW	21	21	31.3	31.3
	Heating	kW	-	20.8	-	33.9
Fan	Power input	kW	0.9 x 2	0.9 x 2	0.9 x 3	0.9 x 3
	Fan No.		2	2	3	3
	Air flow	m^3/h	13000 x 2	13000 x 2	13000 x 3	13000 x 3
Water-side heat exchanger	Water pressure drop	kPa	50	50	50	50
	Water pipe size	mm	114	114	89	89
	Pipe connection		Clamp	Clamp	Clamp	Clamp
	Water flow	m^3/h	11.1	11.1	17.2	17.2
Max. operating Current		A	49.3	49.3	74	74
Dimensions	Length	mm	2000	2000	2030	2030
	Width	mm	1000	1000	1930	1930
	Height	mm	2100	2100	2100	2100
Weight	Shipping weight	kg	800	840	1180	1240
	Operating weight	kg	880	920	1280	1350

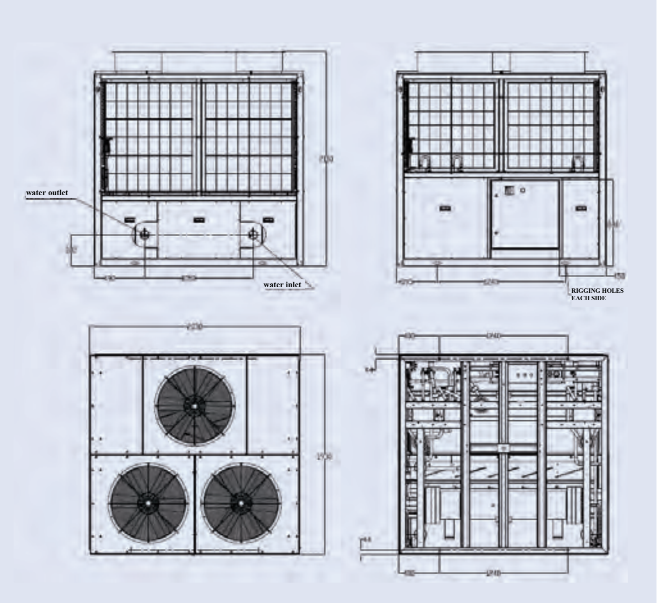
Nominal conditions: Cooling capacities in kW given for 7°C water leaving temperature Δt 5°C and 35°C ambient temperature
Heating capacities in kW given for 45°C water leaving temperature and 7°C ambient temperature

Dimensions and hydraulic connections

YCAE 065R/S



YCAE 100R/S



All dimensions in mm. Drawings not a scale.

Return to Content

YLAA
Air-cooled scroll compressor chiller

Cooling capacities from 190 kW to 519 kW

There are 2 versions COOLING ONLY	
YLAA SE	Standard Efficiency
YLAA HE	High Efficiency

Features

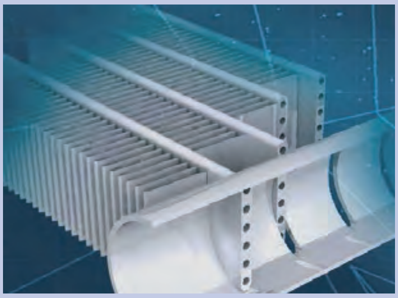
The **YORK YLAA TEMPO** air-cooled chiller is an environmental leader.

Utilising scroll type compressors and microchannel condenser coil technology the **YLAA** delivers premium efficiency for all air conditioning applications.

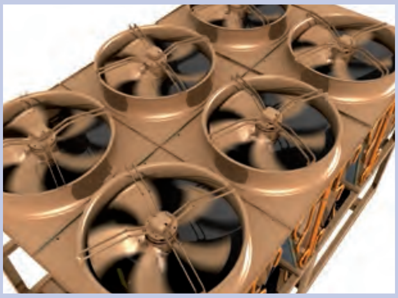
YLAA chillers are a self-contained cooling solution that is light-weight and compact for convenient installation on the ground or on building rooftops.

Options / Accessories

- Soft start
- Power Factor Correction Capacitors
- Low ambient kit
- BMS Interfacing options
- Dual pressure relief valves
- Victaulic coupling
- Flow switch
- Heat recovery option
- Enclosure options
- Sound attenuation options
- Anti-vibration mounts options
- Hydrokits with single and dual pump
- Epoxy Post-coated Dipped Microchannel Coils
- VSD Fans

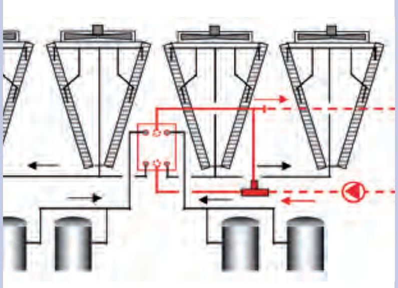


The TEMPO delivers energy efficiency levels that surpasses Eurovent A Class requirements. Aluminium microchannel condenser coil technology is one reason for this premium efficiencies.



Ultra quiet operation can be obtained through optional dual or low speed fans and a compressor accousitc enclosure.

A single point power connection and optional, factory packaged water pumps, water filter and flow switch provide fast and easy installation.



An optional heat recovery feature can be added to provide hot water to 50°C; which is useful for facility heating or hot water preheating.

Return to Content

Air-cooled scroll compressor chiller

YLAA 0180 to 0517

Nominal capacity

YLAA SE Standard	**0180**	**0210**	**0241**	**0286**	**0320**	**0360**	**0400**	**0435**	**0485**
Cooling capacity (kW)	190	205	218	272	310	349	388	423	473
EER	2.97	2.42	2.74	2.62	2.44	2.57	2.45	2.55	2.48
ESEER	3.97	3.43	3.6	3.84	3.63	3.84	3.71	3.75	3.74
ESEER with VSD	-	-	-	-	-	-	-	-	-
Sound power level dB(A)	89	89	86	90	94	94	95	96	96
Sound power level Low Noise Version dB(A)	82	83	84	87	87	87	87	89	89

YLAA HE High Efficiency	**0195**	**0221**	**0261**	**0301**	**0350**	**0391**	**0442**	**0457**	**0517**
Cooling capacity (kW)	198	212	248	295	344	380	426	455	519
EER	3.1	3.2	3.08	2.99	2.95	2.96	2.96	2.9	2.93
ESEER	4.25	4.15	4.08	3.98	3.92	4.12	4.1	3.98	4.16
ESEER with VSD	-	4.44	4.34	4.27	4.28	4.36	4.35	4.30	4.38
Sound power level dB(A)	89	91	90	93	94	95	95	96	96
Sound power level Low Noise Version dB(A)	82	84	87	86	87	88	88	89	89

At leaving chilled water temperature of 7°C, and ambient temperature of 35°C.

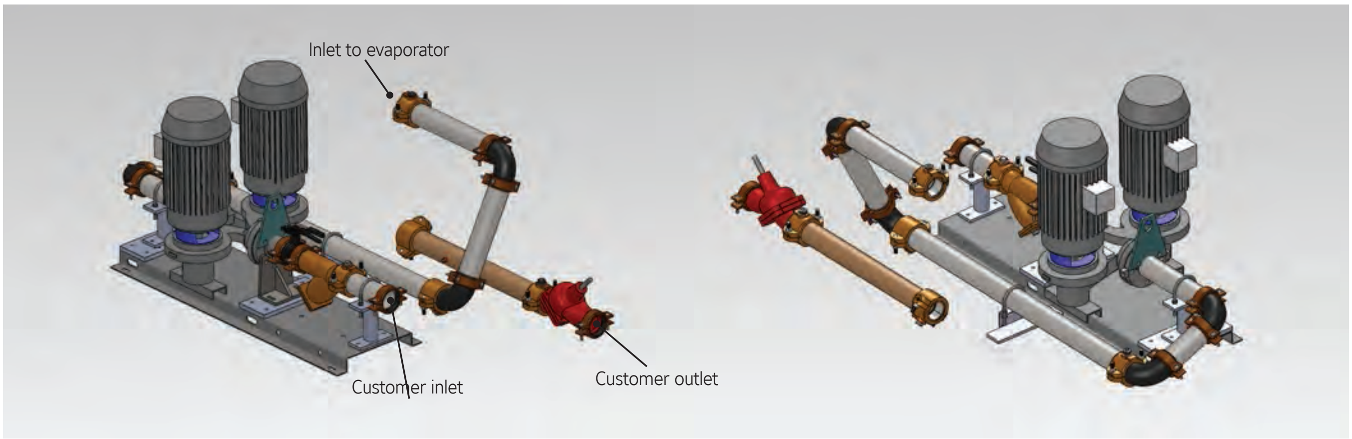
Technical data

YLAA SE Standard			**0180**	**0210**	**0241**	**0286**	**0320**	**0360**	**0400**	**0435**	**0485**
Dimensions	Length	mm	2911					3614			
	Width	mm	2242								
	Height	mm	2508								
Operating weight kg			1681	1725	1785	1853	1937	2814	2873	2642	2755

YLAA HE High Efficiency			**0195**	**0221**	**0261**	**0301**	**0350**	**0391**	**0442**	**0457**	**0517**
Dimensions	Length	mm	2911			3614			4769		
	Width	mm	2254								
	Height	mm	2507								
Operating weight kg			1706	1721	1851	2170	2339	2508	3343	3481	3615

YLAA Pump Kit

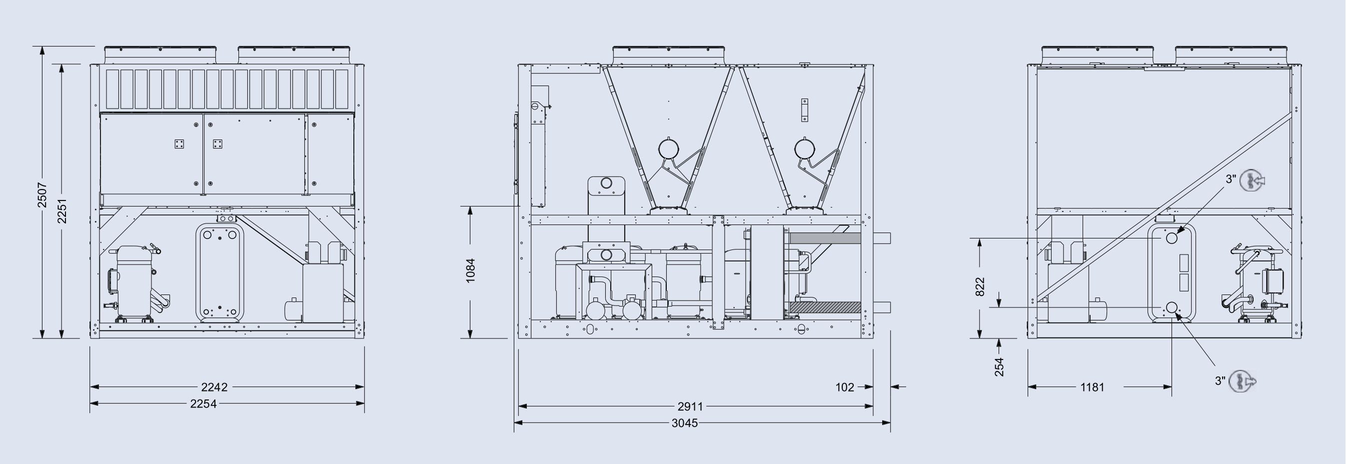
- Two option levels - basic and full featured - for maximum flexibility
- More impeller size options for better match to customer requirements
- New, smaller pump motors suitable for primary-secondary systems
- VSD option by SQ



Return to Content

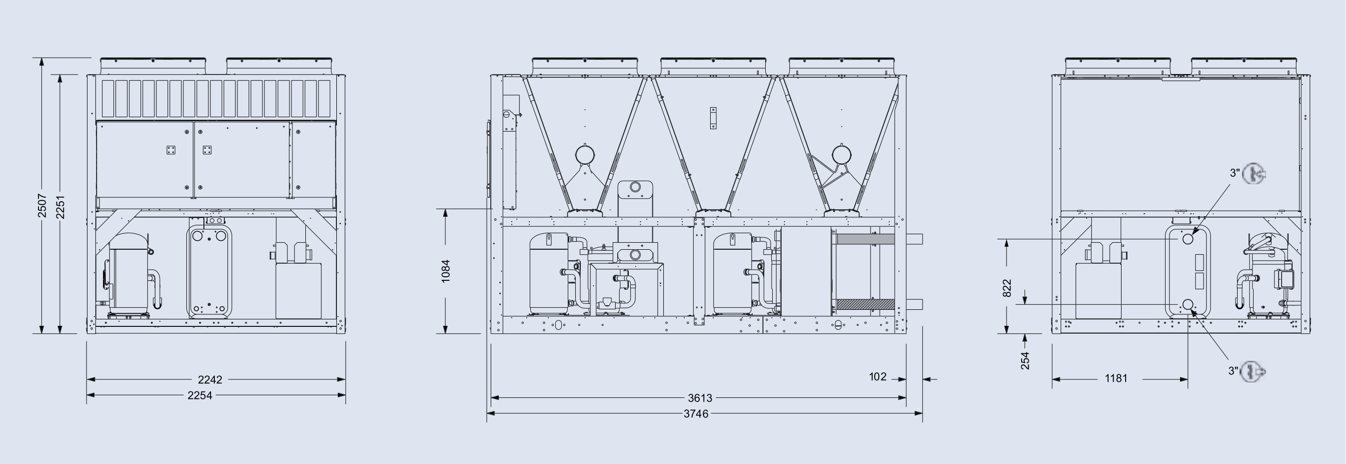
Dimensions and hydraulic connections

YLAA0180SE, 0210SE, 0241SE, 0286SE, 0320SE, 0195HE, 0221HE & 0261HE



All dimensions in mm. Drawings not a scale.

YLAA0360SE, 0400SE, 0435SE, 0485SE, 0301HE & 0391HE

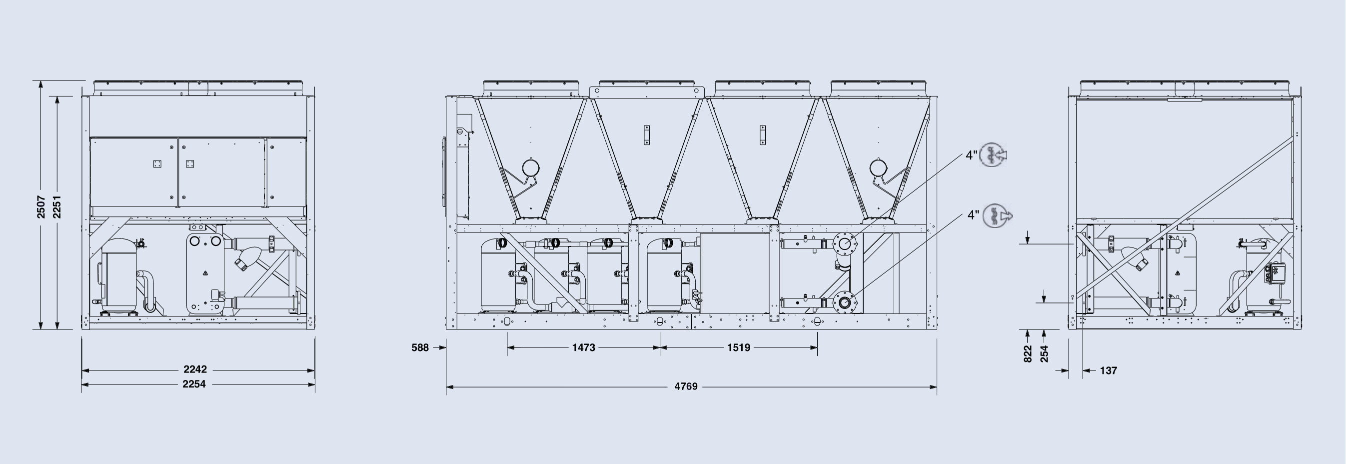


All dimensions in mm. Drawings not a scale.

Return to Content

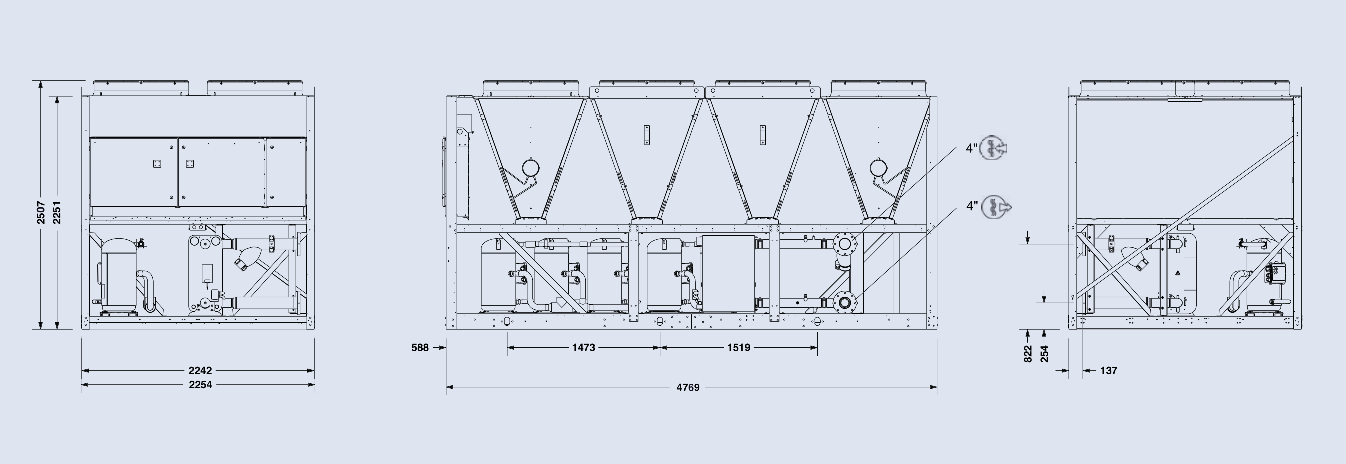
YLAA 0180 to 0517

YLAA0442HE



All dimensions in mm. Drawings not a scale.

YLAA0457HE & 0517HE



All dimensions in mm. Drawings not a scale.

Catalogue of York YCAS 0835 EB

YCAS eco^2

AIR COOLED SCREW CHILLER

R407C REFRIGERANT

COOLING CAPACITIES 260 kW to 1194 kW

The YCAS range of chillers are designed for water or water-glycol cooling. Models are available with 2, 3 and 4 refrigerant circuits.

Semi-hermetic twin helical screw compressors are provided to ensure high operational efficiencies and reliable performance.

Optional heat recovery condensers or desuperheaters are available on 2 and 4 refrigerant circuit models

All units are designed to be located outside on the roof of a building or at ground level.

CONTENTS

AVAILABLE MODELS & NOMINAL COOLING CAPACITIES TABLE 1

Model	0295	0335	0375	0425	0475	0515	0555	0575	0605
Refrigerant Circuits	Two								
Cooling (kW)	260	308	364	397	446	495	527	558	584
Heat Recovery (kW)	253	306	365	383	435	488	527	566	574
DeSuperheater (kW)	22	26	32	33	38	42	46	49	50

Model	0685	0775	0835	0905	0965	1065	1135	1215
Refrigerant Circuits	Three					Four		
Cooling (kW)	692	782	829	898	923	1056	1125	1194
Heat Recovery (kW)	Not Available					1020	1100	1182
DeSuperheater (kW)	Not Available					82	87	100

Cooling capacities at 7°C leaving chilled liquid temperature and 35°C ambient air temperature.
Optional heat recovery capacities at 40°C leaving hot liquid temperature and 7°C leaving chilled liquid temperature.
Optional Desuperheater capacities at 60°C leaving hot liquid temperature, 7°C leaving chilled liquid temperature and 35°C ambient air temperature.

FEATURES	BENEFITS
Manufactured to ISO 9001 EN 29001.	High standard of quality control.
Two, three and four refrigerant circuits.	System stand-by security.
Constructed from heavy gauge painted galvanised steel.	Durable and weather protected.
High efficiency industrial type semi-hermetic twin helical screw compressor.	Energy efficient, long life reliable compressor.
Full factory run test.	Operating quality control.
Optional acoustic kit.	Reduces operating sound levels.
Optional Star/Delta compressor starter.	Reduced starting current.
Separate power and control compartments with lockable doors and emergency stop device.	Operator safety considerations.
Power compartment optional door interlocked isolators.	Operator safety convenience.
Microprocessor control with visual display of temperatures, pressures, motor currents, operating hours and number of starts.	System data logging and temperature reset capability. Fault diagnostics. Energy management.
Unit remote alarm contacts.	Warning notification.
Remote water temperature reset.	Improved operating efficiency.
Building management system interface.	For central data logging and single point full system monitoring and control.
Fuzzy logic.	Maximise capacity control.
Suction line heat exchanger and counter flow cooler.	Maximises chiller capacity and efficiency.

SPECIFICATION

The YCAS Air Cooled chiller shall be completely assembled with all interconnecting refrigerant piping and internal wiring, ready for field installation. The unit shall be pressure tested, evacuated, and fully factory charged with refrigerant and oil in each of the independent refrigerant circuits.

After assembly, an operational test shall be performed with water flowing through the cooler to ensure that each refrigerant circuit operates correctly.

The unit structure shall be manufactured from heavy gauge, galvanised steel and coated with baked-on powder paint (Desert Sand (RAL 1019)). This provides a finish which, when subjected to 500 hour, 5% salt spray conditions, shows breakdown of less than 3mm either side of a scribed line.

All exposed power wiring shall be routed through liquid-tight, non-metallic conduit.

Compressors

Each compressor shall be direct drive, semi-hermetic, rotary twin screw type and include the following items:

- Two screw rotors, with asymmetric profiles, manufactured from forged steel.
- A cast iron compressor housing precision machined to provide optimal clearance for the rotors.
- The entire compressor, from suction to discharge shall have a design working pressure of 31 bar.
- Capacity Control: The compressors shall start at the minimum load position and provide a capacity control range from 100% to 10% of the full chiller load using a continuous function slide valve. A microprocessor controlled output pressure regulating capacity control valve shall be supplied to command compressor capacity independent of control valve input pressure and to balance the compressor capacity with the cooling load.
- An automatic spring return of capacity control valve to the minimum load position to ensure compressor starting at minimum motor load.
- An internal discharge check valve to prevent rotor backspin upon shutdown.
- An acoustically tuned, internal discharge muffler to minimise noise at the source, while optimising flow for maximum performance.
- Discharge and suction shut-off service valves.
- A rain tight terminal box.
- A reliable suction gas cooled high efficiency, accessible hermetic motor with redundant overload protection using both thermistor and current overload protection.
- A suction gas screen and serviceable, 0.5 micron full flow oil filter within the compressor housing.
- A 350 W compressor body heater.

Oil Separator

Oil separators with a design working pressure of 31 bar shall be the high efficiency, augmented gas impingement type to maximise oil extraction without fragile media to break down.

Oil Cooler

Oil cooling shall be provided by a dedicated air-cooled finned tube type heat exchanger located in the condenser section of the unit.

Refrigerant Circuits

An independent refrigerant circuit shall be provided per compressor. Each circuit will use copper refrigerant pipe formed on computer controlled bending machines to reduce the number of brazed joints resulting in a reliable and leak resistant system.

Liquid line components shall include: manual shut-off valve with charging port, high absorption removable core filter-drier, solenoid valve, sight glass with moisture indicator, and thermostatic expansion valves.

Suction lines shall be covered with closed-cell insulation.

Cooler

The cooler shall be a special optimised 'Counter-Flow' heat exchanger, which will take advantage of the "Glide" characteristic of R407C. It will employ technologically advanced (patent pending) high efficiency tube assemblies which make possible a single refrigerant pass, delivering refrigerant suction gas warmer than the leaving chilled water at full load. An independent circuit shall be provided for each compressor. The shell design working pressure shall be 10.3 bar, and 23.8 bar for the tubes.

The cooler shall have water baffles fabricated from galvanised steel to resist corrosion, removable heads for access to internally enhanced, seamless, copper tubes. The water nozzles shall be provided with grooves for mechanical couplings and be insulated by the contractor after pipe installation. Water vent and drain connections shall also be included.

The cooler shall be equipped with a thermostatically controlled heater for protection to -29°C ambient and insulated with 19 mm flexible closed-cell foam.

Suction Line Heat Exchanger

Each refrigerant circuit utilises a refrigerant to refrigerant, compact, shell and tube type suction line heat exchanger to maximise chiller capacity and efficiency by subcooling liquid refrigerant delivered to the expansion valve and superheating suction gas delivered to the compressor. The design working pressure shall be 31 bar. The exchanger shall be constructed in accordance with applicable pressure vessel safety code.

Condenser

Fans - The fans shall be dynamically and statically balanced, direct drive with corrosion resistant glass fibre reinforced composite blades moulded into low sound, full airfoil cross section, providing vertical air discharge from extended orifices for efficiency and low sound. Each fan shall be located in a separate compartment to prevent cross flow during fan cycling. Guards of heavy gauge, PVC (polyvinyl chloride) coated galvanised steel shall be provided.

Motors - The fan motors shall be the high efficiency, direct drive, 6 pole, 3 phase, Class-“F”, current overload protected, totally enclosed (TEAC) type with double sealed, permanently lubricated, ball bearings.

Coils - Fin and tube condenser coils shall be manufactured from seamless, internally enhanced, high condensing coefficient, corrosion resistant copper tubes arranged in staggered rows and mechanically expanded into corrosion resistant black fin aluminium alloy with full height fin collars. The design working pressure shall be 31 bar and each coil shall be pressure tested to 34 bar.

Power and Control Panel

All controls and motor starting equipment necessary for unit operation shall be factory wired and function tested.

The panel enclosure shall be designed to IP55 (rain/dust tight) and be manufactured from powder painted galvanised steel.

The Power and Control Panel shall be divided into a power section for each electrical system, a control section and an electrical options section.

Power and control sections shall have a separate hinged, latched, and gasket sealed door equipped with wind struts for safer servicing.

Each power compartment shall contain:

Compressor and fan starting contactors, fan motor external overloads, control circuit serving compressor capacity control, compressor and fan contactor coils and compressor motor overloads.

Compressor Motor Overloads: Current transformers sense each phase, as an input to the microprocessor, to protect compressor motors from damage due to: low input current, high input current, unbalanced current, single phasing, phase reversal, and compressor locked rotor.

The control section shall contain:

On/Off toggle switch, microcomputer keypad and display, microprocessor board, I/O expansion board, relay boards and power supply board.

The options section shall contain:

A control circuit transformer providing 115/1Ø power to the unit control system.

Electrical options as described in “Accessories and Options”.

Microprocessor Controls

Fuzzy Logic control will be incorporated in the YCAS range of chillers. Fuzzy logic allows the control system to monitor several key variables to provide tighter, more stable, chilled water temperature control. The control system monitors the leaving chilled water temperature to track where it has been, where it is now, how fast it is moving, and accurately adjusts chiller operation in anticipation of expected performance to minimise hunting and save energy.

The microprocessor shall have the following functions and displays:

- A liquid crystal 40 character display with text provided on two lines and light emitting diode backlighting for outdoor viewing.
- A colour coded, 35 button, sealed keypad with sections for Display, Entry, Setpoints, Clock, Print, Program and Unit On/Off switch.
- The standard controls shall include: brine chilling or thermal storage, automatic pump down, run signal contacts, demand load limit from external building automation system input, remote reset liquid temperature reset input, unit alarm contacts, chilled liquid pump control, automatic reset after power failure, automatic system optimisation to match operating conditions, software stored in non-volatile memory (EPROM) to eliminate chiller failure due to AC power failure.
- Programmed Setpoint shall be retained in a lithium battery backed RTC memory for a minimum of 5 years.

DISPLAY – In Metric (°C and Bar) or English (°F and psi) units. For each circuit, the following items shall be displayed:

- Return and leaving chilled liquid, and ambient temperature.
- Day, date and time. Daily start/stop times. Holiday and Manual Override status.
- Compressor operating hours and starts. Automatic or manual lead/lag. Lead compressor identification.
- Run permissive status. No cooling load condition. Compressor run status.
- Anti-recycle timer and anti-coincident start timer status per compressor.
- System suction (and suction superheat), discharge, and oil pressures and temperatures.
- Percent full load compressor motor current. Compressor capacity control valve input steps.
- Cut-out status and set-points for: supply fluid temperature, low suction pressure, high discharge pressure and temperature, high oil temperature, low and high ambient, high and low current, and low leaving liquid temperature.
- Unloading limit setpoints for high discharge pressure and compressor motor current.
- Liquid pull-down rate sensitivity (0.3°C to 3°C/minute in 0.05°C increments).
- Status of: evaporator heater, condenser fans, load and unload timers, chilled liquid pump.
- “Out of range” message.
- Up to 6 fault shut down conditions.
- Standard Display Language is English, with other language options.

ENTRY – Enter set point changes, cancel inputs, advance day, and change AM/PM.

SET POINTS – Chilled liquid temperature, chilled liquid range, remote reset temperature range.

CLOCK – Time, daily or holiday start/stop schedule, manual override for servicing.

PRINT – Operating data or system fault shutdown history for last six faults, and software version. Printouts through an RS-232 port via a separate printer (by others).

PROGRAM – Low leaving liquid temperature cutout, 300 to 600 second anti-recycle timer, lag compressor start time delay, average motor current unload point, liquid temperature set-point reset signal from YORK ISN or building automation system (by others) via:

- Pulse width modulated (PWM) input for up to 22°C total reset as standard.
- *Optional* Building Automation System interface input card for up to 11°C reset using a 4 to 20 mA, 0 to 10 Vdc input, or discrete reset input.
- [**NOTE**: The Standard microprocessor can be directly connected to a YORK ISN Building Automation System via the standard on-board RS485 communication port. This Option also provides open system compatibility with other communications networks (BACNET™ & LONMARK™) via interface through standard onboard 485 or 232 port and an external YorkTalk Translator.]
- Additional functions (password protected) for programming by a qualified service technician:
- Cut-outs for low and high ambient, low suction pressure, high discharge pressure, high oil temperature.
- Refrigerant type.
- High discharge pressure unload setpoint.
- Fan control discharge pressure set point.
- Fan ON/OFF pressure differential.
- Compressor motor current percent limit.
- The Standard unit controls permit operation down to -18°C outdoors ambient temperature.

Motor Protection

The microprocessor motor protection provides high current protection to ensure that the motor is not damaged due to voltage, excess refrigerant or other problems that could cause excessive motor current.

The microprocessor also provides low motor current protection when it senses a motor current of less than 10% FLA.

A motor protector module provides thermal and current motor overload protection. The module also protects against phase to phase current imbalance, over current, under current and phase rotation.

ACCESSORIES AND OPTIONS

ELECTRICAL OPTIONS

Power Supply Connection Options

		Multi Point Power Supply			
		Options Panel		Power Panels 1 and 2	
Models	Option	Terminal Block per Electrical System	Non-Fused Switch Disconnect per Electrical System	Door Interlocked Circuit Breaker per Individual Compressor System	Door Interlocked Non-Fused Switch Disconnect & Fuses per Individual Compressor System
0295 to 0605	2.1			*	
	2.1x				*
0685 to 1215	2.2	*		*	
	2.2x	*			*
	2.3		*	*	
	2.3x		*		*

(1) Supply to Control System Non-Fused Switch Disconnect derived internally from Compressor 1 Power Supply.

		Single Point Power Supply			
		Options Panel		Power Panels 1 and 2	
Models	Option	Terminal Block	Non-Fused Switch Disconnect	Door Interlocked Circuit Breaker per Individual Compressor System	Door Interlocked Non-Fused Switch Disconnect & Fuses per Individual Compressor System
0295 to 1215	2.4	*		*	
	2.4x	*			*
	2.5		*	*	
	2.5x		*		*

(1) **Option 2.4/2.4x** Supply to Control System Non-Fused Switch Disconnect derived internally from Compressor 1 Power Supply.
Option 2.5/2.5x Supply to Control System Non-Fused Switch Disconnect derived internally from common electrical power.

Multi Point Power Supply Connection:
Two field provided 400 V, 3Ø, 50 Hz supplies to the unit with circuit protection.

Single Point Power Supply Connection:
One field provided 400 V, 3Ø, 50 Hz supply to the unit with circuit protection.

Power Factor Correction

Factory mounted passive (static) correction capacitors to correct unit compressor power factors to 0.95 (depending on operating conditions).

Star-Delta Compressor Motor Starter

Provides approximately 65% reduced inrush current compared to direct on-line starting (Factory Mounted).

Closed Transition Star/Delta Start

With the addition of closed transition contactors and resistors the change over spike during starting can be reduced to nearer the star inrush level thus reducing the risk of electrical interference during compressor start.

OptiView™ Control panel

Field mounted remote control panel, used to monitor and control remote York air cooled chillers from an indoor location. Each panel can control up to 8 chillers.

Remote Control Panel and Wall Adaptor

Field mounted remote control panel.
(Cannot be fitted when a (BAS) Interface or Multi-unit Sequence Control is fitted).

Multi-unit Sequence Control

A factory mounted Sequencing Control Centre to manage sequencing control of up to eight chillers in parallel based on mixed liquid temperature (interconnecting wiring by others).
(Cannot be fitted when a (BAS) Interface or Remote Control Panel is fitted).

Building Automation System (BAS) Interface

Provides a means to reset the leaving chilled liquid temperature and/or percent full load amps (current limiting) from the BAS (Factory Mounted):

Printed circuit board to accept 4 to 20 mA, 0 to 10 Vdc, or dry contact closure input from the BAS.
(Cannot be fitted when a Multi-unit Sequence Control or Remote Control Panel is fitted).

Note: A YORK ISN Building Automation System can provide a Pulse Width Modulated (PWM) signal direct to the standard control panel via the standard on-board RS485 port.

Flow Switch Accessory

Johnson Controls model F61MG-1C Vapour-proof SPDT, NEMA 4X switch, 10.3 bar DWP, -29°C to 121°C, with 1" NPT (IPS) connection for upright mounting in horizontal pipe. A flow switch must be field installed with each unit.

High Static Pressure Fans

Fans and motors suitable for high external static conditions to 150 Pa.

OTHER OPTIONS

Heat Recovery

(2 and 4 Refrigerant Circuit Models only) Factory fitted plate heat exchanger(s) to provide warm water during cooling to satisfy heating and domestic hot water requirements.

Desuperheaters

(2 and 4 Refrigerant Circuit Models only) Factory fitted desuperheaters on compressor discharge lines to provide hot water during cooling.

Alternative Condenser Coils:

Copper fin condenser coils – Condenser coils are constructed with corrosion resistant copper fins.

Blygold Protective Coating - is recommended for corrosive applications, such as coastal locations where salt spray may hit the condenser fins.

Un-coated aluminium fin stock is available as an option.

DX Cooler Options:

21 Bar Waterside Design Working Pressure – The DX cooler waterside is designed and constructed for 21 bar working pressure. (Factory Mounted)

Flange Accessory – Consists of raised face flanges to convert grooved water nozzles to flanged cooler connections. Includes companion flanges for field mounting.

Unit Enclosures

Wired guards – Heavy gauge welded wire mesh guards mounted over the exterior condenser coil faces and around the bottom of the unit (factory mounted).

Sound Reduction Options

Low sound fans – Reduced RPM fan motors and alternative fan selection for low sound applications.

Compressor sound enclosures – Acoustically treated flexible compressor enclosures.

Acoustic Kit I – Comprises low sound fans and compressor sound enclosures.

Acoustic Kit II – Comprises low sound fans, compressor sound enclosures and fan speed inverters.

Acoustic Kit III – Comprises low sound fans, fan baffles and side and end intake silencers.

Acoustic Kit IV (ELS) **–** Comprises low sound fans, fan baffles, side and end intake silencers, compressor sound enclosures and fan speed inverters.

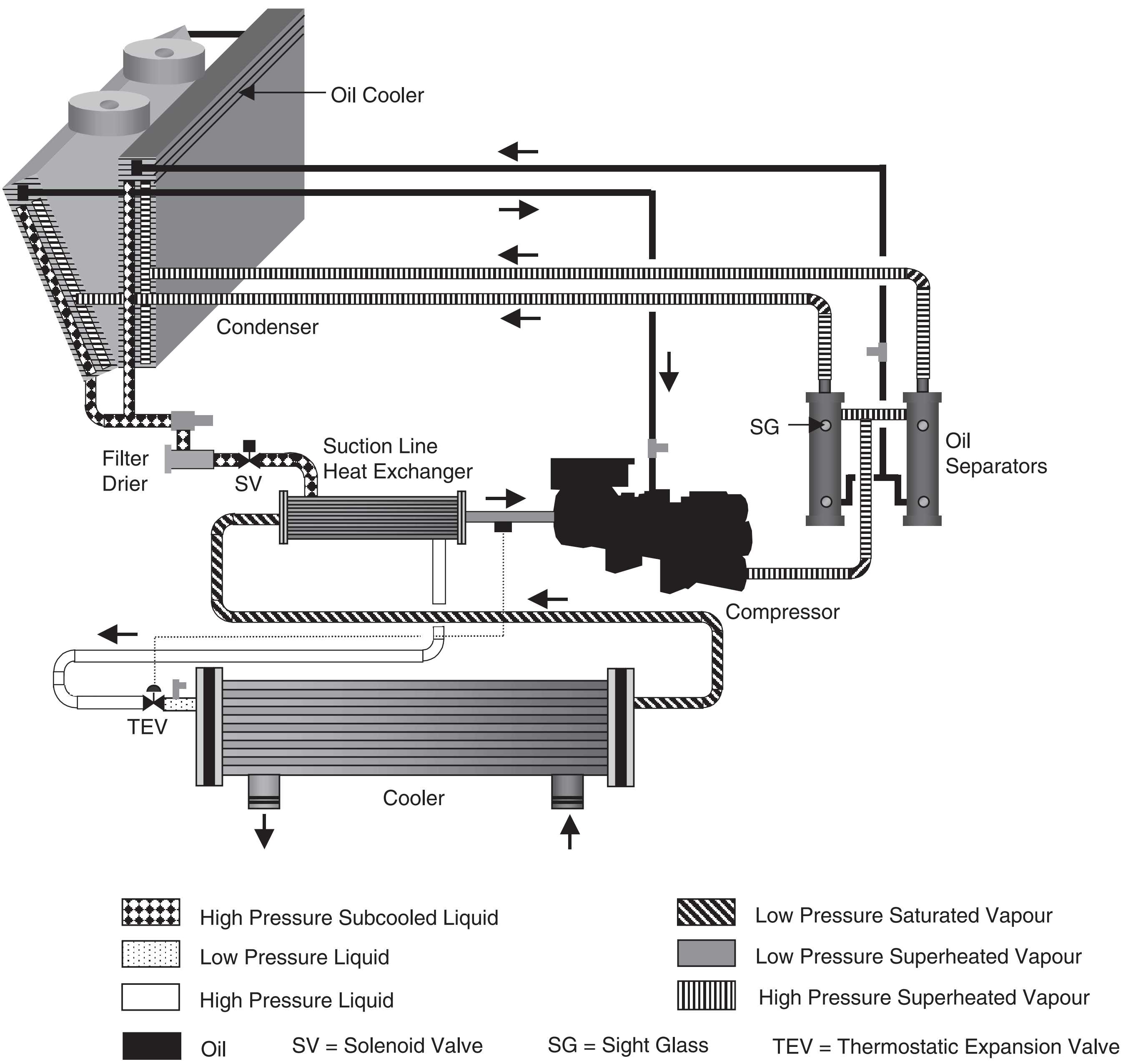
Vibration Isolation

25 mm spring isolators – Level adjustable, spring and cage type isolators for mounting under the unit base rails (Field mounted).

50 mm seismic spring isolators – Restrained Spring-Flex Mountings incorporate welded steel housing with vertical and horizontal limit stops. Housings designed to withstand a minimum 1.0 g accelerated force in all directions to 50 mm. Level adjustable, deflection may vary slightly by application (Field mounted).

REFRIGERANT FLOW DIAGRAM

FIGURE 1



Note: Only one refrigerant circuit shown.

Cooling (Figure 1)
Low pressure liquid refrigerant from the expansion valve (TEV) enters the counter-flow cooler tubes and is evaporated by the heat energy absorbed from the chilled water passing through the shell. The refrigerant leaves the cooler in a saturated vapour state.

High pressure liquid refrigerant, from the condenser, enters the suction line heat exchanger shell and superheats the refrigerant vapour entering the tubes from the cooler. The low temperature liquid refrigerant, leaving the exchanger to the cooler, has been sub-cooled by the refrigerant vapour in the exchanger tubes.

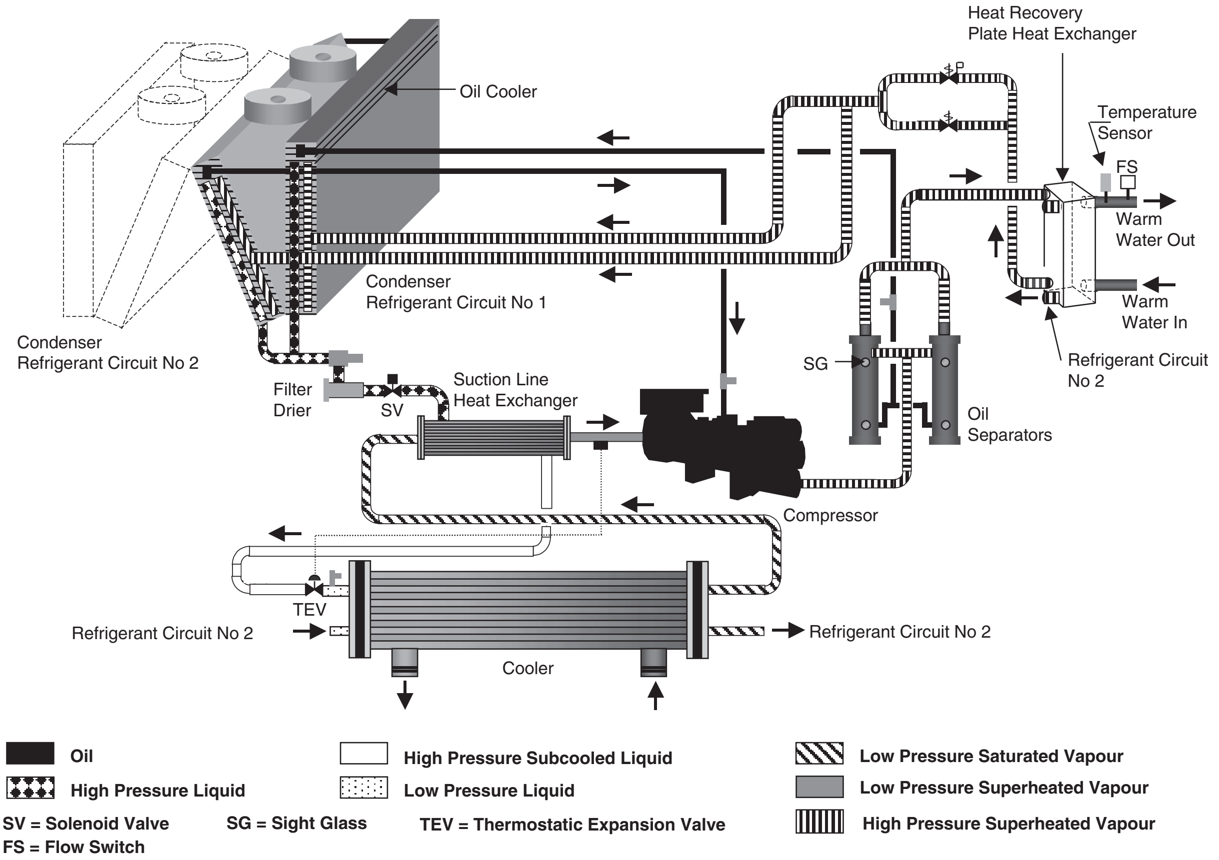
Low-pressure superheated vapour enters the compressor where pressure and superheat are increased. High pressure vapour is passed through the oil separator where compressor oil is removed and recirculated to the compressor via the oil cooler. The high pressure oil-free vapour is fed to the air cooled condenser coil and fans where the heat is removed. The high pressure liquid refrigerant returns to the expansion valve via the suction line heat exchanger.

Optional Heat Recovery (Figure 1a)
If the warm water flow switch detects water flow the heat recovery pressure regulating valves are energised. The valves allow high-pressure superheated refrigerant, from the oil separators, to enter the twin circuit heat recovery plate heat exchanger. The refrigerant is partially condensed as the warm water absorbs heat energy.

The valves are de-energised when the leaving warm water temperature sensor registers the high point of the set point dead band. If water flow is maintained the valves are re-energised if the temperature sensor registers the low point of the set point dead band.

FIGURE 1a REFRIGERANT FLOW DIAGRAM

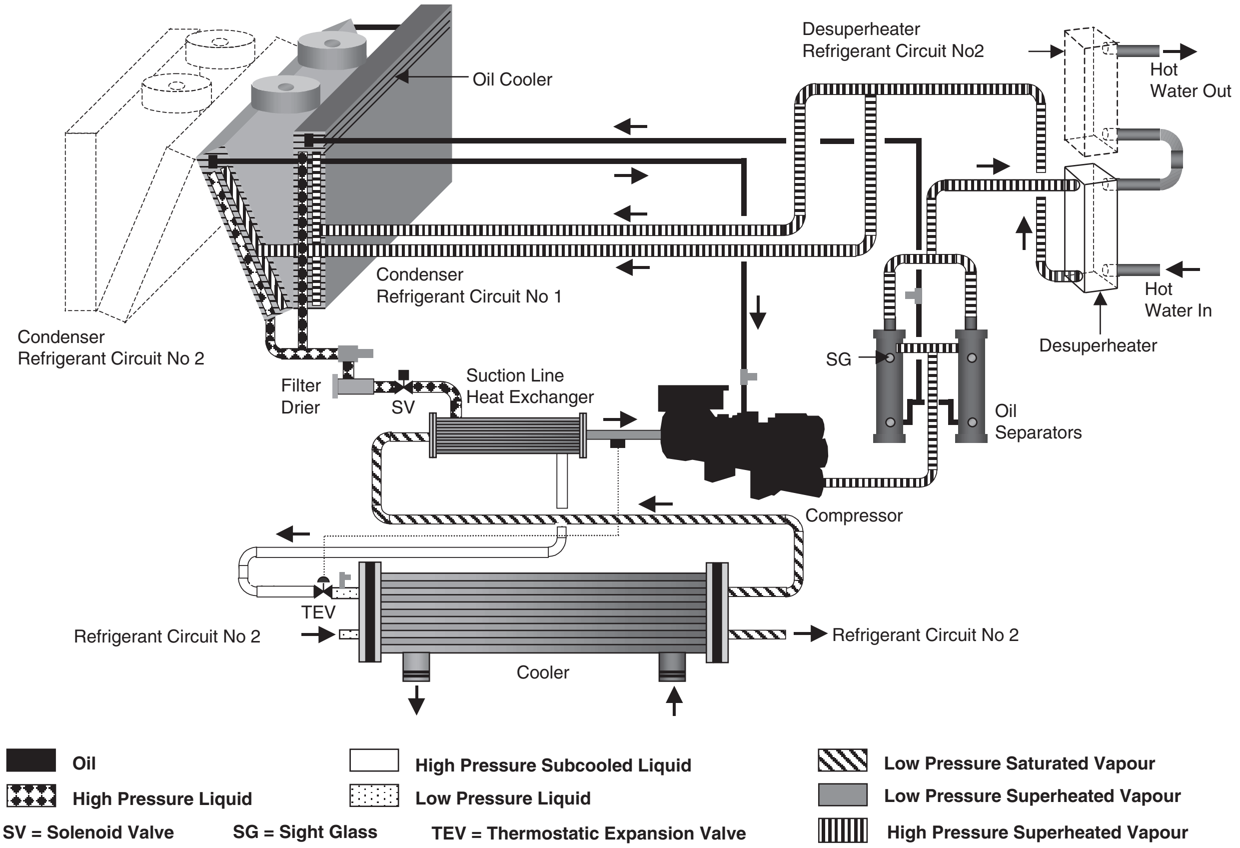
2 and 4 REFRIGERANT CIRCUIT MODELS WITH OPTIONAL HEAT RECOVERY



Note: Only refrigerant circuits 1 and 2 shown.

FIGURE 1b REFRIGERANT FLOW DIAGRAM

2 and 4 REFRIGERANT CIRCUIT MODELS WITH OPTIONAL DESUPERHEATERS



Note: Only refrigerant circuits 1 and 2 shown.

OPERATING LIMITATIONS

TABLE 2

2 Refrigerant Circuit Models

Model YCAS-EB				0295		0335		0375		0425		0475	
				Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
Chilled Liquid	Liquid outlet temperature	Water outlet	°C	5 to 13									
		Glycol outlet	°C	-2 to 13 (1)									
		Temp. spread	°C	3 to 10									
	Flow rate		l/s	6.94	25.42	7.70	25.42	8.58	25.42	9.53	37.85	10.60	42.27
	Pressure drop		kPa	6.2	72.9	7.5	72.9	9.3	72.9	6.0	61.3	7.1	73.9
	Maximum working pressure		bar	10.3 (21.0 Optional)									
Ambient Air	Air Entering temperature	Standard units	°C	-18 to 50									
		Low sound fans	°C	-18 to 46									
		High pressure fans	°C	-18 to 50									
	Fan Available Static Pressure	Standard units	Pa	20									
		Low sound fans	Pa	10									
		High pressure fans	Pa	150									
Power supply voltage 400 V, 3 Ø, 50 Hz (nominal)			V	342 to 440									
Recommended system water volum (2)			l	835		985		1165		1275		1430	

2 Refrigerant Circuit Models

Model YCAS-EB				0515		0555		0575		0605	
				Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
Chilled Liquid	Liquid outlet temperature	Water outlet	°C	5 to 13							
		Glycol outlet	°C	-2 to 13 (1)							
		Temp. spread	°C	3 to 10							
	Flow rate		l/s	11.67	46.87	12.37	48.45	13.06	48.45	13.63	48.45
	Pressure drop		kPa	8.4	88.0	9.3	93.1	10.2	93.1	10.9	93.1
	Maximum working pressure		bar	10.3 (21.0 Optional)							
Ambient Air	Air Entering temperature	Standard units	°C	-18 to 50							
		Low sound fans	°C	-18 to 46							
		High pressure fans	°C	-18 to 50							
	Fan Available Static Pressure	Standard units	Pa	20							
		Low sound fans	Pa	10							
		High pressure fans	Pa	150							
Power supply voltage 400 V, 3 Ø, 50 Hz (nominal)			V	342 to 440							
Recommended system water volume (2)			l	1585		1685		1785		1865	

3 Refrigerant Circuit Models

Model YCAS-EB				0685		0775		0835		0905		0965	
				Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
Chilled Liquid	Liquid outlet temperature	Water outlet	°C	5 to 13									
		Glycol outlet	°C	-2 to 13 (1)									
		Temp. spread	°C	3 to 10									
	Flow rate		l/s	18.5	67.6	21.0	75.7	21.0	75.7	21.0	75.7	21.0	75.7
	Pressure drop		kPa	8.8	97.2	9.3	92.4	9.3	92.4	9.3	92.4	9.3	92.4
	Maximum working pressure		bar	10 (21.0 Optional)									
Ambient Air	Air Entering temperature	Standard units	°C	-18 to 50									
		Low sound fans	°C	-18 to 46									
		High pressure fans	°C	-18 to 50									
	Fan Available Static Pressure	Standard units	Pa	20									
		Low sound fans	Pa	10									
		High pressure fans	Pa	150									
Power supply voltage 400 V, 3 Ø, 50 Hz (nominal)			V	342 to 440									
Recommended system water volume (2)			l	2215		2500		2650		2875		2950	

Notes:
(1) -2°C is the minimum leaving chilled liquid temp. (LCLT) for standard coded vessels. ASME coded vessels and other codes with special materials have a minimum LCLT of -9.7°C.
(2) Tables show minimum water / glycol volume of system.

TABLE 2 OPERATING LIMITATIONS

4 Refrigerant Circuit Models

Model YCAS-EB				1065		1135		1215	
				Min.	Max.	Min.	Max.	Min.	Max.
Chilled Liquid	Liquid outlet temperature	Water outlet	°C	5 to 13					
		Glycol outlet	°C	-2 to 13 (1)					
		Temp. spread	°C	3 to 10					
	Flow rate		l/s	27.2	100.9	27.2	100.9	27.2	100.9
	Pressure drop		kPa	10.3	93.7	10.3	93.7	10.3	93.7
	Maximum working pressure		bar	10 (21.0 Optional)					
Ambient Air	Air Entering temperature	Standard units	°C	-18 to 50					
		Low sound fans	°C	-18 to 46					
		High pressure fans	°C	-18 to 50					
	Fan Available Static Pressure	Standard units	Pa	20					
		Low sound fans	Pa	10					
		High pressure fans	Pa	150					
Power supply voltage 400 V, 3 Ø, 50 Hz (nominal)			V	342 to 440					
Recommended system water volume (2)			l	3375		3600		3825	

Notes: (1) -2°C is the minimum leaving chilled liquid temp. (LCLT) for standard coded vessels. ASME coded vessels and other codes with special materials have a minimum LCLT of -9.7°C.

(2) Table shows minimum water / glycol volume of system.

SELECTION GUIDE

DATA REQUIRED

To select a YORK YCAS chiller the following information is required:

1. Required cooling capacity.
2. Design chilled water entering and leaving temperatures.
3. Design water flow rate if one of the temperatures in item 3 are unknown.
4. Design condenser entering air temperature. This will normally be the design summer ambient air temperature unless location or other factors have an influence.
5. Altitude above sea level.
6. Design cooler fouling factor.
7. Static pressure resistance against condenser entering and leaving air flow (where ducts, louvres, attenuators, etc., are used) at full unit air volume.

Note: Items 1, 2 and 3 must be linked by the following formulae:

Cooling Capacity (kW) = Range (°C) x Flow (litres/sec) x 4.18

Where:
Range = Entering liquid temperature - Leaving liquid temperature.

CHILLER SELECTION METHOD

1. Determine the correct size of chiller by selecting the model which most closely matches the required capacity at the design conditions of leaving water temperature and entering air temperature (Table 7).
2. Apply correction factors for fouling factor (Table 3) and altitude & fan application (Tables 4 & 5) to the capacity and power values from the capacity tables (Table 7). Ensure the corrected capacity is still sufficient for requirements.
3. Using the corrected capacity of the selected chiller adjust the design temperature range, or flow rate, to balance the formulae shown in "Data Required".
4. Physical and electrical data can now be determined from Tables 9 and 10.
5. Always re-check that selections fall within the design limitations specified in Table 2.

TABLE 3 FOULING FACTORS

COOLER		
Fouling Factor m² °C/kW	Capacity Factor	Comp. Input Factor
0.044	1.000	1.000
0.088	0.987	0.995
0.176	0.964	0.985
0.352	0.915	0.962

TABLE 4 ALTITUDE FACTORS

Altitude (m)	Capacity Factor	Comp. Input Factor
0	1.000	1.000
600	0.987	1.010
1200	0.973	1.020
1800	0.958	1.029
2400	0.943	1.038

TABLE 5 FAN APPLICATION FACTORS

Fan Type	External Static (Pa)	Capacity Factor	Comp. Input Factor
Low Sound Fans	0	1.00	1.00
	10	0.99	1.01
Standard Fans	0	1.00	1.00
	20	0.99	1.01
High Pressure Fans	150	1.00	1.00

COOLING ONLY CHILLER SAMPLE SELECTION

A chiller is required to cool water from 12°C to 7°C having a cooling capacity of 575 kW at a design flow rate of 28 l/s. Other design conditions applying are:

Ambient air entering condenser:	35°C
Fouling factor:	0.044 m² °C./kW
Altitude:	Sea level
Condenser air restriction:	None

From a cursory examination of Capacity Table 7, a model 0605EB gives approximately the required capacity:

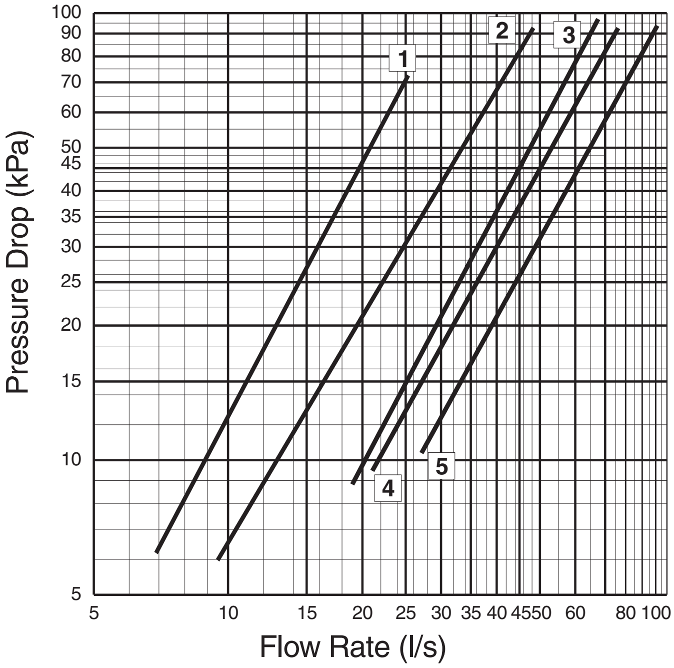
Capacity	= 584 kW
Compressor power	= 179.7 kW

No correction factors apply therefore, after calculating the flow rate, the conditions will be as follows:

Cooling capacity:	584 kW
Water temperature:	12°C to 7°C (Range = 5°C)
Water flow rate:	27.95 l/s
Compressor power:	179.7 kW

All values are within the operating limits in Table 2. From Pressure Drop Graph (Figure 2), YCAS0605EB cooler water pressure drop = 36.7 kPa at the calculated flow of 27.95 l/s.

COOLER WATER PRESSURE DROPS FIGURE 2



Model	Line	Pressure Drop Calculation
0295, 0335, 0375	1	Pressure Drop [kPa] = 0.1556 x (Flow Rate [l/s]$^{1.9004}$)
0425, 0475, 0515, 0555, 0575, 0605	2	Pressure Drop [kPa] = 0.1320 x (Flow Rate [l/s]$^{1.6901}$)
0685	3	Pressure Drop [kPa] = 0.0396 x (Flow Rate [l/s]$^{1.8523}$)
0775, 0835, 0905, 0965	4	Pressure Drop [kPa] = 0.0394 x (Flow Rate [l/s]$^{1.7935}$)
1065, 1135, 1215	5	Pressure Drop [kPa] = 0.0396 x (Flow Rate [l/s]$^{1.6837}$)

OPTIONAL HEAT RECOVERY SAMPLE SELECTION

A chiller is required to cool water from 12°C to 7°C having a cooling capacity of approximately 575 kW at a design flow rate of 28 l/s. Other design conditions applying are:

Ambient air entering condenser:	35°C
Fouling factor:	0.044 m² °C./kW
Altitude:	Sea level
Condenser air restriction:	None
Required leaving Temperature	50°C
Hot water temperature range	12°C

A model 0605EB meets the cooling requirements, see sample selection opposite.

From Table 8 a model 0605EB gives the following data when providing hot water at 50°C.

LWT	Cool (kW)	Power (kW)	Heat (kW)
7°C	510	226	393

The heating capacity should be corrected for the hot water temperature range Table 6: 393 kW x 1.02 = 400.8

Heat recovery water flow: $$\frac{400.8}{12^\circ C \times 4.18} = 7.99\ l/s$$

Heat recovery pressure drop from graph (Figure 3) is 46 kPa at the calculated flow of 7.99 l/s.

TEMPERATURE RANGE FACTORS TABLE 6

Temperature Range	Capacity Factor	Temperature Range	Capacity Factor
8	0.98	11	1.01
9	0.99	12	1.02
10	1.00	13	1.03
		14	1.04

FIGURE 3 HEAT RECOVERY PRESSURE DROP

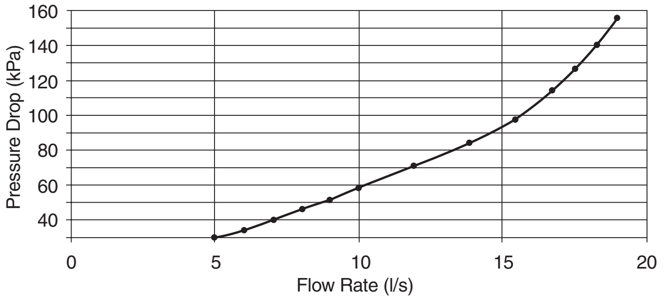
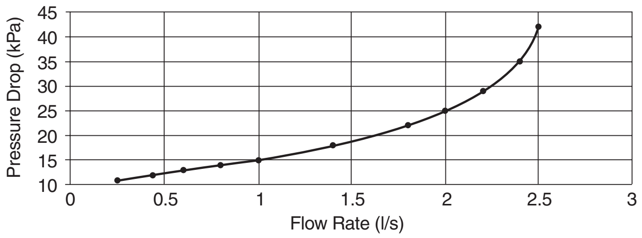


FIGURE 4 DESUPERHEATERS PRESSURE DROP



The water pressure drop values shown in figures 3 and 4 are for two refrigerant circuit models with flow rates based on 10°C hot water temperature range.

On four refrigerant circuit models two heat recovery condensers or two pairs of desuperheaters are fitted. Both options are to have their heat exchanger water circuits connected in parallel.

When connected in this configuration the water flow will be equally divided through the heat exchangers, therefore the total flow should be divided by 2 when calculating the pressure drop.

TABLE 7 2 REFRIGERANT CIRCUIT MODELS COOLING CAPACITIES

Model	Leaving Water Temp. °C	Condenser Entering Air Temperature °C											
		25		30		35		40		45		50	
		Cool kW	Power kW	Cool kW	Power kW	Cool kW	Power kW	Cool kW	Power kW	Cool kW	Power kW	Cool kW	Power kW
YCAS 0295EB	5.0	274	60.4	260	67.8	244	76.6	229	86.4	214	97.4	200	109.4
	6.0	***283***	***60.1***	***269***	***67.6***	***252***	***76.2***	***236***	***86.0***	***221***	***96.9***	***208***	***108.7***
	7.0	292	59.9	277	67.3	260	75.9	244	85.7	229	96.4	215	108.1
	8.0	***301***	***59.7***	***285***	***67.1***	***269***	***75.7***	***252***	***85.3***	***236***	***96.0***	***222***	***107.6***
	9.0	310	59.5	293	66.9	277	75.5	260	85.1	244	95.7	230	107.2
	10.0	***319***	***59.2***	***301***	***66.7***	***285***	***75.3***	***268***	***84.9***	***252***	***95.4***	***237***	***106.8***
	11.0	328	59.1	309	66.6	294	75.2	276	84.8	260	95.3	243	105.8
	12.0	***337***	***58.9***	***317***	***66.5***	***302***	***75.1***	***285***	***84.7***	***268***	***95.2***	***245***	***103.7***
	13.0	346	58.7	326	66.4	311	75.1	293	84.7	276	95.2	249	102.2
YCAS 0335EB	5.0	327	77.6	309	87.4	289	98.7	271	111.4	253	125.4	212	125.9
	6.0	***338***	***77.7***	***318***	***87.5***	***299***	***98.8***	***282***	***111.5***	***262***	***125.4***	***217***	***124.4***
	7.0	348	77.8	328	87.6	308	98.8	289	111.3	271	125.2	222	123.1
	8.0	***358***	***77.9***	***338***	***87.7***	***318***	***98.9***	***298***	***111.4***	***280***	***125.1***	***227***	***121.7***
	9.0	368	78.0	348	87.8	327	99.0	308	111.4	289	125.1	233	120.1
	10.0	***379***	***78.0***	***357***	***87.9***	***337***	***99.1***	***317***	***111.5***	***298***	***125.1***	***237***	***119.5***
	11.0	389	78.1	367	88.0	347	99.2	327	111.7	307	125.2	241	118.0
	12.0	***399***	***78.2***	***377***	***88.2***	***357***	***99.4***	***336***	***111.8***	***317***	***125.4***	***244***	***116.1***
	13.0	410	78.2	388	88.3	367	99.5	346	112.0	326	125.6	247	114.5
YCAS 0375EB	5.0	389	94.9	365	107.1	342	121.0	320	136.4	299	153.6	227	142.3
	6.0	***400***	***95.4***	***376***	***107.6***	***353***	***121.4***	***330***	***136.7***	***309***	***153.9***	***230***	***140.0***
	7.0	412	95.8	387	108.1	364	121.8	341	137.1	320	154.1	234	138.1
	8.0	***424***	***96.2***	***399***	***108.5***	***375***	***122.2***	***352***	***137.5***	***330***	***154.3***	***236***	***135.7***
	9.0	435	96.6	411	108.8	386	122.6	363	137.9	341	154.6	240	134.0
	10.0	***447***	***96.9***	***422***	***109.2***	***398***	***122.9***	***374***	***138.3***	***352***	***154.9***	***242***	***132.1***
	11.0	459	97.2	434	109.6	409	123.3	385	138.7	363	155.3	245	130.2
	12.0	***471***	***97.5***	***446***	***109.9***	***421***	***123.7***	***396***	***139.0***	***373***	***155.6***	***248***	***128.5***
	13.0	483	97.8	459	110.3	432	124.1	408	139.3	385	156.0	250	126.8
YCAS 0425EB	5.0	425	87.2	399	98.4	373	111.2	349	125.5	326	141.4	305	158.8
	6.0	***437***	***87.4***	***412***	***98.6***	***385***	***111.3***	***360***	***125.5***	***337***	***141.4***	***316***	***158.7***
	7.0	450	87.5	424	98.7	397	111.5	372	125.7	348	141.4	327	158.6
	8.0	***463***	***87.7***	***437***	***98.9***	***410***	***111.6***	***384***	***125.7***	***359***	***141.4***	***338***	***158.5***
	9.0	477	87.8	450	99.0	422	111.6	396	125.8	371	141.4	346	157.5
	10.0	***490***	***87.9***	***463***	***99.1***	***435***	***111.7***	***408***	***125.9***	***383***	***141.4***	***349***	***154.3***
	11.0	505	87.8	476	99.1	448	111.8	420	125.9	395	141.4	355	152.2
	12.0	***518***	***87.8***	***489***	***99.2***	***461***	***111.9***	***433***	***126.0***	***407***	***141.5***	***361***	***150.0***
	13.0	533	87.8	502	99.2	474	112.0	445	126.1	419	141.6	365	147.6
YCAS 0475EB	5.0	478	103.6	449	116.9	420	131.8	392	148.6	367	167.3	318	174.1
	6.0	***492***	***104.0***	***462***	***117.2***	***433***	***132.2***	***405***	***148.9***	***379***	***167.5***	***326***	***172.5***
	7.0	507	104.3	476	117.6	446	132.5	418	149.2	391	167.6	333	170.9
	8.0	***521***	***104.6***	***491***	***117.9***	***460***	***132.8***	***431***	***149.4***	***404***	***167.8***	***341***	***169.4***
	9.0	536	104.9	505	118.1	474	133.1	444	149.7	417	168.0	347	167.5
	10.0	***551***	***105.1***	***542***	***118.5***	***488***	***133.3***	***458***	***150.0***	***430***	***168.2***	***351***	***164.6***
	11.0	598	105.4	534	118.7	502	133.6	471	150.3	443	168.4	356	162.2
	12.0	***581***	***105.6***	***577***	***118.9***	***516***	***133.9***	***485***	***150.5***	***456***	***168.7***	***361***	***159.9***
	13.0	596	105.8	563	119.1	530	134.2	499	150.8	470	169.0	364	157.5
YCAS 0515EB	5.0	532	120.1	498	135.3	466	152.5	436	171.8	408	193.2	331	189.3
	6.0	***547***	***120.6***	***513***	***135.9***	***481***	***153.1***	***450***	***172.2***	***421***	***193.6***	***336***	***186.2***
	7.0	563	121.1	529	136.4	495	153.6	464	172.7	435	193.9	340	183.3
	8.0	***579***	***121.6***	***544***	***136.9***	***510***	***154.0***	***478***	***173.2***	***449***	***194.2***	***344***	***180.4***
	9.0	596	122.0	560	137.4	526	154.5	493	173.7	463	194.6	349	177.6
	10.0	***612***	***122.5***	***576***	***137.8***	***541***	***155.0***	***507***	***174.2***	***477***	***195.0***	***353***	***174.9***
	11.0	628	123.0	592	138.3	556	155.5	522	174.6	491	195.5	356	172.3
	12.0	***644***	***123.4***	***608***	***138.7***	***572***	***156.0***	***538***	***175.0***	***506***	***195.9***	***360***	***169.8***
	13.0	660	123.8	624	139.1	587	156.5	553	175.5	521	196.4	364	167.4
YCAS 0555EB	5.0	566	136.1	530	153.4	496	172.8	463	194.5	418	209.6	326	199.4
	6.0	***582***	***136.8***	***546***	***154.1***	***511***	***173.5***	***478***	***195.2***	***432***	***209.8***	***331***	***196.3***
	7.0	599	137.6	562	154.9	527	174.2	493	195.8	445	209.9	335	193.4
	8.0	***616***	***138.3***	***578***	***155.5***	***542***	***174.9***	***508***	***196.5***	***459***	***210.1***	***339***	***190.5***
	9.0	633	138.9	595	156.1	558	175.5	524	197.1	472	210.3	343	187.8
	10.0	***650***	***139.5***	***611***	***156.8***	***574***	***176.2***	***539***	***197.8***	***486***	***210.5***	***347***	***185.1***
	11.0	667	140.2	628	157.5	591	176.9	555	198.5	500	210.7	350	182.5
	12.0	***684***	***140.8***	***645***	***158.2***	***607***	***177.6***	***571***	***199.1***	***514***	***211.0***	***354***	***180.1***
	13.0	701	141.3	662	158.8	623	178.3	587	199.8	528	211.1	357	177.7
YCAS 0575EB	5.0	599	152.1	561	171.4	525	193.0	491	217.3	429	226.0	322	209.5
	6.0	***617***	***153.1***	***578***	***172.3***	***541***	***193.9***	***507***	***218.2***	***442***	***226.0***	***326***	***206.4***
	7.0	634	154.1	595	173.4	558	194.8	523	219.0	455	226.0	330	203.5
	8.0	***652***	***155.0***	***613***	***174.0***	***574***	***195.7***	***539***	***219.8***	***468***	***226.0***	***334***	***200.7***
	9.0	670	155.8	630	174.9	591	196.6	555	220.6	482	226.0	338	197.9
	10.0	***688***	***156.6***	***647***	***175.7***	***608***	***197.4***	***571***	***221.5***	***495***	***226.0***	***341***	***195.3***
	11.0	706	157.5	664	176.9	625	198.3	588	222.3	509	226.0	345	192.7
	12.0	***724***	***158.2***	***682***	***177.7***	***642***	***199.2***	***604***	***223.2***	***523***	***226.0***	***348***	***190.3***
	13.0	743	158.9	700	178.6	660	200.1	621	224.1	536	225.7	351	187.9
YCAS 0605EB	5.0	625	140.8	586	158.5	549	178.6	513	201.2	479	226.0	398	226.0
	6.0	***643***	***141.5***	***604***	***159.3***	***566***	***179.1***	***530***	***201.7***	***495***	***226.0***	***411***	***226.0***
	7.0	662	142.0	622	159.8	584	179.7	546	202.2	510	226.0	425	226.0
	8.0	***681***	***142.6***	***640***	***160.4***	***606***	***180.5***	***563***	***202.7***	***525***	***226.0***	***438***	***226.0***
	9.0	700	143.1	658	160.9	618	180.9	581	203.0	541	226.0	450	225.0
	10.0	***719***	***143.5***	***677***	***161.4***	***636***	***181.5***	***598***	***203.6***	***556***	***226.0***	***456***	***221.5***
	11.0	738	143.9	696	161.9	654	182.0	615	204.3	572	226.0	461	217.9
	12.0	***757***	***144.3***	***715***	***162.4***	***673***	***182.5***	***633***	***204.8***	***588***	***226.0***	***466***	***214.4***
	13.0	776	144.7	734	162.8	691	183.0	651	205.4	603	226.0	471	211.1

3 REFRIGERANT CIRCUIT MODELS COOLING CAPACITIES

TABLE 7

Model	Leaving Water Temp. °C	Condenser Entering Air Temperature °C											
		25		30		35		40		45		50	
		Cool kW	Power kW	Cool kW	Power kW	Cool kW	Power kW	Cool kW	Power kW	Cool kW	Power kW	Cool kW	Power kW
YCAS 0685EB	5.0	743	166.3	695	187.5	650	211.5	608	238.2	558	262.7	448	256.5
	6.0	764	167.1	717	188.2	671	212.1	627	238.8	577	262.9	455	252.6
	7.0	786	167.8	738	188.9	692	212.8	647	239.4	595	263.1	461	248.7
	8.0	809	168.4	760	189.5	713	213.4	667	239.9	614	263.3	467	245.0
	9.0	831	168.9	782	190.0	734	213.9	688	240.5	633	263.4	473	241.4
	10.0	853	169.4	804	190.7	755	214.5	709	241.0	652	263.7	479	237.9
	11.0	876	169.8	827	191.3	777	215.1	730	241.6	671	263.9	484	234.5
	12.0	900	170.3	849	191.8	799	215.7	751	242.2	691	264.1	489	231.3
	13.0	938	170.8	872	192.4	821	216.3	772	242.8	710	264.3	495	228.2
YCAS 0775EB	5.0	839	175.2	786	197.5	735	222.7	687	251.0	643	282.3	567	299.0
	6.0	864	175.8	810	198.1	759	223.3	709	251.4	664	282.6	576	294.0
	7.0	889	176.3	835	198.7	782	223.8	732	251.9	686	282.9	584	289.1
	8.0	915	176.8	860	199.2	806	224.3	755	252.3	708	283.3	592	284.4
	9.0	940	177.3	885	199.7	830	224.8	778	252.8	730	283.6	600	279.8
	10.0	965	177.7	910	200.1	855	225.3	802	253.2	753	284.0	607	275.3
	11.0	990	178.4	936	200.6	879	225.7	826	253.7	776	284.4	614	271.0
	12.0	1015	178.7	961	201.0	904	226.2	850	254.2	799	284.8	621	266.9
	13.0	1042	179.0	987	201.4	929	226.7	874	254.7	823	285.3	628	262.8
YCAS 0835EB	5.0	891	190.8	834	214.9	780	242.2	728	272.7	671	301.3	568	307.2
	6.0	917	191.6	859	215.7	804	242.9	752	273.4	693	301.5	576	302.3
	7.0	943	192.3	885	216.4	829	243.6	775	274.0	715	301.7	584	297.4
	8.0	970	193.0	911	217.0	854	244.3	800	274.7	737	301.9	591	292.7
	9.0	997	193.6	937	217.7	879	244.9	824	275.2	760	302.2	599	288.2
	10.0	1023	194.3	964	218.4	905	245.6	849	275.8	782	302.5	606	283.8
	11.0	1050	194.8	990	219.1	930	246.2	874	276.5	805	302.7	613	279.5
	12.0	1078	195.3	1017	219.7	956	246.9	899	277.1	829	303.0	619	275.4
	13.0	1106	195.8	1044	220.3	983	247.6	924	277.9	852	303.3	625	271.5
YCAS 0905EB	5.0	966	221.3	904	249.1	845	280.6	790	315.8	708	339.0	562	327.8
	6.0	993	222.7	932	250.2	872	281.7	815	316.9	730	339.0	569	322.7
	7.0	1022	223.7	959	251.3	898	282.7	841	318.0	752	339.0	576	317.9
	8.0	1051	224.7	987	252.3	925	283.7	866	318.9	775	339.0	584	313.2
	9.0	1080	225.6	1015	253.5	952	284.7	893	319.7	797	339.0	590	308.6
	10.0	1109	226.5	1042	254.7	980	285.7	919	320.6	820	339.0	597	304.2
	11.0	1139	227.4	1071	255.6	1007	286.7	946	321.6	843	339.0	603	300.0
	12.0	1169	228.2	1100	256.6	1035	287.8	973	322.6	866	339.0	609	295.9
	13.0	1198	229.0	1129	257.5	1063	288.9	1000	323.7	889	339.0	615	291.9
YCAS 0965EB	5.0	990	211.4	928	237.9	869	267.7	812	301.4	751	334.8	630	339.0
	6.0	1020	212.3	956	238.8	896	268.5	838	302.2	775	334.8	652	339.0
	7.0	1049	213.1	985	239.7	923	269.3	864	302.9	799	334.8	668	336.3
	8.0	1090	214.1	1014	240.4	950	270.4	891	303.6	823	334.9	681	332.6
	9.0	1108	214.5	1043	241.2	978	271.1	918	304.3	848	335.0	694	329.1
	10.0	1173	216.1	1072	241.9	1007	271.9	945	305.2	873	335.0	707	325.7
	11.0	1169	215.8	1101	242.6	1035	272.7	972	306.1	897	335.3	720	322.4
	12.0	1199	216.4	1131	243.3	1064	273.5	1000	306.9	922	335.4	732	319.2
	13.0	1230	216.9	1161	244.0	1093	274.2	1028	307.7	947	335.6	744	316.2

4 REFRIGERANT CIRCUIT MODELS COOLING CAPACITIES

TABLE 7

Model	Leaving Water Temp. °C	Condenser Entering Air Temperature °C											
		25		30		35		40		45		50	
		Cool kW	Power kW	Cool kW	Power kW	Cool kW	Power kW	Cool kW	Power kW	Cool kW	Power kW	Cool kW	Power kW
YCAS 1065EB	5.0	1134	234.0	1062	263.7	993	297.3	927	334.9	867	376.6	760	396.5
	6.0	1168	234.8	1094	264.5	1024	298.0	957	335.5	896	377.0	771	389.9
	7.0	1202	235.4	1127	265.2	1056	299.1	988	336.1	925	377.4	782	383.4
	8.0	1236	236.1	1161	265.8	1088	299.3	1019	336.6	955	377.9	793	377.2
	9.0	1270	236.6	1194	266.5	1120	300.0	1050	337.2	985	378.3	803	371.1
	10.0	1303	237.4	1229	267.1	1153	300.6	1082	337.9	1015	378.8	813	365.2
	11.0	1337	238.0	1249	267.3	1186	301.3	1114	338.5	1046	379.4	822	359.6
	12.0	1372	238.5	1298	268.2	1219	301.9	1146	339.2	1077	380.0	831	354.1
	13.0	1409	238.9	1332	268.9	1253	302.6	1178	339.9	1109	380.6	840	348.8
YCAS 1135EB	5.0	1208	264.4	1132	297.8	1058	335.6	989	377.9	904	414.3	754	417.0
	6.0	1244	265.8	1166	298.9	1091	336.7	1020	378.9	933	414.5	765	410.4
	7.0	1280	266.8	1201	300.0	1125	337.7	1052	379.9	963	414.7	775	403.9
	8.0	1316	267.7	1236	301.0	1159	338.8	1085	380.9	992	414.9	785	397.6
	9.0	1352	268.6	1272	302.0	1193	339.7	1118	381.7	1022	415.2	795	391.5
	10.0	1389	269.7	1307	303.2	1227	340.7	1152	382.6	1053	415.4	804	385.6
	11.0	1425	270.5	1343	304.1	1262	341.7	1185	383.6	1083	415.7	813	380.0
	12.0	1463	271.3	1380	305.1	1297	342.7	1220	384.6	1114	416.0	821	374.5
	13.0	1501	272.1	1416	306.0	1333	343.8	1254	385.6	1145	416.3	830	369.2
YCAS 1215EB	5.0	1283	294.9	1202	332.0	1124	374.0	1050	421.0	941	452.0	748	437.6
	6.0	1320	296.8	1238	333.5	1159	375.5	1084	422.3	971	452.0	758	430.8
	7.0	1358	298.2	1275	334.9	1194	376.8	1117	423.8	1000	452.0	768	424.3
	8.0	1396	299.5	1312	336.2	1230	378.2	1152	425.1	1030	452.0	777	418.0
	9.0	1435	300.7	1349	337.6	1266	379.5	1187	426.2	1060	452.0	786	411.9
	10.0	1474	301.9	1386	339.4	1302	380.8	1222	427.4	1090	452.0	795	406.1
	11.0	1514	303.1	1424	340.7	1339	382.2	1257	428.7	1121	452.0	804	400.4
	12.0	1553	304.2	1462	341.9	1376	383.6	1293	430.0	1151	452.0	812	394.9
	13.0	1593	305.3	1501	343.2	1413	385.0	1329	431.5	1182	452.0	820	389.6

TABLE 8 2 REFRIGERANT CIRCUIT MODELS HEAT RECOVERY CAPACITIES

Model	Leaving Chilled Water Temp. °C	Leaving Hot Water Temperature °C														
		30			35			40			45			50		
		Cool kW	Power kW	Heat kW	Cool kW	Power kW	Heat kW	Cool kW	Power kW	Heat kW	Cool kW	Power kW	Heat kW	Cool kW	Power kW	Heat kW
YCAS 0295EB	5.0	274	60.4	275	260	67.8	260	244	76.6	241	229	86.4	216	214	97.4	166
	6.0	283	60.1	282	269	67.6	266	252	76.2	247	236	86.0	221	221	96.9	170
	7.0	292	59.9	289	277	67.3	272	260	75.9	253	244	85.7	227	229	96.4	174
	8.0	301	59.7	296	285	67.1	279	269	75.7	259	252	85.3	232	236	96.0	178
	9.0	310	59.5	304	293	66.9	285	277	75.5	265	260	85.1	237	244	95.7	182
	10.0	319	59.2	311	301	66.7	291	285	75.3	271	268	84.9	242	252	95.4	186
	11.0	328	59.1	318	309	66.6	297	294	75.2	277	276	84.8	248	260	95.3	190
	12.0	337	58.9	325	317	66.5	304	302	75.1	284	285	84.7	254	268	95.2	194
	13.0	346	58.7	332	326	66.4	311	311	75.1	290	293	84.7	259	276	95.2	198
YCAS 0335EB	5.0	327	77.6	333	309	87.4	314	289	98.7	292	271	111.4	262	253	125.4	203
	6.0	338	77.7	341	318	87.5	321	299	98.8	299	282	111.5	270	262	125.4	207
	7.0	348	77.8	350	328	87.6	329	308	98.8	306	289	111.3	275	271	125.2	212
	8.0	358	77.9	358	338	87.7	337	318	98.9	313	298	111.4	281	280	125.1	217
	9.0	368	78.0	367	348	87.8	345	327	99.0	321	308	111.4	288	289	125.1	221
	10.0	379	78.0	375	357	87.9	352	337	99.1	328	317	111.5	294	298	125.1	226
	11.0	389	78.1	384	367	88.0	360	347	99.2	336	327	111.7	301	307	125.2	231
	12.0	399	78.2	392	377	88.2	368	357	99.4	343	336	111.8	308	317	125.4	236
	13.0	410	78.2	401	388	88.3	377	367	99.5	351	346	112.0	315	326	125.6	241
YCAS 0375EB	5.0	389	94.9	397	365	107.1	373	342	121.0	348	320	136.4	313	299	153.6	242
	6.0	400	95.4	407	376	107.6	383	353	121.4	357	330	136.7	321	309	153.9	248
	7.0	412	95.8	417	387	108.1	392	364	121.8	365	341	137.1	328	320	154.1	253
	8.0	424	96.2	427	399	108.5	402	375	122.2	374	352	137.5	336	330	154.3	259
	9.0	435	96.6	437	411	108.8	411	386	122.6	383	363	137.9	344	341	154.6	265
	10.0	447	96.9	447	422	109.2	421	398	122.9	392	374	138.3	352	352	154.9	271
	11.0	459	97.2	457	434	109.6	431	409	123.3	401	385	138.7	359	363	155.3	277
	12.0	471	97.5	467	446	109.9	440	421	123.7	410	396	139.0	368	373	155.6	283
	13.0	483	97.8	478	459	110.3	450	432	124.1	419	408	139.3	376	385	156.0	289
YCAS 0425EB	5.0	425	87.2	421	399	98.4	394	373	111.2	364	349	125.5	326	326	141.4	250
	6.0	437	87.4	431	412	98.6	404	385	111.3	374	360	125.5	334	337	141.4	256
	7.0	450	87.5	442	424	98.7	414	397	111.5	383	372	125.7	342	348	141.4	262
	8.0	463	87.7	453	437	98.9	424	410	111.6	392	384	125.7	350	359	141.4	268
	9.0	477	87.8	464	450	99.0	435	422	111.6	402	396	125.8	358	371	141.4	274
	10.0	490	87.9	475	463	99.1	445	435	111.7	411	408	125.9	367	383	141.4	280
	11.0	505	87.8	487	476	99.1	455	448	111.8	421	420	125.9	375	395	141.4	287
	12.0	518	87.8	498	489	99.2	465	461	111.9	431	433	126.0	384	407	141.5	293
	13.0	533	87.8	510	502	99.2	476	474	112.0	441	445	126.1	392	419	141.6	300
YCAS 0475EB	5.0	478	103.6	478	449	116.9	448	420	131.8	415	392	148.6	371	367	167.3	285
	6.0	492	104.0	490	462	117.2	459	433	132.2	425	405	148.9	380	379	167.5	292
	7.0	507	104.3	502	476	117.6	470	446	132.5	435	418	149.2	389	391	167.6	299
	8.0	521	104.6	514	491	117.9	482	460	132.8	446	431	149.4	399	404	167.8	306
	9.0	536	104.9	527	505	118.1	493	474	133.1	457	444	149.7	408	417	168.0	313
	10.0	551	105.1	539	542	118.5	523	488	133.3	467	458	150.0	417	430	168.2	320
	11.0	598	105.4	578	534	118.7	516	502	133.6	478	471	150.3	427	443	168.4	327
	12.0	581	105.6	564	577	118.9	551	516	133.9	489	485	150.5	436	456	168.7	334
	13.0	596	105.8	577	563	119.1	540	530	134.2	500	499	150.8	446	470	169.0	341
YCAS 0515EB	5.0	532	120.1	536	498	135.3	501	466	152.5	465	436	171.8	417	408	193.2	321
	6.0	547	120.6	549	513	135.9	514	481	153.1	477	450	172.2	427	421	193.6	329
	7.0	563	121.1	562	529	136.4	526	495	153.6	488	464	172.7	437	435	193.9	336
	8.0	579	121.6	576	544	136.9	539	510	154.0	500	478	173.2	447	449	194.2	344
	9.0	596	122.0	590	560	137.4	552	526	154.5	512	493	173.7	458	463	194.6	351
	10.0	612	122.5	603	576	137.8	565	541	155.0	524	507	174.2	468	477	195.0	359
	11.0	628	123.0	617	592	138.3	578	556	155.5	535	522	174.6	479	491	195.5	367
	12.0	644	123.4	630	608	138.7	591	572	156.0	547	538	175.0	489	506	195.9	375
	13.0	660	123.8	644	624	139.1	604	587	156.5	560	553	175.5	500	521	196.4	383
YCAS 0555EB	5.0	566	136.1	577	530	153.4	541	496	172.8	503	463	194.5	452	418	209.6	336
	6.0	582	136.8	591	546	154.1	554	511	173.5	515	478	195.2	462	432	209.8	343
	7.0	599	137.6	605	562	154.9	567	527	174.2	527	493	195.8	473	445	209.9	350
	8.0	616	138.3	619	578	155.5	581	542	174.9	540	508	196.5	484	459	210.1	357
	9.0	633	138.9	634	595	156.1	594	558	175.5	552	524	197.1	495	472	210.3	365
	10.0	650	139.5	648	611	156.8	608	574	176.2	565	539	197.8	506	486	210.5	372
	11.0	667	140.2	663	628	157.5	622	591	176.9	577	555	198.5	517	500	210.7	380
	12.0	684	140.8	678	645	158.2	636	607	177.6	590	571	199.1	529	514	211.0	388
	13.0	701	141.3	692	662	158.8	650	623	178.3	603	587	199.8	540	528	211.1	395
YCAS 0575EB	5.0	599	152.1	618	561	171.4	580	525	193.0	540	491	217.3	487	429	226.0	350
	6.0	617	153.1	632	578	172.3	594	541	193.9	553	507	218.2	498	442	226.0	357
	7.0	634	154.1	648	595	173.4	608	558	194.8	566	523	219.0	509	455	226.0	364
	8.0	652	155.0	663	613	174.0	623	574	195.7	579	539	219.8	521	468	226.0	371
	9.0	670	155.8	678	630	174.9	637	591	196.6	593	555	220.6	533	482	226.0	378
	10.0	688	156.6	694	647	175.7	651	608	197.4	606	571	221.5	544	495	226.0	386
	11.0	706	157.5	709	664	176.9	666	625	198.3	620	588	222.3	556	509	226.0	393
	12.0	724	158.2	725	682	177.7	681	642	199.2	633	604	223.2	568	523	226.0	400
	13.0	743	158.9	741	700	178.6	695	660	200.1	647	621	224.1	580	536	225.7	407
YCAS 0605EB	5.0	625	140.8	629	586	158.5	589	549	178.6	547	513	201.2	491	479	226.0	377
	6.0	643	141.5	645	604	159.3	604	566	179.1	561	530	201.7	502	495	226.0	385
	7.0	662	142.0	661	622	159.8	619	584	179.7	574	546	202.2	514	510	226.0	393
	8.0	681	142.6	677	640	160.4	634	606	180.5	592	563	202.7	526	525	226.0	402
	9.0	700	143.1	693	658	160.9	648	618	180.9	601	581	203.0	538	541	226.0	410
	10.0	719	143.5	709	677	161.4	664	636	181.5	615	598	203.6	551	556	226.0	418
	11.0	738	143.9	725	696	161.9	679	654	182.0	629	615	204.3	563	572	226.0	427
	12.0	757	144.3	741	715	162.4	694	673	182.5	643	633	204.8	575	588	226.0	435
	13.0	776	144.7	757	734	162.8	710	691	183.0	658	651	205.4	588	603	226.0	443

Heat recovery capacities (Heat) are for a leaving hot water temperature range of 10°C, where range = leaving liquid temperature - entering liquid temperature.

4 REFRIGERANT CIRCUIT MODELS HEAT RECOVERY CAPACITIES

TABLE 8

Model	Leaving Chilled Water Temp. °C	Leaving Hot Water Temperature °C														
		30			35			40			45			50		
		Cool kW	Power kW	Heat kW	Cool kW	Power kW	Heat kW	Cool kW	Power kW	Heat kW	Cool kW	Power kW	Heat kW	Cool kW	Power kW	Heat kW
YCAS 1065EB	5.0	1134	234.0	1124	1062	263.7	1049	993	297.3	970	927	334.9	867	867	376.6	665
	6.0	***1168***	***234.8***	***1152***	***1094***	***264.5***	***1075***	***1024***	***298.0***	***995***	***957***	***335.5***	***888***	***896***	***377.0***	***680***
	7.0	1202	235.4	1181	1127	265.2	1102	1056	299.1	1020	988	336.1	909	925	377.4	696
	8.0	***1236***	***236.1***	***1209***	***1161***	***265.8***	***1129***	***1088***	***299.3***	***1044***	***1019***	***336.6***	***931***	***955***	***377.9***	***712***
	9.0	1270	236.6	1238	1194	266.5	1156	1120	300.0	1068	1050	337.2	953	985	378.3	729
	10.0	***1303***	***237.4***	***1266***	***1229***	***267.1***	***1184***	***1153***	***300.6***	***1094***	***1082***	***337.9***	***975***	***1015***	***378.8***	***745***
	11.0	1337	238.0	1294	1249	267.3	1200	1186	301.3	1119	1114	338.5	997	1046	379.4	762
	12.0	***1372***	***238.5***	***1323***	***1298***	***268.2***	***1239***	***1219***	***301.9***	***1145***	***1146***	***339.2***	***1020***	***1077***	***380.0***	***779***
	13.0	1409	238.9	1354	1332	268.9	1267	1253	302.6	1171	1178	339.9	1043	1109	380.6	796
YCAS 1135EB	5.0	1208	264.4	1210	1132	297.8	1131	1058	335.6	1049	989	377.9	938	904	414.3	705
	6.0	***1244***	***265.8***	***1240***	***1166***	***298.9***	***1159***	***1091***	***336.7***	***1074***	***1020***	***378.9***	***961***	***933***	***414.5***	***720***
	7.0	1280	266.8	1271	1201	300.0	1188	1125	337.7	1100	1052	379.9	984	963	414.7	736
	8.0	***1316***	***267.7***	***1301***	***1236***	***301.0***	***1217***	***1159***	***338.8***	***1127***	***1085***	***380.9***	***1007***	***992***	***414.9***	***752***
	9.0	1352	268.6	1332	1272	302.0	1245	1193	339.7	1153	1118	381.7	1030	1022	415.2	769
	10.0	***1389***	***269.7***	***1363***	***1307***	***303.2***	***1274***	***1227***	***340.7***	***1180***	***1152***	***382.6***	***1054***	***1053***	***415.4***	***785***
	11.0	1425	270.5	1393	1343	304.1	1304	1262	341.7	1207	1185	383.6	1078	1083	415.7	801
	12.0	***1463***	***271.3***	***1425***	***1380***	***305.1***	***1333***	***1297***	***342.7***	***1234***	***1220***	***384.6***	***1102***	***1114***	***416.0***	***818***
	13.0	1501	272.1	1457	1416	306.0	1363	1333	343.8	1262	1254	385.6	1126	1145	416.3	835
YCAS 1215EB	5.0	1283	294.9	1297	1202	332.0	1214	1124	374.0	1127	1050	421.0	1011	941	452.0	745
	6.0	***1320***	***296.8***	***1328***	***1238***	***333.5***	***1244***	***1159***	***375.5***	***1154***	***1084***	***422.3***	***1034***	***971***	***452.0***	***761***
	7.0	1358	298.2	1361	1275	334.9	1274	1194	376.8	1182	1117	423.8	1058	1000	452.0	776
	8.0	***1396***	***299.5***	***1393***	***1312***	***336.2***	***1304***	***1230***	***378.2***	***1210***	***1152***	***425.1***	***1083***	***1030***	***452.0***	***792***
	9.0	1435	300.7	1426	1349	337.6	1335	1266	379.5	1238	1187	426.2	1108	1060	452.0	808
	10.0	***1474***	***301.9***	***1459***	***1386***	***339.4***	***1365***	***1302***	***380.8***	***1266***	***1222***	***427.4***	***1133***	***1090***	***452.0***	***824***
	11.0	1514	303.1	1493	1424	340.7	1396	1339	382.2	1295	1257	428.7	1158	1121	452.0	841
	12.0	***1553***	***304.2***	***1526***	***1462***	***341.9***	***1428***	***1376***	***383.6***	***1324***	***1293***	***430.0***	***1184***	***1151***	***452.0***	***857***
	13.0	1593	305.3	1560	1501	343.2	1459	1413	385.0	1353	1329	431.5	1209	1182	452.0	873

Heat recovery capacities (Heat) are for a leaving hot water temperature range of 10°C, where range = leaving liquid temperature - entering liquid temperature.
Total heat recovery capacities shown are for both heat recovery condensers piped in parallel.

TABLE 9 2 REFRIGERANT CIRCUIT MODELS PHYSICAL DATA

Model YCAS-EB				0295	0335	0375	0425	0475
Refrigerant circuits				2	2	2	2	2
Refrigerant Charge		Circuit 1	kg	55	65	65	79	85
		Circuit 2	kg	55	55	65	79	79
Oil Charge		Per circuit	l	19	19	19	19	19
Compressor		Number		2	2	2	2	2
		Type (circuit 1)		DXS12L	DXS24L	DXS24L	DXS24L	DXS36L
		Nominal cooling capacity	kW	145	190	190	190	250
		Type (circuit 2)		DXS12L	DXS12L	DXS24L	DXS24L	DXS24L
		Nominal cooling capacity	kW	145	145	190	190	190
		Capacity Control	%	10 - 100%	10 - 100%	10 - 100%	10 - 100%	10 - 100%
Evaporator		Number		1	1	1	1	1
		Type		1084	1084	1084	1160	1160
		Water volume	l	143	143	143	309	309
Air Cooled Condenser		Total coil face area	m²	17.84	17.84	17.84	23.78	23.78
		Number of tube rows		3	3	3	3	3
		Number of fans (cicuit 1)		3	3	3	4	4
		Number of fans (cicuit 2)		3	3	3	4	4
Fans	Standard	Nominal speed	rpm	950	950	950	950	950
		Total airflow	m³/s	37.6	37.6	37.6	50.2	50.2
	Low sound	Nominal speed	rpm	690	690	690	690	690
		Total airflow	m³/s	36.8	36.8	36.8	49.1	49.1
	High pressure	Nominal speed	rpm	965	965	965	965	965
		Total airflow (@ 150 Pa EXT.)	m³/s	37.6	37.6	37.6	50.2	50.2
Sound level to EN 292 1991 (1)		Standard fans	dBA	67	67	68	69	69
		Low sound fans	dBA	63	64	64	65	65
		Acoustic Kit I fitted	dBA	63	63	63	64	64
		Acoustic Kit II fitted	dBA	61	61	61	62	62
		Acoustic Kit III fitted	dBA	62	62	62	63	63
		Acoustic Kit IV fitted	dBA	58	58	58	59	59
		High pressure fans	dBA	72	72	72	73	73
Dimensions (3)		Length (2)	mm	4499	4499	4499	5718	5718
		Width	mm	2321	2321	2321	2321	2321
		Height	mm	2438	2438	2438	2438	2438
Operating Weight (4)	Units with aluminum fin coils		kg	4353	4555	4678	5938	6021
	Units with copper fin coils		kg	4762	4964	5087	6510	6593
	Heat recovery units with aluminum fin coils		kg	4826	5041	5176	6443	6538
	Heat recovery units with copper fin coils		kg	5235	5449	5584	7015	7110
	Aluminum fin coil units (Acoustic Kit III/IV fitted)		kg	4871	5073	5196	6592	6674
	Copper fin coils units (Acoustic Kit III/IV fitted)		kg	5279	5482	5605	7164	7246

(1) Sound Pressure levels are 10 m from the Control Panel, at a height of 1.6 m from the unit base. Levels may vary at different positions around the unit.

(2) Length excludes switch disconnect and/or circuit breaker handles.

(3) The unit length is incresed by 300 mm and the width is incresed by 600 mm with optional Acoustic Kit III or IV fitted.

(4) Shipping weights are Operating Weight - 140 kg (models 0295, 0335 and 0375) or Operating Weight - 300 kg (models 0425 and 0475). Weights with Acoustic Kits fitted include the intake silencers which are fitted on site.

2 REFRIGERANT CIRCUIT MODELS PHYSICAL DATA

TABLE 9

Model YCAS-EB				0515	0555	0575	0605
Refrigerant circuits				2	2	2	2
Refrigerant Charge		Circuit 1	kg	85	88	88	94
		Circuit 2	kg	85	85	88	94
Oil Charge		Per circuit	l	19	19	19	19
Compressor		Number		2	2	2	2
		Type (circuit 1)		DXS36L	DXS45L	DXS45L	DXS45L
		Nominal cooling capacity	kW	250	280	280	280
		Type (circuit 2)		DXS36L	DXS36L	DXS45L	DXS45L
		Nominal cooling capacity	kW	250	250	280	280
		Capacity Control	%	10 - 100%	10 - 100%	10 - 100%	10 - 100%
Evaporator		Number		1	1	1	1
		Type		1160	1160	1160	1160
		Water volume	l	309	309	309	309
Air Cooled Condenser		Total coil face area	m²	23.78	23.78	23.78	29.73
		Number of tube rows		3	3	3	3
		Number of fans (cicuit 1)		4	4	4	5
		Number of fans (cicuit 2)		4	4	4	5
Fans	Standard	Nominal speed	rpm	950	950	950	950
		Total airflow	m³/s	50.2	50.2	50.2	62.7
	Low sound	Nominal speed	rpm	690	690	690	690
		Total airflow	m³/s	49.1	49.1	49.1	61.4
	High pressure	Nominal speed	rpm	965	965	965	965
		Total airflow (@ 150 Pa EXT.)	m³/s	50.2	50.2	50.2	62.7
Sound level to EN 292 1991 (1)		Standard fans	dBA	69	70	71	71
		Low sound fans	dBA	66	67	68	69
		Acoustic Kit I fitted	dBA	64	64	64	65
		Acoustic Kit II fitted	dBA	62	62	62	63
		Acoustic Kit III fitted	dBA	63	63	63	64
		Acoustic Kit IV fitted	dBA	59	59	59	59
		High pressure fans	dBA	73	74	74	75
Dimensions (3)		Length (2)	mm	5718	5718	5718	6937
		Width	mm	2321	2321	2321	2321
		Height	mm	2438	2438	2438	2438
Operating Weight (4)	Units with aluminum fin coils		kg	6098	6121	6150	6570
	Units with copper fin coils		kg	6670	6693	6722	7261
	Heat recovery units with aluminum fin coils		kg	6626	6657	6699	7118
	Heat recovery units with copper fin coils		kg	7198	7229	7271	7810
	Aluminum fin coil units (Acoustic Kit III/IV fitted)		kg	6751	6775	6804	7359
	Copper fin coils units (Acoustic Kit III/IV fitted)		kg	7324	7347	7376	8051

(1) Sound Pressure levels are 10 m from the Control Panel, at a height of 1.6 m from the unit base. Levels may vary at different positions around the unit.

(2) Length excludes switch disconnect and/or circuit breaker handles.

(3) The unit length is incresed by 300 mm and the width is incresed by 600 mm with optional Acoustic Kit III or IV fitted.

(4) Shipping weights are Operating Weight - 300 kg (models 0515, 0555, 0575 and 0605). Weights with Acoustic Kits fitted include the intake silencers which are fitted on site.

TABLE 9

3 REFRIGERANT CIRCUIT MODELS
PHYSICAL DATA

Model YCAS-EB				0685	0775	0835	0905	0965
Refrigerant circuits				3	3	3	3	3
Refrigerant Charge		Circuit 1	kg	78	88	91	91	99
		Circuit 2	kg	78	88	88	91	99
		Circuit 3	kg	91	88	88	91	99
Oil Charge		Per circuit	l	15	15	15	15	15
Compressor		Number		3	3	3	3	3
		Type (circuit 1)		DXS24L	DXS36L	DXS45L	DXS45L	DXS45L
		Nominal cooling capacity	kW	190	250	280	280	280
		Type (circuit 2)		DXS24L	DXS36L	DXS36L	DXS45L	DXS45L
		Nominal cooling capacity	kW	190	250	250	280	280
		Type (circuit 3)		DXS45L	DXS36L	DXS36L	DXS45L	DXS45L
		Nominal cooling capacity	kW	280	250	250	280	280
		Capacity Control	%	10 - 100%	10 - 100%	10 - 100%	10 - 100%	10 - 100%
Evaporator		Number		1	1	1	1	1
		Type		1224	1252	1252	1252	1252
		Water volume	l	762	914	914	914	914
Air Cooled Condenser		Total coil face area	m²	29.73	35.67	35.67	35.67	47.56
		Number of tube rows		3	3	3	3	3
		Number of fans (circuit 1)		3	4	4	4	5
		Number of fans (circuit 2)		3	4	4	4	5
		Number of fans (circuit 3)		4	4	4	4	6
Fans	Standard	Nominal speed	rpm	950	950	950	950	950
		Total airflow	m³/s	72.7	87.2	87.2	87.2	116.3
	Low sound	Nominal speed	rpm	690	690	690	690	690
		Total airflow	m³/s	71.2	85.5	85.5	85.5	113.9
	High pressure	Nominal speed	rpm	965	965	965	965	965
		Total airflow (@ 150 Pa EXT.)	m³/s	72.7	87.2	87.2	87.2	116.3
Sound level to EN 292 1991(1)		Standard fans	dBA	70	70	70	71	72
		Low sound fans	dBA	67	67	68	69	70
		Acoustic Kit I fitted	dBA	64	65	65	65	66
		Acoustic Kit II fitted	dBA	62	63	63	63	64
		Acoustic Kit III fitted	dBA	63	64	64	64	65
		Acoustic Kit IV fitted	dBA	60	60	60	60	60
		High pressure fans	dBA	74	74	74	75	76
Dimensions (3)		Length (2)	mm	7474	8694	8694	8694	11132
		Width	mm	2331	2331	2331	2331	2331
		Height	mm	2438	2438	2438	2438	2438
Operating Weight (4)	Units with aluminum fin coils		kg	9089	9826	9915	9995	10746
	Units with copper fin coils		kg	9783	10683	10772	10852	11847
	Heat recovery units with aluminum fin coils		kg	N/A	N/A	N/A	N/A	N/A
	Heat recovery units with copper fin coils		kg	N/A	N/A	N/A	N/A	N/A
	Aluminum fin coil units (Acoustic Kit III/IV fitted)		kg	9879	10752	10841	10921	11952
	Copper fin coils units (Acoustic Kit III/IV fitted)		kg	10573	11609	11698	11778	13046

(1) Sound Pressure levels are 10 m from the Control Panel, at a height of 1.6 m from the unit base. Levels may vary at different positions around the unit.

(2) Length excludes switch disconnect and/or circuit breaker handles.

(3) The unit length is incresed by 300 mm and the width is incresed by 600 mm with optional Acoustic Kit III or IV fitted.

(4) Shipping weights are Operating Weight - 750 kg (model 0685) or Operating Weight - 900 kg (models 0775, 0835, 0905 and 0965). Weights with Acoustic Kits fitted include the intake silencers which are fitted on site.

4 REFRIGERANT CIRCUIT MODELS PHYSICAL DATA

TABLE 9

Model YCAS-EB				1065	1135	1215
Refrigerant circuits				4	4	4
Refrigerant Charge		Circuit 1	kg	88	91	91
		Circuit 2	kg	88	91	91
		Circuit 3	kg	88	88	91
		Circuit 4	kg	88	88	91
Oil Charge		Per circuit	l	15	15	15
Compressor		Number		4	4	4
		Type (circuit 1 & 2)		DXS36L	DXS45L	DXS45L
		Nominal cooling capacity	kW	250	280	280
		Type (circuit 3 & 4)		DXS36L	DXS36L	DXS45L
		Nominal cooling capacity	kW	250	250	280
		Capacity Control	%	10 - 100%	10 - 100%	10 - 100%
Evaporator		Number		1	1	1
		Type		1336	1336	1336
		Water volume	l	1013	1013	1013
Air Cooled Condenser		Total coil face area	m^2	47.56	47.56	47.56
		Number of tube rows		3	3	3
		Number of fans (circuit 1)		4	4	4
		Number of fans (circuit 2)		4	4	4
		Number of fans (circuit 3)		4	4	4
		Number of fans (circuit 4)		4	4	4
Fans	Standard	Nominal speed	rpm	950	950	950
		Total airflow	m^3/s	116.3	116.3	116.3
	Low sound	Nominal speed	rpm	690	690	690
		Total airflow	m^3/s	113.9	113.9	113.9
	High pressure	Nominal speed	rpm	965	965	965
		Total airflow (@ 150 Pa EXT.)	m^3/s	116.3	116.3	116.3
Sound level to EN 292 1991(1)		Standard fans	dBA	71	72	73
		Low sound fans	dBA	68	69	70
		Acoustic Kit I fitted	dBA	66	66	66
		Acoustic Kit II fitted	dBA	64	64	64
		Acoustic Kit III fitted	dBA	65	65	65
		Acoustic Kit IV fitted	dBA	62	62	62
		High pressure fans	dBA	75	76	76
Dimensions (3)		Length (2)	mm	11132	11132	11132
		Width	mm	2331	2331	2331
		Height	mm	2438	2438	2438
Operating Weight (4)	Units with aluminum fin coils		kg	12889	12962	13011
	Units with copper fin coils		kg	14077	14140	14210
	Heat recovery units with aluminum fin coils		kg	13946	14094	14108
	Heat recovery units with copper fin coils		kg	15133	15269	15307
	Aluminum fin coil units (Acoustic Kit III/IV fitted)		kg	14094	14167	14217
	Copper fin coils units (Acoustic Kit III/IV fitted)		kg	15232	15305	15354

(1) Sound Pressure levels are 10 m from the Control Panel, at a height of 1.6 m from the unit base.
Levels may vary at different positions around the unit.

(2) Length excludes switch disconnect and/or circuit breaker handles.

(3) The unit length is incresed by 300 mm and the width is incresed by 600 mm with optional Acoustic Kit III or IV fitted.

(4) Shipping weights are Operating Weight - 1000 kg (models 1065, 1135 and 1215)
Weights with Acoustic Kits fitted include the intake silencers which are fitted on site.

TABLE 10 2, 3 AND 4 REFRIGERANT CIRCUIT MODELS ELECTRICAL DATA

	Standard Fan Chillers						Largest Compressor Starting Amps		Starting Amps per Fan	Nominal Running Amps per Fan
	Nominal Running Amps			Maximum Running Amps						
Model YCAS EB	Total Unit Amps	System 1 Amps	System 2 Amps	Total Unit Amps	System 1 Amps	System 2 Amps	Star Delta Amps	Direct on Line Amps		
0295	152	76	76	228	114	114	175	523	17.1	4.4
0335	195	119	76	273	159	114	232	732	17.1	4.4
0375	238	119	119	318	159	159	232	732	17.1	4.4
0425	235	118	118	304	152	152	232	732	17.1	4.4
0475	267	150	118	357	205	152	283	907	17.1	4.4
0515	299	150	150	410	205	205	283	907	17.1	4.4
0555	330	181	150	460	255	205	283	907	17.1	4.4
0575	361	181	181	510	255	255	283	907	17.1	4.4
0605	344	172	172	482	241	241	283	907	17.1	4.4
0685	406	287	119	508	367	141	283	907	17.1	4.4
0775	440	293	147	549	366	183	283	907	17.1	4.4
0835	468	321	147	592	409	183	283	907	17.1	4.4
0905	524	349	175	678	452	226	283	907	17.1	4.4
0965	520	348	172	665	442	223	283	907	17.1	4.4
1065	586	293	293	732	366	366	283	907	17.1	4.4
1135	642	321	321	818	409	409	283	907	17.1	4.4
1215	698	349	349	904	452	452	283	907	17.1	4.4

	Low Sound Fan Chillers						Largest Compressor Starting Amps		Starting Amps per Fan	Nominal Running Amps per Fan
	Nominal Running Amps			Maximum Running Amps						
Model YCAS EB	Total Unit Amps	System 1 Amps	System 2 Amps	Total Unit Amps	System 1 Amps	System 2 Amps	Star Delta Amps	Direct on Line Amps		
0295	151	75	75	226	113	113	175	523	13.0	4.1
0335	194	118	75	271	158	113	232	732	13.0	4.1
0375	237	118	118	316	158	158	232	732	13.0	4.1
0425	233	116	116	302	151	151	232	732	13.0	4.1
0475	265	148	116	355	204	151	283	907	13.0	4.1
0515	297	148	148	408	204	204	283	907	13.0	4.1
0555	328	179	148	458	254	204	283	907	13.0	4.1
0575	359	179	179	508	254	254	283	907	13.0	4.1
0605	341	171	171	479	240	240	283	907	13.0	4.1
0685	403	285	118	505	365	140	283	907	13.0	4.1
0775	436	291	145	545	364	182	283	907	13.0	4.1
0835	464	319	145	588	407	182	283	907	13.0	4.1
0905	520	347	173	674	450	225	283	907	13.0	4.1
0965	516	345	171	660	439	222	283	907	13.0	4.1
1065	582	291	291	727	364	364	283	907	13.0	4.1
1135	638	319	319	813	407	407	283	907	13.0	4.1
1215	694	347	347	899	450	450	283	907	13.0	4.1

Electrical Data Notes

Nominal conditions are taken at 7°C leaving chilled liquid temperature and 35°C condenser air entering temperature.

Maximum NamePlate conditions allowed by compressor motor protection.

Total Unit values are for all compressors and fans running. That is, system 1 & 2.

System 1, are values for one or two compressors with respective condenser fans running.

System 2, are values for one or two compressors with respective condenser fans running.

Starting Amps is the maximum inrush current (per compressor) when Star Delta or Direct on Line starting is employed at 400 V.

	High Pressure Fan Chillers						Largest Compressor Starting Amps		Starting Amps per Fan	Nominal Running Amps per Fan
	Nominal Running Amps			Maximum Running Amps						
Model YCAS EB	Total Unit Amps	System 1 Amps	System 2 Amps	Total Unit Amps	System 1 Amps	System 2 Amps	Star Delta Amps	Direct on Line Amps		
0295	170	85	85	246	123	123	175	523	48.3	7.4
0335	213	128	85	291	168	123	232	732	48.3	7.4
0375	256	128	128	336	168	168	232	732	48.3	7.4
0425	259	130	130	328	164	164	232	732	48.3	7.4
0475	291	162	130	381	217	164	283	907	48.3	7.4
0515	323	162	162	434	217	217	283	907	48.3	7.4
0555	354	193	162	484	267	217	283	907	48.3	7.4
0575	385	193	193	534	267	267	283	907	48.3	7.4
0605	374	187	187	512	256	256	283	907	48.3	7.4
0685	436	308	128	538	388	150	283	907	48.3	7.4
0775	476	317	159	585	390	195	283	907	48.3	7.4
0835	504	345	159	628	433	195	283	907	48.3	7.4
0905	560	373	187	714	476	238	283	907	48.3	7.4
0965	568	381	187	713	475	238	283	907	48.3	7.4
1065	634	317	317	780	390	390	283	907	48.3	7.4
1135	690	345	345	866	433	433	283	907	48.3	7.4
1215	746	373	373	952	476	476	283	907	48.3	7.4

Electrical Data Notes

Nominal conditions are taken at 7°C leaving chilled liquid temperature and 35°C condenser air entering temperature.

Maximum NamePlate conditions allowed by compressor motor protection.

Total Unit values are for all compressors and fans running. That is, system 1 & 2.

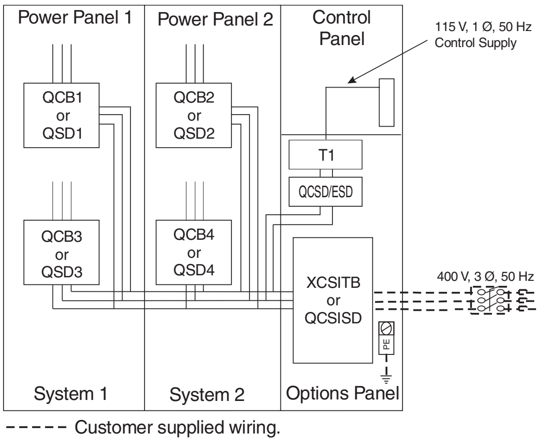
System 1, are values for one or two compressors with respective condenser fans running.

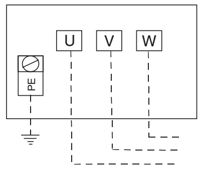
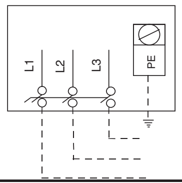
System 2, are values for one or two compressors with respective condenser fans running.

Starting Amps is the maximum inrush current (per compressor) when Star Delta or Direct on Line starting is employed at 400 V.

2, 3 AND 4 REFRIGERANT CIRCUIT MODELS CONNECTION DIAGRAMS

Single Point Power Supply Connection - All Models with Terminal Block or Non-Fused Switch Disconnect (Options 2.4, 2.4x, 2.5 or 2.5x)



Model YCAS	**Terminal Block Wire Range (mm²)**	**N-F Switch Disconnect Wire Range (mm²)**	**Terminal Block Connection**
0295	70 - 240	25-150	
0335	70 - 240	(2) 95-120	
0375	(2) 50 - 150	(2) 95-120	
0425	(2) 50 - 150	(2) 95-120	
0475	(2) 70 - 240	(3) 95-185	
0515	(2) 50 - 150	(2) 95-120	
0555	(2) 70 - 240	(3) 95-185	
0575	(2) 70 - 240	(3) 95-185	**Non-Fused Switch Disconnect Connection**
0605	(2) 70 - 240	(3) 95-185	
0685	(2) 70 - 240	(2) 120 - 240	
0775	(2) 70 - 240	(2) 120 - 240	
0835	(2) 70 - 240	(2) 120 - 240	
0905	(3) 50 - 150	(3) 95-185	
0965	(3) 50 - 150	(3) 95-185	
1065	(3) 70 - 240	(3) 95-185	
1135	(3) 70 - 240	(4) 95-240	
1215	(3) 70 - 240	(4) 95-240	

Note: Figures in brackets denote the number of available connections per phase. For example (2) 95 - 120 mm² - can take 2 cables at the stated wire range.

One field provided 400 V, 3Ø, 50 Hz supply to the unit with circuit protection. Field connections to factory provided Terminal Block (XCSITB) or Non-Fused Switch Disconnect (QCSISD) in the Options Panel.

Options 2.4 and 2.5: Internal branch Circuit Breakers (QCB) for each circuit in the two Power Panels.

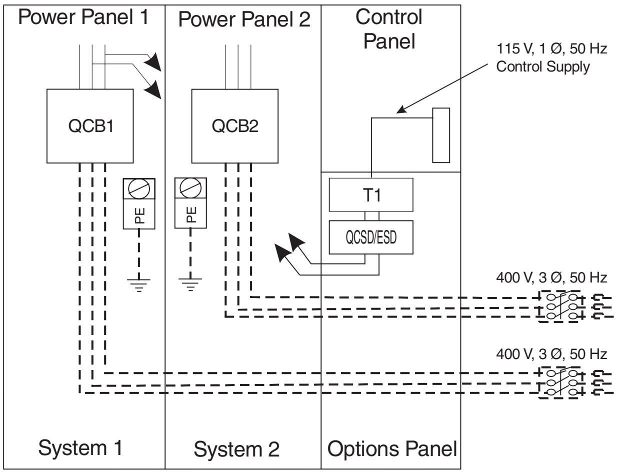
Options 2.4x and 2.5x: Internal branch Non-Fused Switch Disconnects (QSD) and Fuses for each circuit in the two Power Panels.

Options 2.4 and 2.4x: The control circuit supply is derived internally from Electrical System 1 (Circuit 1) which then feeds the Non-Fused Switch Disconnect (QCSD/ESD) and Control Transformer (T1) in the Options Panel.

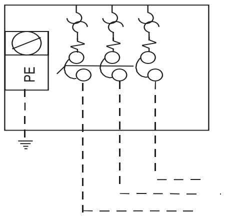
Options 2.5 and 2.5x: The control circuit supply is derived internally from the common supply which then feeds the Non-Fused Switch Disconnect (QCSD/ESD) and Control Transformer (T1) in the Options Panel.

2, 3 AND 4 REFRIGERANT CIRCUIT MODELS CONNECTION DIAGRAMS

Multi-Point Power Supply Connection - Models 0295 to 0605 with Door Interlocked Circuit Breakers (Option 2.1)



----- Customer supplied wiring.

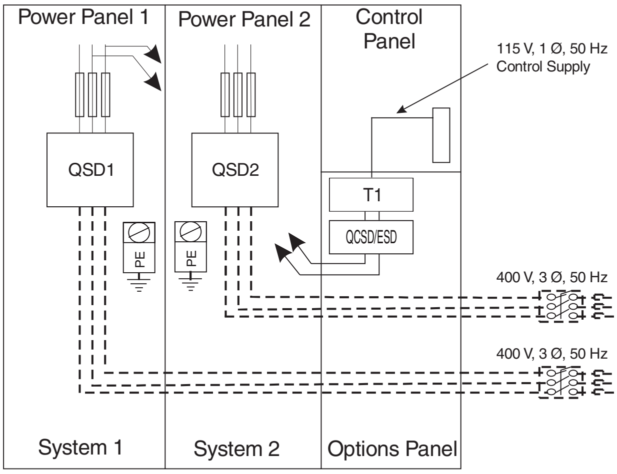
Model YCAS	System 1 Wire Range (mm²)	System 2 Wire Range (mm²)	Circuit Breaker Connection
0295	25 -150	25 -150	
0335	25 -150	25 -150	
0375	25 -150	25 -150	
0425	25 -150	25 -150	
0475	(2) 95 - 120	(2) 95 - 120	
0515	25 -150	25 -150	
0555	(2) 95 - 120	(2) 95 - 120	
0575	(2) 95 - 120	(2) 95 - 120	
0605	(2) 95 - 120	(2) 95 - 120	

Note: Figures in brackets denote the number of available connections per phase. For example (2) 95 - 120 mm² - can take 2 cables at the stated wire range.

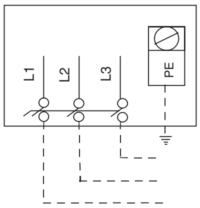
Two field provided 400 V, 3Ø, 50 Hz supplies to the unit with circuit protection. Field connections to factory provided Circuit Breakers (QCB) in each of the two Power Panels.

The control circuit supply is derived internally from Electrical System 1 which then feeds the Non-Fused Switch Disconnect (QCSD/ESD) and Control Transformer (T1) in the Options Panel.

Multi-Point Power Supply Connection - Models 0295 to 0605 with Door Interlocked Non-Fused Switch Disconnects and Fuses (Option 2.1x)



----- Customer supplied wiring.

Model YCAS	System 1 Wire Range (mm²)	System 2 Wire Range (mm²)	Non-Fused Switch Disconnect Connection
0295	70 -120	70 -120	
0335	70 -120	70 -120	
0375	70 -120	70 -120	
0425	95 -185	95 -185	
0475	95 -185	95 -185	
0515	95 -185	95 -185	
0555	95 -185	95 -185	
0575	95 -185	95 -185	
0605	95 -185	95 -185	

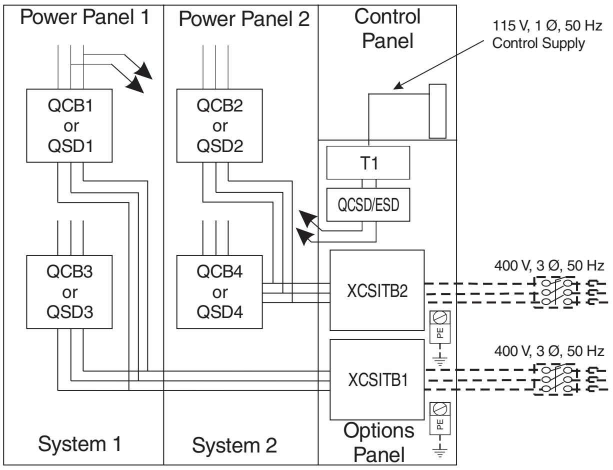
Note: Figures in brackets denote the number of available connections per phase. For example (2) 95 - 120 mm² - can take 2 cables at the stated wire range.

Two field provided 400 V, 3Ø, 50 Hz supplies to the unit with circuit protection. Field connections to factory provided Non-Fused Switch Disconnects (QSD) in the two Power Panels.

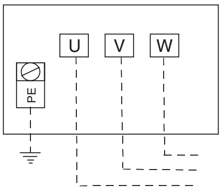
The control circuit supply is derived internally from Electrical System 1 which then feeds the Non-Fused Switch Disconnect (QCSD/ESD) and Control Transformer (T1) in the Options Panel.

2, 3 AND 4 REFRIGERANT CIRCUIT MODELS
CONNECTION DIAGRAMS

Multi-Point Power Supply Connection - Models 0685 to 1215 with Terminal Blocks (Options 2.2 and 2.2x)



----- Customer supplied wiring.

Model YCAS	System 1 Wire Range (mm^2)	System 2 Wire Range (mm^2)	Terminal Block Connection
0685	(2) 35 - 95	35 - 95	
0775	(2) 35 - 95	35 - 95	
0835	(2) 50 - 150	35 - 95	
0905	(2) 50 - 150	50 - 150	
0965	(2) 50 - 150	50 - 150	
1065	(2) 35 - 95	(2) 35 - 95	
1135	(2) 50 - 150	(2) 50 - 150	
1215	(2) 50 - 150	(2) 50 - 150	

Note: Figures in brackets denote the number of available connections per phase. For example (2) 95 - 120 mm^2 - can take 2 cables at the stated wire range.

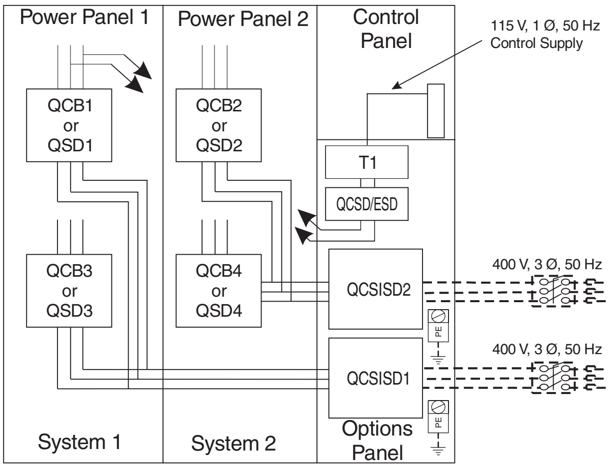
Two field provided 400 V, 3Ø, 50 Hz supplies to the unit with circuit protection. Field connections to factory provided Terminal Blocks (XCSITB) in the Options Panel.

Option 2.2: Internal branch Circuit Breakers (QCB) for each circuit in the two Power Panels.

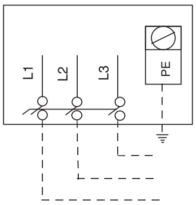
Option 2.2x: Internal branch Non-Fused Switch Disconnects (QSD) and Fuses for each circuit in the two Power Panels.

The control circuit supply is derived internally from Electrical System 1 (Circuit 1) which then feeds the Non-Fused Switch Disconnect (QCSD/ESD) and Control Transformer (T1) in the Options Panel.

Multi-Point Power Supply Connection - Models 0685 to 1215 with Non-Fused Switch Disconnects (Options 2.3 and 2.3x)



----- Customer supplied wiring.

Model YCAS	System 1 Wire Range	System 2 Wire Range	Non-Fused Switch Disconnect Connection
0685	(2) 95-120	35 - 95	
0775	(2) 95-120	25 - 150	
0835	(2) 120 - 240	25 - 150	
0905	(2) 120 - 240	25 - 150	
0965	(2) 120 - 240	25 - 150	
1065	(2) 95-120	(2) 95-120	
1135	(2) 120 - 240	(2) 120 - 240	
1215	(2) 120 - 240	(2) 120 - 240	

Note: Figures in brackets denote the number of available connections per phase. For example (2) 95 - 120 mm^2 - can take 2 cables at the stated wire range.

Two field provided 400 V, 3Ø, 50 Hz supplies to the unit with circuit protection. Field connections to factory provided Non-Fused Switch Disconnects (QCSISD) in the Options Panel.

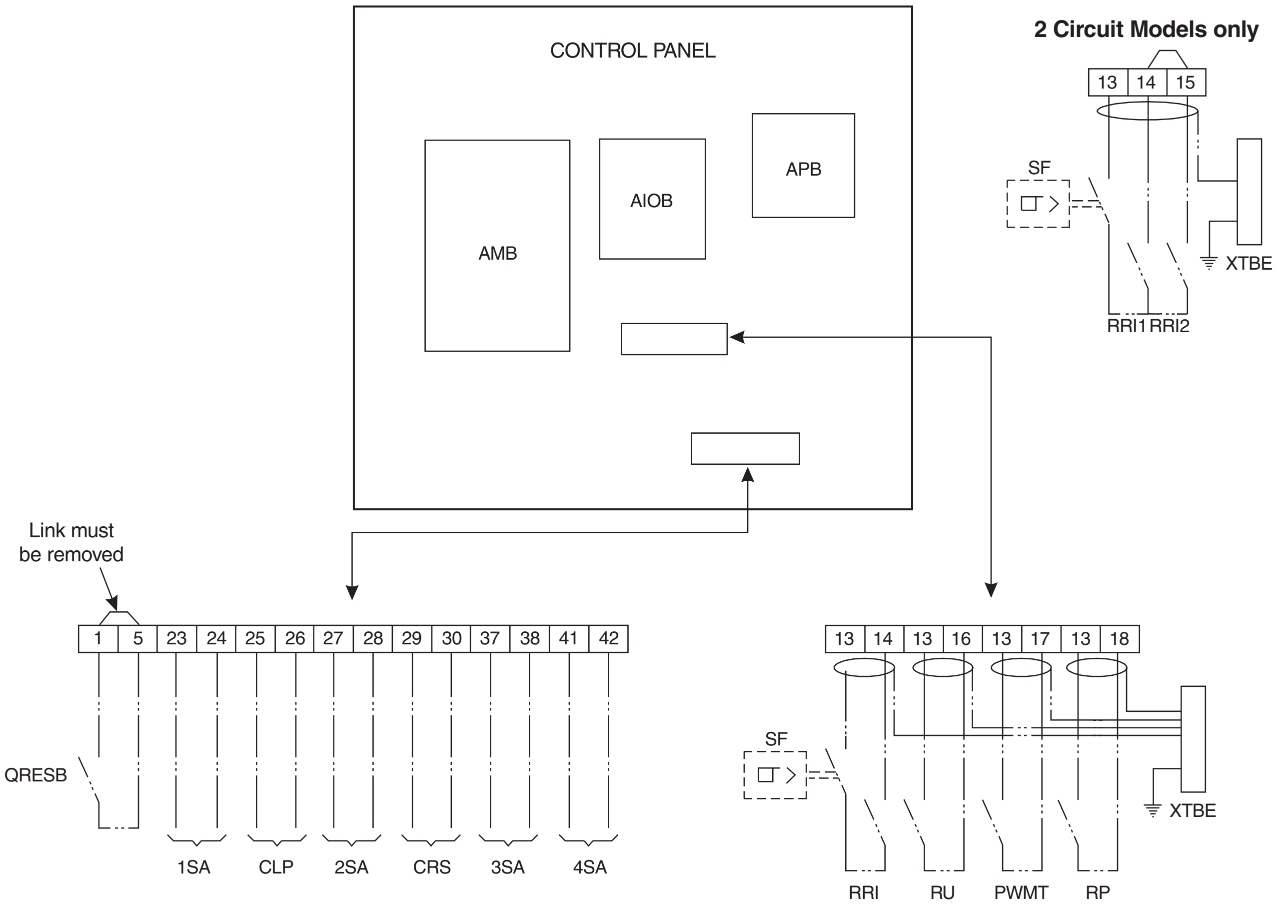
Option 2.3: Internal branch Circuit Breakers (QCB) for each circuit in the two Power Panels.

Option 2.3x: Internal branch Non-Fused Switch Disconnects (QSD) and Fuses for each circuit in the two Power Panels.

The control circuit supply is derived internally from Electrical System 1 (Circuit 1) which then feeds the Non-Fused Switch Disconnect (QCSD/ESD) and Control Transformer (T1) in the Options Panel.

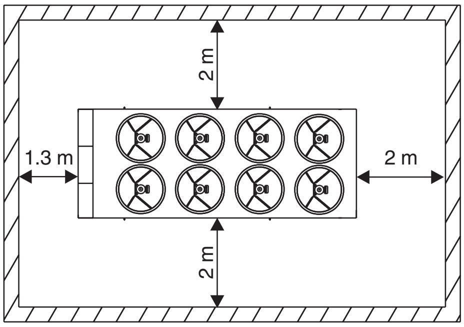
2, 3 AND 4 REFRIGERANT CIRCUIT MODELS CONNECTION DIAGRAMS

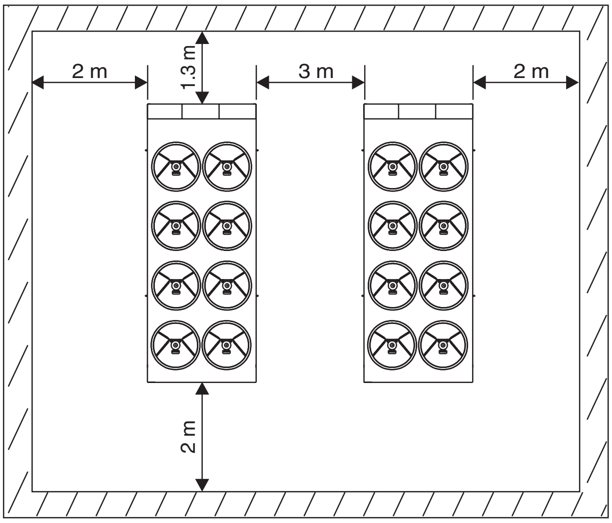
Customer Connection Diagram

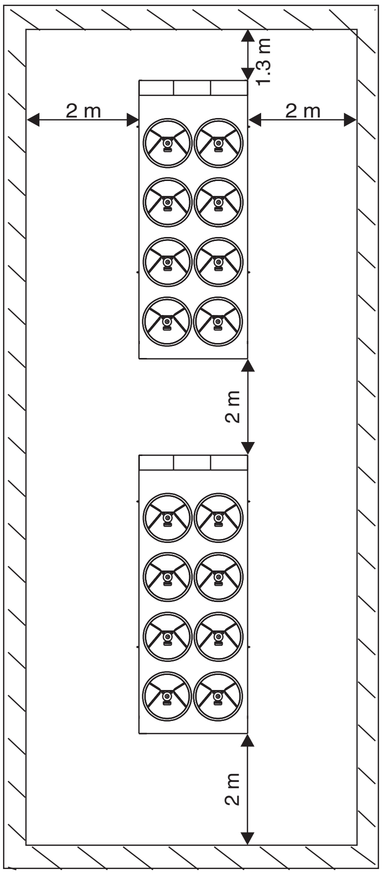


AMB	Microprocessor Board	**CLP**	Chilled Liquid Pump Start	**1SA**	System 1 Alarm Contacts
AIOB	Input/Output Board	**CRS**	Chiller Run	**2SA**	System 2 Alarm Contacts
APB	Power Board	**RU**	Current PWM	**3SA**	System 3 Alarm Contacts
QRESB	Remote Emergency Stop	**PWMT**	Temperature PWM	**4SA**	System 4 Alarm Contacts
RRI	Remote Run Interlock	**RRI1**	Remote Run Interlock (Circuit 1)	**RRI2**	Remote Run Interlock (Circuit 2)
SF	Flow Switch	**RP**	Remote Print	**XTBE**	Ground Terminal

CLEARANCES (All Models)

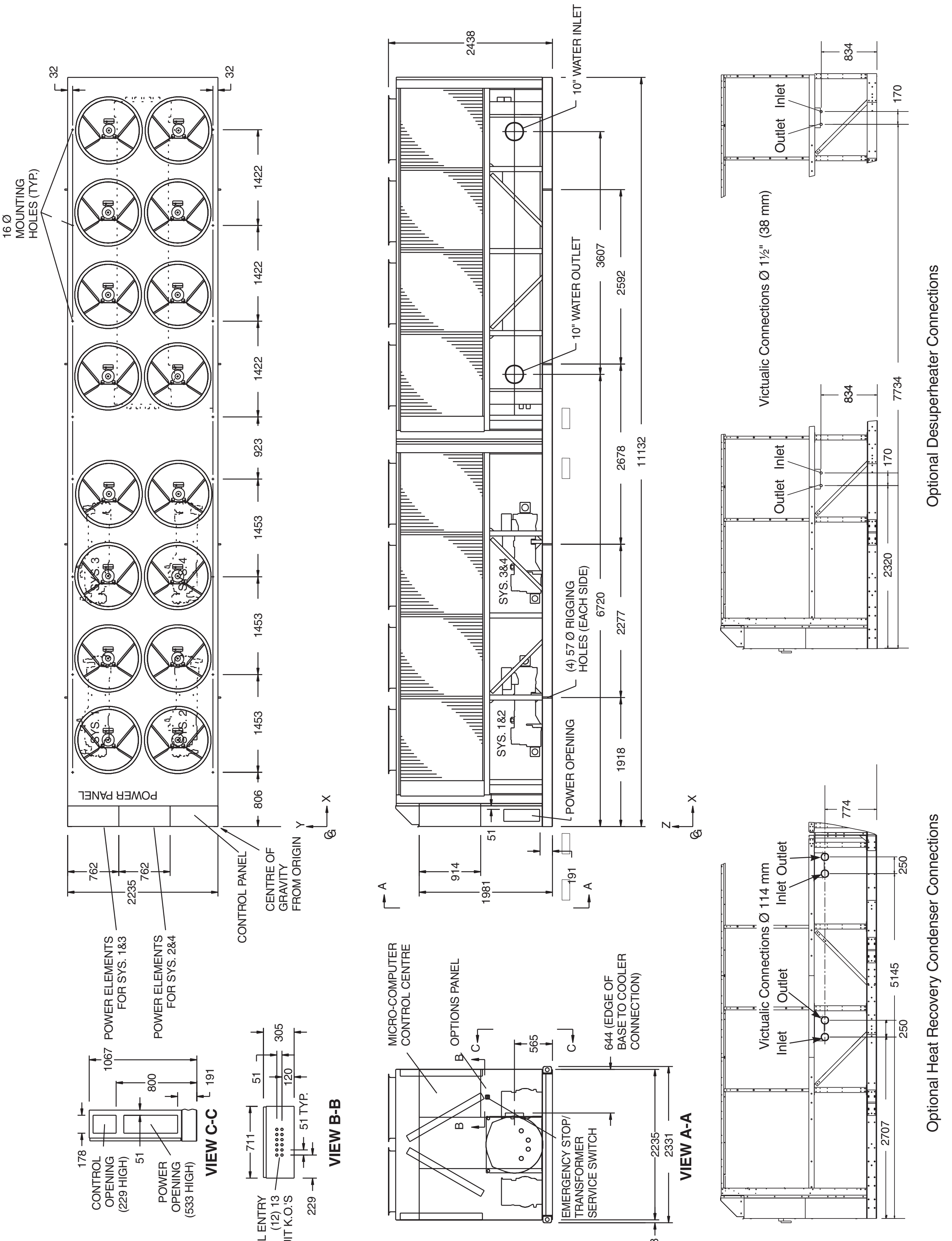






DIMENSIONS (continued)

Models 1065, 1135 and 1215



Catalogue of Carrier 30RB 090R

PRODUCT SELECTION DATA

AIR-COOLED SCROLL CHILLERS AND HEAT PUMPS WITH GREENSPEED® INTELLIGENCE

Low environmental impact

High full and part load efficiency

Compact and simple to install

Low refrigerant charge

Superior reliability

30RB/30RQ 040R-160R

Cooling capacity 40-160 kW
Heating capacity 40-160 kW

Aquasnap® heat pumps and liquid chillers are the best solution for commercial and industrial applications where installers, engineering and design departments and building owners require reduced installation costs, optimal performances and maximum quality.

- AquaSnap® (30RB-30RQ) is a compact all-in-one package optimised for applications which require reduced investment and installation costs (low CapEx).
- The large options panel allows for configurations that suit user requirements.
- Optional variable-speed fans and pumps with Carrier Greenspeed® intelligence control logic make this a product which is optimised for part load applications where a high SEER, SEPR, SCOP or IPLV value is required.

In this configuration, AquaSnap® provides premium part load efficiency to reduce maintenance costs over the lifespan of the chiller. In addition, the sound levels achieved under the part load conditions are particularly low. Besides operating efficiently and quietly, the AquaSnap® range with Greenspeed® intelligence operates from -20 °C up to +46 °C as standard.

---

* The availability of sizes and options depends on the country. Please contact your local commercial dealer for more information.

CARRIER participates in the ECP programme for LCP/HP
Check ongoing validity of certificate:
www.eurovent-certification.com

Translation of the original document

PHYSICAL DATA, SIZES 040R TO 160R

30RB				040R	045R	050R	055R	060R	070R	080R	090R	100R	120R	140R	160R
Standard unit															
Cooling Full load performances*	CA1	Nominal capacity	kW	41,7	47,3	52,9	56,1	63,6	71,2	81,1	93,4	107	124	140	160
		EER	kW/kW	2,95	2,94	2,93	2,97	2,89	2,90	2,78	2,97	2,83	2,85	2,87	2,76
	CA2	Nominal capacity	kW	54,6	62,7	69,4	74,3	84,6	93,0	103	126	142	162	183	203
		EER	kW/kW	3,60	3,60	3,51	3,61	3,63	3,49	3,22	3,72	3,48	3,40	3,48	3,21
Seasonal energy efficiency**		**SEER $_{12/7\ °C}$ Comfort low temp.**	**kWh/kWh**	**4,41**	**4,47**	**4,50**	**4,62**	**4,41**	**4,31**	**4,24**	**4,38**	**4,51**	**4,57**	**4,46**	**4,37**
		ηs cool $_{12/7°C}$	**%**	**173**	**176**	**177**	**182**	**174**	**169**	**167**	**172**	**177**	**180**	**176**	**172**
		SEER $_{23/18°C}$ Comfort medium temp.	**kWh/kWh**	**6,10**	**6,11**	**6,06**	**6,17**	**5,61**	**5,72**	**5,46**	**5,54**	**5,78**	**5,73**	**5,61**	**5,34**
		SEPR $_{12/7\ °C}$ Process high temp.	**kWh/kWh**	**6,30**	**6,23**	**6,23**	**6,21**	**5,92**	**5,46**	**5,21**	**5,45**	**5,19**	**5,24**	**5,37**	**5,15**
		SEPR $_{-2/-8°C}$ Process medium temp.	**kWh/kWh**	**3,59**	**3,65**	**3,79**	**3,89**	**3,65**	**3,61**	**3,67**	**3,54**	**3,54**	**3,74**	**3,61**	**3,68**
Part Load integrated values		IPLV.SI	kW/kW	4,945	5,025	5,182	5,270	5,369	4,630	4,630	4,904	4,953	4,997	4,707	4,680
Sound levels															
Standard unit															
Sound power(1)			dB(A)	81,5	82,0	83,5	83,5	89,0	89,0	89,0	91,5	91,5	92,0	92,0	92,0
Sound pressure at 10 m(2)			dB(A)	50,0	50,5	52,0	52,0	57,0	57,5	57,0	60,0	59,5	60,0	60,0	60,0
Unit + option 15LS															
Sound power(1)			dB(A)	78,5	79,0	80,0	80,0	80,0	80,0	80,0	83,0	83,0	83,0	83,0	83,0
Sound pressure at 10 m(2)			dB(A)	47,0	47,5	48,5	48,5	48,0	48,5	48,0	51,0	51,0	51,5	51,0	51,0
Dimensions															
Standard unit															
Length			mm	2109	2109	2109	2109	2109	2109	2109	2275	2275	2275	2275	2275
Width			mm	1090	1090	1090	1090	1090	1090	1090	2125	2125	2125	2125	2125
Height			mm	1330	1330	1330	1330	1330	1330	1330	1330	1330	1330	1330	1330
Unit height (option 12)			mm	1372	1372	1372	1372	1372	1372	1372	1372	1372	1372	1372	1372
Unit height (option 307)			mm	1931	1931	1931	1931	1931	1931	1931	1931	1931	1931	1931	1931
Unit height (option 12 + 307)			mm	1973	1973	1973	1973	1973	1973	1973	1973	1973	1973	1973	1973

*	In accordance with standard EN14511-3:2018.
**	In accordance with EN14825:2018, average climatic conditions.
CA1	Cooling mode conditions: evaporator water inlet/outlet temperature 12 °C/7 °C, outdoor air temperature 35 °C, evaporator fouling factor 0 m^2. k/W
CA2	Cooling mode conditions: evaporator water inlet/outlet temperature 23 °C/18 °C, outdoor air temperature 35 °C, evaporator fouling factor 0 m^2. k/W
ηs cool$_{12/7°C}$ & SEER $_{12/7°C}$	**Values in bold comply with Ecodesign Regulation (EU) No. 2016/2281 for Comfort applications**
SEER $_{23/18\ °C}$	**Values in bold comply with Ecodesign Regulation (EU) No. 2016/2281 for Comfort applications**
SEPR $_{-2/-8°C}$	**Values in bold comply with Ecodesign Regulation (EU) No. 2015/1095 for HT applications**
IPLV.SI	Calculated as per AHRI standard 551-591.
(1)	In dB ref=10^{-12} W, (A) weighting. Declared dual-number noise emission value in accordance with ISO 4871 with an uncertainty of +/-3 dB(A). Measured in accordance with ISO 9614-1 and certified by Eurovent.
(2)	In dB ref 20 μPa, (A) weighting. Declared dual-number noise emission value in accordance with ISO 4871 with an uncertainty of +/-3 dB(A). For information, calculated from the sound power Lw(A).

EUROVENT CERTIFIED PERFORMANCE
www.eurovent-certification.com

Eurovent certified values

---

* The availability of sizes and options depends on the country. Please contact your local commercial dealer for more information.

PHYSICAL DATA, SIZES 040R TO 160R

30RB		040R	045R	050R	055R	060R	070R	080R	090R	100R	120R	140R	160R
Operating weight (3)													
Standard unit	kg	408	409	428	428	435	446	454	672	734	743	861	877
Unit + single high-pressure pump option	kg	428	429	448	448	455	466	474	692	754	768	886	902
Unit + dual high-pressure pump option	kg	455	456	475	475	482	493	501	719	781	790	908	924
Unit + single high-pressure pump and buffer tank options	kg	763	765	784	784	791	801	810	1087	1149	1163	1281	1297
Unit + dual high-pressure pump and buffer tank options	kg	790	792	811	811	818	828	837	1114	1176	1185	1303	1319
Compressors		Hermetic Scroll 48,3 r/s											
Circuit A		2	2	2	2	2	2	2	2	3	3	2	2
Circuit B												2	2
No. of power stages		2	2	2	2	2	2	2	2	3	3	4	4
Refrigerant(3)		R-32 / A2L/ PRP= 675 in accordance with AR4											
Circuit A	kg	3,72	3,92	4,43	4,90	4,70	4,87	4,84	7,75	8,40	9,00	5,00	5,07
	tCO$_2$e	2,5	2,6	3,0	3,3	3,2	3,3	3,3	5,2	5,7	6,1	3,4	3,4
Circuit B	kg											5,00	5,07
	tCO$_2$e											3,4	3,4
Oil		POE											
Circuit A	l	6,00	6,00	6,60	6,60	6,60	7,20	7,20	7,20	10,80	10,80	7,20	7,20
Circuit B	l											7,20	7,20
Capacity control		SmartVu™											
Minimum capacity	%	50	50	50	50	50	50	50	50	33	33	25	25
PED category		III											
Condenser		All-aluminium micro-channel coils (MCHE)											
Fans		Axial Flying bird™ 6 with rotating shroud											
Standard unit													
Quantity		1	1	1	1	1	1	1	2	2	2	2	2
Maximum total air flow	l/s	3882	3802	4058	3900	5484	5452	5414	10568	10512	10974	10904	10827
Maximum rotation speed	r/s	12	12	12	12	16	16	16	16	16	16	16	16
Evaporator		Direct expansion brazed-plate heat exchanger											
Water volume	l	3,55	4	4,44	4,44	5,18	6,07	6,96	7,4	8,44	9,92	12,69	14,31
Max. water-side operating pressure without hydronic module	kPa	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Hydronic module (option)		Pump, Victaulic screen filter, relief valve, water and air vent valve, pressure sensors											
Pump		Centrifugal pump, monocell, 48,3 r/s, low- or high-pressure (as required), single or dual (as required)											
Expansion tank volume (Option 293)	l	12	12	12	12	12	12	12	35	35	35	35	35
Buffer tank volume (Option 307)	l	208	208	208	208	208	208	208	208	208	208	208	208
Max. water-side operating pressure with hydronic module	kPa	400	400	400	400	400	400	400	400	400	400	400	400
Water connections with or without hydronic module		Victaulic® type											
Connections	inches	2	2	2	2	2	2	2	2	2	2	2	2
External diameter	mm	60,3	60,3	60,3	60,3	60,3	60,3	60,3	60,3	60,3	60,3	60,3	60,3
Casing paint colour		Colour code RAL 7035											

(3) Values are guidelines only. Refer to the unit name plate.

---

* The availability of sizes and options depends on the country. Please contact your local commercial dealer for more information.

PHYSICAL DATA, SIZES 040R TO 160R

30RQ				040R	045R	050R	060R	070R	080R	090R	100R	120R	140R	160R
Standard unit														
Heating Full load performances*	HA1	**Nominal capacity**	**kW**	**44,1**	**47,9**	**54,3**	**61,6**	**68,2**	**61,8**	**93,3**	**106,6**	**119,1**	**136,8**	**123,1**
		COP	**kW/kW**	**3,91**	**3,97**	**3,89**	**3,80**	**3,81**	**3,03**	**3,80**	**3,80**	**3,80**	**3,80**	**3,03**
	HA2	**Nominal capacity**	**kW**	**42,7**	**47,0**	**53,5**	**59,5**	**67,2**	**75,7**	**91,7**	**104,5**	**117,6**	**134,9**	**150,2**
		COP	**kW/kW**	**3,07**	**3,16**	**3,12**	**3,01**	**3,08**	**3,01**	**3,10**	**3,09**	**3,09**	**3,08**	**3,00**
Seasonal energy efficiency**	HA1	**SCOP$_{30/35°C}$**	**kWh/kWh**	**3,82**	**3,85**	**3,81**	**3,58**	**3,67**	**3,65**	**3,61**	**3,56**	**3,79**	**3,76**	**3,78**
		ηs heat $_{30/35°C}$	**%**	**150**	**151**	**149**	**140**	**144**	**143**	**141**	**139**	**149**	**147**	**148**
		P_{rated}	kW	31,6	33,5	36,4	42,7	49,8	55,0	59,9	68,4	87,0	99,6	109,3
Cooling Full load performances*	CA1	Nominal capacity	kW	41,0	43,1	50,3	60,2	65,2	74,3	87,0	99,9	114,2	131,6	147,2
		EER	kW/kW	2,89	2,69	2,66	2,97	2,90	2,66	2,88	2,84	2,93	2,85	2,66
Seasonal energy efficiency**		SEER $_{12/7\ °C}$ Comfort low temp.	kWh/kWh	4,19	4,23	4,18	4,34	4,25	4,03	4,48	4,86	4,88	4,20	4,09
		SEPR $_{12/7\ °C}$ Process high temp.	kWh/kWh	6,08	5,93	5,69	6,13	5,87	5,39	5,82	5,82	5,89	5,48	5,24
Unit with Heating Optimized option 119D														
Heating Full load performances*	HA1	**Nominal capacity**	**kW**	**44,4**	**48,2**	**54,6**	**62,2**	**68,9**	**62,3**	**94,4**	**107,8**	**120,5**	**137,4**	**123,3**
		COP	**kW/kW**	**4,02**	**4,09**	**3,99**	**3,93**	**3,92**	**3,15**	**3,94**	**3,87**	**3,88**	**3,90**	**3,13**
	HA2	**Nominal capacity**	**kW**	**43,1**	**47,4**	**53,9**	**60,2**	**67,9**	**76,3**	**92,9**	**105,8**	**119,0**	**135,6**	**151,1**
		COP	**kW/kW**	**3,18**	**3,29**	**3,23**	**3,15**	**3,20**	**3,17**	**3,25**	**3,18**	**3,18**	**3,20**	**3,15**
Seasonal energy efficiency**	HA1	**SCOP$_{30/35°C}$**	**kWh/kWh**	**3,97**	**4,00**	**3,96**	**3,78**	**3,88**	**3,89**	**3,77**	**3,71**	**3,95**	**3,98**	**4,00**
		ηs heat $_{30/35°C}$	**%**	**156**	**157**	**155**	**148**	**152**	**153**	**148**	**145**	**155**	**156**	**157**
		P_{rated}	kW	31,7	33,6	36,4	42,9	50,0	55,1	60,3	68,8	87,5	99,8	109,4
Cooling Full load performances*	CA1	Nominal capacity	kW	38,9	41,1	48,1	57,5	62,7	71,8	83,4	96,0	109,6	127,1	142,7
		EER	kW/kW	2,75	2,57	2,56	2,85	2,80	2,59	2,77	2,74	2,83	2,76	2,58
Seasonal energy efficiency**		SEER $_{12/7\ °C}$ Comfort low temp.	kWh/kWh	3,95	4,00	3,98	4,15	4,06	3,89	4,29	4,63	4,66	4,10	4,02
		SEPR $_{12/7\ °C}$ Process high temp.	kWh/kWh	5,68	5,56	5,39	5,79	5,56	5,17	5,52	5,49	5,58	5,33	5,16
Sound levels														
Unit + option 16														
Sound power(1)			dB(A)	82	83	84	89	89,5	89,5	92	92	92	92,5	92
Sound pressure at 10 m(2)			dB(A)	50	52	53	58	58	58	60	61	60	61	60,0
Standard unit														
Sound power(1)			dB(A)	82	83	84	89	89,5	89,5	92	92	92	92,5	92
Sound pressure at 10 m(2)			dB(A)	50	52	53	58	58	58	60	61	60	61	60,0
Unit + option 15LS(3)														
Sound power(1)			dB(A)	78,5	79	80,5	80,5	80,5	80,5	83,5	83,5	83,5	83,5	83,5
Sound pressure at 10 m(2)			dB(A)	47	48	49	49	49	49	52	52	52	52	52

*	In accordance with standard EN14511-3:2018.
**	In accordance with EN14825:2018, average climatic conditions.
HA1	Heating mode conditions: Water type heat exchanger water inlet/outlet temperature 30 °C/35 °C, outdoor air temperature tdb/twb = 7 °C db/6 °C wb, evaporator fouling factor 0 m^2. k/W
HA2	Heating mode conditions: Water type heat exchanger water inlet/outlet temperature 40 °C/45 °C, outdoor air temperature tdb/twb = 7 °C db/6 °C wb, evaporator fouling factor 0 m^2. k/W
CA1	Cooling mode conditions: evaporator water inlet/outlet temperature 12 °C/7 °C, outdoor air temperature 35 °C, evaporator fouling factor 0 m^2. k/W
ηs heat $_{30/35°C}$ & SCOP $_{30/35°C}$	**Values in bold comply with Ecodesign Regulation (EU) No. 813/2013 for Heating applications**
SEER $_{12/7\ °C}$ & SEPR $_{12/7\ °C}$	Applicable Ecodesign regulation (EU) No. 2016/2281
(1)	In dB ref=10^{-12} W, (A) weighting. Declared dual-number noise emission value in accordance with ISO 4871 with an uncertainty of +/-3 dB(A). Measured in accordance with ISO 9614-1 and certified by Eurovent.
(2)	In dB ref 20 µPa, (A) weighting. Declared dual-number noise emission value in accordance with ISO 4871 with an uncertainty of +/-3 dB(A). For information, calculated from the sound power Lw(A).
(3)	Options: 15LS = Very low noise level, 116W = Variable-speed high pressure dual-pump hydraulic module, 307 = Water buffer tank module

EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com

Eurovent certified values

---

* The availability of sizes and options depends on the country. Please contact your local commercial dealer for more information.

PHYSICAL DATA, SIZES 040R TO 160R

30RQ		040R	045R	050R	060R	070R	080R	090R	100R	120R	140R	160R
Dimensions												
Standard unit												
Length	mm	2109	2109	2109	2109	2109	2109	2275	2275	2275	2275	2275
Width	mm	1090	1090	1090	1090	1090	1090	2125	2125	2125	2125	2125
Height	mm	1330	1330	1330	1330	1330	1330	1330	1330	1330	1330	1330
Unit height (option 12)	mm	1372	1372	1372	1372	1372	1372	1372	1372	1372	1372	1372
Unit height (option 307)	mm	1931	1931	1931	1931	1931	1931	1931	1931	1931	1931	1931
Unit height (option 12 +307)	mm	1973	1973	1973	1973	1973	1973	1973	1973	1973	1973	1973
Operating weight(4)												
Standard unit	kg	444	446	469	496	506	515	759	818	866	996	1000
Unit + single high-pressure pump option	kg	464	466	489	516	526	535	779	838	891	1021	1025
Unit + dual high-pressure pump option	kg	491	493	516	543	553	562	805	864	923	1054	1058
Unit + single high-pressure pump and buffer tank options	kg	800	802	825	852	862	871	1174	1233	1286	1416	1420
Unit + dual high-pressure pump and buffer tank options	kg	827	829	852	879	889	898	1200	1259	1318	1449	1453
Compressors		Hermetic Scroll 48,3 r/s										
Circuit A		2	2	2	2	2	2	2	3	3	2	2
Circuit B											2	2
No. of power stages		2	2	2	2	2	2	2	3	3	4	4
Refrigerant(4)		R-32 / A2L/ PRP= 675 in accordance with AR4										
Circuit A	kg	7,30	7,30	7,80	8,70	8,95	9,20	15,20	15,70	19,60	8,95	9,15
	tCO_2e	4,9	4,9	5,3	5,9	6,0	6,2	10,3	10,6	13,3	6,0	6,2
Circuit B	kg										8,95	9,15
	tCO_2e										6,0	6,2
Oil		Oil type										
Circuit A	l	6,0	6,0	6,6	6,6	7,2	7,2	7,2	10,8	10,8	7,2	7,2
Circuit B	l										7,2	7,2
Capacity control		SmartVu™										
Minimum capacity	%	50	50	50	50	50	50	50	33	33	25	25
PED category		III										
Condenser		Grooved copper tubes and aluminium fins										
Fans		Axial Flying bird™ 6 with rotating shroud										
Standard unit												
Quantity		1	1	1	1	1	1	2	2	2	2	2
Maximum total air flow	l/s	4034	4034	4034	5613	5613	5613	10904	10904	10904	11226	11226
Maximum rotation speed	r/s	12	12	12	16	16	16	16	16	16	16	16
Evaporator		Dual-circuit plate heat exchanger										
Water volume	l	3,55	4	4,44	5,18	6,07	6,96	7,4	8,44	9,92	12,69	14,31
Max. water-side operating pressure without hydronic module	kPa	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Hydronic module (option)		Pump, Victaulic screen filter, relief valve, water and air vent valve, pressure sensors										
Pump		Centrifugal pump, monocell, 48,3 r/s, low- or high-pressure (as required), single or dual (as required)										
Expansion tank volume (Option 293)	l	12	12	12	12	12	12	35	35	35	35	35
Buffer tank volume (Option 307)	l	208	208	208	208	208	208	208	208	208	208	208
Max. water-side operating pressure with hydronic module	kPa	400	400	400	400	400	400	400	400	400	400	400
Water connections with or without hydronic module		Victaulic® type										
Connections	inches	2	2	2	2	2	2	2	2	2	2	2
External diameter	mm	60,3	60,3	60,3	60,3	60,3	60,3	60,3	60,3	60,3	60,3	60,3
Casing paint colour		Colour code RAL 7035 & 7024										

(3) Options: 15LS = Very low noise level, 116W = Variable-speed high pressure dual-pump hydraulic module, 307 = Water buffer tank module,

(4) Values are guidelines only. Refer to the unit name plate.

* The availability of sizes and options depends on the country. Please contact your local commercial dealer for more information.

ELECTRICAL SPECIFICATIONS

30RB/30RQ		040R	045R	050R	055R	060R	070R	080R	090R	100R	120R	140R	160R
Power circuit supply													
Nominal voltage	V-ph-Hz	400 - 3 - 50											
Voltage range	V	360 - 440											
Control circuit supply		24 V via internal transformer											
Maximum operating input power(1) or (2)													
Circuit A&B	kW	19	21	24	24	28	31	36	41	48	55	63	71
Power factor at maximum power(1) or (2)													
Displacement Power Factor (Cos Phi), standard unit		0,81	0,82	0,82	0,82	0,84	0,84	0,85	0,82	0,84	0,85	0,84	0,85
Nominal unit current draw(4)													
Standard unit	A	26	29	35	35	36	46	52	59	71	81	91	104
Maximum operating current draw (Un)(1) or (2)													
Standard unit	A	34	37	42	42	48	54	60	72	84	93	108	121
Maximum current (Un-10%)(1) or (2)													
Standard unit	A	37	39	44	44	51	58	65	77	89	99	115	129
Maximum start-up current (Un)(2) + (3)													
Standard unit	A	116	118	165	165	169	177	191	238	206	223	231	251

(1) Values at the unit's permanent maximum operating condition (as shown on the unit's nameplate).
(2) Values at the unit's maximum operating condition (as shown on the unit's nameplate).
(3) Maximum operating current of the smallest compressor(s) + fan current + locked rotor current of the largest compressor.
(4) Standardised EUROVENT conditions, water-cooled exchanger inlet/outlet = 12 °C/7 °C, outdoor air temperature = 35 °C.

Short-circuit withstand current (TN system)(1)

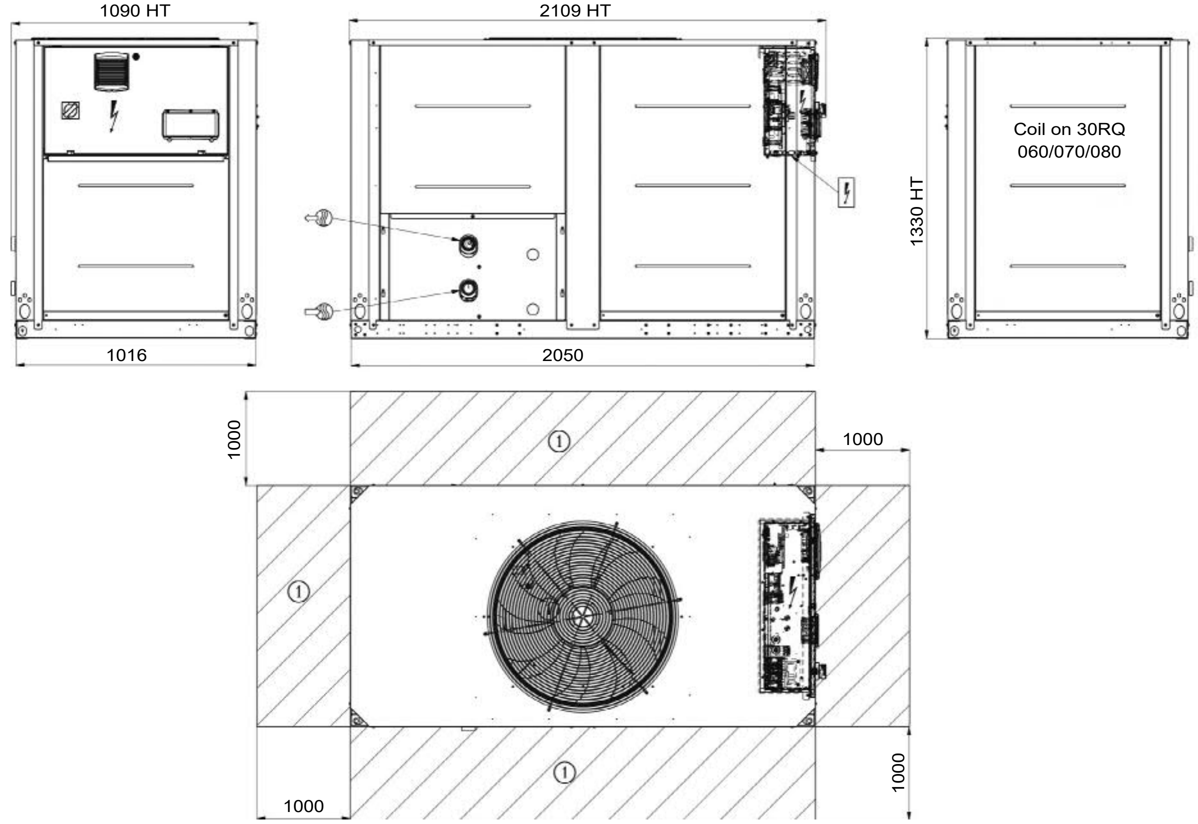
30RB/30RQ		040R	045R	050R	055R	060R	070R	080R	090R	100R	120R	140R	160R
Rated short-circuit withstand currents													
Rated short time (1s) current - Icw	kA eff	3,36	3,36	3,36	3,36	3,36	3,36	5,62	5,62	5,62	5,62	5,62	5,62
Rated peak current - Ipk	kA pk	20	20	20	20	20	20	15	20	20	15	20	15
Value with upstream electrical protection (1)													
Rated conditional short circuit current Icc	kA eff	40	40	40	40	40	40	40	40	40	40	30	30
Associated protection - type/supplier		Circuit breaker/Schneider											
Associated protection - rating/reference		NS100H	NS100H	NS100H	NS100H	NS100H	NS100H	NS100H	NS100H	NS160H	NS160H	NS250H	NS250H

(1) If another current limitation protection device is used, its time-current and thermal constraint (I²t) trip characteristics must be at least equivalent to those of the recommended protection.
Note: The short circuit current withstand capability values above have been established for the TN system.

* The availability of sizes and options depends on the country. Please contact your local commercial dealer for more information.

DIMENSIONS/CLEARANCES

30RB/30RQ 040R-080R, units without water buffer tank module



Key:
All dimensions are given in mm.

① Clearances required for maintenance and air flow

② Clearance recommended for coil removal

≋⇦ Water inlet

⇦≋ Water outlet

≀≀≀ Air outlet, do not obstruct

ϟ Control box

NOTE: Non-contractual drawings.

When designing a system, refer to the certified dimensional drawings provided with the unit or available on request.

Refer to the certified dimensional drawings for:

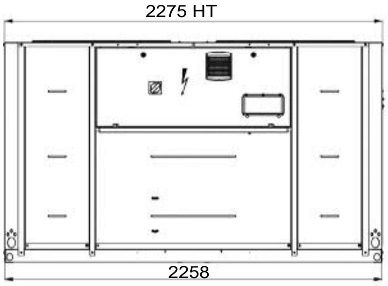
- **The location of the fixing points,**
- **The weight distribution,**
- **The coordinates of the centre of gravity, hydraulic and electrical connections,**
- **Details of the 12/12A/23B option connections.**

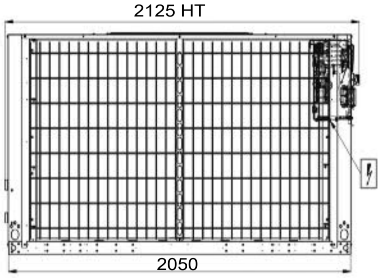
---

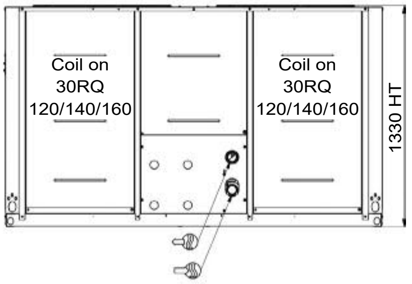
* The availability of sizes and options depends on the country. Please contact your local commercial dealer for more information.

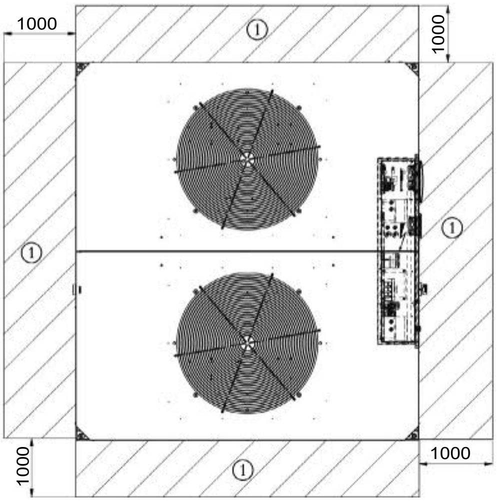
DIMENSIONS/CLEARANCES

30RB/30RQ 090R-160R, units without water buffer tank module









Key:
All dimensions are given in mm.

① Clearances required for maintenance and air flow

② Clearance recommended for coil removal

Water inlet

Water outlet

Air outlet, do not obstruct

ϟ Control box

NOTE: Non-contractual drawings.

When designing a system, refer to the certified dimensional drawings provided with the unit or available on request.

Refer to the certified dimensional drawings for:

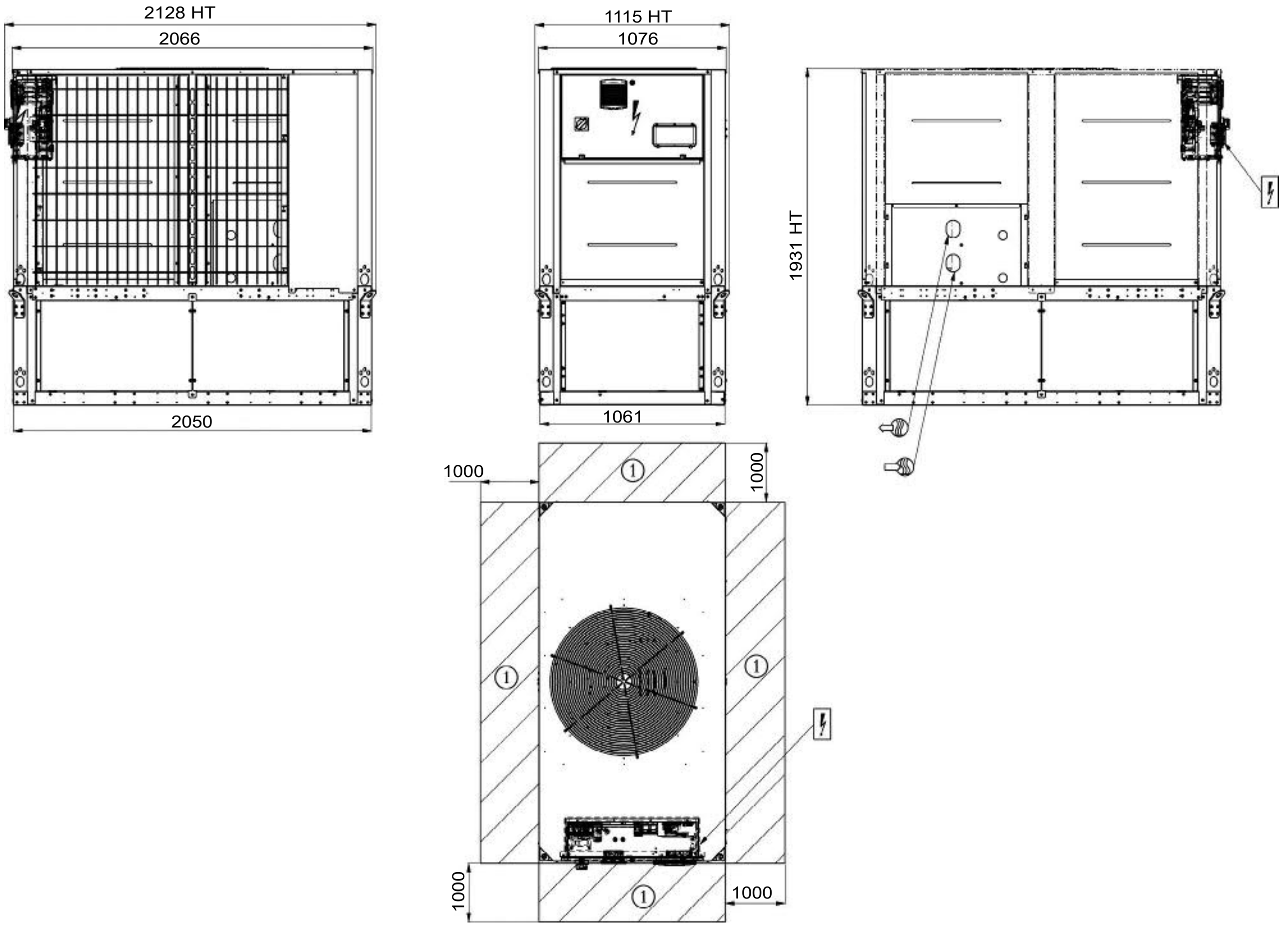
- **The location of the fixing points,**
- **The weight distribution,**
- **The coordinates of the centre of gravity, hydraulic and electrical connections,**
- **Details of the 12/12A/23B option connections.**

---

* The availability of sizes and options depends on the country. Please contact your local commercial dealer for more information.

DIMENSIONS/CLEARANCES

30RB/30RQ 040R-080R, units with water buffer tank module



Key:
All dimensions are given in mm.

① Clearances required for maintenance and air flow

② Clearance recommended for coil removal

Water inlet

Water outlet

⦚ Air outlet, do not obstruct

ϟ Control box

NOTE: Non-contractual drawings.

When designing a system, refer to the certified dimensional drawings provided with the unit or available on request.

Refer to the certified dimensional drawings for:

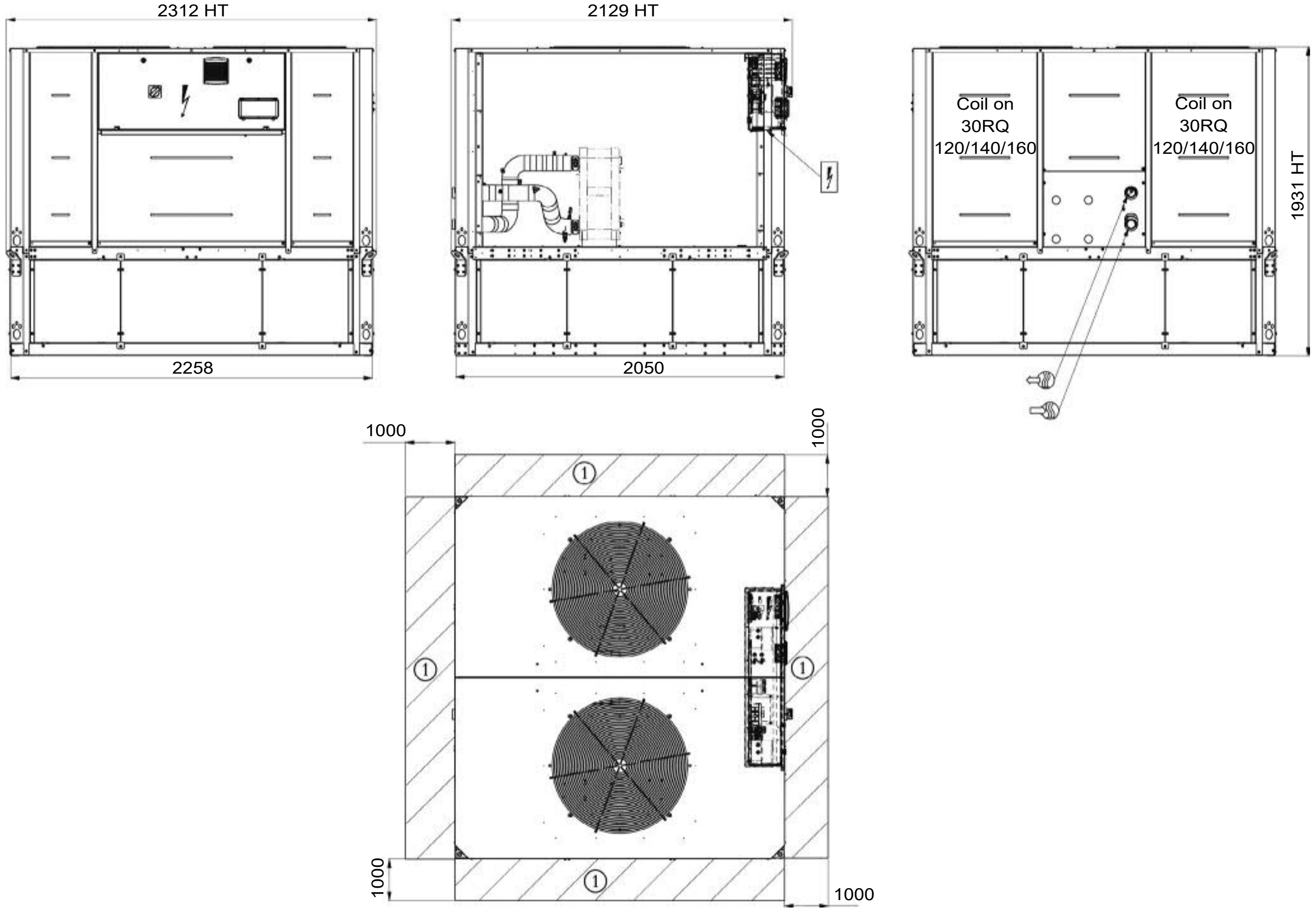
- **The location of the fixing points,**
- **The weight distribution,**
- **The coordinates of the centre of gravity, hydraulic and electrical connections,**
- **Details of the 12/12A/23B option connections.**

---

* The availability of sizes and options depends on the country. Please contact your local commercial dealer for more information.

DIMENSIONS/CLEARANCES

30RB/30RQ 090R-160R, units with water buffer tank module



Key:
All dimensions are given in mm.

① Clearances required for maintenance and air flow

② Clearance recommended for coil removal

Water inlet

Water outlet

Air outlet, do not obstruct

⚡ Control box

NOTE: Non-contractual drawings.

When designing a system, refer to the certified dimensional drawings provided with the unit or available on request.

Refer to the certified dimensional drawings for:

- **The location of the fixing points,**
- **The weight distribution,**
- **The coordinates of the centre of gravity, hydraulic and electrical connections,**
- **Details of the 12/12A/23B option connections.**

---

* The availability of sizes and options depends on the country. Please contact your local commercial dealer for more information.

Catalogue of McQuay MCS135.1

Air Cooled Single Screw Chiller

Models:	MCS050.1-380.2F
Cooling Capacity:	161kW-1370kW
Refrigerant:	R22/R407C

McQuay®
Air Conditioning

Engineered for flexibility and performance.™

Model			**MCS120.1**	**MCS135.1**	**MCS150.1**	**MCS170.1**	**MCS185.1**
*1 **Normal cooling capacity**		kW	422	455	525	625	654
		USRT	120	129	149	178	186
		kcal/h	362,900	391,300	451,500	537,500	562,400
		Btu/h	1,440,700	1,553,400	1,792,400	2,133,800	2,232,800
Casing/Color			Paintable Galvanized Steel Plate / Ivory White				
Capacity Steps			0,25 ~ 100%				
Power Supply			380~400V/3~50Hz				
Compressor	**Type**		Semi-hermetic Single-screw				
	No. × Model		1×3221	1×4221	1×4222	1×4223	1×4223
	Motor Input	kW	120	126	149	182	170
Refrigerant Oil	**Model**		LPT68				
	Charge	L	18	16	16	16	16
Evaporator	**Type**		High-efficiency Shell and Tube				
	Flow Rate	L/min.	1210	1304	1505	1792	1875
	Pressure Drop	kPa	37	37	37	32	46
Condenser	**Type**		Cross Fin Coil				
	Rows × Stages		3×44	3×44	3×44	3×44	3×44
	Fit Pitch	mm	1.8	1.8	1.8	1.8	1.8
	Face Area	m^2	16.09	16.09	20.12	20.12	24.14
Fan	**Type**		Propeller (Direct Drive)				
	No.		8	8	10	10	12
	Air Flow Rate	m^3/min.	2,933	2,933	3,667	3,667	4,400
		cfm	103,547	103,547	129,433	129,433	155,320
	Motor Input	kW	16	16	20	20	24
Refrigerant	**Type**		R22				
	No. of Circuits		1	1	1	1	1
	Control		Electronic Expansion Valve				
Water Piping Connection		inch	8				
Compressor Acoustic Insulation Material			Polyurethane Foaming				
Unit Input		kW	136	142	169	202	194
Unit Dimensions	**D**	mm	4100	4100	5000	5000	5900
	W	mm	2260	2260	2260	2260	2260
	H	mm	2360	2360	2360	2360	2360
Weight		kg	4290	4290	4795	4795	5370
Operation Weight		kg	4440	4440	4975	4975	5560
Standard Accessories			Unit Operation Instructions, Conformity Certificate, Warranty Application Form, Spring Damper, Water Flow Switch.				

Notes:

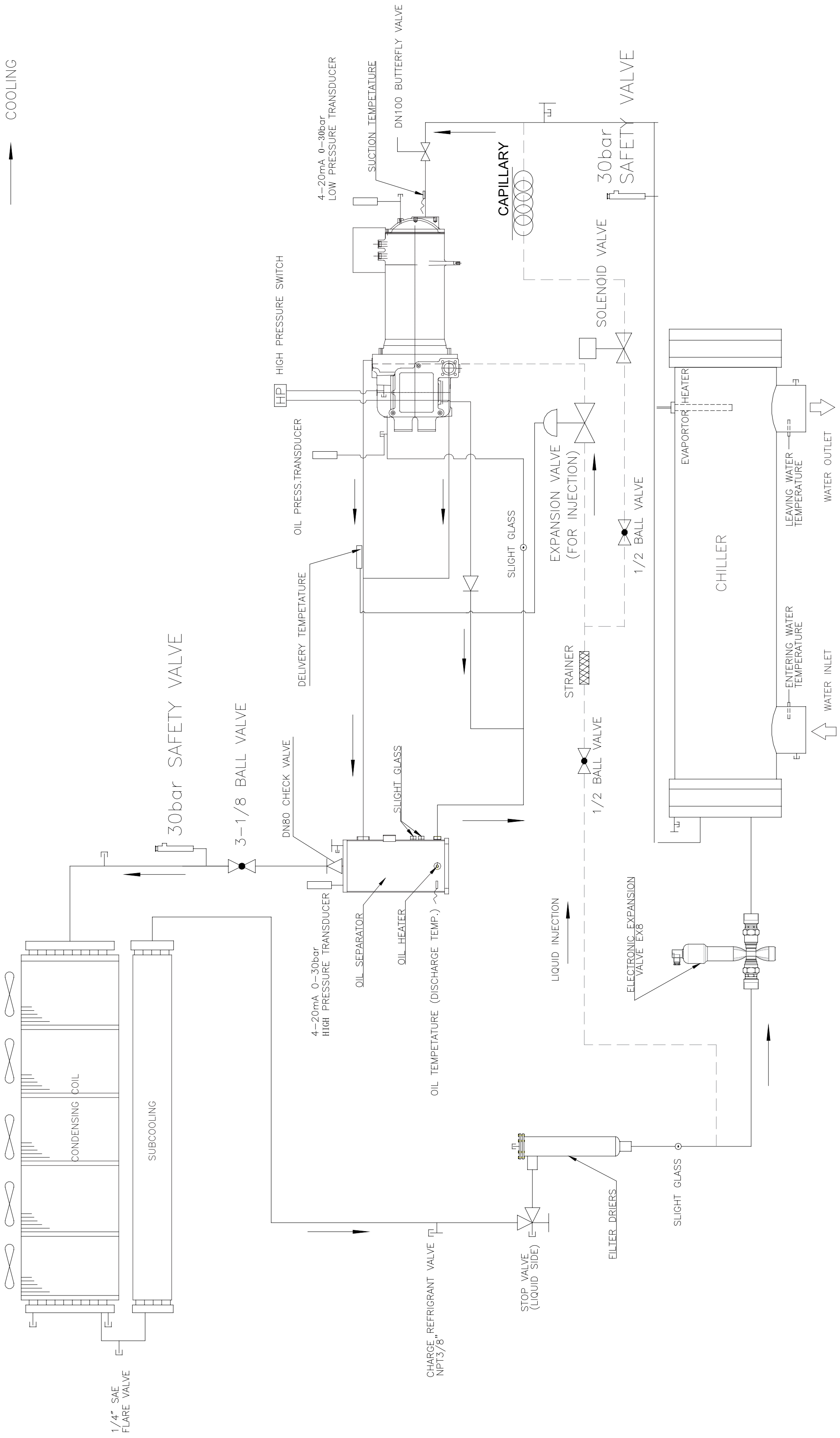
*1. Cooling capacity is based on the following conditions:
Entering chilled water temp. 12°C, Leaving chilled water temp. 7°C, ambient temp. 35°C DB

2. The following safity devices are equipped as standard.

- High pressure (pressure switch)
- Low pressure (pressure sensor)
- Compressor thermal
- Condensation fan thermal
- High discharge temperature on the compressor
- Phase monitor
- Star/Delta transition failed
- Low-pressure ratio
- High oil pressure drop
- Low oil pressure
- Freeze protection
- Load stepless adjust
- Trouble record

Conversion Formulae
kcal/h=kW×860
Btu/h=kW×3414
cfm=m^3/min×35.3

MCS135.1~185.1,MCS260.2~380.2F



11. Sound Level

11.1 ST Overall Sound Level and Octave Band Level

Model	Octave band level								Overall dBA
Hz	63	125	250	500	1000	2000	4000	8000	
MCS050.1FST	46.4	65.5	71.6	76.2	75.3	71.3	64.9	56.4	74.0
MCS060.1FST	43.5	56.6	63.3	69.4	70.0	65.6	60.2	56.0	74.0
MCS070.1FST	53.7	64.6	70.3	71.0	69.7	65.2	57.4	49.3	76.0
MCS080.1FST	48.0	63.6	69.2	71.0	69.6	68.0	61.4	53.9	76.0
MCS100.1FST	53.9	66.4	72.4	71.2	70.9	65.5	59.6	53.3	77.0
MCS120.1FST	40.5	58.2	65.8	71.8	73.5	68.2	60.6	54.1	77.0
MCS135.1FST	46.5	58.5	68.3	71.0	72.8	69.4	62.3	54.9	77.0
MCS150.1FST	51.9	69.1	72.4	72.9	72.2	64.5	57.4	50.6	78.0
MCS170.1FST	51.8	66.7	69.9	73.3	73.6	68.2	60.3	51.4	78.0
MCS185.1FST	46.7	65.2	70.8	74.6	74.0	69.5	62.0	52.1	79.0
MCS200.2FST	45.8	65.9	69.8	73.6	74.1	71.7	63.0	56.7	79.0
MCS220.2FST	49.3	66.7	71.7	74.3	75.2	72.2	65.5	58.5	80.0
MCS235.2FST	54.2	66.6	75.0	74.0	74.5	70.1	63.7	57.2	80.5
MCS260.2FST	46.4	65.5	71.6	76.2	75.3	71.3	64.9	56.4	80.5
MCS285.2FST	53.7	68.1	73.3	77.3	76.5	72.9	67.0	59.1	81.0
MCS310.2FST	58.8	68.1	71.9	74.9	76.6	73.7	66.9	60.0	81.0
MCS330.2FST	46.4	65.5	71.6	76.2	75.3	71.3	64.9	56.4	81.0
MCS350.2FST	45.4	60.5	72.1	76.0	75.5	71.6	65.4	56.8	81.0
MCS380.2FST	54.6	67.6	73.2	76.6	76.6	72.7	66.4	59.2	81.5

Notes:

Average sound pressure level is according to ISO 3744, semispheric free field conditions.
Sound pressure levels are referred to units furnished without hydronic kit.
Measuring location is at 1m from the unit in semispheric free field (rif. 2×10^{-5} Pa).

Catalogue of Mitsubishi FDC125VS

Manual No. '11 • PAC-T-160

MHI

THCHNICAL MANUAL

HYPER INVERTER PACKAGED AIR-CONDITIONERS

(Split system, Air to air heat pump type)

FLOOR STANDING TYPE

Single type

- Single phase use
  FDF71VNXVD
  100VNXVD
  125VNXVD
  140VNXVD
- 3 phase use
  FDF100VSXVD
  125VSXVD
  140VSXVD

Twin type

- Single phase use
  FDF140VNXPVD
- 3 phase use
  FDF140VSXPVD

MICRO INVERTER PACKAGED AIR-CONDITIONERS

(Split system, Air to air heat pump type)

FLOOR STANDING TYPE

Single type

- Single phase use
  FDF100VNVD
  125VNVD
  140VNVD
- 3 phase use
  FDF100VSVD
  125VSVD
  140VSVD

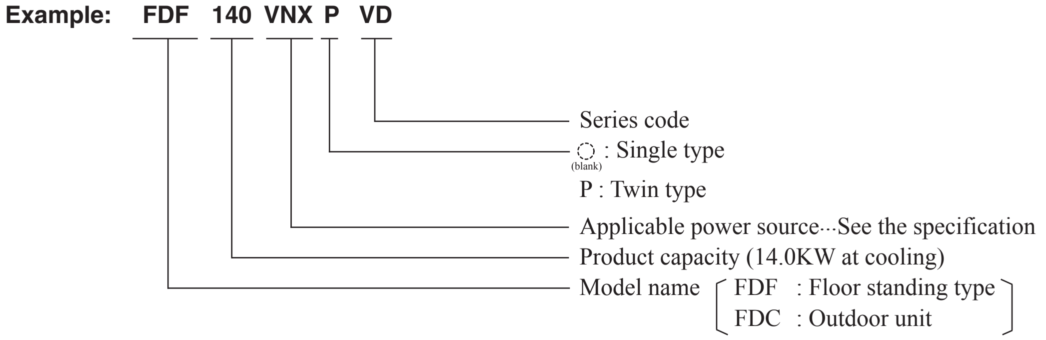
Twin type

- Single phase use
  FDF140VNPVD
- 3 phase use
  FDF140VSPVD
  200VSPVD
  250VSPVD

MITSUBISHI HEAVY INDUSTRIES, LTD.

CONTENTS

How to read the model name



Adapted to **RoHS** directive

Item \ Model		**FDF125VSVD**	
		Indoor unit **FDF125VD**	Outdoor unit **FDC125VS**
Power source			380-415V 3N~50Hz / 380V 3N~60Hz
Operation data		Cooling	Heating
Nominal capacity	kW	12.5 [5.0 (Min.)~14.0 (Max.)]	14.0 [4.0 (Min.)~16.0 (Max.)]
Power consumption	kW	4.4	4.36
Running current	A	6.5 / 6.8	6.5 / 6.8
Power factor	%	98	97
Inrush current	A	5 < Max.running current 15 >	
Sound Pressure Level	dB(A)	P-Hi : 54 Hi : 50 Me : 48 Lo : 44	Cooling : 50 Heating : 51
Exterior dimensions Height x Width x Depth	mm	1,850 × 600 × 320	845 × 970 × 370
Exterior appearance (Munsell color)		Ceramic White (N8.0) near equivalent	Stucco White (4.2Y7.5/1.1) near equivalent
Net weight	kg	52	83
Refrigerant equipment			
Compressor type & Q'ty		—	RMT5126MDE3 × 1
Starting method		—	Direct line start
Refrigerant oil	·	—	0.9 M-MA68
Heat exchanger		Louver fine & inner grooved tubing	M shape fin & inner grooved tubing
Refrigerant control		—	Electronic expansion valve
Air handling equipment			
Fan type & Q'ty		Centrifugal fan × 1	Propeller fan × 1
Motor <Starting method>	W	157 < Direct line start >	86 < Direct line start >
Air flow (Standard)	CMM	P-Hi : 29 Hi : 26 Me : 23 Lo : 19	Cooling : 75, Heating : 73
External static pressure	Pa	0	—
Outside air intake		Not possible	—
Air filter, Q'ty		Plastic net × 1 (Washable)	—
Shock & vibration absorber		Rubber sleeve (for fan motor)	Rubber sleeve (for Compressor)
Insulation (noise & heat)		Polyurethane form	—
Electric heater	W	—	20 (Crank case heater)
Remote controller		RC-E4 Installed / wireless : RCN-KIT3-E (option)	
Room temperature control		Thermostat by electronics	—
Safety equipment		Overload protection for fan motor Frost protection thermostat	Internal thermostat for fan motor Abnormal discharge temperature protection.
Installation data Refrigerant piping size	mm	Liquid line: I/U φ9.52 (3/8") Pipe φ9.52 (3/8") × 0.8 O/U φ9.52 (3/8") Gas line: φ 15.88 (5/8") φ 15.88 (5/8") × 1.0 φ15.88 (5/8")	
Connecting method		Flare piping	Flare piping
Refrigerant line (one way) length		Max.50m	See page 43
Vertical height difference between outdoor unit and indoor unit		Max.30m (Outdoor unit is higher) Max.15m (Outdoor unit is lower)	
Refrigerant Quantity		R410A 3.8kg in outdoor unit (incl. the amount for the piping of : 30m)	
Drain pump		—	—
Drain		Hose Connectable with VP20	Holes size φ20 × 3pcs
Insulation for piping		Necessary (both Liquid & Gas lines)	
Standard Accessories		Mounting kit	Edging

Notes (1) The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature	
Operation	DB	WB	DB	WB
Cooling	27°C	19°C	35°C	24°C
Heating	20°C		7°C	6°C

(2) This packaged air-conditioner is manufactured and tested in conformity with the ISO.

(3) Sound pressure level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient temperature.

(4) The operation data indicates when the air-conditioner is operated at 400V50Hz or 380V60Hz.

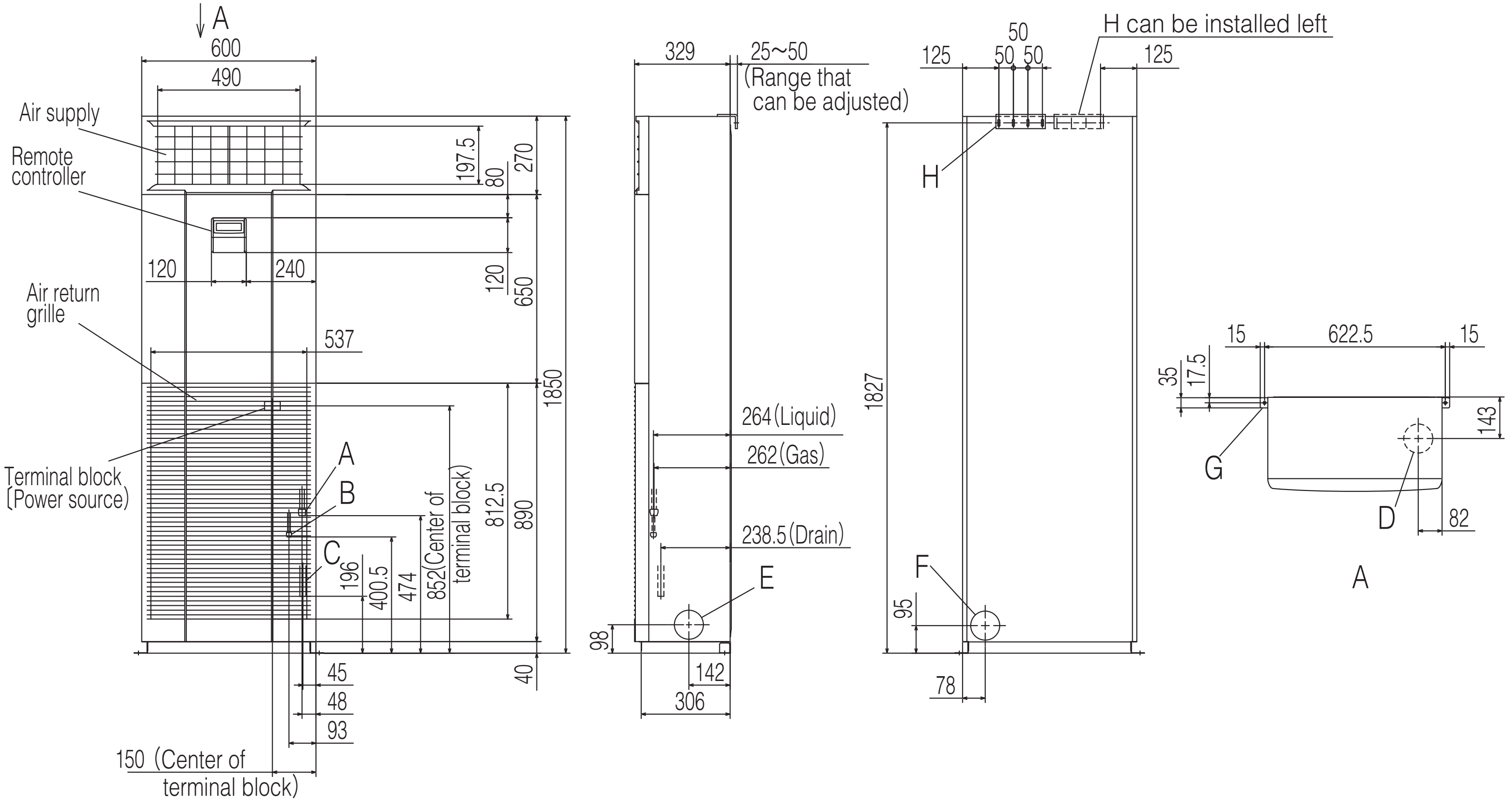
(5) If wireless remote controller is used, only 3-speed fan setting (Hi-Me-Lo) is available.

PGA000Z780

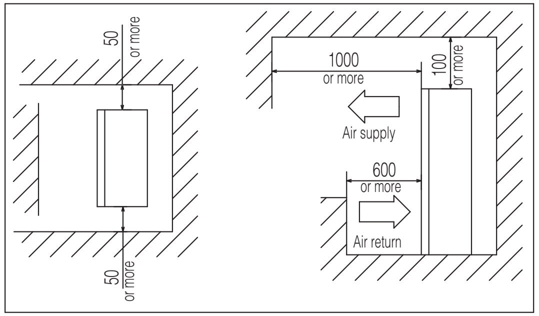
2. EXTERIOR DIMENSIONS

(1) Indoor units

Models All model



Space for installation and service



Symbol	Content	
A	Gas piping	ϕ15.88(5/8") (Flare)
B	Liquid piping	ϕ9.52(3/8") (Flare)
C	Drain piping	ϕ20(VP20)
D	Hole on wall for bottom piping	ϕ100(Resin cap having)
E	Hole on wall for side piping/ Fresh air intake(Both left and right)	ϕ100(Knock out)
F	Hole on wall for rear piping	ϕ100(Knock out)
G	Metal fittings to fix to floor face	M8(2 places)
H	Fall prevention metal fittings	4-7×25(Slot)

Note(1)The model name label is attached on the left lower side panel inside the air return grille.

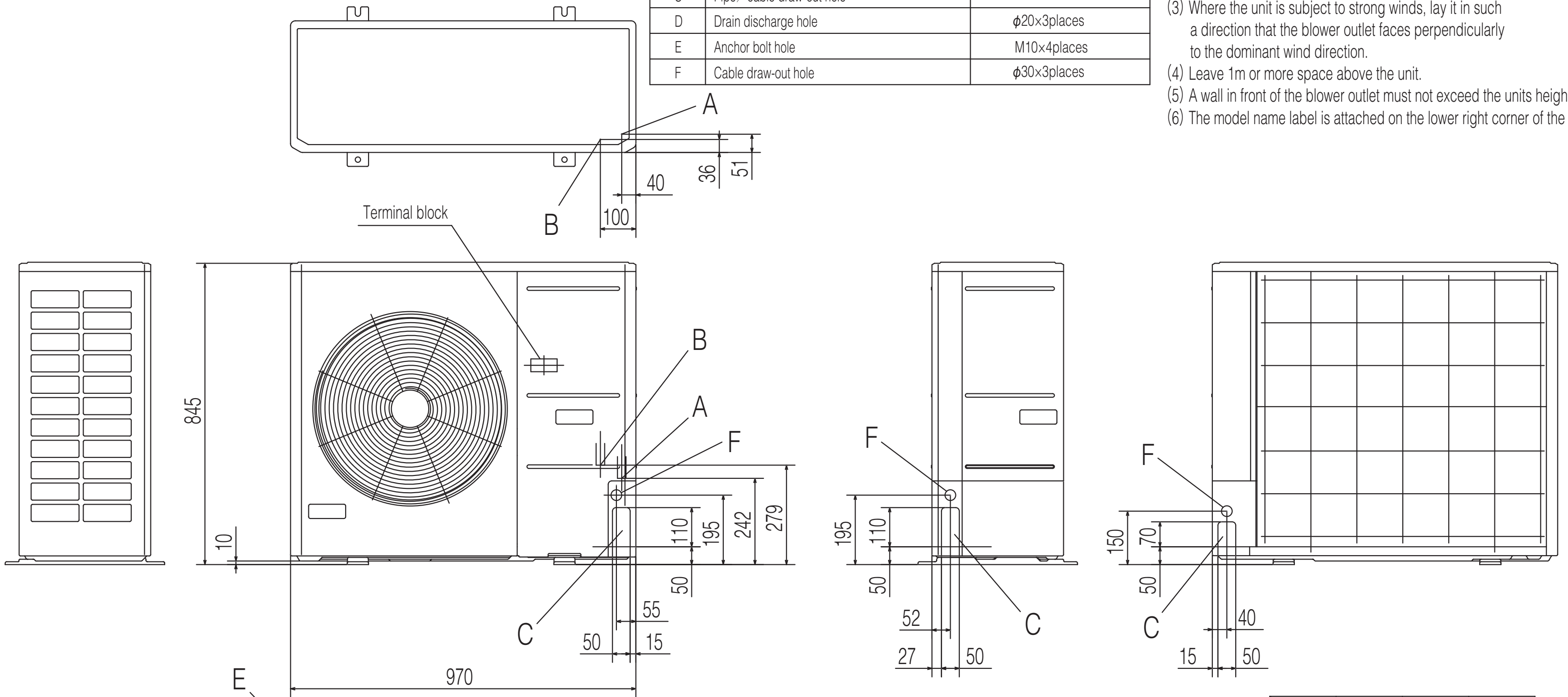
Unit:mm

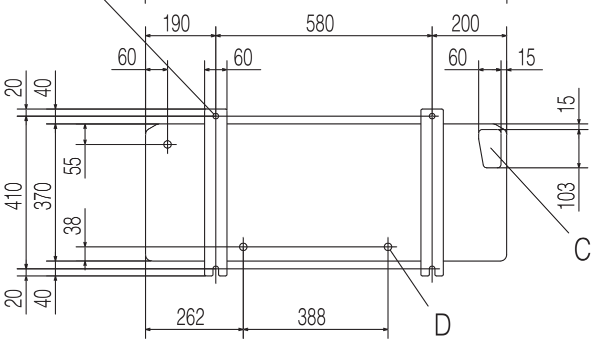
(b) Micro inverter

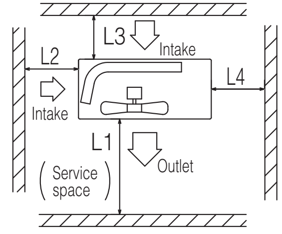
Models FDC100VN, 125VN, 140VN
FDC100VS, 125VS, 140VS

Symbol	Content	
A	Service valve connection (gas side)	ϕ15.88 (5/8") (Flare)
B	Service valve connection (liquid side)	ϕ9.52 (3/8") (Flare)
C	Pipe/cable draw-out hole	
D	Drain discharge hole	ϕ20×3places
E	Anchor bolt hole	M10×4places
F	Cable draw-out hole	ϕ30×3places

Notes
(1) It must not be surrounded by walls on the four sides.
(2) The unit must be fixed with anchor bolts. An anchor bolt must not protrude more the 15mm.
(3) Where the unit is subject to strong winds, lay it in such a direction that the blower outlet faces perpendicularly to the dominant wind direction.
(4) Leave 1m or more space above the unit.
(5) A wall in front of the blower outlet must not exceed the units height.
(6) The model name label is attached on the lower right corner of the front.







Minimum installation space

Dimensions \ Examples of installation	I	II	III
L1	Open	Open	500
L2	300	5	Open
L3	150	300	150
L4	5	5	5

Unit:mm

3. ELECTRICAL WIRING

(1) Indoor units

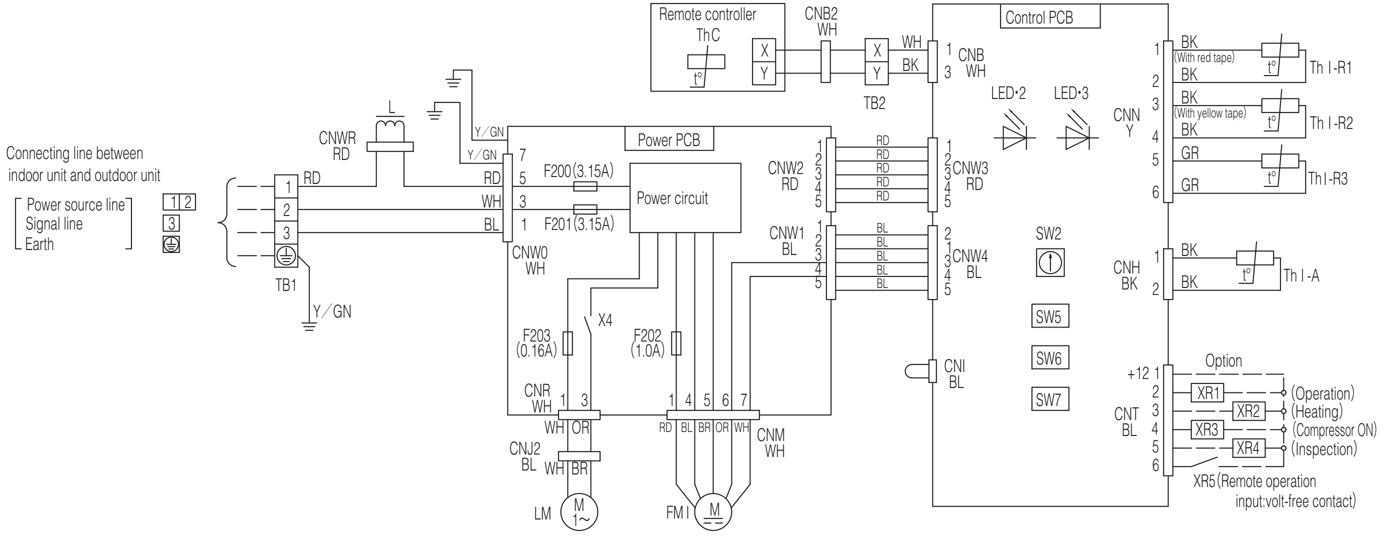
Models All model

Color Marks

Mark	Color	Mark	Color	Mark	Color
BK	Black	GR	Gray	WH	White
BL	Blue	OR	Orange	Y	Yellow
BR	Brown	RD	Red	Y／GN	Yellow／Green

CNB～Z	Connector
F200～203	Fuse
FM I	Fan motor
L	Reactor
LED•2	Indication lamp (Green-Normal operation)
LED•3	Indication lamp(Red-Inspection)
LM	Louver motor
SW2	Remote controller communication address

SW5	Plural units Master／Slave setting
SW6	Model capacity setting
SW7-1	Operation check,Drain motor test run
TB1	Terminal block(Power source) (? mark)
TB2	Terminal block(Signal line) (□mark)
Thc	Thermistor(Remote controller)
ThI-A	Thermistor(Return air)
Th -R1,2,3	Thermistor(Heat exchanger)
X4	Relay for DM



Notes 1. — indicates wiring on site.

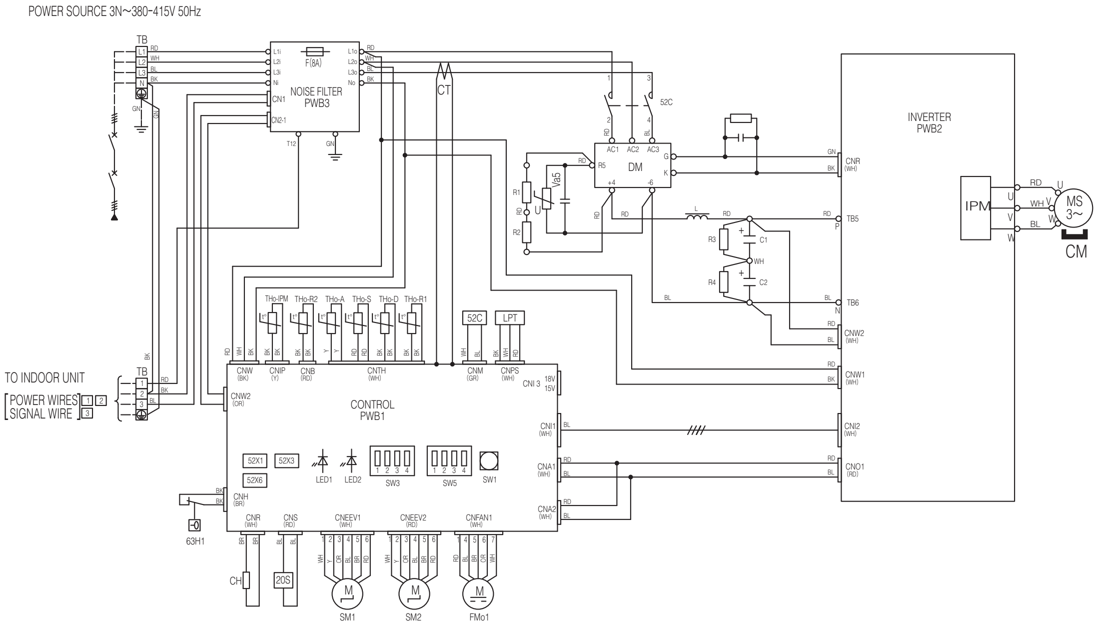
2. See the wiring diagram of outside unit about the line between inside unit and outside unit.

3. Use twin core cable(0.3mm^2 X2)at remote controller line. See spec sheet of remote controller in case that the total length is more than 100m.

4. Do not put remote controller line alongside power source line.

PGA000Z783

Models FDC100VS, 125VS, 140VS



Item	Description
CnA~Z	Connector
CH	Crankcase heater
CM	Compressor motor
CT	Current sensor
DM	Diode module
F	Fuse
FM01	Fan motor
IPM	Intelligent power module
L	Reactor
LED1	Indication lamp(GREEN)
LED2	Indication lamp(RED)
LPT	Low pressure sensor
SM1	Expansion valve for cooling
SM2	Expansion valve for heating
SW1	Pump down switch
SW3,5	Local setting switch
TB	Terminal block
THo-A	Thermistor(Outdoor air temp.)
THo-D	Thermistor(Discharger pipe temp.)
THo-IPM	Thermistor(IPM)
THo-R1,2	Thermistor(Heat exchanger pipe temp.)
THo-S	Thermistor(Suction pipe temp.)
20S	Solenoid valve for 4 way valve
52X1	Auxilliary relay(for CH)
52X3	Auxilliary relay(for 20S)
52X6	Auxilliary relay(for 52C)
63H1	High pressure switch

Mark	Color
BK	Black
BL	Blue
BR	Brown
GR	Gray
P	Pink
OR	Orange
RD	Red
WH	White
Y	Yellow
Y/GN	Yellow/Green

Power cable, indoor-outdoor connecting wires

Model	MAX over current (A)	Power cable size (mm^2)	Power cable length (m)	indoor-outdoor wire size x number (mm^2)	Earth wire size (mm^2)
100	15	3.5	27	Ø1.6mm x 3	Ø1.6mm
125					
140					

At the connection with the duct type indoor unit.

Model	MAX over current (A)	Power cable size (mm^2)	Power cable length (m)	indoor-outdoor wire size x number (mm^2)	Earth wire size (mm^2)
100	16	3.5	26	Ø1.6mm x 3	Ø1.6mm
125	18		23		
140	19		21		

- The specifications shown in the above table are for units without heaters. For units with heaters, refer to the installation instructions or the construction instructions of the indoor unit.
- Switchgear of Circuit breaker capacity which is calculated from MAX. over current should be chosen along the regulations in each country.
- The cable specifications are based on the assumption that a metal or plastic conduit is used with no more than three cables contained in a conduit and a voltage drop is 2%. For an installation falling outside of these conditions, please follow the internal cabling regulations. Adapt it to the regulation in effect in each country.

Local setting switch SW3(Set up at shipment OFF)

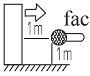
SW3-1	Defrost control change	The defrosting operation interval becomes shorter by turning ON this switch. This switch should be turned ON in the area where outside temperature becomes below the freezing point.
SW3-2	Snow guard fan control	When this switch is turned ON, the outdoor unit fan will run for 30 seconds in every 10 minutes, when outdoor temperature falls to 3 or lower and the compressor is not runnning when the unit is used in a very snowy country, set this switch to ON.
SW3-3,4	Trial operation	Method of trial operation ①Trial operation can be performed by using SW3-3,4. ②Compressor will be in the operation when SW3-3 is ON. ③Cooling trial operation will be performed when SW3-4 is OFF, and heating trial operation when SW3-4 is ON. ④Be sure to turn OFF SW3-3 after the trial operation is finished.

4. NOISE LEVEL

Notes (1) The data are based on the following conditions.
Ambient air temperature: Indoor unit 27℃WB. Outdoor unit 35℃DB.
(2) The data in the chart are measured in an anechoic room.
(3) The noise levels measured in the field are usually higher than the data because of reflection.

(1) Indoor units

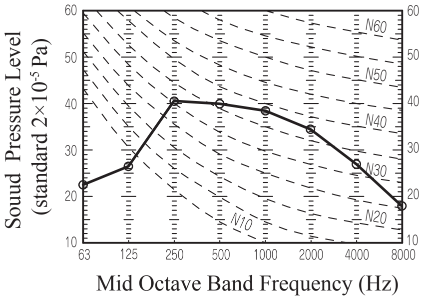
Measured based on JIS B 8616
Mike position as right



Mike (1 m each at front face, forward & height)

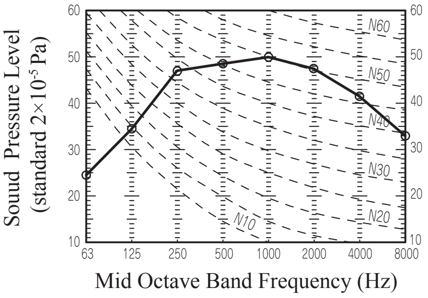
Model FDF71VD

Noise level 42 dB (A) at P-HIGH
39 dB (A) at HIGH
35 dB (A) at MEDIUM
33 dB (A) at LOW



Models FDF100VD, 125VD, 140VD

Noise level 54 dB (A) at P-HIGH
50 dB (A) at HIGH
48 dB (A) at MEDIUM
44 dB (A) at LOW



(2) Outdoor units

Measured based on JIS B 8616

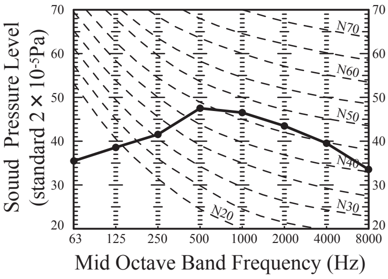
Mike position: at highest noise level in position as mentined below

Distance from front side	1m
Height	1m

(a) Hyper inverter

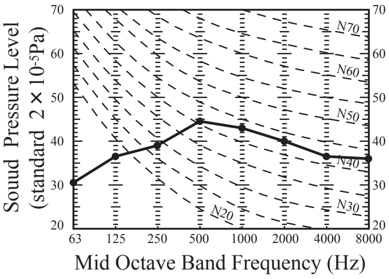
Model FDC71VNX

Cooling noise level 51 dB (A)



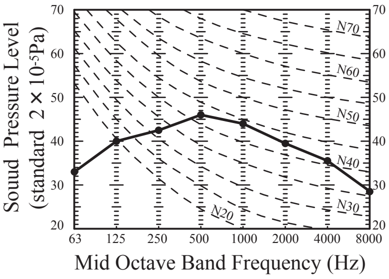
Model FDC71VNX

Heating noise level 48 dB (A)



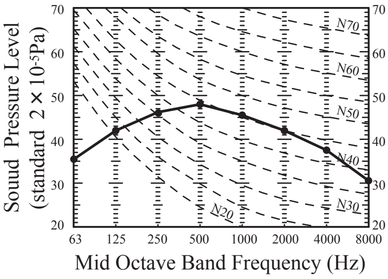
Model FDC100VNX,100VSX

Cooling noise level 48 dB (A)



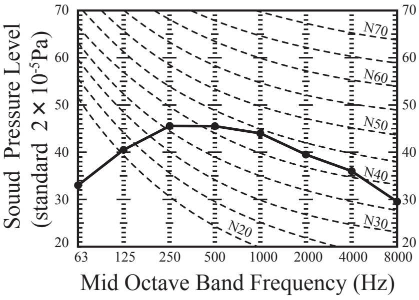
Model FDC100VNX,100VSX

Heating noise level 50 dB (A)



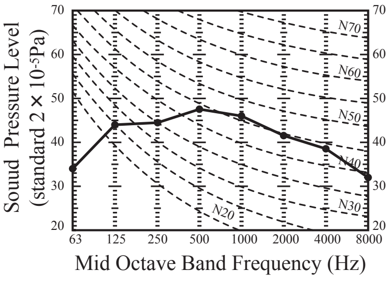
Models FDC125VNX,125VSX

Cooling noise level 48 dB (A)



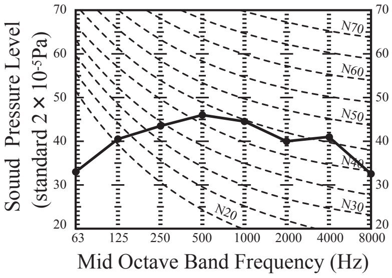
Models FDC125VNX,125VSX

Heating noise level 50 dB (A)



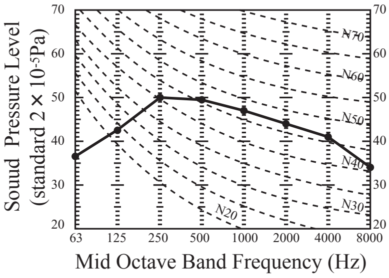
Models FDC140VNX,140VSX

Heating noise level 49 dB (A)



Models FDC140VNX,140VSX

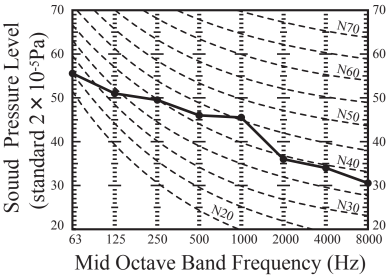
Heating noise level 52 dB (A)



(b) Micro inverter

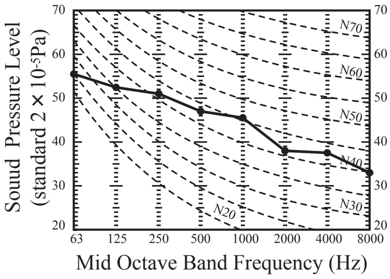
Models FDC100VN,100VS

Noise level 49 dB (A)



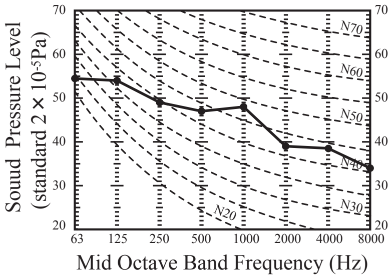
Models FDC125VN,125VS

Cooling noise level 50 dB (A)



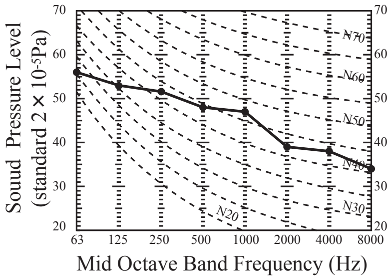
Models FDC125VN,125VS

Heating noise level 51 dB (A)



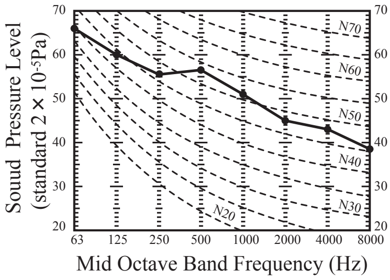
Models FDC140VN,140VS

Noise level 51 dB (A)



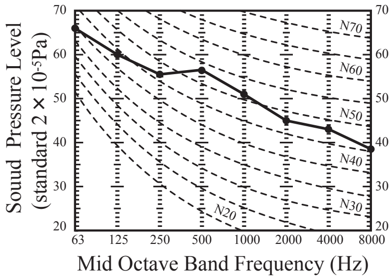
Model FDC200VS

Noise level 57 dB (A)



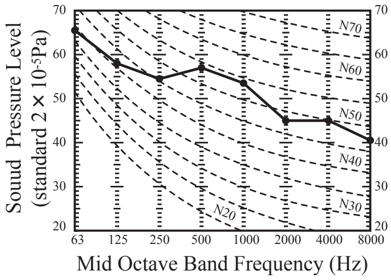
Model FDC250VS

Cooling noise level 57 dB (A)



Model FDC250VS

Heating noise level 58 dB (A)



Catalogue of Mitsubishi FDC400KXE6, FDC450KXE6, FDC504KXE6, FDC560KXE6

MHI

DATA BOOK

DRAFT

Manual No. '08•KX-DB-127

INVERTER DRIVEN MULTI-INDOOR UNIT CLIMATE CONTROL SYSTEM

Alternative refrigerant R410A use models

(OUTDOOR UNIT)

KX6 series **(Heat pump type)**

- **All-in-one type (Used also for combination)**
  FDC335KXE6-K, 400KXE6, 450KXE6, 504KXE6, 560KXE6, 560KXE6-K, 615KXE6, 680KXE6
- **Combined type**
  FDC735KXE6, 800KXE6, 850KXE6, 900KXE6, 960KXE6, 1010HKXE6, 1065KXE6, 1130KXE6, 1180KXE6, 1235KXE6, 1300KXE6, 1360KXE6

This DATA BOOK described relating to an outdoor unit.Regarding the Indoor unit, see Manual No. '08•KX-DB-124.

MITSUBISHI HEAVY INDUSTRIES, LTD.

PREFACE

Combination table for KX4 series and KX6 series

( ) Date of launching in the market

Category			Indoor unit								
	Connectable remote controller		Same series	Same series	Same series	Mixed series	Mixed series	Mixed series	Same or Mixed series	Mixed series	Same series
	3-wire type	RC-E1	KXE4 (2004.4-)	KXE4(A) (2004.6-)	KXE4A (2004.11-)	KXE4A (2004.11-)	KXE4A (2004.11-)	KXE4A (2004.11-)			
		RC-E1R				KXE4R (2006.3-) KXE4BR (2007.4-) KXE5R (2007.4-)	KXE4R (2006.3-) KXE4BR (2007.4-) KXE5R (2007.4-)		KXE4R (2006.3-) KXE4BR (2007.4-) KXE5R (2007.4-)	KXE4R (2006.3-) KXE4BR (2007.4-) KXE5R (2007.4-)	
	Outdoor unit 2-wire type	RC-E3					KXE6 (2008.3-)	KXE6 (2008.3-)		KXE6 (2008.3-)	KXE6 (2008.3-)
Heat pump (2-pipe) systems	FDCA-HKXE4 5HP	(2004.4-)	YES [C]	YES [C]	YES [C]	NO	NO	NO	NO	NO	NO
	FDCA-HKXE4 8-48HP	(2004.4-)	NO	YES [C]	YES [C]	NO	NO	NO	NO	NO	NO
	FDCA-HKXE4A 5HP FDCA-HKXE4R 5,6HP	(2006.2-) (2006.5-)	NO	YES [C]	YES [C]	YES [C]*1	NO	NO	YES [C]*1	NO	NO
	FDCA-HKXE4A 8-48HP FDCA-HKXE4R 8-48HP FDCA-HKXE4BR 8-48HP	(2006.2-) (2006.5-) (2007.4-)	NO	YES [C]	YES [C]	YES [C]	YES [C]	YES [C]	YES [C]	YES [C]	YES [C]
	FDC-KXE6 4,5,6HP	(2008.3-)	NO	NO	NO	NO	NO	NO	NO	NO	YES [A]*6
	FDC-KXE6 8-12HP	(not yet)	NO	NO	NO	NO	NO	NO	YES [B]	YES [B]	YES [A]
	FDC-KXE6 14-48HP	(not yet)	NO	NO	NO	NO	NO	NO	YES [B]	YES [B]	YES [A]
Heat recovery (3-pipe) systems [Note(3)]	FDCA-HKXRE4 8-48HP	(2004.11-)	NO	NO	YES [C]	NO	NO	NO	NO	NO	NO
	FDCA-HKXRE4A 8-48HP FDCA-HKXRE4R 8-48HP FDCA-HKXRE4BR 8-48HP	(2006.2-) (2006.6-) (2007.4-)	NO	NO	YES [C]	YES [C]	YES [C]	YES [C]	YES [C]	YES [C]	YES [C]
	FDC-KXRE6 8-48HP	(not yet)	NO	NO	NO	NO	NO	NO	YES [B]	YES [B]	YES [A]

*1 except FDKA71KXE5R

Note (1) YES: Connectable (See following table in detail), NO: Not connectable

	Outdoor unit	Connected Indoor unit		Dip switch setting of outdoor unit KXE6	Superlink Protocol	Limitation
		Same series	Mixed series			
YES [A]*2	KXE6	KXE6		Ⅱ(New)	New (for KX6)	New (for KX6)
YES [B]		KXE4 series	KXE6 & KXE4 series	Ⅰ(Previous)	Previous (for KX4)	Previous (for KX4)
YES [C]	KXE4 series	KXE4 series	KXE4 series		Previous (for KX4)	Previous (for KX4)

*2 If Outdoor unit system (YES [A]) is connected to other outdoor unit systems (YES [B] and/or YES [C]) in one superlink network, the dip switch of outdoor unit KXE6 of (YES [A]) should be set from Ⅱ(New) to Ⅰ(Previous).
In this case the superlink protocol and limitation of outdoor unit system (YES [A]) are switched to Previous (for KX4).

(2) Combination with new Central control, PC windows central control and BMS interface unit

		Central control, PC windows central control and BMS interface unit					
		SC-SL1N-E	SC-SL2N-E	SC-SL3N-AE/BE	SC-WGWN-A/B	SC-LGWN-A	SC-BGWN-A/B
YES [A]	Connectable I/U	16	64	128 (128x1)	128 (64x2) *3	96 (48x2)	128 (64x2) *3
	Superlink protocol	New	New	New	New	New	New
	Connectable network	1	1	1	2	2	2
YES[B] & YES[C]	Connectable I/U	16	48	144 (48x3)	96 *4 (48x2)	96 *4 (48x2)	96 *4 (48x2)
	Superlink*5 protocol	Previous	Previous	Previous	Previous	Previous	Previous
	Connectable network	1	1	3	2	2	2

*3 Maximum number of AC Cell is limited up to 96.
In case the number of connected indoor units are more than 96, some AC Cells should hold 2 or more indoor units.

*4 In case of other Central control like SC-SLxN-E is connected in the same network, the connectable indoor unit is limited up to 64 (32x2).

*5 In case of previous superlink protcol, the superlink mode of new central control should be set "Previous".

*6 In case of YES[A], previous central control is available to use. But the limitation of connectable indoor unit and so on is complied with the rule of previous superlink.

(3) The compatibility of PFD refrigerant flow branch controller is mentioned in following table.

Connectable PFD controller		Indoor unit	
		KXE4 & KXE5 series	KXE6 series
Outdoor unit	KXRE4 series	Current one only PFD-E PFD-ER	Current*7 & New (Not yet)
	KXRE4 series	Current one only PFD-E PFD-ER	New one only (Not yet)

*7 When the current PFD controller is connected, the connector of relay kit must be connected to CnT connector (NOT CnT 2).

CONTENTS

1 GENERAL INFORMATION

1.1 Specific features

(1) The new R410A refrigerant is used

The new refrigerant R410A, with an ozone destruction coefficient of zero, is used and the CO_2 discharge volume is reduced, In addition, R410A is a pseudo-azeotropic refrigerant, so there is little change in its consistency that would cause it to divide into the gas and liquid phases, or undergo temperature slide, and it is also possible to add refrigerant on-site.

(2) Connectable indoor capacity

Capacity from 50% to 200% is possible.

Note (1) When connecting the indoor unit type FDK, FDFL or FDFU Series, limit the connectable capacity not higher than 130%.

Item Model	Number of connectable	Connectable capacity (1)
FDC400KXE6	1 to 36 units	200 ~ 800
FDC450KXE6	1 to 40 units	225 ~ 900
FDC504KXE6	1 to 36 units	252 ~ 806

Capacity from 50% to 160% is possible.

Note (1) When connecting the indoor unit type FDK, FDFL or FDFU Series, limit the connectable capacity not higher than 130%.

Item Model	Number of connectable	Connectable capacity(1)
FDC560KXE6	1 to 40 units	280 ~ 896
FDC615KXE6	2 to 44 units	308 ~ 984
FDC680KXE6	2 to 49 units	340 ~ 1088
FDC735KXE6	2 to 53 units	368 ~ 1176
FDC800KXE6	2 to 58 units	400 ~ 1280
FDC850KXE6	2 to 61 units	425 ~ 1360
FDC900KXE6	2 to 65 units	450 ~ 1440
FDC960KXE6	2 to 69 units	477 ~ 1526

Capacity from 50% to 130% is possible.

Item Model	Number of connectable	Connectable capacity
FDC1010KXE6	2 to 59 units	504 ~ 1311
FDC1065KXE6	2 to 62 units	532 ~ 1384
FDC1130KXE6	2 to 66 units	560 ~ 1456
FDC1180KXE6	3 to 69 units	588 ~ 1528
FDC1235KXE6	3 to 72 units	615 ~ 1599
FDC1300KXE6	3 to 76 units	650 ~ 1690
FDC1360KXE6	3 to 80 units	680 ~ 1768

1.2 How to read the model name

Outdoor unit
Example: FDC 735 KX E 6

6 — Series No.
E — Application power source...See the specifications
KX — Multi KX series
735 — Nominal capacity (nominal cooling capacity : 73.5kW)
FDC — Model name (Outdoor unit)

Note

For outdoor unit, EN60552-2 and EN60555-3 are not applicable as consent by the utility company or notification to the utility company is given before usage.

1.3 Table of models

Capacity Model	22	28	36	45	56	71	90	112	140	160	224	280
Ceiling cassette-4 way type (FDT)		○	○	○	○	○	○	○	○	○		
Ceiling cassette-4 way compact type (FDTC)	○	○	○	○	○							
Ceiling cassette-2 way type (FDTW)		○		○	○	○	○	○	○			
Ceiling cassette-1 way type (FDTS)				○		○						
Ceiling cassette-1 way compact type (FDTQ)	○	○	○									
Duct connected-High static pressure type (FDU)						○	○	○	○		○	○
Duct connected-Middle static preessure type (FDUM)	○	○	○	○	○	○	○	○	○			
Duct connected (Ultra thin)-Low static preessure type (FDQS)	○	○	○	○	○							
Wall mounted type (FDK)	○	○	○	○	○	○						
Ceiling suspen ded type (FDE)			○	○	○	○		○	○			
Floor standing (with casing) type (FDFL)		○		○		○						
Floor standing (without casing) type (FDFU)		○		○	○	○						
Duct connected-compact and Flexible type (FDUH)	○	○	○									
Outdoor units to be combined (FDC)	FDC335KXE6-K, FDC400KXE6 ～ 560KXE6, FDC560KXE6-K, FDC615KXE6 ～ 1360KXE6											

1.4 Table of indoor units panel (Optional)

Model		Parts Model
FDTC	Capacity:22,28,36,45,56	TC-PSA-24W-ER
FDT	Capacity:28,36,45,56,71, 90,112,140,160	T-PSA-36W-E
FDTW	Capacity:28,45,56	TW-PSA-24W-E
	Capacity:71,90	TW-PSA-34W-E
	Capacity:112,140	TW-PSA-44W-E
FDTQ (Direct blow panel)	Capacity:22,28,36	TQ-PSA-15W-E
		TQ-PSB-15W-E
FDTQ (Duct panel)	Capacity:22,28,36	QR-PNA-14W-ER
		QR-PNB-14W-ER
FDTS	Capacity: 45	TS-PSA-29W-E
	Capacity:71	TS-PSA-39W-E

1.5 Outdoor units combination table

(a) Models FDC735, 800, 850, 900KXE6

Item / Models	Combination outdoor unit models			Indoor unit	
	FDC335KXE6-K	**FDC400KXE6**	**FDC450KXE6**	**Connectable capacity** [(1)]	**Number of connectable units**
FDC735KXE6	1	1	—	368 ~ 1176	2 to 53 unit
FDC800KXE6	—	2	—	400 ~ 1280	2 to 58 unit
FDC850KXE6	—	1	1	425 ~ 1360	2 to 61 unit
FDC900KXE6	—	—	2	450 ~ 1440	2 to 65 unit

Note (1) When connecting the indoor unit type FDK, FDFL or FDFU Series, limit the connectable capacity not higher than 130%.

(b) Models FDC960, 1010, 1065, 1130, 1180, 1235, 1300, 1360KXE6

Item / Models	Combination outdoor unit models						Indoor unit	
	FDC450 KXE6	**FDC504 KXE6**	**FDC560 KXE6**	**FDC560 KXE6-K**	**FDC615 KXE6**	**FDC680 KXE6**	**Connectable capacity**	**Number of connectable units**
FDC960KXE6 (1)	1	1	—	—	—	—	477 ~ 1526	2 to 69 unit
FDC1010KXE6	—	2	—	—	—	—	504 ~ 1311	2 to 59 unit
FDC1065KXE6	—	1	1	—	—	—	532 ~ 1384	2 to 62 unit
FDC1130KXE6	—	—	2	—	—	—	560 ~ 1456	2 to 66 unit
FDC1180KXE6	—	—	—	1	1	—	588 ~ 1528	3 to 69 unit
FDC1235KXE6	—	—	—	—	2	—	615 ~ 1599	3 to 72 unit
FDC1300KXE6	—	—	—	—	1	1	650 ~ 1690	3 to 76 unit
FDC1360KXE6	—	—	—	—	—	2	680 ~ 1768	3 to 80 unit

Note (1) When connecting the indoor unit type FDK, FDFL or FDFU Series to FDC960KXE6, limit the connectable capacity not higher than 130%.

(c) Outdoor unit side branch pipe set (Option)

Outdoor unit	Branch pipe set
For two units (for 735 ~ 1360)	DOS-2A-1

Note (1) Be sure to use this when combining units.

(d) Branch pipe set (Option)

Total capacity downstream	Branching pipe set
Less than 180	DIS-22-1
180 or more but less than 371	DIS-180-1
371 or more but less than 540	DIS-371-1
540 or more	DIS-540-2

(e) Header pipe set (Option)

Total capacity downstream	Header set model type	Number of branches
Less than 180	HEAD4-22-1	4 branches at the most
180 or more but less than 371	HEAD6-180-1	6 branches at the most
371 or more but less than 540	HEAD8-371-1	8 branches at the most
540 or more	HEAD8-540-2	8 branches at the most

2 OUTDOOR UNIT

2.1 Specifications

- **All-in-one type (Used also for combination)**

Models			FDC335KXE6-K	FDC400KXE6	FDC450KXE6	FDC504KXE6	FDC560KXE6	FDC560KXE6-K	FDC615KXE6	FDC680KXE6
Nominal cooling capacity*1		kW	33.5	40.0	45.0	50.4	56.0	56.0	61.5	68.0
Nominal heating capacity*2			37.5	45.0	50.0	56.5	63.0	63.0	69.0	73.0
Power source			3 Phase 380-415V 50Hz／380V 60Hz							
Power consumption	Cool	kW	8.94	11.27	12.97	14.73	16.79	16.79	20.37	24.98
	Heat		8.93	11.73	13.10	15.12	16.79	16.79	18.48	19.08
Running current	Cool	A	14.5／13.3	18.4／16.9	21.1／19.3	24.1／22.0	27.4／25.1	27.4／25.1	33.1／30.3	40.3／36.9
	Heat		14.8／13.5	19.6／17.9	21.7／19.9	25.2／23.1	28.0／25.7	28.0／25.7	30.7／28.1	31.6／29.0
Sound Pressure Level		dB（A）	59／59	59.5／60	62.5／62.5	61.5／62	63／63.5	63／63.5	64.5／64	65／65
Exterior dimensions Height × Width × Depth		mm	1690×1350×720			2048×1350×720				
Net weight		kg	317			341		355		
Refrigerant equipment compressor type & Q'ty			GTC5150NH48L×2					GTD5160NH48L×2		
Motor		kW	2.99×2	3.71×2	4.29×2	4.87×2	5.78×2		6.66×2	7.15×2
Starting method			Direct line starting							
capacity control		%	19-130	15-114	13-112	11-100	10-113	12-113	11-110	10-108
Crankcase heater		W	33×2							
Refrigerant equipment Heat exchanger			Straight fin & inner grooved tubing							
Refrigerant control			Electronic expansion valve							
Refrigerant			R410A							
Quantity		kg	11.5							
Refrigerant oil		l	4.2（M-MA32R）							
Defrost control			Microcomputer controlled De-Icer							
Air handling equipment fan type & Q'ty			Propeller fan × 2							
Motor		W	386×2							
Starting method			Direct start							
Air flow（Standard）		CMM	220／180	250／220	260／240	270／250				
Shock & vibration absorber			Rubber mount（for compressor）							
safety equipment			Compressor overheat protection ／ overcurrent protection ／ power transistor overheating protection ／ abnormal high pressure protection							
Installation data Refrigerant piping size		mm（in）	Liquid line：φ12.7（1／2"）							
			Gas line：φ25.4（1"）（φ28.58（11／8"））		Gas line：φ28.58（11／8"）					
Connecting method			Gas line：Brazing ／ Liquid line：Flare							
Drain			Hole for drain（φ20 × 6pcs , φ45 × 3pcs）							
Insullation for piping			Necessary（both Liquid & Gas lines）							
Accessories			-	-	-	-	-	-	-	-
Exterior dimensions			PCB003Z041	PCB003Z041	PCB003Z041	PCB003Z044	PCB003Z044	PCB003Z044	PCB003Z044	PCB003Z044
Electrical wiring			PCB003Z060	PCB003Z060	PCB003Z060	PCB003Z060	PCB003Z060	PCB003Z060	PCB003Z060	PCB003Z060

Notes （1） The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature		Standards
Operation	DB	WB	DB	WB	
Cooling*1	27 ℃	19 ℃	35 ℃	24 ℃	ISO-T1
Heating*2	20 ℃	–	7 ℃	6 ℃	

Adapted to RoHS directive

（2） This packaged air-conditioner is manufactured and tested in conformity with the following standard.
ISO-T1 "UNITARY AIR-CONDITIONERS"

（3） Refrigerant piping size applicable to European installations are shown in parentheses.

• Combined type

Models			FDC735KXE6	FDC800KXE6	FDC850KXE6	FDC900KXE6	FDC960KXE6	FDC1010KXE6
Combination unit			FDC335KXE6-K	FDC400KXE6	FDC400KXE6	FDC450KXE6	FDC450KXE6	FDC504KXE6
			FDC400KXE6	FDC400KXE6	FDC450KXE6	FDC450KXE6	FDC504KXE6	FDC504KXE6
Power source			3 Phase 380-415V 50Hz／380V 60Hz					
Nominal cooling capacity*1		kW	73.5	80.0	85.0	90.0	96.0	101.0
Nominal heating capacity*2			82.5	90.0	95.0	100.0	108.0	113.0
Power consumption	Cool	kW	20.21	22.54	24.24	25.94	27.7	29.46
	Heat		20.66	23.46	24.83	26.2	28.22	30.24
Running current	Cool	A	32.9／30.2	36.8／33.8	39.5／36.2	42.2／38.6	45.2／41.3	48.2／44
	Heat		34.4／31.4	39.2／35.8	41.3／37.8	43.4／39.8	46.9／43	50.4／46.2
Net weight		kg	634	634	634	634	658	682
Refrigerant piping size	Liquid line	φmm	φ15.88					
	Gas line		φ31.75（φ34.92）					
	Oil equalization		φ9.52					

Models			FDC1065KXE6	FDC1130KXE6	FDC1180KXE6	FDC1235KXE6	FDC1300KXE6	FDC1360KXE6
Combination unit			FDC504KXE6	FDC560KXE6	FDC560KXE6-K	FDC615KXE6	FDC615KXE6	FDC680KXE6
			FDC560KXE6	FDC560KXE6	FDC615KXE6	FDC615KXE6	FDC680KXE6	FDC680KXE6
Power source			3 Phase 380-415V 50Hz／380V 60Hz					
Nominal cooling capacity*1		kW	106.5	113.0	118.0	123.5	130.0	136.0
Nominal heating capacity*2			119.5	127.0	132.0	138.0	142.0	146.0
Power consumption	Cool	kW	31.52	33.58	37.16	40.74	45.35	49.96
	Heat		31.91	33.58	35.27	36.96	37.56	38.16
Running current	Cool	A	51.5／47.1	54.8／50.2	60.5／55.4	66.2／60.6	73.4／67.2	80.6／73.8
	Heat		53.2／48.8	56／51.4	58.7／53.8	61.4／56.2	62.3／57.1	63.2／58
Net weight		kg	682	682	710	710	710	710
Refrigerant piping size	Liquid line	φmm	φ19.05					
	Gas line		φ38.1（φ34.92）					
	Oil equalization		φ9.52					

Notes （1） The data are measured at the following conditions.

Item	Indoor air temperature		Outdoor air temperature		Standards
Operation	DB	WB	DB	WB	
Cooling*1	27 ℃	19 ℃	35 ℃	24 ℃	ISO-T1
Heating*2	20 ℃	–	7 ℃	6 ℃	

（2） This packaged air-conditioner is manufactured and tested in conformity with the following standard.
ISO-T1 "UNITARY AIR-CONDITIONERS"

（3） Refrigerant piping size applicable to European installations are shown in parentheses.

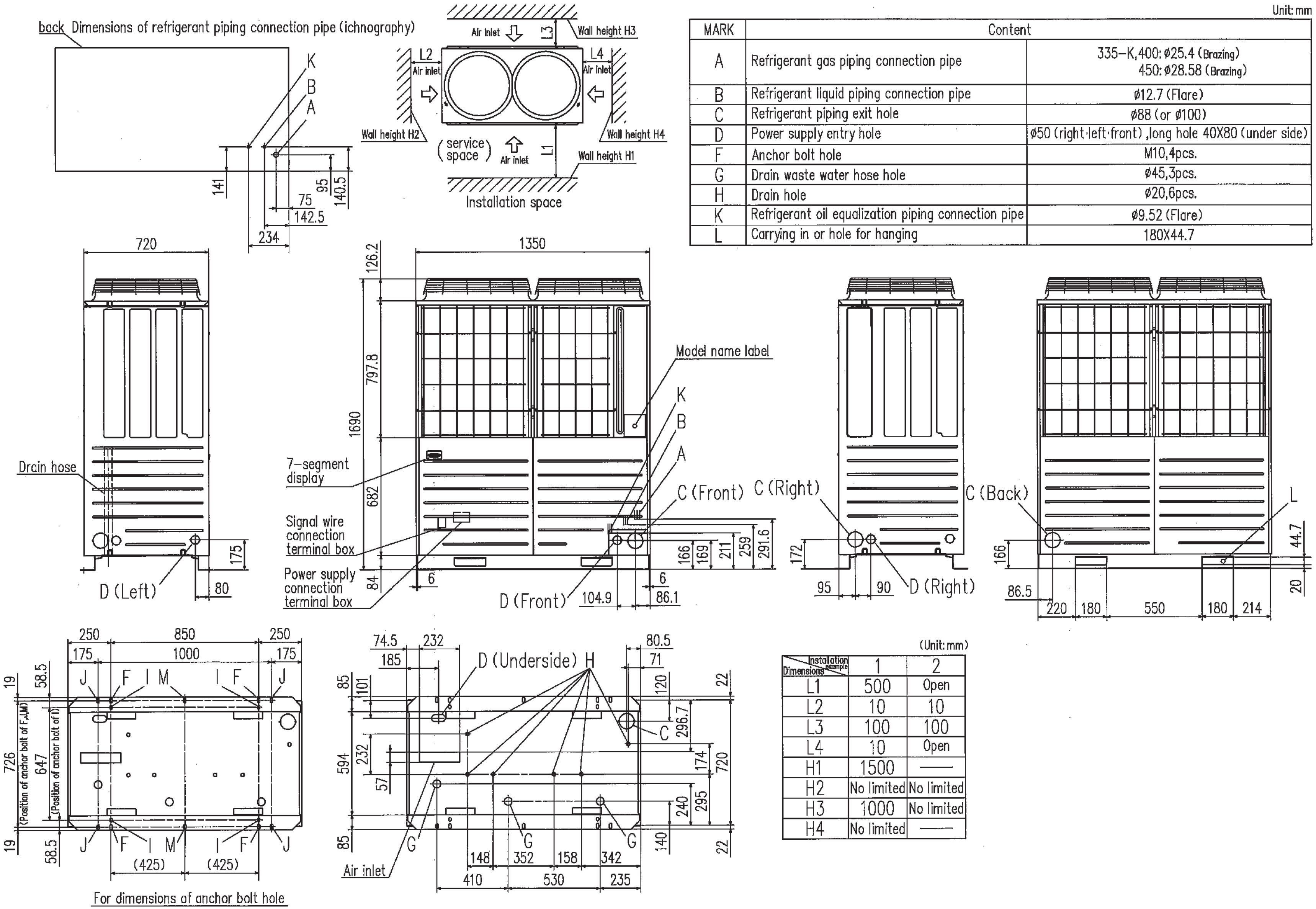
Adapted to RoHS directive

2.2 Exterior dimensions

Models FDC335KXE6-K, 400KXE6, 450KXE6

Unit: mm

MARK	Content	
A	Refrigerant gas piping connection pipe	335–K,400: ø25.4 (Brazing) 450: ø28.58 (Brazing)
B	Refrigerant liquid piping connection pipe	ø12.7 (Flare)
C	Refrigerant piping exit hole	ø88 (or ø100)
D	Power supply entry hole	ø50 (right·left·front) ,long hole 40X80 (under side)
F	Anchor bolt hole	M10,4pcs.
G	Drain waste water hose hole	ø45,3pcs.
H	Drain hole	ø20,6pcs.
K	Refrigerant oil equalization piping connection pipe	ø9.52 (Flare)
L	Carrying in or hole for hanging	180X44.7



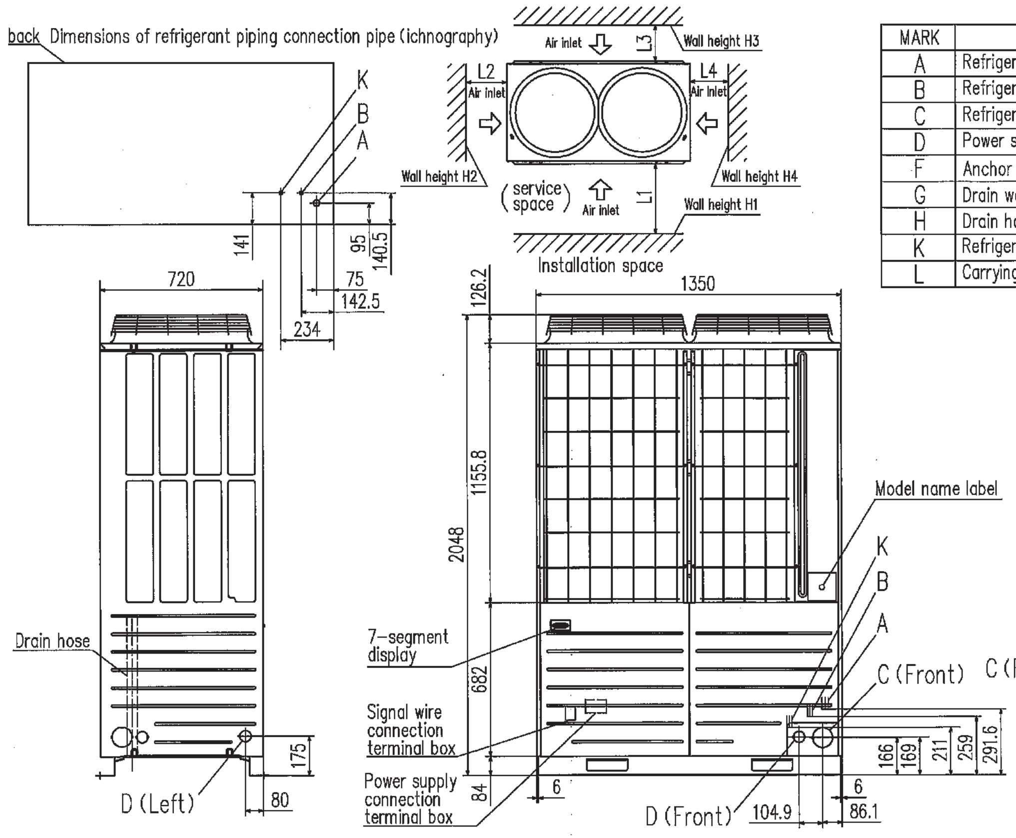
(Unit: mm)

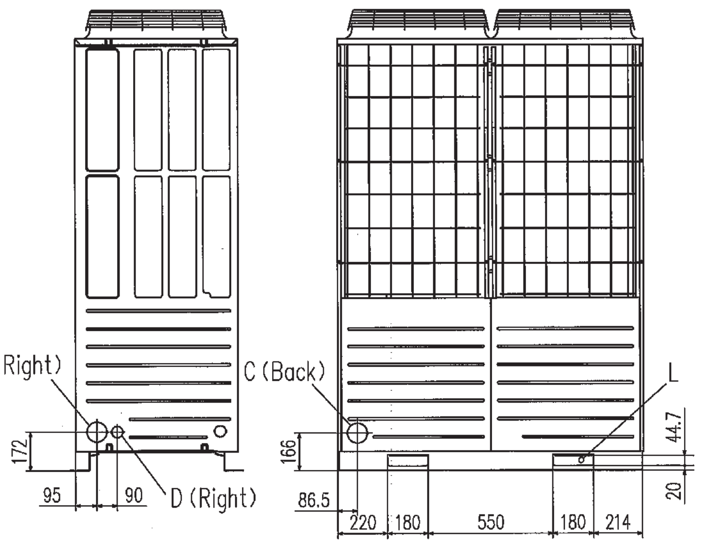
Dimensions \ Installation example	1	2
L1	500	Open
L2	10	10
L3	100	100
L4	10	Open
H1	1500	——
H2	No limited	No limited
H3	1000	No limited
H4	No limited	——

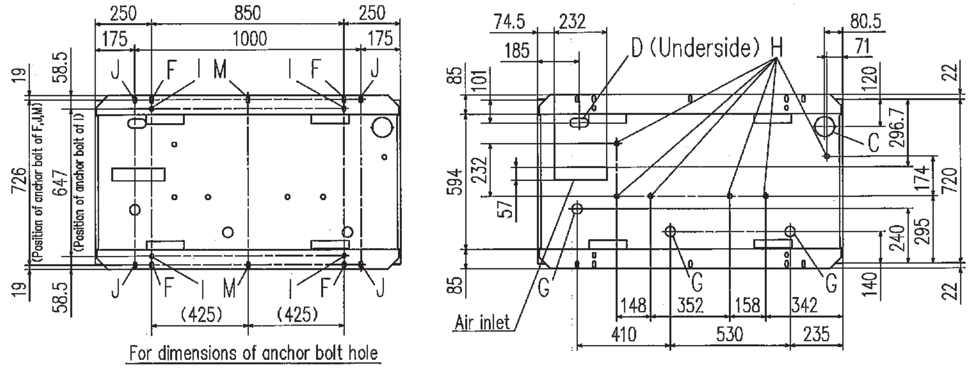
Models FDC504KXE6, 560KXE6, 560KXE6-K, 615KXE6, 680KXE6

Unit: mm

MARK	Content	
A	Refrigerant gas piping connection pipe	ø28.58 (Brazing)
B	Refrigerant liquid piping connection pipe	ø12.7 (Flare)
C	Refrigerant piping exit hole	ø88 (or ø100)
D	Power supply entry hole	ø50 (right·left·front) ,long hole 40X80 (under side)
F	Anchor bolt hole	M10,4pcs.
G	Drain waste water hose hole	ø45,3pcs.
H	Drain hole	ø20,6pcs.
K	Refrigerant oil equalization piping connection pipe	ø9.52 (Flare)
L	Carrying in or hole for hanging	180X44.7





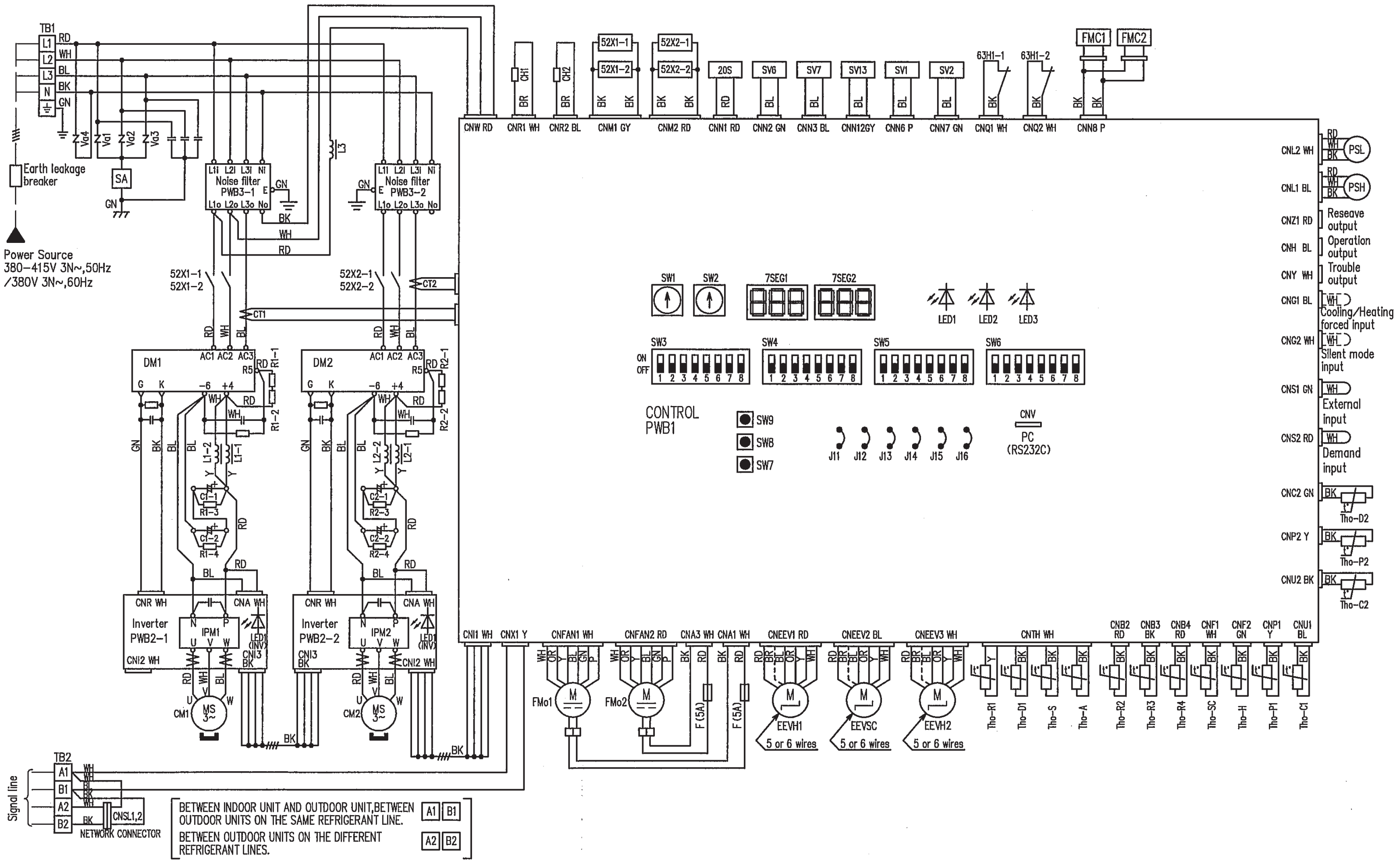


(Unit: mm)

Dimensions \ Installation example	1	2
L1	500	Open
L2	10	10
L3	100	100
L4	10	Open
H1	1500	—
H2	No limited	No limited
H3	1000	No limited
H4	No limited	—

2.3 Electrical wiring

Models All model



CH1,2	Crankcase heater
CM1,2	Compressor motor
CNA–Z	Connector
CT1,CT2	Current sensor
C1–1,2,C2–1,2	Electrolytic capacitor
DM	Diode module
EEVH1,2	Expansion valve for heating
EEVSC	Expansion valve for SC
F	Fuse
FMC1,2	Fan for IPM
FMo1,2	Blower motor
IPM	Intelligent power module
J11,12	Set up model (volt)
J13	External input select level/pulse
J14	Defrost recover temp
J15	Defrost start temp
J16	Heat recovery unit
LED1	Inspection (Red)
LED1 (INV)	Normal (Yellow) –Flashing
LED2	Normal (Green)
LED3	Service (green for service)
L1–1,2,L2–1,2	D.C.reactor
L3	D.C.reactor

PSH		High pressure sensor
PSL		Low pressure sensor
PWB1~3		Printed wiring board (PCB)
R1,2		Rush current suppression resistor
SA		Arrestor
SV1		Solenoid valve (CM1: bypass)
SV2		Solenoid valve (CM2: bypass)
SV6		Solenoid valve (oil separator CM1)
SV7		Solenoid valve (oil separator CM2)
SV13		Solenoid valve (gas bypass)
SW1		Address setting SW outdoor unit No. (2 digits)
SW2		Address setting SW outdoor unit No. (1 digit)
SW3–1		inspection LED reset
SW3–2	ON	Auto backup operation
	OFF	Regular operation
SW3–3		Spare
SW3–4	ON	Refrigerant quantity check
	OFF	Regular operation
SW3–5	ON	Check operation
	OFF	Regular operation
SW3–6		Spare
SW3–7	ON	Forced cooling/heating
	OFF	Regular operation

SW3–8	ON	Test mode
	OFF	Regular operation
SW4–1~4		Model setting
SW4–5		Demand
SW4–6		Demand
SW4–7		Address setting switch (master・slave)
SW4–8		Address setting switch (master・slave)
SW5–1	ON	Trial operation
	OFF	Regular operation
SW5–2	ON	Trial operation mode/cooling
	OFF	Trial operation mode/heating
SW5–3	ON	Pump down operation
	OFF	Regular operation
SW5–4		Spare
SW5–5	ON	Super Link communication
	OFF	Super Link II communication
SW5–6~8		Spare
SW6–1~8		Spare
SW7		Data clear/insert
SW8		7seg indicate (unit's place)
SW9		7seg indicate (ten's place)
SW10		Reset
TB1,2		Terminal block

Tho–A	External air thermistor
Tho–C1,2	Under–dome thermistor
Tho–D1,2	Discharge pipe thermistor
Tho–H	Sub–cooling coil thermistor 2
Tho–P1,2	Power transistor thermistor
Tho–R1	Heat exchanger thermistor (exhaust)
Tho–R2	Heat exchanger thermistor (exhaust)
Tho–R3	Heat exchanger thermistor (inlet)
Tho–R4	Heat exchanger thermistor (inlet)
Tho–S	Suction pipe thermistor
Tho–SC	Sub–cooling coil thermistor 1
Va1~4	Varistor
20S	4way valve
52X1–1,2	Solenoid for CM1
52X2–1,2	Solenoid for CM2
63H1–1,2	High pressure switch (for protection)
7SEG1	7seg L.E.D. (function indication)
7SEG2	7seg L.E.D. (data indication)

Color symbol

BK	Black
BL	Blue
BR	Brawn
GN	Green
GR	Gray
OR	Orange
RD	Red
WH	White
Y	Yellow
P	Pink

2.4 Noise level

Measured based on JIS B 8616

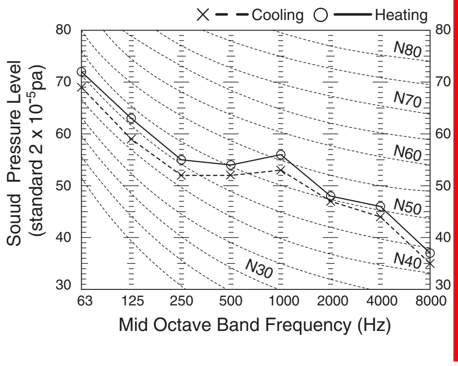
Mike position as highest noise level in position as below

Distance from front side 1m

Height 1m

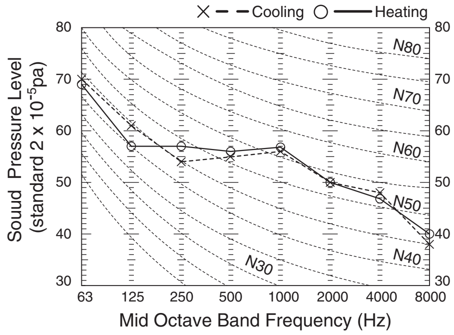
Model FDC335KXE6-k

Noise level 59 dB (A) at cooling
59 dB (A) at heating



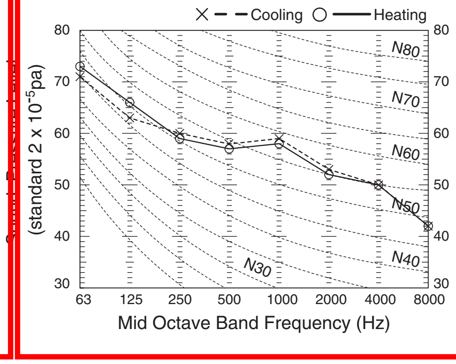
Model FDC400KXE6

Noise level 59.5 dB (A) at cooling
60 dB (A) at heating



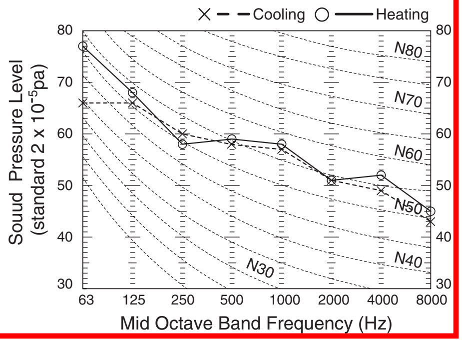
Model FDC450KXE6

Noise level 62.5 dB (A) at cooling
62.5 dB (A) at heating



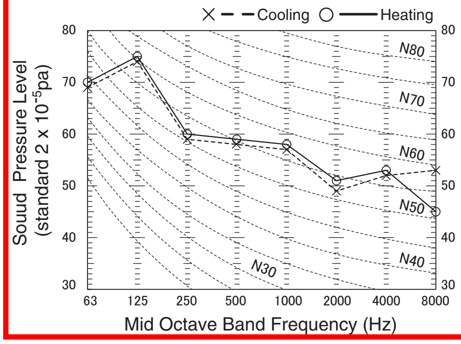
Model FDC504KXE6

Noise level 61.5 dB (A) at cooling
62 dB (A) at heating



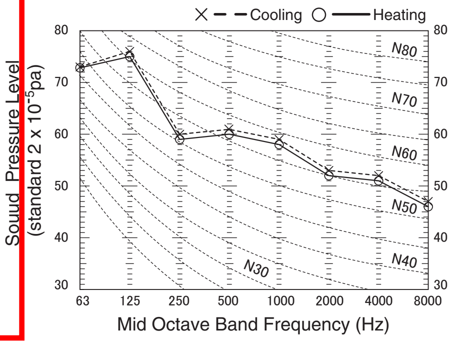
Models FDC560KXE6
560KXE6-K

Noise level 63 dB (A) at cooling
63.5 dB (A) at heating



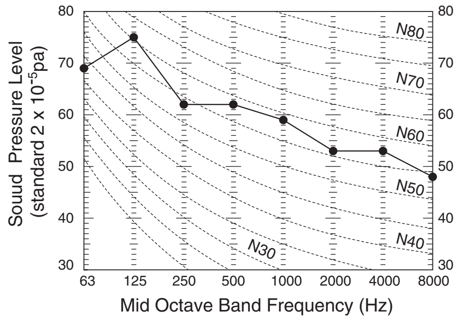
Model FDC615KXE6

Noise level 64.5 dB (A) at cooling
64 dB (A) at heating



Model FDC680KXE6

Noise level 65 dB (A) at cooling
65 dB (A) at heating



Catalogue of Daikin RU08K

ED 42 - 019A

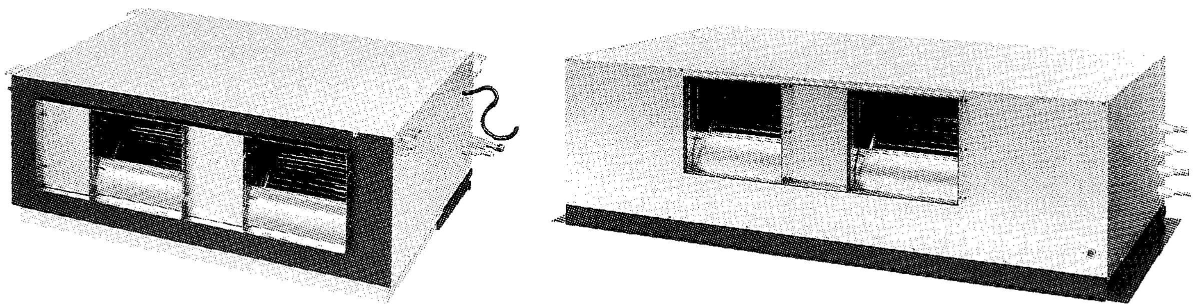
Engineering Data

Packaged Air Conditioners
Duct Connection Type

(High Static Pressure Application)

FD-K Series

— Cooling Only —



DAIKIN INDUSTRIES, LTD.

Duct Connection Type High Static Pressure Application FD-K Series

1. Power Supply and Nomenclature

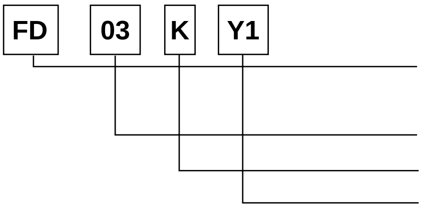
1.1 Power Supply

Symbol	Indoor Unit	Outdoor Unit	Power Supply
Y1	FD03KY1	R71FUY1	3ϕ 380~415V 50Hz (4 wires)
	FD04KY1	R100FUY1	
	FD05KY1	R125FUY1	
	FD06KY1	RU06KY1	
	FD08KY1	RU08KY1	
	FD08KY1	RU08KUY1 ∗	
	FD10KY1	RU10KY1	
	FD10KY1	RU10KUY1 ∗	
	FD15KY1	RU08KY1×2	
	FD15KY1	RU08KUY1×2 ∗	
	FD20KY1	RU10KY1×2	
	FD20KY1	RU10KUY1×2 ∗	
VAL	FD03KVAL	R71FUVAL	1ϕ 220V 60Hz
	FD04KVAL	R100FUVAL	
TAL	FD05KTAL	R125FUTAL	3ϕ 220V 60Hz
	FD06KTAL	RU06KTAL	
	FD08KTAL	RU08KTAL	
	FD08KTAL	RU08KUTAL ∗	
	FD10KTAL	RU10KTAL	
	FD10KTAL	RU10KUTAL ∗	
	FD15KTAL	RU08KTAL×2	
	FD15KTAL	RU08KUTAL×2 ∗	
	FD20KTAL	RU10KTAL×2	
	FD20KTAL	RU10KUTAL×2 ∗	

Note:
1. ∗ : New Model or Changed Model
2. Power Supply Intake; Outdoor Unit

1.2 Nomenclature

Indoor Unit



Duct Connection High Static Pressure Type
FD : Cooling Only

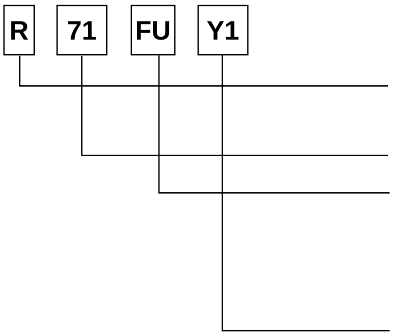
Capacity : HP

Indicates Major Design Category

Power Supply Symbol

Y1	: 3ϕ 380~415V	50Hz
VAL	: 1ϕ 220V	60Hz
TAL	: 3ϕ 220V	60Hz

Outdoor Unit



Outdoor Unit
R, RU : Cooling Only

Capacity ×100 kcal/h (50 Hz)

Indicates Major Design Category

	50Hz	60Hz
FU	○	○
K	○	○
KU	○	○

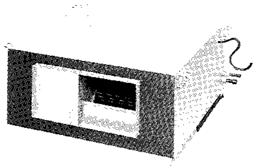
Power Supply Symbol

Y1	: 3ϕ 380~415V	50Hz
VAL	: 1ϕ 220V	60Hz
TAL	: 3ϕ 220V	60Hz

2. External Appearance

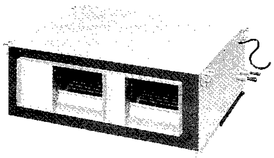
2.1 Indoor Unit

FD03K



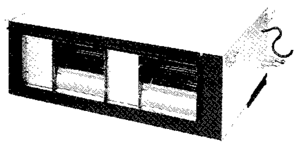
FD04K

FD05K

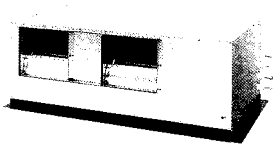


FD06K

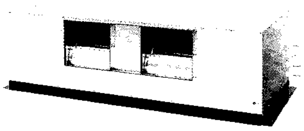
FD08K



FD10K



FD15K

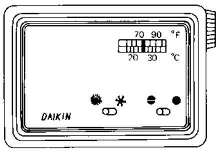


FD20K

2.2 Remote Controller

KRC47-3

KRC47-5



KRC17-2B

2.3 Outdoor Unit

R71FU

R100FU
R125FU

RU06K

RU08K
RU08KU

RU10K
RU10KU

3. Functions

3.1 FD-K Series

Points and Functions	Duct Connection High Static Pressure Type FD-K
Auto Restart	○
Central Remote Control	○ (Adaptor Kit is needed. Refer to P. 90)
PE fin	○
Adjustable External Static Pressure	○ (Required to change the pulley)

○ : Existing Functions

Cautions

1. Air conditioners should not be installed in areas where corrosive gases, such as acid gas or alkaline gas, are produced.
2. If the outdoor unit is to be installed close to the sea shore, direct exposure to the sea breeze should be avoided and choose an outdoor unit with anti-corrosion treatment.

4. Specifications

4.1 50Hz

R-FU Series <50Hz>

Model	**Indoor Unit**			**FD03KY1**	**FD04KY1**	**FD05KY1**
	Outdoor Unit			**R71FUY1**	**R100FUY1**	**R125FUY1**
∗1 Cooling Capacity (1)/(2)/(3)			kW	8.1 / 7.9 / 6.7	11.0 / 10.8 / 9.5	14.0 / 13.8 / 11.8
			Btu/h	27,800 / 27,000 / 22,900	37,700 / 36,900 / 32,400	47,600 / 46,800 / 40,300
			kcal/h	7,000 / 6,800 / 5,800	9,500 / 9,300 / 8,200	12,000 / 11,800 / 10,100
Indoor Unit				**FD03KY1**	**FD04KY1**	**FD05KY1**
Dimensions		H×W×D	mm	450×650×850	450×900×850	450×900×850
Coil	Type			Cross Fin Coil (Waffle Louver Fins and Hi-XA Tubes)		
	Row×Stages×Fin Pitch			2×24×2.0	2×24×2.0	2×24×2.0
	Face Area		m^2	0.238	0.370	0.370
Fan	Type			Sirocco Fan		
	Drive			Belt Drive		
	Motor Output		kW	0.4	0.4	0.75
	Air Flow Rate		m^3/min	26	30	46
			cfm	918	1,059	1,620
	Ext. Static Pressure		mmH$_2$O	7	9	9
Weight			kg	51	59	72
Piping Connections		Liquid	mm	ϕ 9.5 (Brazing)	ϕ 9.5 (Brazing)	ϕ 9.5 (Brazing)
		Gas	mm	ϕ 15.9 (Brazing)	ϕ 19.1 (Brazing)	ϕ 19.1 (Brazing)
		Drain	mm	FPS3/4B	FPS3/4B	FPS3/4B
Remote Controller		Wired		KRC47-3	KRC47-3	KRC47-3
		Wireless		—	—	—
Outdoor Unit				**R71FUY1**	**R100FUY1**	**R125FUY1**
Color				Ivory		
Dimensions		H×W×D	mm	816×880×370	1,215×880×370	1,215×880×370
Coil	Type			Cross Fin Coil		
	Row×Stages×Fin Pitch			2×36×2.0	2×54×2.0	2×54×2.0
	Face Area		m^2	0.653	0.979	0.979
Comp.	Model			H23A35QDBNA	H23A46QDBNA	H23A56QDBNA
	Type			Hermetically Sealed Type		
	Motor Output		kW	3.0	3.8	4.5
Fan	Model			P45J11SM	P45J11SM×2	P45J11SM×2
	Type			Propeller		
	Motor Output		W	50	75+35	75+60
	Air Flow Rate		m^3/min	46	80	87
			cfm	1,620	2,824	3,071
Weight			kg	84	109	110
Piping Connections		Liquid	mm	ϕ 9.5 (Flare)	ϕ 9.5 (Flare)	ϕ 9.5 (Flare)
		Gas	mm	ϕ 15.9 (Flare)	ϕ 19.1 (Flare)	ϕ 19.1 (Flare)
		Drain	mm	ϕ 26.0 (Hole)	ϕ 26.0 (Hole)	ϕ 26.0 (Hole)
Safety Devices				Thermal Protector for Outdoor Fan Motor. Internal Pressure Relief Valve (Compressor). Motor Protector (Compressor). Over Current Relay for Indoor Fan Motor.		
Capacity Step			%	100 – 0	100 – 0	100 – 0
Refrigerant Control				Capillary Tube		
Ref. Piping	Standard Length		m	5	5	5
	Max. Length		m	50 (Equivalent Length 70m)	50 (Equivalent Length 70m)	50 (Equivalent Length 70m)
	Max. Height Difference		m	30	30	30
Refrigerant	Model			R22	R22	R22
	Charge		kg	2.1 (Factory Charge for 5m)	2.4 (Factory Charge for 5m)	2.8 (Factory Charge for 5m)
Ref. Oil	Model			SUNISO 3GS		
	Charge		L	1.48	1.63	1.63
Drawing No.				C : 4D004103A		

Note: 1. ∗1 The above data are based on the following conditions.

	Cooling	Piping Length	Hz–Volts	Standard
(1)	Indoor: 27°C(81°F)DB, 19.5°C(67°F)WB Outdoor: 35°C(95°F)DB	5m (Horizontal)	50Hz–380V	—
(2)	Indoor: 27°C(81°F)DB, 19.0°C(66°F)WB Outdoor: 35°C(95°F)DB	5m (Horizontal)	50Hz–380V	—
(3)	Indoor: 29°C(84°F)DB, 19.0°C(66°F)WB Outdoor: 46°C(115°F)DB, 24°C(75°F)WB	7.5m (Horizontal)	50Hz–380V	SSA 385/386

Capacities are gross capacities which do not include a deduction for indoor fan motor heat.

Conversion Formulae

kcal/h=kW×860
Btu/h=kW×3414
cfm=m^3/min×35.3

RU-K Series <50Hz>

Model	Indoor Unit			FD06KY1	FD08KY1	FD10KY1	FD15KY1	FD20KY1
	Outdoor Unit			RU06KY1	RU08KY1	RU10KY1	RU08KY1×2	RU10KY1×2
∗1 Cooling Capacity (1)/(2)/(3)			kW	17.4 / 17.2 / 15.0	24.3 / 24.0 / 21.6	29.7 / 29.2 / 26.3	48.6 / 47.9 / 43.2	59.3 / 58.4 / 42.7
			Btu/h	59,500 / 58,800 / 51,200	83,000 / 81,800 / 73,700	101,200 / 99,600 / 89,800	166,000 / 163,500 / 147,500	202,400 / 199,400 / 145,800
			kcal/h	15,000 / 14,800 / 12,900	20,900 / 20,600 / 18,600	25,500 / 25,100 / 22,600	41,800 / 41,200 / 37,200	51,000 / 50,200 / 36,700
Indoor Unit				**FD06KY1**	**FD08KY1**	**FD10KY1**	**FD15KY1**	**FD20KY1**
Dimensions		H×W×D	mm	450×1,130×850	500×1,130×850	500×1,330×850	625×1,620×850	625×1,980×850
Coil	Type			Cross Fin Coil (Waffle Louver Fins and Hi-XA Tubes)				
	Row×Stages×Fin Pitch			2×24×2.0	3×22×2.0	3×22×2.0	3×26×2.0	3×26×2.0
	Face Area		m²	0.491	0.443	0.540	0.784	0.990
Fan	Type			Sirocco Fan				
	Drive			Belt Drive				
	Motor Output		kW	0.75	1.5	1.5	2.2	3.7
	Air Flow Rate		m³/min	52	68	83	136	166
			cfm	1,836	2,400	2,930	4,800	5,860
	Ext. Static Pressure		mmH2O	9	10	10	15	15
Weight			kg	79	93	104	161	187
Piping Connections		Liquid	mm	ϕ 9.5 (Brazing)	ϕ 12.7 (Brazing)	ϕ 15.9 (Brazing)	2× ϕ 12.7 (Brazing)	2× ϕ 15.9 (Brazing)
		Gas	mm	ϕ 19.1 (Brazing)	ϕ 25.4 (Brazing)	ϕ 31.8 (Brazing)	2× ϕ 25.4 (Brazing)	2× ϕ 31.8 (Brazing)
		Drain	mm	FPS3/4B	FPS3/4B	FPS3/4B	FPS1B	FPS1B
Remote Controller		Wired		KRC47-3	KRC47-3	KRC47-3	KRC17-2B KRC47-3	KRC17-2B KRC47-3
		Wireless		—	—	—	—	—
Outdoor Unit				**RU06KY1**	**RU08KY1**	**RU10KY1**	**RU08KY1×2**	**RU10KY1×2**
Color				Ivory White				
Dimensions		H×W×D	mm	1,345×880×320	1,220×1,280×690	1,440×1,280×690	2×(1,220×1,280×690)	2×(1,440×1,280×690)
Coil	Type			Cross Fin Coil (Waffle Louver Fins and Hi-XA Tubes)				
	Row×Stages×Fin Pitch			2×60×2.0	2×40×2.0	2×50×2.0	2×(2×40×2.0)	2×(2×50×2.0)
	Face Area		m²	1.16	1.57	1.97	2×1.57	2×1.97
Comp.	Model			JT200B-YE	JT265DYE-P1	JT335DYE-P1	2×(JT265DYE-P1)	2×(JT335DYE-P1)
	Type			Hermetically Sealed Scroll Type				
	Motor Output		kW	4.5	7.5	9.0	2×7.5	2×9.0
Fan	Model			P45J11SM	P52H11S	P52H11S	2×P52H11S	2×P52H11S
	Type			Propeller				
	Motor Output		W	85+65	230+190	230+190	2×(230+190)	2×(230+190)
	Air Flow Rate		m³/min	108	150	175	2×150	2×175
			cfm	3,812	5,295	6,177	2×5,295	2×6,177
Weight			kg	112	177	190	2×177	2×190
Piping Connections		Liquid	mm	ϕ 9.5 (Flare)	ϕ 12.7 (Brazing)	ϕ 15.9 (Brazing)	2× ϕ 12.7 (Brazing)	2× ϕ 15.9 (Brazing)
		Gas	mm	ϕ 19.1 (Flare)	ϕ 25.4 (Brazing)	ϕ 31.8 (Brazing)	2× ϕ 25.4 (Brazing)	2× ϕ 31.8 (Brazing)
		Drain	mm	—	—	—	—	—
Safety Devices				Thermal Protector for Compressor and Outdoor Fan Motor. High Pressure Switch. Low Pressure Switch. Over Current Relay (Compressor and Indoor Fan Motor). Reverse Phase Protector. Fuse.	Thermal Protector for Compressor and Outdoor Fan Motor. High Pressure Switch. Over Current Relay (Compressor and Indoor Fan Motor). Reverse Phase Protector. Fuse.			
Capacity Step			%	100 – 0	100 – 0	100 – 0	100 – 50 – 0	100 – 50 – 0
Refrigerant Control				Capillary Tube				
Ref. Piping	Standard Length		m	5	5	5	5	5
	Max. Length		m	50 (Equivalent Length 70m)	50 (Equivalent Length 70m)	50 (Equivalent Length 70m)	50 (Equivalent Length 70m)	50 (Equivalent Length 70m)
	Max. Height Difference		m	30	30	30	30	30
Refrigerant	Model			R22	R22	R22	R22	R22
	Charge		kg	3.0 (Factory Charge for 5m)	5.0 (Field Charge for 5m)	6.1 (Field Charge for 5m)	2×5.0 (Field Charge for 5m)	2×6.1 (Field Charge for 5m)
Ref. Oil	Model			SUNISO 4GSDID-K				
	Charge		L	1.6	4.0	4.0	2×4.0	2×4.0
Drawing No.				C : 4D006819A			C : 4D008677	

Note:

1. ∗1 The above data are based on the following conditions.

	Cooling	Piping Length	Hz–Volts	Standard
(1)	Indoor: 27°C(81°F)DB, 19.5°C(67°F)WB Outdoor: 35°C(95°F)DB	5m (Horizontal)	50Hz–380V	—
(2)	Indoor: 27°C(81°F)DB, 19.0°C(66°F)WB Outdoor: 35°C(95°F)DB	5m (Horizontal)	50Hz–380V	—
(3)	Indoor: 29°C(84°F)DB, 19.0°C(66°F)WB Outdoor: 46°C(115°F)DB, 24°C(75°F)WB	7.5m (Horizontal)	50Hz–380V	SSA 385/386

Capacities are gross capacities which do not include a deduction for indoor fan motor heat.

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3414 cfm=m³/min×35.3

RU-KU Series <50Hz>

Model	**Indoor Unit**			**FD08KY1**	**FD10KY1**	**FD15KY1**	**FD20KY1**
	Outdoor Unit			**RU08KUY1**	**RU10KUY1**	**RU08KUY1×2**	**RU10KUY1×2**
∗1 Cooling Capacity (1)/(2)/(3)			kW	24.3 / 24.0 / 21.6	29.7 / 29.2 / 26.3	48.6 / 47.9 / 43.2	59.3 / 58.4 / 42.7
			Btu/h	83,000 / 81,800 / 73,700	101,200 / 99,600 / 89,800	166,000 / 163,500 / 147,500	202,400 / 199,400 / 145,800
			kcal/h	20,900 / 20,600 / 18,600	25,500 / 25,100 / 22,600	41,800 / 41,200 / 37,200	51,000 / 50,200 / 36,700
Indoor Unit				**FD08KY1**	**FD10KY1**	**FD15KY1**	**FD20KY1**
Dimensions		H×W×D	mm	500×1,130×850	500×1,330×850	625×1,620×850	625×1,980×850
Coil	Type			Cross Fin Coil (Waffle Louver Fins and Hi-XA Tubes)			
	Row×Stages×Fin Pitch			3×22×2.0	3×22×2.0	3×26×2.0	3×26×2.0
	Face Area		m^2	0.443	0.540	0.784	0.990
Fan	Type			Sirocco Fan			
	Drive			Belt Drive			
	Motor Output		kW	1.5	1.5	2.2	3.7
	Air Flow Rate		m^3/min	68	83	136	166
			cfm	2,400	2,930	4,800	5,860
	Ext. Static Pressure		mmH_2O	10	10	15	15
Weight			kg	93	104	161	187
Piping Connections		Liquid	mm	ϕ 12.7 (Brazing)	ϕ 15.9 (Brazing)	2× ϕ 12.7 (Brazing)	2× ϕ 15.9 (Brazing)
		Gas	mm	ϕ 25.4 (Brazing)	ϕ 31.8 (Brazing)	2× ϕ 25.4 (Brazing)	2× ϕ 31.8 (Brazing)
		Drain	mm	FPS3/4B	FPS3/4B	FPS1B	FPS1B
Remote Controller		Wired		KRC47-3	KRC47-3	KRC17-2B KRC47-3	KRC17-2B KRC47-3
		Wireless		—	—	—	—
Outdoor Unit				**RU08KUY1**	**RU10KUY1**	**RU08KUY1×2**	**RU10KUY1×2**
Color				Ivory White			
Dimensions		H×W×D	mm	1,220×1,280×690	1,440×1,280×690	2×(1,220×1,280×690)	2×(1,440×1,280×690)
Coil	Type			Cross Fin Coil (Waffle Louver Fins and Hi-XA Tubes)			
	Row×Stages×Fin Pitch			2×40×2.0	2×50×2.0	2×(2×40×2.0)	2×(2×50×2.0)
	Face Area		m^2	1.57	1.97	2×1.57	2×1.97
Comp.	Model			JT265D-P1YE	JT335D-P1YE	2×(JT265D-P1YE)	2×(JT335D-P1YE)
	Type			Hermetically Sealed Scroll Type			
	Motor Output		kW	7.5	9.0	2×7.5	2×9.0
Fan	Model			P52H11S	P52H11S	2×P52H11S	2×P52H11S
	Type			Propeller			
	Motor Output		W	230+190	230+190	2×(230+190)	2×(230+190)
	Air Flow Rate		m^3/min	150	175	2×150	2×175
			cfm	5,295	6,177	2×5,295	2×6,177
Weight			kg	185	200	2×185	2×200
Piping Connections		Liquid	mm	ϕ 12.7 (Flare)	ϕ 15.9 (Flare)	2× ϕ 12.7 (Flare)	2× ϕ 15.9 (Flare)
		Gas	mm	ϕ 25.4 (Brazing)	ϕ 31.8 (Brazing)	2× ϕ 25.4 (Brazing)	2× ϕ 31.8 (Brazing)
		Drain	mm	—	—	—	—
Safety Devices				Thermal Protector for Compressor and Outdoor Fan Motor. High Pressure Switch. Low Pressure Switch. Over Current Relay (Compressor and Indoor Fan Motor). Reverse Phase Protector. Fuse.			
Capacity Step			%	100 – 0	100 – 0	100 – 50 – 0	100 – 50 – 0
Refrigerant Control				Capillary Tube			
Ref. Piping	Standard Length		m	5	5	5	5
	Max. Length		m	50 (Equivalent Length 70m)	50 (Equivalent Length 70m)	50 (Equivalent Length 70m)	50 (Equivalent Length 70m)
	Max. Height Difference		m	30	30	30	30
Refrigerant	Model			R22	R22	R22	R22
	Charge		kg	5.0 (Factory Charge for 5m)	6.1 (Factory Charge for 5m)	2×5.0 (Factory Charge for 5m)	2×6.1 (Factory Charge for 5m)
Ref. Oil	Model			SUNISO 4GSDID-K			
	Charge		L	4.0	4.0	2×4.0	2×4.0
Drawing No.				C : 4D045868		C : 4D045870	

Note: 1. ∗1 The above data are based on the following conditions.

	Cooling	Piping Length	Hz–Volts	Standard
(1)	Indoor: 27°C(81°F)DB, 19.5°C(67°F)WB Outdoor: 35°C(95°F)DB	5m (Horizontal)	50Hz–380V	—
(2)	Indoor: 27°C(81°F)DB, 19.0°C(66°F)WB Outdoor: 35°C(95°F)DB	5m (Horizontal)	50Hz–380V	—
(3)	Indoor: 29°C(84°F)DB, 19.0°C(66°F)WB Outdoor: 46°C(115°F)DB, 24°C(75°F)WB	7.5m (Horizontal)	50Hz–380V	SSA 385/386

Capacities are gross capacities which do not include a deduction for indoor fan motor heat.

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3414 cfm=m^3/min×35.3

4.2 60Hz

R-FU Series <60Hz>

Model	Indoor Unit			FD03KVAL	FD04KVAL	FD05KTAL
	Outdoor Unit			R71FUVAL	R100FUVAL	R125FUTAL
∗1 Cooling Capacity (1)/(2)/(3)			kW	8.6 / 8.5 / 7.1	12.1 / 11.9 / 9.0	15.5 / 15.2 / 14.1
			Btu/h	29,400 / 29,000 / 24,200	41,300 / 40,600 / 30,700	52,800 / 52,000 / 48,100
			kcal/h	7,400 / 7,300 / 6,100	10,400 / 10,200 / 7,700	13,300 / 13,100 / 12,100
Indoor Unit				**FD03KVAL**	**FD04KVAL**	**FD05KTAL**
Dimensions		H×W×D	mm	450×650×850	450×900×850	450×900×850
Coil	Type			Cross Fin Coil (Waffle Louver Fins and Hi-XA Tubes)		
	Row×Stages×Fin Pitch			2×24×2.0	2×24×2.0	2×24×2.0
	Face Area		m²	0.238	0.370	0.370
Fan	Type			Sirocco Fan		
	Drive			Belt Drive		
	Motor Output		kW	0.4	0.4	0.75
	Air Flow Rate		m³/min	26	30	46
			cfm	917	1,059	1,623
	Ext. Static Pressure		mmH$_2$O	7	9	9
Weight			kg	54	62	72
Piping Connections		Liquid	mm	ϕ 9.5 (Brazing)	ϕ 9.5 (Brazing)	ϕ 9.5 (Brazing)
		Gas	mm	ϕ 15.9 (Brazing)	ϕ 19.1 (Brazing)	ϕ 19.1 (Brazing)
		Drain	mm	FPS3/4B	FPS3/4B	FPS3/4B
Remote Controller		Wired		KRC47-3	KRC47-3	KRC47-3
		Wireless		—	—	—
Outdoor Unit				**R71FUVAL**	**R100FUVAL**	**R125FUTAL**
Color				Ivory		
Dimensions		H×W×D	mm	816×880×370	1,215×880×370	1,215×880×370
Coil	Type			Cross Fin Coil		
	Row×Stages×Fin Pitch			2×36×2.0	2×54×2.0	2×54×2.0
	Face Area		m²	0.653	0.979	0.979
Comp.	Model			H23A35QABCA	H23A46QABCA	H23A62QDBLA
	Type			Hermetically Sealed Type		
	Motor Output		kW	3.4	4.5	6.0
Fan	Model			P45J11SM	P45J11SM×2	P45J11SM×2
	Type			Propeller		
	Motor Output		W	80	90+60	90+80
	Air Flow Rate		m³/min	55	92	98
			cfm	1,941	3,247	3,459
Weight			kg	87	117	110
Piping Connections		Liquid	mm	ϕ 9.5 (Flare)	ϕ 9.5 (Flare)	ϕ 9.5 (Flare)
		Gas	mm	ϕ 15.9 (Flare)	ϕ 19.1 (Flare)	ϕ 19.1 (Flare)
		Drain	mm	ϕ 26.0 (Hole)	ϕ 26.0 (Hole)	ϕ 26.0 (Hole)
Safety Devices				Thermal Protector for Outdoor Fan Motor. Internal Pressure Relief Valve (Compressor). Motor Protector (Compressor). Over Current Relay for Indoor Fan Motor.		
Capacity Step			%	100 – 0	100 – 0	100 – 0
Refrigerant Control				Capillary Tube		
Ref. Piping	Standard Length		m	5	5	5
	Max. Length		m	50 (Equivalent Length 70m)	50 (Equivalent Length 70m)	50 (Equivalent Length 70m)
	Max. Height Difference		m	30	30	30
Refrigerant	Model			R22	R22	R22
	Charge		kg	2.2 (Factory Charge for 5m)	2.9 (Factory Charge for 5m)	3.1 (Factory Charge for 5m)
Ref. Oil	Model			SUNISO 3GS		
	Charge		L	1.48	1.63	1.63
Drawing No.				C : 4D008260A		

Note:

1. ∗1 The above data are based on the following conditions.

	Cooling	Piping Length	Standard
(1)	Indoor: 27°C(81°F)DB, 19.5°C(67°F)WB Outdoor: 35°C(95°F)DB	5m (Horizontal)	—
(2)	Indoor: 27°C(81°F)DB, 19.0°C(66°F)WB Outdoor: 35°C(95°F)DB	5m (Horizontal)	—
(3)	Indoor: 29°C(84°F)DB, 19.0°C(66°F)WB Outdoor: 46°C(115°F)DB, 24°C(75°F)WB	7.5m (Horizontal)	SSA 385/386

Capacities are gross capacities which do not include a deduction for indoor fan motor heat.

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3414 cfm=m³/min×35.3

RU-K Series <60Hz>

Model				FD06KTAL	FD08KTAL	FD10KTAL	FD15KTAL	FD20KTAL
Model	Outdoor Unit			RU06KTAL	RU08KTAL	RU10KTAL	RU08KTAL×2	RU10KTAL×2
∗1 Cooling Capacity (1)/(2)/(3)			kW	17.4 / 17.3 / 15.7	24.3 / 24.0 / 21.9	29.7 / 29.2 / 26.7	48.6 / 47.9 / 43.8	59.3 / 58.4 / 53.3
			Btu/h	59,500 / 59,100 / 53,600	83,000 / 81,800 / 74,600	101,200 / 99,600 / 91,300	166,000 / 163,500 / 149,500	202,400 / 199,400 / 182,000
			kcal/h	15,000 / 14,900 / 13,500	20,900 / 20,600 / 18,800	25,500 / 25,100 / 23,000	41,800 / 41,200 / 37,700	51,000 / 50,200 / 45,800
Indoor Unit				**FD06KTAL**	**FD08KTAL**	**FD10KTAL**	**FD15KTAL**	**FD20KTAL**
Dimensions		H×W×D	mm	450×1,130×850	500×1,130×850	500×1,330×850	625×1,620×850	625×1,980×850
Coil	Type			Cross Fin Coil (Waffle Louver Fins and Hi-XA Tubes)				
	Row×Stages×Fin Pitch			2×24×2.0	3×22×2.0	3×22×2.0	3×26×2.0	3×26×2.0
	Face Area		m²	0.491	0.443	0.540	0.784	0.990
Fan	Type			Sirocco Fan				
	Drive			Belt Drive				
	Motor Output		kW	0.75	1.5	1.5	2.2	3.7
	Air Flow Rate		m³/min	52	68	83	136	166
			cfm	1,835	2,400	2,930	4,800	5,860
	Ext. Static Pressure		mmH2O	9	10	10	15	15
Weight			kg	79	93	104	161	187
Piping Connections		Liquid	mm	ϕ 9.5 (Brazing)	ϕ 12.7 (Brazing)	ϕ 15.9 (Brazing)	2× ϕ 12.7 (Brazing)	2× ϕ 15.9 (Brazing)
		Gas	mm	ϕ 19.1 (Brazing)	ϕ 25.4 (Brazing)	ϕ 31.8 (Brazing)	2× ϕ 25.4 (Brazing)	2× ϕ 31.8 (Brazing)
		Drain	mm	FPS3/4B	FPS3/4B	FPS3/4B	FPS1B	FPS1B
Remote Controller		Wired		KRC47-3	KRC47-3	KRC47-3	KRC17-2B KRC47-3	KRC17-2B KRC47-3
		Wireless		—	—	—	—	—
Outdoor Unit				**RU06KTAL**	**RU08KTAL**	**RU10KTAL**	**RU08KTAL×2**	**RU10KTAL×2**
Color				Ivory White				
Dimensions		H×W×D	mm	1,345×880×320	1,220×1,280×690	1,440×1,280×690	2×(1,220×1,280×690)	2×(1,440×1,280×690)
Coil	Type			Cross Fin Coil (Waffle Louver Fins and Hi-XA Tubes)				
	Row×Stages×Fin Pitch			2×26×2.0	2×40×2.0	2×50×2.0	2×(2×40×2.0)	2×(2×50×2.0)
	Face Area		m²	1.16	1.57	1.97	2×1.57	2×1.97
Comp.	Model			JT190B	JT236D-P1	JT300D-P1	2×(JT236D-P1)	2×(JT300D-P1)
	Type			Hermetically Sealed Scroll Type				
	Motor Output		kW	4.5	5.5	7.5	2×5.5	2×7.5
Fan	Model			P45J11SM	P52H11S	P52H11S	2×P52H11S	2×P52H11S
	Type			Propeller				
	Motor Output		W	100+100	230+190	230+190	2×(230+190)	2×(230+190)
	Air Flow Rate		m³/min	108	160	190	2×160	2×190
			cfm	3,812	5,648	6,707	2×5,648	2×6,707
Weight			kg	112	176	188	2×176	2×188
Piping Connections		Liquid	mm	ϕ 9.5 (Flare)	ϕ 12.7 (Brazing)	ϕ 15.9 (Brazing)	2× ϕ 12.7 (Brazing)	2× ϕ 15.9 (Brazing)
		Gas	mm	ϕ 19.1 (Flare)	ϕ 25.4 (Brazing)	ϕ 31.8 (Brazing)	2× ϕ 25.4 (Brazing)	2× ϕ 31.8 (Brazing)
		Drain	mm	—	—	—	—	—
Safety Devices				Thermal Protector for Compressor and Outdoor Fan Motor. High Pressure Switch. Low Pressure Switch. Over Current Relay (Compressor and Indoor Fan Motor). Reverse Phase Protector. Fuse.	Thermal Protector for Compressor and Outdoor Fan Motor. High Pressure Switch. Over Current Relay (Compressor and Indoor Fan Motor). Reverse Phase Protector. Fuse.			
Capacity Step			%	100 – 0	100 – 0	100 – 0	100 – 50 – 0	100 – 50 – 0
Refrigerant Control				Capillary Tube				
Ref. Piping	Standard Length		m	5	5	5	5	5
	Max. Length		m	50 (Equivalent Length 70m)	50 (Equivalent Length 70m)	50 (Equivalent Length 70m)	50 (Equivalent Length 70m)	50 (Equivalent Length 70m)
	Max. Height Difference		m	30	30	30	30	30
Refrigerant	Model			R22	R22	R22	R22	R22
	Charge		kg	3.0 (Factory Charge for 5m)	5.0 (Field Charge for 5m)	6.1 (Field Charge for 5m)	2×5.0 (Field Charge for 5m)	2×6.1 (Field Charge for 5m)
Ref. Oil	Model			SUNISO 4GSDID-K				
	Charge		L	1.6	4.0	4.0	2×4.0	2×4.0
Drawing No.				C : 4D006820A			C : 4D008678	

Note:

1. ∗1 The above data are based on the following conditions.

	Cooling	Piping Length	Standard
(1)	Indoor: 27°C(81°F)DB, 19.5°C(67°F)WB Outdoor: 35°C(95°F)DB	5m (Horizontal)	—
(2)	Indoor: 27°C(81°F)DB, 19.0°C(66°F)WB Outdoor: 35°C(95°F)DB	5m (Horizontal)	—
(3)	Indoor: 29°C(84°F)DB, 19.0°C(66°F)WB Outdoor: 46°C(115°F)DB, 24°C(75°F)WB	7.5m (Horizontal)	SSA 385/386

Capacities are gross capacities which do not include a deduction for indoor fan motor heat.

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3414 cfm=m³/min×35.3

RU-KU Series <60Hz>

Model	Indoor Unit			FD08KTAL	FD10KTAL	FD15KTAL	FD20KTAL
	Outdoor Unit			RU08KUTAL	RU10KUTAL	RU08KUTAL×2	RU10KUTAL×2
∗1 Cooling Capacity (1)/(2)/(3)			kW	24.3 / 24.0 / 21.9	29.7 / 29.2 / 26.7	48.6 / 47.9 / 43.8	59.3 / 58.4 / 53.3
			Btu/h	83,000 / 81,800 / 74,600	101,200 / 99,600 / 91,300	166,000 / 163,500 / 149,500	202,400 / 199,400 / 182,000
			kcal/h	20,900 / 20,600 / 18,800	25,500 / 25,100 / 23,000	41,800 / 41,200 / 37,700	51,000 / 50,200 / 45,800
Indoor Unit				**FD08KTAL**	**FD10KTAL**	**FD15KTAL**	**FD20KTAL**
Dimensions		H×W×D	mm	500×1,130×850	500×1,330×850	625×1,620×850	625×1,980×850
Coil	Type			Cross Fin Coil (Waffle Louver Fins and Hi-XA Tubes)			
	Row×Stages×Fin Pitch			3×22×2.0	3×22×2.0	3×26×2.0	3×26×2.0
	Face Area		m^2	0.443	0.540	0.784	0.990
Fan	Type			Sirocco Fan			
	Drive			Belt Drive			
	Motor Output		kW	1.5	1.5	2.2	3.7
	Air Flow Rate		m^3/min	68	83	136	166
			cfm	2,400	2,930	4,800	5,860
	Ext. Static Pressure		mmH$_2$O	10	10	15	15
Weight			kg	93	104	161	187
Piping Connections		Liquid	mm	ϕ 12.7 (Brazing)	ϕ 15.9 (Brazing)	2× ϕ 12.7 (Brazing)	2× ϕ 15.9 (Brazing)
		Gas	mm	ϕ 25.4 (Brazing)	ϕ 31.8 (Brazing)	2× ϕ 25.4 (Brazing)	2× ϕ 31.8 (Brazing)
		Drain	mm	FPS3/4B	FPS3/4B	FPS1B	FPS1B
Remote Controller		Wired		KRC47-3	KRC47-3	KRC17-2B KRC47-3	KRC17-2B KRC47-3
		Wireless		—	—	—	—
Outdoor Unit				**RU08KUTAL**	**RU10KUTAL**	**RU08KUTAL×2**	**RU10KUTAL×2**
Color				Ivory White			
Dimensions		H×W×D	mm	1,220×1,280×690	1,440×1,280×690	2×(1,220×1,280×690)	2×(1,440×1,280×690)
Coil	Type			Cross Fin Coil (Waffle Louver Fins and Hi-XA Tubes)			
	Row×Stages×Fin Pitch			2×40×2.0	2×50×2.0	2×(2×40×2.0)	2×(2×50×2.0)
	Face Area		m^2	1.57	1.97	2×1.57	2×1.97
Comp.	Model			JT236D-P1	JT300D-P1	2×(JT236D-P1)	2×(JT300D-P1)
	Type			Hermetically Sealed Scroll Type			
	Motor Output		kW	5.5	7.5	2×5.5	2×7.5
Fan	Model			P52H11S	P52H11S	2×P52H11S	2×P52H11S
	Type			Propeller			
	Motor Output		W	230+190	230+190	2×(230+190)	2×(230+190)
	Air Flow Rate		m^3/min	160	190	2×160	2×190
			cfm	5,648	6,707	2×5,648	2×6,707
Weight			kg	185	200	2×185	2×200
Piping Connections		Liquid	mm	ϕ 12.7 (Flare)	ϕ 15.9 (Flare)	2× ϕ 12.7 (Flare)	2× ϕ 15.9 (Flare)
		Gas	mm	ϕ 25.4 (Brazing)	ϕ 31.8 (Brazing)	2× ϕ 25.4 (Brazing)	2× ϕ 31.8 (Brazing)
		Drain	mm	—	—	—	—
Safety Devices				Thermal Protector for Compressor and Outdoor Fan Motor. High Pressure Switch. Low Pressure Switch. Over Current Relay (Compressor and Indoor Fan Motor). Reverse Phase Protector. Fuse.			
Capacity Step			%	100 – 0	100 – 0	100 – 50 – 0	100 – 50 – 0
Refrigerant Control				Capillary Tube			
Ref. Piping	Standard Length		m	5	5	5	5
	Max. Length		m	50 (Equivalent Length 70m)	50 (Equivalent Length 70m)	50 (Equivalent Length 70m)	50 (Equivalent Length 70m)
	Max. Height Difference		m	30	30	30	30
Refrigerant	Model			R22	R22	R22	R22
	Charge		kg	5.0 (Factory Charge for 5m)	6.1 (Factory Charge for 5m)	2×5.0 (Factory Charge for 5m)	2×6.1 (Factory Charge for 5m)
Ref. Oil	Model			SUNISO 4GSDID-K			
	Charge		L	4.0	4.0	2×4.0	2×4.0
Drawing No.				C : 4D045869		C : 4D045871	

Note: 1. ∗1 The above data are based on the following conditions.

	Cooling	Piping Length	Standard
(1)	Indoor: 27°C(81°F)DB, 19.5°C(67°F)WB Outdoor: 35°C(95°F)DB	5m (Horizontal)	—
(2)	Indoor: 27°C(81°F)DB, 19.0°C(66°F)WB Outdoor: 35°C(95°F)DB	5m (Horizontal)	—
(3)	Indoor: 29°C(84°F)DB, 19.0°C(66°F)WB Outdoor: 46°C(115°F)DB, 24°C(75°F)WB	7.5m (Horizontal)	SSA 385/386

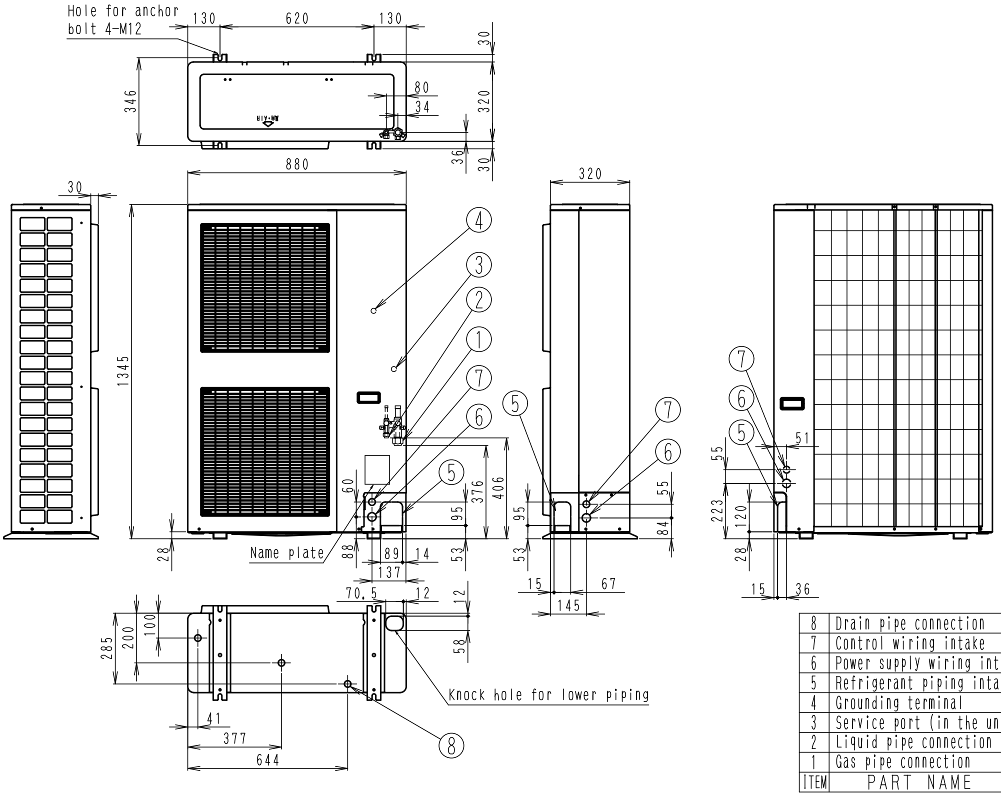
Capacities are gross capacities which do not include a deduction for indoor fan motor heat.

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3414 cfm=m^3/min×35.3

5.2.2 RU-K Series

RU06K

Unit (mm)

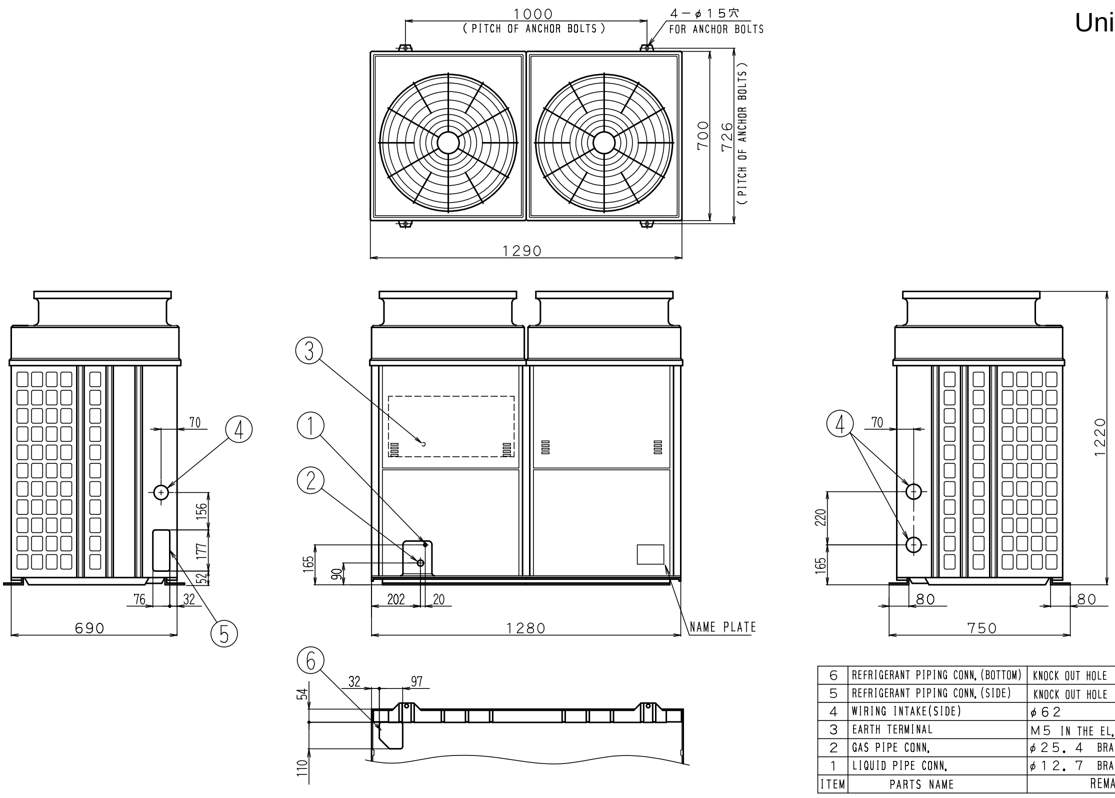


ITEM	PART NAME	REMARK
8	Drain pipe connection	O.D. φ26 3place
7	Control wiring intake	φ27 knock hole
6	Power supply wiring intake	φ34 knock hole
5	Refrigerant piping intake	
4	Grounding terminal	M5 (in switch box)
3	Service port (in the unit)	
2	Liquid pipe connection	φ9.5 Flare
1	Gas pipe connection	φ19.1 Flare

C : 3D007481

RU08K

Unit (mm)



ITEM	PARTS NAME	REMARK
6	REFRIGERANT PIPING CONN.(BOTTOM)	KNOCK OUT HOLE
5	REFRIGERANT PIPING CONN.(SIDE)	KNOCK OUT HOLE
4	WIRING INTAKE(SIDE)	φ62
3	EARTH TERMINAL	M5 IN THE EL.COMPO.BOX ASSY
2	GAS PIPE CONN.	φ25.4 BRAZING
1	LIQUID PIPE CONN.	φ12.7 BRAZING

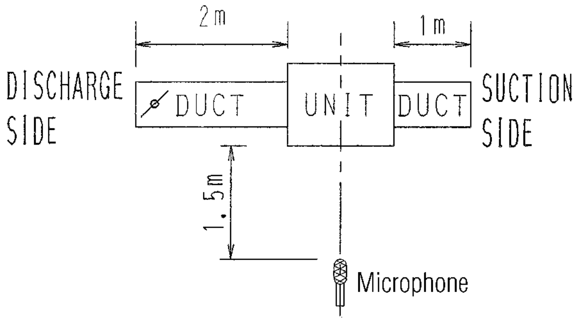
3D004870

10. Sound Level

10.1 Overall Sound Level

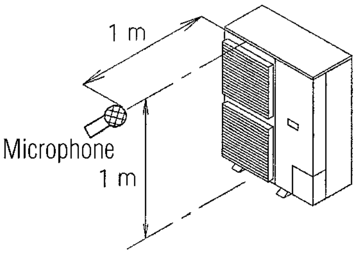
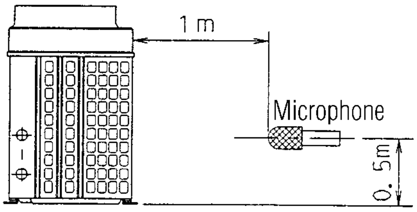
- **Indoor Unit**

dB(A)

Model	50/60Hz	Measuring Location
FD03K	46	 4D004893A
FD04K	49	
FD05K	49	
FD06K	51	
FD08K	51	
FD10K	53	
FD15K	58	
FD20K	60	

- **Outdoor Unit**

dB(A)

Model	50/60Hz	Measuring Location
R71FU	52/53	 4D002417
R100FU	56/57	
R125FU	57/59	
RU06K	59	
RU08K RU08KU	60 60	 4D006806
RU10K RU10KU	61 61	

Note : Operation noise differes with operation and ambient conditions.

Catalogue of Daikin R50GV1

Si01-202

Service Manual

SPLIT
GA Series

[Applied Models]

●Non-Inverter Pair : Cooling Only

Non Inverter Pair

●Cooling Only

Indoor Unit

FT50GAVE	**FT50GAVEA**	**FT50GAVAL**
FT60GAVE	**FT60GAVEA**	**FT60GAVAL**

Outdoor Unit

R50GV1	**R50GV19**	**R50GAV1A**	**R50GVAL**
R60GV1	**R60GV19**	**R60GAV1A**	**R60GVAL**
R50GV1K	**R50GV1K9**	**R50GAV1A9**	**R50GVAL9**
R60GV1K	**R60GV1K9**	**R60GAV1A9**	**R60GVAL9**

Part 1 List of Function 1

Part 2 Specifications 3

Part 3 Printed Circuit Board Connector Wiring Diagram 7

Part 4 Main Function... 11

Part 5 System Configuration... 21

Part 6 Service Diagnosis... 37

Part 7 Removal Procedure... 53

1. Introduction

1.1 Safety Cautions

Cautions and Warnings

- Be sure to read the following safety cautions before conducting repair work.
- The caution items are classified into “ ⚠ **Warning**” and “ ⚠ **Caution**”. The “ ⚠ **Warning**” items are especially important since they can lead to death or serious injury if they are not followed closely. The “ ⚠ **Caution**” items can also lead to serious accidents under some conditions if they are not followed. Therefore, be sure to observe all the safety caution items described below.
- About the pictograms

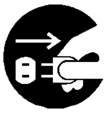
△ This symbol indicates an item for which caution must be exercised.
The pictogram shows the item to which attention must be paid.

○ This symbol indicates a prohibited action.
The prohibited item or action is shown inside or near the symbol.

● This symbol indicates an action that must be taken, or an instruction.
The instruction is shown inside or near the symbol.

- After the repair work is complete, be sure to conduct a test operation to ensure that the equipment operates normally, and explain the cautions for operating the product to the customer

1.1.1 Caution in Repair

⚠ **Warning**	
Be sure to disconnect the power cable plug from the plug socket before disassembling the equipment for a repair. Working on the equipment that is connected to a power supply can cause an electrical shook. If it is necessary to supply power to the equipment to conduct the repair or inspecting the circuits, do not touch any electrically charged sections of the equipment.	
If the refrigerant gas discharges during the repair work, do not touch the discharging refrigerant gas. The refrigerant gas can cause frostbite.	
When disconnecting the suction or discharge pipe of the compressor at the welded section, release the refrigerant gas completely at a well-ventilated place first. If there is a gas remaining inside the compressor, the refrigerant gas or refrigerating machine oil discharges when the pipe is disconnected, and it can cause injury.	
If the refrigerant gas leaks during the repair work, ventilate the area. The refrigerant gas can generate toxic gases when it contacts flames.	
The step-up capacitor supplies high-voltage electricity to the electrical components of the outdoor unit. Be sure to discharge the capacitor completely before conducting repair work. A charged capacitor can cause an electrical shock.	
Do not start or stop the air conditioner operation by plugging or unplugging the power cable plug. Plugging or unplugging the power cable plug to operate the equipment can cause an electrical shock or fire.	

⚠ **Caution**	
Do not repair the electrical components with wet hands. Working on the equipment with wet hands can cause an electrical shock.	🛇
Do not clean the air conditioner by splashing water. Washing the unit with water can cause an electrical shock.	🛇
Be sure to provide the grounding when repairing the equipment in a humid or wet place, to avoid electrical shocks.	⏚
Be sure to turn off the power switch and unplug the power cable when cleaning the equipment. The internal fan rotates at a high speed, and cause injury.	🔌
Do not tilt the unit when removing it. The water inside the unit can spill and wet the furniture and floor.	🛇
Be sure to check that the refrigerating cycle section has cooled down sufficiently before conducting repair work. Working on the unit when the refrigerating cycle section is hot can cause burns.	
Use the welder in a well-ventilated place. Using the welder in an enclosed room can cause oxygen deficiency.	❗

1.1.2 Cautions Regarding Products after Repair

⚠ **Warning**	
Be sure to use parts listed in the service parts list of the applicable model and appropriate tools to conduct repair work. Never attempt to modify the equipment. The use of inappropriate parts or tools can cause an electrical shock, excessive heat generation or fire.	
When relocating the equipment, make sure that the new installation site has sufficient strength to withstand the weight of the equipment. If the installation site does not have sufficient strength and if the installation work is not conducted securely, the equipment can fall and cause injury.	
Be sure to install the product correctly by using the provided standard installation frame. Incorrect use of the installation frame and improper installation can cause the equipment to fall, resulting in injury.	For integral units only
Be sure to install the product securely in the installation frame mounted on a window frame. If the unit is not securely mounted, it can fall and cause injury.	For integral units only
Be sure to use an exclusive power circuit for the equipment, and follow the technical standards related to the electrical equipment, the internal wiring regulations and the instruction manual for installation when conducting electrical work. Insufficient power circuit capacity and improper electrical work can cause an electrical shock or fire.	

⚠ **Warning**	
Be sure to use the specified cable to connect between the indoor and outdoor units. Make the connections securely and route the cable properly so that there is no force pulling the cable at the connection terminals. Improper connections can cause excessive heat generation or fire.	
When connecting the cable between the indoor and outdoor units, make sure that the terminal cover does not lift off or dismount because of the cable. If the cover is not mounted properly, the terminal connection section can cause an electrical shock, excessive heat generation or fire.	
Do not damage or modify the power cable. Damaged or modified power cable can cause an electrical shock or fire. Placing heavy items on the power cable, and heating or pulling the power cable can damage the cable.	⊘
Do not mix air or gas other than the specified refrigerant (R22) in the refrigerant system. If air enters the refrigerating system, an excessively high pressure results, causing equipment damage and injury.	
If the refrigerant gas leaks, be sure to locate the leak and repair it before charging the refrigerant. After charging refrigerant, make sure that there is no refrigerant leak. If the leak cannot be located and the repair work must be stopped, be sure to perform pump-down and close the service valve, to prevent the refrigerant gas from leaking into the room. The refrigerant gas itself is harmless, but it can generate toxic gases when it contacts flames, such as fan and other heaters, stoves and ranges.	❗
When replacing the coin battery in the remote controller, be sure to disposed of the old battery to prevent children from swallowing it. If a child swallows the coin battery, see a doctor immediately.	

⚠ **Caution**	
Installation of a leakage breaker is necessary in some cases depending on the conditions of the installation site, to prevent electrical shocks.	
Do not install the equipment in a place where there is a possibility of combustible gas leaks. If a combustible gas leaks and remains around the unit, it can cause a fire.	⊘
Be sure to install the packing and seal on the installation frame properly. If the packing and seal are not installed properly, water can enter the room and wet the furniture and floor.	For integral units only

1.1.3 Inspection after Repair

⚠ **Warning**	
Check to make sure that the power cable plug is not dirty or loose, then insert the plug into a power outlet all the way. If the plug has dust or loose connection, it can cause an electrical shock or fire.	❗
If the power cable and lead wires have scratches or deteriorated, be sure to replace them. Damaged cable and wires can cause an electrical shock, excessive heat generation or fire.	❗
Do not use a joined power cable or extension cable, or share the same power outlet with other electrical appliances, since it can cause an electrical shock, excessive heat generation or fire.	⊘

⚠ **Caution**	
Check to see if the parts and wires are mounted and connected properly, and if the connections at the soldered or crimped terminals are secure. Improper installation and connections can cause excessive heat generation, fire or an electrical shock.	
If the installation platform or frame has corroded, replace it. Corroded installation platform or frame can cause the unit to fall, resulting in injury.	
Check the grounding, and repair it if the equipment is not properly grounded. Improper grounding can cause an electrical shock.	⏚
Be sure to measure the insulation resistance after the repair, and make sure that the resistance is 1 Mohm or higher. Faulty insulation can cause an electrical shock.	
Be sure to check the drainage of the indoor unit after the repair. Faulty drainage can cause the water to enter the room and wet the furniture and floor.	

1.1.4 Using Icons

Icons are used to attract the attention of the reader to specific information. The meaning of each icon is described in the table below:

1.1.5 Using Icons List

Icon	Type of Information	Description
ℹ Note:	Note	A “note” provides information that is not indispensable, but may nevertheless be valuable to the reader, such as tips and tricks.
⚠ Caution	Caution	A “caution” is used when there is danger that the reader, through incorrect manipulation, may damage equipment, loose data, get an unexpected result or has to restart (part of) a procedure.
⚠ Warning	Warning	A “warning” is used when there is danger of personal injury.
↳	Reference	A “reference” guides the reader to other places in this binder or in this manual, where he/she will find additional information on a specific topic.

Part 1
List of Function

1. Functions

1.1 List of Functions

Category	Functions	FT50·60GAVE(A)/GAVAL R50·60GV1/GAV1A/GAVAL(K)(9)
Basic Function	Inverter (with Inverter Power Control)	—
	Operation Limit for Cooling (°C)★1	19.4 ~54
	Microprocessor Control	○
	PAM Control	—
Compressor	Oval Scroll Compressor (DAIKIN SCROLL)	—
	Swing Compressor(DAIKIN ROTARY)	—
	Rotary Compressor	○
	Reluctance DC Motor	—
Comfortable Airflow	Power-Airflow Flap	○
	Power-Airflow Dual Flaps	—
	Power-Airflow Diffuser	○
	Wide-Angle Louvers	○
	Vertical Auto-Swing (Up and Down)	○
	Horizontal Auto-Swing (Right and Left)	★2
	3-D Airflow	—
	3-Step Airflow (H/P Only)	—
"Comfortable Control" Comfort Control	Auto Fan Speed	○
	Silent Operation Control (Automatic)	—
	Outdoor Unit Silent Operation (Manual)	—
	Intelligent Eye	—
	Quick Warming Function	—
	Hot-Start Function	—
	Automatic Defrosting	—
Operation	Automatic Operation	—
	Programme Dry Function	○
	Fan Only	○
Lifestyle Convenience	New Powerful Operation (Non-Inverter)	○
	Inverter Powerful Operation	—
	Priority-Room Setting	—
	Laundry Programme Operation	—
	Home Leave Operation	—
	Power Selection	—
	Indoor Unit On/Off Switch	○
	Signal Reception Indicator	○
	Temperature Display	—

Category	Functions	FT50·60GAVE(A)/GAVAL R50·60GV1/GAV1A/GAVAL(K)(9)
Health Health & Clean	Air Purifying Filter with Bacteriostatic, Virustatic & Deodorizing Functions	○
	Longlife Filter	—
	Ultra-Longlife Filter (Option)	—
	Photocatalytic Deodorizing Filter	—
	Photocatalytic Filter with UV Lamp	—
	Mold Proof Air Filter	○
	Washable Grille	○
	Filter Cleaning Indicator	○
	Good-Sleep Cooling Operation	—
Timer	72-Hour On/Off Timer	—
	24-Hour On/Off Timer	○
	Night Set Mode	○
	Just Fit Thermostatic Timer	—
Worry Free "Reliability & Durability"	Auto-Restart (after Power Failure)	○
	Self-Diagnosis (Digital, LED) Display	○
	The Remote Controller Loss Prevention with the Chain (Option)	○
	Wiring-Error Check	—
	Anticorrosion Treatment of Outdoor Heat Exchanger	○
Flexibility	Multi-Split / Split Type Compatible Indoor Unit ★3	○
	Flexible Voltage Correspondence	—
	High Ceiling Application	—
	Chargeless	10m
Remote Control	5-Rooms Centralized Controller (Option)	○
	Remote Control Adaptor (Option) (Normal Open-Pulse)	○
	Remote Control Adaptor (Normal Open Contact)	○
	DIII-NET Compatible (Adaptor)	—
Remote Controller	Wireless	○
	Wired	—

Note: ○ : Holding Functions
— : No Functions

★1 R50·60GAV1A : 19.4°C~46°C
★2 Apply only for FT50·60GAVAL
★3 For FT50·60GAVAL : [—]

Part 2
Specifications

1. Specifications

1.1 Cooling Only

V1 : 50Hz, 220-240V V1A : 50Hz, 220-230-240V

Model	Indoor Units		FT50GAVE	FT50GAVEA		FT60GAVE	FT60GAVEA	
	Outdoor Units		R50GV1(9)	R50GAV1A(9)	R50GV1K(9)	R60GV1(9)	R60GAV1A(9)	R60GV1K(9)
Capacity Rated		kW	5.3			6.4		
		Btu/h	18,100			21,800		
		kcal/h	4,560			5,500		
Moisture Removal		L/h	2.9			5.2		
Running Current (Rated)		A	10.1-11.0	10.1-11.2-11.2	10.1-11.0	11.8-11.4	11.8-11.3-11.3	11.8-11.4
Power Consumption (Rated)		W	2,000-2,180	2,000-2,120-2,120	2,000-2,180	2,410-2,500-2,500		
Power Factor		%	90.0-82.6	90.0-82.3-81.1	90.0-82.6	92.8-91.4	92.8-96.2-92.2	92.8-91.4
COP		W/W	2.65-2.43	2.65-2.50-2.50	2.65-2.43	2.66-2.56-2.56		
Piping Connections	Liquid	mm	ϕ6.4			ϕ6.4		
	Gas	mm	ϕ15.9			ϕ15.9		
	Drain	mm	ϕ18.0			ϕ18.0		
Heat Insulation			Both Liquid and Gas Pipes			Both Liquid and Gas Pipes		
Indoor Unit			**FT50GAVE**	**FT50GAVEA**		**FT60GAVE**	**FT60GAVEA**	
Front Panel Color			Almond White			Almond White		
Air Flow Rate	m^3/min (cfm)	H	14.0 (494)			14.0 (494)		
		M	12.0 (424)			12.4 (438)		
		L	10.0 (353)			10.8 (381)		
Fan	Type		Cross Flow Fan			Cross Flow Fan		
	Motor Output	W	54			54		
	Speed	Steps	5 Steps and Auto			5 Steps and Auto		
Air Direction Control			Right, Left, Horizontal and Downward			Right, Left, Horizontal and Downward		
Air Filter			Removal-Washable-Mildew Proof			Removal-Washable-Mildew Proof		
Running Current (Rated)		A	0.19-0.18-0.17			0.19-0.18-0.17		
Power Consumption (Rated)		W	40			40		
Power Factor		%	95.7-96.6-98.0			95.7-96.6-98.0		
Temperature Control			Microcomputer Control			Microcomputer Control		
Dimension (H×W×D)		mm	298×1,050×190			298×1,050×190		
Packaged Dimension		mm	1,183×367×289			1,183×367×289		
Weight		kg	12			12		
Gross Weight		kg	16			16		
Operation Sound	H/M/L	dBA	43/39/35			46/42/38		
Outdoor Unit			**R50GV1**	**R50GAV1A**	**R50GV1K(9)**	**R60GV1**	**R60GAV1A**	**R60GV1K(9)**
Casing Color			Ivory White			Ivory White		
Compressor	Type		Hermetically Sealed Rotary Type			Hermetically Sealed Rotary Type		
	Model		RC70AV1TRT			NH41VMDT		
	Motor Output	W	1,700			2,200		
Refrigerant Oil	Type		SUNISO 4GSD.I.			MS-32		
	Charge	L	0.85			1.20		
Refrigerant	Type		R22			R22		
	Charge	kg	1.10	1.20	1.10	1.50		
Air Flow Rate	m^3/min (cfm)	H	29-29.5-30 (1,024-1,041-1,059)			40-40.5-41 (1,412-1,430-1,447)		
		L	—			23-24-25 (812-847-883)		
Fan	Type		Propeller			Propeller		
	Motor Output	W	45			53		
Running Current (Rated)		A	9.91-10.83	9.91-11.02-11.03	9.91-10.83	11.61-11.23	11.61-11.12-11.13	11.61-11.23
Power Consumption (Rated)		W	1,960-2,140	1,960-2,080-2,080	1,960-2,140	2,370-2,460-2,460		
Power Factor		%	89.9-82.3	90.0-82.1-78.6	90.0-82.3	92.8-91.3	92.8-96.2-92.1	92.8-91.3
Starting Current		A	43-47	43-44-45	43-45	55-58-60		
Dimensions (H×W×D)		mm	540×750×270			685×800×300		
Packaged Dimension		mm	940×360×609			955×390×732		
Weight		kg	42			61		
Gross Weight		kg	45			66		
Operation Sound		dBA	49-50-50			54-55-55		
Drawing No.			3D029060	3D028525	3D029102	3D029061	3D028526	3D029103

Notes:

- ■ MAX. interunit piping length: 30m
- ■ MAX. interunit height difference: 15m
- ■ Amount of additional charge of refrigerant 20g/m for piping length exceeding 10m
- ■ The data are based on the conditions shows in the table below.

FT50/60GAVE (220V)

Standard	Cooling	Piping Length
JIS C 9612	Indoor ; 27°CDB/19°CWB Outdoor ; 35°CDB/24°CWB	5m

FT50/60GAVEA (230/240V)

Standard	Cooling	Piping Length	Power Source
AS/NZS3823, 1	Indoor ; 27°CDB/19°CWB Outdoor ; 35°CDB/24°CWB	7.5m	50Hz 230/240V

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3414 cfm=m^3/min×35.3

Catalogue of Daikin R125FU

ED 42 - 019A

DAIKIN

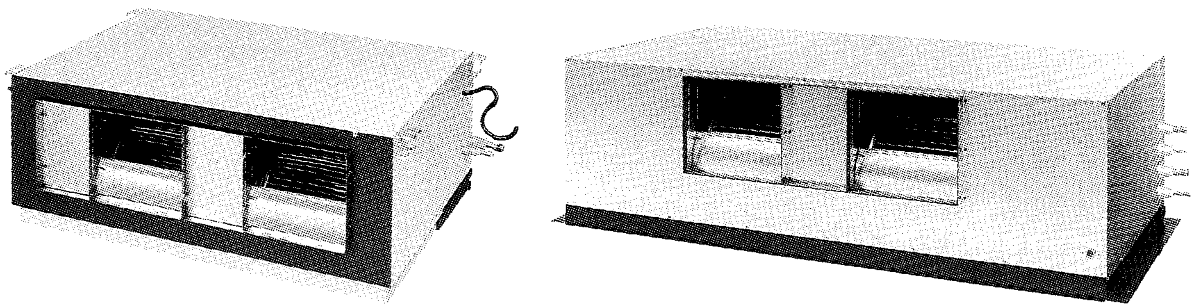
Engineering Data

Packaged Air Conditioners
Duct Connection Type

(High Static Pressure Application)

FD-K Series

— Cooling Only —



DAIKIN INDUSTRIES, LTD.

Duct Connection Type High Static Pressure Application FD-K Series

1. Power Supply and Nomenclature

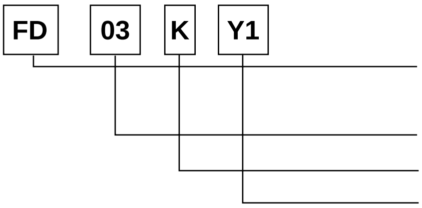
1.1 Power Supply

Symbol	Indoor Unit	Outdoor Unit	Power Supply
Y1	FD03KY1	R71FUY1	3ϕ 380~415V 50Hz (4 wires)
	FD04KY1	R100FUY1	
	FD05KY1	R125FUY1	
	FD06KY1	RU06KY1	
	FD08KY1	RU08KY1	
	FD08KY1	RU08KUY1 ∗	
	FD10KY1	RU10KY1	
	FD10KY1	RU10KUY1 ∗	
	FD15KY1	RU08KY1×2	
	FD15KY1	RU08KUY1×2 ∗	
	FD20KY1	RU10KY1×2	
	FD20KY1	RU10KUY1×2 ∗	
VAL	FD03KVAL	R71FUVAL	1ϕ 220V 60Hz
	FD04KVAL	R100FUVAL	
TAL	FD05KTAL	R125FUTAL	3ϕ 220V 60Hz
	FD06KTAL	RU06KTAL	
	FD08KTAL	RU08KTAL	
	FD08KTAL	RU08KUTAL ∗	
	FD10KTAL	RU10KTAL	
	FD10KTAL	RU10KUTAL ∗	
	FD15KTAL	RU08KTAL×2	
	FD15KTAL	RU08KUTAL×2 ∗	
	FD20KTAL	RU10KTAL×2	
	FD20KTAL	RU10KUTAL×2 ∗	

Note:
1. ∗ : New Model or Changed Model
2. Power Supply Intake; Outdoor Unit

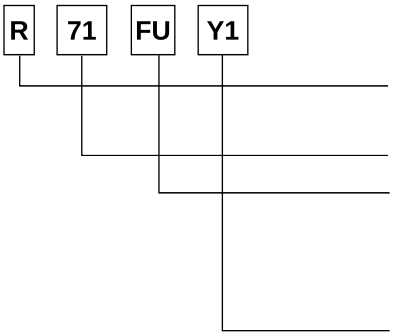
1.2 Nomenclature

Indoor Unit



Duct Connection High Static Pressure Type
FD : Cooling Only
Capacity : HP
Indicates Major Design Category
Power Supply Symbol
Y1 : 3ϕ 380~415V 50Hz
VAL : 1ϕ 220V 60Hz
TAL : 3ϕ 220V 60Hz

Outdoor Unit



Outdoor Unit
R, RU : Cooling Only
Capacity ×100 kcal/h (50 Hz)
Indicates Major Design Category

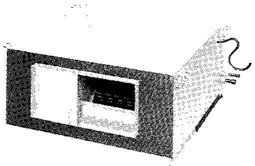
	50Hz	60Hz
FU	○	○
K	○	○
KU	○	○

Power Supply Symbol
Y1 : 3ϕ 380~415V 50Hz
VAL : 1ϕ 220V 60Hz
TAL : 3ϕ 220V 60Hz

2. External Appearance

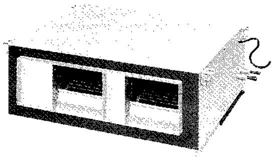
2.1 Indoor Unit

FD03K



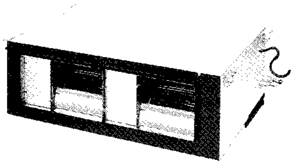
FD04K

FD05K

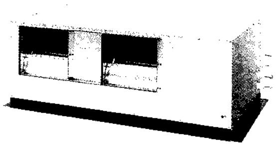


FD06K

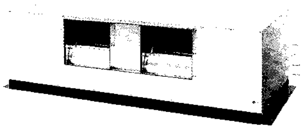
FD08K



FD10K



FD15K

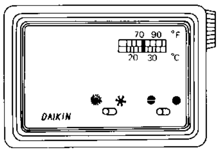


FD20K

2.2 Remote Controller

KRC47-3

KRC47-5



KRC17-2B

2.3 Outdoor Unit

R71FU

R100FU
R125FU

RU06K

RU08K
RU08KU

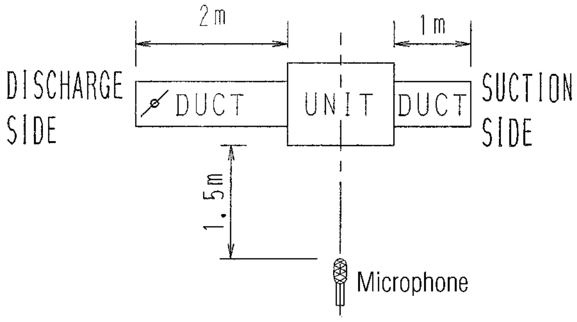
RU10K
RU10KU

10. Sound Level

10.1 Overall Sound Level

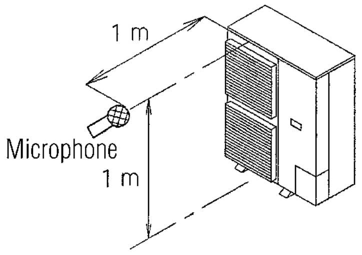
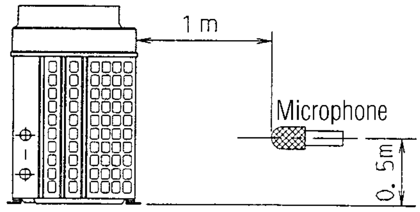
■ Indoor Unit

dB(A)

Model	50/60Hz	Measuring Location
FD03K	46	 4D004893A
FD04K	49	
FD05K	49	
FD06K	51	
FD08K	51	
FD10K	53	
FD15K	58	
FD20K	60	

■ Outdoor Unit

dB(A)

Model	50/60Hz	Measuring Location
R71FU	52/53	 4D002417
R100FU	56/57	
R125FU	57/59	
RU06K	59	
RU08K RU08KU	60 60	 4D006806
RU10K RU10KU	61 61	

Note : Operation noise differes with operation and ambient conditions.

Catalogue of Daikin RUXYQ12AB

DAIKIN

VRVDHK2015-1

VRV X SERIES

Heat Pump 50Hz
R-410A

DAIKIN

VRV X SERIES

Next Generation VRV X SERIES System

VRV X SERIES

*First launched in Japan in 1982, the Daikin **VRV** system has been embraced by world markets for over 30 years. Now, Daikin proudly introduces the next-generation **VRV X SERIES** system. It now offers improved energy savings, comfort, and ease of installation to meet an ever wider variety of needs.*

* *VRV* is a trademark of Daikin Industries, Ltd.

INDEX

Outdoor Unit VRV X SERIES

Outdoor Units

The latest technology is implemented in the VRVX system and responds to the needs of our customers that require air-conditioning solutions for large-sized building.

Outdoor units
Offering a higher capacity of up to 66HP, responding to the needs of large-sized buildings.

The previous outdoor unit had a maximum output of 48 HP. The VRVX has a top output of 66 HP. By connecting main units (up to 22HP each), a high capacity system (up to 66HP) that is compact yet flexible can be achieved.

8HP **RUXYQ8AB**
10HP **RUXYQ10AB**
12HP **RUXYQ12AB**

14HP **RUXYQ14AB**
16HP **RUXYQ16AB**
18HP **RUXYQ18AB**
20HP **RUXYQ20AB**
22HP **RUXYQ22AB**

24HP **RUXYQ24AB**

26HP **RUXYQ26AB**
28HP **RUXYQ28AB**
30HP **RUXYQ30AB**
32HP **RUXYQ32AB**
34HP **RUXYQ34AB**

36HP **RUXYQ36AB**
38HP **RUXYQ38AB**
40HP **RUXYQ40AB**
42HP **RUXYQ42AB**
44HP **RUXYQ44AB**

46HP **RUXYQ46AB**
48HP **RUXYQ48AB**
50HP **RUXYQ50AB**
52HP **RUXYQ52AB**
54HP **RUXYQ54AB**
56HP **RUXYQ56AB**

58HP **RUXYQ58AB**
60HP **RUXYQ60AB**
62HP **RUXYQ62AB**
64HP **RUXYQ64AB**
66HP **RUXYQ66AB**

Outdoor Series Combinations

Model	RUXYQ8AB	RUXYQ10AB	RUXYQ12AB	RUXYQ14AB	RUXYQ16AB	RUXYQ18AB	RUXYQ20AB	RUXYQ22AB			
Model	RUXYQ24AB	RUXYQ26AB	RUXYQ28AB	RUXYQ30AB	RUXYQ32AB	RUXYQ34AB	RUXYQ36AB	RUXYQ38AB	RUXYQ40AB	RUXYQ42AB	RUXYQ44AB
Combination	RUXYQ12AB	RUXYQ10AB	RUXYQ12AB	RUXYQ8AB	RUXYQ10AB	RUXYQ12AB	RUXYQ14AB	RUXYQ16AB	RUXYQ18AB	RUXYQ20AB	RUXYQ22AB
	RUXYQ12AB	RUXYQ16AB	RUXYQ16AB	RUXYQ22AB	RUXYQ22AB	RUXYQ22AB	RUXYQ22AB	RUXYQ22AB	RUXYQ22AB	RUXYQ22AB	RUXYQ22AB
Model	RUXYQ46AB	RUXYQ48AB	RUXYQ50AB	RUXYQ52AB	RUXYQ54AB	RUXYQ56AB	RUXYQ58AB	RUXYQ60AB	RUXYQ62AB	RUXYQ64AB	RUXYQ66AB
Combination	RUXYQ8AB	RUXYQ10AB	RUXYQ12AB	RUXYQ10AB	RUXYQ10AB	RUXYQ12AB	RUXYQ14AB	RUXYQ16AB	RUXYQ18AB	RUXYQ20AB	RUXYQ22AB
	RUXYQ16AB	RUXYQ16AB	RUXYQ16AB	RUXYQ20AB	RUXYQ22AB	RUXYQ22AB	RUXYQ22AB	RUXYQ22AB	RUXYQ22AB	RUXYQ22AB	RUXYQ22AB
	RUXYQ22AB	RUXYQ22AB	RUXYQ22AB	RUXYQ22AB	RUXYQ22AB	RUXYQ22AB	RUXYQ22AB	RUXYQ22AB	RUXYQ22AB	RUXYQ22AB	RUXYQ22AB

Outdoor Unit Combination

HP	Model	Combination	Outdoor unit multi connection piping kit	Capacity (kW)	Total Capacity of connectable Indoor units	Maximum number of connectable indoor units
8	RUXYQ8AB	-	-	22.4	11.20 - 29.12	13
10	RUXYQ10AB	-	-	28.0	14.00 - 36.40	16
12	RUXYQ12AB	-	-	33.5	16.75 - 43.55	19
14	RUXYQ14AB	-	-	40.0	20.00 - 52.00	23
16	RUXYQ16AB	-	-	45.0	22.50 - 58.50	26
18	RUXYQ18AB	-	-	50.0	25.00 - 65.00	29
20	RUXYQ20AB	-	-	56.0	28.00 - 72.80	33
22	RUXYQ22AB	-	-	61.5	30.75 - 79.95	36
24	RUXYQ24AB	RUXYQ12AB + RUXYQ12AB	BHFP22MC90	67.0	33.50 - 87.10	39
26	RUXYQ26AB	RUXYQ10AB + RUXYQ16AB	BHFP22MC90	73.0	36.50 - 94.90	43
28	RUXYQ28AB	RUXYQ12AB + RUXYQ16AB	BHFP22MC90	78.5	39.25 - 102.05	46
30	RUXYQ30AB	RUXYQ8AB + RUXYQ22AB	BHFP22MC90	83.9	41.95 - 109.07	49
32	RUXYQ32AB	RUXYQ10AB + RUXYQ22AB	BHFP22MC90	89.5	44.75 - 116.35	52
34	RUXYQ34AB	RUXYQ12AB + RUXYQ22AB	BHFP22MC90	95.0	47.50 - 123.50	56
36	RUXYQ36AB	RUXYQ14AB + RUXYQ22AB	BHFP22MC90	101.5	50.75 - 131.95	59
38	RUXYQ38AB	RUXYQ16AB + RUXYQ22AB	BHFP22MC90	106.5	53.25 - 138.45	62
40	RUXYQ40AB	RUXYQ18AB + RUXYQ22AB	BHFP22MC90	111.5	55.75 - 144.95	64
42	RUXYQ42AB	RUXYQ20AB + RUXYQ22AB	BHFP22MC90	117.5	58.75 - 152.75	64
44	RUXYQ44AB	RUXYQ22AB + RUXYQ22AB	BHFP22MC90	123.0	61.50 - 159.90	64
46	RUXYQ46AB	RUXYQ8AB + RUXYQ16AB + RUXYQ22AB	BHFP22MC135	128.9	64.45 - 167.57	64
48	RUXYQ48AB	RUXYQ10AB + RUXYQ16AB + RUXYQ22AB	BHFP22MC135	134.5	67.25 - 174.85	64
50	RUXYQ50AB	RUXYQ12AB + RUXYQ16AB + RUXYQ22AB	BHFP22MC135	140.0	70.00 - 182.00	64
52	RUXYQ52AB	RUXYQ10AB + RUXYQ20AB + RUXYQ22AB	BHFP22MC135	145.5	72.75 - 189.15	64
54	RUXYQ54AB	RUXYQ10AB + RUXYQ22AB + RUXYQ22AB	BHFP22MC135	151.0	75.50 - 196.30	64
56	RUXYQ56AB	RUXYQ12AB + RUXYQ22AB + RUXYQ22AB	BHFP22MC135	156.5	78.25 - 203.45	64
58	RUXYQ58AB	RUXYQ14AB + RUXYQ22AB + RUXYQ22AB	BHFP22MC135	163.0	81.50 - 211.90	64
60	RUXYQ60AB	RUXYQ16AB + RUXYQ22AB + RUXYQ22AB	BHFP22MC135	168.0	84.00 - 218.40	64
62	RUXYQ62AB	RUXYQ18AB + RUXYQ22AB + RUXYQ22AB	BHFP22MC135	173.0	86.50 - 224.90	64
64	RUXYQ64AB	RUXYQ20AB + RUXYQ22AB + RUXYQ22AB	BHFP22MC135	179.0	89.50 - 232.70	64
66	RUXYQ66AB	RUXYQ22AB + RUXYQ22AB + RUXYQ22AB	BHFP22MC135	184.5	92.25 - 239.85	64

VRV X SERIES Outdoor Lineup

Outdoor Unit																		
Model			RUXYQ8AB	RUXYQ10AB	RUXYQ12AB	RUXYQ14AB	RUXYQ16AB	RUXYQ18AB	RUXYQ20AB	RUXYQ22AB	RUXYQ24AB	RUXYQ26AB	RUXYQ28AB	RUXYQ30AB	RUXYQ32AB	RUXYQ34AB	RUXYQ36AB	RUXYQ38AB
Horse Power		HP	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38
Combination			—	—	—	—	—	—	—	—	12+12	10+16	12+16	8+22	10+22	12+22	14+22	16+22
Power Supply			3 - Phase 50Hz 380V															
★1 Cooling Capacity		kW	22.4	28.0	33.5	40.0	45.0	50.4	56.0	61.5	67.0	73.0	78.5	83.9	89.5	95.0	101.5	106.5
★2 Heating Capacity		kW	25.0	31.5	37.5	45.0	50.0	56.5	63.0	69.0	75.0	81.5	87.5	94.0	100.5	106.5	114.0	119.0
Power Consumption	Cooling	kW	5.05	7.00	8.70	10.70	12.70	14.30	16.50	18.6	17.40	19.70	21.40	23.7	25.6	27.3	29.3	31.3
	Heating	kW	5.34	7.15	8.81	10.90	12.40	14.00	16.50	18.70	17.60	19.55	21.20	24.00	25.85	27.51	29.60	31.10
Airflow Rate		m³/min	162	175	185	223	260	251	261	271	185+185	175+260	185+260	162+271	175+271	185+271	223+271	260+271
Dimensions (HxWxD)		mm	1657×930×765			1657×1240×765					1657×930×765+ 1657×930×765	1657×930×765+1657×1240×765					1657×1240×765+1657×1240×765	
External Static Pressure		Pa	81															
★3 Sound Level	Fount Sound Level	dB(A)	57	58	60			61	62	63		62	63	64		65		
	Surround Sound Level	dB(A)	60	61	63			64	65	66		65	66	67		68		
Night Quiet Mode		dB(A)	40								43							
Piping Connections	Liquid	mm	Φ9.5		Φ12.7			Φ15.9				Φ19.1						
	Gas	mm	Φ19.1	Φ22.2	Φ25.4		Φ28.6					Φ31.8					Φ38.1	
Weight		kg	186	193	215	288		322			430	481	503	508	515	537	610	
Refrigerant	Type		R410A															
	Charge	kg	7.9	8.2	9.3	10.5	10.6	13.6			18.6	18.80	19.9	21.5	21.80	22.90	24.10	24.20
Operation Range	Cooling	℃DB	-5~50℃DB															
	Heating	℃WB	-20~15.5℃WB															
★4 Max. Fuse Amps	MFA	A	25			30	35	50				55		60		80		
★4 Min. Circuit Amps	MCA	A	16.1	18.0	20.1	24.4	26.0	34.8	39.6	43.6	40.2	44.0	46.1	59.7	61.6	63.7	68.0	69.6

Outdoor Unit																
Model			RUXYQ40AB	RUXYQ42AB	RUXYQ44AB	RUXYQ46AB	RUXYQ48AB	RUXYQ50AB	RUXYQ52AB	RUXYQ54AB	RUXYQ56AB	RUXYQ58AB	RUXYQ60AB	RUXYQ62AB	RUXYQ64AB	RUXYQ66AB
Horse Power		HP	40	42	44	46	48	50	52	54	56	58	60	62	64	66
Combination			18+22	20+22	22+22	8+16+22	10+16+22	12+16+22	10+20+22	10+22+22	12+22+22	14+22+22	16+22+22	18+22+22	20+22+22	22+22+22
Power Supply			3 - Phase 50Hz 380V						3 - Phase 50Hz 380V							
★1 Cooling Capacity		kW	111.9	117.5	123.0	128.9	134.5	140.0	145.5	151.0	156.5	163.0	168.0	173.4	179.0	184.5
★2 Heating Capacity		kW	125.5	132.0	138.0	144.0	150.5	156.5	163.5	169.5	175.5	183.0	188.0	194.5	201.0	207.0
Power Consumption	Cooling	kW	32.9	35.1	37.2	36.4	38.3	40.0	42.1	44.2	45.9	47.9	49.9	51.5	53.7	55.8
	Heating	kW	32.70	35.20	37.40	36.40	38.30	39.90	42.40	44.60	46.20	48.30	49.80	51.40	53.90	56.10
Airflow Rate		m³/min	251+271	261+271	271+271	162+260+271	175+260+271	185+260+271	175+261+271	175+271+271	185+271+271	223+271+271	260+271+271	251+271+271	261+271+271	271+271+271
Dimensions (HxWxD)		mm	1657×1240×765+1657×1240×765			1657×930×765+1657×1240×765+1657×1240×765			1657×930×765+1657×1240×765+1657×1240×765			1657×1240×765+1657×1240×765+1657×1240×765				
External Static Pressure		Pa	81													
★3 Sound Level	Fount Sound Level	dB(A)	65	66						67					68	
	Surround Sound Level	dB(A)	68	69						70					71	
Night Quiet Mode		dB(A)	43			45										
Piping Connections	Liquid	mm	Φ19.1													
	Gas	mm	Φ38.1								Φ41.3					
Weight		kg	644			796	803	825	837.0		859.0	932		966		
Refrigerant	Type		R410A													
	Charge	kg	27.20			32.10	32.40	33.5	35.4		36.5	37.70	37.80	40.80		
Operation Range	Cooling	℃DB	-5~50℃DB													
	Heating	℃WB	-20~15.5℃WB													
★4 Max. Fuse Amps	MFA	A	95	100				120		130	135	140		150	155	160
★4 Min. Circuit Amps	MCA	A	78.4	83.2	87.2	85.7	87.6	89.7	101.2	105.2	107.3	111.6	113.2	122.0	126.8	130.8

★1 Indoor Temp. of 27°CDB, 19°CWB; Outdoor Temp. of 35°CDB

★2 Indoor Temp. of 20°CDB; Outdoor Temp. of 7°CDB, 6°CWB

★3 Sound level: The operation sound levels are conversion values in anechoic chamber. In practice, sound levels tend to be higher than the specified values due to ambient noise or reflection. Frond sound level measured at a point 1m in front of the unit. Surround sound measured at 4 points (front, rear, left and right) of 1m in front of the unit.

★4 MFA is used to select the circuit breaker and the ground fault circuit interrupter (earth leakage circuit breaker). MCA is used to select wire size.

Remark: 1. System Connection Ratio: 50%-130%

2. Additional refrigerant to be charged : R (kg)

R = Total length(m) of liquid piping size at 22.2mm x 0.36 + Total length(m) of liquid piping size at 19.1mm x 0.26 + Total length(m) of liquid piping size at 15.9mm x 0.17 + Total length(m) of liquid piping size at 12.7mm x 0.11+ Total length(m) of liquid piping size at 9.5mm x 0.057 + Total length(m) of liquid piping size at 6.4mm x 0.022.

Catalogue of Daikin RXYQ216PBYD, RXYQ72PBYD, RXYQ96PBYD,

DAIKIN

EDUS 391005 - R1

R-410A

Engineering Data

VRV® III

RXYQ-PBYD
3 phase
460V, 60Hz

DAIKIN AC (AMERICAS), INC.

RXYQ-PBYD
Heat Pump
3 phase
460V, 60Hz

1. Specifications

Model Name			RXYQ72PBYD	RXYQ96PBYD	RXYQ120PBYD
Power Supply			3 phase, 460V, 60Hz	3 phase, 460V, 60Hz	3 phase, 460V, 60Hz
★1 Cooling Capacity	Nominal	Btu / h	72,000	96,000	120,000
	Rated		69,000	92,000	114,000
★2 Heating Capacity	Nominal	Btu / h	81,000	108,000	135,000
	Rated		77,000	103,000	129,000
Casing Color			Ivory White (5Y7.5/1)	Ivory White (5Y7.5/1)	Ivory White (5Y7.5/1)
Dimensions: (H×W×D)		in. (mm)	66-1/8 × 36-5/8 × 30-1/8 (1680 x 930 x765)	66-1/8 × 48-7/8 × 30-1/8 1680 x 1241 x 765	66-1/8 × 48-7/8 × 30-1/8 1680 x 1241 x 765
Heat Exchanger			Cross Fin Coil	Cross Fin Coil	Cross Fin Coil
Comp.	Type		Hermetically Sealed Scroll Type	Hermetically Sealed Scroll Type	Hermetically Sealed Scroll Type
	Displacement	m^3/h	16.90	10.53+13.34	10.53+13.34
	Number of Revolutions	r/min	7980	2900, 6300	2900, 6300
	Motor Output×Number of Units	kW	4.7 × 1	(2.2+4.5) × 1	(3.5+4.5) × 1
	Starting Method		Soft Start	Soft Start	Soft Start
Fan	Type		Propellor Fan	Propellor Fan	Propellor Fan
	Motor Output	kW	0.75 × 1	0.35 × 2	0.35 × 2
	Airflow Rate	cfm	6,350	8,230	8,230
	Drive		Direct Drive	Direct Drive	Direct Drive
Connecting Pipes	Liquid Pipe	in. (mm)	ϕ 3/8 (9.5) C1220T (Brazing Connection)	ϕ 3/8 (9.5) C1220T (Brazing Connection)	ϕ 1/2 (12.7) C1220T (Brazing Connection)
	Gas Pipe	in. (mm)	ϕ 3/4 (19.1) C1220T (Brazing Connection)	ϕ 7/8 (22.2) C1220T (Brazing Connection)	ϕ 1-1/8 (28.6) C1220T (Brazing Connection)
Mass		Lbs (kg)	433 (196)	633 (287)	633 (287)
★3 Sound Level (Reference Value)		dBA	57	60	60
Safety Devices			High Pressure Switch, Fan Driver Overload Protector, Overcurrent Relay, Inverter Overload Protector	High Pressure Switch, Fan Driver Overload Protector, Overcurrent Relay, Inverter Overload Protector	High Pressure Switch, Fan Driver Overload Protector, Overcurrent Relay, Inverter Overload Protector
Defrost Method			Deicer	Deicer	Deicer
Capacity Control		%	20~100	14~100	14~100
Refrigerant	Refrigerant Name		R-410A	R-410A	R-410A
	Charge	Lbs (kg)	16.5 (7.5)	21.4 (9.7)	22.1 (10)
	Control		Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve
Standard Accessories			Installation Manual, Operation Manual, Connection Pipes, Clamps	Installation Manual, Operation Manual, Connection Pipes, Clamps	Installation Manual, Operation Manual, Connection Pipes, Clamps
Drawing No.			C: 4D070504	C: 4D070505	C: 4D070506

Notes:

★1 Indoor temp. : 80°FDB (27°CDB), 67°FWB(19.4°CWB) / outdoor temp. : 95°FDB (35°CDB) / Equivalent piping length : 25ft (7.5 m), level difference : 0 ft.

★2 Indoor temp. : 70°FDB (21°CDB) / outdoor temp. : 47°FDB, 43°FWB (8.3° CDB, 6° CWB) / Equivalent piping length : 25ft (7.5 m), difference : 0 ft.

★3 Anechoic chamber conversion value, measure under JISB8616 conditions. During actual operation, these values are normally somewhat higher as a result of ambient conditions.

Model Name (Combination Unit)			**RXYQ144PBYD**	**RXYQ168PBYD**	**RXYQ192PBYD**
Model Name (Independent Unit)			**RXYQ72PBYD** **RXYQ72PBYD**	**RXYQ72PBYD** **RXYQ96PBYD**	**RXYQ72PBYD** **RXYQ120PBYD**
Power Supply			3 phase, 460V, 60Hz	3 phase, 460V, 60Hz	3 phase, 460V, 60Hz
★1 Cooling Capacity	Nominal	Btu / h	144,000	168,000	192,000
	Rated		138,000	160,000	184,000
★2 Heating Capacity	Nominal	Btu / h	162,000	188,000	216,000
	Rated		154,000	180,000	206,000
Casing Color			Ivory White (5Y7.5/1)	Ivory White (5Y7.5/1)	Ivory White (5Y7.5/1)
Dimensions: (H×W×D)		in. (mm)	66-1/8 × 36-5/8 × 30-1/8 + 66-1/8 × 36-5/8 × 30-1/8 (1680 x 930 x 765 + 1680 x 930 x765)	66-1/8 × 36-5/8 × 30-1/8 + 66-1/8 × 48-7/8 × 30-1/8 (1680 x 930 x 765 + 1680 x 1241 x 765)	66-1/8 × 36-5/8 × 30-1/8 + 66-1/8 × 48-7/8 × 30-1/8 (1680 x 930 x 765 + 1680 x 1241 x 765)
Heat Exchanger			Cross Fin Coil	Cross Fin Coil	Cross Fin Coil
Comp.	Type		Hermetically Sealed Scroll Type	Hermetically Sealed Scroll Type	Hermetically Sealed Scroll Type
	Displacement	m^3/h	(16.90) × 2	16.90 + (10.53+13.34)	16.90 + (10.53+13.34)
	Number of Revolutions	r/min	(7980) × 2	7980, (2900, 6300)	7980, (2900, 6300)
	Motor Output×Number of Units	kW	(4.7) × 2	(4.7) × 1 + (2.2+4.5) × 1	(4.7) × 1 + (3.5+4.5) × 1
	Starting Method		Soft Start	Soft Start	Soft Start
Fan	Type		Propellor Fan	Propellor Fan	Propellor Fan
	Motor Output	kW	(0.75) × 1 + (0.75) × 1	(0.75) × 1 + (0.35) × 2	(0.75) × 1 + (0.35) × 2
	Airflow Rate	cfm	6,350+6,350	6,350+8,230	6,350+8,230
	Drive		Direct Drive	Direct Drive	Direct Drive
Connecting Pipes	Liquid Pipe	in. (mm)	ϕ1/2 (12.7) C1220T (Brazing Connection)	ϕ5/8 (15.8) C1220T (Brazing Connection)	ϕ5/8 (15.8) C1220T (Brazing Connection)
	Gas Pipe	in. (mm)	ϕ1-1/8 (28.6 C1220T (Brazing Connection)	ϕ1-1/8 (28.6 C1220T (Brazing Connection)	ϕ1-1/8 (28.6 C1220T (Brazing Connection)
Mass		Lbs (kg)	433 + 433 (196.4 + 196.4)	433 + 633 (196.4 + 287)	433 + 633 (196.4 + 287)
★3 Sound Level (Reference Value)		dBA	60	62	62
Safety Devices			High Pressure Switch, Fan Driver Overload Protector, Overcurrent Relay, Inverter Overload Protector	High Pressure Switch, Fan Driver Overload Protector, Overcurrent Relay, Inverter Overload Protector	High Pressure Switch, Fan Driver Overload Protector, Overcurrent Relay, Inverter Overload Protector
Defrost Method			Deicer	Deicer	Deicer
Capacity Control		%	10~100	9~100	8~100
Refrigerant	Refrigerant Name		R-410A	R-410A	R-410A
	Charge	Lbs (kg)	16.5+16.5 (7.5 + 7.5)	16.5+21.4 (7.5 + 9.7)	16.5 + 22.1 (7.5 + 10)
	Control		Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve
Standard Accessories			Installation Manual, Operation Manual, Connection Pipes, Clamps	Installation Manual, Operation Manual, Connection Pipes, Clamps	Installation Manual, Operation Manual, Connection Pipes, Clamps
Drawing No.			C: 4D070909	C: 4D070910	C: 4D070911

Notes:

★1 Indoor temp. : 80°FDB(27°CDB), 67°FWB(19.4°CWB) / outdoor temp. : 95°FDB (35°CDB) / Equivalent piping length : 25ft (7.5 m), level difference : 0 ft.

★2 Indoor temp. : 70°FDB(21°CDB) / outdoor temp. : 47°FDB, 43°FWB (8.3° CDB, 6° CWB) / Equivalent piping length : 25ft (7.5 m), difference : 0 ft.

★3 Anechoic chamber conversion value, measure under JISB8616 conditions. During actual operation, these values are normally somewhat higher as a result of ambient conditions.

Model Name (Combination Unit)			**RXYQ216PBYD**	**RXYQ240PBYD**	**RXYQ264PBYD**
Model Name (Independent Unit)			**RXYQ96PBYD** **RXYQ120PBYD**	**RXYQ120PBYD** **RXYQ120PBYD**	**RXYQ72PBYD** **RXYQ96PBYD** **RXYQ96PBYD**
Power Supply			3 phase, 460V, 60Hz	3 phase, 460V, 60Hz	3 phase, 460V, 60Hz
★1 Cooling Capacity	Nominal	Btu / h	216,000	240,000	264,000
	Rated		206,000	228,000	251,000
★2 Heating Capacity	Nominal	Btu / h	243,000	270,000	297,000
	Rated		231,000	257,000	283,000
Casing Color			Ivory White (5Y7.5/1)	Ivory White (5Y7.5/1)	Ivory White (5Y7.5/1)
Dimensions: (H×W×D)		in. (mm)	66-1/8 × 48-7/8 × 30-1/8 + 66-1/8 × 48-7/8 × 30-1/8 (1680 x 1241 x 765 + 1680 x 1241 x 765)	66-1/8 × 48-7/8 × 30-1/8 + 66-1/8 × 48-7/8 × 30-1/8 (1680 x 1241 x 765 + 1680 x 1241 x 765)	66-1/8 × 36-5/8 × 30-1/8 + 66-1/8 × 48-7/8 × 30-1/8 + 66-1/8 × 48-7/8 × 30-1/8 (1680 x 930 x 765 +1680 x 1241 x 765 + 1680 x 1241 x 765)
Heat Exchanger			Cross Fin Coil	Cross Fin Coil	Cross Fin Coil
Comp.	Type		Hermetically Sealed Scroll Type	Hermetically Sealed Scroll Type	Hermetically Sealed Scroll Type
	Displacement	m^3/h	(10.53+13.34) × 2	(10.53+13.34) × 2	16.90 + (10.53+13.34) × 2
	Number of Revolutions	r/min	(2900, 6300) × 2	(2900, 6300) × 2	7980, (2900, 6300) × 2
	Motor Output×Number of Units	kW	(2.2+4.5) × 1 + (3.5+4.5) × 1	(3.5+4.5) × 2	(4.7) × 1 + (2.2+4.5) × 2
	Starting Method		Soft Start	Soft Start	Soft Start
Fan	Type		Propellor Fan	Propellor Fan	Propellor Fan
	Motor Output	kW	(0.35) × 2 + (0.35) × 2	(0.35) × 2 + (0.35) × 2	(0.75) × 1 + (0.35) × 2 + (0.35) × 2
	Airflow Rate	cfm	8,230+8,230	8,230+8,230	6,350+8,230+8,230
	Drive		Direct Drive	Direct Drive	Direct Drive
Connecting Pipes	Liquid Pipe	in. (mm)	ϕ5/8 (15.8) C1220T (Brazing Connection)	ϕ5/8 (15.8) C1220T (Brazing Connection)	ϕ3/4 (19.1)C1220T (Brazing Connection)
	Gas Pipe	in. (mm)	ϕ1-1/8 (28.6 C1220T (Brazing Connection)	ϕ1-3/8 (35) C1220T (Brazing Connection)	ϕ1-3/8 (35) C1220T (Brazing Connection)
Mass		Lbs (kg)	633 + 633 (287 + 287)	633 + 633 (287 + 287)	433 + 633 + 633 (196 + 287 + 287)
★3 Sound Level (Reference Value)		dBA	63	63	64
Safety Devices			High Pressure Switch, Fan Driver Overload Protector, Overcurrent Relay, Inverter Overload Protector	High Pressure Switch, Fan Driver Overload Protector, Overcurrent Relay, Inverter Overload Protector	High Pressure Switch, Fan Driver Overload Protector, Overcurrent Relay, Inverter Overload Protector
Defrost Method			Deicer	Deicer	Deicer
Capacity Control		%	7~100	7~100	6~100
Refrigerant	Refrigerant Name		R-410A	R-410A	R-410A
	Charge	Lbs (kg)	21.4 + 22.1 (9.7 + 10)	22.1 + 22.1 (10 + 10)	16.5+21.4+21.4 (7.5 + 9.7 + 9.7)
	Control		Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve
Standard Accessories			Installation Manual, Operation Manual, Connection Pipes, Clamps	Installation Manual, Operation Manual, Connection Pipes, Clamps	Installation Manual, Operation Manual, Connection Pipes, Clamps
Drawing No.			C: 4D070912	C: 4D070913	C: 4D070914

Notes:

★1 Indoor temp. : 80°FDB(27°CDB), 67°FWB(19.4°CWB) / outdoor temp. : 95°FDB (35°CDB) / Equivalent piping length : 25ft (7.5 m), level difference : 0 ft.

★2 Indoor temp. : 70°FDB(21°CDB) / outdoor temp. : 47°FDB, 43°FWB (8.3° CDB, 6° CWB) / Equivalent piping length : 25ft (7.5 m), difference : 0 ft.

★3 Anechoic chamber conversion value, measure under JISB8616 conditions. During actual operation, these values are normally somewhat higher as a result of ambient conditions.

Model Name (Combination Unit)			**RXYQ288PBYD**	**RXYQ312PBYD**	**RXYQ336PBYD**
Model Name (Independent Unit)			**RXYQ72PBYD RXYQ96PBYD RXYQ120PBYD**	**RXYQ72PBYD RXYQ120PBYD RXYQ120PBYD**	**RXYQ96PBYD RXYQ120PBYD RXYQ120PBYD**
Power Supply			3 phase, 460V, 60Hz	3 phase, 460V, 60Hz	3 phase, 460V, 60Hz
★1 Cooling Capacity	Nominal	Btu / h	288,000	312,000	336,000
	Rated		274,000	297,000	320,000
★2 Heating Capacity	Nominal	Btu / h	324,000	351,000	378,000
	Rated		308,000	334,000	360,000
Casing Color			Ivory White (5Y7.5/1)	Ivory White (5Y7.5/1)	Ivory White (5Y7.5/1)
Dimensions: (H×W×D)		in. (mm)	66-1/8 × 36-5/8 × 30-1/8 + 66-1/8 × 48-7/8 × 30-1/8 + 66-1/8 × 48-7/8 × 30-1/8 (1680 x 930 x 765 + 1680 x 1241 x 765 + 1680 x 1241 x 765)	66-1/8 × 36-5/8 × 30-1/8 + 66-1/8 × 48-7/8 × 30-1/8 + 66-1/8 × 48-7/8 × 30-1/8 (1680 x 930 x 765 + 1680 x 1241 x 765 + 1680 x 1241 x 765)	66-1/8 × 48-7/8 × 30-1/8 + 66-1/8 × 48-7/8 × 30-1/8 + 66-1/8 × 48-7/8 × 30-1/8 (1680 x 1241 x 765 + 1680 x 1241 x 765 + 1680 x 1241 x 765)
Heat Exchanger			Cross Fin Coil	Cross Fin Coil	Cross Fin Coil
Comp.	Type		Hermetically Sealed Scroll Type	Hermetically Sealed Scroll Type	Hermetically Sealed Scroll Type
	Displacement	m^3/h	16.90 + (10.53+13.34) × 2	16.90 + (10.53+13.34) × 2	(10.53+13.34) × 3
	Number of Revolutions	r/min	7980, (2900, 6300) × 2	7980, (2900, 6300) × 2	(2900, 6300) × 3
	Motor Output×Number of Units	kW	(4.7) × 1 + (2.2+4.5) × 1 + (3.5+4.5) × 1	(4.7) × 1 + (3.5+4.5) × 2	(2.2+4.5) × 1 + (3.5+4.5) × 2
	Starting Method		Soft Start	Soft Start	Soft Start
Fan	Type		Propellor Fan	Propellor Fan	Propellor Fan
	Motor Output	kW	(0.75) × 1 + (0.35) × 2 + (0.35) × 2	(0.75) × 1 + (0.35) × 2 + (0.35) × 2	(0.35) × 2 + (0.35) × 2 + (0.35) × 2
	Airflow Rate	cfm	6,350+8,230+8,230	6,350+8,230+8,230	8,230+8,230+8,230
	Drive		Direct Drive	Direct Drive	Direct Drive
Connecting Pipes	Liquid Pipe	in. (mm)	ϕ3/4 (19.1) C1220T (Brazing Connection)	ϕ3/4 (19.1)C1220T (Brazing Connection)	ϕ3/4 (19.1) C1220T (Brazing Connection)
	Gas Pipe	in. (mm)	ϕ1-3/8 (35) C1220T (Brazing Connection)	ϕ1-3/8 (35) C1220T (Brazing Connection)	ϕ1-3/8 (35) C1220T (Brazing Connection)
Mass		Lbs (kg)	433 + 633 + 633 (196 + 28 7+ 287)	433 + 633 + 633 (196 + 28 7+ 287)	633 + 633+ 633 (196 + 28 7+ 287)
★3 Sound Level (Reference Value)		dBA	64	64	65
Safety Devices			High Pressure Switch, Fan Driver Overload Protector, Overcurrent Relay, Inverter Overload Protector	High Pressure Switch, Fan Driver Overload Protector, Overcurrent Relay, Inverter Overload Protector	High Pressure Switch, Fan Driver Overload Protector, Overcurrent Relay, Inverter Overload Protector
Defrost Method			Deicer	Deicer	Deicer
Capacity Control		%	5~100	5~100	4~100
Refrigerant	Refrigerant Name		R-410A	R-410A	R-410A
	Charge	Lbs (kg)	16.5 + 21.4 + 22.1 (7.5 + 9.7 + 10)	16.5 + 22.1 + 22.1 (7.5 + 10 + 10)	21.4 + 22.1 + 22.1 (9.7 + 10 + 10)
	Control		Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve
Standard Accessories			Installation Manual, Operation Manual, Connection Pipes, Clamps	Installation Manual, Operation Manual, Connection Pipes, Clamps	Installation Manual, Operation Manual, Connection Pipes, Clamps
Drawing No.			C: 4D070915	C: 4D070916	C: 4D070917

Notes:

★1 Indoor temp. : 80°FDB(27°CDB), 67°FWB(19.4°CWB) / outdoor temp. : 95°FDB (35°CDB) / Equivalent piping length : 25ft (7.5 m), level difference : 0 ft.
★2 Indoor temp. : 70°FDB(21°CDB) / outdoor temp. : 47°FDB, 43°FWB (8.3° CDB, 6° CWB) / Equivalent piping length : 25ft (7.5 m), difference : 0 ft.
★3 Anechoic chamber conversion value, measure under JISB8616 conditions. During actual operation, these values are normally somewhat higher as a result of ambient conditions.

Model Name (Combination Unit)			**RXYQ360PBYD**
Model Name (Independent Unit)			**RXYQ120PBYD** **RXYQ120PBYD** **RXYQ120PBYD**
Power Supply			3 phase, 460V, 60Hz
★1 Cooling Capacity	Nominal	Btu / h	360,000
	Rated		342,000
★2 Heating Capacity	Nominal	Btu / h	405,000
	Rated		385,000
Casing Color			Ivory White (5Y7.5/1)
Dimensions: (H×W×D)		in. (mm)	66-1/8 × 48-7/8 × 30-1/8 + 66-1/8 × 48-7/8 × 30-1/8 + 66-1/8 × 48-7/8 × 30-1/8 (1680 x 1241 x 765 + 1680 x 1241 x 765 + 1680 x 1241 x 765)
Heat Exchanger			Cross Fin Coil
Comp.	Type		Hermetically Sealed Scroll Type
	Displacement	m^3/h	(10.53+13.34) × 3
	Number of Revolutions	r/min	(2900, 6300) × 3
	Motor Output×Number of Units	kW	(3.5+4.5) × 3
	Starting Method		Soft Start
Fan	Type		Propellor Fan
	Motor Output	kW	(0.35) × 2 + (0.35) × 2 + (0.35) × 2
	Airflow Rate	cfm	8,230+8,230+8,230
	Drive		Direct Drive
Connecting Pipes	Liquid Pipe	in. (mm)	ϕ3/4 (19.1) C1220T (Brazing Connection)
	Gas Pipe	in. (mm)	ϕ1-5/8 (41.3) C1220T (Brazing Connection)
Mass		Lbs (kg)	633 + 633 + 633 (287 + 287 + 287)
★3 Sound Level (Reference Value)		dBA	65
Safety Devices			High Pressure Switch, Fan Driver Overload Protector, Overcurrent Relay, Inverter Overload Protector
Defrost Method			Deicer
Capacity Control		%	5~100
Refrigerant	Refrigerant Name		R-410A
	Charge	Lbs (kg)	22.1+22.1+22.1 (10 + 10 + 10)
	Control		Electronic Expansion Valve
Standard Accessories			Installation Manual, Operation Manual, Connection Pipes, Clamps
Drawing No.			C: 4D070918

Notes:

★1 Indoor temp. : 80°FDB(27°CDB), 67°FWB(19.4°CWB) / outdoor temp. : 95°FDB (35°CDB) / Equivalent piping length : 25ft (7.5 m), level difference : 0 ft.

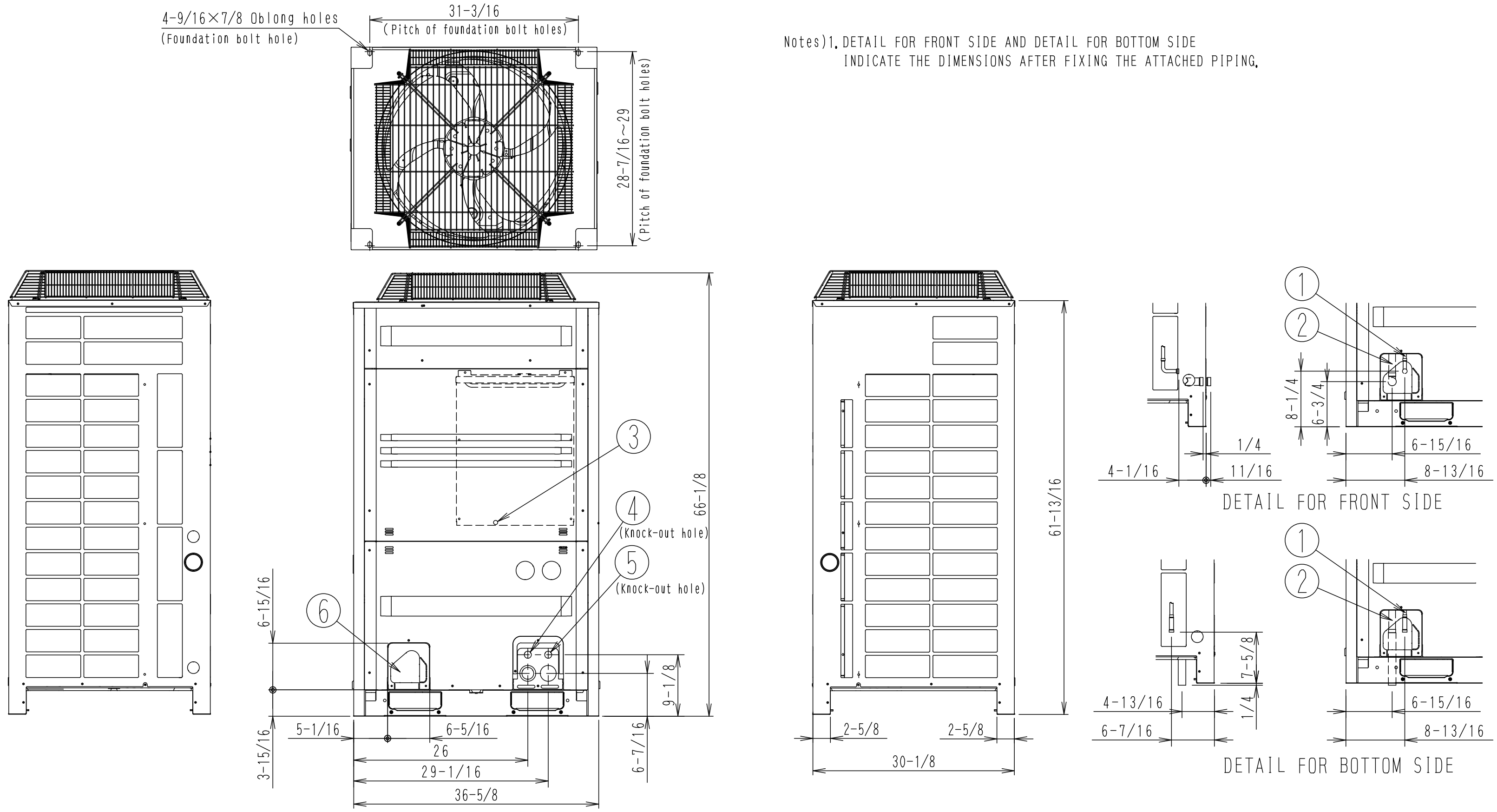
★2 Indoor temp. : 70°FDB(21°CDB) / outdoor temp. : 47°FDB, 43°FWB (8.3° CDB, 6° CWB) / Equivalent piping length : 25ft (7.5 m), difference : 0 ft.

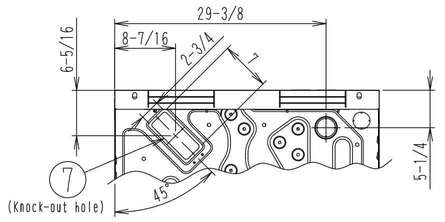
★3 Anechoic chamber conversion value, measure under JISB8616 conditions. During actual operation, these values are normally somewhat higher as a result of ambient conditions.

2. Dimensions

RXYQ72PBYD

Notes)1. DETAIL FOR FRONT SIDE AND DETAIL FOR BOTTOM SIDE INDICATE THE DIMENSIONS AFTER FIXING THE ATTACHED PIPING.

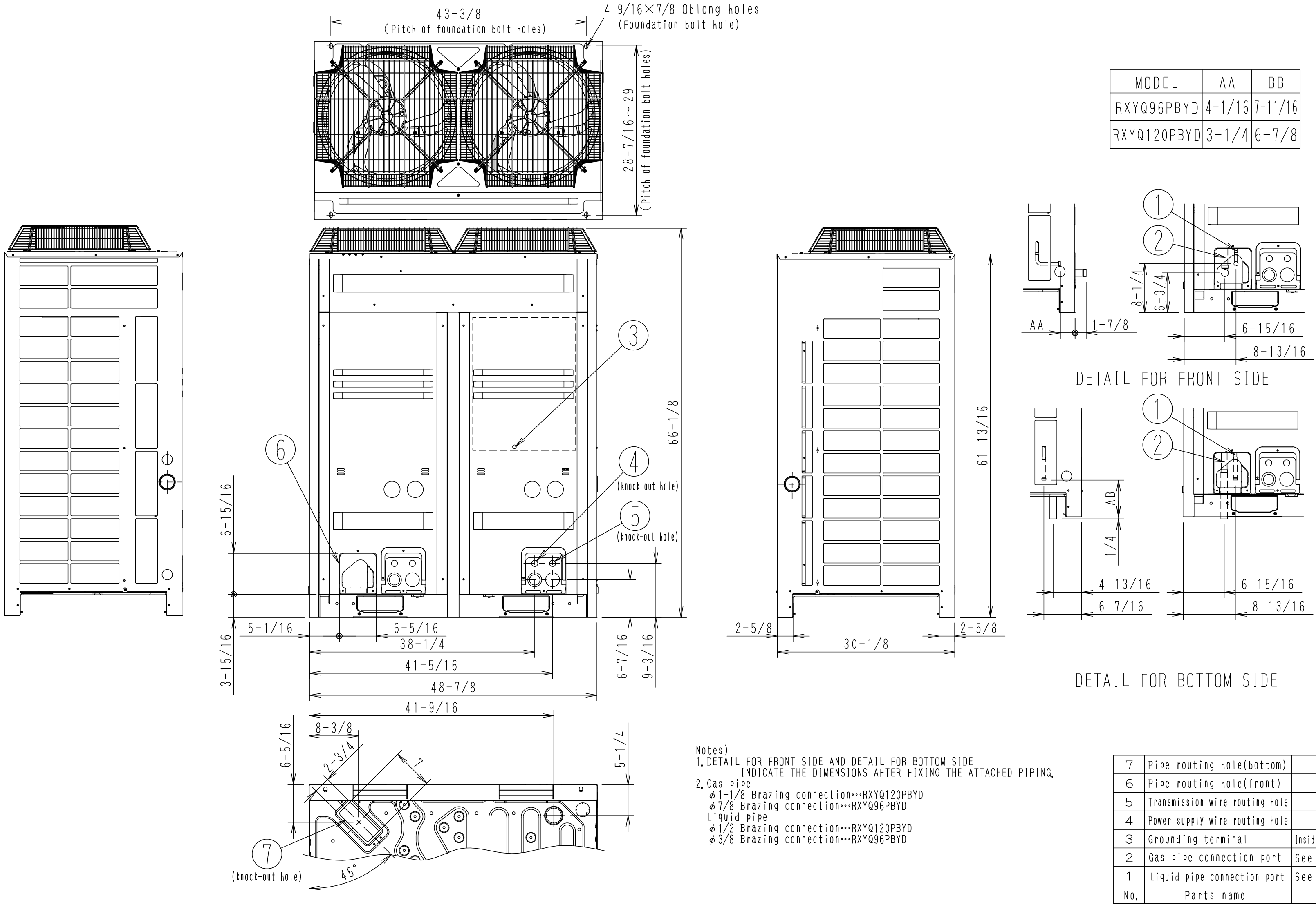




No.	Parts name	Remarks
7	Pipe routing hole(bottom)	
6	Pipe routing hole(front)	
5	Transmission wire routing hole	
4	Power supply wire routing hole	
3	Grounding terminal	Inside of switch box(M8)
2	Gas pipe connection port	φ3/4 Blazing connection
1	Liquid pipe connection port	φ3/8 Blazing connection

3D070517

RXYQ96PBYD / RXYQ120PBYD



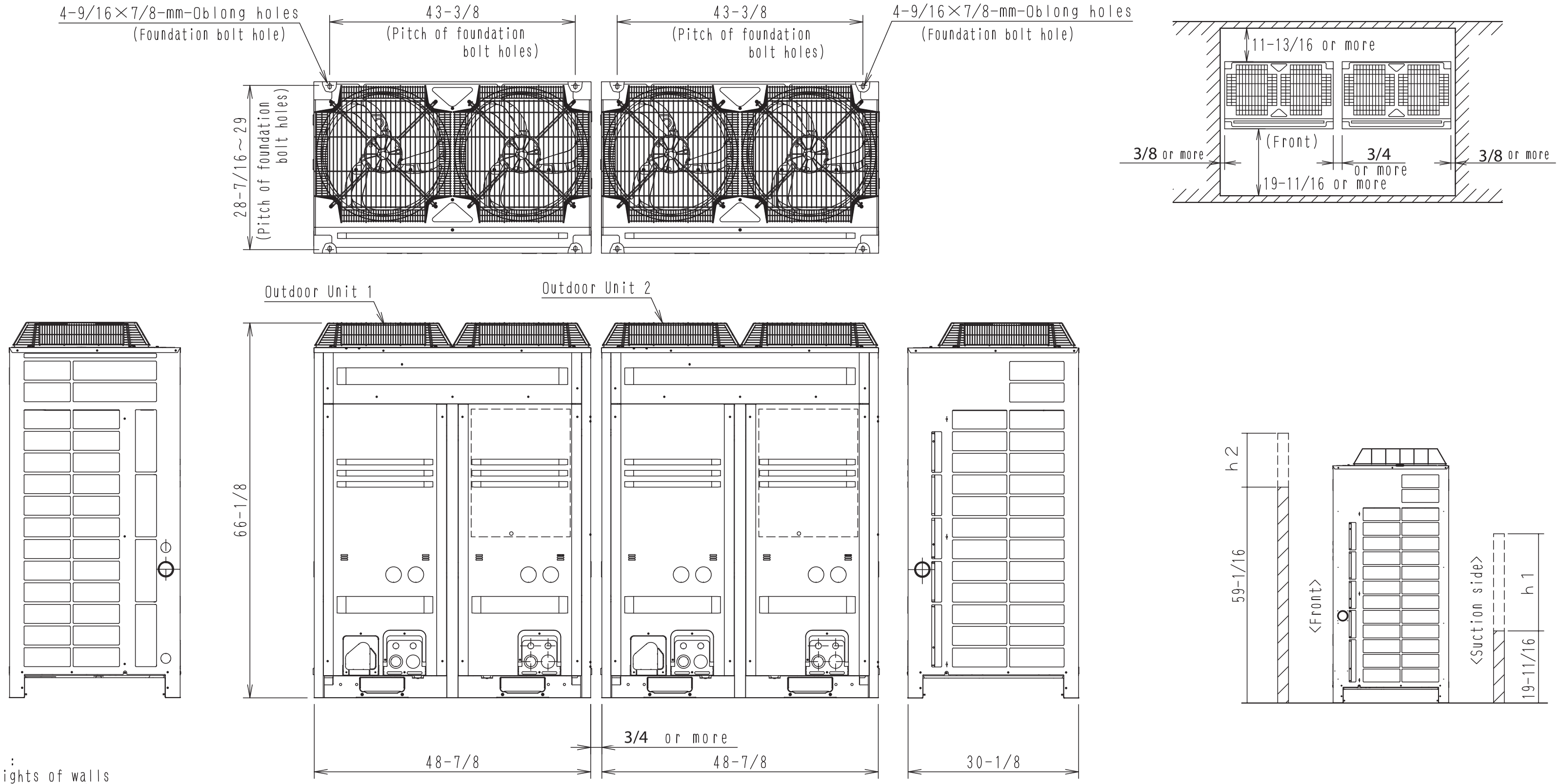
MODEL	AA	BB
RXYQ96PBYD	4-1/16	7-11/16
RXYQ120PBYD	3-1/4	6-7/8

Notes)
1. DETAIL FOR FRONT SIDE AND DETAIL FOR BOTTOM SIDE INDICATE THE DIMENSIONS AFTER FIXING THE ATTACHED PIPING.
2. Gas pipe
φ1-1/8 Brazing connection…RXYQ120PBYD
φ7/8 Brazing connection…RXYQ96PBYD
Liquid pipe
φ1/2 Brazing connection…RXYQ120PBYD
φ3/8 Brazing connection…RXYQ96PBYD

No.	Parts name	Remarks
7	Pipe routing hole(bottom)	
6	Pipe routing hole(front)	
5	Transmission wire routing hole	
4	Power supply wire routing hole	
3	Grounding terminal	Inside of switch box(M8)
2	Gas pipe connection port	See note 2.
1	Liquid pipe connection port	See note 2.

C: 3D070518A

RXYQ216PBYD / RXYQ240PBYD



Notes :

1. Heights of walls
   Front : 59-1/16in
   Suction side : 19-11/16in
   Side : Height unrestricted
   The installation space shown in this figure is based on the condition of cooling operation at the outdoor air temperature of 95°F.
   The installation space of suction side shown above must be expanded in the following case.
   - Design outdoor temperature becomes over 95°F.
   - Operating over Max. operating load (In case of causing a heavy heating load at indoor unit side)
2. If the above wall heights are exceeded then h2/2 and h1/2 should be added to the front and suction side service spaces respectively as shown in the following figure.
3. When installing the units the most appropriate pattern should be selected from Section 3. in order to obtain the best fit in the space available always bearing in mind the need to leave enough room for a person to pass between units and wall and for the air to circulate freely.

NOTE: If more units are to be installed than are shown in Section 3, your layout should take account of the possibility of short circuiting.

4. The units should be installed to leave sufficient space at the front for the on site refrigerant piping work to be carried out comfortably.

Model Name	Outdoor Unit 1	Outdoor Unit 2
RXYQ216PBYD	RXYQ120PBYD	RXYQ96PBYD
RXYQ240PBYD	RXYQ120PBYD	RXYQ120PBYD

C: 3D070852

Appendix 3.2

Fixed Noise Impact Assessment Results

Prediction of Fixed Noise Source Impact on Planned NSR

NSR Labels	Nature of Use	Existing/ Planned Uses	Location		ASR	Noise Criteria (ANL), L_{eq} (30 min)		Noise Source ID	Description of Noise Sources	SWL, dB(A), L_{eq} (30 min)		Source Location			Directivity Factor (Q)	No. of Plant	% on-time within 30min (Daytime Peak)	% on-time within 30min (Night-time Peak)	Distance to NSR, d (m)	Correction for, dB(A)								Noise Impact at NSR, dB(A)	
			X	Y		Daytime & Evening Time (0700-2300)	Nighttime (2300-0700)			Daytime & Evening Time (0700-2300)	Nighttime (2300-0700)	X	Y	Z, mPD						Distance	No.	% on time (Daytime)	% on time (Night-time)	Screening by Features [1]	Silencer	Tonality	Facade	Daytime & Evening Period	Night-time
FN01	Residential	Planned	837270	820877	B	65	55	F01	VRV at the roof of Kowloon Ling Liang Church	71	OFF	837213	820947	0.0	2	1	100.0%	N.A.	90	-47.1	0	0	N.A.	0	0	3	3	29.9	N.A.
								F02	VRV at the roof of Kowloon Ling Liang Church	71	OFF	837215	820947	0.0	2	1	100.0%	N.A.	89	-47.0	0	0	N.A.	0	0	3	3	30.0	N.A.
								F03	VRV at the roof of Kowloon Ling Liang Church	71	OFF	837217	820947	0.0	2	1	100.0%	N.A.	88	-46.9	0	0	N.A.	0	0	3	3	30.1	N.A.
								F04	VRV at the roof of Kowloon Ling Liang Church	71	OFF	837215	820945	0.0	2	1	100.0%	N.A.	88	-46.9	0	0	N.A.	0	0	3	3	30.1	N.A.
								F05	VRV at the roof of Kowloon Ling Liang Church	71	OFF	837217	820945	0.0	2	1	100.0%	N.A.	86	-46.7	0	0	N.A.	0	0	3	3	30.3	N.A.
								F06	VRV at the roof of Kowloon Ling Liang Church	71	OFF	837216	820943	0.0	2	1	100.0%	N.A.	85	-46.6	0	0	N.A.	0	0	3	3	30.4	N.A.
								F07	VRV at the roof of Kowloon Ling Liang Church	66	OFF	837212	820945	0.0	2	1	100.0%	N.A.	89	-47.0	0	0	N.A.	0	0	3	3	25.0	N.A.
								F08	VRV at the roof of Kowloon Ling Liang Church	66	OFF	837212	820943	0.0	2	1	100.0%	N.A.	88	-46.9	0	0	N.A.	0	0	3	3	25.1	N.A.
								F09	Condensing Unit at the roof of Kowloon Ling Liang Church	57	OFF	837211	820940	0.0	2	1	100.0%	N.A.	86	-46.7	0	0	N.A.	0	0	3	3	16.3	N.A.
								F10	Condensing Unit at the roof of Kowloon Ling Liang Church	57	OFF	837213	820940	0.0	2	1	100.0%	N.A.	85	-46.6	0	0	N.A.	0	0	3	3	16.4	N.A.
								F11	VRV at the roof of Kowloon Ling Liang Church	68	OFF	837214	820940	0.0	2	1	100.0%	N.A.	84	-46.5	0	0	N.A.	0	0	3	3	27.5	N.A.
								F12	VRV at the roof of Kowloon Ling Liang Church	58	OFF	837219	820937	0.0	2	1	100.0%	N.A.	79	-46.0	0	0	N.A.	0	0	3	3	18.0	N.A.
								F13	Condensing Unit at the roof of Kowloon Ling Liang Church	57	OFF	837224	820942	0.0	2	1	100.0%	N.A.	79	-46.0	0	0	N.A.	0	0	3	3	17.0	N.A.
								F14	Condensing Unit at the roof of Kowloon Ling Liang Church	57	OFF	837226	820941	0.0	2	1	100.0%	N.A.	78	-45.9	0	0	N.A.	0	0	3	3	17.1	N.A.
								F15	Air Conditioner at the roof of Kowloon Ling Liang Church	67	OFF	837234	820941	0.0	2	1	100.0%	N.A.	74	-45.4	0	0	N.A.	0	0	3	3	27.6	N.A.
								F16	VRV at the roof of Kowloon Ling Liang Church	68	OFF	837239	820944	0.0	2	1	100.0%	N.A.	74	-45.4	0	0	N.A.	0	0	3	3	28.6	N.A.
								F17	VRV at the roof of Kowloon Ling Liang Church	68	OFF	837239	820947	0.0	2	1	100.0%	N.A.	76	-45.6	0	0	N.A.	0	0	3	3	28.4	N.A.
								F18	VRV at the roof of Kowloon Ling Liang Church	68	OFF	837237	820947	0.0	2	1	100.0%	N.A.	77	-45.7	0	0	N.A.	0	0	3	3	28.3	N.A.
								F19	Chiller at the roof of The Grandeur (Block 1)	68	OFF	837231	821184	0.0	2	1	100.0%	N.A.	310	-57.8	0	0	N.A.	0	0	3	3	16.2	N.A.
								F20	Chiller at the roof of The Grandeur (Block 1)	68	OFF	837233	821184	0.0	2	1	100.0%	N.A.	309	-57.8	0	0	N.A.	0	0	3	3	16.2	N.A.
								F21	Chiller at the roof of The Grandeur (Block 1)	68	OFF	837236	821184	0.0	2	1	100.0%	N.A.	309	-57.8	0	0	N.A.	0	0	3	3	16.2	N.A.
								F22	Chiller at the roof of The Grandeur (Block 1)	68	OFF	837236	821186	0.0	2	1	100.0%	N.A.	311	-57.9	0	0	N.A.	0	0	3	3	16.1	N.A.
								F23	Chiller at the roof of The Grandeur (Block 1)	68	OFF	837236	821188	0.0	2	1	100.0%	N.A.	313	-57.9	0	0	N.A.	0	0	3	3	16.1	N.A.
								F24	Chiller at the roof of The Grandeur (Block 1)	68	OFF	837233	821188	0.0	2	1	100.0%	N.A.	313	-57.9	0	0	N.A.	0	0	3	3	16.1	N.A.
								F25	Chiller at the roof of The Grandeur (Block 1)	68	OFF	837231	821188	0.0	2	1	100.0%	N.A.	314	-57.9	0	0	N.A.	0	0	3	3	16.1	N.A.
								F26	Cooling Tower at the roof of Smart A	82	OFF	837332	820958	0.0	2	1	100.0%	N.A.	102	-48.1	0	0	N.A.	-10	0	3	3	29.9	N.A.
								F27	Chiller at the roof of Smart A	83	OFF	837331	820956	0.0	2	1	100.0%	N.A.	100	-48.0	0	0	N.A.	-10	0	3	3	31.0	N.A.
								F28	Chiller at the roof of Smart A	83	OFF	837329	820955	0.0	2	1	100.0%	N.A.	98	-47.9	0	0	N.A.	-10	0	3	3	31.1	N.A.
								F29	Chiller at the roof of Smart A	83	OFF	837328	820957	0.0	2	1	100.0%	N.A.	99	-47.9	0	0	N.A.	-10	0	3	3	31.1	N.A.
								F30	Chiller at the roof of Smart A	83	OFF	837330	820958	0.0	2	1	100.0%	N.A.	101	-48.0	0	0	N.A.	-10	0	3	3	31.0	N.A.
								F31	Chiller at the roof of Hang Seng Kowloon City Building	92	OFF	837347	820950	0.0	2	1	100.0%	N.A.	106	-48.5	0	0	N.A.	-10	0	3	3	39.0	N.A.
								F32	Chiller at the roof of Hang Seng Kowloon City Building	92	OFF	837347	820948	0.0	2	1	100.0%	N.A.	105	-48.4	0	0	N.A.	-10	0	3	3	39.1	N.A.
								F33	Cooling Tower at the roof of 404-410 Nga Tsin Long Road	82	OFF	837555	820986	0.0	2	1	100.0%	N.A.	305	-57.7	0	0	N.A.	-10	0	3	3	20.3	N.A.
								F34	Cooling Tower at the roof of 404-410 Nga Tsin Long Road	84	OFF	837557	820986	0.0	2	1	100.0%	N.A.	307	-57.7	0	0	N.A.	-10	0	3	3	22.3	N.A.
								F35	Cooling Tower at the roof of 404-410 Nga Tsin Long Road	91	OFF	837557	820984	0.0	2	1	100.0%	N.A.	306	-57.7	0	0	N.A.	-10	0	3	3	29.3	N.A.
								F36	Cooling Tower at the roof of St.Teresa Hospital (North Wing)	OFF	OFF	837057	820850	0.0	2	1	N.A.	N.A.	214	-54.6	0	N.A.	N.A.	-10	0	3	3	N.A.	N.A.
								F37	Cooling Tower at the roof of St.Teresa Hospital (North Wing)	86	OFF	837065	820851	0.0	2	1	100.0%	N.A.	207	-54.3	0	0	N.A.	-10	0	3	3	27.7	N.A.
								F38	Cooling Tower at the roof of St.Teresa Hospital (North Wing)	86	86	837075	820851	0.0	2	1	100.0%	100.0%	196	-53.9	0	0	0	-10	0	3	3	28.1	28.1
								F39	Cooling Tower at the roof of St.Teresa Hospital (North Wing)	86	86	837082	820853	0.0	2	1	100.0%	100.0%	190	-53.6	0	0	0	-10	0	3	3	28.4	28.4
								F40	Chiller at the roof of St.Teresa Hospital (East Wing)	98	OFF	837114	820858	0.0	2	1	100.0%	N.A.	157	-51.9	0	0	N.A.	-10	0	3	3	42.1	N.A.
								F41	Chiller at the roof of St.Teresa Hospital (East Wing)	98	98	837117	820859	0.0	2	1	100.0%	100.0%	154	-51.7	0	0	0	-10	0	3	3	42.3	42.3
								F42	Chiller at the roof of St.Teresa Hospital (East Wing)	OFF	OFF	837116	820854	0.0	2	1	N.A.	N.A.	155	-51.8	0	N.A.	N.A.	-10	0	3	3	N.A.	N.A.
								F43	Chiller at the roof of St.Teresa Hospital (Extension Building)	85	85	837109	820783	0.0	2	1	100.0%	100.0%	186	-53.4	0	0	0	-10	0	3	3	27.6	27.6
								F44	Chiller at the roof of St.Teresa Hospital (Extension Building)	85	85	837110	820778	0.0	2	1	100.0%	100.0%	188	-53.5	0	0	0	-10	0	3	3	27.5	27.5
								F45	Chiller at the roof of St.Teresa Hospital (Extension Building)	85	85	837071	820775	0.0	2	1	100.0%	100.0%	223	-55.0	0	0	0	-10	0	3	3	26.0	26.0
								F46	Chiller at the roof of St.Teresa Hospital (Extension Building)	85	85	837072	820770	0.0	2	1	100.0%	100.0%	225	-55.0	0	0	0	-10	0	3	3	26.0	26.0
								F47	Chiller at the roof of St.Teresa Hospital (Extension Building)	98	98	837074	820743	0.0	2	1	100.0%	100.0%	237	-55.5	0	0	0	-10	0	3	3	38.5	38.5
								F48	Chiller at the roof of St.Teresa Hospital (Extension Building)	98	98	837066	820741	0.0	2	1	100.0%	100.0%	245	-55.8	0	0	0	-10	0	3	3	38.2	38.2
								F49	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837170	820827	0.0	2	1	100.0%	100.0%	112	-49.0	0	0	0	0	0	3	3	28.5	28.5
								F50	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837172	820827	0.0	2	1	100.0%	100.0%	110	-48.8	0	0	0	0	0	3	3	27.2	27.2
								F51	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837173	820823	0.0	2	1	100.0%	100.0%	111	-48.9	0	0	0	0	0	3	3	27.1	27.1
								F52	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837171	820823	0.0	2	1	100.0%	100.0%	113	-49.0	0	0	0	0	0	3	3	27.0	27.0
								F53	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837169	820822	0.0	2	1	100.0%	100.0%	114	-49.2	0	0	0	0	0	3	3	26.8	26.8
								F54	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837170	820820	0.0	2	1	100.0%	100.0%	115	-49.2	0	0	0	0	0	3	3	28.3	28.3
								F55	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837170	820818	0.0	2	1	100.0%	100.0%	116	-49.3	0	0	0	0	0	3	3	28.2	28.2
								F56	VRV at the roof of St. Teresa Hospital (Staff Quarter)	68	68	837167	820816	0.0	2	1	100.0%	100.0%	120	-49.6	0	0	0	0	0	3	3	24.4	24.4
								F57	VRV at the roof of St. Teresa Hospital (Staff Quarter)	71	71	837164	820816	0.0	2	1	100.0%	100.0%	122	-49.7	0	0	0	0	0	3	3	26.8	26.8
								F58	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837162	820815	0.0	2	1	100.0%	100.0%	125	-49.9	0	0	0	0	0	3	3	27.6	27.6
								F59	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837161	820817	0.0	2	1	100.0%	100.0%	124	-49.9	0	0	0	0	0	3	3	26.1	26.1
								F60	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837161	820820	0.0	2	1	100.0%	100.0%	123	-49.8	0	0	0	0	0	3	3	27.7	27.7
								F61	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837164	820819	0.0	2	1	100.0%	100.0%	121	-49.6	0	0	0	0	0	3	3	27.9	27.9
								F62	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837166	820820	0.0	2	1	100.0%	100.0%	119	-49.5	0	0	0	0	0	3	3	28.0	28.0
								F63	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837158	820823	0.0	2	1	100.0%	100.0%	125	-49.9	0	0	0	0	0	3	3	27.6	27.6
								F64	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837158	820825	0.0	2	1	100.0%	100.0%	124	-49.8	0	0	0	0	0	3	3	26.2	26.2
								F65	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837160	820825	0.0	2	1	100.0%	100.0%	122	-49.7	0	0	0	0	0	3	3	26.3	26.3
								F66	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837162	820822	0.0	2	1	100.0%	100.0%	121	-49.6	0	0	0	0	0	3	3	27.9	27.9
								F67	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837164	820823	0.0	2	1	100.0%	100.0%	119	-49.5	0	0	0	0	0	3	3	26.5	26.5
								F68	Chiller at the roof of Hong Kong Eye Hospital	97	97	837029	820680	0.0	2	1	100.0%	100.0%	312	-57.9	0	0	0	-10	0	3	3	35.1	35.1
								F69	Chiller at the roof of Hong Kong Eye Hospital	97	97	837034	820681	0.0	2	1	100.0%	100.0%	307	-57.7	0	0	0	-10	0	3	3	35.3	35.3
								F70	Chiller at the roof of Hong Kong Eye Hospital	96	96	837043	820652	0.0	2	1	100.0%	100.0%	319	-58.1	0	0	0	-10	0	3	3	33.9	33.9
								F71	Cooling Tower at the roof of Kowloon City Law Courts Building	92	OFF	837139	820699	0.0	2	1	100.0%	N.A.	220	-54.9	0	0	N.A.	-5	0	3	3	38.1	N.A.
								F72	Cooling Tower at the roof of Kowloon City Law Courts Building	92	OFF	837140	820697	0.0	2	1	100.0%	N.A.	222	-54.9	0	0	N.A.	-5	0	3	3	38.1	N.A.
								F73	Chiller at the roof of Kowloon City Law Courts Building	94	OFF	837138	820693	0.0	2	1	100.0%	N.A.	227	-55.1	0	0	N.A.	-5	0	3	3	39.9	N.A.
								F74	Chiller at the roof of Kowloon City Law Courts Building	94	OFF	837139	820687	0.0	2	1	100.0%	N.A.	231	-55.3	0	0	N.A.	-5	0	3	3	39.7	N.A.
																											Total =	**51**	**47**

Prediction of Fixed Noise Source Impact on Planned NSR

NSR Labels	Nature of Use	Existing/ Planned Uses	Location		ASR	Noise Criteria (ANL), L_{eq} (30 min)		Noise Source ID	Description of Noise Sources	SWL, dB(A), L_{eq} (30 min)		Source Location			Directivity Factor (Q)	No. of Plant	% on-time within 30min (Daytime Peak)	% on-time within 30min (Night-time Peak)	Distance to NSR, d (m)	Correction for, dB(A)								Noise Impact at NSR, dB(A)	
			X	Y		Daytime & Evening Time (0700-2300)	Nighttime (2300-0700)			Daytime & Evening Time (0700-2300)	Nighttime (2300-0700)	X	Y	Z, mPD						Distance	No.	% on time (Daytime)	% on time (Night-time)	Screening by Features [1]	Silencer	Tonality	Facade	Daytime & Evening Period	Night-time
FN02	Residential	Planned	837272	820867	B	65	55	F36	Cooling Tower at the roof of St.Teresa Hospital (North Wing)	OFF	OFF	837057	820850	0.0	2	1	N.A.	N.A.	215	-54.7	0	N.A.	N.A.	-10	0	3	3	N.A.	N.A.
								F37	Cooling Tower at the roof of St.Teresa Hospital (North Wing)	86	OFF	837065	820851	0.0	2	1	100.0%	N.A.	207	-54.3	0	0	N.A.	-10	0	3	3	27.7	N.A.
								F38	Cooling Tower at the roof of St.Teresa Hospital (North Wing)	86	86	837075	820851	0.0	2	1	100.0%	100.0%	197	-53.9	0	0	0	-10	0	3	3	28.1	28.1
								F39	Cooling Tower at the roof of St.Teresa Hospital (North Wing)	86	86	837082	820853	0.0	2	1	100.0%	100.0%	190	-53.6	0	0	0	-10	0	3	3	28.4	28.4
								F40	Chiller at the roof of St.Teresa Hospital (East Wing)	98	OFF	837114	820858	0.0	2	1	100.0%	N.A.	158	-52.0	0	0	N.A.	-10	0	3	3	42.0	N.A.
								F41	Chiller at the roof of St.Teresa Hospital (East Wing)	98	98	837117	820859	0.0	2	1	100.0%	100.0%	155	-51.8	0	0	0	-10	0	3	3	42.2	42.2
								F42	Chiller at the roof of St.Teresa Hospital (East Wing)	OFF	OFF	837116	820854	0.0	2	1	N.A.	N.A.	156	-51.8	0	N.A.	N.A.	-10	0	3	3	N.A.	N.A.
								F43	Chiller at the roof of St.Teresa Hospital (Extension Building)	85	85	837109	820783	0.0	2	1	100.0%	100.0%	183	-53.2	0	0	0	-10	0	3	3	27.8	27.8
								F44	Chiller at the roof of St.Teresa Hospital (Extension Building)	85	85	837110	820778	0.0	2	1	100.0%	100.0%	184	-53.3	0	0	0	-10	0	3	3	27.7	27.7
								F45	Chiller at the roof of St.Teresa Hospital (Extension Building)	85	85	837071	820775	0.0	2	1	100.0%	100.0%	220	-54.9	0	0	0	-10	0	3	3	26.1	26.1
								F46	Chiller at the roof of St.Teresa Hospital (Extension Building)	85	85	837072	820770	0.0	2	1	100.0%	100.0%	221	-54.9	0	0	0	-10	0	3	3	26.1	26.1
								F47	Chiller at the roof of St.Teresa Hospital (Extension Building)	98	98	837074	820743	0.0	2	1	100.0%	100.0%	233	-55.3	0	0	0	-10	0	3	3	38.7	38.7
								F48	Chiller at the roof of St.Teresa Hospital (Extension Building)	98	98	837066	820741	0.0	2	1	100.0%	100.0%	241	-55.6	0	0	0	-10	0	3	3	38.4	38.4
								F49	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837170	820827	0.0	2	1	100.0%	100.0%	109	-48.8	0	0	0	0	0	3	3	28.7	28.7
								F50	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837172	820827	0.0	2	1	100.0%	100.0%	107	-48.6	0	0	0	0	0	3	3	27.4	27.4
								F51	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837173	820823	0.0	2	1	100.0%	100.0%	108	-48.7	0	0	0	0	0	3	3	27.3	27.3
								F52	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837171	820823	0.0	2	1	100.0%	100.0%	110	-48.8	0	0	0	0	0	3	3	27.2	27.2
								F53	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837169	820822	0.0	2	1	100.0%	100.0%	111	-48.9	0	0	0	0	0	3	3	27.1	27.1
								F54	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837170	820820	0.0	2	1	100.0%	100.0%	112	-49.0	0	0	0	0	0	3	3	28.5	28.5
								F55	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837170	820818	0.0	2	1	100.0%	100.0%	113	-49.0	0	0	0	0	0	3	3	28.5	28.5
								F56	VRV at the roof of St. Teresa Hospital (Staff Quarter)	68	68	837167	820816	0.0	2	1	100.0%	100.0%	117	-49.3	0	0	0	0	0	3	3	24.7	24.7
								F57	VRV at the roof of St. Teresa Hospital (Staff Quarter)	71	71	837164	820816	0.0	2	1	100.0%	100.0%	119	-49.5	0	0	0	0	0	3	3	27.0	27.0
								F58	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837162	820815	0.0	2	1	100.0%	100.0%	122	-49.7	0	0	0	0	0	3	3	27.8	27.8
								F59	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837161	820817	0.0	2	1	100.0%	100.0%	121	-49.7	0	0	0	0	0	3	3	26.3	26.3
								F60	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837161	820820	0.0	2	1	100.0%	100.0%	121	-49.6	0	0	0	0	0	3	3	27.9	27.9
								F61	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837164	820819	0.0	2	1	100.0%	100.0%	118	-49.4	0	0	0	0	0	3	3	28.1	28.1
								F62	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837166	820820	0.0	2	1	100.0%	100.0%	116	-49.3	0	0	0	0	0	3	3	28.2	28.2
								F63	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837158	820823	0.0	2	1	100.0%	100.0%	122	-49.7	0	0	0	0	0	3	3	27.8	27.8
								F64	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837158	820825	0.0	2	1	100.0%	100.0%	121	-49.7	0	0	0	0	0	3	3	26.3	26.3
								F65	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837160	820825	0.0	2	1	100.0%	100.0%	119	-49.5	0	0	0	0	0	3	3	26.5	26.5
								F66	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837162	820822	0.0	2	1	100.0%	100.0%	118	-49.4	0	0	0	0	0	3	3	28.1	28.1
								F67	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837164	820823	0.0	2	1	100.0%	100.0%	116	-49.3	0	0	0	0	0	3	3	26.7	26.7
								F68	Chiller at the roof of Hong Kong Eye Hospital	97	97	837029	820680	0.0	2	1	100.0%	100.0%	307	-57.7	0	0	0	-10	0	3	3	35.3	35.3
								F69	Chiller at the roof of Hong Kong Eye Hospital	97	97	837034	820681	0.0	2	1	100.0%	100.0%	302	-57.6	0	0	0	-10	0	3	3	35.4	35.4
								F70	Chiller at the roof of Hong Kong Eye Hospital	96	96	837043	820652	0.0	2	1	100.0%	100.0%	313	-57.9	0	0	0	-10	0	3	3	34.1	34.1
								F71	Cooling Tower at the roof of Kowloon City Law Courts Building	92	OFF	837139	820699	0.0	2	1	100.0%	N.A.	214	-54.6	0	0	N.A.	0	0	3	3	43.4	N.A.
								F72	Cooling Tower at the roof of Kowloon City Law Courts Building	92	OFF	837140	820697	0.0	2	1	100.0%	N.A.	215	-54.7	0	0	N.A.	0	0	3	3	43.3	N.A.
								F73	Chiller at the roof of Kowloon City Law Courts Building	94	OFF	837138	820693	0.0	2	1	100.0%	N.A.	220	-54.8	0	0	N.A.	0	0	3	3	45.2	N.A.
								F74	Chiller at the roof of Kowloon City Law Courts Building	94	OFF	837139	820687	0.0	2	1	100.0%	N.A.	224	-55.0	0	0	N.A.	0	0	3	3	45.0	N.A.
																											Total =	**53**	**47**

FN03	Residential	Planned	837273	820860	B	65	55	F01	VRV at the roof of Kowloon Ling Liang Church	71	OFF	837213	820947	0.0	2	1	100.0%	N.A.	106	-48.5	0	0	N.A.	0	0	3	3	28.5	N.A.
								F02	VRV at the roof of Kowloon Ling Liang Church	71	OFF	837215	820947	0.0	2	1	100.0%	N.A.	104	-48.4	0	0	N.A.	0	0	3	3	28.6	N.A.
								F03	VRV at the roof of Kowloon Ling Liang Church	71	OFF	837217	820947	0.0	2	1	100.0%	N.A.	103	-48.3	0	0	N.A.	0	0	3	3	28.7	N.A.
								F04	VRV at the roof of Kowloon Ling Liang Church	71	OFF	837215	820945	0.0	2	1	100.0%	N.A.	103	-48.2	0	0	N.A.	0	0	3	3	28.8	N.A.
								F05	VRV at the roof of Kowloon Ling Liang Church	71	OFF	837217	820945	0.0	2	1	100.0%	N.A.	102	-48.1	0	0	N.A.	0	0	3	3	28.9	N.A.
								F06	VRV at the roof of Kowloon Ling Liang Church	71	OFF	837216	820943	0.0	2	1	100.0%	N.A.	101	-48.1	0	0	N.A.	0	0	3	3	28.9	N.A.
								F07	VRV at the roof of Kowloon Ling Liang Church	66	OFF	837212	820945	0.0	2	1	100.0%	N.A.	104	-48.4	0	0	N.A.	0	0	3	3	23.6	N.A.
								F08	VRV at the roof of Kowloon Ling Liang Church	66	OFF	837212	820943	0.0	2	1	100.0%	N.A.	103	-48.2	0	0	N.A.	0	0	3	3	23.8	N.A.
								F09	Condensing Unit at the roof of Kowloon Ling Liang Church	57	OFF	837211	820940	0.0	2	1	100.0%	N.A.	101	-48.1	0	0	N.A.	0	0	3	3	14.9	N.A.
								F10	Condensing Unit at the roof of Kowloon Ling Liang Church	57	OFF	837213	820940	0.0	2	1	100.0%	N.A.	100	-48.0	0	0	N.A.	0	0	3	3	15.0	N.A.
								F11	VRV at the roof of Kowloon Ling Liang Church	68	OFF	837214	820940	0.0	2	1	100.0%	N.A.	99	-47.9	0	0	N.A.	0	0	3	3	26.1	N.A.
								F12	VRV at the roof of Kowloon Ling Liang Church	58	OFF	837219	820937	0.0	2	1	100.0%	N.A.	94	-47.5	0	0	N.A.	0	0	3	3	16.5	N.A.
								F13	Condensing Unit at the roof of Kowloon Ling Liang Church	57	OFF	837224	820942	0.0	2	1	100.0%	N.A.	95	-47.6	0	0	N.A.	0	0	3	3	15.4	N.A.
								F14	Condensing Unit at the roof of Kowloon Ling Liang Church	57	OFF	837226	820941	0.0	2	1	100.0%	N.A.	94	-47.5	0	0	N.A.	0	0	3	3	15.5	N.A.
								F15	Air Conditioner at the roof of Kowloon Ling Liang Church	67	OFF	837234	820941	0.0	2	1	100.0%	N.A.	90	-47.1	0	0	N.A.	0	0	3	3	25.9	N.A.
								F16	VRV at the roof of Kowloon Ling Liang Church	68	OFF	837239	820944	0.0	2	1	100.0%	N.A.	91	-47.1	0	0	N.A.	0	0	3	3	26.9	N.A.
								F17	VRV at the roof of Kowloon Ling Liang Church	68	OFF	837239	820947	0.0	2	1	100.0%	N.A.	93	-47.3	0	0	N.A.	0	0	3	3	26.7	N.A.
								F18	VRV at the roof of Kowloon Ling Liang Church	68	OFF	837237	820947	0.0	2	1	100.0%	N.A.	93	-47.4	0	0	N.A.	0	0	3	3	26.6	N.A.
								F36	Cooling Tower at the roof of St.Teresa Hospital (North Wing)	OFF	OFF	837057	820850	0.0	2	1	N.A.	N.A.	216	-54.7	0	N.A.	N.A.	-10	0	3	3	N.A.	N.A.
								F37	Cooling Tower at the roof of St.Teresa Hospital (North Wing)	86	OFF	837065	820851	0.0	2	1	100.0%	N.A.	208	-54.4	0	0	N.A.	-10	0	3	3	27.6	N.A.
								F38	Cooling Tower at the roof of St.Teresa Hospital (North Wing)	86	86	837075	820851	0.0	2	1	100.0%	100.0%	198	-53.9	0	0	0	-10	0	3	3	28.1	28.1
								F39	Cooling Tower at the roof of St.Teresa Hospital (North Wing)	86	86	837082	820853	0.0	2	1	100.0%	100.0%	191	-53.6	0	0	0	-10	0	3	3	28.4	28.4
								F40	Chiller at the roof of St.Teresa Hospital (East Wing)	98	OFF	837114	820858	0.0	2	1	100.0%	N.A.	159	-52.0	0	0	N.A.	-10	0	3	3	42.0	N.A.
								F41	Chiller at the roof of St.Teresa Hospital (East Wing)	98	98	837117	820859	0.0	2	1	100.0%	100.0%	156	-51.9	0	0	0	-10	0	3	3	42.1	42.1
								F42	Chiller at the roof of St.Teresa Hospital (East Wing)	OFF	OFF	837116	820854	0.0	2	1	N.A.	N.A.	157	-51.9	0	N.A.	N.A.	-10	0	3	3	N.A.	N.A.
								F43	Chiller at the roof of St.Teresa Hospital (Extension Building)	85	85	837109	820783	0.0	2	1	100.0%	100.0%	181	-53.2	0	0	0	-10	0	3	3	27.8	27.8
								F44	Chiller at the roof of St.Teresa Hospital (Extension Building)	85	85	837110	820778	0.0	2	1	100.0%	100.0%	182	-53.2	0	0	0	-10	0	3	3	27.8	27.8
								F45	Chiller at the roof of St.Teresa Hospital (Extension Building)	85	85	837071	820775	0.0	2	1	100.0%	100.0%	219	-54.8	0	0	0	-10	0	3	3	26.2	26.2
								F46	Chiller at the roof of St.Teresa Hospital (Extension Building)	85	85	837072	820770	0.0	2	1	100.0%	100.0%	220	-54.8	0	0	0	-10	0	3	3	26.2	26.2
								F47	Chiller at the roof of St.Teresa Hospital (Extension Building)	98	98	837074	820743	0.0	2	1	100.0%	100.0%	231	-55.3	0	0	0	-10	0	3	3	38.7	38.7
								F48	Chiller at the roof of St.Teresa Hospital (Extension Building)	98	98	837066	820741	0.0	2	1	100.0%	100.0%	239	-55.6	0	0	0	-10	0	3	3	38.4	38.4
								F49	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837170	820827	0.0	2	1	100.0%	100.0%	108	-48.7	0	0	0	0	0	3	3	28.8	28.8
								F50	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837172	820827	0.0	2	1	100.0%	100.0%	106	-48.5	0	0	0	0	0	3	3	27.5	27.5
								F51	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837173	820823	0.0	2	1	100.0%	100.0%	107	-48.6	0	0	0	0	0	3	3	27.4	27.4
								F52	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837171	820823	0.0	2	1	100.0%	100.0%	108	-48.7	0	0	0	0	0	3	3	27.3	27.3
								F53	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837169	820822	0.0	2	1	100.0%	100.0%	110	-48.8	0	0	0	0	0	3	3	27.2	27.2
								F54	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837170	820820	0.0	2	1	100.0%	100.0%	111	-48.9	0	0	0	0	0	3	3	28.6	28.6
								F55	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837170	820818	0.0	2	1	100.0%	100.0%	111	-48.9	0	0	0	0	0	3	3	28.6	28.6
								F56	VRV at the roof of St. Teresa Hospital (Staff Quarter)	68	68	837167	820816	0.0	2	1	100.0%	100.0%	115	-49.2	0	0	0	0	0	3	3	24.8	24.8
								F57	VRV at the roof of St. Teresa Hospital (Staff Quarter)	71	71	837164	820816	0.0	2	1	100.0%	100.0%	117	-49.4	0	0	0	0	0	3	3	27.1	27.1
								F58	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837162	820815	0.0	2	1	100.0%	100.0%	120	-49.6	0	0	0	0	0	3	3	27.9	27.9
								F59	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837161	820817	0.0	2	1	100.0%	100.0%	120	-49.6	0	0	0	0	0	3	3	26.4	26.4
								F60	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837161	820820	0.0	2	1	100.0%	100.0%	119	-49.5	0	0	0	0	0	3	3	28.0	28.0
								F61	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837164	820819	0.0	2	1	100.0%	100.0%	116	-49.3	0	0	0	0	0	3	3	28.2	28.2
								F62	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837166	820820	0.0	2	1	100.0%	100.0%	114	-49.2	0	0	0	0	0	3	3	28.3	28.3
								F63	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837158	820823	0.0	2	1	100.0%	100.0%	121	-49.7	0	0	0	0	0	3	3	27.8	27.8
								F64	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837158	820825	0.0	2	1	100.0%	100.0%	120	-49.6	0	0	0	0	0	3	3	26.4	26.4
								F65	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837160	820825	0.0	2	1	100.0%	100.0%	118	-49.5	0	0	0	0	0	3	3	26.5	26.5
								F66	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837162	820822	0.0	2	1	100.0%	100.0%	117	-49.4	0	0	0	0	0	3	3	28.1	28.1
								F67	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837164	820823	0.0	2	1	100.0%	100.0%	115	-49.2	0	0	0	0	0	3	3	26.8	26.8
								F68	Chiller at the roof of Hong Kong Eye Hospital	97	97	837029	820680	0.0	2	1	100.0%	100.0%	304	-57.6	0	0	0	-10	0	3	3	35.4	35.4
								F69	Chiller at the roof of Hong Kong Eye Hospital	97	97	837034	820681	0.0	2	1	100.0%	100.0%	299	-57.5	0	0	0	-10	0	3	3	35.5	35.5
								F70	Chiller at the roof of Hong Kong Eye Hospital	96	96	837043	820652	0.0	2	1	100.0%	100.0%	310	-57.8	0	0	0	-10	0	3	3	34.2	34.2
								F71	Cooling Tower at the roof of Kowloon City Law Courts Building	92	OFF	837139	820699	0.0	2	1	100.0%	N.A.	209	-54.4	0	0	N.A.	0	0	3	3	43.6	N.A.
								F72	Cooling Tower at the roof of Kowloon City Law Courts Building	92	OFF	837140	820697	0.0	2	1	100.0%	N.A.	211	-54.5	0	0	N.A.	0	0	3	3	43.5	N.A.
								F73	Chiller at the roof of Kowloon City Law Courts Building	94	OFF	837138	820693	0.0	2	1	100.0%	N.A.	215	-54.7	0	0	N.A.	0	0	3	3	45.3	N.A.
								F74	Chiller at the roof of Kowloon City Law Courts Building	94	OFF	837139	820687	0.0	2	1	100.0%	N.A.	219	-54.8	0	0	N.A.	0	0	3	3	45.2	N.A.
																											Total =	**53**	**47**

Prediction of Fixed Noise Source Impact on Planned NSR

NSR Labels	Nature of Use	Existing/ Planned Uses	Location		ASR	Noise Criteria (ANL), L_{eq} (30 min)		Noise Source ID	Description of Noise Sources	SWL, dB(A), L_{eq} (30 min)		Source Location			Directivity Factor (Q)	No. of Plant	% on-time within 30min (Daytime Peak)	% on-time within 30min (Night-time Peak)	Distance to NSR, d (m)	Correction for, dB(A)								Noise Impact at NSR, dB(A)	
			X	Y		Daytime & Evening Time (0700-2300)	Nighttime (2300-0700)			Daytime & Evening Time (0700-2300)	Nighttime (2300-0700)	X	Y	Z, mPD						Distance	No.	% on time (Daytime)	% on time (Night-time)	Screening by Features [1]	Silencer	Tonality	Facade	Daytime & Evening Period	Night-time
FN04	Residential	Planned	837277	820843	B	65	55	F36	Cooling Tower at the roof of St.Teresa Hospital (North Wing)	OFF	OFF	837057	820850	0.0	2	1	N.A.	N.A.	220	-54.8	0	N.A.	N.A.	-10	0	3	3	N.A.	N.A.
								F37	Cooling Tower at the roof of St.Teresa Hospital (North Wing)	86	OFF	837065	820851	0.0	2	1	100.0%	N.A.	212	-54.5	0	0	N.A.	-10	0	3	3	27.5	N.A.
								F38	Cooling Tower at the roof of St.Teresa Hospital (North Wing)	86	86	837075	820851	0.0	2	1	100.0%	100.0%	202	-54.1	0	0	0	-10	0	3	3	27.9	27.9
								F39	Cooling Tower at the roof of St.Teresa Hospital (North Wing)	86	86	837082	820853	0.0	2	1	100.0%	100.0%	196	-53.8	0	0	0	-10	0	3	3	28.2	28.2
								F40	Chiller at the roof of St.Teresa Hospital (East Wing)	98	OFF	837114	820858	0.0	2	1	100.0%	N.A.	164	-52.3	0	0	N.A.	-10	0	3	3	41.7	N.A.
								F41	Chiller at the roof of St.Teresa Hospital (East Wing)	98	98	837117	820859	0.0	2	1	100.0%	100.0%	161	-52.1	0	0	0	-10	0	3	3	41.9	41.9
								F42	Chiller at the roof of St.Teresa Hospital (East Wing)	OFF	OFF	837116	820854	0.0	2	1	N.A.	N.A.	161	-52.1	0	N.A.	N.A.	-10	0	3	3	N.A.	N.A.
								F43	Chiller at the roof of St.Teresa Hospital (Extension Building)	85	85	837109	820783	0.0	2	1	100.0%	100.0%	178	-53.0	0	0	0	-10	0	3	3	28.0	28.0
								F44	Chiller at the roof of St.Teresa Hospital (Extension Building)	85	85	837110	820778	0.0	2	1	100.0%	100.0%	179	-53.1	0	0	0	-10	0	3	3	27.9	27.9
								F45	Chiller at the roof of St.Teresa Hospital (Extension Building)	85	85	837071	820775	0.0	2	1	100.0%	100.0%	217	-54.7	0	0	0	-10	0	3	3	26.3	26.3
								F46	Chiller at the roof of St.Teresa Hospital (Extension Building)	85	85	837072	820770	0.0	2	1	100.0%	100.0%	217	-54.7	0	0	0	-10	0	3	3	26.3	26.3
								F47	Chiller at the roof of St.Teresa Hospital (Extension Building)	98	98	837074	820743	0.0	2	1	100.0%	100.0%	226	-55.1	0	0	0	-10	0	3	3	38.9	38.9
								F48	Chiller at the roof of St.Teresa Hospital (Extension Building)	98	98	837066	820741	0.0	2	1	100.0%	100.0%	234	-55.4	0	0	0	-10	0	3	3	38.6	38.6
								F49	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837170	820827	0.0	2	1	100.0%	100.0%	109	-48.7	0	0	0	0	0	3	3	28.8	28.8
								F50	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837172	820827	0.0	2	1	100.0%	100.0%	106	-48.5	0	0	0	0	0	3	3	27.5	27.5
								F51	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837173	820823	0.0	2	1	100.0%	100.0%	106	-48.5	0	0	0	0	0	3	3	27.5	27.5
								F52	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837171	820823	0.0	2	1	100.0%	100.0%	108	-48.7	0	0	0	0	0	3	3	27.3	27.3
								F53	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837169	820822	0.0	2	1	100.0%	100.0%	110	-48.8	0	0	0	0	0	3	3	27.2	27.2
								F54	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837170	820820	0.0	2	1	100.0%	100.0%	110	-48.8	0	0	0	0	0	3	3	28.7	28.7
								F55	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837170	820818	0.0	2	1	100.0%	100.0%	110	-48.8	0	0	0	0	0	3	3	28.7	28.7
								F56	VRV at the roof of St. Teresa Hospital (Staff Quarter)	68	68	837167	820816	0.0	2	1	100.0%	100.0%	114	-49.1	0	0	0	0	0	3	3	24.9	24.9
								F57	VRV at the roof of St. Teresa Hospital (Staff Quarter)	71	71	837164	820816	0.0	2	1	100.0%	100.0%	116	-49.3	0	0	0	0	0	3	3	27.2	27.2
								F58	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837162	820815	0.0	2	1	100.0%	100.0%	119	-49.5	0	0	0	0	0	3	3	28.0	28.0
								F59	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837161	820817	0.0	2	1	100.0%	100.0%	119	-49.5	0	0	0	0	0	3	3	26.5	26.5
								F60	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837161	820820	0.0	2	1	100.0%	100.0%	119	-49.5	0	0	0	0	0	3	3	28.0	28.0
								F61	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837164	820819	0.0	2	1	100.0%	100.0%	116	-49.3	0	0	0	0	0	3	3	28.2	28.2
								F62	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837166	820820	0.0	2	1	100.0%	100.0%	114	-49.1	0	0	0	0	0	3	3	28.4	28.4
								F63	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837158	820823	0.0	2	1	100.0%	100.0%	121	-49.7	0	0	0	0	0	3	3	27.8	27.8
								F64	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837158	820825	0.0	2	1	100.0%	100.0%	120	-49.6	0	0	0	0	0	3	3	26.4	26.4
								F65	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837160	820825	0.0	2	1	100.0%	100.0%	119	-49.5	0	0	0	0	0	3	3	26.5	26.5
								F66	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837162	820822	0.0	2	1	100.0%	100.0%	117	-49.3	0	0	0	0	0	3	3	28.2	28.2
								F67	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837164	820823	0.0	2	1	100.0%	100.0%	114	-49.2	0	0	0	0	0	3	3	26.8	26.8
								F68	Chiller at the roof of Hong Kong Eye Hospital	97	97	837029	820680	0.0	2	1	100.0%	100.0%	297	-57.5	0	0	0	-10	0	3	3	35.5	35.5
								F69	Chiller at the roof of Hong Kong Eye Hospital	97	97	837034	820681	0.0	2	1	100.0%	100.0%	292	-57.3	0	0	0	-10	0	3	3	35.7	35.7
								F70	Chiller at the roof of Hong Kong Eye Hospital	96	96	837043	820652	0.0	2	1	100.0%	100.0%	302	-57.6	0	0	0	-10	0	3	3	34.4	34.4
								F71	Cooling Tower at the roof of Kowloon City Law Courts Building	92	OFF	837139	820699	0.0	2	1	100.0%	N.A.	199	-54.0	0	0	N.A.	0	0	3	3	44.0	N.A.
								F72	Cooling Tower at the roof of Kowloon City Law Courts Building	92	OFF	837140	820697	0.0	2	1	100.0%	N.A.	200	-54.0	0	0	N.A.	0	0	3	3	44.0	N.A.
								F73	Chiller at the roof of Kowloon City Law Courts Building	94	OFF	837138	820693	0.0	2	1	100.0%	N.A.	205	-54.2	0	0	N.A.	0	0	3	3	45.8	N.A.
								F74	Chiller at the roof of Kowloon City Law Courts Building	94	OFF	837139	820687	0.0	2	1	100.0%	N.A.	209	-54.4	0	0	N.A.	0	0	3	3	45.6	N.A.
																											Total =	**53**	**47**
FN05	Residential	Planned	837282	820844	B	65	55	F43	Chiller at the roof of St.Teresa Hospital (Extension Building)	85	85	837109	820783	0	2	1	100.00%	100.00%	183	-53.3	0	0	0	-10	0	3	3	27.7	27.7
								F44	Chiller at the roof of St.Teresa Hospital (Extension Building)	85	85	837110	820778	0	2	1	100.00%	100.00%	184	-53.3	0	0	0	-10	0	3	3	27.7	27.7
								F45	Chiller at the roof of St.Teresa Hospital (Extension Building)	85	85	837071	820775	0	2	1	100.00%	100.00%	222	-54.9	0	0	0	-10	0	3	3	26.1	26.1
								F46	Chiller at the roof of St.Teresa Hospital (Extension Building)	85	85	837072	820770	0	2	1	100.00%	100.00%	222	-54.9	0	0	0	-10	0	3	3	26.1	26.1
								F47	Chiller at the roof of St.Teresa Hospital (Extension Building)	98	98	837074	820743	0	2	1	100.00%	100.00%	231	-55.3	0	0	0	-10	0	3	3	38.7	38.7
								F48	Chiller at the roof of St.Teresa Hospital (Extension Building)	98	98	837066	820741	0	2	1	100.00%	100.00%	239	-55.6	0	0	0	-10	0	3	3	38.4	38.4
								F49	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837170	820827	0	2	1	100.00%	100.00%	113	-49.1	0	0	0	0	0	3	3	28.4	28.4
								F50	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837172	820827	0	2	1	100.00%	100.00%	111	-48.9	0	0	0	0	0	3	3	27.1	27.1
								F51	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837173	820823	0	2	1	100.00%	100.00%	111	-48.9	0	0	0	0	0	3	3	27.1	27.1
								F52	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837171	820823	0	2	1	100.00%	100.00%	113	-49.0	0	0	0	0	0	3	3	27.0	27.0
								F53	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837169	820822	0	2	1	100.00%	100.00%	114	-49.2	0	0	0	0	0	3	3	26.8	26.8
								F54	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837170	820820	0	2	1	100.00%	100.00%	114	-49.2	0	0	0	0	0	3	3	28.3	28.3
								F55	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837170	820818	0	2	1	100.00%	100.00%	115	-49.2	0	0	0	0	0	3	3	28.3	28.3
								F56	VRV at the roof of St. Teresa Hospital (Staff Quarter)	68	68	837167	820816	0	2	1	100.00%	100.00%	118	-49.5	0	0	0	0	0	3	3	24.5	24.5
								F57	VRV at the roof of St. Teresa Hospital (Staff Quarter)	71	71	837164	820816	0	2	1	100.00%	100.00%	121	-49.6	0	0	0	0	0	3	3	26.9	26.9
								F58	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837162	820815	0	2	1	100.00%	100.00%	124	-49.8	0	0	0	0	0	3	3	27.7	27.7
								F59	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837161	820817	0	2	1	100.00%	100.00%	124	-49.8	0	0	0	0	0	3	3	26.2	26.2
								F60	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837161	820820	0	2	1	100.00%	100.00%	124	-49.8	0	0	0	0	0	3	3	27.7	27.7
								F61	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837164	820819	0	2	1	100.00%	100.00%	121	-49.6	0	0	0	0	0	3	3	27.9	27.9
								F62	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837166	820820	0	2	1	100.00%	100.00%	118	-49.5	0	0	0	0	0	3	3	28.0	28.0
								F63	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837158	820823	0	2	1	100.00%	100.00%	126	-50.0	0	0	0	0	0	3	3	27.5	27.5
								F64	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837158	820825	0	2	1	100.00%	100.00%	125	-50.0	0	0	0	0	0	3	3	26.0	26.0
								F65	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837160	820825	0	2	1	100.00%	100.00%	123	-49.8	0	0	0	0	0	3	3	26.2	26.2
								F66	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837162	820822	0	2	1	100.00%	100.00%	121	-49.7	0	0	0	0	0	3	3	27.8	27.8
								F67	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837164	820823	0	2	1	100.00%	100.00%	119	-49.5	0	0	0	0	0	3	3	26.5	26.5
								F68	Chiller at the roof of Hong Kong Eye Hospital	97	97	837029	820680	0	2	1	100.00%	100.00%	302	-57.6	0	0	0	-10	0	3	3	35.4	35.4
								F69	Chiller at the roof of Hong Kong Eye Hospital	97	97	837034	820681	0	2	1	100.00%	100.00%	296	-57.4	0	0	0	-10	0	3	3	35.6	35.6
								F70	Chiller at the roof of Hong Kong Eye Hospital	96	96	837043	820652	0	2	1	100.00%	100.00%	306	-57.7	0	0	0	-10	0	3	3	34.3	34.3
								F71	Cooling Tower at the roof of Kowloon City Law Courts Building	92	OFF	837139	820699	0	2	1	100.00%	N.A.	203	-54.1	0	0	N.A.	0	0	3	3	43.9	N.A.
								F72	Cooling Tower at the roof of Kowloon City Law Courts Building	92	OFF	837140	820697	0	2	1	100.00%	N.A.	204	-54.2	0	0	N.A.	0	0	3	3	43.8	N.A.
								F73	Chiller at the roof of Kowloon City Law Courts Building	94	OFF	837138	820693	0	2	1	100.00%	N.A.	209	-54.4	0	0	N.A.	0	0	3	3	45.6	N.A.
								F74	Chiller at the roof of Kowloon City Law Courts Building	94	OFF	837139	820687	0	2	1	100.00%	N.A.	212	-54.5	0	0	N.A.	0	0	3	3	45.5	N.A.
																											Total =	**52**	**46**

Appendix 4

Sewerage Impact Assessment

Prepared for

Lead Engineering Limited

Prepared by

Ramboll Hong Kong Limited

AMENDMENT TO THE APPROVED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY) IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON

SEWERAGE IMPACT ASSESSMENT

Date	**August 2024**
Prepared by	**Jolene Wong** **Assistant Environmental Consultant**
Signed	Jolene
Approved by	**Katie Yu** **Senior Manager**
Signed	
Project Reference	**WSLPE349EI00**
Document No.	**R9454_V1.1.docx**

Ramboll Hong Kong Limited

21/F, BEA Harbour View Centre
56 Gloucester Road, Wan Chai, Hong Kong

Tel: (852) 3465 2888
Fax: (852) 3465 2899
Email: hkinfo@ramboll.com

Q:\Projects\WSLPE349EI00\04 Deliverables\02 SIA Report\R9454_V1.1.docx

CHAPTERS

TABLES

FIGURES

APPENDICES

1. INTRODUCTION

1.1 Background and Objectives

1.1.1 The Subject Site is zoned as "Residential (Group B)" under the Approved Ho Man Tin Outline Zoning Plan No. S/K10/30, with site area of 582.9 m^2. This S16 application is submitted to the Town Planning Board for the amendment to the approved Social Welfare Facility (Residential Care Home for the Elderly) (Town Planning Board Ref. A/K10/261) at 349 Prince Edward Road West, Kowloon.

1.1.2 Ramboll Hong Kong Limited has been commissioned by Lead Engineering Limited (hereinafter referred to as "Applicant") to conduct this Sewerage Impact Assessment for the subject S16 application.

1.2 Subject Site and its Environs

1.2.1 The Subject Site is bounded by Prince Edward Road West to the North and is surrounded by existing elderly home and residential buildings e.g. Woodland Villa, Ka Wah Court and Blue Haven.

1.2.2 **Figure 1.1** shows the location of the Subject Site and its environs.

1.3 Proposed Development

1.3.1 The proposed development would consist of 11 storeys including basement, with a total of 2914.5 m^2 gross floor area. The plot ratio of the proposed development is 5.0. The population intake year is anticipated to be 2027.

1.3.2 **Appendix 1.1** shows the indicative Master Layout Plan of the proposed development.

2. SEWERAGE IMPACT ASSESSMENT

2.1 Scope of Work

2.1.1 The aim of this study is to assess whether the capacity of the existing sewerage networking to the Subject Site is sufficient to cope with the sewage flow generated from the proposed development and existing development in the vicinity.

2.2 Existing Sewerage System

2.2.1 The drainage record shows that there are existing Ø300mm, Ø600mm and Ø675mm sewers running along Prince Edward Road West to the north of the Subject Site (manhole reference no. FMH4027438 to FMH4048827).

2.2.2 According to a previous SIA submitted under the approved planning application no. A/K10/261, a manhole survey was conducted to obtain the invert levels of several manholes, as the information was not shown in the drainage records. According to our site survey, manholes FMH4048826 and FMH4050810 could not be located. And previous manhole survey results show that manhole FMH4067900 is connected to manhole FMH4050809, in contrary to the online drainage records. The manhole survey report from the previous planning application is extracted and attached as **Appendix 2.2**. It is assumed that the pipe material of existing Ø300mm is vitrified clay, while that of Ø600mm and Ø675mm sewers are concrete. This SIA is conducted according to the sewerage system alignment observed in the manhole survey. The underground pipeline survey is shown in **Appendix 2.2**.

2.3 Assessment Criteria and Methodology

2.3.1 Environmental Protection Department's (EPD's) Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning, Version 1.0 (GESF) is referenced to estimate the quantity of the sewage generated from the proposed development and the existing development. Sewage flow parameters and global peaking factors in this document are adopted.

2.3.2 For the purpose of this SIA, area in the proposed development is considered as institutional uses. According to Table T-1 of the GESF, the domestic unit flow of Institutional and special class is 0.19 m^3/day.

2.3.3 According to Table T-2 of the GESF, the unit flow of Community, Social & Personal Services (J11) is 0.2 m^3/day, resulting in 0.28 m^3/day for each employee.

2.3.4 Full bore flow of the sewer segments between manhole FMH4050807 and FMH4048824 is used to estimate the sewage generation rate of the northern portion of catchment B.

2.4 Assessment of Sewerage Impact

2.4.1 The wastewater generated by the proposed development will be contributed by the elderly and employees of the proposed elderly home. Sewage generated from the Subject Site will be directed to sewers along Prince Edward Road West.

2.4.2 **Appendix 2.1** shows the detailed calculation on the estimated hydraulic capacity of the existing sewer sections and the calculation of the amount of sewage entering each segment of the said sewer network.

2.4.3 Along Prince Edward Road West, the existing public foul water manhole (FMH4027438) is the closest to the proposed development, while the invert level (7.8mPD) of the existing pipes is suitable for the connection to the proposed development (9.2mPD at ground level). The proposed sewage pipe and the existing sewerage system in the vicinity of the subject site is shown in **Figure 2.1** while the catchment in the vicinity of the Subject Site is shown in **Figure 2.2**.

2.4.4 Calculation of the sewage generation rate for the proposed development is given in **Table 2.1**.

Table 2.1 Estimated Peak Flow of the Proposed Development

Calculation for Sewage Generation Rate of the Proposed Development			
1. Proposed Elderly Home			
1a. Total number of beds	=	141	units
1b. Total number of elderlies	=	141	people
1c. Design flow	=	190	litre/person/day -- (Special class in Table T-1 of GESF)
1d. Sewage Generation rate	=	**26.8**	m^3/day
2a. Total number of nursing staff	=	21	staff (Estimated based on Code of Practice for Residential Care Homes (Nursing Homes) for the Elderly)
2b. Design flow	=	280	litre/employee/day -- (refer to Table T-2 of GESF - J11 Community, Social & Personal Services)
2c. Sewage Generation rate	=	**5.9**	m^3/day
3a. Assumed area for RCHE communal facilities	=	247.9	m^2
3b. Assumed floor area per employee	=	30.3	m^2 per employee -- (refer to Table 8 of CIFSUS - Community, Social & Personal Services)
3c. Total number of employees	=	8	employees
3d. Design flow	=	280	litre/employee/day -- (refer to Table T-2 of GESF - J11 Community, Social & Personal Services)
3e. Sewage generation rate	=	**2.3**	m^3/day
Total Flow from Proposed Development			
Flow Rate	=	35.0	m^3/day
Contributing Population	=	129	people
Peaking factor	=	8	Refer to Table T-5 of GESF for population <1,000 incl. stormwater allowance
Peak Flow	=	**3.2**	litre/sec

2.5 Discussion

2.5.1 The average and peak flow rates from the proposed development are about 35.0m^3/day and 3.2 litre/sec respectively.

2.5.2 After calculating the appropriate capacities as mentioned above, the estimated sewage flow from the proposed development has been compared with the capacity of the existing sewerage system to determine whether it has adequate spare capacity to accommodate the flow from the proposed development and existing catchment area.

2.5.3 According to Table 4 of **Appendix 2.1**, it is found that the contribution from the sewage generated from the proposed development and surrounding catchment areas will be within 90% of the existing sewage system capacity. Therefore, the existing sewerage system is sufficient to cater for the sewage generated from the proposed development.

3. OVERALL CONCLUSION

3.1 Conclusion

3.1.1 The development of an Elderly Home is proposed at 349 Prince Edward Road West, Kowloon. The potential sewerage impact has been quantitatively addressed.

3.1.2 Based on the sewerage impact assessment results, it is found that the capacity of the existing sewers serving the Subject Site will be sufficient to cater for the sewage generation from the proposed development and the surrounding catchment areas. Therefore, adverse sewerage impacts are not anticipated.

Figures

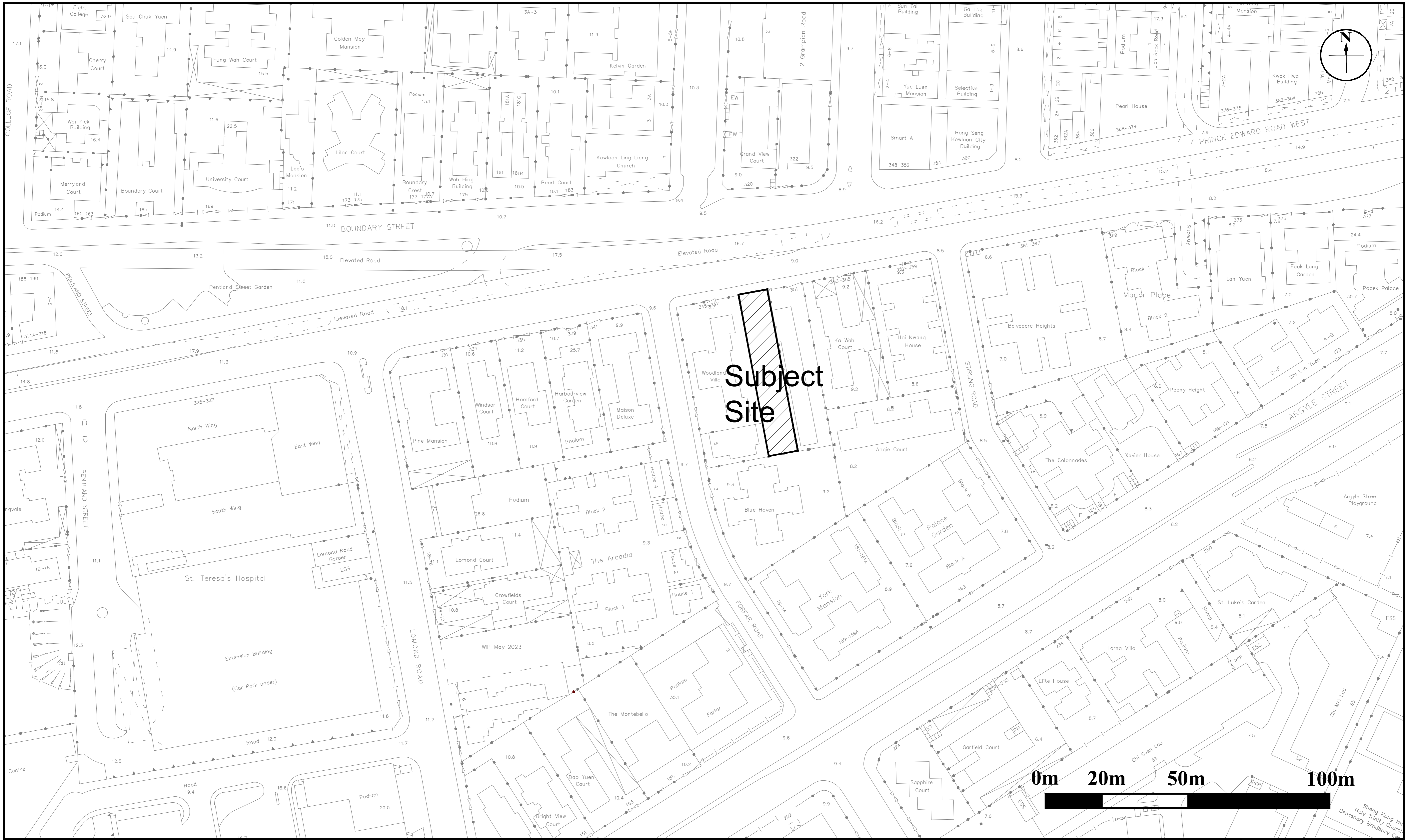


Figure: 1.1	RAMBOLL
Title: Subject Site and its Environs	Drawn by: JW
	Checked by: KY
Project: Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon	Rev.: 1.1
	Date: Aug 2024

Q:\Projects\WSLPE349EI00\04 Deliverables\02 SIA Report\Figures\v1.1\source\Figure 1.1.dwg

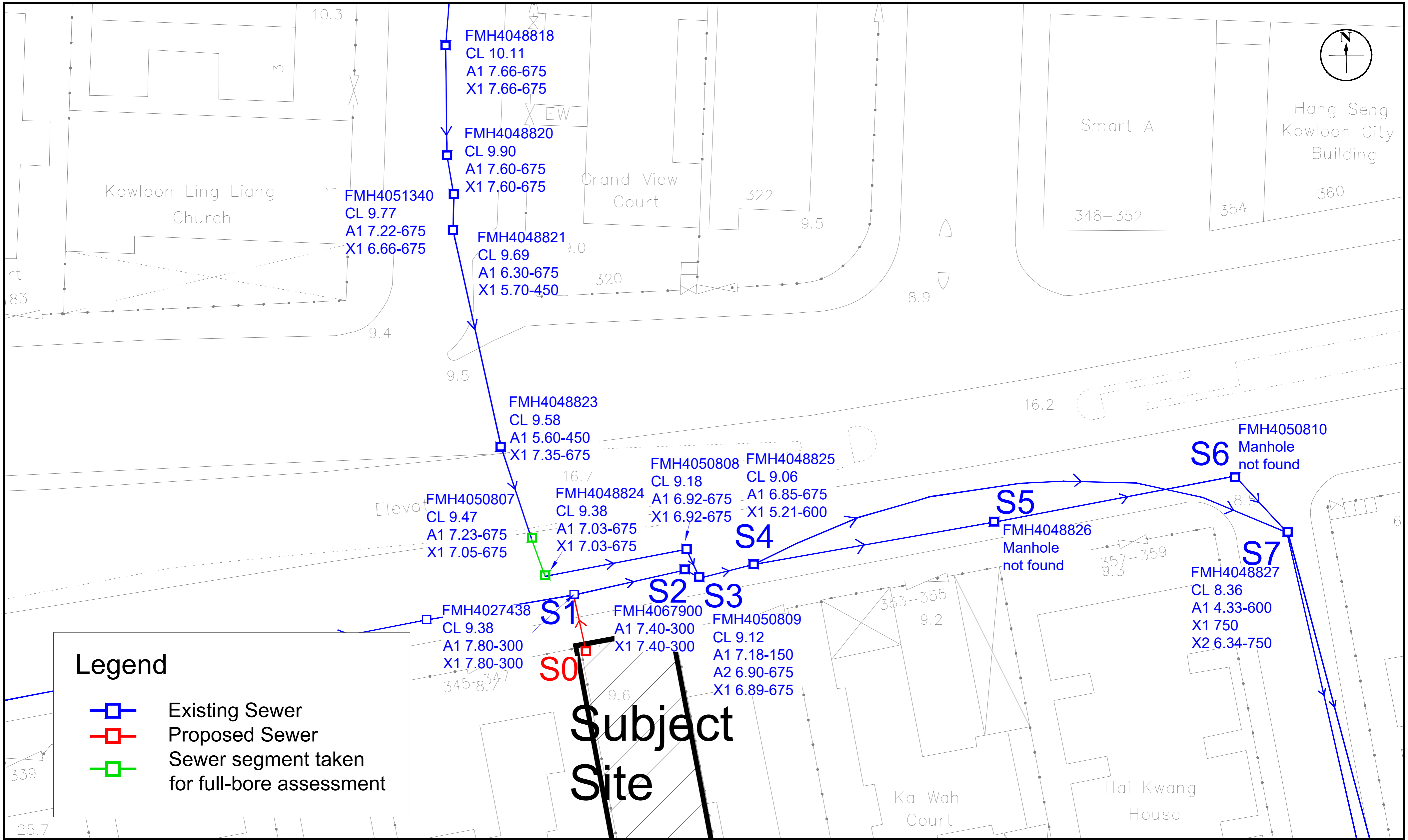


Figure: 2.1

Title: Existing Sewerage System in the Vicinity of the Subject Site

Project: Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon

Drawn by: JW
Checked by: KY
Rev.: 1.1
Date: Aug 2024

Q:\Projects\WSLPE349EI00\04 Deliverables\02 SIA Report\Figures\v1.1\source\Figure 2.1-2.2.dwg

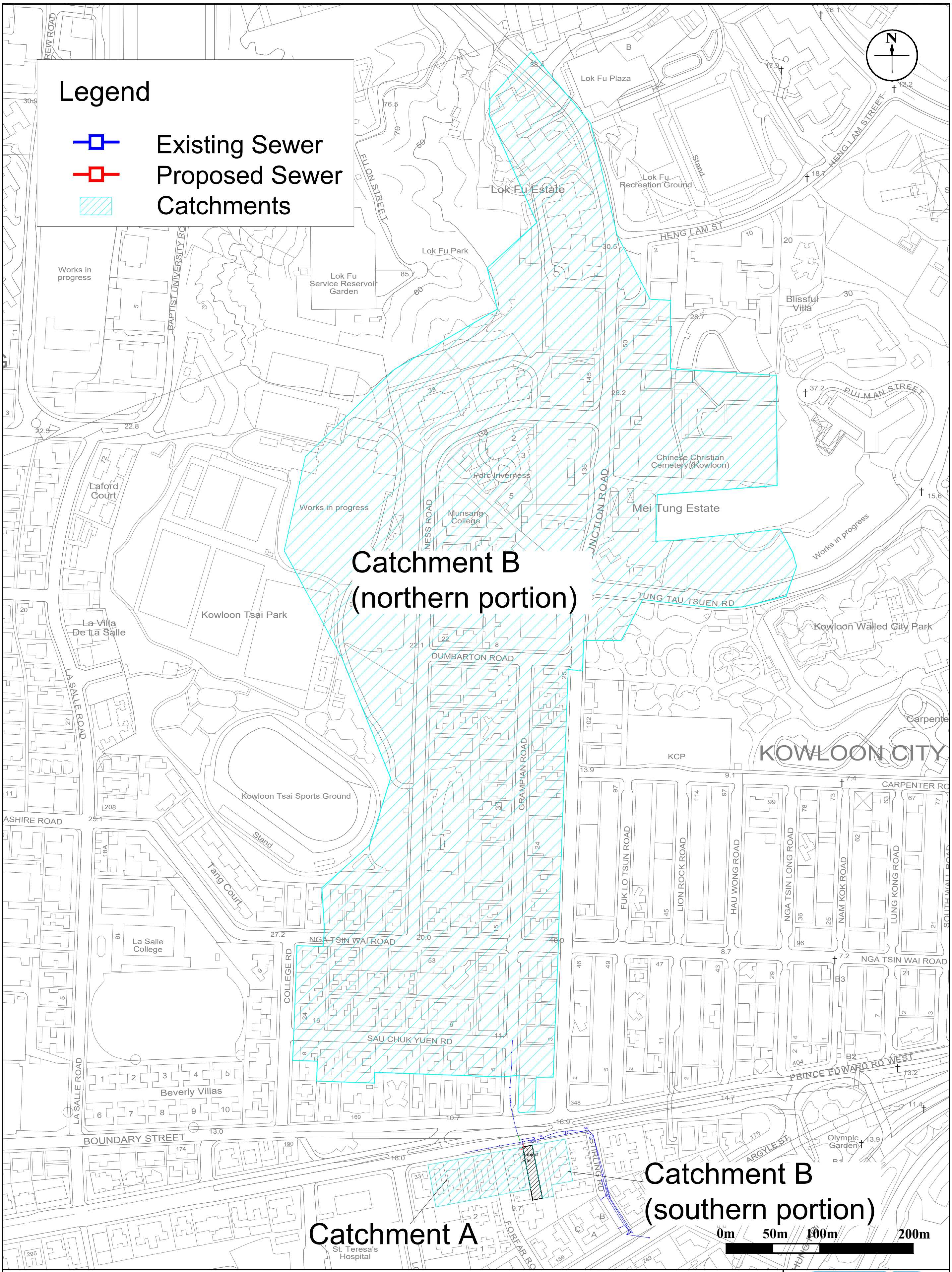


Figure: 2.2

Title: Existing Sewerage System and Catchments in the Vicinity of the Subject Site

Project: Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon

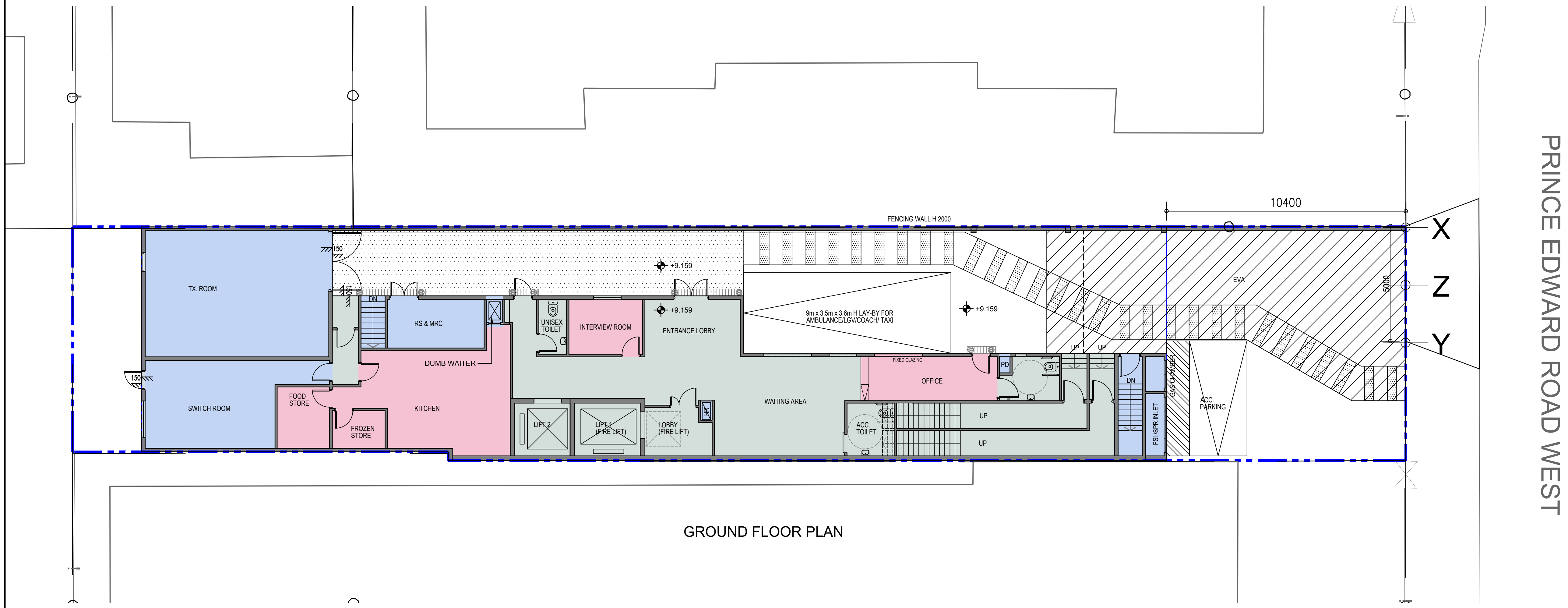
RAMBOLL

Drawn by: JW
Checked by: KY
Rev.: 1.1
Date: Aug 2024

Q:\Projects\WSLPE349EI00\04 Deliverables\02 SIA Report\Figures\v1.1\source\Figure 2.1-2.2.dwg

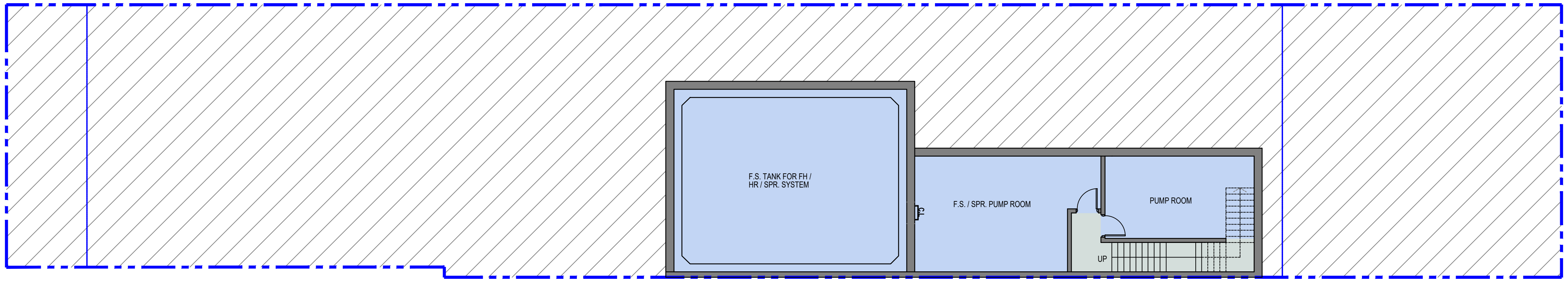
Appendix 1.1 Indicative MLP of the Proposed Development

- SITE BOUNDARY
- ▬ FOOTPATH
- 🟨 WARD
- 🟥 ANCILLARY AREA
- ▨ COMMON / CIRCULATION SPACE
- 🟦 PLANT ROOM/ STAIRCASE TO U/G PLANT ROOM



GROUND FLOOR PLAN

G/F LAYOUT 1:200



B/S LAYOUT 1:200

N

BD REF. NO.:

FSD REF. NO.:

REVISIONS AND SUBMISSIONS:

NO.:	DATE:	DETAILS:	CHECKED:

NOTES:
1. CONTENTS ON THIS DRAWING SHOW DESIGN INTENT ONLY CONTRACTOR IS RESPONSIBLE FOR DETAILED DESIGN OF THE INTERIOR FITTING–OUT. CONTRACTOR IS REQUIRED TO SUBMIT FULL SET SHOP DRAWINGS FOR ARCHITECT'S APPROVAL PRIOR TO FABRICATION AND SITE INSTALLATION.
2. STRUCTURAL CALCULATIONS IF REQUIRED AND RELATED SUPPORTING DATA SHOULD BE SUBMITTED FOR REVIEW AND APPROVAL.
3. TRUE COLOR SAMPLES OF MATERIALS SHOULD BE SUBMITTED FOR ARCHITECT'S APPROVAL PRIOR TO PROCUREMENT.
4. ALL FITTING/ ASSEMBLY AND MATERIALS SHOULD BE DESIGN & INSTALLED TO CONTRACT DRAWINGS AND SPECIFICATION, AND IN COMPLIANCE WITH ALL RELEVANT STATUTORY REQUIREMENTS.
5. DIMENSIONS BASED ON ON SITE MEASUREMENTS.

6. FINAL MATERIALS & FINISHES OF WALL,FLOOR,CEILING,WALL FIXTURE ETC. SHOULD BE REFER TO FINISHES AND MATERIALS SCHEDULE UNDER THE SPECIFICATION PROVIDED.

CLIENT/EMPLOYER:

PROJECT ARCHITECT/AUTHORIZED PERSON:

馬海
馬海(建築顧問)有限公司
Spence Robinson Limited

PROJECT STRUCTURAL ENGINEER/
PROJECT GEO-TECHNICAL ENGINEER:

張耀新建築工程師有限公司
Wilson & Associates Ltd

PROJECT E/M ENGINEER:

PROJECT LANDSCAPE CONSULTANT:

PROJECT QUANTITY SURVEYOR:

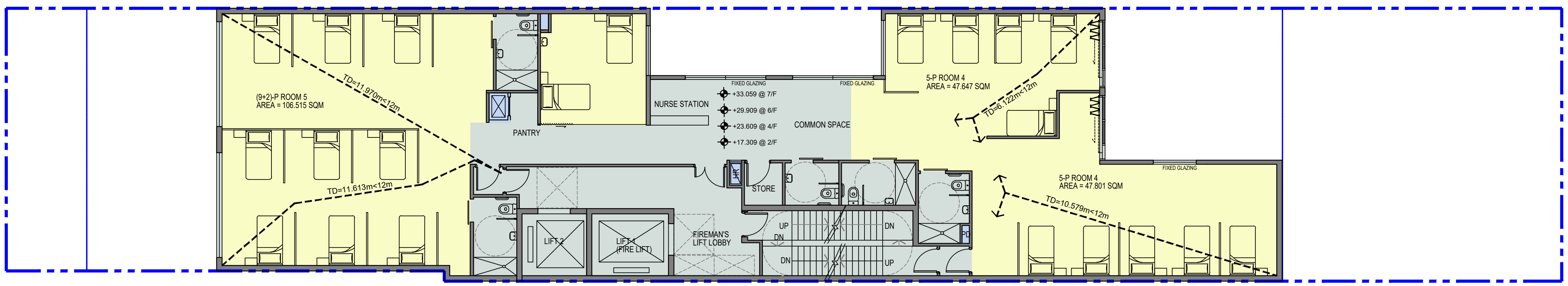
PROJECT:
PURPOSE BUILT C&A HOME DEVELOPMENT AT
349 PRINCE EDWARD ROAD WEST

DRAWING TITLE:

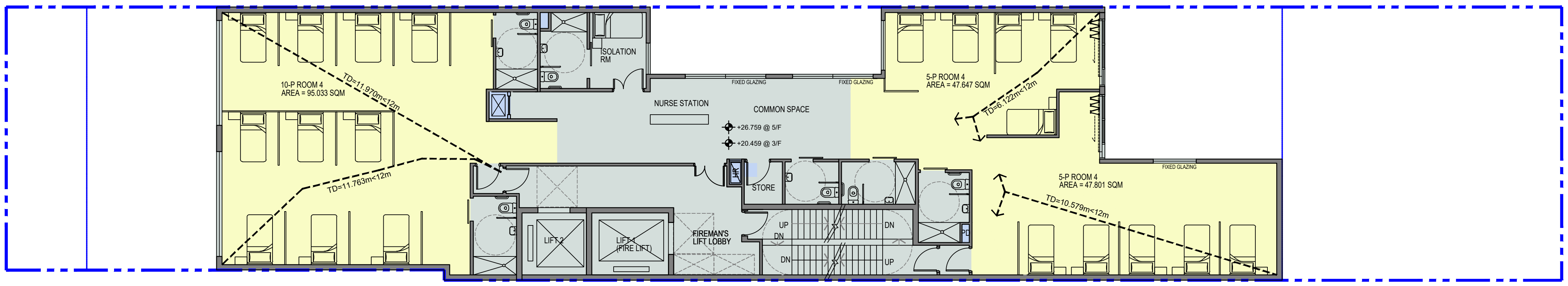
GROUND FLOOR PLAN &
BASEMENT FLOOR PLAN

DRAWN BY:	DATE:	
CZ	AUG-2024	
CHECKED BY:	APPROVED BY:	
CMD	KCY	
SCALE:	PAPER SIZE:	
1:200	A3	
PROJECT:	DRAWING:	REVISION:
PE 6170	GP-00	V12

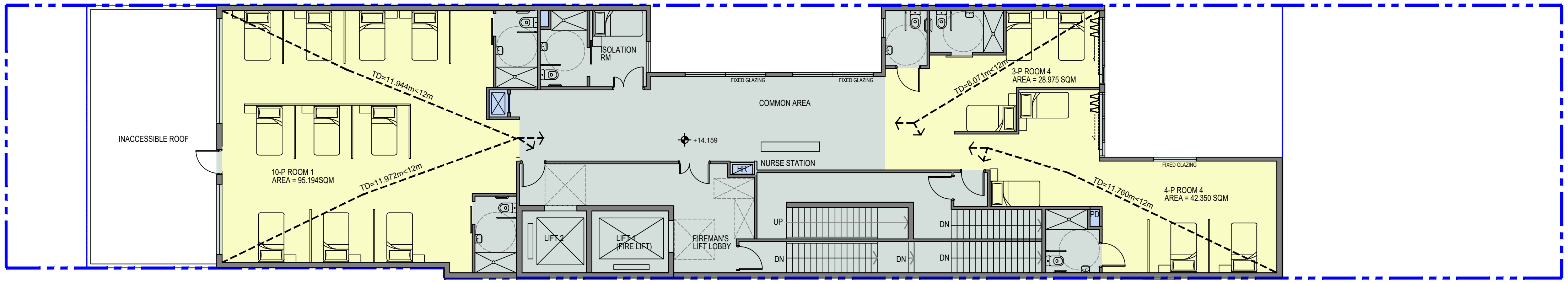
NOTES :
1. This drawing and design are copyright and no portion may be reproduced without the written permission of the Architect.
2. Use written dimensions or grid lines in preference to scaled dimensions. Measurements to existing work are to be checked on site.
3. This drawing is to be read in conjunction with the Architect's Specification and Conditions of Contract.
4. Prints not showing the last revision are to be cancelled.
5. Prints without an authorized signature in the checked and approved spaces below and after the last revision above are NOT vaild for use outside SRL.



2/F, 4/F, 6/F, 7/F LAYOUT 1:200



3/F, 5/F LAYOUT 1:200

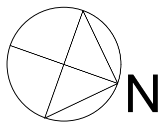


1/F LAYOUT 1:200

— SITE BOUNDARY
▩ FOOTPATH
🟨 WARD
🟥 ANCILLARY AREA
▨ COMMON / CIRCULATION SPACE
🟦 PLANT ROOM/ STAIRCASE
TO U/G PLANT ROOM

NOS. OF BED
(9.5m²/ppl)

G/F	0
1/F	17
2/F	21
3/F	20
4/F	21
5/F	20
6/F	21
7/F	21
TOTAL	141



BD REF. NO.:
FSD REF. NO.:
REVISIONS AND SUBMISSIONS:

NO.:	DATE:	DETAILS:	CHECKED:

NOTES:
1. CONTENTS ON THIS DRAWING SHOW DESIGN INTENT ONLY CONTRACTOR IS RESPONSIBLE FOR DETAILED DESIGN OF THE INTERIOR FITTING–OUT. CONTRACTOR IS REQUIRED TO SUBMIT FULL SET SHOP DRAWINGS FOR ARCHITECT'S APPROVAL PRIOR TO FABRICATION AND SITE INSTALLATION.
2. STRUCTURAL CALCULATIONS IF REQUIRED AND RELATED SUPPORTING DATA SHOULD BE SUBMITTED FOR REVIEW AND APPROVAL.
3. TRUE COLOR SAMPLES OF MATERIALS SHOULD BE SUBMITTED FOR ARCHITECT'S APPROVAL PRIOR TO PROCUREMENT.
4. ALL FITTING/ ASSEMBLY AND MATERIALS SHOULD BE DESIGN & INSTALLED TO CONTRACT DRAWINGS AND SPECIFICATION, AND IN COMPLIANCE WITH ALL RELEVANT STATUTORY REQUIREMENTS.
5. DIMENSIONS BASED ON ON SITE MEASUREMENTS.
6. FINAL MATERIALS & FINISHES OF WALL,FLOOR,CEILING,WALL FIXTURE ETC. SHOULD BE REFER TO FINISHES AND MATERIALS SCHEDULE UNDER THE SPECIFICATION PROVIDED.

CLIENT/EMPLOYER:

PROJECT ARCHITECT/AUTHORIZED PERSON:
馬海
馬海(建築顧問)有限公司
Spence Robinson Limited

PROJECT STRUCTURAL ENGINEER/
PROJECT GEO–TECHNICAL ENGINEER:
張耀新建築工程師有限公司
Wilson & Associates Ltd

PROJECT E/M ENGINEER:

PROJECT LANDSCAPE CONSULTANT:

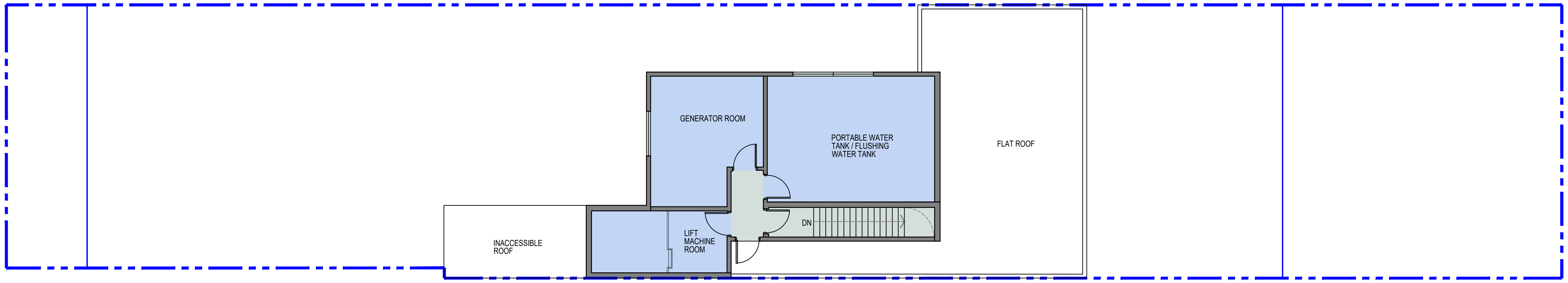
PROJECT QUANTITY SURVEYOR:

PROJECT:
PURPOSE BUILT C&A HOME DEVELOPMENT AT
349 PRINCE EDWARD ROAD WEST

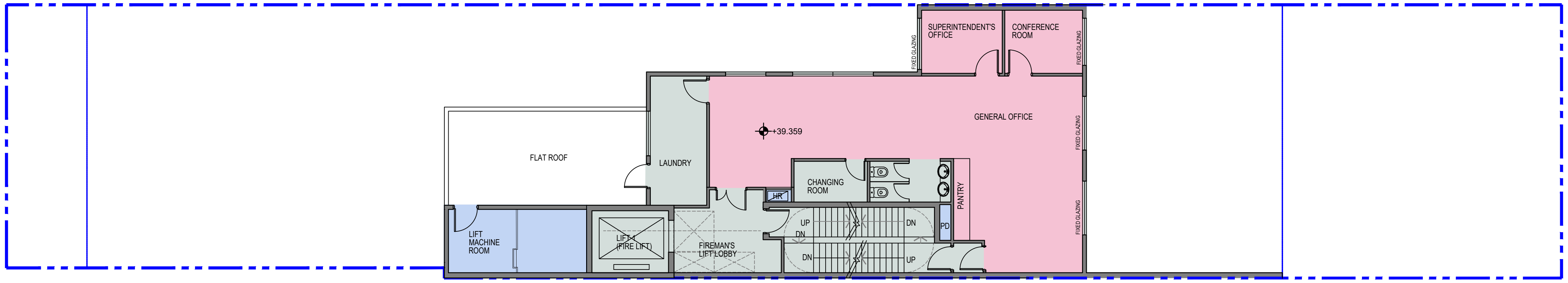
DRAWING TITLE:
FIRST FLOOR PLAN &
TYPICAL FLOOR PLAN (3/F,5/F) &
TYPICAL FLOOR PLAN (2/F,4/F,6/F& 7/F)

DRAWN BY: CZ	DATE: AUG-2024	
CHECKED BY: CMD	APPROVED BY: KCY	
SCALE: 1:200	PAPER SIZE: A3	
PROJECT: PE 6170	DRAWING: GP-01	REVISION: V12

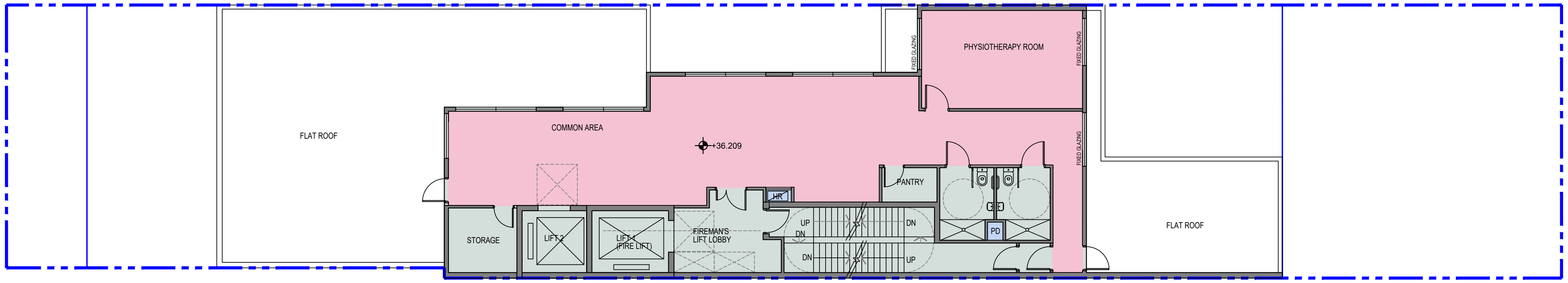
NOTES :
1. This drawing and design are copyright and no portion may be reproduced without the written permission of the Architect.
2. Use written dimensions or grid lines in preference to scaled dimensions. Measurements to existing work are to be checked on site.
3. This drawing is to be read in conjunction with the Architect's Specification and Conditions of Contract.
4. Prints not showing the last revision are to be cancelled.
5. Prints without an authorized signature in the checked and approved spaces below and after the last revision above are NOT vaild for use outside SRL.



ROOF LAYOUT 1:200



9/F LAYOUT 1:200



8/F LAYOUT 1:200

━	SITE BOUNDARY
▬	FOOTPATH
🟨	WARD
🟥	ANCILLARY AREA
⬜	COMMON / CIRCULATION SPACE
🟦	PLANT ROOM/ STAIRCASE TO U/G PLANT ROOM

NOS. OF BED
(9.5m²/ppl)

G/F	0
1/F	17
2/F	21
3/F	20
4/F	21
5/F	20
6/F	21
7/F	21
TOTAL	141

N

BD REF. NO.:
FSD REF. NO.:
REVISIONS AND SUBMISSIONS:

NO.:	DATE:	DETAILS:	CHECKED:

NOTES:
1. CONTENTS ON THIS DRAWING SHOW DESIGN INTENT ONLY CONTRACTOR IS RESPONSIBLE FOR DETAILED DESIGN OF THE INTERIOR FITTING-OUT. CONTRACTOR IS REQUIRED TO SUBMIT FULL SET SHOP DRAWINGS FOR ARCHITECT'S APPROVAL PRIOR TO FABRICATION AND SITE INSTALLATION.
2. STRUCTURAL CALCULATIONS IF REQUIRED AND RELATED SUPPORTING DATA SHOULD BE SUBMITTED FOR REVIEW AND APPROVAL.
3. TRUE COLOR SAMPLES OF MATERIALS SHOULD BE SUBMITTED FOR ARCHITECT'S APPROVAL PRIOR TO PROCUREMENT.
4. ALL FITTING/ ASSEMBLY AND MATERIALS SHOULD BE DESIGN & INSTALLED TO CONTRACT DRAWINGS AND SPECIFICATION, AND IN COMPLIANCE WITH ALL RELEVANT STATUTORY REQUIREMENTS.
5. DIMENSIONS BASED ON ON SITE MEASUREMENTS.

6. FINAL MATERIALS & FINISHES OF WALL,FLOOR,CEILING,WALL FIXTURE ETC. SHOULD BE REFER TO FINISHES AND MATERIALS SCHEDULE UNDER THE SPECIFICATION PROVIDED.

CLIENT/EMPLOYER:

PROJECT ARCHITECT/AUTHORIZED PERSON:
馬海
馬海(建築顧問)有限公司
Spence Robinson Limited

PROJECT STRUCTURAL ENGINEER/
PROJECT GEO-TECHNICAL ENGINEER:
張耀新建築工程師有限公司
Wilson & Associates Ltd

PROJECT E/M ENGINEER:

PROJECT LANDSCAPE CONSULTANT:

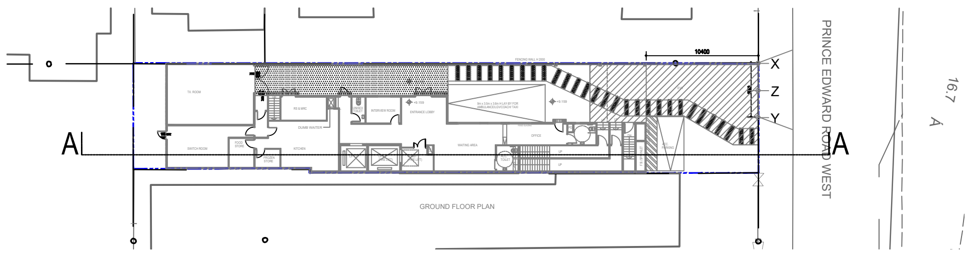
PROJECT QUANTITY SURVEYOR:

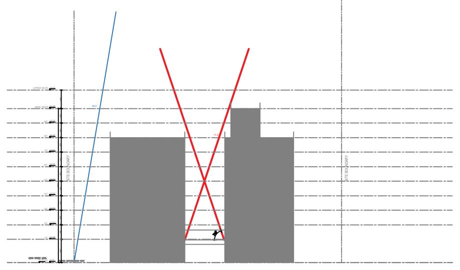
PROJECT:
PURPOSE BUILT C&A HOME DEVELOPMENT AT
349 PRINCE EDWARD ROAD WEST

DRAWING TITLE:
8/F & 9/F FLOOR PLAN &
ROOF FLOOR PLAN

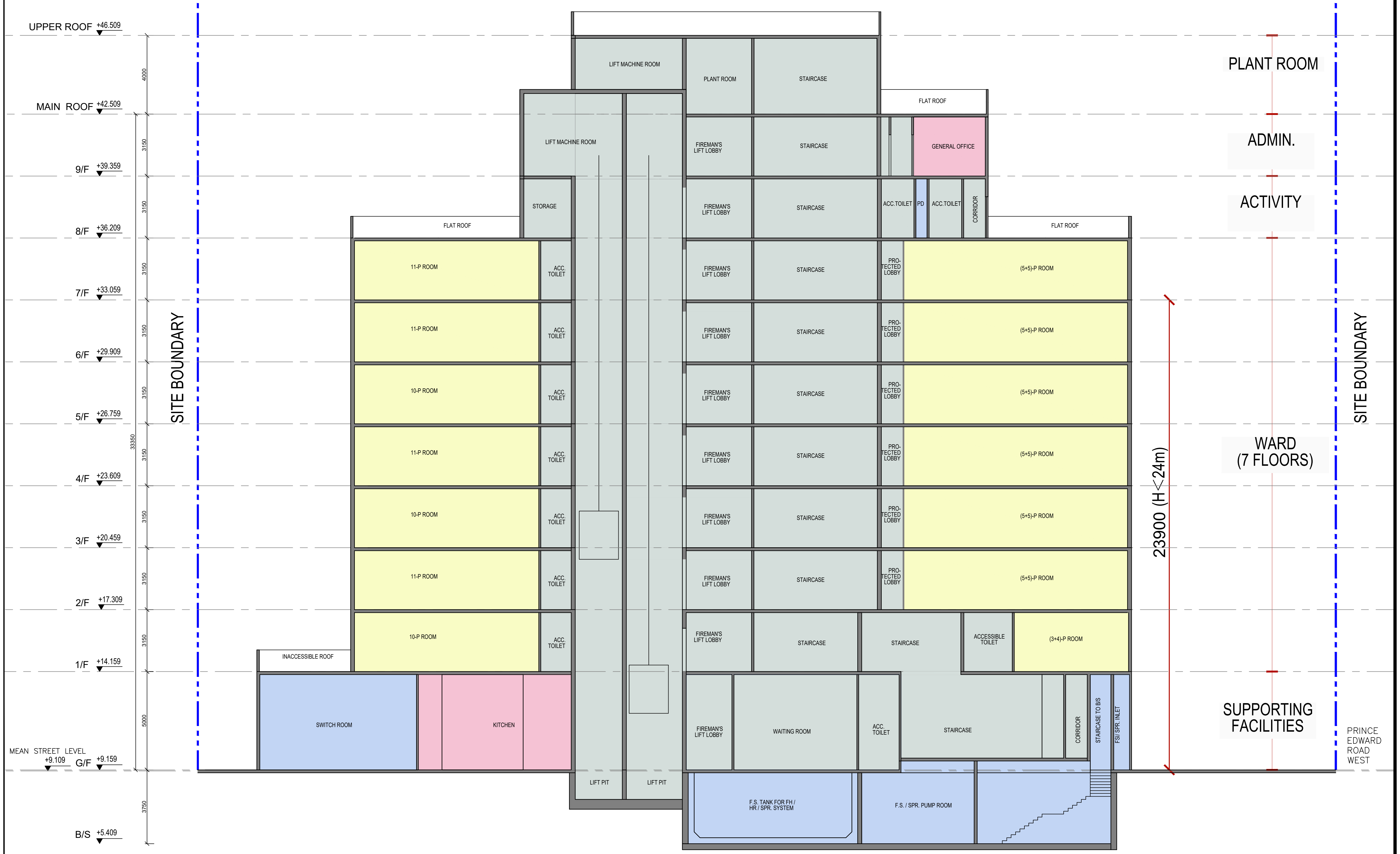
DRAWN BY: CZ
DATE: AUG-2024
CHECKED BY: CMD
APPROVED BY: KCY
SCALE: 1:200
PAPER SIZE: A3
PROJECT: PE 6170
DRAWING: GP-02
REVISION: V12

NOTES :
1. This drawing and design are copyright and no portion may be reproduced without the written permission of the Architect.
2. Use written dimensions or grid lines in preference to scaled dimensions. Measurements to existing work are to be checked on site.
3. This drawing is to be read in conjunction with the Architect's Specification and Conditions of Contract.
4. Prints not showing the last revision are to be cancelled.
5. Prints without an authorized signature in the checked and approved spaces below and after the last revision above are NOT vaild for use outside SRL.





- ▬ SITE BOUNDARY
- ■ FOOTPATH
- 🟨 WARD
- 🟥 ANCILLARY AREA
- ▨ COMMON / CIRCULATION SPACE
- 🟦 PLANT ROOM/ STAIRCASE TO U/G PLANT ROOM



SECTION A-A 1:200

BD REF. NO.:

FSD REF. NO.:

REVISIONS AND SUBMISSIONS:

NO.:	DATE:	DETAILS:	CHECKED:

NOTES:
1. CONTENTS ON THIS DRAWING SHOW DESIGN INTENT ONLY CONTRACTOR IS RESPONSIBLE FOR DETAILED DESIGN OF THE INTERIOR FITTING-OUT. CONTRACTOR IS REQUIRED TO SUBMIT FULL SET SHOP DRAWINGS FOR ARCHITECT'S APPROVAL PRIOR TO FABRICATION AND SITE INSTALLATION.
2. STRUCTURAL CALCULATIONS IF REQUIRED AND RELATED SUPPORTING DATA SHOULD BE SUBMITTED FOR REVIEW AND APPROVAL.
3. TRUE COLOR SAMPLES OF MATERIALS SHOULD BE SUBMITTED FOR ARCHITECT'S APPROVAL PRIOR TO PROCUREMENT.
4. ALL FITTING/ ASSEMBLY AND MATERIALS SHOULD BE DESIGN & INSTALLED TO CONTRACT DRAWINGS AND SPECIFICATION, AND IN COMPLIANCE WITH ALL RELEVANT STATUTORY REQUIREMENTS.
5. DIMENSIONS BASED ON ON SITE MEASUREMENTS.

6. FINAL MATERIALS & FINISHES OF WALL,FLOOR,CEILING,WALL FIXTURE ETC. SHOULD BE REFER TO FINISHES AND MATERIALS SCHEDULE UNDER THE SPECIFICATION PROVIDED.

CLIENT/EMPLOYER:

PROJECT ARCHITECT/AUTHORIZED PERSON:

馬海
馬海(建築顧問)有限公司
Spence Robinson Limited

PROJECT STRUCTURAL ENGINEER/
PROJECT GEO-TECHNICAL ENGINEER:

張耀新建築工程師有限公司
Wilson & Associates Ltd

PROJECT E/M ENGINEER:

PROJECT LANDSCAPE CONSULTANT:

PROJECT QUANTITY SURVEYOR:

PROJECT:
PURPOSE BUILT C&A HOME DEVELOPMENT AT 349 PRINCE EDWARD ROAD WEST

DRAWING TITLE:
SECTION

DRAWN BY:	DATE:	
CZ	AUG-2024	
CHECKED BY:	APPROVED BY:	
CMD	KCY	
SCALE:	PAPER SIZE:	
1:200	A3	
PROJECT:	DRAWING:	REVISION:
PE 6170	GP-03	V12

NOTES :
1. This drawing and design are copyright and no portion may be reproduced without the written permission of the Architect.
2. Use written dimensions or grid lines in preference to scaled dimensions. Measurements to existing work are to be checked on site.
3. This drawing is to be read in conjunction with the Architect's Specification and Conditions of Contract.
4. Prints not showing the last revision are to be cancelled.
5. Prints without an authorized signature in the checked and approved spaces below and after the last revision above are NOT vaild for use outside SRL.

Appendix 2.1 Detailed Sewerage Impact Assessment Calculations

Table 1 Calculation for Sewage Generation Rate of the Proposed Development at the Application Site

Proposed Development

1. Proposed Elderly Home

1a. Total number of beds = 141 beds
1b. Total number of elderlies = 141 people
1c. Design flow = 190 litre/person/day -- (Institutional and special class in Table T-1 of GESF)
1d. Sewage Generation rate = **26.8** m^3/day

2a. Total number of nursing staff = 21 staff (Estimated based on Code of Practice for Residential Care Homes (Nursing Homes) for the Elderly)
2b. Design flow = 280 litre/employee/day -- (refer to Table T-2 of GESF - J11 Community, Social & Personal Services)
2c. Sewage Generation rate = **5.9** m^3/day

3a. Assumed area for RCHE communal facilities = 247.3 m^2
3b. Assumed floor area per employee = 30.3 m^2 per employee -- (refer to Table 8 of CIFSUS - Community, Social & Personal Services)
3c. Total number of employees = 8 employees
3d. Design flow = 280 litre/employee/day -- (refer to Table T-2 of GESF - J11 Community, Social & Personal Services)
3e. Sewage generation rate = **2.3** m^3/day

Total Flow from Proposed Development

Flow Rate = 35.0 m^3/day
Contributing Population = 129 people
Peaking factor = 8 Refer to Table T-5 of GESF for population <1,000 incl. stormwater allowance
Peak Flow = **3.2** litre/sec

Table 2a Hydraulic Capacity of Existing Sewers at Prince Edward Road West

Segment	**Manhole Reference**	**Manhole Reference**	**Pipe Dia.**	**Pipe Length**	**Cover Level 1[2]**	**Cover Level 2[2]**	**Depth 1**	**Depth 2**	**Invert Level 1[3]**	**Invert Level 2[3]**	**g**	**k_s**	**s**	**v**	**V**	**Area**	**Q**	**Estimated Capacity**
			mm	**m**	**mPD**	**mPD**	**m**	**m**	**mPD**	**mPD**	**m/s^2**	**m**		**m^2/s**	**m/s**	**m^2**	**m^3/s**	**L/s**
S1-S2	FMH4027438	FMH4067900	300	12.2	9.38	9.10	1.7	1.7	7.80	7.40	9.81	0.0006	0.033	0.000001	2.86	0.07	0.20	202
S2-S3	FMH4067900	FMH4050809	300	1.8	9.10	9.10	1.7	2.2	7.40	6.90	9.81	0.0006	0.281	0.000001	8.39	0.07	0.59	593
S3-S4	FMH4050809	FMH4048825	675	4.9	9.10	9.06	2.2	2.2	6.89	6.85	9.81	0.003	0.009	0.000001	2.02	0.36	0.72	722
S4-S5	FMH4048825	FMH4048826	675	25.1	9.06	8.80	2.2	-	6.86	-	9.81	0.003	-	0.000001	-	0.36	-	-
S5-S6	FMH4048826	FMH4050810	675	25.0	8.80	8.94	-	-	-	-	9.81	0.003	-	0.000001	-	0.36	-	-
S6-S7	FMH4050810	FMH4048827	675	7.3	8.94	8.36	-	-	-	-	9.81	0.003	-	0.000001	-	0.36	-	-
S4-S7'	FMH4048825	FMH4048827	600	57.9	-	8.36	-	-	5.21	4.33	9.81	0.003	0.015	0.000001	2.43	0.28	0.69	687

Note:

[1] According to the Drainage Record Plans (DSD), the invert levels of several manholes are missing. According to planning application no. A/K10/261, a manhole survey was conducted to determine the depth and alignment of the concerned manholes. The survey results show that manhole FMH4067900 (S2) is connected to FMH4050809 (S3), which is different from the online Drainage Record Plans published by DSD. Since the invert levels of manholes downstream of S4 are not available in the Drainage Record Plan, interpolation is adopted to assess the hydraulic capcity of sewers at segment S4-S5-S6-S7 as shown in **Table 2b**.

[2] The cover levels of S2, S5 and S6 are referenced from the previous planning application no. A/K10/261.

[3] The incoming invert levels of S1-S2 and S2-S3, and outgoing invert levels of S2-S3 and S4-S5 are deduced by subtracting the depth from the cover level.

[4] g=gravitational acceleration; ks=equivalent sand roughness; s=gradient; v=kinematic viscosity of water; V=mean velocity

[5] The value of k_s = 0.6mm or 3mm are used for the calculation of slimed clayware sewer, poor condition (based on Table 5: Recommended roughness values in Sewerage Manual)

[6] The value of k_s = 3mm or 6mm are used for the calculation of slimed concrete sewer, poor condition (based on Table 5: Recommended roughness values in Sewerage Manual)

[7] The value of velocity (V) is referred to the Tables for the hydraulic design of pipes, sewers and channels (8th edition)

[8] Equation used: $V=-\sqrt{(8gDs)}\log(\frac{k_s}{3.7D}+\frac{2.51v}{D\sqrt{(2gDs)}})$

Table 2b Hydraulic Capacity of Existing Sewers at Prince Edward Road West - Overall hydraulic capacity of several segments

Segment	**Manhole Reference**	**Manhole Reference**	**Pipe Dia.**	**Pipe Length**	**Invert Level 1**	**Invert Level 2**	**g**	**k_s**	**s**	**v**	**V**	**Area**	**Q**	**Estimated Capacity**
			mm	**m**	**mPD**	**mPD**	**m/s^2**	**m**		**m^2/s**	**m/s**	**m^2**	**m^3/s**	**L/s**
S4-S5	FMH4048825	FMH4048826	675	25.1	6.86	6.48	9.81	0.0006	0.015	0.000001	3.24	0.36	1.16	1160
S5-S6	FMH4048826	FMH4050810	675	25.0	6.48	6.09	9.81	0.0006	0.015	0.000001	3.24	0.36	1.16	1160
S6-S7	FMH4050810	FMH4048827	675	7.3	6.09	5.98	9.81	0.0006	0.015	0.000001	3.24	0.36	1.16	1160

Note:

[1] The invert levels are calculated based on the assumption that S4-S5, S5-S6, and S6-S7 has the same gradient ("s") as S4-S7'.

Table 2c Hydraulic Capacity of Existing Sewers at Prince Edward Road West - after corrections

Segment	**Manhole Reference**	**Manhole Reference**	**Pipe Dia.**	**Pipe Length**	**Invert Level 1**	**Invert Level 2**	**g**	**k_s**	**s**	**v**	**V**	**Area**	**Q**	**Estimated Capacity**
			mm	**m**	**mPD**	**mPD**	**m/s^2**	**m**		**m^2/s**	**m/s**	**m^2**	**m^3/s**	**L/s**
S1-S2	FMH4027438	FMH4067900	300	12.2	7.80	7.40	9.81	0.0006	0.033	0.000001	2.86	0.07	0.20	202
S2-S3	FMH4067900	FMH4050809	300	1.8	7.40	6.90	9.81	0.0006	0.281	0.000001	8.39	0.07	0.59	593
S3-S4	FMH4050809	FMH4048825	675	4.9	6.89	6.85	9.81	0.003	0.009	0.000001	2.02	0.36	0.72	722
S4-S5	FMH4048825	FMH4048826	675	25.1	6.86	6.48	9.81	0.003	0.015	0.000001	2.62	0.36	0.94	939
S5-S6	FMH4048826	FMH4050810	675	25.0	6.48	6.09	9.81	0.003	0.015	0.000001	2.62	0.36	0.94	939
S6-S7	FMH4050810	FMH4048827	675	7.3	6.09	5.98	9.81	0.003	0.015	0.000001	2.62	0.36	0.94	939
S4-S7'	FMH4048825	FMH4048827	600	57.9	5.21	4.33	9.81	0.003	0.015	0.000001	2.43	0.28	0.69	687

Table 2d Hydraulic Capacity of Proposed Sewers at Prince Edward Road West

Segment	**Manhole Reference**	**Manhole Reference**	**Pipe Dia.**	**Pipe Length**	**Invert Level 1**	**Invert Level 2**	**g**	**k_s**	**s**	**v**	**V**	**Area**	**Q**	**Estimated Capacity**
			mm	**m**	**mPD**	**mPD**	**m/s^2**	**m**		**m^2/s**	**m/s**	**m^2**	**m^3/s**	**L/s**
S0-S1	Proposed TM	FMH4027438	225	6.2	7.85	7.80	9.81	0.0006	0.008	0.000001	1.17	0.04	0.05	47

Table 3a Calculation for Sewage Generation Rate of the Existing Surrounding Building

Catchment A

1. Windsor Court (333 Prince Edward Road West)

1a. Total number of residential units = 18 units

1b. Total number of residents = 49 people -- (2023 Population Census: Kowloon City District of 2.7)

1c. Design flow = 270 litre/person/day -- (Private R2 in Table T-1 of GESF)

1d. Sewage Generation rate = **13.1** m^3/day

2. Hamford Court (335 Prince Edward Road West)

1a. Total number of residential units = 24 units

1b. Total number of residents = 65 people -- (2023 Population Census: Kowloon City District of 2.7)

1c. Design flow = 270 litre/person/day -- (Private R2 in Table T-1 of GESF)

1d. Sewage Generation rate = **17.5** m^3/day

3. Harbourview Garden (339 Prince Edward Road West)

1a. Total number of residential units = 34 units

1b. Total number of residents = 92 people -- (2023 Population Census: Kowloon City District of 2.7)

1c. Design flow = 270 litre/person/day -- (Private R2 in Table T-1 of GESF)

1d. Sewage Generation rate = **24.8** m^3/day

4. Maison Deluxe (341 Prince Edward Road West)

1a. Total number of residential units = 33 units

1b. Total number of residents = 89 people -- (2023 Population Census: Kowloon City District of 2.7)

1c. Design flow = 270 litre/person/day -- (Private R2 in Table T-1 of GESF)

1d. Sewage Generation rate = **24.1** m^3/day

5. Woodland Vila (345-347 Prince Edward Road West)

1a. Total number of residential units = 35 units

1b. Total number of residents = 95 people -- (2023 Population Census: Kowloon City District of 2.7)

1c. Design flow = 270 litre/person/day -- (Private R2 in Table T-1 of GESF)

1d. Sewage Generation rate = **25.5** m^3/day

Sub-total Flow of Catchment A

Flow Rate = 105.0 m^3/day

Contributing Population = 389 people

Peaking factor = 8 Refer to Table T-5 of GESF for population <1,000 incl. stormwater allowance

Peak Flow = **9.7** litre/sec

Total Flow at Manhole S1 (FMH4027438), including Proposed Development

Flow Rate = 139.9 m^3/day

Contributing Population = 518 people

Peaking factor = 8 Refer to Table T-5 of GESF for population <1,000 incl. stormwater allowance

Peak Flow = **13.0** litre/sec

Table 3b-1 Full-bore assessment for the northern part of catchment B (Northern Portion)

Manhole Reference	**Manhole Reference**	**Pipe Dia.**	**Pipe Length**	**Invert Level 1**	**Invert Level 2**	**g**	**k_s**	**s**	**v**	**V**	**Area**	**Q**	**Estimated Capacity**
		mm	**m**	**mPD**	**mPD**	**m/s^2**	**m**		**m^2/s**	**m/s**	**m^2**	**m^3/s**	**L/s**
FMH4048815	FMH4050983	675	11.5	8.05	7.94	9.81	0.003	0.009	0.000001	2.01	0.36	0.72	718
FMH4050983	FMH4048817	675	13.5	7.94	7.82	9.81	0.003	0.009	0.000001	2.01	0.36	0.72	718
FMH4048817	FMH4048818	675	22.9	7.82	7.66	9.81	0.003	0.007	0.000001	1.77	0.36	0.63	635
FMH4048818	FMH4048820	675	10.7	7.66	7.60	9.81	0.003	0.006	0.000001	1.61	0.36	0.58	577
FMH4048820	FMH4051340	675	3.5	7.60	7.22	9.81	0.003	0.110	0.000001	7.03	0.36	2.52	2516
FMH4051340	FMH4048821	675	3.0	6.66	6.30	9.81	0.003	0.119	0.000001	7.34	0.36	2.63	2625
FMH4048821	FMH4048823	450	22.6	5.70	5.60	9.81	0.0006	0.004	0.000001	1.35	0.16	0.21	214
FMH4048823	FMH4050807	675	9.5	7.35	7.23	9.81	0.003	0.012	0.000001	2.37	0.36	0.85	849
FMH4050807	FMH4048824	675	3.4	7.05	7.03	9.81	0.003	0.0058	0.000001	1.62	0.36	0.58	**581**
FMH4048824	FMH4050808	675	14.3	7.03	6.92	9.81	0.003	0.0080	0.000001	1.90	0.36	0.68	678
FMH4050808	FMH4050809	675	2.3	6.92	6.89	9.81	0.003	0.0130	0.000001	2.42	0.36	0.87	866

Remarks:
(1) g=gravitational acceleration; k_s=equivalent sand roughness; s=gradient; v=kinematic viscosity of water; V=mean velocity
(2) Table 1a: The value of k_s = 3mm is used for the calculation of slimed **concrete** sewer, poor condition (based on Table 5: Recommended roughness values in Sewerage Manual)
(2) Table 1a: The value of k_s = 0.6mm is used for the calculation of slimed **clayware** sewer, poor condition (based on Table 5: Recommended roughness values in Sewerage Manual)
(4) The value of velocity (V) is referred to the Tables for the hydraulic design of pipes, sewers and channels (8th edition)
(5) Equation used: $V=-\sqrt{(8gDs)}\log(\frac{k_s}{3.7D}+\frac{2.51v}{D\sqrt{(2gDs)}})$

Table 3b-2 Calculation for Sewage Generation Rate of the Existing Surrounding Building

Catchment B (Southern Portion)

1. Ka Wah Court

1a. Total number of residential units = 27 units

1b. Total number of residents = 73 people -- (2023 Population Census: Kowloon City District of 2.7)

1c. Design flow = 270 litre/person/day -- (Private R2 in Table T-1 of GESF)

1d. Sewage Generation rate = **19.7** m^3/day

2. Prince Home for the Elderly (Prince Edward Road West 351, G/F) Reference: https://elderlyinfo.swd.gov.hk/en/content/prince-home-elderly

1a. Total number of bedspaces = 40 spaces

1b. Design flow = 190 litre/person/day -- (Institutional and special class in Table T-1 of GESF)

1a. Total number of Elderly Care Employee = 12 employees

1b. Design flow = 280 litre/person/day -- (J11 in Table T-2 of GESF)

1d. Sewage Generation rate = **11.0** m^3/day

3. Hung To for the Home (Prince Edward Road West 351, 1/F) Reference: https://www.elderlyinfo.swd.gov.hk/en/content/hung-home

1a. Total number of bedspaces = 48 spaces

1b. Design flow = 190 litre/person/day -- (Institutional and special class in Table T-1 of GESF)

1a. Total number of Elderly Care Employee = 9 employees

1b. Design flow = 280 litre/person/day -- (J11 in Table T-2 of GESF)

1d. Sewage Generation rate = **11.6** m^3/day

4. Kin Tat Home for the Aged (Prince Edward Road West 351, 2/F) Reference: https://www.elderlyinfo.swd.gov.hk/en/content/kin-tat-home-aged

1a. Total number of bedspaces = 47 spaces

1b. Design flow = 190 litre/person/day -- (Institutional and special class in Table T-1 of GESF)

1a. Total number of Elderly Care Employee = 13 employees

1b. Design flow = 280 litre/person/day -- (J11 in Table T-2 of GESF)

1d. Sewage Generation rate = **12.6** m^3/day

Catchment B (Northern Portion)

Sewage Generated from the northern portion of Catchment B = **581** litre/sec

Sub-total Flow of Catchment B

Flow Rate = 54.9 m^3/day

Contributing Population = 203 people

Peaking factor = 8 Refer to Table T-5 of GESF for population <1,000 incl. stormwater allowance

Peak Flow = **5.1** litre/sec

Peak Flow with the northern portion of Catchment B = **585.8** litre/sec

Total Flow at Manhole S3 (FMH4050809), including Proposed Development

Flow Rate = 194.8 m^3/day

Contributing Population = 721 people

Peaking factor = 8 Refer to Table T-5 of GESF for population <1,000 incl. stormwater allowance

Peak Flow = **18.0** litre/sec

Peak Flow with the northern portion of Catchment B = **598.7** litre/sec

Table 4 Comparison of the Hydraulic Capacity of Existing and Proposed Sewers for the Sewage generated from the Proposed Development and Surrounding Catchment Areas

Segment	Pipe Dia. (mm)	Pipe Length (m)	Gradient	Estimated Capacity (L/s)	Peak Flow from the Proposed Development only (L/s)	Contribution from the Proposed Development only (%)	Status	Peak Flow from the Proposed Development and Catchment Areas (L/s)	Contribution from the Proposed Development and the Surrounding Catchment Areas (%)	Status
S0-S1	225	6.2	0.008	47	3.2	6.9%	OK	3.2	6.9%	OK
S1-S2	300	12.2	0.033	202	3.2	1.6%	OK	13.0	6.4%	OK
S2-S3	300	1.8	0.281	593	3.2	0.5%	OK	13.0	2.2%	OK
S3-S4	675	4.9	0.009	722	3.2	0.4%	OK	598.7	82.9%	OK
S4-S5	675	25.1	0.015	939	3.2	0.3%	OK	598.7	63.8%	OK
S5-S6	675	25.0	0.015	939	3.2	0.3%	OK	598.7	63.8%	OK
S6-S7	675	7.3	0.015	939	3.2	0.3%	OK	598.7	63.8%	OK
S4-S7'	600	57.9	0.015	687	3.2	0.5%	OK	598.7	87.1%	OK

Remark:

According to a manhole survey conducted under planning application no. A/K10/261, the outlet of S5 is blocked and unable to be surveyed any further. For conservative purposes, both the calculations of S4-S5-S6-S7 and S4-S7' are shown in the above table, with no exceedance in either route. It should be noted that the sewage will be preferentially discharged to S4-S5-S6-S7, instead of S4-S7', due to the lower incoming invert level of the former.

Appendix 2.2 Manhole Survey Report

Pipeline Drainage Ltd.

PRE-CCTV SURVEY REPORT

Work Location: Prince Edward Rd West,
Kowloon City, Kowloon

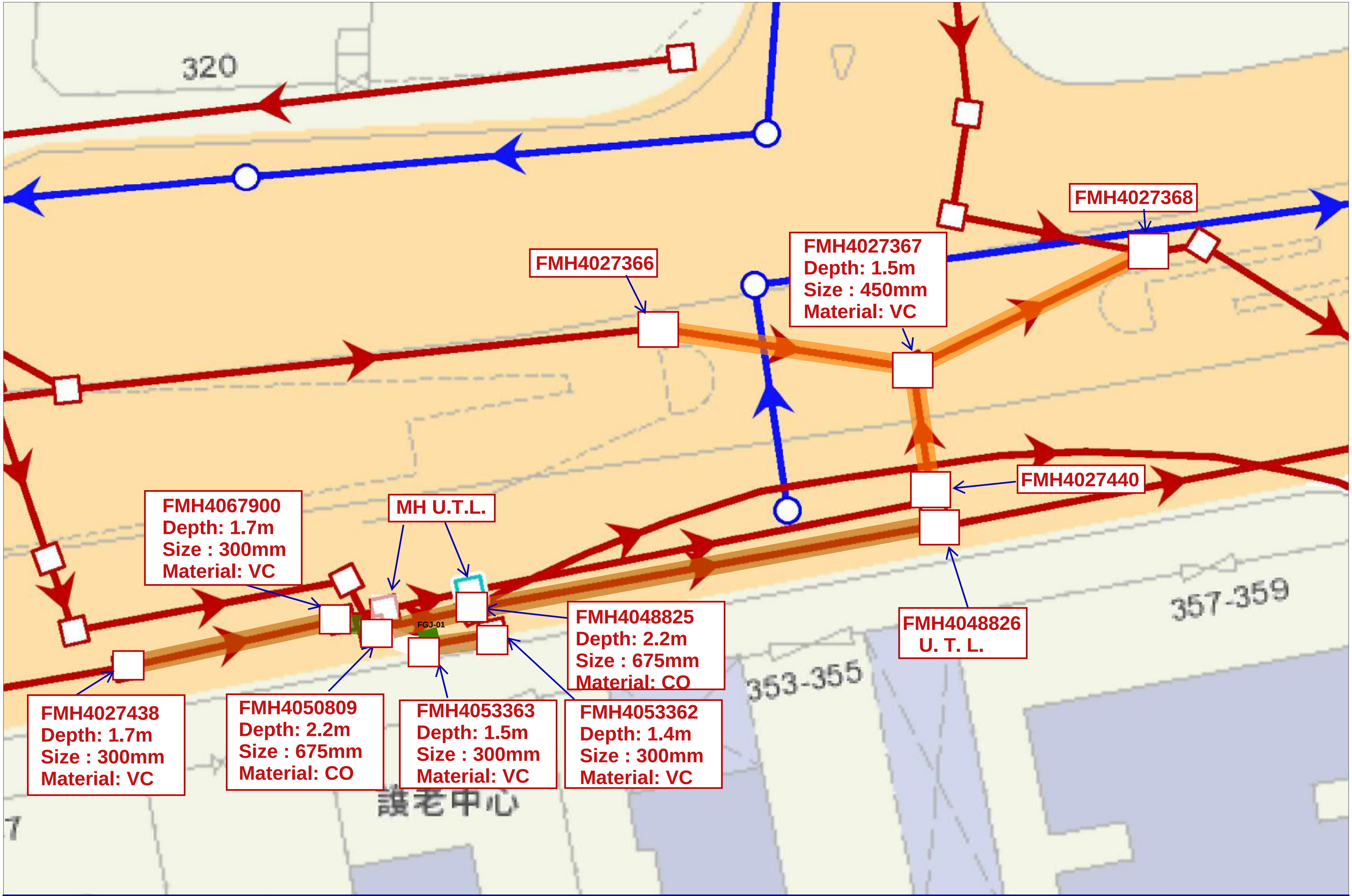
CCTV Survey Date: June 04, 2019

Job No: N/A

Works Order No: N/A

Work Description: CCTV Survey for underground pipelines

Flat 02, 6th Floor, Block E, Kai Tak Factory Building Stage 2, 39-41 Tseuk Luk Street, San Po Kong, Kowloon
九龍 新蒲崗 爵祿街 39-41 號，啟德工廠大廈 2 期 E座 6 樓 2 室 ☎ : 9219 7884



Pipeline Drainage Ltd ☎ : 9219 7884
高寶渠務工程有限公司 Email:pipelinedrainage@gmail.com
九龍 新蒲崗 爵祿街 39-41 號 啟德工廠大廈 2 期 E 座 6 樓 2 室

地 點 : **PD440 Prince Edward Rd West, Kowloon City**
LOCATION : 九龍城 太子道西

DATE: 日期: **03-06-2019**

PROJECT TITLE : 工程名稱: **PRE -** CCTV

SCALE: 比例 N.T.S.

REVISION : 修正: 0

Summary of Defects

Works Order No.					**Colour CCTV Drainage Survey**																		
					Pipe									**Service Condition**								**MISC**	
	Manhole																						
Item No.	From	To	Meters (m)	Urgent	Cracked	Fractured	Broken	Deformed	Collapsed	Hole	Surface Spalling/Wear	Joint Displaced	Open Joint	Roots	Infiltration	Encrustation	Silt	Grease	Obstruction	Water Line	Line	Survey Abandoned	camera Under Water
001	FMH4053362	FMH4053363	002.8																	**1**			
002	FMH4053363	FGJ-01	001.5																	**1**			
003	FMH4067900	FMH4027438	012.9	**2**	**1**	**7**							**1**							**1**			
004	FMH4067900	FMH4050809	001.5																	**1**			
005	FMH4050809	FMH4048825	000.9																	**1**			
006	FMH4048825	FMH4048826	039.1			**1**														**1**		**1**	
007	FMH4027367	FMH4027368	010.1																	**1**			**1**
008	FMH4027367	FMH4027440	008.3	**1**		**1**	**1**										**2**			**1**			
009	FMH4027367	FMH4027366	012.2			**1**					**1**									**1**			
		Total	89.3	**3**	**1**	**10**	**1**				**1**		**1**				**2**			**9**		**1**	**1**

Summary of Pipelines

Project/Contract/Wo No.

Slope Reference No. **-**

Date : **04.06.19**

Location : **Kowloon City**

Drain / Sewer use : **Foul**

Item	**Manhole**		**Pipe**			**Manhole(From)**			**Grades**			**Remarks**
	From	To	Lengths(m)	Size(mm)	Material	I.L.	C.L.	Depths(m)	SCG	ICG	SPG	
1	FMH4053362	FMH4053363	002.8	300	VC				1	1	1	
2	FMH4053363	FGJ-01	001.5	300	VC				1	1	1	
3	FMH4067900	FMH4027438	012.9	300	VC				1	4	4	
4	FMH4067900	FMH4050809	001.5	300	VC				1	1	1	
5	FMH4050809	FMH4048825	000.9	675	CO				1	1	1	
6	FMH4048825	FMH4048826	039.1	675	CO				1	3	3	S.A. DUE TO UNABLE TO PUSH FORWARD
7	FMH4027367	FMH4027368	010.1	450	VC				1	1	1	
8	FMH4027367	FMH4027440	008.3	300	VC				1	4	4	
9	FMH4027367	FMH4027366	012.2	450	VC				1	3	3	

Contract No. :
PRE-CCTV SURVEY REPORT AT
PRINCE EDWARD ROAD WEST
KOWLOON CITY, KOWLOON

CCTV SURVEY

Works Order No. :

Summary of CCTV Survey Results:

ID	Pipe Length Ref.	Start MH	Finish MH	Survey Area	Function	Size	Grade	Length	Clean	Remarks
1	FMH4053362X	FMH4053362	FMH4053363	-	F	300	1	2.8m	N	FH
2	FMH4053363X	FMH4053363	FGJ-01	-	F	300	1	1.5m	N	FH
3	FMH4027438X	FMH4067900	FMH4027438	-	F	300	4	12.9m	N	FH
4	FMH4067900X	FMH4067900	FMH4050809	-	F	300	1	1.5m	N	FH
5	FMH4050809X	FMH4050809	FMH4048825	-	F	675	1	0.9m	N	FH
6	FMH4048825X	FMH4048825	FMH4048826	-	F	675	3	39.1m	N	SA, UNABLE TO PUSH FORWARD
7	FMH4027367X	FMH4027367	FMH4027368	-	F	450	1	10.1m	N	FH
8	FMH4027440X	FMH4027367	FMH4027440	-	F	300	4	8.3m	N	FH
9	FMH4027366X	FMH4027367	FMH4027366	-	F	450	3	12.2m	N	FH

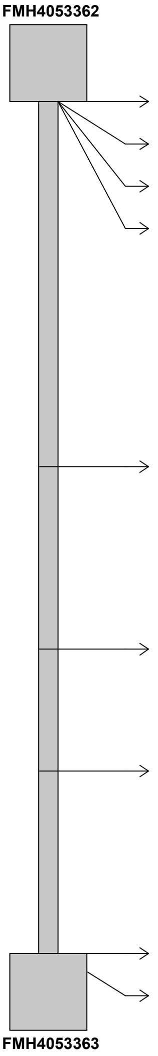
CCTV Survey Report

Heading

Contract No.	-	Operator	**W.K, Lam**	Date	**04.06.19**	ID	**001**
Purpose	**Structural defects**	Job No.	-	Time		PLR	**FMH4053362X**
Start MH	**FMH4053362**	Finish MH	**FMH4053363**	Weather	**Dry**	Use	**Foul**
Depth		Depth		Cleaned	**No**	Direction	**Downstream**
Cover Level		Cover Level		Score	**0**	Pipe Length	
Invert Level		Invert Level		Grade	**1**	Total Length	**2.8**

Road	**Prince Edward Road West**	Size	**300 mm**
Location	**Kowloon City**	Shape	**Circular**
Loc. Code	**Light road**	Material	**Vitrified clay**
Area Code	-	Lining	**Nil**
District	-	Comment	
Division	-	Loc. Details	
Category	**Z**	Tape	**0001**

Coding



Video No.	1:25	Chainage	Code	Observation	Photo	Grade
0:00:00		0.0	ST	Start Of Survey		0
		0.0	MH	Manhole Remark : FMH4053362		0
		0.0	WL	Water Level, 5 % height/diameter		0
0:00:30		0.0	GP	General Photograph	001	0
0:00:38		1.2	GP	General Photograph	002	0
0:00:41		1.8	GP	General Photograph	003	0
0:00:45		2.2	GP	General Photograph	004	0
		2.8	MH	Manhole Remark : FMH4053363		0
0:01:24		2.8	FH	Finished Survey		0

- ● Structural Defects
- ● Service Defects
- ● **Structural Defects with Grade 4 or 5**
- ● **Service Defects with Grade 4 or 5**
- ● Constructional Features
- ● Miscellaneous Features

CCTV Photographs

Road	Prince Edward Road West	Start MH	FMH4053362	Size	300 mm	ID	001
Location	Kowloon City	Finish Pt.	FMH4053363	Shape Material	Circular Vitrified clay	PLR	FMH4053362X

Photo Ref. : 001
Video Tape : 0001, 0:00:30
Observation : General Photograph

Photo Ref. : 002
Video Tape : 0001, 0:00:38
Observation : General Photograph

Photo Ref. : 003
Video Tape : 0001, 0:00:41
Observation : General Photograph

Photo Ref. : 004
Video Tape : 0001, 0:00:45
Observation : General Photograph

- ● Structural Defects
- ● Service Defects
- ● **Structural Defects with Grade 4 or 5**
- ● **Service Defects with Grade 4 or 5**
- ● Constructional Features
- ● Miscellaneous Features

CCTV Survey Report

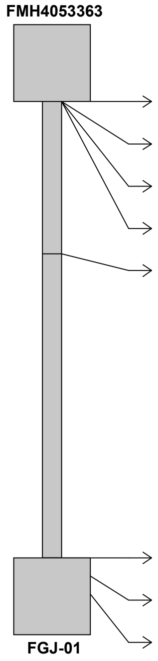
Heading

Contract No.	**-**	Operator	**W.K, Lam**	Date	**04.06.19**	ID	**002**
Purpose	**Structural defects**	Job No.	**-**	Time		PLR	**FMH4053363X**
Start MH	**FMH4053363**	Finish MH	**FGJ-01**	Weather	**Dry**	Use	**Foul**
Depth		Depth		Cleaned	**No**	Direction	**Downstream**
Cover Level		Cover Level		Score	**0**	Pipe Length	
Invert Level		Invert Level		Grade	**1**	Total Length	**1.5**

Road	**Prince Edward Road West**	Size	**300 mm**
Location	**Kowloon City**	Shape	**Circular**
Loc. Code	**Light road**	Material	**Vitrified clay**
Area Code	**-**	Lining	**Nil**
District	**-**	Comment	
Division	**-**	Loc. Details	
Category	**Z**	Tape	**0001**

Coding

FLOW



Video No.	1:25	Chainage	Code	Observation	Photo	Grade
0:00:00		0.0	ST	Start Of Survey		0
		0.0	MH	Manhole Remark : FMH4053363		0
		0.0	WL	Water Level, 5 % height/diameter		0
0:00:30		0.0	GP	General Photograph	005	0
0:00:33		0.5	GP	General Photograph	006	0
0:00:59		1.5	GP	General Photograph	007	0
		1.5	MH	Manhole Remark : FGJ-01		0
0:01:18		1.5	FH	Finished Survey		0

- ● Structural Defects
- ● Service Defects
- ● **Structural Defects with Grade 4 or 5**
- ● **Service Defects with Grade 4 or 5**
- ● Constructional Features
- ● Miscellaneous Features

CCTV Photographs

Road	**Prince Edward Road West**	Start MH	**FMH4053363**	Size	**300 mm**	ID	**002**
Location	**Kowloon City**	Finish Pt.	**FGJ-01**	Shape	**Circular**	PLR	**FMH4053363X**
				Material	**Vitrified clay**		

Photo Ref. : 005
Video Tape : 0001, 0:00:30
Observation : General Photograph

Photo Ref. : 006
Video Tape : 0001, 0:00:33
Observation : General Photograph

Photo Ref. : 007
Video Tape : 0001, 0:00:59
Observation : General Photograph

● Structural Defects
● Service Defects
● **Structural Defects with Grade 4 or 5**
● **Service Defects with Grade 4 or 5**
● Constructional Features
● Miscellaneous Features

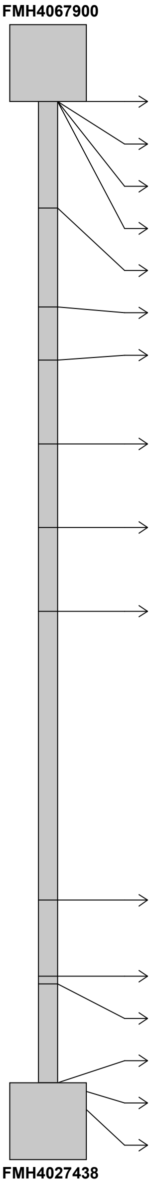
CCTV Survey Report

Heading

Contract No.	**-**	Operator	**W.K, Lam**	Date	**04.06.19**	ID	**003**
Purpose	**Structural defects**	Job No.	**-**	Time		PLR	**FMH4027438X**
Start MH	**FMH4067900**	Finish MH	**FMH4027438**	Weather	**Dry**	Use	**Foul**
Depth		Depth		Cleaned	**No**	Direction	**Upstream**
Cover Level		Cover Level		Score	**80**	Pipe Length	
Invert Level		Invert Level		Grade	**4**	Total Length	**12.9**

Road	**Prince Edward Road West**	Size	**300 mm**
Location	**Kowloon City**	Shape	**Circular**
Loc. Code	**Light road**	Material	**Vitrified clay**
Area Code	**-**	Lining	**Nil**
District	**-**	Comment	
Division	**-**	Loc. Details	
Category	**Z**	Tape	**0001**

Coding



FLOW

Video No.	1:100	Chainage	Code	Observation	Photo	Grade
0:00:00		0.0	ST	Start Of Survey		0
		0.0	MH	Manhole Remark : FMH4067900		0
		0.0	WL	Water Level, 5 % height/diameter		0
0:00:37		0.0	GP	General Photograph	008	0
0:00:47		1.4	CCJ	Crack Circumferential AT Joint, from 10 to 05 o'clock	009	2
0:00:54		2.7	FCJ	Fracture Circumferential AT Joint, from 03 to 05 o'clock	010	3
0:00:58		3.4	FCJ	Fracture Circumferential AT Joint, from 02 to 06 o'clock	011	3
0:01:03		**4.5**	**FM**	**Fracture Multiple, from 07 to 10 o'clock**	**012**	**4**
0:01:13		**5.6**	**FM**	**Fracture Multiple, from 07 to 01 o'clock**	**013**	**4**
0:01:33		6.7	FC	Fracture Circumferential, from 07 to 04 o'clock	014	3
0:02:00		10.5	FCJ	Fracture Circumferential AT Joint, from 09 to 03 o'clock	015	3
0:02:06		11.5	FL	Fracture Longitudinal, at 09 o'clock	016	3
0:02:09		11.6	OJL	Open Joint Large	017	2
0:02:26		12.9	GP	General Photograph	018	0
		12.9	MH	Manhole Remark : FMH4027438		0
0:03:14		12.9	FH	Finished Survey		0

- ● Structural Defects
- ● Service Defects
- ● **Structural Defects with Grade 4 or 5**
- ● **Service Defects with Grade 4 or 5**
- ● Constructional Features
- ● Miscellaneous Features

CCTV Photographs

Road	**Prince Edward Road West**	Start MH	**FMH4067900**	Size	**300 mm**	ID	**003**
Location	**Kowloon City**	Finish Pt.	**FMH4027438**	Shape Material	**Circular** **Vitrified clay**	PLR	**FMH4027438X**

Photo Ref. : 008
Video Tape : 0001, 0:00:37
Observation : General Photograph

Photo Ref. : 009
Video Tape : 0001, 0:00:47
Observation : Crack Circumferential AT Joint, from 10 to 05 o'clock

Photo Ref. : 010
Video Tape : 0001, 0:00:54
Observation : Fracture Circumferential AT Joint, from 03 to 05 o'clock

Photo Ref. : 011
Video Tape : 0001, 0:00:58
Observation : Fracture Circumferential AT Joint, from 02 to 06 o'clock

- ● Structural Defects
- ● Service Defects
- ● **Structural Defects with Grade 4 or 5**
- ● **Service Defects with Grade 4 or 5**
- ● Constructional Features
- ● Miscellaneous Features

CCTV Photographs

Road	**Prince Edward Road West**	Start MH	**FMH4067900**	Size	**300 mm**	ID	**003**
Location	**Kowloon City**	Finish Pt.	**FMH4027438**	Shape Material	**Circular** **Vitrified clay**	PLR	**FMH4027438X**

Photo Ref. : 012
Video Tape : 0001, 0:01:03
Observation : Fracture Multiple, from 07 to 10 o'clock

Photo Ref. : 013
Video Tape : 0001, 0:01:13
Observation : Fracture Multiple, from 07 to 01 o'clock

Photo Ref. : 014
Video Tape : 0001, 0:01:33
Observation : Fracture Circumferential, from 07 to 04 o'clock

Photo Ref. : 015
Video Tape : 0001, 0:02:00
Observation : Fracture Circumferential AT Joint, from 09 to 03 o'clock

- ● Structural Defects
- ● Service Defects
- ● **Structural Defects with Grade 4 or 5**
- ● **Service Defects with Grade 4 or 5**
- ● Constructional Features
- ● Miscellaneous Features

CCTV Photographs

Road	**Prince Edward Road West**	Start MH	**FMH4067900**	Size	**300 mm**	ID	**003**
Location	**Kowloon City**	Finish Pt.	**FMH4027438**	Shape Material	**Circular** **Vitrified clay**	PLR	**FMH4027438X**

Photo Ref. : 016
Video Tape : 0001, 0:02:06
Observation : Fracture Longitudinal, at 09 o'clock

Photo Ref. : 017
Video Tape : 0001, 0:02:09
Observation : Open Joint Large

Photo Ref. : 018
Video Tape : 0001, 0:02:26
Observation : General Photograph

- ● Structural Defects
- ● Service Defects
- ● **Structural Defects with Grade 4 or 5**
- ● **Service Defects with Grade 4 or 5**
- ● Constructional Features
- ● Miscellaneous Features

CCTV Survey Report

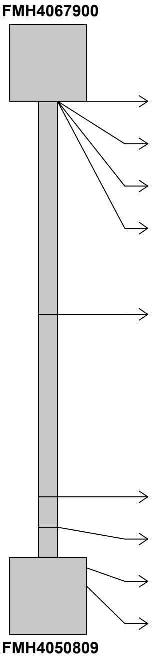
Heading

Contract No.	-	Operator	**W.K, Lam**	Date	**04.06.19**	ID	**004**
Purpose	**Structural defects**	Job No.	-	Time		PLR	**FMH4067900X**
Start MH	**FMH4067900**	Finish MH	**FMH4050809**	Weather	**Dry**	Use	**Foul**
Depth		Depth		Cleaned	**No**	Direction	**Downstream**
Cover Level		Cover Level		Score	**0**	Pipe Length	
Invert Level		Invert Level		Grade	**1**	Total Length	**1.5**

Road	**Prince Edward Road West**	Size	**300 mm**
Location	**Kowloon City**	Shape	**Circular**
Loc. Code	**Light road**	Material	**Vitrified clay**
Area Code	-	Lining	**Nil**
District	-	Comment	
Division	-	Loc. Details	
Category	**Z**	Tape	**0001**

Coding

FLOW



Video No.	1:25	Chainage	Code	Observation	Photo	Grade
0:00:00		0.0	ST	Start Of Survey		0
		0.0	MH	Manhole Remark : FMH4067900		0
		0.0	WL	Water Level, 5 % height/diameter		0
0:00:32		0.0	GP	General Photograph	019	0
0:00:36		0.7	GP	General Photograph	020	0
0:00:37		1.3	GP	General Photograph	021	0
0:00:40		1.4	GP	General Photograph	022	0
		1.5	MH	Manhole Remark : FMH4050809		0
0:01:01		1.5	FH	Finished Survey		0

- ● Structural Defects
- ● Service Defects
- ● **Structural Defects with Grade 4 or 5**
- ● **Service Defects with Grade 4 or 5**
- ● Constructional Features
- ● Miscellaneous Features

CCTV Photographs

Road	**Prince Edward Road West**	Start MH	**FMH4067900**	Size	**300 mm**	ID	**004**
				Shape	**Circular**		
Location	**Kowloon City**	Finish Pt.	**FMH4050809**	Material	**Vitrified clay**	PLR	**FMH4067900X**

Photo Ref. : 019
Video Tape : 0001, 0:00:32
Observation : General Photograph

Photo Ref. : 020
Video Tape : 0001, 0:00:36
Observation : General Photograph

Photo Ref. : 021
Video Tape : 0001, 0:00:37
Observation : General Photograph

Photo Ref. : 022
Video Tape : 0001, 0:00:40
Observation : General Photograph

- ● Structural Defects
- ● Service Defects
- ● **Structural Defects with Grade 4 or 5**
- ● **Service Defects with Grade 4 or 5**
- ● Constructional Features
- ● Miscellaneous Features

CCTV Survey Report

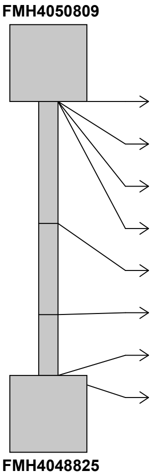
Heading

Contract No.	-	Operator	W.K, Lam	Date	04.06.19	ID	005
Purpose	Structural defects	Job No.	-	Time		PLR	FMH4050809X
Start MH	FMH4050809	Finish MH	FMH4048825	Weather	Dry	Use	Foul
Depth		Depth		Cleaned	No	Direction	Downstream
Cover Level		Cover Level		Score	0	Pipe Length	
Invert Level		Invert Level		Grade	1	Total Length	0.9

Road	Prince Edward Road West	Size	675 mm
Location	Kowloon City	Shape	Circular
Loc. Code	Light road	Material	Concrete
Area Code	-	Lining	Nil
District	-	Comment	
Division	-	Loc. Details	
Category	Z	Tape	0001

Coding

FLOW



Video No.	1:25	Chainage	Code	Observation	Photo	Grade
0:00:00		0.0	ST	Start Of Survey		0
		0.0	MH	Manhole Remark : FMH4050809		0
		0.0	WL	Water Level, 10 % height/diameter		0
0:00:55		0.0	GP	General Photograph	023	0
0:00:59		0.4	GP	General Photograph	024	0
0:01:01		0.7	GP	General Photograph	025	0
		0.9	MH	Manhole Remark : FMH4048825		0
0:02:05		0.9	FH	Finished Survey		0

● Structural Defects
● Service Defects
● **Structural Defects with Grade 4 or 5**
● **Service Defects with Grade 4 or 5**
● Constructional Features
● Miscellaneous Features

CCTV Photographs

Road	**Prince Edward Road West**	Start MH	**FMH4050809**	Size	**675 mm**	ID	**005**
Location	**Kowloon City**	Finish Pt.	**FMH4048825**	Shape	**Circular**	PLR	**FMH4050809X**
				Material	**Concrete**		

Photo Ref. : 023
Video Tape : 0001, 0:00:55
Observation : General Photograph

Photo Ref. : 024
Video Tape : 0001, 0:00:59
Observation : General Photograph

Photo Ref. : 025
Video Tape : 0001, 0:01:01
Observation : General Photograph

- ● Structural Defects
- ● Service Defects
- ● **Structural Defects with Grade 4 or 5**
- ● **Service Defects with Grade 4 or 5**
- ● Constructional Features
- ● Miscellaneous Features

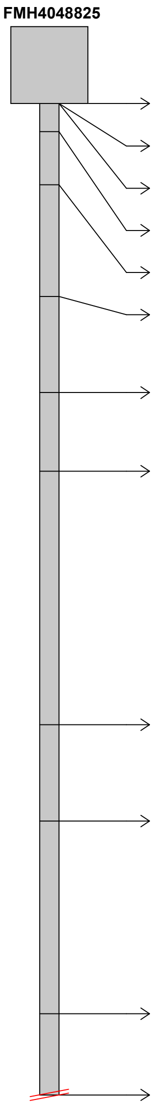
CCTV Survey Report

Heading

Contract No.	-	Operator	W.K, Lam	Date	04.06.19	ID	006
Purpose	Structural defects	Job No.	-	Time		PLR	FMH4048825X
Start MH	FMH4048825	Finish MH	FMH4048826	Weather	Dry	Use	Foul
Depth		Depth		Cleaned	No	Direction	Downstream
Cover Level		Cover Level		Score	40	Pipe Length	
Invert Level		Invert Level		Grade	3	Total Length	

Road	Prince Edward Road West	Size	675 mm
Location	Kowloon City	Shape	Circular
Loc. Code	Light road	Material	Concrete
Area Code	-	Lining	Nil
District	-	Comment	S.A. DUE TO UNABLE TO PUSH FORWARD
Division	-	Loc. Details	
Category	Z	Tape	0001

Coding



Video No.	1:300	Chainage	Code	Observation	Photo	Grade
0:00:00		0.0	ST	Start Of Survey		0
		0.0	MH	Manhole Remark : FMH4048825		0
		0.0	WL	Water Level, 15 % height/diameter		0
000054		1.1	GP	General Photograph	026	0
0:03:19		3.2	FC	Fracture Circumferential, from 06 to 09 o'clock	027	3
0:01:20		7.6	DE	Debris, 20 % cross-sectional area loss	028	1
0:01:32		11.4	DE	Debris, 05 % cross-sectional area loss	029	1
0:01:42		14.5	DE	Debris, 10 % cross-sectional area loss	030	1
0:02:15		24.5	DE	Debris, 10 % cross-sectional area loss	031	1
0:02:28		28.3	DE	Debris, 15 % cross-sectional area loss	032	1
0:02:52		35.9	GP	General Photograph	033	0
0:01:28		39.1	SA	Survey Abandoned Remark : UNABLE TO PUSH FORWARD	034	0

- ● Structural Defects
- ● Service Defects
- ● **Structural Defects with Grade 4 or 5**
- ● **Service Defects with Grade 4 or 5**
- ● Constructional Features
- ● Miscellaneous Features

CCTV Photographs

Road	**Prince Edward Road West**	Start MH	**FMH4048825**	Size	**675 mm**	ID	**006**
Location	**Kowloon City**	Finish Pt.	**FMH4048826**	Shape Material	**Circular** **Concrete**	PLR	**FMH4048825X**

Photo Ref. : 026
Video Tape : 0001, 000054
Observation : General Photograph

Photo Ref. : 027
Video Tape : 0001, 0:03:19
Observation : Fracture Circumferential, from 06 to 09 o'clock

Photo Ref. : 028
Video Tape : 0001, 0:01:20
Observation : Debris, 20 % cross-sectional area loss

Photo Ref. : 029
Video Tape : 0001, 0:01:32
Observation : Debris, 05 % cross-sectional area loss

- ● Structural Defects
- ● Service Defects
- ● **Structural Defects with Grade 4 or 5**
- ● **Service Defects with Grade 4 or 5**
- ● Constructional Features
- ● Miscellaneous Features

CCTV Photographs

Road	**Prince Edward Road West**	Start MH	**FMH4048825**	Size	**675 mm**	ID	**006**
Location	**Kowloon City**	Finish Pt.	**FMH4048826**	Shape Material	**Circular** **Concrete**	PLR	**FMH4048825X**

Photo Ref. : 030
Video Tape : 0001, 0:01:42
Observation : Debris, 10 % cross-sectional area loss

Photo Ref. : 031
Video Tape : 0001, 0:02:15
Observation : Debris, 10 % cross-sectional area loss

Photo Ref. : 032
Video Tape : 0001, 0:02:28
Observation : Debris, 15 % cross-sectional area loss

Photo Ref. : 033
Video Tape : 0001, 0:02:52
Observation : General Photograph

- ● Structural Defects
- ● Service Defects
- ● **Structural Defects with Grade 4 or 5**
- ● **Service Defects with Grade 4 or 5**
- ● Constructional Features
- ● Miscellaneous Features

CCTV Photographs

Road	**Prince Edward Road West**	Start MH	**FMH4048825**	Size	**675 mm**	ID	**006**
Location	**Kowloon City**	Finish Pt.	**FMH4048826**	Shape Material	**Circular** **Concrete**	PLR	**FMH4048825X**

Photo Ref. : 034
Video Tape : 0001, 0:01:28
Observation : Survey Abandoned
Remark : UNABLE TO PUSH FORWARD

- ● Structural Defects
- ● Service Defects
- ● **Structural Defects with Grade 4 or 5**
- ● **Service Defects with Grade 4 or 5**
- ● Constructional Features
- ● Miscellaneous Features

CCTV Survey Report

Heading

Contract No.	**-**	Operator	**W.K, Lam**	Date	**04.06.19**	ID	**007**
Purpose	**Structural defects**	Job No.	**-**	Time		PLR	**FMH4027367X**
Start MH	**FMH4027367**	Finish MH	**FMH4027368**	Weather	**Dry**	Use	**Foul**
Depth		Depth		Cleaned	**No**	Direction	**Downstream**
Cover Level		Cover Level		Score	**0**	Pipe Length	
Invert Level		Invert Level		Grade	**1**	Total Length	**10.1**

Road	**Prince Edward Road West**	Size	**450 mm**
Location	**Kowloon City**	Shape	**Circular**
Loc. Code	**Light road**	Material	**Vitrified clay**
Area Code	**-**	Lining	**Nil**
District	**-**	Comment	
Division	**-**	Loc. Details	
Category	**Z**	Tape	**0001**

Coding

FLOW

Video No.	1:75	Chainage	Code	Observation	Photo	Grade
	FMH4027367					
0:00:00		0.0	ST	Start Of Survey		0
		0.0	MH	Manhole Remark : FMH4027367		0
		0.0	WL	Water Level, 5 % height/diameter		0
0:01:03		0.0	GP	General Photograph	035	0
0:01:17		2.8	GP	General Photograph	036	0
0:01:34		6.9	CU	Camera Underwater	037	0
0:01:52		10.1	GP	General Photograph	038	0
		10.1	MH	Manhole Remark : FMH4027368		0
0:01:34	FMH4027368	10.1	FH	Finished Survey		0

- ● Structural Defects
- ● Service Defects
- ● **Structural Defects with Grade 4 or 5**
- ● **Service Defects with Grade 4 or 5**
- ● Constructional Features
- ● Miscellaneous Features

CCTV Photographs

Road	**Prince Edward Road West**	Start MH	**FMH4027367**	Size	**450 mm**	ID	**007**
Location	**Kowloon City**	Finish Pt.	**FMH4027368**	Shape	**Circular**	PLR	**FMH4027367X**
				Material	**Vitrified clay**		

Photo Ref. : 035
Video Tape : 0001, 0:01:03
Observation : General Photograph

Photo Ref. : 036
Video Tape : 0001, 0:01:17
Observation : General Photograph

Photo Ref. : 037
Video Tape : 0001, 0:01:34
Observation : Camera Underwater

Photo Ref. : 038
Video Tape : 0001, 0:01:52
Observation : General Photograph

● Structural Defects
● Service Defects
● **Structural Defects with Grade 4 or 5**
● **Service Defects with Grade 4 or 5**
● Constructional Features
● Miscellaneous Features

CCTV Survey Report

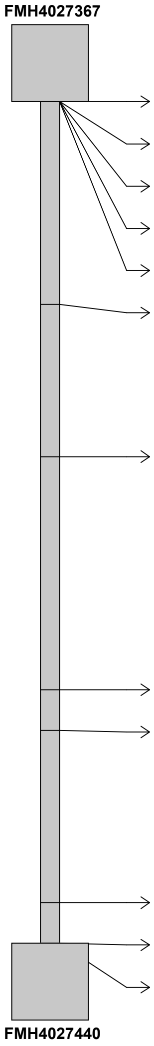
Heading

Contract No.	-	Operator	W.K, Lam	Date	04.06.19	ID	008
Purpose	Structural defects	Job No.	-	Time		PLR	FMH4027440X
Start MH	FMH4027367	Finish MH	FMH4027440	Weather	Dry	Use	Foul
Depth		Depth		Cleaned	No	Direction	Upstream
Cover Level		Cover Level		Score	80	Pipe Length	
Invert Level		Invert Level		Grade	4	Total Length	8.3

Road	Prince Edward Road West	Size	300 mm
Location	Kowloon City	Shape	Circular
Loc. Code	Light road	Material	Vitrified clay
Area Code	-	Lining	Nil
District	-	Comment	
Division	-	Loc. Details	
Category	Z	Tape	0001

Coding

FLOW



Video No.	1:75	Chainage	Code	Observation	Photo	Grade
0:00:00		0.0	ST	Start Of Survey		0
		0.0	MH	Manhole Remark : FMH4027367		0
		0.0	WL	Water Level, 0 % height/diameter		0
0:00:43		0.0	GP	General Photograph	039	0
		0.0	FC	Fracture Circumferential, from 06 to 09 o'clock		3
0:01:31		2.0	DES	Debris Silt, 05 % cross-sectional area loss, Start	040	1
0:01:40		3.5	DES	Debris Silt, 15 % cross-sectional area loss, Change	041	1
0:01:55		**5.8**	**B**	**Broken Pipe, from 12 to 12 o'clock**	**042**	**4**
0:01:57		6.2	MC	Material Change Remark : Concrete	043	0
0:02:14		7.9	GP	General Photograph	044	0
		8.3	MH	Manhole Remark : FMH4027440		0
0:02:14		8.3	FH	Finished Survey		0

- ● Structural Defects
- ● Service Defects
- ● **Structural Defects with Grade 4 or 5**
- ● **Service Defects with Grade 4 or 5**
- ● Constructional Features
- ● Miscellaneous Features

CCTV Photographs

Road	**Prince Edward Road West**	Start MH	**FMH4027367**	Size	**300 mm**	ID	**008**
Location	**Kowloon City**	Finish Pt.	**FMH4027440**	Shape Material	**Circular** **Vitrified clay**	PLR	**FMH4027440X**

Photo Ref. : 039
Video Tape : 0001, 0:00:43
Observation : General Photograph

Photo Ref. : 040
Video Tape : 0001, 0:01:31
Observation : Debris Silt, 05 % cross-sectional area loss, Start

Photo Ref. : 041
Video Tape : 0001, 0:01:40
Observation : Debris Silt, 15 % cross-sectional area loss, Change

Photo Ref. : 042
Video Tape : 0001, 0:01:55
Observation : Broken Pipe, from 12 to 12 o'clock

- ● Structural Defects
- ● Service Defects
- ● **Structural Defects with Grade 4 or 5**
- ● **Service Defects with Grade 4 or 5**
- ● Constructional Features
- ● Miscellaneous Features

CCTV Photographs

Road	**Prince Edward Road West**	Start MH	**FMH4027367**	Size	**300 mm**	ID	**008**
Location	**Kowloon City**	Finish Pt.	**FMH4027440**	Shape Material	**Circular** **Vitrified clay**	PLR	**FMH4027440X**

Photo Ref. : 043
Video Tape : 0001, 0:01:57
Observation : Material Change
Remark : Concrete

Photo Ref. : 044
Video Tape : 0001, 0:02:14
Observation : General Photograph

- ● Structural Defects
- ● Service Defects
- ● **Structural Defects with Grade 4 or 5**
- ● **Service Defects with Grade 4 or 5**
- ● Constructional Features
- ● Miscellaneous Features

CCTV Survey Report

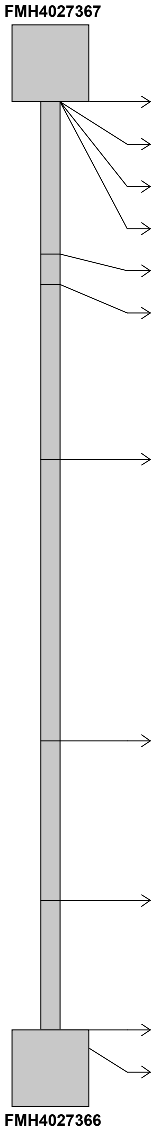
Heading

Contract No.	**-**	Operator	**W.K, Lam**	Date	**04.06.19**	ID	**009**
Purpose	**Structural defects**	Job No.	**-**	Time		PLR	**FMH4027366X**
Start MH	**FMH4027367**	Finish MH	**FMH4027366**	Weather	**Dry**	Use	**Foul**
Depth		Depth		Cleaned	**No**	Direction	**Upstream**
Cover Level		Cover Level		Score	**40**	Pipe Length	
Invert Level		Invert Level		Grade	**3**	Total Length	**12.2**

Road	**Prince Edward Road West**	Size	**450 mm**
Location	**Kowloon City**	Shape	**Circular**
Loc. Code	**Light road**	Material	**Vitrified clay**
Area Code	**-**	Lining	**Nil**
District	**-**	Comment	
Division	**-**	Loc. Details	
Category	**Z**	Tape	**0001**

Coding

FLOW



Video No.	1:100	Chainage	Code	Observation	Photo	Grade
0:00:00		0.0	ST	Start Of Survey		0
		0.0	MH	Manhole Remark : FMH4027367		0
		0.0	WL	Water Level, 0 % height/diameter		0
0:00:28		0.0	GP	General Photograph	045	0
000327		2.0	SSS	Surface Damage Spalling Slight, from 08 to 09 o'clock	046	2
0:00:45		2.4	FCJ	Fracture Circumferential AT Joint, from 12 to 08 o'clock	047	3
0:01:06		4.7	GP	General Photograph	048	0
0:01:36		8.4	GP	General Photograph	049	0
0:01:49		10.5	GP	General Photograph	050	0
		12.2	MH	Manhole Remark : FMH4027366		0
0:02:49		12.2	FH	Finished Survey		0

- ● Structural Defects
- ● Service Defects
- ● **Structural Defects with Grade 4 or 5**
- ● **Service Defects with Grade 4 or 5**
- ● Constructional Features
- ● Miscellaneous Features

CCTV Photographs

Road	**Prince Edward Road West**	Start MH	**FMH4027367**	Size	**450 mm**	ID	**009**
Location	**Kowloon City**	Finish Pt.	**FMH4027366**	Shape Material	**Circular** **Vitrified clay**	PLR	**FMH4027366X**

Photo Ref. : 045
Video Tape : 0001, 0:00:28
Observation : General Photograph

Photo Ref. : 046
Video Tape : 0001, 000327
Observation : Surface Damage Spalling Slight, from 08 to 09 o'clock

Photo Ref. : 047
Video Tape : 0001, 0:00:45
Observation : Fracture Circumferential AT Joint, from 12 to 08 o'clock

Photo Ref. : 048
Video Tape : 0001, 0:01:06
Observation : General Photograph

- ● Structural Defects
- ● Service Defects
- ● **Structural Defects with Grade 4 or 5**
- ● **Service Defects with Grade 4 or 5**
- ● Constructional Features
- ● Miscellaneous Features

CCTV Photographs

Road	**Prince Edward Road West**	Start MH	**FMH4027367**	Size	**450 mm**	ID	**009**
Location	**Kowloon City**	Finish Pt.	**FMH4027366**	Shape Material	**Circular** **Vitrified clay**	PLR	**FMH4027366X**

Photo Ref. : 049
Video Tape : 0001, 0:01:36
Observation : General Photograph

Photo Ref. : 050
Video Tape : 0001, 0:01:49
Observation : General Photograph

- ● Structural Defects
- ● Service Defects
- ● **Structural Defects with Grade 4 or 5**
- ● **Service Defects with Grade 4 or 5**
- ● Constructional Features
- ● Miscellaneous Features

With all the defects scored, the peak score and mean score is then calculated.

The peak score is calculated by determining the sum of all scores for all defects in any one length/ in one metre, (whichever is appropriate) and determining the score of the worst sewer/drain length or one metre. Unless otherwise directed by the asset owner/water authority it may be assumed that pipes have a unit length of 1 metre.

For peak score calculation:

1. Assume longitudinal defects extend for 1 m, unless the “Continuous Defect” facility is in use.
2. Deformation should also be regarded as longitudinal where it extends over 1m or where it is associated with another longitudinal defect.
3. If a number of circumferential defects appear at the same chainage, only the most severe single defect is included, regardless of the radial extent.

The **mean** score is determined by summing all the individual defect scores for the entire length (node to node), and dividing by the total length from node to node.

Two grades are assigned by considering both peak score and mean score according to the following tables. The final grade (ICG or SCG) is taken from whichever higher value.

Structural Grades for ICG

Grade	* Appropriate response in normal circumstances	Peak Score	Mean Score
1	No apparent need for further investigation, acceptable structural condition.	< 10	< 5
2	No immediate action required, minimal collapse risk in short term but potential for further deterioration.	10 to 30	5 to 19.9
3	Consider review in 12 months time, collapse unlikely in near future but further deterioration likely.	40 to 79	20 to 39.9
4	Consider overall circumstances on a programmed basis, collapse likely in foreseeable future.	80 to 164	40 to 82
5	Urgent need to investigate overall circumstances, collapsed or collapse imminent.	> 165	> 82

Table 1 Grading threshold for Internal Condition Grade

Service/ operational Grades for SCG

Grade	* Appropriate response in normal circumstances	Peak Score	Mean Score
1	No apparent need for action.	Less than 1	Less than 0.5
2	No immediate action required.	1 to 1.9	0.5 to 0.9
3	Consider review in 12 months time	2 to 4.9	1to 2.4
4	Consider response on a programmed basis.	5 to 9.9	2.5 to 4.9
5	Appropriate action to be investigated urgently.	Greater than 10	Greater than 5

Table 2 Grading threshold for Service Condition Grade

Notes:

1. The actual action taken will depend on the owner’s asset management system and procedures.
2. Peak score is the maximum score in any 1m of length.
3. Mean score is the total score dividend by the total length.
4. The average score is the total score divided by the number of observations entered.

CONDITION CODES

Code	Definition
B	Broken pipe at…(OR From … to …) o'clock
BR	Branch major
CC	Crack circumferential from … to … o'clock
CL	Crack longitudinal at … o'clock
CM	Cracks multiple from … to … o'clock
CN	Connection at … o'clock, diameter … mm
CNI	Connection at … o'clock, diameter … mm, intrusion … mm
CU	Camera under water
CX	Connection defective at … o'clock, diameter … mm
CXI	Connection defective at … o'clock, diameter … mm, intrusion …mm
D	Deformed sewer … %
DB	Displaced bricks at … (OR from … to …) o'clock
DC	Dimension of sewer changes, new dimension … mm
DE	Debris … % cross-sectional area loss
DEG	Debris grease … % cross-sectional area loss
DES	Debris silt … % cross-sectional area loss
DI	Dropped invert, gap … mm
EH(J)	Encrustation heavy from … to… o'clock …% cross-sectional area loss (at joint)
EL(J)	Encrustation light from … to… o'clock …% (at joint)
EM(J)	Encrustation medium from … to … o'clock … % cross-sectional area loss (at joint)
ESL	Scale light … % cross-sectional area loss from … to … o'clock
ESH	Scale heavy from … to … o'clock … %
ESM	Scale medium … % cross sectional area loss from … to … o'clock
FC	Fracture circumferential from … to … o'clock
FL	Fracture longitudinal at … o'clock
FM	Fractures multiple from … to … o'clock
FH	Finish of sewer length
GO	General observation at this point
GP	General photograph number … taken at this point
H	Hole in sewer at … (OR from … to …) o'clock
ID(J)	Infiltration dripper at … (OR from … to …) o'clock (at joint)
IG(J)	Infiltration gusher at … (OR from … to …) o'clock (at joint)
IR(J)	Infiltration runner at … (OR from … to …) o'clock (at joint)
IS(J)	Infiltration seeper at … (OR from … to …) o'clock (at joint)
JDL	Joint displaced large
JDL	Joint displaced large
JDM	Joint displaced medium
JN	Junction at … o'clock, diameter … mm
JX	Junction defective at … o'clock, diameter … mm, diameter … mm
LC	Lining of sewer changes/starts/finishes at this point
LD	Line of sewer deviates down
LL	Line of sewer deviates left
LN	Lining defect at … (OR from … to …) o'clock
LR	Liner of sewer deviates right
LU	Line of sewer deviates up
MB	Missing
MC	Material of sewer changes at this point
MH	Manhole/node
MM	Mortar missing medium at … (OR from … to …) o'clock
MS	Mortar missing surface at … (OR from … to …) o'clock
MT	Mortar missing total at … (OR from … to …) o'clock
OB	Obstruction … % height/diameter loss
OJL	Open joint large
OJM	Open joint medium
PC	Length of pipe forming sewer changes at this point, new length … mm
RF(J)	Roots fine (at joint)
RM(J)	Roots mass … % cross-sectional area loss (at joint)
RT(J)	Roots tap (at joint)
SA	Survey abandoned
SC	Shape of sewer changes at this point
SSL	Surface damage, spalling large at … (or from … to …) o'clock
SSM	Surface damage, spalling medium at … (or from … to …) o'clock
SSS	Surface damage, spalling slight at … (or from … to …) o'clock
SWL	Surface damage, wear large at … (OR from … to …) o'clock
SWM	Surface damage, wear medium at … (OR from … to …) o'clock
SWS	Surface damage, wear slight at … (OR from … to …) o'clock
ST	Start of Survey
V	Vermin (rats and mice)
WL	Water level … % height/diameter
X	Sewer collapsed … % cross-sectional area loss

KTA
PLANNING LIMITED
規劃顧問有限公司

UNIT K, 16/F, MG TOWER
133 HOI BUN ROAD, KWUN TONG
KOWLOON, HONG KONG
九龍觀塘海濱道133號
萬兆豐中心16樓K室

電話TEL (852) 3426 8451
傳真FAX (852) 3426 9737
電郵EMAIL kta@ktaplanning.com

By Email

Our Ref: S3120/349_PERW/24/002Lg

14 October 2024

Secretary, Town Planning Board
15/F, North Point Government Offices
333 Java Road
North Point
Hong Kong

Dear Sir/Madam,

Proposed Social Welfare Facility
(Residential Care Home for the Elderly)
in "Residential (Group B)" Zone
at 349 Prince Edward Road West, Kowloon
(Planning Application No. A/K10/276)
- Supplementary Information -

Reference is made to the captioned S16 Planning Application which was submitted to the Town Planning Board on 30 August 2024.

We would like to clarify that the building height of the Proposed Social Welfare Facilities at main roof level and top roof level would be +42.509mPD and +46.209mPD respectively. The height of the roof-top ancillary structures would not exceed 10% of the building height, while the total area would not exceed 50% of the roof area of the floor below. Replacement pages for the application form, planning statement and architectural drawings are enclosed to reflect the same.

Should you have any queries in relation to the above and attached, please do not hesitate to contact the undersigned at [redacted] or Mr Wilson Man at [redacted].

Thank you for your kind attention.

Yours faithfully
For and on behalf of
KTA PLANNING LIMITED

Gladys Ng

Encl.

cc. DPO/K – Ms Jenny Lai (By Email)
the Applicant & Team

GN/WM/vy

(iv) For Type (iv) application 供第(iv)類申請

(a) Please specify the proposed minor relaxation of stated development restriction(s) and **also fill in the proposed use/development and development particulars in part (v) below** –
請列明擬議略為放寬的發展限制**並填妥於第(v)部分的擬議用途/發展及發展細節** –

☐ Plot ratio restriction 地積比率限制 From 由 ………………… to 至 …………………

☐ Gross floor area restriction 總樓面面積限制 From 由 …………sq. m 平方米 to 至 …………sq. m 平方米

☐ Site coverage restriction 上蓋面積限制 From 由 ……………….% to 至 ………………… %

☐ Building height restriction 建築物高度限制
From 由 ……………….m 米 to 至 ………………… m 米
From 由 ……………… mPD 米 (主水平基準上) to 至 ……………….mPD 米 (主水平基準上)
From 由 ……………… storeys 層 to 至 ……………… storeys 層

☐ Non-building area restriction 非建築用地限制 From 由 ……………….m to 至 ………………… m

☐ Others (please specify) 其他（請註明）

(v) For Type (v) application 供第(v)類申請

(a) Proposed use(s)/development 擬議用途/發展	Proposed Social Welfare Facility (Residential Care Home for the Elderly) (Please illustrate the details of the proposal on a layout plan 請用平面圖說明建議詳情)

(b) Development Schedule 發展細節表

Proposed gross floor area (GFA) 擬議總樓面面積	Not more than 2914.5 sq.m 平方米	☐About 約
Proposed plot ratio 擬議地積比率	Not more than 5	☐About 約
Proposed site coverage 擬議上蓋面積	Not more than 63 %	☐About 約
Proposed no. of blocks 擬議座數	1	
Proposed no. of storeys of each block 每座建築物的擬議層數	11 storeys 層 ☑ include 包括 1 storeys of basements 層地庫 ☐ exclude 不包括 ...... storeys of basements 層地庫	
Proposed building height of each block 每座建築物的擬議高度	Main roof: 42.509 Top roof: 46.209 mPD 米(主水平基準上)	☑About 約
	37.1 m 米 (measured from mean site formation level to main roof level)	☑About 約

Part 6 (Cont'd) 第 6 部分 (續)

(iii)	Building height/No. of storeys 建築物高度／層數	Domestic 住用	About 37.1 (measured from mean site formation level to main roof level) m 米 ☐ (Not more than 不多於)
			Main roof : about 42.509 Top roof : about 46.209 mPD 米(主水平基準上) ☐ (Not more than 不多於)
			11 Storeys(s) 層 ☐ (Not more than 不多於) 1 (☑*Include 包括*/☐ *Exclude 不包括* ☐ *Carport 停車間* ☑ *Basement 地庫* ☐ *Refuge Floor 防火層* ☐ *Podium 平台*)
		Non-domestic 非住用	m 米 ☐ (Not more than 不多於)
			mPD 米(主水平基準上) ☐ (Not more than 不多於)
			Storeys(s) 層 ☐ (Not more than 不多於) (☐*Include 包括*/☐ *Exclude 不包括* ☐ *Carport 停車間* ☐ *Basement 地庫* ☐ *Refuge Floor 防火層* ☐ *Podium 平台*)
		Composite 綜合用途	m 米 ☐ (Not more than 不多於)
			mPD 米(主水平基準上) ☐ (Not more than 不多於)
			Storeys(s) 層 ☐ (Not more than 不多於) (☐*Include 包括*/☐ *Exclude 不包括* ☐ *Carport 停車間* ☐ *Basement 地庫* ☐ *Refuge Floor 防火層* ☐ *Podium 平台*)
(iv)	Site coverage 上蓋面積	Not more than 63 % ☐ About 約	
(v)	No. of units 單位數目	No. of bed for RCHE: About 141	
(vi)	Open space 休憩用地	Private 私人	sq.m 平方米 ☐ Not less than 不少於
		Public 公眾	sq.m 平方米 ☐ Not less than 不少於

3. THE PROPOSED DEVELOPMENT SCHEME

3.1 The Development Scheme

3.1.1 Schematic drawings for the Proposed RCHE are presented in **Appendix 1** of this Supporting Planning Statement. The Site of an area of about 582.9 m^2 yields a total GFA of approximate 2,914.5m^2 at PR 5. The Proposed RCHE comprises one single block with a total of 11-storey (including 1 level of basement) with a building height of about +42.509mPD (at main roof level) to provide 141 RCHE bed spaces. With an updated design, the Proposed RCHE optimise the permissible PR of the Site and provide 50 (+54.9%) extra bed spaces to meet the growing demand for RCHE. The completion year of the Proposed Development is estimated to be 2032.

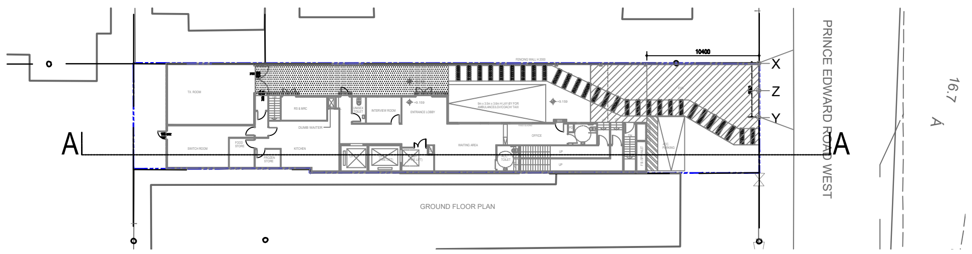
3.1.2 Major development parameters and proposed floor uses of the Proposed RCHE are summarised in **Table 3.1** and **Table 3.2** respectively. The floor plans and schematic section plan are presented in **Appendix 1**.

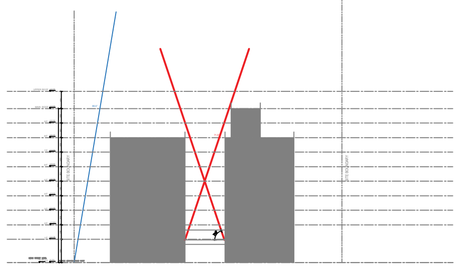
Table 3.1 Key Development Parameters

	Approved Scheme under Planning Application No. A/K10/261 [a]	**Proposed Scheme [b]**	**Difference [b]-[a]**
Total Site Area	About 582.925 m^2	About 582.9 m^2	-0.025 m^2
PR	About 3.92	About 5	+1.08
Total GFA	Not more than 2,285.056 m^2	Not more than 2,914.5 m^2	+629.444 m^2
No. of RCHE Bed Space	About 91	About 141	+50
Site Coverage	49%	Not more than 63%	+14%
Class of Site	Class A	Class A	-
No. of Block	1	1	-
Maximum Building Height • Main Roof Level • Top Roof Level	 About +36.108 mPD N/A	 About +42.509 mPD About +46.209 mPD	 +6.401 mPD N/A
Actual Building Height (measured from mean site formation level to main roof level)	About 27 m	About 37.1 m	+10.1 m
No. of Storeys	8	11 (including 1 level of basement)	+3 storeys

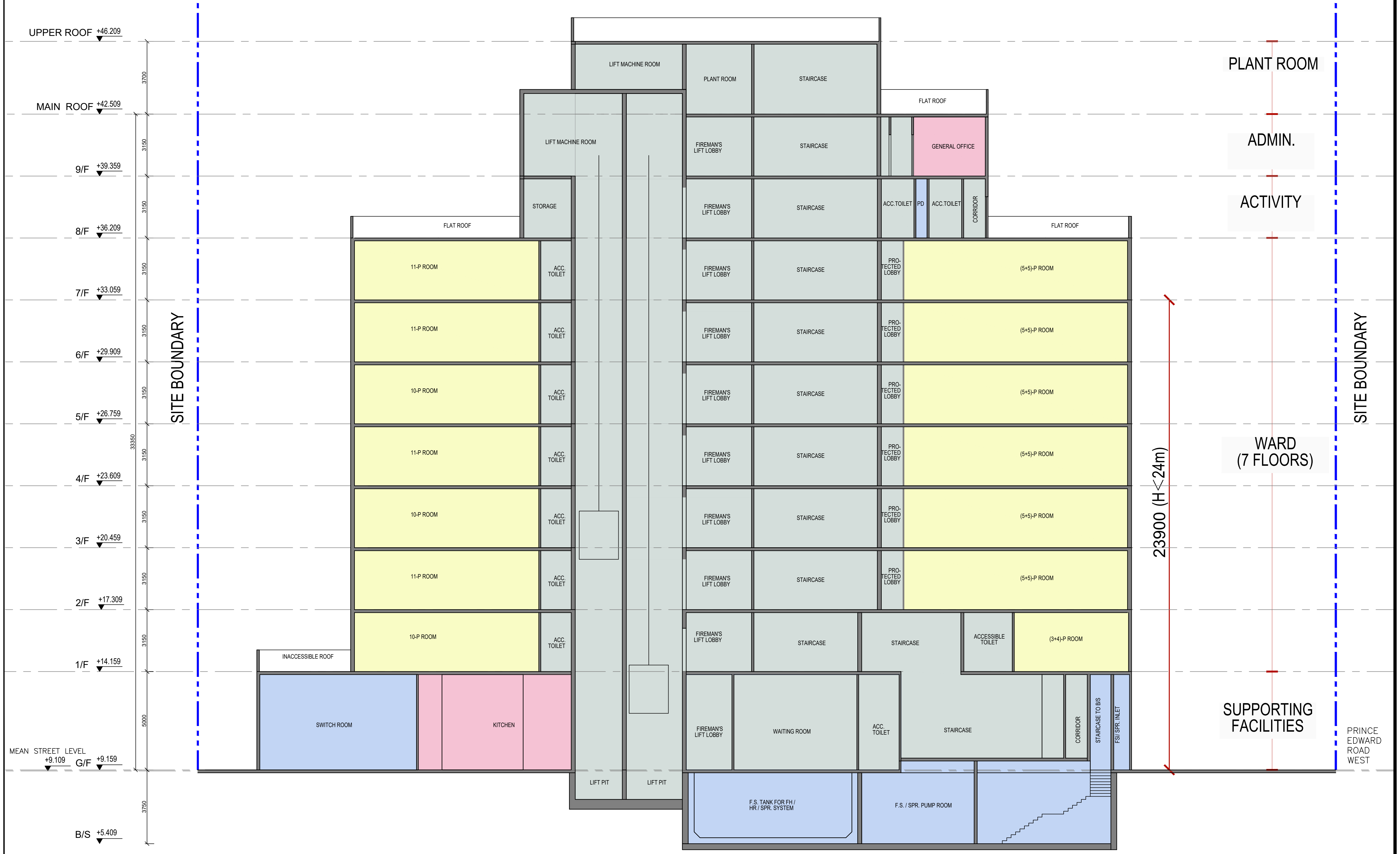
Table 3.2 Proposed Floor Uses

Floor	**Proposed Uses**
R/F	E&M Facilities
9/F	General Office and E&M Facilities
8/F	Flat Roof Area, Physiotherapy Room and Storage Room
1/F – 7/F	Wards for RCHE
G/F	Kitchen, Office, Interview Room, Waiting Room and E&M Facilities
B1/F	E&M Facilities





- 🟦 SITE BOUNDARY
- ■ FOOTPATH
- 🟨 WARD
- 🟪 ANCILLARY AREA
- ▨ COMMON / CIRCULATION SPACE
- 🟦 PLANT ROOM/ STAIRCASE TO U/G PLANT ROOM



SECTION A-A 1:200

BD REF. NO.:

FSD REF. NO.:

REVISIONS AND SUBMISSIONS:

NO.:	DATE:	DETAILS:	CHECKED:

NOTES:

1. CONTENTS ON THIS DRAWING SHOW DESIGN INTENT ONLY CONTRACTOR IS RESPONSIBLE FOR DETAILED DESIGN OF THE INTERIOR FITTING–OUT. CONTRACTOR IS REQUIRED TO SUBMIT FULL SET SHOP DRAWINGS FOR ARCHITECT'S APPROVAL PRIOR TO FABRICATION AND SITE INSTALLATION.
2. STRUCTURAL CALCULATIONS IF REQUIRED AND RELATED SUPPORTING DATA SHOULD BE SUBMITTED FOR REVIEW AND APPROVAL.
3. TRUE COLOR SAMPLES OF MATERIALS SHOULD BE SUBMITTED FOR ARCHITECT'S APPROVAL PRIOR TO PROCUREMENT.
4. ALL FITTING/ ASSEMBLY AND MATERIALS SHOULD BE DESIGN & INSTALLED TO CONTRACT DRAWINGS AND SPECIFICATION, AND IN COMPLIANCE WITH ALL RELEVANT STATUTORY REQUIREMENTS.
5. DIMENSIONS BASED ON ON SITE MEASUREMENTS.
6. FINAL MATERIALS & FINISHES OF WALL,FLOOR,CEILING,WALL FIXTURE ETC. SHOULD BE REFER TO FINISHES AND MATERIALS SCHEDULE UNDER THE SPECIFICATION PROVIDED.

CLIENT/EMPLOYER:

PROJECT ARCHITECT/AUTHORIZED PERSON:

馬海

馬海(建築顧問)有限公司
Spence Robinson Limited

PROJECT STRUCTURAL ENGINEER/
PROJECT GEO–TECHNICAL ENGINEER:

張耀新建築工程師有限公司
Wilson & Associates Ltd

PROJECT E/M ENGINEER:

PROJECT LANDSCAPE CONSULTANT:

PROJECT QUANTITY SURVEYOR:

PROJECT:
PURPOSE BUILT C&A HOME DEVELOPMENT AT
349 PRINCE EDWARD ROAD WEST

DRAWING TITLE:

SECTION

DRAWN BY: CZ	DATE: AUG-2024	
CHECKED BY: CMD	APPROVED BY: KCY	
SCALE: 1:200	PAPER SIZE: A3	
PROJECT: PE 6170	DRAWING: GP-03	REVISION: V12

NOTES :

1. This drawing and design are copyright and no portion may be reproduced without the written permission of the Architect.
2. Use written dimensions or grid lines in preference to scaled dimensions. Measurements to existing work are to be checked on site.
3. This drawing is to be read in conjunction with the Architect's Specification and Conditions of Contract.
4. Prints not showing the last revision are to be cancelled.
5. Prints without an authorized signature in the checked and approved spaces below and after the last revision above are NOT vaild for use outside SRL.

KTA
PLANNING LIMITED
規劃顧問有限公司

UNIT K, 16/F, MG TOWER
133 HOI BUN ROAD, KWUN TONG
KOWLOON, HONG KONG
九龍觀塘海濱道133號
萬兆豐中心16樓K室
電話TEL (852) 3426 8451
傳真FAX (852) 3426 9737
電郵EMAIL kta@ktaplanning.com

By Hand and Email

Our Ref: S3120/349_PERW/24/003Lg

27 November 2024

Secretary, Town Planning Board
15/F, North Point Government Offices
333 Java Road
North Point
Hong Kong

Dear Sir/Madam,

Proposed Social Welfare Facility
(Residential Care Home for the Elderly)
in "Residential (Group B)" Zone
at 349 Prince Edward Road West, Kowloon
(Planning Application No. A/K10/276)
Further Information No. 1

Reference is made to the captioned S16 Planning Application submitted to the Town Planning Board ("TPB") on 30 August 2024 and the comments received from various Government Departments via emails from the Kowloon District Planning Office between 29 October 2024 and 11 November 2024.

In response to the departmental comments received, please find attached 4 hard copies of the Further Information ("F.I.") submission. The submission document consists of:

Response-to-Comment Table	
Appendix I	Updated Schematic Architectural Drawings
Appendix II	Revised Traffic Impact Assessment
Appendix III	Replacement Pages of Sewerage Impact Assessment
Appendix IV	Replacement Pages of Noise Impact Assessment

Should you have any queries in relation to the above, please do not hesitate to contact the undersigned at [redacted] or Mr Wilson Man at [redacted].

Thank you for your kind attention.

Yours faithfully
For and on behalf of
KTA PLANNING LIMITED

Gladys Ng

cc. KDPO – Ms Jenny Lai (By email)
the Applicant & Team

GN/WM/vy

Proposed Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone,
at 349 Prince Edward Road West, Kowloon

(Planning Application No. A/K10/276)

Response-to-Comment Table

Proposed Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone,
at 349 Prince Edward Road West, Kowloon

(Planning Application No. A/K10/276)

Comments	Summary & Response
Comments from Transport Department: **(Contact Person: Mr Simon LI Tel: 2399 2512)** **General comments**	
1. The area of influence in the assessment should be agreed by this office. Please include Kowloon City Roundabout and the junction of Prince Edward Road West / La Salle Road in the assessment;	The Kowloon City Roundabout and the junction of Prince Edward Road West / La Salle Road have been assessed and presented in Tables 2.1 and 4.7 of the revised Traffic Impact Assessment (TIA) report **(Appendix II refers)**.
2. Please include the assessment of the V/C ratios of the roads affected by the proposed development;	It should be noted that the Proposed Elderly Home will generate no more than 3 pcu (one-way) per hour. Hence, the Proposed Elderly Home is expected to have **negligible** impact to link capacity of the local road network.
3. Queue length assessment at the critical junctions should be conducted;	It should be noted that the Proposed Elderly Home will generate no more than 3 pcu (one-way) per hour. Hence, the Proposed Elderly Home is expected to have **negligible** impact to queue length of surveyed junctions.
4. Please include the pedestrian trip generation in the assessment; Please also review if the capacity, forms of crossing facilities and Level-of-Service (LOS) of the existing footpaths in the vicinity are capable to cater for the increasing population of the elderly and wheelchair users;	The pedestrian assessment has been conducted and presented in Paragraphs 2.9 – 2.16 and 4.18 – 4.25 of the revised TIA report **(Appendix II refers)**.
5. Separate traffic flow diagram(s) showing the traffic generated / attracted by the proposed development only should be provided;	The flow diagram showing the traffic generated by the Proposed Elderly Home has been presented in Figure 4.1 of the revised TIA report.

<table>
<tr><th>Comments</th><th>Summary & Response</th></tr>
<tr><td>6. Please provide the traffic impact assessment for construction stage as well. Please show clearly on a plan that the haul routes of all construction traffic generated / attracted by various construction works and carry out assessments on the critical junctions along the routes;</td><td>During construction stage, construction vehicles would access the Application Site via Prince Edward Road West. In view that the Proposed Elderly Home is small with total GFA of around 2,915m^2, only a few construction vehicles will be generated on each working day, say 1 veh/hr or 2.5 pcu/hr (one-way).

Given the low traffic generation during construction stage, it is anticipated that construction of the Proposed Elderly Home would not cause adverse traffic impact to the local road network from traffic engineering point of view.</td></tr>
<tr><td>7. A modal split analysis on both vehicles and pedestrians to / from the proposed development should be included;</td><td>The modal split on vehicles and pedestrians to / from the Proposed Elderly Home is estimated based on the traffic and pedestrian generation surveys conducted at the similar elderly homes, and are presented in Table 1.

TABLE 1 MODAL SPLIT ON VEHICLES AND PEDESTRIANS
<table>
<tr><th>Transport Mode</th><th>Percentage</th></tr>
<tr><td>Private Vehicles (e.g. private car / taxi / mini coach)</td><td>14%</td></tr>
<tr><td>Pedestrians (e.g. public transport / on foot only)</td><td>86%</td></tr>
<tr><td>Total</td><td><u>100%</u></td></tr>
</table>
Table 1 shows that most of visitors, i.e. 86%, use public transport services or walk to the Proposed Elderly Home, and the remaining 14% of visitors use private vehicles.</td></tr>
<tr><td>8. All proposed modifications to public roads should comply with the requirements stipulated in the Transport Planning and Design Manual (TPDM);</td><td>Noted.</td></tr>
</table>

Comments	Summary & Response
9. The vehicular run-in/run-out should be provided within the specified X, Y, Z points according to the lease, with its clear width not exceeding 5m;	Noted. The width of run-in / out is 5m.
Specific Comment	
10. Section 3.2 – The applicant proposes to adopt the same internal transport facilities approved under the previous S16 application (TPB No. A/K10/261) at the subject site with 91 beds, which is not comparable to the subject application with 141 beds; The proposed provision of only 1 parking space for private cars (accessible) and 1 lay-by for share use by taxi, private car, ambulance, LGV and mini coach is not sufficient;	To understand the operation and to ascertain the parking and loading / unloading needs of the Proposed Elderly Home, traffic generation surveys were conducted on weekday, Saturday and Sunday at 3 elderly homes of similar scale located in Kowloon. The survey findings are presented in Paragraphs 3.4 – 3.11 of the revised TIA report. Based on the survey results, the Proposed Elderly Home is expected to generate no more than 2.1 trips for parking and 8.4 trips for loading / unloading related to pick-up / drop-off and goods delivery on a daily basis. In addition, these vehicles are not expected to arrive at the same time and the average dwell time for loading / unloading and pick-up / drop-off activities are short. Taking into consideration the low parking and loading / unloading demand and the narrow site frontage along Prince Edward Road West, i.e. only around 10m, the provision of one lay-by for shared use of taxi / private car / ambulance / LGV / mini coach and one car parking space for persons with disabilities is adequate for the Proposed Elderly Home with 141 beds.
11. Section 3.4 and Section 4.5 – For determination of the parking and unloading needs of the proposed Elderly Home and estimation of the trip generation rates, the applicant only makes reference to the traffic generation survey which was conducted on 7th June 2024 (Friday) at	Please refer to the abovementioned reply on R-t-C item 10.

Comments	Summary & Response
the adjoining elderly home located at 351 Prince Edward Road West, which does not fully represent the worst scenario. Since visits to elderly homes usually takes place on Saturdays, Sundays and public holidays, traffic generation surveys and parking need assessment for the proposed development should cover those days at 3 similar elderly homes with similar scales & site characteristics;	
12. Section 4.11 – Please check with PlanD for completeness of the planned development in the area;	The comments from Planning Department on the planned developments have been sought and have been incorporated in Table 4.6 of the revised TIA report. Please refer to **Annex A**.
13. The entering / leaving of mini coaches / LGV will require three-point turn within the site near the run-in/out and obstruct other ingress vehicles. Any tail back of vehicles would adversely affect Prince Edward Road West and the nearby signal-controlled crossing located immediately on the upstream side. Please review; and	The car parking space within the Proposed Elderly Home has been rearranged so that egress vehicles could conduct 3-point turn away from the proposed run-in / out. The revised G/F plan is shown in Figure 3.1 and the corresponding swept path analysis drawings are found in Appendix C of the revised TIA report.
14. Appendix A – Junction Capacity Analysis for Prince Edward Road West / Junction Road – Please clarify the derivation of the saturation flow for the exclusive left turn lane of Prince Edward Road West (EB).	According to Volume 4 Chapter 2 of Transport Planning and Design Manual (TPDM), *"when the additional lane at the stopline is available for a distance back from the stopline at least sufficient to contain one full cycle capacity of traffic, the above methods of estimation of saturation flow apply"*, i.e. *"S = 1940 + 100(W – 3.25) for nearside lane"*. The flare lane A1 at the junction of Prince Edward Road West / Junction Road is around 30m long and its average vehicle queue length is only around 18m, i.e. can contain one full cycle capacity of traffic. Hence, normal saturation flow, i.e. S = 1940 + 100(W – 3.25), is applicable for A1.

Comments	Summary & Response
Comments from Drainage Services Department: **(Contact Person: Mr CHEUNG Tsz-wai Tel: 2300 1581)**	
1. Please note that EPD is the planning authority of sewerage infrastructure, submission of sewerage impact assessment (SIA) or any sewerage review shall be circulated to SIG/EPD for their comments and approval. Subject to EPD, it may be required to assess and demonstrate the potential sewerage impact to the existing sewerage system, and formulate appropriate mitigation measures if any adverse sewerage impact is identified;	Noted. The SIA Report has been circulated to EPD for review.
2. Appendix 2.1 Table 3b-2 [Catchment B (Northern Portion)] – Please carry out sewage flow estimation using the methodology/approach in accordance with the Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning published by the EPD. The use of other estimation methodology/approaches should be subject to the views and agreement of the SIG/EPD.	Full-bore assessment with sewage flow adopting the maximum capacity of the sewer discharging sewage from Catchment B (Northern Portion) is regarded as a conservative approach for estimating sewage flow. Please note that EPD has no comments on the current estimation methodology in the SIA Report.
Comments from Hong Kong Police Force: **(Contact Person: Ms Chelsia SHING Tel: 3661 8061)**	
1. 1 Disabled Car Parking Space and 1 Shared Lay-by for Taxi/ Private Car/ Ambulance/ Light Goods Vehicle and Mini Coach within the proposed elderly home area. Considering the lay-by would be occupied for ambulance when there is incident, there is no space for parking the emergency vehicle in the elderly home area. An additional parking space is suggested in the proposed elderly home for emergency service.	In case of emergency and when the shared lay-by is occupied, the 2nd emergency vehicle, say police van, can stop next to the shared lay-by. As shown in **Annex B**, the 2nd emergency vehicle could also enter and leave the Proposed Elderly Home in forward movement.

Comments	Summary & Response
2. Prince Edward Road West is a 'Full length TIA route' connecting KW and KE region, pick up / drop off on Prince Edward Road West (E/B) outside the proposed elderly home for the staff own convenience should be restricted. Double yellow line is suggested to be set on the section of Prince Edward Road West outside the main gate to avoid the issue of vehicle obstruction (for TD consideration).	Noted.
Comments from Social Welfare Department: **(Contact Person: Mr Michael PANG Tel: 2116 5939)**	
(a) General	
1. The applicant is reminded that, for a RCHE licence to be issued, the intended RCHE has to comply with the licensing requirements as stipulated in the Residential Care Homes (Elderly Persons) Ordinance, Cap. 459, and its subsidiary legislation and the latest version of the Code of Practice for Residential Care Homes (Elderly Persons) (CoP).	Noted.
(b) Building Height	
2. According to paragraphs 5.3.3 of the CoP, if an RCHE operator can prove that the RCHE possesses facilities for fire safety, evacuation and rescue, and appropriate evacuation, contingency and fire drill plans to the satisfaction of the Director of Social Welfare (DSW), the DSW may approve the ancillary facilities of the RCHE to which the residents normally do not have access (e.g. kitchen, laundry room, office, staff resting room) to be situated at a height more than 24m above the ground.	The Proposed RCHE adheres to the relevant requirements stipulated in the CoP. The general RCHE area is located on 1/F to 7/F, which are situated at a height within 24m above ground. Elderly Residents would only have access to 8/F and 9/F for activities under the supervision of RCHE staff.

Comments	Summary & Response
3. It is noted that a physiotherapy room, common area and flat roof which appear to be accessible by elderly residents are located on 8/F, and some ancillary facilities (e.g. general office) and a large flat roof are located on 9/F. According to the indicative section, 8/F and 9/F are apparently situated at a height more than 24 m above the ground. The applicant is required to confirm if any part of the RCHE is situated at a height more than 24 m above the ground of the building. If affirmative, the applicant shall provide necessary justifications and check the latest CoP to confirm that the design of the RCHE could comply with the fire safety requirements.	Elderly Residents would only have access to the ancillary facilities and flat roof on 8/F and 9/F under the supervision of RCHE staff. The general RCHE area is located on 1/F to 7/F, which are situated at a height within 24m above ground.
(c) Fire Safety	
4. The deadend travel distance for RCHE is limited to 12m to the protected exit or to a point, from which travel in different directions to 2 or more protected exits is available; while the maximum travel distance, including any deadend travel distance, is limited to 30m.	The maximum travel distance is limited to 30m to the nearest protected exit for use classification 3a: health care facility, while 2 or more protected exit is available, according to CoP for Fire Safety in Buildings Clause B11.3. the length complies with the requirements.
5. The proposed RCHE should be separated from the remainder of the building by adequate fire resistance rating constructions according to the current Code of Practice for Fire Safety in Buildings.	The staircase and lift lobbies are separated from the resident habitable areas and comply with the statutory requirements.
(d) Building Design	
6. It is noted that there is one level of basement. The applicant shall draw attention to paragraph 5.2.3 of the CoP that RCHEs should not be situated on the basement floor under general circumstances. Nevertheless, the DSW may consider special cases after consulting	Please noted that the basement floor is used exclusively for plant room and water tank only, not by residents.

Comments	Summary & Response
relevant departments. The applicant should clarify what is the primary use of the basement floor.	
7. It is noted that open plan is adopted for dormitories, which is not a desirable design from service perspective. With reference to other planned RCHEs, all dormitory rooms should be partitioned into enclosed areas with a view to providing a favourable living environment for the residents and address their privacy concerns.	The open-plan layout design for RCHE aims to enhance staff convenience and improve management of the facility to ensure quality care for every elderly resident. The design includes single-bed wards and double-bed wards, separated by partition walls to provide personal areas that address privacy concerns. However, these areas are not fully enclosed to allow for efficient emergency response and ensure unobstructed access for staff.
8. Barrier free access and facilities should be provided within the entire RCHE in accordance with section 72 of the Building (Planning) Regulation (B(P)R) and "Design Manual Barrier Free Access 2008".	Statutory requirements of the barrier free access and facilities would be complied.
9. The headroom underside of the ceiling (the ceiling structure and suspended false ceiling) and beam / building services of the RCHE should not be less than 2.5m in height and 2.3m in height respectively. It is observed that the floor to floor height for 1/F to main roof is 3150 mm per floor. The applicant should ensure that sufficient headroom buffer has to be provided in order to comply with all related requirements.	The headroom clearance provided is not less than 2.5m under ceiling and 2.3m under beam.
(e) Lighting and Ventilation	
10. The provision of prescribed windows for the habitable areas including the sick/isolation/quite room in the proposed RCHE in compliance with sections 29, 30, 31, 32, 33 and 36 of the B(P)R for the provision of adequate natural lighting and natural ventilation should be demonstrated.	Prescribed window requirements have been satisfied, refer attached calculation demonstrates full compliance.

Comments	Summary & Response
11. No part of the habitation/dormitory area shall be more than 9m measured from a prescribed window as stipulated in section 32 of the B(P)R.	The wards on North side of the building are satisfied the requirements. the South side wards layout at 2/F, 4/F, 6/F, 7/F have been revised to satisfy the statutory requirements. However, Wards on south side at 1/F,3/F, 5/F would not be fulfilling the requirements unless reduce the No. of beds by 2 for each of these floor (6 in total). Please find the comments on the attached revised layout plan for RCHE.
12. According to Chapter 4 of the CoP, the proposed RCHE should be adequately ventilated, especially when the windows are kept closed under situations such as inclement weather and heavy traffic noise outside. Thus, besides natural ventilation, mechanical ventilation should be provided to the entire RCHE by making reference to "A supplement on Ventilation: Guidelines on Prevention of Communicable Diseases in Residential Care Homes for the Elderly" published by Centre for Health Protection. (*https://www.chp.gov.hk/files/pdf/a_supplement_on_ventilation.pdf*)	The habitable spaces (bed space) are provided with adequate natural ventilation in compliance with prescribed window requirements within building regulation.
<u>Comments from Environmental Protection Department:</u> **(Contact Person: Ms Alice HSU Tel: 2835 1551)** **Comments on Supporting Planning Statement** 1. Section 4.5.3 - Where is Figure 3.2?	Please refer to Section 3.2 of the Supporting Planning Statement.

Comments	Summary & Response
Comments on Appendix 3 Noise Impact Assessment Technical Comments	
1. Table 2.1	
a) Please clarify if the wards and isolation rooms in the proposed development have the same nature of wards or diagnostic rooms in residential care homes for the elderly stated in the HKPSG. If so, please update the noise criteria.	Please note that the isolation rooms have the same nature of diagnostic rooms; therefore, the noise criteria of 55 dB(A) have been applied for the isolation rooms in the assessment. However, wards are intended for residential purpose. Their nature is different from that of the diagnostic rooms for RCHE stated in the HKPSG, and thus a noise standard of 70 dB(A) has been applied for the wards in the assessment.
b) Please review the type of use for isolation rooms in the Table 2.1 as they are classified as "office".	Noted. Table 2.1 has been revised to indicate that the type of use for isolation rooms is as dwellings with potential medical treatment.
2. Section 2.4.1 - Written proof of TD's endorsement on the traffic forecast data in Year 2047 should be provided.	Noted. TD's endorsement on traffic forecast data in Year 2047 has been provided in Appendix 2.1 of the Noise Impact Assessment (NIA) **(Appendix IV refers)**.
3. Section 2.5.4 - Please clarify why the mitigation measure designs in ProPECC PN 5/23 cannot be adopted in the proposed development.	Noted. Section 2.5.4 has been revised to clarify why the mitigation measure designs in ProPECC PN 5/23 cannot be adopted in the proposed development.
4. Appendix 2.2 - Please demonstrate the total no. of units is 30 in this proposed development.	The total number of units in the proposed development is 36. Appendix 2.2 of the NIA **(Appendix IV refers)** has been revised accordingly. Below is a table displaying the calculation method used to determine the total number of units for the proposed development.

Comments	Summary & Response
	Floor / No. of units: G/F: 1 1/F: 4 2/F - 7/F: 30 (5 units x 6 floors) 9/F: 1 **Total no. of units: 36**
5. Table 2.3 & Appendix 2.3 - The detailed assessment for mitigated road traffic noise for PM is missing in Appendix 2.3.	Please note that the projected peak hour traffic flow volume and percentage of heavy vehicles during the AM peak hour were used for the noise assessment, as they are generally higher than that in the afternoon. Therefore, assessments for unmitigated and mitigated road traffic noise for the AM period only are provided.
6. Section 3.2.3 - Please review if there are influencing factors in the vicinity of the proposed development, such as Prince Edward Road West and so on. If so, please update the ASR.	As Prince Edward Road West is a major road which has annual average daily traffic flow of 41,770, it is considered as the influencing factor for the Proposed Development. ASR rating of "C" should be adopted for the NSR facing Prince Edward Road West. Section 3.2.3 has been revised accordingly.
7. S.3.3.1 - Please clarify the methods of identifying the fixed noise sources.	Desktop study and site survey have been conducted to identify any presence of fixed noise source within 300m assessment area of the Application Site. Section 3.3.1 has been revised to indicate the identification method.

Floor	No. of units
G/F	1
1/F	4
2/F - 7/F	30 (5 units x 6 floors)
9/F	1
Total no. of units	**36**

Comments	Summary & Response
8. Figure 3.1-3.4 & Appendix 3.1 - Please review if the rooftop chillers at EFCC Grace Church, Sheng Kung Hui Holy Trinity Church Centenary Bradbury Centre, Evangel Hospital and Holy Trinity Bradbury Centre Sheng Kung Hui should be considered as fixed noise sources. Please review if there are any fixed noise sources for F33-F35. 	Section 3.3.1 has been revised to indicate that the fixed noise source at EFCC Grace Church, Sheng Kung Hui Holy Trinity Church Centenary Bradbury Centre, Evangel Hospital and Holy Trinity Bradbury Centre Sheng Kui Hui has been fully blocked by surrounding buildings, so they are not included in the assessment. The fixed noise sources for F33-F35 have been removed in the assessment.
9. S.3.5.3 - Please review if corrections for tonality (included in Appendix 3.2 but not in the main text), impulsiveness and intermittency should be considered in the assessment.	The tonal correction of +3 dB(A) has been applied in this assessment and the formula indicated in Section 3.5.3 has been revised. The correction of impulsiveness and intermittency are not applicable to the identified fixed noise sources.

Comments	Summary & Response
10. Appendix 3.1	
a) Please provide proof on the operation time of the fixed noise sources.	The fixed noise source at the rooftop of St. Teresa Hospital and Hong Kong Eye Hospital will be in operation at the same time in both daytime and night-time period. Operation of other noise sources was not observed during night-time. The operation status adopted for these fixed noise sources in the appendix has been revised.
b) Please review the SWL of fixed noise source F07-08, F37-39, and F47-48.	The SWL for F07-08, F34-36 (previous F37-39) and F44-45 (previous F47-48) has been revised to 65dB(A), 88dB(A) and 96dB(A) respectively.
11. Appendix 3.1 – 3.2 - Please review the Z coordinate of the source location in the table.	The corresponding column has been removed from Appendices 3.1 and 3.2 of the NIA **(Appendix IV refers)**.
12. Appendix 3.2 - Please review the screening correction of F36-42 and F49-67 for all representative NSRs.	F33-39 (previous F36-42) are totally screened by Harbourview Garden and Woodland Villa, so the screening correction is -10. For F46-64 (previous F49-67), as these fixed noise sources are 69.7 mPD which is taller than the surrounding buildings, there are no screening corrections for these fixed noise sources.
13. S.3.6.2 - Please include the assessment for planned fixed noise source at the proposed development.	There will be no planned fixed noise sources at the development as split-type air conditioning will be adopted for the Proposed Development.
14. Figure 3.1 – 3.4 - Please provide a full-sized master map for all the fixed noise sources.	Full-sized master map has been provided in Figure 3.1 of the NIA **(Appendix IV refers)**.

Comments	Summary & Response
Noise Model	
1. Please seek the latest information from the relevant Authority to demonstrate the validity of the extent of the low noise road surfacing materials on the road sections marked below in the noise assessment model.  	Noted. The extent of the low noise road surfacing materials on the road sections in the model is cross-referenced with EPD's Centralised Environmental Database. The assessment has been updated. Highway Department's confirmation on the extent of the low noise road surfacing materials on the road sections will be provided after receiving it.
Comments on Appendix 4 - Sewerage Impact Assessment	
General Comment	
1. Please provide the full-set softcopy of the report (in pdf) and calculation spreadsheet (in Excel) as well as all Response to Comments from EPD and DSD as appendix. Please also highlight the revised/updated content of the SIA report in next submission to facilitate review.	Noted. The excel spreadsheet has been provided.

Comments	Summary & Response
Specific Comment *Appendix 2.1*	
2. For sewer segments with associated velocity less than 1.2m/s, the ks value for "sewers/drains slimed to about half depth; velocity, when flowing half full, approximately 0.75 m/s" is recommended to be adopted as a conservative approach. Please review and revise the corresponding calculations and remarks accordingly.	Noted. Table 2d has been amended. Corresponding calculations and remarks in Appendix 2.1 of the Sewerage Impact Assessment (SIA) **(Appendix III refers)** have been revised accordingly.
3. Table 1, please provide the relevant reference source(s) to substantiate the assumed area for RCHE (i.e. 247.9m2).	Noted. Please see the table in Appendix 1.1 of the SIA **(Appendix III refers)**.
4. Table 2c, please advise and substantiate the "corrections" applied in the hydraulic calculations, for the sake of clarity.	The invert levels of several manholes are unavailable in the Drainage Record Plan, thus interpolation is adopted to assess the hydraulic capacity of sewers at segment S4-S5-S6-S7. For further clarification, please refer to Note No. 1 below Table 2a in Appendix 2.1.
Appendix 2.2	
5. It is noted that manhole survey was conducted to assess the manhole settings. Please advise if the results of manhole survey have been agreed by DSD.	Please note that the results of the manhole survey were attached to the previously submitted SIA report under the approved planning application No. A/K10/261 for the S16 application. The application was approved by the Town Planning Board and DSD had no comment on the submitted manhole survey. In addition, the same manhole survey has also been submitted in the current application and no comment from DSD has been received.

Comments	Summary & Response
Comments from Urban Design and Landscape Section, Planning Department: **(Contact Person: Ms Isebella TSUI Tel: 3565 3951)**	
1. According to Table 3.1, there are about 141 no. of RCHE bed space under the proposed scheme. Please consider to provide local open space of 1m^2 per person for the residents.	Not less than 141m^2 of open space would be provided on the flat roof on 1/F, 8/F and 9/F. Open space on 8/F and 9/F would only be accessed under the supervision of RCHE staff.
2. There is no landscape proposal in the submission. With reference to Appendix 1 (Schematic Architectural Drawings), please consider planting at-grade and on flat roofs of 1/F, 8/F, 9/F and R/F.	Planting areas have been added at the flat roof on 1/F , 8/F and 9/F. Please find updated layout in the attached architectural drawings in **Appendix I**.
Comments from Building Department: **(Contact Person: Ms YU Chi-Ching, Tel: 2115 2204)**	
1. All building works are subject to compliance with the Building Ordinance (BO) and its allied regulations.	Noted.
2. You are reminded that the following issues should be addressed when making application for approval of plans for carrying out of building works under the BO: (a) Residential Care Home for the Elderly (RCHE), which is for habitation, is a domestic use under BO and should be accountable for domestic site coverage and plot ratio under the BO. Subject to compliance with the relevant criteria stipulated in PNAP APP-172, application for modification may be considered at building plan submission stage for treating RCHE as non-	Noted. The requirements as stated in items 2(a) to 2(f) of Building Department's comments would be complied with in the building plan submission stage.

Comments	Summary & Response
domestic building for the purposes of regulations 19, 20, 21 and 22 of the Building (Planning) Regulations (B(P)R) and allowing non-provision of open space for RCHE under regulation 25 of B(P)R. (b) There is no existing lane pattern in the vicinity of the proposed development. BD may, on application, favorably consider exercising discretion under section 42 of the BO to grant modification to permit the non-provision of service lane for the RCHE. (c) Access and facilities for persons with a disability should be provided in accordance with B(P)R 72 and Design Manual: Barrier Free Access 2008 (2024 Edition). (d) Natural lighting and ventilation should be provided to rooms used for habitation and for the purposes of office and kitchen complying with Part IV of B(P)R. (e) Adequate means of escape shall be provided to the subject premises in compliance with the regulation 41(1) if the B(P)R. (f) Emergency Vehicular Access (EVA) should be provided in accordance with B(P)R 41 D and Section 6, Part D of the Code of Practice for Fire Safety in Buildings 2011.	

Comments	Summary & Response
3. Before any new building works are carried out, prior approval and consent from Building Authority (BA) under the BO should be obtained unless the works fall within the scope of designated minor works that can be carried out under the simplified requirements specified in the Building (Minor Works) Regulation or such works are exempted works. An Authorized Person should be appointed to ensure that any building works are implemented in compliance with the BO.	Noted.
4. Detailed comments under the BO on individual sites for private developments such as permissible plot ratio, site coverage, means of escape, fire resisting construction, service lane, emergency vehicular access, natural lighting and ventilation, barrier free access and facilities compliance with sustainable building guidelines, etc. will be formulated at the building plan submission stage.	Noted.

Consolidated by: **KTA Planning Limited**
Date: **27 November 2024**

List of Appendices

Appendix I	Updated Schematic Architectural Drawings
Appendix II	Revised Traffic Impact Assessment
Appendix III	Replacement Pages of Sewerage Impact Assessment
Appendix IV	Replacement Pages of Noise Impact Assessment

Annex A –
Email from Planning Department

From:	Jenny Wai Ching LAI/PLAND <jwclai@pland.gov.hk>
Sent:	Friday, 1 November, 2024 16:57
To:	CKM Asia
Cc:	Wilson Man; Gladys Ng; Vicki Yue Yan AU/PLAND; Thomas Ho Lun LAU/PLAND
Subject:	Re: Proposed Elderly Home at 349 Prince Edward Road West (TPB No. A/K10/276) - TIA : Planned Developments
Attachments:	TD comment (2024 10).pdf; extract of TIA (for PlanD).pdf; site location plan.pdf; Appendix I_Email from Consultant.pdf
Importance:	High

Dear Mr. TANG,

I refer to the enquiry in your email below seeking our comments on the planned developments extracted from Table 4.6 of the Traffic Impact Assessment (TIA) report please. Reference is also made to your email dated 30.10.2024 (**Appendix I**), providing the 300m study area for the captioned project and clarifying that some major planned developments outside the 300m study area listed in Table 4.6 have also been considered.

[See attachment "Appendix I_Email from Consultant.pdf"]

2. Please find our comments on Table 4.6 of the TIA report.

Ref.	**Developments**	**PlanD's Comments**
A	222 Argyle Street	· Please refer to the approved Ma Tau Kok OZP No. S/K10/30. You may also make reference to the approved planning application No. Y/K10/5. Relevant information is available from public domain, such as Planning Enquiry Counters, Statutory Planning Portal 3 (SPP3) and Town Planning Board (TPB) websites. It is noted that the development parameter does not tally with that under the approved application.
B	URA Project at Shing Tak Street / Ma Tau Chung Road (CBS-1:KC)	· Please refer to the approved Ma Tau Kok Outline Zoning Plan (OZP) No. S/K10/30. Relevant information is available from public domain, such as Planning Enquiry Counters, SPP3 and TPB websites. · Advice from Urban Renewal Authority (URA) should also be sought regarding URA projects.
C	3 - 13 Nga Tsin Long Road	· Please refer to the approved Ma Tau Kok OZP No. S/K10/30. Relevant information is available from public domain, such as Planning Enquiry Counters, SPP3 and TPB websites.
D	4 - 24 Nam Kok Road	· Please refer to the approved Ma Tau Kok OZP No. S/K10/30. Relevant information is available from public domain, such as Planning Enquiry Counters, SPP3 and TPB websites.

E	URA Project at Nga Tsin Wai Road / Carpenter Road (KC-017)	· Please refer to the approved URA Nga Tsin Wai Road / Carpenter Road Development Scheme Plan (DSP) No. S/K10/URA3/2. Relevant information is available from public domain, such as Planning Enquiry Counters, SPP3 and TPB websites. · Advice from URA should also be sought regarding URA projects.
F	URA Project at Kai Tak Road / Sa Po Road (KC-015)	· Please refer to the approved URA Kai Tak Road / Sa Po Road DSP No. S/K10/URA1/2. Relevant information is available from public domain, such as Planning Enquiry Counters, SPP3 and TPB websites. · Advice from URA should also be sought regarding URA projects.
G	Redevelopment of Kowloon City Plaza at New Kowloon Inland Lot No. 6056	· Please refer to the approved Ma Tau Kok OZP No. S/K10/30. You may make reference to the approved planning application No. Y/K10/3. Relevant information is available from public domain, such as Planning Enquiry Counters, SPP3 and TPB website. The number of spaces for public vehicle park should tally with that indicated under the Notes of the OZP.
H	26A - B Grampian Road and 13A - B Junction Road	· Please refer to the approved Ma Tau Kok OZP No. S/K10/30. Relevant information is available from public domain, such as Planning Enquiry Counters, SPP3 and TPB websites.
I	84 - 98 Junction Road	· Please refer to the approved Ma Tau Kok OZP No. S/K10/30. Relevant information is available from public domain, such as Planning Enquiry Counters, SPP3 and TPB websites.
J	65, 73 and 75 Lion Rock Road	· Please refer to the approved Ma Tau Kok OZP No. S/K10/30. Relevant information is available from public domain, such as Planning Enquiry Counters, SPP3 and TPB websites.
K	93 - 95 Hau Wong Road	· Please refer to the approved Ma Tau Kok OZP No. S/K10/30. Relevant information is available from public domain, such as Planning Enquiry Counters, SPP3 and TPB websites.
L	452 - 464 Prince Edward Road West	· Please refer to the approved Ma Tau Kok OZP No. S/K10/30. Relevant information is available from public domain, such as Planning Enquiry Counters, SPP3 and TPB websites.
M	20 - 20A Grampian Road	· Please refer to the approved Ma Tau Kok OZP No. S/K10/30. Relevant information is available from public domain, such as Planning Enquiry Counters, SPP3 and TPB websites.
N	57A Nga Tsin Wai Road	· Please refer to the approved Ma Tau Kok OZP No. S/K10/30. Relevant information is available from public domain, such as Planning Enquiry Counters, SPP3 and TPB websites.
O	55 Nga Tsin Wai Road	· Please refer to the approved Ma Tau Kok OZP No. S/K10/30. Relevant information is available from public domain, such as Planning Enquiry Counters, SPP3 and TPB websites.

3. It is observed that there are discrepancies between the development parameters listed in the table and information available from public domain. Please refer to information provided in para. 2 above and verify the parameters of all items.

4. Regarding other developments that should be considered apart from the list in your table, please refer to relevant information available from public domain, including Statutory Planning Portal 3 (https://www.ozp.tpb.gov.hk/) and Town Planning Board website (https://www.tpb.gov.hk/).

Thanks and Regards,

Jenny LAI
TP/K10
K DPO
Planning Department
Tel: 2231 4180

From: CKM Asia <mail@ckmasia.com.hk>
Sent: Tuesday, October 29, 2024 10:55 AM
To: Jenny Wai Ching LAI/PLAND <jwclai@pland.gov.hk>
Cc: Wilson Man <wilsonman@ktaplanning.com>; Gladys Ng <gladysng@ktaplanning.com>
Subject: RE: Proposed Elderly Home at 349 Prince Edward Road West (TPB No. A/K10/276) - TIA : Planned Developments

Attn: Planning Department – Ms Jenny Lai (Town Plnr / Kln 10)
cc: KTA Planning Limited

Dear Ms Lai,

We, CKM Asia Limited, are the Traffic Consultant responsible for TPB No. A/K10/276, i.e. the Proposed Elderly Home at 349 Prince Edward Road West.

The comment from Transport Department on our TIA report is attached for reference. Item (l) refers: *"Section 4.11 – Please check with PlanD for completeness of the planned development in the area"*.

In connection to the above, we would like to seek your comment on the planned developments extracted from Table 4.6 of the TIA report. The site location plan is also attached for reference.

We appreciate your reply at the earliest convenience. Should you have any queries, please do not hesitate to contact our Mr Patrick Tang at 2520 5990.

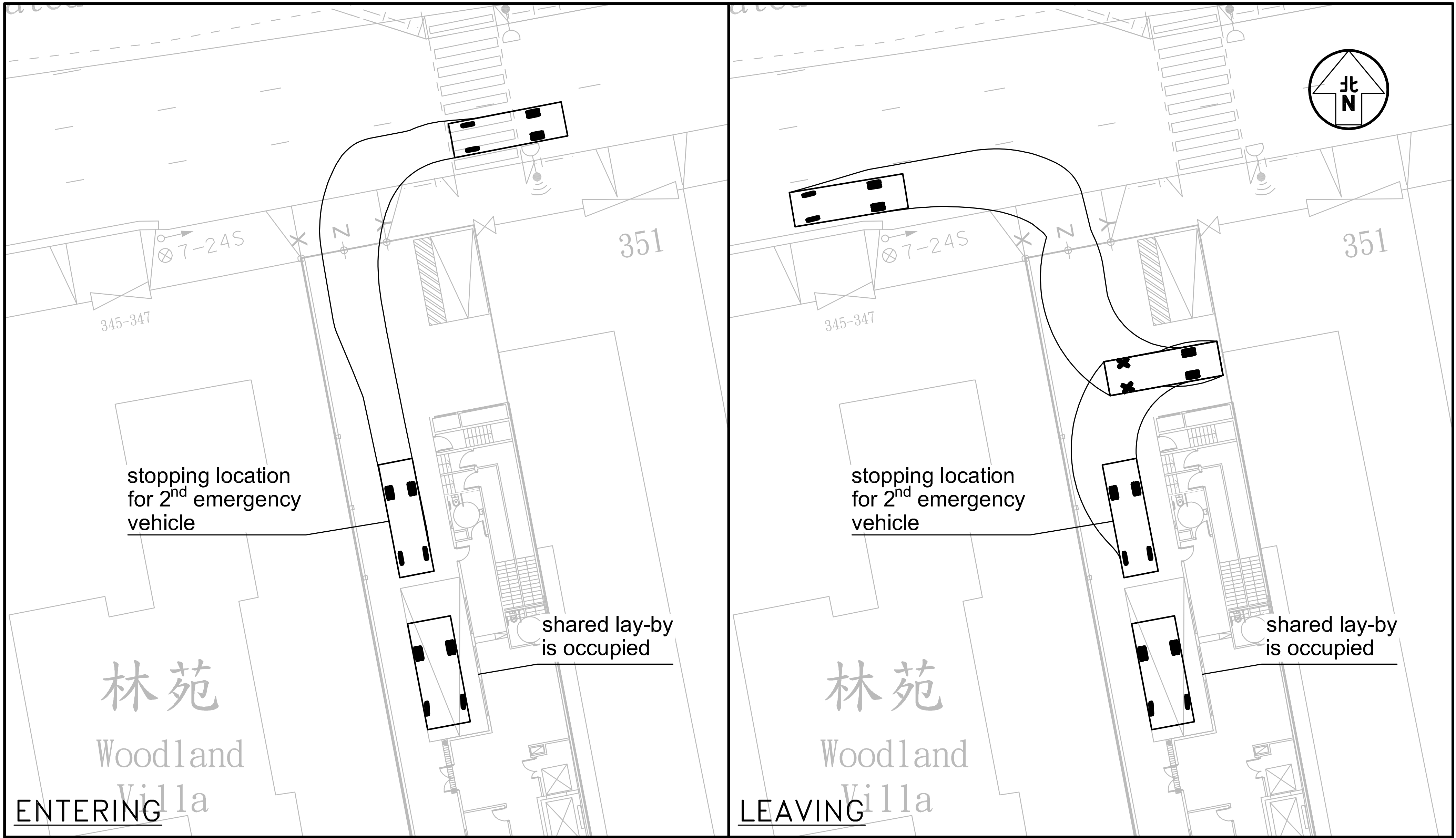
Thank you for your attention.

Regards,

H.C. Tang

CKM Asia Limited
Traffic and Transportation Planning Consultants
Phone: (852) 2520 5990

Annex B – Swept Path of 2nd Emergency Vehicle when the Lay-by is Occupied



Project Title
PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY)
IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY
J7350

Figure Title

SWEPT PATH OF 2nd EMERGENCY VEHICLE WHEN THE LAY-BY IS OCCUPIED

Figure No. SP/106		Revision R2A
Designed by T H C	Drawn by C C L	Checked by K C
Scale in A4 1 : 300	Date 18 NOV 2024	

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road,
Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

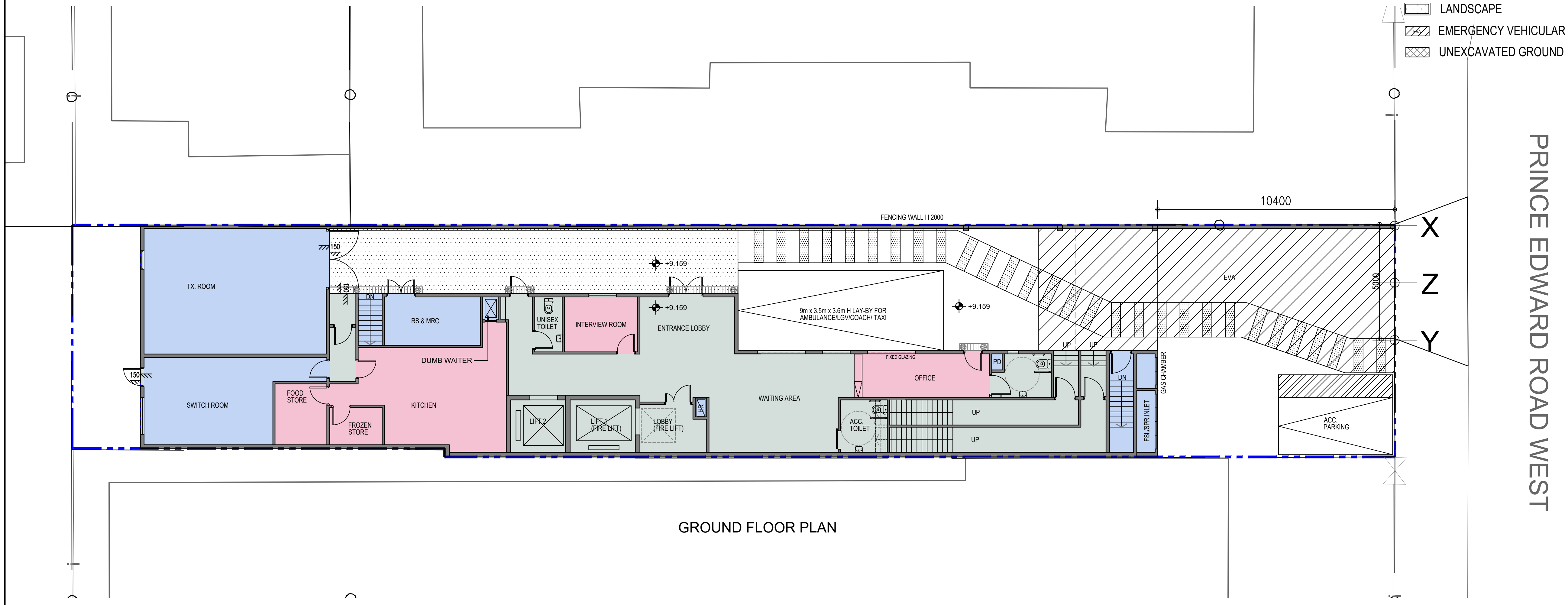
T:\JOB\J7350-J7399\J7350\R2\Fig SP_101-106 RevR2A.dwg

Appendix I

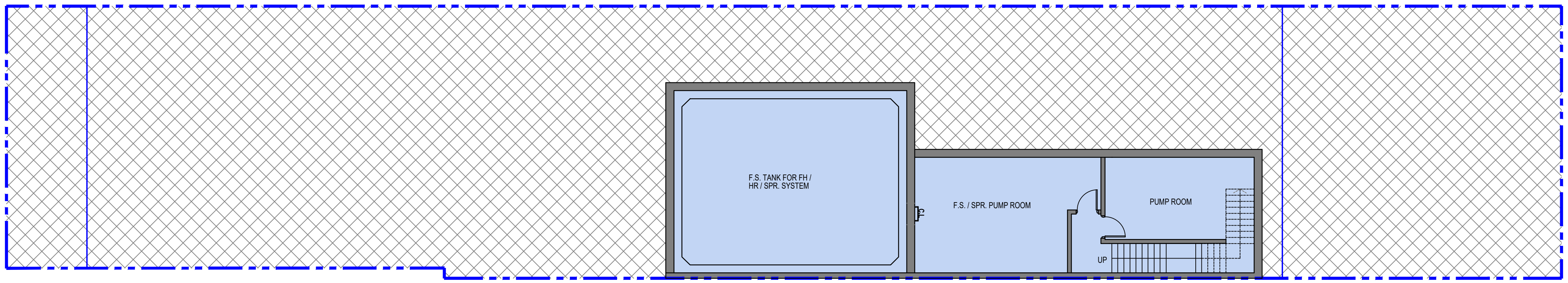
Updated Schematic Architectural Drawings

LEGEND:

—	SITE BOUNDARY
🟨	WARD
🟥	ANCILLARY AREA
▨	COMMON / CIRCULATION SPACE
🟦	PLANT ROOM/ STAIRCASE TO U/G PLANT ROOM
▨	FOOTPATH
▭	LANDSCAPE
▨	EMERGENCY VEHICULAR ACCESS
▨	UNEXCAVATED GROUND



G/F LAYOUT 1:200



B/S LAYOUT 1:200

N

BD REF. NO.:
FSD REF. NO.:
REVISIONS AND SUBMISSIONS:

NO.:	DATE:	DETAILS:	CHECKED:

NOTES:

1. CONTENTS ON THIS DRAWING SHOW DESIGN INTENT ONLY CONTRACTOR IS RESPONSIBLE FOR DETAILED DESIGN OF THE INTERIOR FITTING–OUT. CONTRACTOR IS REQUIRED TO SUBMIT FULL SET SHOP DRAWINGS FOR ARCHITECT'S APPROVAL PRIOR TO FABRICATION AND SITE INSTALLATION.
2. STRUCTURAL CALCULATIONS IF REQUIRED AND RELATED SUPPORTING DATA SHOULD BE SUBMITTED FOR REVIEW AND APPROVAL.
3. TRUE COLOR SAMPLES OF MATERIALS SHOULD BE SUBMITTED FOR ARCHITECT'S APPROVAL PRIOR TO PROCUREMENT.
4. ALL FITTING/ ASSEMBLY AND MATERIALS SHOULD BE DESIGN & INSTALLED TO CONTRACT DRAWINGS AND SPECIFICATION, AND IN COMPLIANCE WITH ALL RELEVANT STATUTORY REQUIREMENTS.
5. DIMENSIONS BASED ON ON SITE MEASUREMENTS.

6. FINAL MATERIALS & FINISHES OF WALL,FLOOR,CEILING,WALL FIXTURE ETC. SHOULD BE REFER TO FINISHES AND MATERIALS SCHEDULE UNDER THE SPECIFICATION PROVIDED.

CLIENT/EMPLOYER:

PROJECT ARCHITECT/AUTHORIZED PERSON:

馬海
馬海 (建築顧問) 有限公司
Spence Robinson Limited

PROJECT STRUCTURAL ENGINEER/
PROJECT GEO–TECHNICAL ENGINEER:

張耀新建築工程師有限公司
Wilson & Associates Ltd

PROJECT E/M ENGINEER:

PROJECT LANDSCAPE CONSULTANT:

PROJECT QUANTITY SURVEYOR:

PROJECT:
PURPOSE BUILT C&A HOME DEVELOPMENT AT
349 PRINCE EDWARD ROAD WEST

DRAWING TITLE:
GROUND FLOOR PLAN &
BASEMENT FLOOR PLAN

DRAWN BY:
CZ

DATE:
NOV-2024

CHECKED BY:
CMD

APPROVED BY:
KCY

SCALE:
1:200

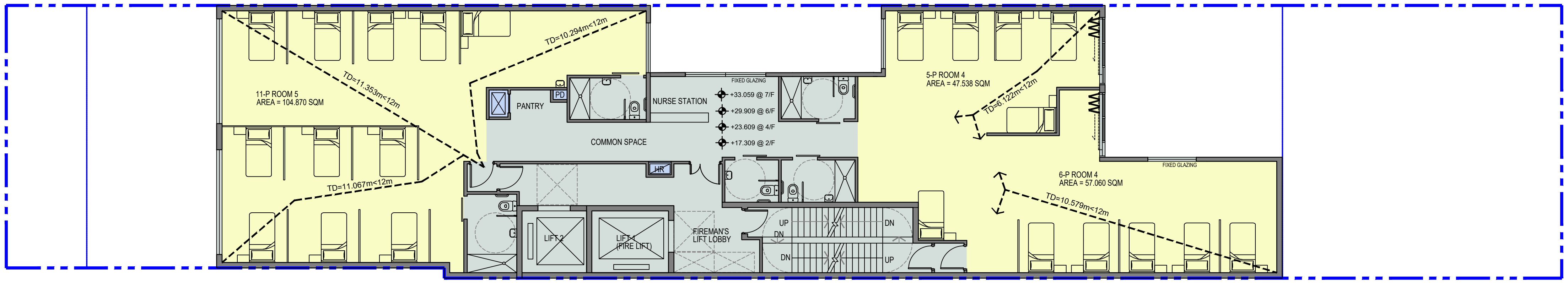
PAPER SIZE:
A3

PROJECT:
PE 6170

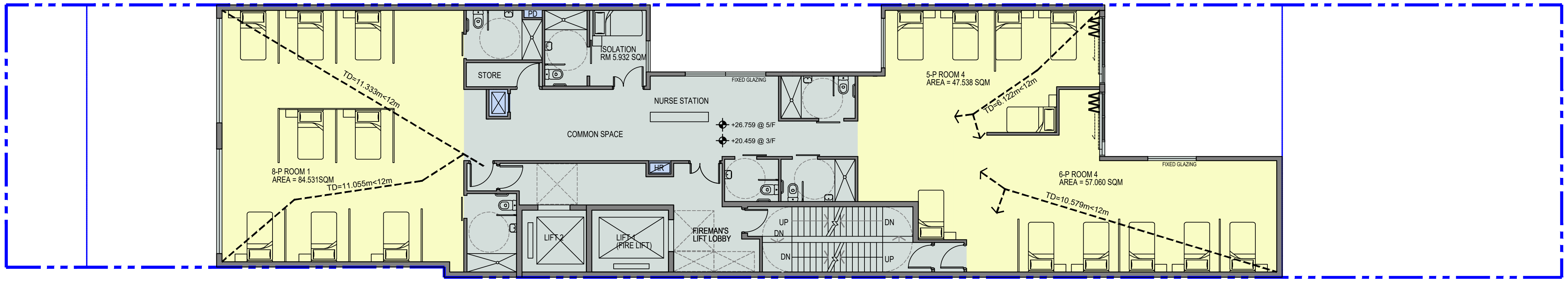
DRAWING:
GP-00

REVISION:
V14

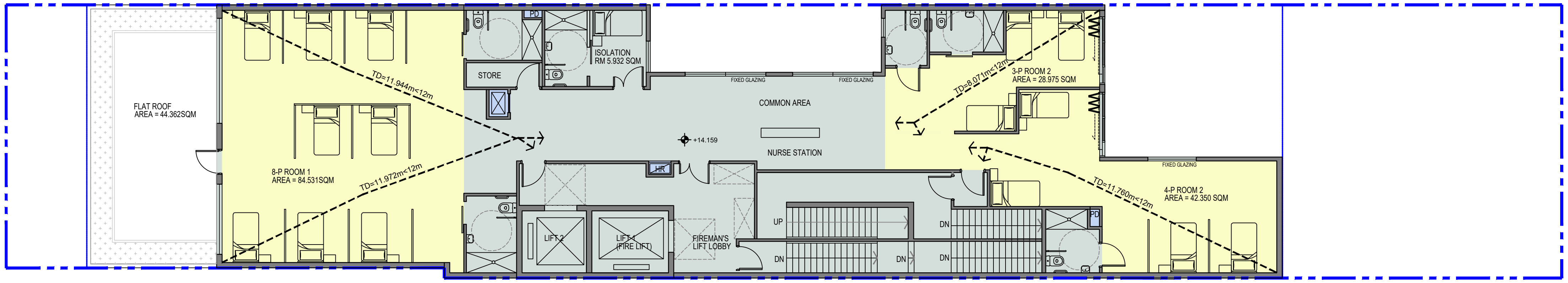
NOTES :
1. This drawing and design are copyright and no portion may be reproduced without the written permission of the Architect.
2. Use written dimensions or grid lines in preference to scaled dimensions. Measurements to existing work are to be checked on site.
3. This drawing is to be read in conjunction with the Architect's Specification and Conditions of Contract.
4. Prints not showing the last revision are to be cancelled.
5. Prints without an authorized signature in the checked and approved spaces below and after the last revision above are NOT vaild for use outside SRL.



2/F, 4/F, 6/F, 7/F LAYOUT 1:200



3/F, 5/F LAYOUT 1:200



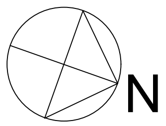
1/F LAYOUT 1:200

LEGEND:

- ─ SITE BOUNDARY
- 🟨 WARD
- 🟥 ANCILLARY AREA
- ⬜ COMMON / CIRCULATION SPACE
- 🟦 PLANT ROOM/ STAIRCASE TO U/G PLANT ROOM
- ▦ FOOTPATH
- ☐ LANDSCAPE
- ▨ EMERGENCY VEHICULAR ACCESS
- ▩ UNEXCAVATED GROUND

NOS. OF BED
(9.5m²/ppl)

G/F	0
1/F	15
2/F	22
3/F	19
4/F	22
5/F	19
6/F	22
7/F	22
TOTAL	141



BD REF. NO.:

FSD REF. NO.:

REVISIONS AND SUBMISSIONS:

NO.:	DATE:	DETAILS:	CHECKED:

NOTES:
1. CONTENTS ON THIS DRAWING SHOW DESIGN INTENT ONLY CONTRACTOR IS RESPONSIBLE FOR DETAILED DESIGN OF THE INTERIOR FITTING-OUT. CONTRACTOR IS REQUIRED TO SUBMIT FULL SET SHOP DRAWINGS FOR ARCHITECT'S APPROVAL PRIOR TO FABRICATION AND SITE INSTALLATION.
2. STRUCTURAL CALCULATIONS IF REQUIRED AND RELATED SUPPORTING DATA SHOULD BE SUBMITTED FOR REVIEW AND APPROVAL.
3. TRUE COLOR SAMPLES OF MATERIALS SHOULD BE SUBMITTED FOR ARCHITECT'S APPROVAL PRIOR TO PROCUREMENT.
4. ALL FITTING/ ASSEMBLY AND MATERIALS SHOULD BE DESIGN & INSTALLED TO CONTRACT DRAWINGS AND SPECIFICATION, AND IN COMPLIANCE WITH ALL RELEVANT STATUTORY REQUIREMENTS.
5. DIMENSIONS BASED ON ON SITE MEASUREMENTS.
6. FINAL MATERIALS & FINISHES OF WALL,FLOOR,CEILING,WALL FIXTURE ETC. SHOULD BE REFER TO FINISHES AND MATERIALS SCHEDULE UNDER THE SPECIFICATION PROVIDED.

CLIENT/EMPLOYER:

PROJECT ARCHITECT/AUTHORIZED PERSON:

馬海
馬海(建築顧問)有限公司
Spence Robinson Limited

PROJECT STRUCTURAL ENGINEER/
PROJECT GEO-TECHNICAL ENGINEER:

張耀新建築工程師有限公司
Wilson & Associates Ltd

PROJECT E/M ENGINEER:

PROJECT LANDSCAPE CONSULTANT:

PROJECT QUANTITY SURVEYOR:

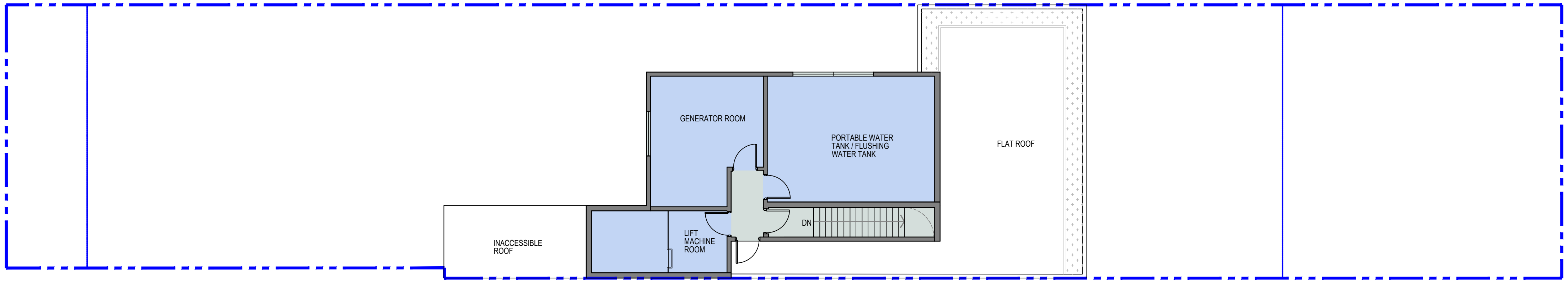
PROJECT:
PURPOSE BUILT C&A HOME DEVELOPMENT AT
349 PRINCE EDWARD ROAD WEST

DRAWING TITLE:

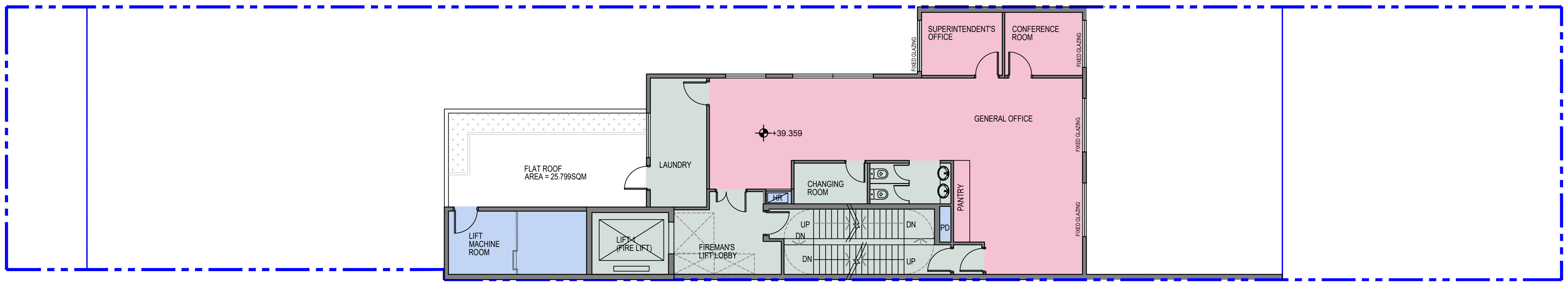
FIRST FLOOR PLAN &
TYPICAL FLOOR PLAN (3/F,5/F) &
TYPICAL FLOOR PLAN (2/F,4/F,6/F& 7/F)

DRAWN BY: CZ	DATE: NOV-2024	
CHECKED BY: CMD	APPROVED BY: KCY	
SCALE: 1:200	PAPER SIZE: A3	
PROJECT: PE 6170	DRAWING: GP-01	REVISION: V14

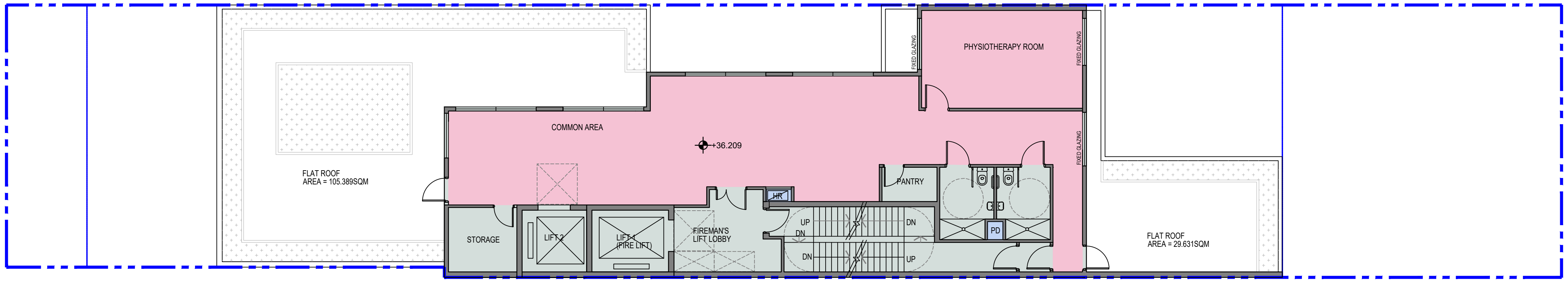
NOTES :
1. This drawing and design are copyright and no portion may be reproduced without the written permission of the Architect.
2. Use written dimensions or grid lines in preference to scaled dimensions. Measurements to existing work are to be checked on site.
3. This drawing is to be read in conjunction with the Architect's Specification and Conditions of Contract.
4. Prints not showing the last revision are to be cancelled.
5. Prints without an authorized signature in the checked and approved spaces below and after the last revision above are NOT vaild for use outside SRL.



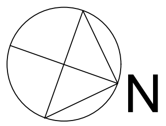
ROOF LAYOUT 1:200



9/F LAYOUT 1:200



8/F LAYOUT 1:200



LEGEND:

- ━ SITE BOUNDARY
- 🟨 WARD
- 🟥 ANCILLARY AREA
- ⬜ COMMON / CIRCULATION SPACE
- 🟦 PLANT ROOM/ STAIRCASE TO U/G PLANT ROOM
- ▨ FOOTPATH
- ☐ LANDSCAPE
- ▨ EMERGENCY VEHICULAR ACCESS
- ▨ UNEXCAVATED GROUND

NOS. OF BED
(9.5m²/ppl)

G/F	0
1/F	15
2/F	22
3/F	19
4/F	22
5/F	19
6/F	22
7/F	22
TOTAL	141

BD REF. NO.:
FSD REF. NO.:
REVISIONS AND SUBMISSIONS:

NO.:	DATE:	DETAILS:	CHECKED:

NOTES:
1. CONTENTS ON THIS DRAWING SHOW DESIGN INTENT ONLY CONTRACTOR IS RESPONSIBLE FOR DETAILED DESIGN OF THE INTERIOR FITTING-OUT. CONTRACTOR IS REQUIRED TO SUBMIT FULL SET SHOP DRAWINGS FOR ARCHITECT'S APPROVAL PRIOR TO FABRICATION AND SITE INSTALLATION.
2. STRUCTURAL CALCULATIONS IF REQUIRED AND RELATED SUPPORTING DATA SHOULD BE SUBMITTED FOR REVIEW AND APPROVAL.
3. TRUE COLOR SAMPLES OF MATERIALS SHOULD BE SUBMITTED FOR ARCHITECT'S APPROVAL PRIOR TO PROCUREMENT.
4. ALL FITTING/ ASSEMBLY AND MATERIALS SHOULD BE DESIGN & INSTALLED TO CONTRACT DRAWINGS AND SPECIFICATION, AND IN COMPLIANCE WITH ALL RELEVANT STATUTORY REQUIREMENTS.
5. DIMENSIONS BASED ON ON SITE MEASUREMENTS.

6. FINAL MATERIALS & FINISHES OF WALL,FLOOR,CEILING,WALL FIXTURE ETC. SHOULD BE REFER TO FINISHES AND MATERIALS SCHEDULE UNDER THE SPECIFICATION PROVIDED.

CLIENT/EMPLOYER:

PROJECT ARCHITECT/AUTHORIZED PERSON:
馬海
馬海(建築顧問)有限公司
Spence Robinson Limited

PROJECT STRUCTURAL ENGINEER/
PROJECT GEO-TECHNICAL ENGINEER:
張耀新建築工程師有限公司
Wilson & Associates Ltd

PROJECT E/M ENGINEER:

PROJECT LANDSCAPE CONSULTANT:

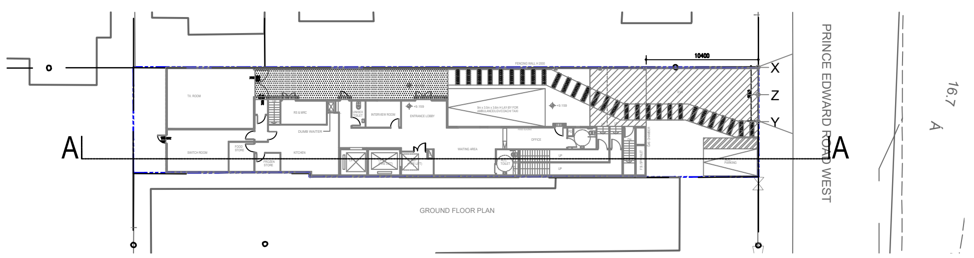
PROJECT QUANTITY SURVEYOR:

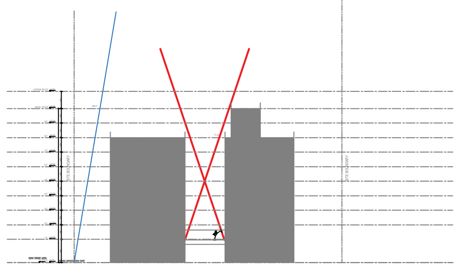
PROJECT:
PURPOSE BUILT C&A HOME DEVELOPMENT AT
349 PRINCE EDWARD ROAD WEST

DRAWING TITLE:
8/F & 9/F FLOOR PLAN &
ROOF FLOOR PLAN

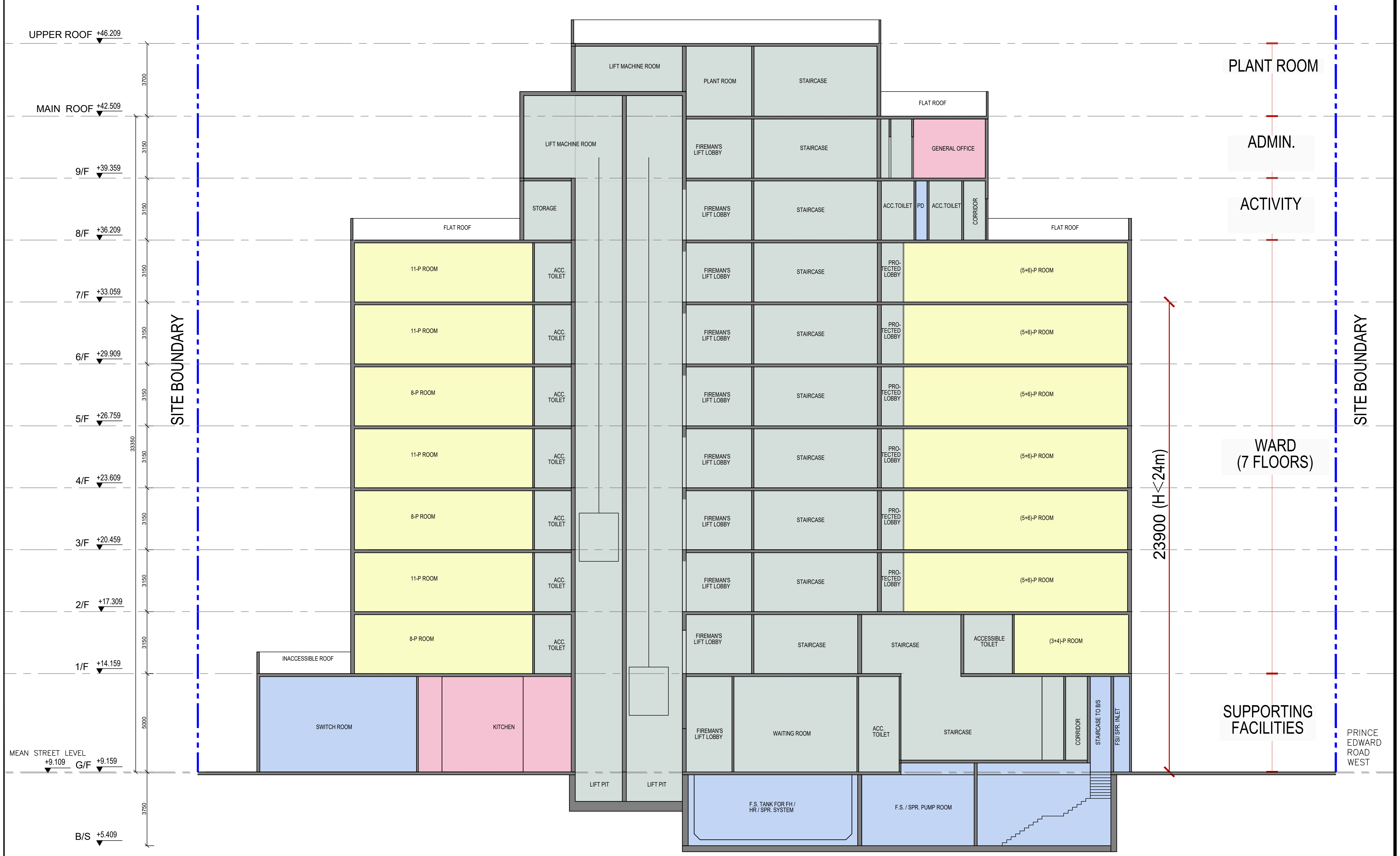
DRAWN BY: CZ
DATE: NOV-2024
CHECKED BY: CMD
APPROVED BY: KCY
SCALE: 1:200
PAPER SIZE: A3
PROJECT: PE 6170
DRAWING: GP-02
REVISION: V14

NOTES :
1. This drawing and design are copyright and no portion may be reproduced without the written permission of the Architect.
2. Use written dimensions or grid lines in preference to scaled dimensions. Measurements to existing work are to be checked on site.
3. This drawing is to be read in conjunction with the Architect's Specification and Conditions of Contract.
4. Prints not showing the last revision are to be cancelled.
5. Prints without an authorized signature in the checked and approved spaces below and after the last revision above are NOT vaild for use outside SRL.





LEGEND:
- SITE BOUNDARY
- 🟨 WARD
- 🟥 ANCILLARY AREA
- ▨ COMMON / CIRCULATION SPACE
- 🟦 PLANT ROOM/ STAIRCASE TO U/G PLANT ROOM
- ▨ FOOTPATH
- ☐ LANDSCAPE
- ▨ EMERGENCY VEHICULAR ACCESS
- ▨ UNEXCAVATED GROUND



SECTION A-A 1:200

BD REF. NO.:

FSD REF. NO.:

REVISIONS AND SUBMISSIONS:

NO.:	DATE:	DETAILS:	CHECKED:

NOTES:
1. CONTENTS ON THIS DRAWING SHOW DESIGN INTENT ONLY CONTRACTOR IS RESPONSIBLE FOR DETAILED DESIGN OF THE INTERIOR FITTING-OUT. CONTRACTOR IS REQUIRED TO SUBMIT FULL SET SHOP DRAWINGS FOR ARCHITECT'S APPROVAL PRIOR TO FABRICATION AND SITE INSTALLATION.
2. STRUCTURAL CALCULATIONS IF REQUIRED AND RELATED SUPPORTING DATA SHOULD BE SUBMITTED FOR REVIEW AND APPROVAL.
3. TRUE COLOR SAMPLES OF MATERIALS SHOULD BE SUBMITTED FOR ARCHITECT'S APPROVAL PRIOR TO PROCUREMENT.
4. ALL FITTING/ ASSEMBLY AND MATERIALS SHOULD BE DESIGN & INSTALLED TO CONTRACT DRAWINGS AND SPECIFICATION, AND IN COMPLIANCE WITH ALL RELEVANT STATUTORY REQUIREMENTS.
5. DIMENSIONS BASED ON ON SITE MEASUREMENTS.

6. FINAL MATERIALS & FINISHES OF WALL,FLOOR,CEILING,WALL FIXTURE ETC. SHOULD BE REFER TO FINISHES AND MATERIALS SCHEDULE UNDER THE SPECIFICATION PROVIDED.

CLIENT/EMPLOYER:

PROJECT ARCHITECT/AUTHORIZED PERSON:

馬海
馬海(建築顧問)有限公司
Spence Robinson Limited

PROJECT STRUCTURAL ENGINEER/
PROJECT GEO-TECHNICAL ENGINEER:

張耀新建築工程師有限公司
Wilson & Associates Ltd

PROJECT E/M ENGINEER:

PROJECT LANDSCAPE CONSULTANT:

PROJECT QUANTITY SURVEYOR:

PROJECT:
PURPOSE BUILT C&A HOME DEVELOPMENT AT 349 PRINCE EDWARD ROAD WEST

DRAWING TITLE:
SECTION

DRAWN BY: CZ	DATE: NOV-2024	
CHECKED BY: CMD	APPROVED BY: KCY	
SCALE: 1:200	PAPER SIZE: A3	
PROJECT: PE 6170	DRAWING: GP-03	REVISION: V14

NOTES :
1. This drawing and design are copyright and no portion may be reproduced without the written permission of the Architect.
2. Use written dimensions or grid lines in preference to scaled dimensions. Measurements to existing work are to be checked on site.
3. This drawing is to be read in conjunction with the Architect's Specification and Conditions of Contract.
4. Prints not showing the last revision are to be cancelled.
5. Prints without an authorized signature in the checked and approved spaces below and after the last revision above are NOT vaild for use outside SRL.

Appendix II

Revised Traffic Impact Assessment

Proposed Social Welfare Facility (Residential Care Home for the Elderly) in “Residential (Group B)” Zone at 349 Prince Edward Road West, Kowloon City

Traffic Impact Assessment

Final Report
November 2024

Prepared by: **CKM Asia Limited**

Prepared for: **Lead Engineering Limited**

Proposed Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon City

CONTENTS

Proposed Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon City

TABLES

NUMBER

Proposed Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon City

FIGURES

NUMBER

1.0 INTRODUCTION

Background

1.1 The subject site is located at 349 Prince Edward Road West in Kowloon City. Figure 1.1 shows the location of the subject site.

1.2 ***On 3rd January 2020, the Town Planning Board (TPB) approved the s16 planning application (TPB No. A/K10/261) for construction of an elderly home (the "Proposed Elderly Home") with 91 beds at the subject site.***

1.3 The Applicant has engaged CKM Asia Limited, a traffic and transportation planning consultancy firm, to prepare a traffic impact assessment (TIA) for the Proposed Elderly Home with 141 beds.

Scope of the Assessment

1.4 The main objectives of this study are as follow:

- To assess the existing traffic issues in the vicinity of the subject site; and
- To ensure that adequate internal transport facilities are provided for the Proposed Elderly Home;
- To quantify the amount of traffic generated by the Proposed Elderly Home; and
- To examine the traffic impact of the Proposed Elderly Home on the local road network.

Contents of the Report

1.5 After this introduction, the remaining chapters contain the following:

chapter two – describes the existing situation;
chapter three – presents the Proposed Elderly Home;
chapter four – describes the traffic impact analysis; and
chapter five – gives the overall conclusion.

2.0 THE EXISTING SITUATION

Subject Site and Road Network

2.1 The subject site is located on the southern side of Prince Edward Road West and to the west of Junction Road.

2.2 Prince Edward Road East is classified as a Primary Distributor. It connects with the Kowloon City to the east and Mong Kok to the west. The section of Prince Edward Road East fronting the subject site has 2 – 4 westbound traffic lanes (towards Mong Kok), and 3 – 4 eastbound traffic lanes (towards Wong Tai Sin).

2.3 Junction Road is a District Distributor in Kowloon City running in north-south direction. It is a single carriageway 3-lane road connecting Prince Edward Road West and Carpenter Road.

Manual Classified Counts

2.4 Manual classified counts were conducted on 7th June 2024 (Friday) during the AM and PM peak periods at 6 junctions which are located in the vicinity of the subject site in order to establish the peak hour traffic flows. The surveyed junctions included the following:

- Prince Edward Road West / Junction Road;
- Prince Edward Road West / Forfar Road;
- Prince Edward Road West / Lomond Road;
- Argyle Street / Lomond Street;
- Kowloon City Roundabout; and
- Prince Edward Road West / La Salle Road.

2.5 The traffic counts were classified by vehicle type to enable traffic flows in passenger car units (pcu) to be calculated. The locations and layouts of the surveyed junctions are shown in Figure 2.1 and Figures 2.2 – 2.7 respectively.

2.6 The AM and the PM peak hour traffic flows were found to occur at 0800 – 0900 and 1800 – 1900 hours respectively, and the peak hour traffic flows are illustrated in Figure 2.8.

Operational Performance of the Surveyed Junctions

2.7 The existing operational performance of the surveyed junctions was calculated based on the observed traffic counts and the analysis method found in Volumes 2 and 4 of Transport Planning and Design Manual (TPDM). The analysis results are summarised in Table 2.1 and detailed calculations are found in Appendix A.

TABLE 2.1 EXISTING JUNCTION OPERATIONAL PERFORMANCE

Ref.	Junction	Type of Junction	Performance Indicator [1]	AM Peak	PM Peak
J1	Prince Edward Road West / Junction Road	Signal	RC	49%	44%
J2	Prince Edward Road West / Forfar Road	Priority	RFC	0.294	0.350
J3	Prince Edward Road West / Lomond Road	Signal	RC	68%	75%
J4	Argyle Street / Lomond Street	Signal	RC	38%	47%
J5	Kowloon City Roundabout	Roundabout	RFC	0.698	0.656
J6	Prince Edward Road West / La Salle Road	Signal	RC	59%	47%

Note: (1) RC – Reserve Capacity RFC – Ratio-of-Flow to Capacity

2.8 The above results indicate that the surveyed junctions currently operate with capacities during the AM and PM peak hours.

Pedestrian Count Surveys

2.9 Pedestrian counts were conducted during the AM and PM peak periods on 7th June 2024 (Friday) at footpaths and pedestrian crossings located in the vicinity of the subject site, and these include the following:

Pedestrian Crossing

C1 – Downstream Signalised Crossing at Prince Edward Road West (west of Junction Road)
C2 – Upstream Signalised Crossing at Prince Edward Road West (west of Junction Road)

Footpath

F1 – Southern footpath of Prince Edward Road West (west of C1)
F2 – Southern footpath of Prince Edward Road West (east of C1)

2.10 From the survey results, it was found that the AM and PM peak 15-minute pedestrian flows occurred at 0845 – 0900 and 1800 – 1815 hours respectively. The AM and PM peak 15-minute pedestrian flows are presented in Figure 2.9.

Pedestrian Crossing Performance

2.11 The performance of signalised pedestrian crossings is evaluated by considering their Volume to Capacity Ratio (V/C). The analysis was undertaken using the empirical formula with reference to Volume 4 of the TPDM:

$$PC = K \times GTP \times W$$

where PC = Pedestrian crossing capacity in per/15-min
GTP = Green time proportion
i.e. $\dfrac{\text{Pedestrian green + Flashing green time}}{\text{Cycle time}}$
W = Lateral width of pedestrian crossing
K = A constant equivalent to saturation flow for pedestrians may be taken as 475 ped/m/15-min

2.12 The performance of signalised crossings are calculated and presented in Table 2.2.

TABLE 2.2 EXISTING PERFORMANCE OF SIGNALISED CROSSING

Ref.	Crossing Width (m)	Peak Period	Green Time (sec)		Cycle Time (sec)	GTP [(1)]	PC [(2)] (ped/ 15-min)	Flow (ped/ 15-min)	V/C [(3)]
			Pedestrian	Flashing					
C1	3.5	AM	10	7	120	0.14	235.5	78	**0.331**
		PM	11	7	115	0.16	260.2	75	**0.288**
C2	4.5	AM	60	7	120	0.56	1193.4	78	**0.065**
		PM	54	7	115	0.53	1133.8	75	**0.066**

Note: (1) GTP = (pedestrian green + flashing green time) ÷ cycle time
(2) PC = K × GTP × W, where K = 475 ped/m/15-min
(3) V/C = pedestrian flow ÷ PC

Index: C1 – Downstream Signalised Crossing at Prince Edward Road West (west of Junction Road)
C2 – Upstream Signalised Crossing at Prince Edward Road West (west of Junction Road)

2.13 The results in Table 2.2 indicate that the signalised pedestrian crossings now operate with capacities during the AM and PM peak periods.

Footpath Level-of-Service

2.14 The level-of-service (LOS) of a pedestrian walkway is dependent on its width and number of pedestrians using the facility. Description of the LOS is obtained from Volume 6 of the TPDM, and is presented in Table 2.3.

TABLE 2.3 DESCRIPTION OF PEDESTRIAN WALKWAY LOS

LOS	Flow Rate (ped/min/m)	Description
A	≤ 16	Pedestrians basically move in desired paths without altering their movements in response to other pedestrians. Walking speeds are freely selected, and conflicts between pedestrians are unlikely.
B	16 – 23	Sufficient space is provided for pedestrians to freely select their walking speeds, to bypass other pedestrians and to avoid crossing conflicts with others. At this level, pedestrians begin to be aware of other pedestrians and to respond to their presence in the selection of walking paths.
C	23 – 33	Sufficient space is available to select normal walking speeds and to bypass other pedestrians primarily in unidirectional stream. Where reverse direction or crossing movement exist, minor conflicts will occur, and speed and volume will be somewhat lower.
D	33 – 49	Freedom to select individual walking speeds and bypass other pedestrians is restricted. Where crossing or reverse-flow movements exist, the probability of conflicts is high and its avoidance requires changes of speeds and position. The LOS provides reasonable fluid flow; however considerable friction and interactions between pedestrians are likely to occur.
E	49 – 75	Virtually, all pedestrians would have their normal walking speeds restricted. At the lower range of this LOS, forward movement is possible only by shuffling. Space is insufficient to pass over slower pedestrians. Cross- and reverse-movement are possible only with extreme difficulties. Design volumes approach the limit of walking capacity with resulting stoppages and interruptions to flow.
F	> 75	Walking speeds are severely restricted. Forward progress is made only by shuffling. There are frequent and unavoidable conflicts with other pedestrians. Cross- and reverse-movements are virtually impossible. Flow is sporadic and unstable. Space is more characteristics of queued pedestrians than of moving pedestrian streams.

Source: Volume 6 Chapter 10 of the TPDM

2.15 The LOS assessment is presented in Table 2.4.

TABLE 2.4 EXISTING LEVEL-OF-SERVICE ASSESSMENT

Ref.	**Footpath**	**Total Width**	**Effective Width** [(1)]	**Peak Period**	**2-way Peak Pedestrian Flows**		**LOS**
					Flow (ped/ 15-min)	**Rate (ped/ min/m)** [(2)]	
F1	Southern footpath of Prince Edward Road West (west of C1)	2.0	1.0	AM	186	12.4	A
				PM	195	13.0	A
F2	Southern footpath of Prince Edward Road West (east of C1)	2.5	1.5	AM	178	7.9	A
				PM	192	8.5	A

Note: (1) effective width = total width – (0.5m × 2)
(2) pedestrian flow rate = pedestrian flow ÷ 15 minutes ÷ effective width

2.16 The above results indicate that the surveyed footpaths currently operate with LOS A during the AM and PM peak periods. As stated in the TPDM, *"LOS C is desirable for most design at streets with dominant 'living' pedestrian activities"*. Hence, LOS A is considered as an acceptable level of service.

Public Transport Facilities

2.17 Access to road-based and rail-based public transport services from the subject site is convenient. The Exit B of MTR Sung Wong Toi Station is located around 300m or equivalent to around 5 minutes' walk from the subject site.

2.18 In addition, numerous franchised bus and green minibus routes operate along Prince Edward Road East, Prince Edward Road West and Junction Road, within 500 metres or about 10 minutes' walk away. Details of the road-based public transport services operating close to the subject site are presented in Figure 2.10 and Table 2.5.

TABLE 2.5 ROAD-BASED PUBLIC TRANSPORT SERVICES OPERATING NEAR THE SUBJECT SITE

Route No.	**Routing**	**Frequency (min)**
KMB 1	Star Ferry – Chuk Yuen Estate	8 – 20
KMB 1A	Star Ferry – Sau Mau Ping (Central)	7 – 15
KMB 2A	Mei Foo – Lok Wah	10 – 25
KMB 2D	Tung Tau Estate – Chak On Estate	20 – 30
KMB 2X	Choi Fook – Mei Foo	20 – 30
KMB 3B	Hung Hom Ferry – Tsz Wan Shan (Central)	20 – 30
KMB 5	Star Ferry – Fu Shan	9 – 25
KMB 5A	Kai Tak (Kai Ching Estate) – Star Ferry	25 – 30
KMB 5C	Star Ferry – Tsz Wan Shan (Central)	8 – 20
KMB 5P	Star Ferry – Tsz Wan Shan (Central)	AM & PM peak
KMB 6D	Mei Foo – Ngau Tau Kok	12 – 30
KMB 6P	So Uk – Lei Yue Mun Estate	AM & PM peak
KMB 6X	Shing Tak Street – Mei Foo	PM peak
KMB 7B	Hung Hom (Hung Luen Road) – Lok Fu	20 – 35
KMB 9	Tsim Sha Tsui East (Mody Road) – Choi Fook	15 – 30
KMB 10	Choi Wan – Tai Kok Tsui (Circular)	15 – 30

TABLE 2.5 ROAD-BASED PUBLIC TRANSPORT SERVICES OPERATING NEAR THE SUBJECT SITE (CONT'D)

Route No.	**Routing**	**Frequency (min)**
KMB 11	Kowloon Station – Diamond Hill Station	12 – 30
KMB 11B	Kowloon City Ferry – Kwun Tong (Tsui Ping Road)	12 – 30
KMB 11D	Lok Fu – Kwun Tong Ferry	15 – 30
KMB 11K	Hung Hom Station – Chuk Yuen Estate	20 – 35
KMB 11X	Hung Hom Station – Sau Mau Ping (Upper)	9 – 25
KMB 12A	Whampoa Garden – Cheung Sha Wan (Hoi Tat Estate)	10 – 25
KMB 13D	Tai Kok Tsui (Island Harbourview) – Po Tat	15 – 30
KMB 14	China Ferry Terminal – Lei Yue Mun Estate	12 – 30
KMB 15	Hung Hom (Hung Luen Road) – Ping Tin	12 – 30
KMB 16	Mong Kok (Park Avenue) – Lam Tin (Kwong Tin Estate)	8 – 30
KMB 16P	Mong Kok (Park Avenue) – Kwun Tong Ferry	AM & PM peak
KMB 16X	Mong Kok (Park Avenue) – Lam Tin (Kwong Tin Estate)	AM & PM peak
KMB 17	Ho Man Tin (Oi Man Estate) – Kwun Tong (Yue Man Square)	5 – 25
CTB 20	Kai Tak (Muk On Street) – Cheung Sha Wan (Hoi Tat)	12 – 30
CTB 20A	High Speed Rail West Kowloon Station – Kai Tak Cruise Terminal	25 – 30
KMB 21	Hung Hom Station – Choi Wan	20 – 30
CTB 22	Kai Tak Cruise Terminal – Kowloon Tong	20 – 35
CTB 22M	Kai Tak Cruise Terminal – To Kwa Wan	20 – 30
KMB 24	Kai Yip – Mong Kok (Circular)	20 – 30
KMB 26	Tsim Sha Tsui East – Shun Tin	8 – 25
KMB 27	Shun Tin – Mong Kok (Circular)	6 – 20
KMB 27X	Shun Tin – Olympic Station	AM & PM peak
KMB 28	Star Ferry – Lok Wah	10 – 25
KMB 42	Cheung Hong Estate – Shun Lee	10 – 25
KMB 61X	Kowloon City Ferry – Tuen Mun Central	10 – 25
KMB 75X	Kowloon City Ferry – Tai Po (Fu Shin)	10 – 25
KMB 85	Kowloon City Ferry – Fo Tan Chun Yeung Estate	20 – 30
KMB 85A	Kowloon City Ferry – Kwong Yuen	20 – 30
KMB 85B	Kowloon City Ferry – Chun Shek	AM & PM peak
KMB 85X	Hung Luen Road – Man On Shan Town Centre	9 – 30
KMB 92R	Sai Kung – Star Ferry	weekend
KMB 93K	Mong Kok East Station – Po Lam	17 – 30
KMB 95	Kowloon Station – Tsui Lam	12 – 30
KMB 98C	Mei Foo – Hang Hau (North)	10 – 25
KMB 98E	Mei Foo – Hang Hau (North)	AM & PM peak
KMB 98S	Lohas Park Station – Mei Foo	AM & PM peak
KMB / CTB 101	Kennedy Town – Kwun Tong (Yue Man Square)	4 – 20
KMB / CTB 106	Siu Sai Wan (Island Resort) – Wong Tai Sin	6 – 22
KMB / CTB 106A	Wong Tai Sin – Taikoo (Kornhill Plaza)	AM peak
KMB / CTB 106P	Siu Sai Wan (Island Resort) – Wong Tai Sin	AM & PM peak
KMB / CTB 107	Wah Kwai – Kowloon Bay	5 – 20
KMB 108	Braemar Hill – Kai Yip	10 – 30
KMB / CTB 111	Central (Macau Ferry) – Ping Shek	4 – 30
KMB / CTB 111P	Choi Fook – Central (Macau Ferry)	AM & PM peak
KMB / CTB 113	Kennedy Town (Belcher Bay) – Choi Hung	10 – 29
KMB / CTB 116	Quarry Bay – Tsz Wan Shan (Central)	4 – 18
KMB 203E	Kowloon Station – Choi Hung	15 – 30
KMB 208	Broadcast Drive – Tsim Sha Tsui East	25 – 30
KMB 213D	Sau Mau Ping (Central) – Mong Kok (Circular)	10 – 20

TABLE 2.5 ROAD-BASED PUBLIC TRANSPORT SERVICES OPERATING NEAR THE SUBJECT SITE (CONT'D)

KMB 275X	Tai Po (Fu Shin) – Hung Hom (Hung Luen Road)	AM & PM peak
KMB 293S	Hang Hau (Ngan O Road) – Mei Foo	overnight
KMB 296C	Cheung Sha Wan (Hoi Ying Estate) – Sheung Tak	15 – 30
KMB 296P	Sheung Tak – Lai Chi Kok Station	AM & PM peak
KMB 297	Hung Hom (Hung Luen Road) – Po Lam	15 – 30
KMB 298C	Lohas Park Station – Mei Foo	AM & PM peak
KMB 298X	Hang Hau (North) (Tseung Kwan O Hospital) – Cheung Sha Wan (Kom Tsun Street)	AM & PM peak
CTB 608	Kowloon City (Shing Tak Street) – Shau Kei Wan	10 – 30
CTB 608P	Siu Sai Wan (Island Resort) – Kowloon City (Shing Tak Street)	AM peak
CTB 793	Tseung Kwan O Industrial Estate – So Uk	15 – 20
CTB 796X	Tsim Sha Tsui East – Tseung Kwan O Industrial Estate / Tseung Kwan O Station	12 – 30
CTB A22	Lam Tin Station – Airport	15 – 60
CTB E23	Airport – Tsz Wan Shan (South)	12 – 30
CTB E23A	Tsz Wan Shan (South) – Airport	20 – 30
CTB N20	Island Harbourview – Kai Tak (Muk On Street)	overnight
CTB N23	Tung Chung Station – Tsz Wan Shan (North)	overnight
KMB / CTB N121	Central (Macau Ferry) – Ngau Tau Kok	overnight
KMB N213	Tsim Sha Tsui East (Mody Road) – On Tai (West)	overnight
KMB N216	Hung Hom Station – Yau Tong	overnight
KMB N293	Mong Kok (Park Avenue) – Sheung Tak	20 – 30
CTB N796	Lohas Park – Mong Kok	20 – 30
GMB 2	Whampoa Garden – Festival Walk	10 – 25
GMB 2A	Whampoa Garden – Festival Walk	10 – 25
GMB 13	Kowloon Tong (Broadcast Drive) – Hung Hom Ferry Pier	15 – 30
GMB 17M	Prince Edward Station – Kowloon Hospital	7 – 15
GMB 25A	Kowloon Tong Station – Tung Tau Estate	15 – 20
GMB 25B	The Latitude – Kowloon Tong Station	15 – 18
GMB 25M	Tung Tau Estate – Kowloon Tong Station	6 – 8
GMB 46	Island Harbourview – Richland Gardens	3 – 15
GMB 49	Shun Tin Estate – Kowloon City Ferry Pier	25
GMB 61	Mong Kok Station – Siu Sai Wan (Island Resort)	overnight
GMB 66S	Fu Shan Estate – Mong Kok	overnight
GMB 69	Kowloon City (Lion Rock Road) – Laguna City	20 – 30
GMB 69A	Prince Edward Station – Laguna City	15 – 20
GMB 70	Island Harbourview – Diamond Hill Station	4 – 12
GMB 70A	Olympic Station – Diamond Hill Station	30 – 60
GMB 88	Kai Ching Estate – Wong Tai Sin	12 – 30
GMB 105	To Kwa Wan – Hong Sing Garden	5 – 20
GMB 110	Tiu Keng Leng Station – Kowloon City (Circular)	15 – 30

Note: KMB – Kowloon Motor Bus CTB – Citybus
GMB – Green Minibus

3.0 THE PROPOSED ELDERLY HOME

Development Schedule

3.1 The Proposed Elderly Home consists of 1 block with 141 beds for elderly and is targeted for completion by 2027.

Internal Transport Facilities

3.2 The Hong Kong Planning Standards and Guidelines (HKPSG) have no recommendations on the provision of internal transport facilities for elderly home. Taking into consideration the narrow site frontage along Prince Edward Road West, which is only around 10m, and to satisfy the operational needs, the following internal transport facilities, which is same as TPB No. A/K10/261**,** are recommended:

- 1 lay-by with dimensions 9m(L) × 3.5m(W) × 3.6m(H) for shared use by taxi, private car, ambulance, LGV and mini coach, and
- 1 car parking space for persons with disabilities of dimensions 5m(L) × 3.5m(W) × 2.4m(H).

3.3 A 5m wide run-in / out is proposed, and the proposed ground floor plan is shown in Figure 3.1.

3.4 In order to understand the operation and to ascertain the parking and loading / unloading needs of the Proposed Elderly Home, weekday and weekend traffic generation surveys were conducted at similar elderly homes **located in Kowloon**. Details of the surveyed elderly homes are given in Table 3.1.

TABLE 3.1 DETAILS OF ELDERLY HOMES SURVEYED

Location of Elderly Home	**No. of Beds**	**Accessibility to Public Transport Services**	**Internal Car Park**
(A) 351 Prince Edward Road West, Kowloon City	135	This elderly home is located adjoining to the subject site. Numerous bus and GMB routes operate in the vicinity, and the nearest MTR Sung Wong Toi Station is located within 500m from this elderly home.	Yes
(B) 8 Kung Lok Road, Kwun Tong	266	Access to public transport services from this elderly home is convenient with numerous bus and GMB routes operate in the vicinity. The nearest MTR Ngau Tau Kok Station is located within 500m from this elderly home.	Yes
(C) 88 Kung Lok Road, Kwun Tong	226	Access to public transport services from this elderly home is convenient with numerous bus and GMB routes operate in the vicinity. The nearest MTR Ngau Tau Kok Station is located within 500m from this elderly home.	Yes

3.5 The survey results are summarised in Table 3.2, and detail survey records are presented in Appendix B.

TABLE 3.2 SUMMARY OF TRAFFIC GENERATION SURVEYS

Location of Elderly Home	**No. of Beds [a]**	**Day of Week**	**No. of Vehicle Observed (veh/day) [b]**	**Demand Rate (veh/day/bed) [b] ÷ [a]**	**Dwell Time of Vehicle (min)**	
					Average	**Maximum**
Parking Demand (related to visitation)						
(A) 351 Prince Edward Road West, Kowloon City	135	Weekday	0	0		
		Saturday	2	0.0148	31.5	33
		Sunday	2	0.0148	24.0	32
(B) 8 Kung Lok Road, Kwun Tong	266	Weekday	2	0.0075	23.5	27
		Saturday	3	0.0113	30.3	43
		Sunday	4	0.0150	27.0	46
(C) 88 Kung Lok Road, Kwun Tong	226	Weekday	2	0.0088	39.0	44
		Saturday	1	0.0044	31.0	31
		Sunday	2	0.0088	41.5	42
Maximum Demand for Parking				**0.0150**		
Loading / Unloading Demand (related to pick-up / drop-off and goods delivery)						
(A) 351 Prince Edward Road West, Kowloon City	135	Weekday	8	0.0593	4.4	8
		Saturday	4	0.0296	6.0	14
		Sunday	3	0.0222	2.3	5
(B) 8 Kung Lok Road, Kwun Tong	266	Weekday	13	0.0489	5.3	23
		Saturday	11	0.0414	3.9	11
		Sunday	11	0.0414	3.4	9
(C) 88 Kung Lok Road, Kwun Tong	226	Weekday	11	0.0487	6.9	21
		Saturday	11	0.0487	3.8	15
		Sunday	9	0.0398	6.9	18
Maximum Demand for Loading / Unloading				**0.0593**		

(i) Parking Demand (related to visitation)

3.6 Table 3.2 shows that several private car trips generated per day and these cars stayed for less than an hour. During the survey period, these cars did not arrive at the same time.

3.7 Based on the maximum parking demand obtained from the survey, i.e. 0.0150 veh/day/bed, the Proposed Elderly Home with 141 beds is expected to generate no more than 2.1 parking trips daily [Calculation: 0.0150 × 141], and is considered low.

(ii) Loading / Unloading Demand (related to pick-up / drop-off and goods delivery)

3.8 Several vehicle trips related to goods delivery and passenger pick-up / drop-off were observed during the survey. As shown in Appendix B, these vehicles include taxi, private car, goods van, LGV, mini coach and ambulance. No HGV and coach were observed.

3.9 During the survey period, these vehicles did not arrive at the same time and the average dwell time is short, i.e. stay of only 2.3 – 6.9 minutes.

3.10 Based on the maximum loading / unloading demand i.e. related to pick-up / drop-off and goods delivery, obtained from the survey, i.e. 0.0593 veh/day/bed, the Proposed Elderly Home is expected to generate no more than 8.4 loading / unloading trips related to pick-up / drop-off and goods delivery daily [Calculation: 0.0593 × 141] , which is also low.

3.11 Taking into consideration the low parking demand (related to visitation) and loading / unloading demand (related to pick-up / drop-off and goods delivery) and that the site frontage along Prince Edward Road West is narrow, i.e. only around 10m, the provision of one lay-by for shared use by taxi / private car / ambulance / LGV / mini coach and one car parking space for persons with disabilities, is considered adequate and acceptable from traffic engineering point of view.

Swept Path Analysis

3.12 The CAD-based swept path analysis programme, *Autodesk Vehicle Tracking*, was used to check the ease of manoeuvring of vehicles, and are found to have no problems. The swept path analysis drawings are found in the Appendix C.

4.0 TRAFFIC IMPACT

Design Year

4.1 The completion of the Proposed Elderly Home in 2027 and the design year adopted for the capacity analysis is 2031.

Analysis on Traffic Generation

4.2 The subject site falls within the *"Residential (Group B)"* zone in the Approved Ma Tau Kok Outline Zoning Plan (OZP) No. S/K10/30, and according to the OZP, residential use is always permitted. An extract from OZP No. S/K10/30 is attached in Appendix D.

4.3 In order to assess the potential traffic impact of the Proposed Elderly Home, a traffic generation analysis is conducted to compare the Proposed Elderly Home and a hypothetical residential building (the "Hypothetical Residential Building") at the subject site.

4.4 The traffic generation for the Proposed Elderly Home and Hypothetical Residential Building is estimated below:

(i) Proposed Elderly Home

4.5 To quantify the traffic generated by the Proposed Elderly Home, reference is made to the traffic generation from the similar elderly homes presented in Table 3.1. The survey results are presented in Table 4.1.

TABLE 4.1 TRIP GENERATION RATE FOR SIMILAR ELDERLY HOME

Site	**No. of Beds**	**Traffic Generation (pcu/hr)**				**Trip Generation Rate (pcu/hr/bed)**			
		AM Peak		**PM Peak**		**AM Peak**		**PM Peak**	
		IN	**OUT**	**IN**	**OUT**	**IN**	**OUT**	**IN**	**OUT**
Weekday									
(A) 351 Prince Edward Road West in Kowloon City	135	2	2	1.5	1.5	0.0148	0.0148	0.0111	0.0111
(B) 8 Kung Lok Road in Kwun Tong	266	3	3	2.5	2.5	0.0113	0.0113	0.0094	0.0094
(C) 88 Kung Lok Road in Kwun Tong	226	3.5	3.5	3	3	0.0155	0.0155	0.0133	0.0133
Saturday									
(A) 351 Prince Edward Road West in Kowloon City	135	2.5	2.5	1	1	0.0185	0.0185	0.0074	0.0074
(B) 8 Kung Lok Road in Kwun Tong	266	3	3	2	2	0.0113	0.0113	0.0075	0.0075
(C) 88 Kung Lok Road in Kwun Tong	226	2.5	2.5	3	3	0.0111	0.0111	0.0133	0.0133

TABLE 4.1 TRIP GENERATION RATE FOR SIMILAR ELDERLY HOME (CONT'D)

Site	**No. of Beds**	**Traffic Generation (pcu/hr)**				**Trip Generation Rate (pcu/hr/bed)**			
		AM Peak		**PM Peak**		**AM Peak**		**PM Peak**	
		IN	**OUT**	**IN**	**OUT**	**IN**	**OUT**	**IN**	**OUT**
Sunday									
(A) 351 Prince Edward Road West in Kowloon City	135	1	1	1	2	0.0074	0.0074	0.0074	0.0148
(B) 8 Kung Lok Road in Kwun Tong	266	2	2	3	3	0.0075	0.0075	0.0113	0.0113
(C) 88 Kung Lok Road in Kwun Tong	226	3.5	3.5	1	1	0.0155	0.0155	0.0044	0.0044
Adopted Trip Generation Rate (maximum)						**0.0185**	**0.0185**	**0.0133**	**0.0133**

4.6 To conduct the worst case scenario, the maximum trip generation rates identified from weekday and weekend surveys are adopted to calculate the traffic generated associated with the Proposed Elderly Home, and the calculated traffic generation is presented in Table 4.2.

TABLE 4.2 PROPOSED ELDERLY HOME TRAFFIC GENERATION

Proposed Elderly Home (with 141 beds)	**Unit**	**AM Peak**		**PM Peak**	
		IN	**OUT**	**IN**	**OUT**
Traffic Generation	pcu/hr	3	3	2	2

(ii) Hypothetical Residential Building

4.7 According to the Authorised Person, the Hypothetical Residential Building has 60 flats with average flat size of around 50m^2. Hence, trip generation rates for *"Private Housing: High-density / R(A)"* from Transport Planning and Design Manual (TPDM) are adopted and these are presented in Table 4.3.

TABLE 4.3 RESIDENTIAL TRIP GENERATION RATES FROM TPDM

Private Housing: High-density / R(A)	**Unit**	**AM Peak**		**PM Peak**	
		IN	**OUT**	**IN**	**OUT**
Trip Generation Rate	pcu/hr/flat	0.0425	0.0718	0.0370	0.0286

4.8 The trip generation rates presented in Table 4.3 are used to calculate the traffic generated associated with the Hypothetical Residential Building, and the calculated traffic generation is presented in Table 4.4.

TABLE 4.4 HYPOTHETICAL RESIDENTIAL BUILDING TRAFFIC GENERATION

Hypothetical Residential Building (with 60 flats)	**Unit**	**AM Peak**		**PM Peak**	
		IN	**OUT**	**IN**	**OUT**
Traffic Generation	pcu/hr	3	5	3	2

4.9 The comparison of traffic generation for the Proposed Elderly Home (Table 4.2) and Hypothetical Residential Building (Table 4.4) is presented in Table 4.5.

TABLE 4.5 COMPARISON OF TRAFFIC GENERATION

Development	**Traffic Generation (pcu/hour)**					
	AM Peak			**PM Peak**		
	IN	**OUT**	**2-way**	**IN**	**OUT**	**2-way**
Hypothetical Residential Building [a]	3	5	8	3	2	5
Proposed Elderly Home [b]	3	3	6	2	2	4
Difference [b] – [a]	**0** **(0%)**	**–2** **(–40%)**	**–2** **(–25%)**	**–1** **(–33%)**	**0** **(0%)**	**–1** **(–20%)**

4.10 Table 4.5 shows that the Proposed Elderly Home is expected to generate **2 and 1 pcu (2-way) less than** the Hypothetical Residential Building during the AM and PM peak hours respectively, or equivalent to **25% and 20% less traffic**. Hence, **the Proposed Elderly Home is a better-off scheme** compared to the Hypothetical Residential Building.

Planned Developments

4.11 The major planned developments in the vicinity of the Proposed Elderly Home are summarised in Table 4.6.

TABLE 4.6 DETAILS OF MAJOR PLANNED DEVELOPMENTS

Ref.	**Location**	**Use**	**Development Parameter (Approx.)**
A	222 Argyle Street	Hospital	around 118 beds
B	URA Project at Shing Tak Street / Ma Tau Chung Road (CBS-1:KC)	Private Housing	around 640 flats, retail GFA of around 6,449m^2
C	3 – 13 Nga Tsin Long Road	Private Housing	around 110 flats, retail GFA of around 1,190m^2
D	4 – 24 Nam Kok Road	Private Housing	around 313 flats, retail GFA of around 1,826m^2
E	URA Project at Nga Tsin Wai Road / Carpenter Road (KC-017)	Private Housing	around 4,353 flats, retail GFA of around 25,302m^2, G/IC of around 47,000m^2 and public vehicle park of around 360 spaces
F	URA Project at Kai Tak Road / Sa Po Road (KC-015)	Private Housing	around 810 flats, retail GFA of around 8,028m^2 and public vehicle park of around 300 spaces
G	Redevelopment of Kowloon City Plaza at New Kowloon Inland Lot No. 6056	Private Housing	around 850 flats, retail GFA of around 8,882m^2 and public vehicle park of around 414 spaces
H	26A – B Grampian Road and 13A – B Junction Road	Private Housing	around 72 flats
I	84 – 98 Junction Road	Private Housing	around 140 flats, retail GFA of around 1,373m^2
J	65, 73 and 75 Lion Rock Road	Private Housing	around 150 flats, retail GFA of around 640m^2
K	93 – 95 Hau Wong Road	Private Housing	around 50 flats, retail GFA of around 450m^2
L	452 – 464 Prince Edward Road West	Private Housing	domestic GFA of around 5,793m^2 and retail GFA of around 1,159m^2

TABLE 4.6 DETAILS OF MAJOR PLANNED DEVELOPMENTS (CONT'D)

Ref.	Location	Use	Development Parameter (Approx.)
M	20 – 20A Grampian Road	Private Housing	domestic GFA of around 2,168m2
N	57A Nga Tsin Wai Road	Private Housing	around 11 flats
O	55 Nga Tsin Wai Road	Private Housing	domestic GFA of around 1,106m^2

4.12 The major planned developments listed in Table 4.6 have been included in the traffic forecast.

Traffic Forecast

4.13 The 2031 design traffic flows for capacity analysis are derived with reference to the following:

i. 2031 peak hour traffic models from the BDTM;
ii. planned developments located in the vicinity; and
iii. traffic generation of the Proposed Elderly Home.

4.14 The flow diagram showing the traffic generated by the Proposed Elderly Home is presented in Figure 4.1, and the 2031 peak hour traffic flows without and with the Proposed Elderly Home are shown in Figures 4.2 and 4.3 respectively.

2031 Junction Capacity Analysis

4.15 The 2031 junction capacity analysis for the cases without and with the Proposed Elderly Home is summarised in Table 4.7, and detailed calculations are found in Appendix A.

TABLE 4.7 2031 JUNCTION OPERATIONAL PERFORMANCE

Ref.	Junction	Performance Indicator [(1)]	Without Proposed Elderly Home		With Proposed Elderly Home	
			AM Peak	PM Peak	AM Peak	PM Peak
J1	Prince Edward Road West / Junction Road	RC	25%	22%	25%	22%
J2	Prince Edward Road West / Forfar Road	RFC	0.363	0.419	0.364	0.419
J3	Prince Edward Road West / Lomond Road	RC	47%	55%	47%	55%
J4	Argyle Street / Lomond Street	RC	23%	32%	23%	32%
J5	Kowloon City Roundabout	RFC	0.848	0.828	0.848	0.828
J6	Prince Edward Road West / La Salle Road	RC	43%	36%	43%	36%

Note: [(1)] RC – Reserve Capacity RFC – Ratio-of-Flow to Capacity

4.16 The above results indicate that the analysed junctions are expected to operate with sufficient capacity during the peak hours in 2031. The junctions analysed have sufficient capacity to accommodate the (i) expected traffic growth; and (ii) additional traffic generated by the Proposed Elderly Home.

4.17 The traffic generated by the Proposed Elderly Home is expected to have minimal impact to the capacity of the analysed junctions. It can be concluded that the Proposed Elderly Home is acceptable from traffic engineering terms.

Pedestrian Generation

4.18 Pedestrians generated by the Proposed Elderly Home are estimated based on the pedestrian generation surveys conducted. The surveyed and adopted pedestrian generation rates are found in Table 4.8.

TABLE 4.8 PEDESTRIAN GENERATION RATES

Site	No. of Beds	Pedestrian Generation (ped/15-min)				Pedestrian Generation Rate (ped/15-min/bed)			
		AM Peak		PM Peak		AM Peak		PM Peak	
		IN	OUT	IN	OUT	IN	OUT	IN	OUT
Weekday									
(A) 351 Prince Edward Road West in Kowloon City	135	8	8	9	6	0.0593	0.0593	0.0667	0.0444
(B) 8 Kung Lok Road in Kwun Tong	266	11	5	7	21	0.0414	0.0188	0.0263	0.0789
(C) 88 Kung Lok Road in Kwun Tong	226	14	4	3	15	0.0619	0.0177	0.0133	0.0664
Saturday									
(A) 351 Prince Edward Road West in Kowloon City	135	3	5	1	3	0.0222	0.0370	0.0074	0.0222
(B) 8 Kung Lok Road in Kwun Tong	266	6	9	7	26	0.0226	0.0338	0.0263	0.0977
(C) 88 Kung Lok Road in Kwun Tong	226	5	9	3	25	0.0221	0.0398	0.0133	0.1106
Sunday									
(A) 351 Prince Edward Road West in Kowloon City	135	2	4	2	3	0.0148	0.0296	0.0148	0.0222
(B) 8 Kung Lok Road in Kwun Tong	266	13	7	4	22	0.0489	0.0263	0.0150	0.0827
(C) 88 Kung Lok Road in Kwun Tong	226	8	2	3	8	0.0354	0.0088	0.0133	0.0354
Adopted Pedestrian Generation Rate (maximum)						**0.0619**	**0.0593**	**0.0667**	**0.1106**

4.19 To conduct the worst case scenario, the maximum pedestrian generation rates identified from weekday and weekend surveys are adopted to calculate the pedestrians generated associated with the Proposed Elderly Home, and the calculated pedestrian generation is presented in Table 4.9.

TABLE 4.9 PROPOSED ELDERLY HOME PEDESTRIAN GENERATION

Proposed Elderly Home (with 141 beds)	Unit	AM Peak		PM Peak	
		IN	OUT	IN	OUT
Pedestrian Generation	ped/15-min	9	9	10	16

2031 Pedestrian Crossing Assessment

4.20 In order to produce the pedestrian forecast to year 2031, reference is made to the latest *"Territorial Population and Employment Data Matrix"* ("TPEDM") published by Planning Department, and the projected population and employment data is summarised in Table 4.10.

TABLE 4.10 TPEDM DATA FOR KOWLOON CITY

Year	**Population**	**Employment**	**Total**
2019	429,300	212,000	**641,300**
2026	451,100	237,900	**689,000**
2031	420,050	227,850	**647,900**
Annual Growth Rate			**0.09%**

4.21 Table 4.10 shows that the annual growth rate obtained from TPEDM is modest, i.e. 0.09%. To err on the high side, the traffic and pedestrian growth rate of **1%** per annum is adopted to produce the pedestrian forecast for year 2031.

4.22 The 2031 peak 15-minute pedestrian flows without and with the Proposed Elderly Home are shown in Figures 4.4 and 4.5 respectively, and the performance of signalised pedestrian crossings in 2031 is assessed as shown in Table 4.11.

TABLE 4.11 2031 PERFORMANCE OF SIGNALISED CROSSING

Ref.	**Crossing Width (m)**	**Peak Period**	**Green Time (sec)**		**Cycle Time (sec)**	**GTP (1)**	**PC (2) (ped/ 15-min)**	**Without Proposed Elderly Home**		**With Proposed Elderly Home**	
			Pedestrian	**Flashing**				**Flow (ped/ 15-min)**	**V/C (3)**	**Flow (ped/ 15-min)**	**V/C (3)**
C1	3.5	AM	10	7	120	0.14	235.5	84	**0.357**	91	**0.386**
		PM	11	7	115	0.16	260.2	81	**0.311**	88	**0.338**
C2	4.5	AM	60	7	120	0.56	1193.4	84	**0.070**	91	**0.076**
		PM	54	7	115	0.53	1133.8	81	**0.071**	88	**0.078**

Note: (1) GTP = (pedestrian green + flashing green time) ÷ cycle time
(2) PC = K × GTP × W, where K = 475 ped/m/15-min
(3) V/C = pedestrian flow ÷ PC

Index: C1 – Downstream Signalised Crossing at Prince Edward Road West (west of Junction Road)
C2 – Upstream Signalised Crossing at Prince Edward Road West (west of Junction Road)

4.23 The results in Table 4.11 indicate that the signalised pedestrian crossings would operate with capacities during the AM and PM peak periods in 2031.

2031 Level-of-Service Assessment

4.24 The LOS assessment is presented in Table 4.12.

TABLE 4.12 2031 LEVEL-OF-SERVICE ASSESSMENT

Ref.	**Footpath**	**Peak Period**	**2-way Peak Pedestrian Flows**					
			Without Proposed Elderly Home			**With Proposed Elderly Home**		
			Flow (ped/ 15-min)	**Rate (ped/ min/m)**	**LOS**	**Flow (ped/ 15-min)**	**Rate (ped/ min/m)**	**LOS**
F1	Southern footpath of Prince Edward Road West (west of C1)	AM	200	13.3	A	218	14.5	A
		PM	210	14.0	A	222	14.8	A
F2	Southern footpath of Prince Edward Road West (east of C1)	AM	191	8.5	A	217	9.6	A
		PM	206	9.2	A	223	9.9	A

4.25 The above results indicate that the analysed footpaths are expected to operate with LOS A during the peak hours in 2031. The results show that the footpaths analysed has sufficient capacity to accommodate the (i) expected pedestrian growth; and (ii) additional pedestrians generated by the Proposed Elderly Home.

Traffic Impact during Construction

4.26 During construction stage, construction vehicles would access the subject site via Prince Edward Road West. In view that the Proposed Elderly Home is small with total GFA of around 2,915m^2, the construction traffic is only several vehicles a day, say 1 veh/hr or 2.5 pcu/hr (one-way).

4.27 Given the low traffic generation during construction stage, it is anticipated that construction of the Proposed Elderly Home would not cause adverse traffic impact to the local road network from traffic engineering point of view.

5.0 CONCLUSION

5.1 The subject site is located at 349 Prince Edward Road West in Kowloon City. The Applicant intends to construct an elderly home with 141 beds at the subject site.

5.2 In view of the site constraints and to satisfy the operational needs, the following internal transport facilities are proposed for the Proposed Elderly Home:

- 1 lay-by of dimensions 9m(L) × 3.5m(W) × 3.6m(H) for shared use by taxi, private car, ambulance, LGV and mini coach; and
- 1 car parking space for persons with disabilities of dimensions 5m(L) × 3.5m(W) × 2.4m(H)

5.3 The traffic generation of the Proposed Elderly Home is estimated to be **2 and 1 pcu (2-way) less than** the Hypothetical Residential Building during the AM and PM peak hours respectively, or equivalent to **25% and 20% less traffic**. Compared to the Hypothetical Residential Development, the Proposed Elderly Home is a better-off scheme.

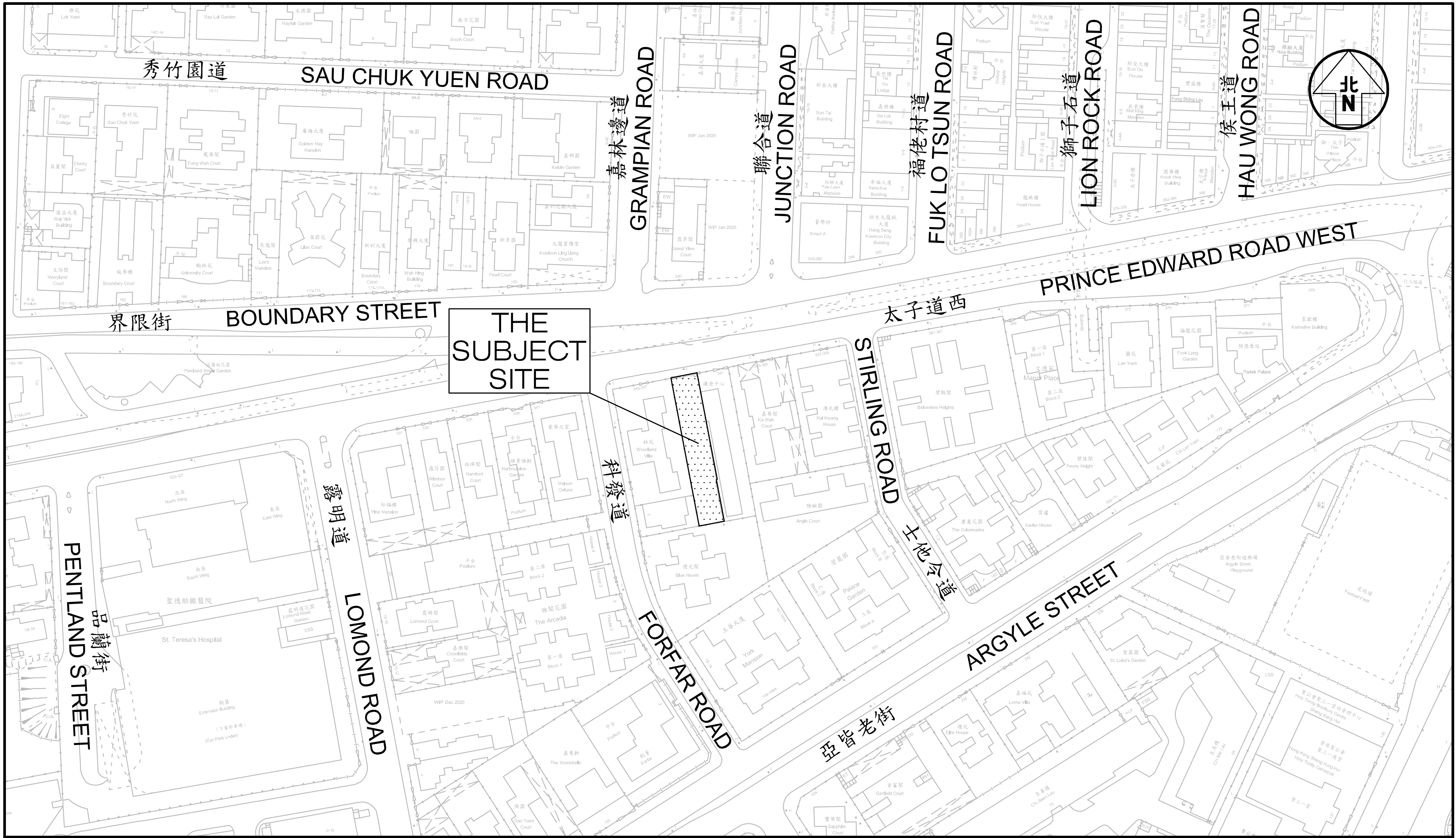
5.4 Manual classified counts were conducted at junctions, which are located in the vicinity in order to establish the existing traffic flows during the AM and PM peak hours. The 2031 design traffic flows are derived with reference to the latest BDTM and have taken into account the planned developments in the vicinity of the subject site.

5.5 The 2031 junction capacity analysis was undertaken for the cases without and with the Proposed Elderly Home. The junctions analysed have sufficient capacity to accommodate the expected traffic flows in 2031 and the traffic generated by the Proposed Elderly Home.

5.6 Pedestrian counts were conducted at the footpaths and pedestrian crossings in the vicinity of the subject site in order to estimate the future pedestrian flows during the AM and PM peak periods. The LOS and pedestrian crossing assessments demonstrate that the analysed footpaths and pedestrian crossings have sufficient capacity to accommodate the estimated pedestrian flows in 2031.

5.7 The TIA concluded that the Proposed Elderly Home will result in **no** adverse traffic impact to the surrounding road network. From traffic engineering grounds, the Proposed Elderly Home is acceptable.

Figures



Project Title

PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY)
IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY

J7350

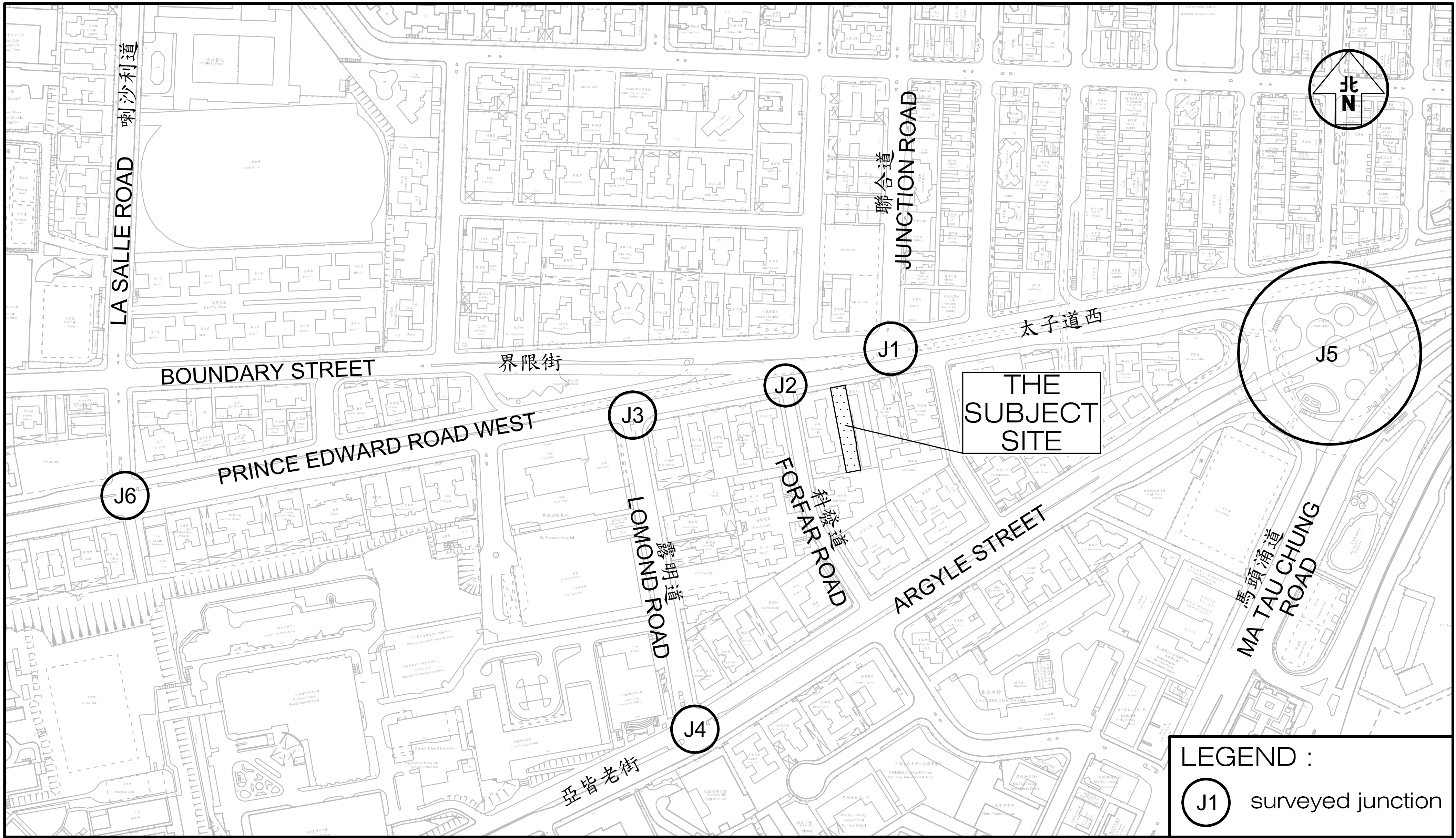
Figure Title

LOCATION OF THE SUBJECT SITE

Figure No.		Revision
1.1		R2A
Designed by	Drawn by	Checked by
T H C	C C L	K C
Scale in A4	Date	
1 : 4,000	18 NOV 2024	

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road,
Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOB\J7350-J7399\J7350\R2\Fig 1.1 RevR2A.dwg



Project Title

PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY)
IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY

J7350

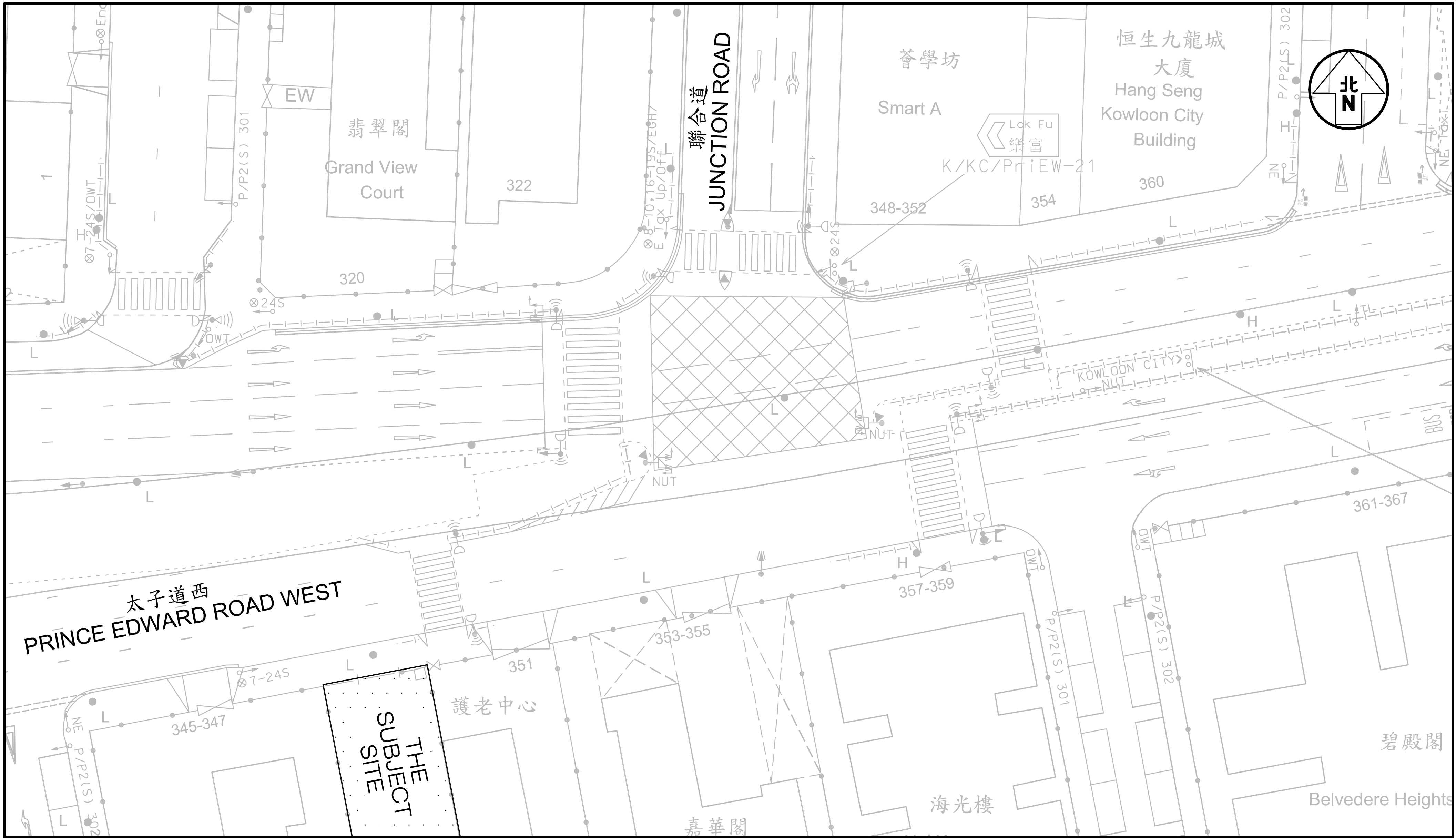
Figure Title

LOCATION OF THE SURVEYED JUNCTIONS

Figure No.		Revision
2.1		R2A
Designed by	Drawn by	Checked by
T H C	C C L	K C
Scale in A4	Date	
1 : 4,000	18 NOV 2024	

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road,
Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOB\J7350-J7399\J7350\R2\Fig 2.1 RevR2A.dwg



T:\JOB\J7350-J7399\J7350\R2\Fig 2.2 - 2.5 RevR2A.dwg

Project Title

PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY)
IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY

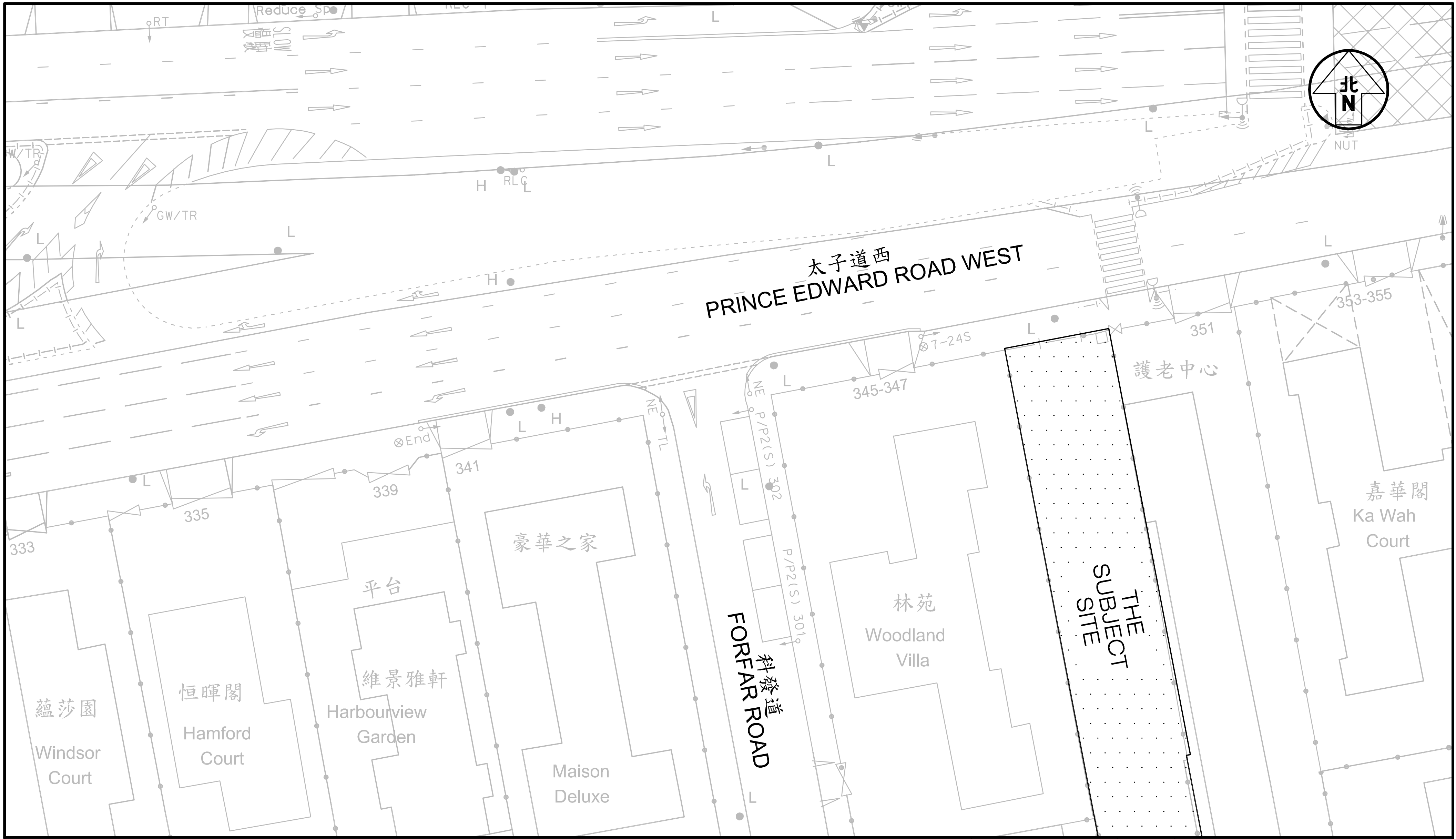
J7350

Figure Title

(J1) JUNCTION OF PRINCE EDWARD ROAD WEST / JUNCTION ROAD

Figure No.		Revision
2.2		R2A
Designed by	Drawn by	Checked by
T H C	C C L	K C
Scale in A4	Date	
1 : 500	18 NOV 2024	

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road,
Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk



Project Title

PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY)
IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY

J7350

Figure Title

(J2) JUNCTION OF PRINCE EDWARD ROAD WEST / FORFAR ROAD

Figure No. 2.3

Revision R2A

Designed by T H C

Drawn by C C L

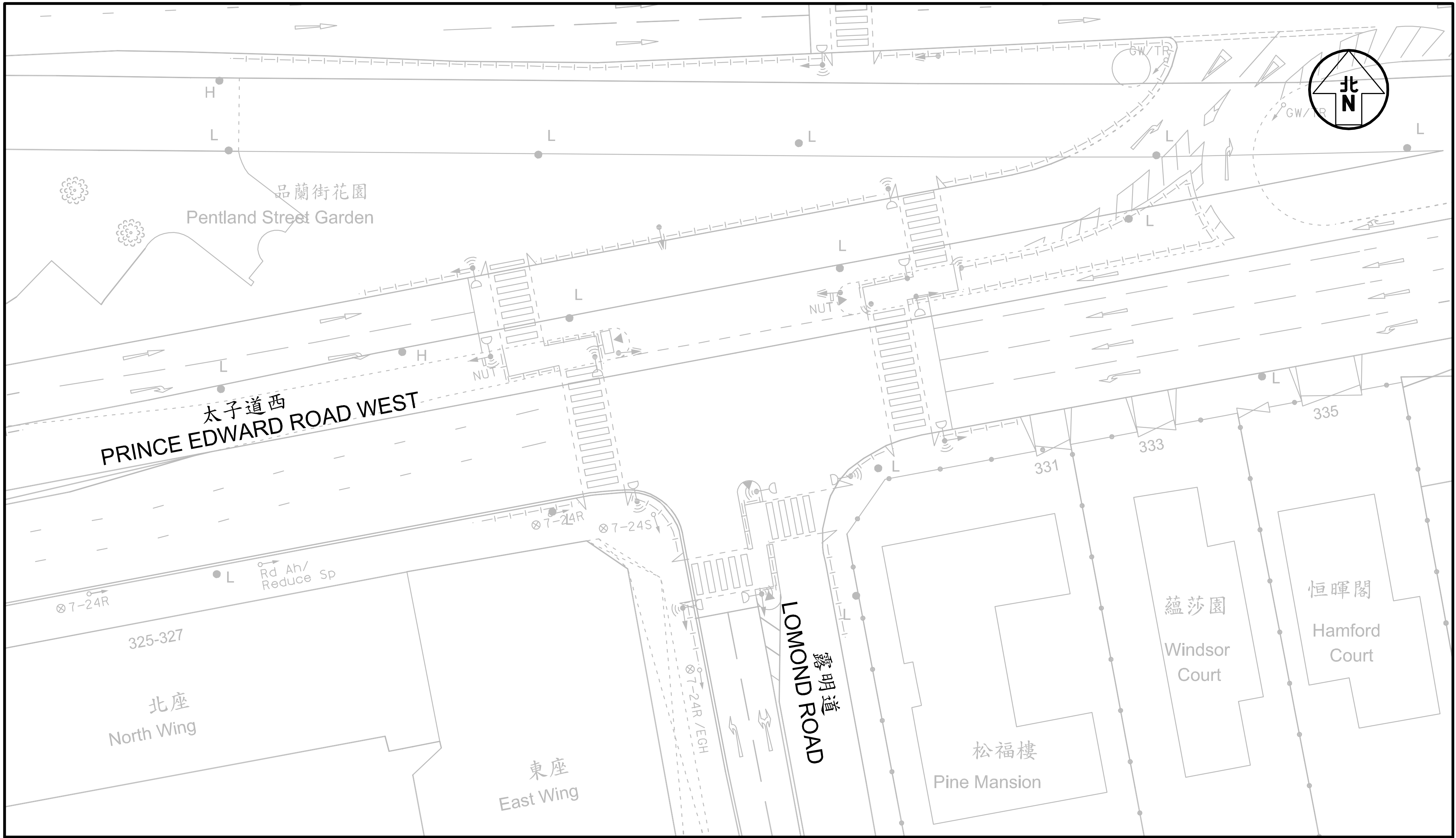
Checked by K C

Scale in A4 1 : 500

Date 18 NOV 2024

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road,
Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOB\J7350-J7399\J7350\R2\Fig 2.2 - 2.5 RevR2A.dwg



Project Title

PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY)
IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY

J7350

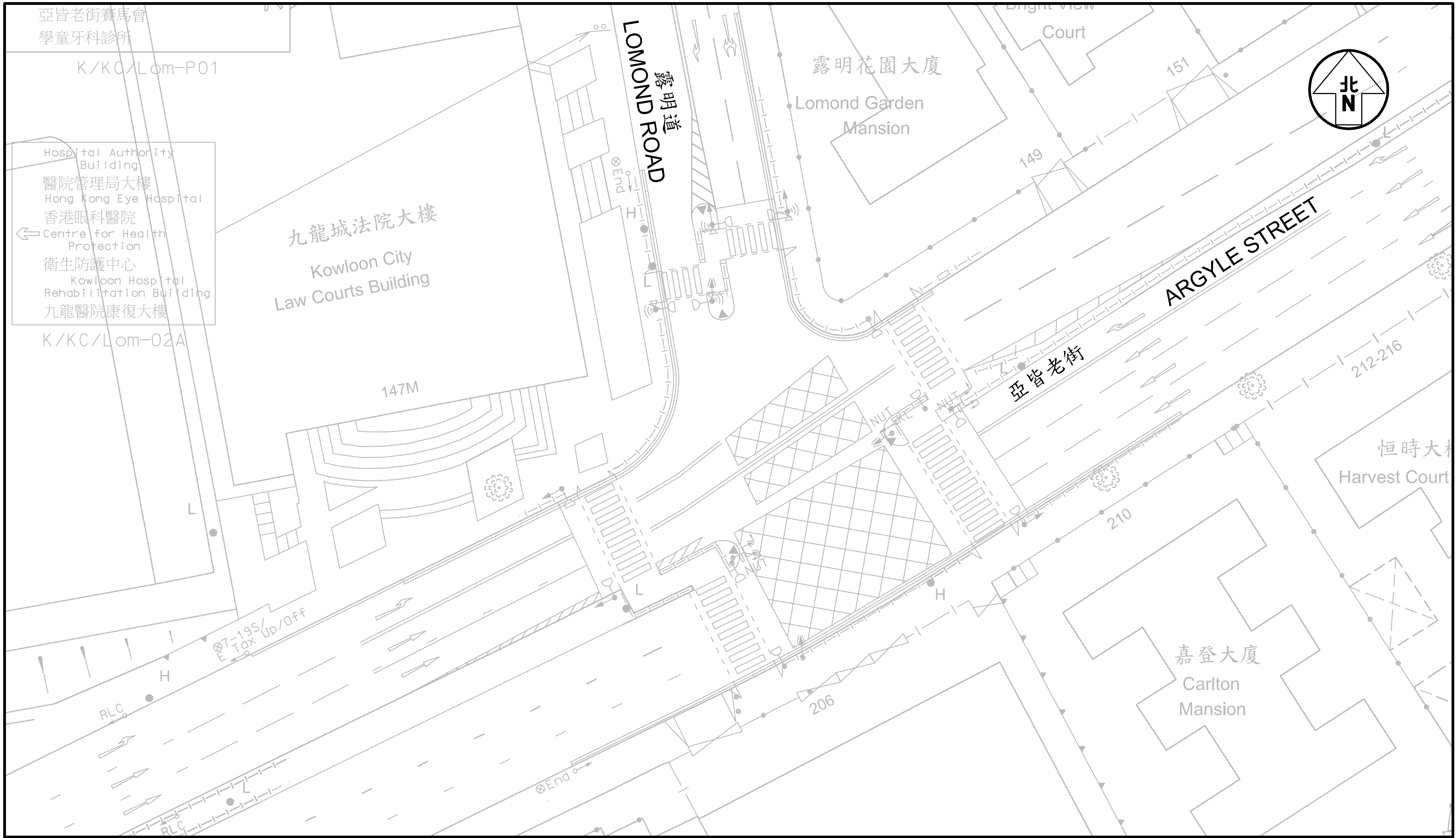
Figure Title

(J3) JUNCTION OF PRINCE EDWARD ROAD WEST / LOMOND ROAD

Figure No. 2.4		Revision R2A
Designed by T H C	Drawn by C C L	Checked by K C
Scale in A4 1 : 500	Date 18 NOV 2024	

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road,
Wan Chai, Hong Kong
Tel : (852) 2520 5990   Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOB\J7350-J7399\J7350\R2\Fig 2.2 - 2.5 RevR2A.dwg



Project Title

PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY)
IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY

J7350

Figure Title

(J4) JUNCTION OF ARGYLE STREET / LOMOND ROAD

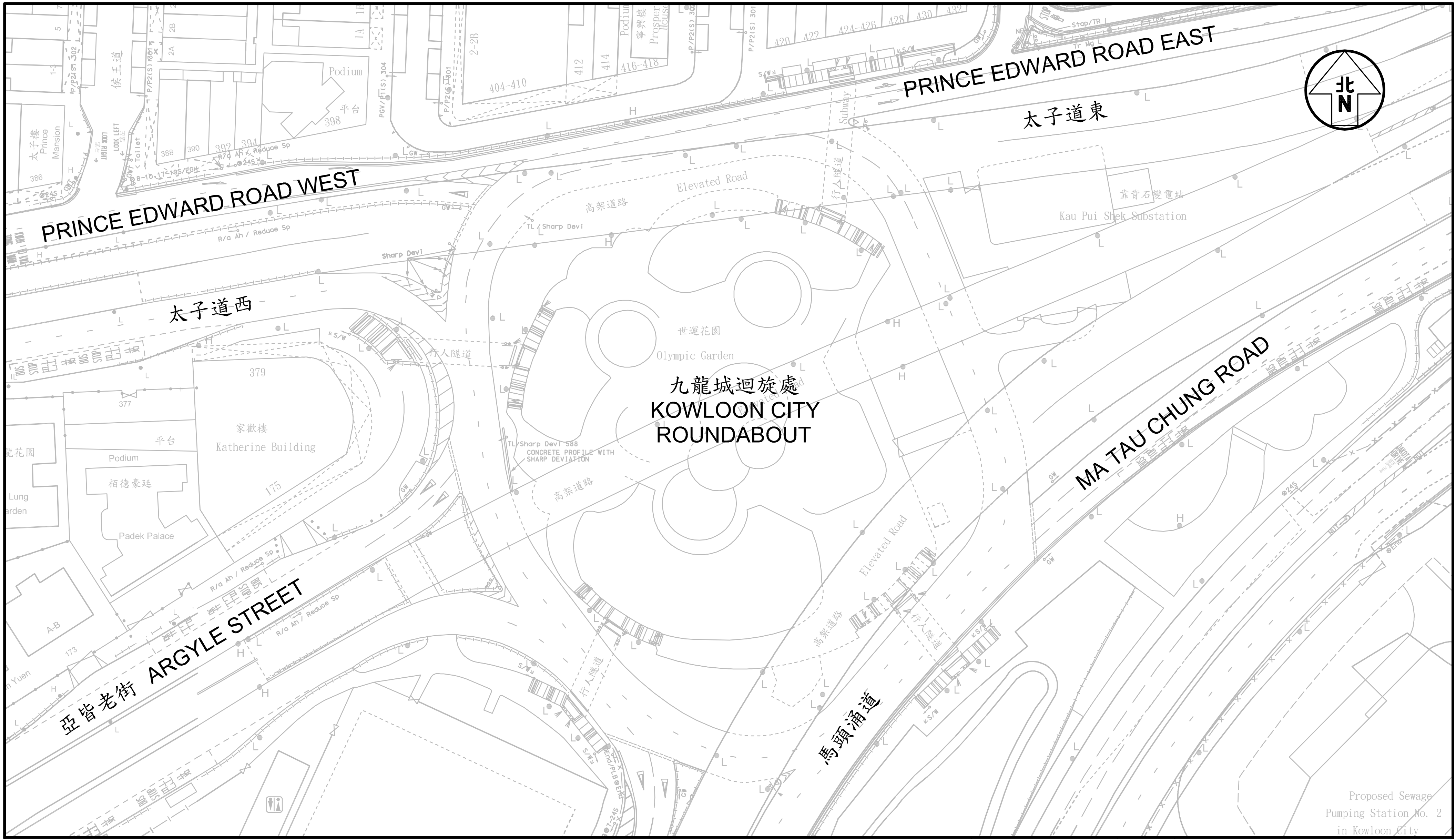
Figure No.	Revision
2.5	R2A

Designed by	Drawn by	Checked by
T H C	C C L	K C

Scale in A4	Date
1 : 500	18 NOV 2024

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road,
Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOB\J7350-J7399\J7350\R2\Fig 2.2 - 2.5 RevR2A.dwg



Project Title

PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY)
IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY

J7350

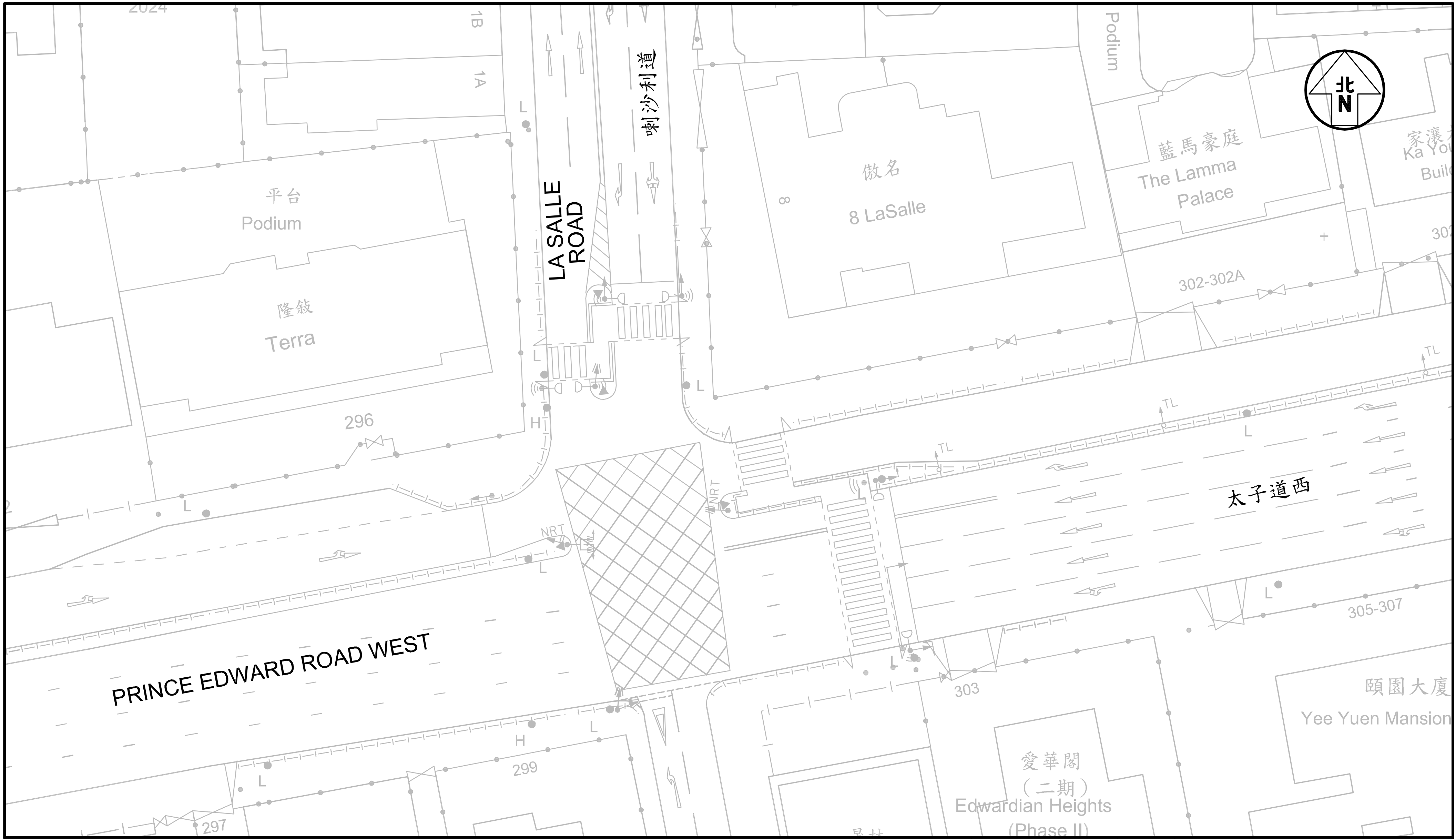
Figure Title

(J5) KOWLOON CITY ROUNDABOUT

Figure No.		Revision
2.6		R2A
Designed by	Drawn by	Checked by
T H C	C C L	K C
Scale in A4	Date	
1 : 1,000	18 NOV 2024	

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road,
Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOB\J7350-J7399\J7350\R2\Fig 2.6 - 2.7 RevR2A.dwg



Project Title

PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY)
IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY

J7350

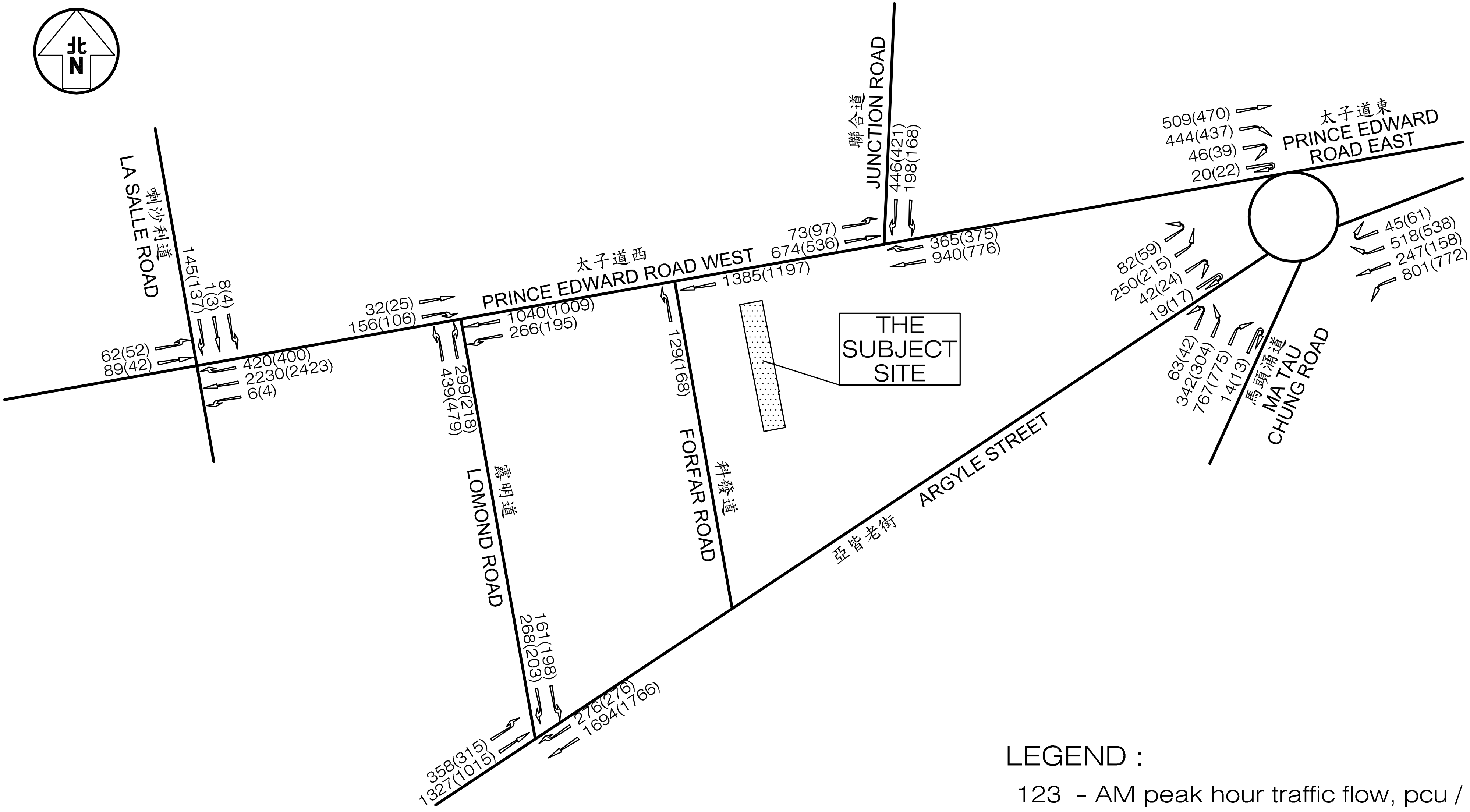
Figure Title

(J6) JUNCTION OF PRINCE EDWARD ROAD WEST / LA SALLE ROAD

Figure No.		Revision
2.7		R2A
Designed by	Drawn by	Checked by
T H C	C C L	K C
Scale in A4	Date	
1 : 500	18 NOV 2024	

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road,
Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOB\J7350-J7399\J7350\R2\Fig 2.6 - 2.7 RevR2A.dwg



LEGEND :

123 - AM peak hour traffic flow, pcu / hr

(456) - PM peak hour traffic flow, pcu / hr

Project Title

PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY)
IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY

J7350

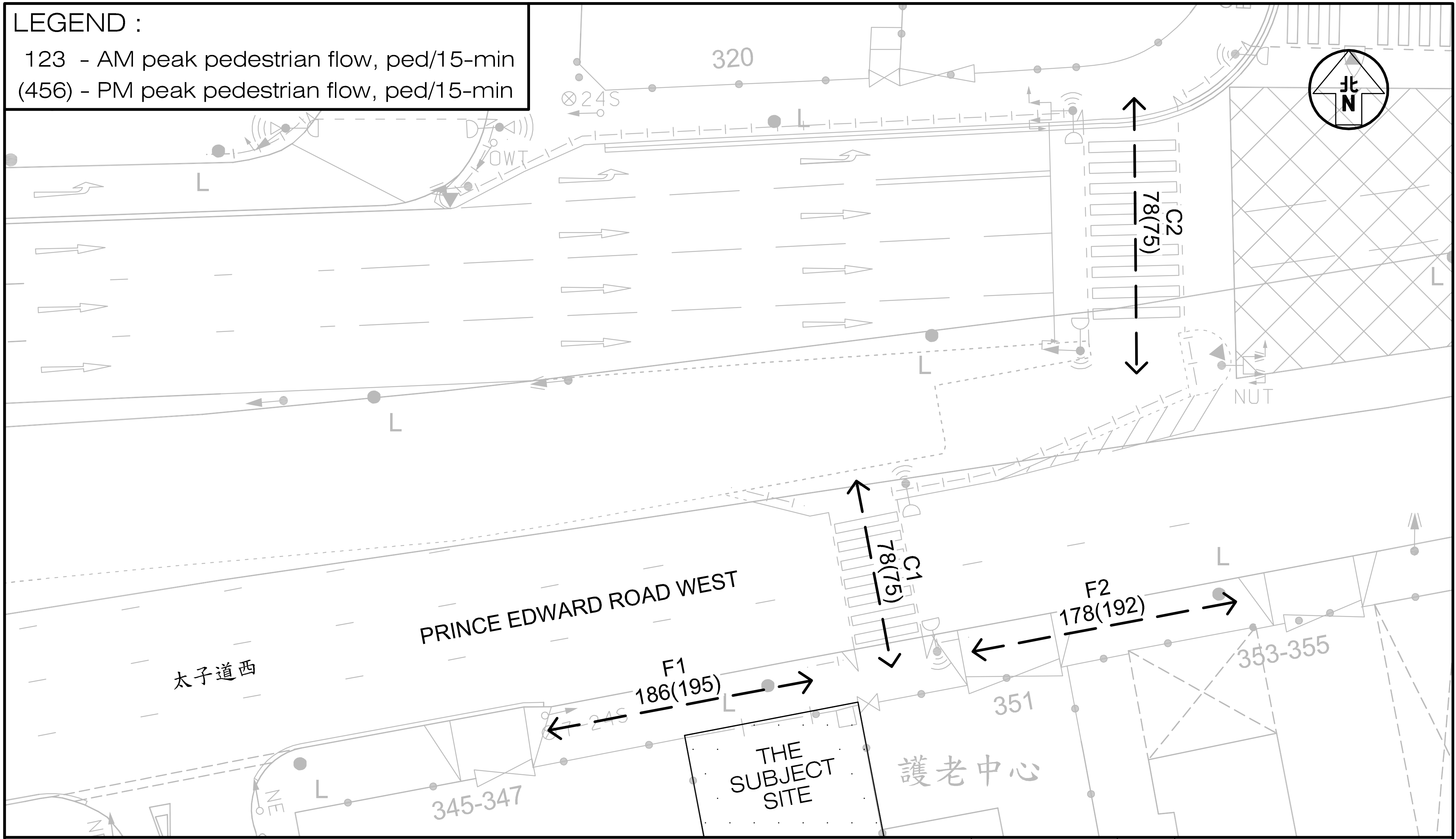
Figure Title

EXISTING PEAK HOUR TRAFFIC FLOWS

Figure No.		Revision
2.8		R2A
Designed by	Drawn by	Checked by
T H C	C C L	K C
Scale in A4	Date	
N.T.S.	18 NOV 2024	

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road,
Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOB\J7350-J7399\J7350\R2\Fig 2.8 RevR2A.dwg



Project Title

PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY)
IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY

J7350

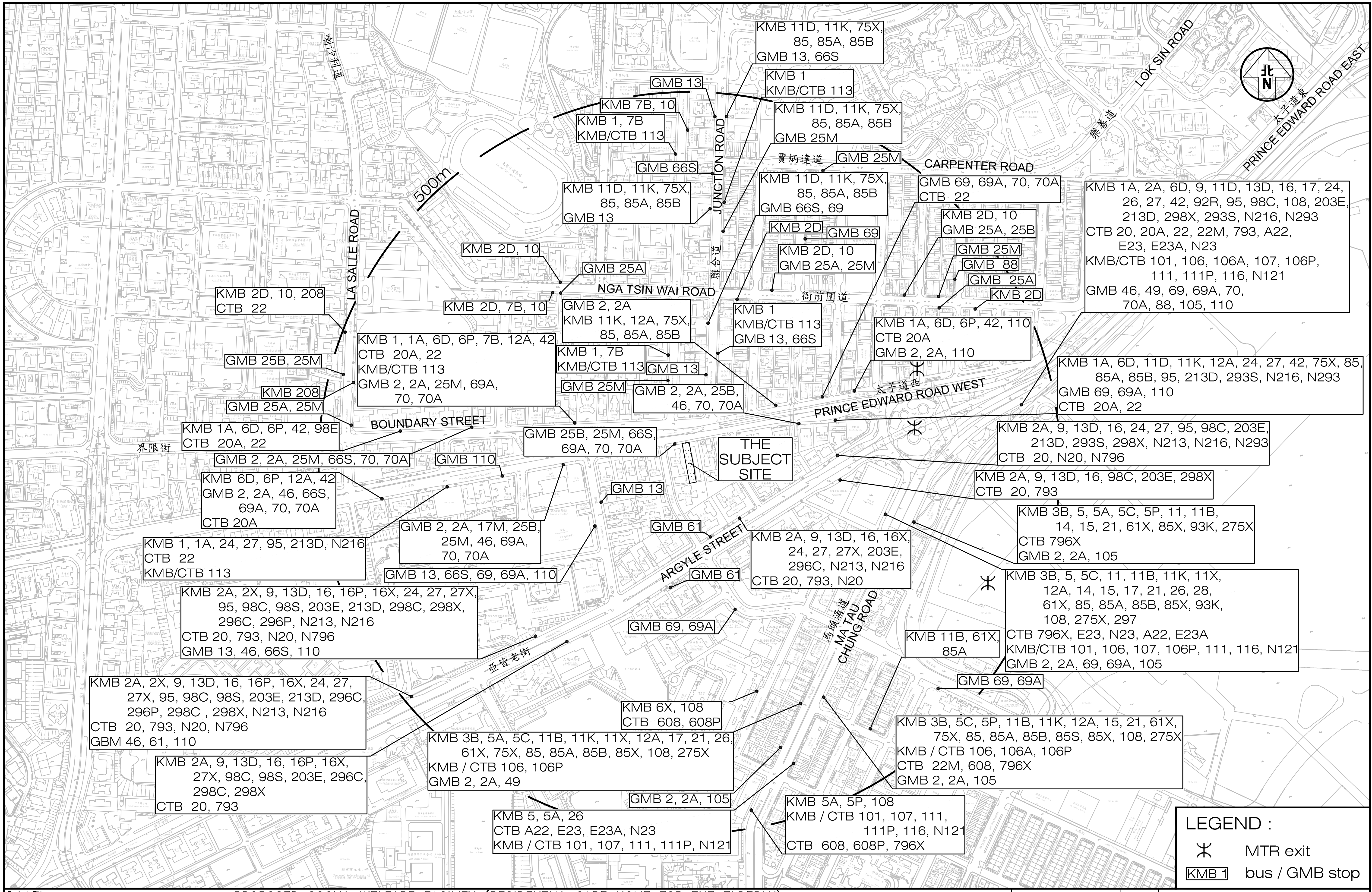
Figure Title

EXISTING PEAK 15-MINUTE PEDESTRIAN FLOWS

Figure No.			Revision
2.9			R2A
Designed by	Drawn by		Checked by
T H C	C C L		K C
Scale in A4	Date		
1 : 500	18 NOV 2024		

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road,
Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOB\J7350-J7399\J7350\R2\Fig 2.9 RevR2Achung.dwg



Project Title

PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY)
IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY

J7350

Figure Title

AVAILABILITY OF PUBLIC TRANSPORT SERVICES IN THE VICINITY OF THE SUBJECT SITE

Figure No.	Revision
2.10	R2A

Designed by	Drawn by	Checked by
T H C	C C L	K C

Scale in A3	Date
N.T.S.	18 NOV 2024

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road
Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOB\J7350-J7399\J7350\R2\Fig 2.10 RevR2A.dwg

Project Title

PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY) IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY

Figure Title

PROPOSED INTERNAL TRANSPORT LAYOUT

Job No.	Figure No.		Scale in A4
J7350	3.1		1 : 300

Designed by	Drawn by	Checked by	Revision	Date
T H C	C C L	K C	R2A	18 NOV 2024

CKM Asia Limited

Traffic and Transportation Planning Consultants

21st Floor, Methodist House, 36 Hennessy Road, Wan Chai, Hong Kong

Tel : (852) 2520 5990 Fax : (852) 2528 6343 Email : mail@ckmasia.com.hk

T:\JOB\J7350-J7399\J7350\R2\Fig 3.1 RevR2A.dwg

LEGEND :

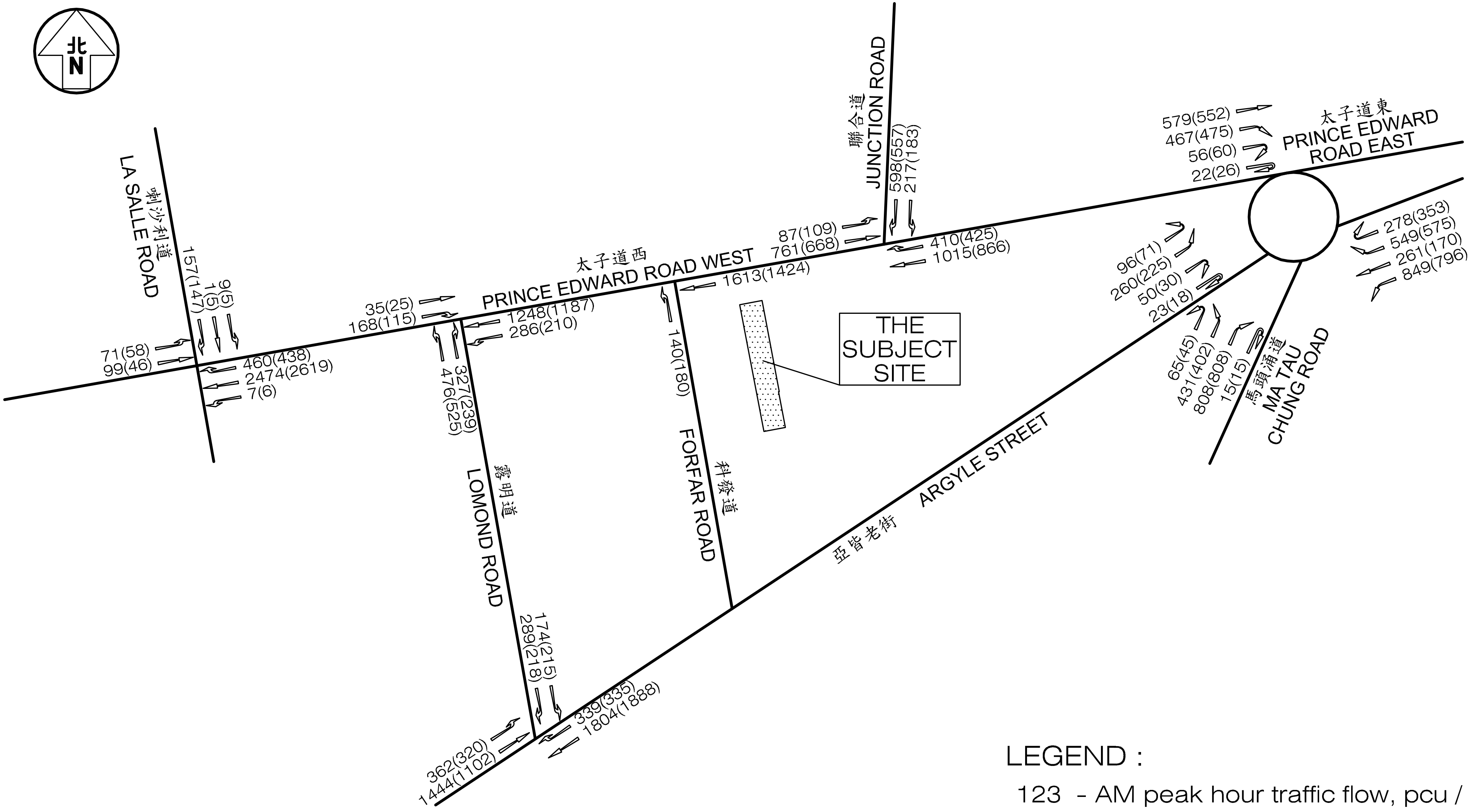
123 - AM peak hour traffic flow, pcu / hr

(456) - PM peak hour traffic flow, pcu / hr

Project Title	PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY) IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY J7350	Figure No. 4.1		Revision R2A
Figure Title	TRAFFIC GENERATED BY THE PROPOSED ELDERLY HOME	Designed by T H C	Drawn by C C L	Checked by K C
		Scale in A4 N.T.S.	Date 18 NOV 2024	

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road,
Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOB\J7350-J7399\J7350\R2\Fig 4.1 - 4.3 RevR2A.dwg



LEGEND :

123 - AM peak hour traffic flow, pcu / hr

(456) - PM peak hour traffic flow, pcu / hr

Project Title

PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY)
IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY

J7350

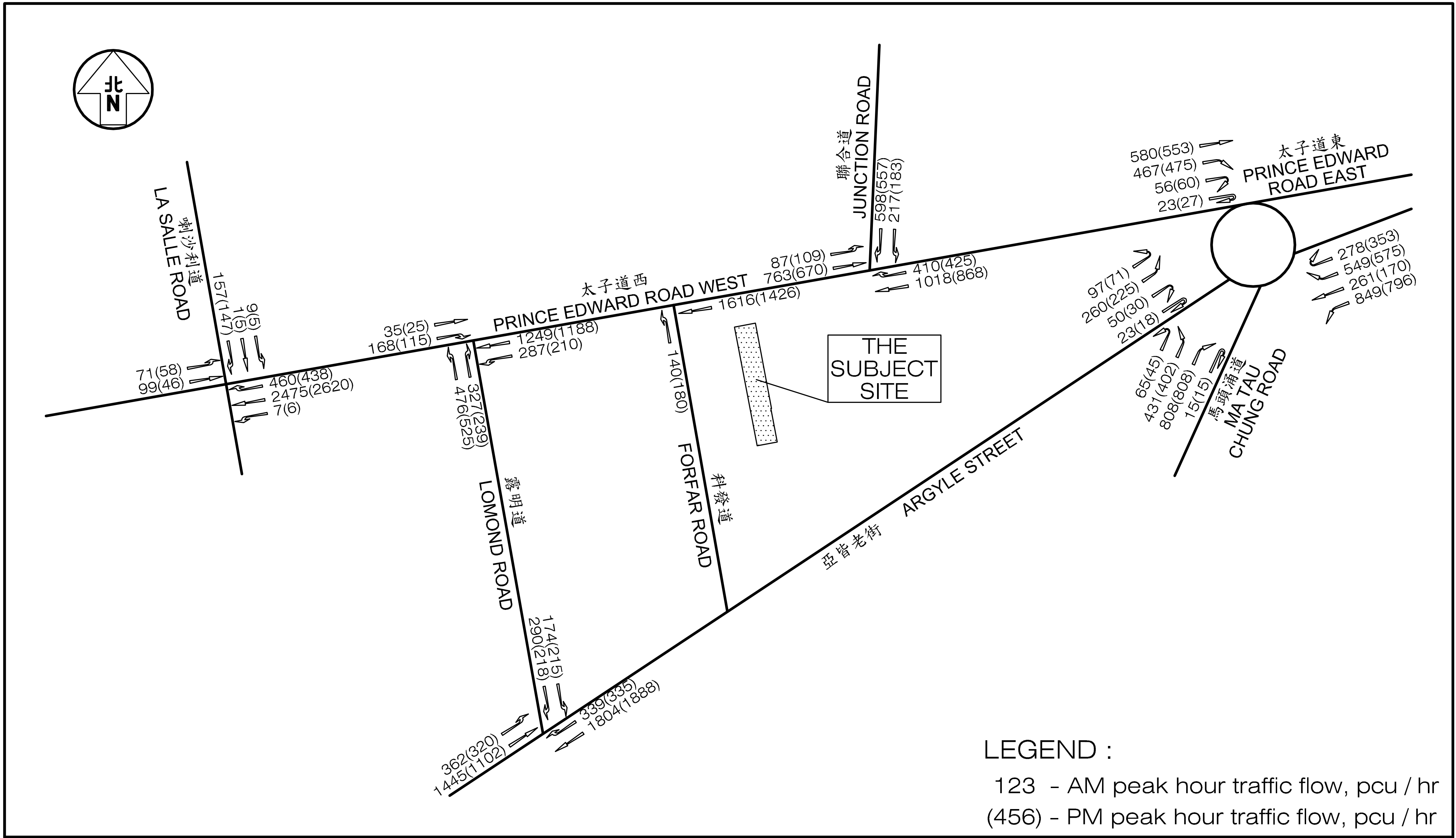
Figure Title

2031 PEAK HOUR TRAFFIC FLOWS WITHOUT THE PROPOSED ELDERLY HOME

Figure No.		Revision
4.2		R2A
Designed by	Drawn by	Checked by
T H C	C C L	K C
Scale in A4	Date	
N.T.S.	18 NOV 2024	

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road,
Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOB\J7350-J7399\J7350\R2\Fig 4.1 - 4.3 RevR2A.dwg



LEGEND :

123 - AM peak hour traffic flow, pcu / hr

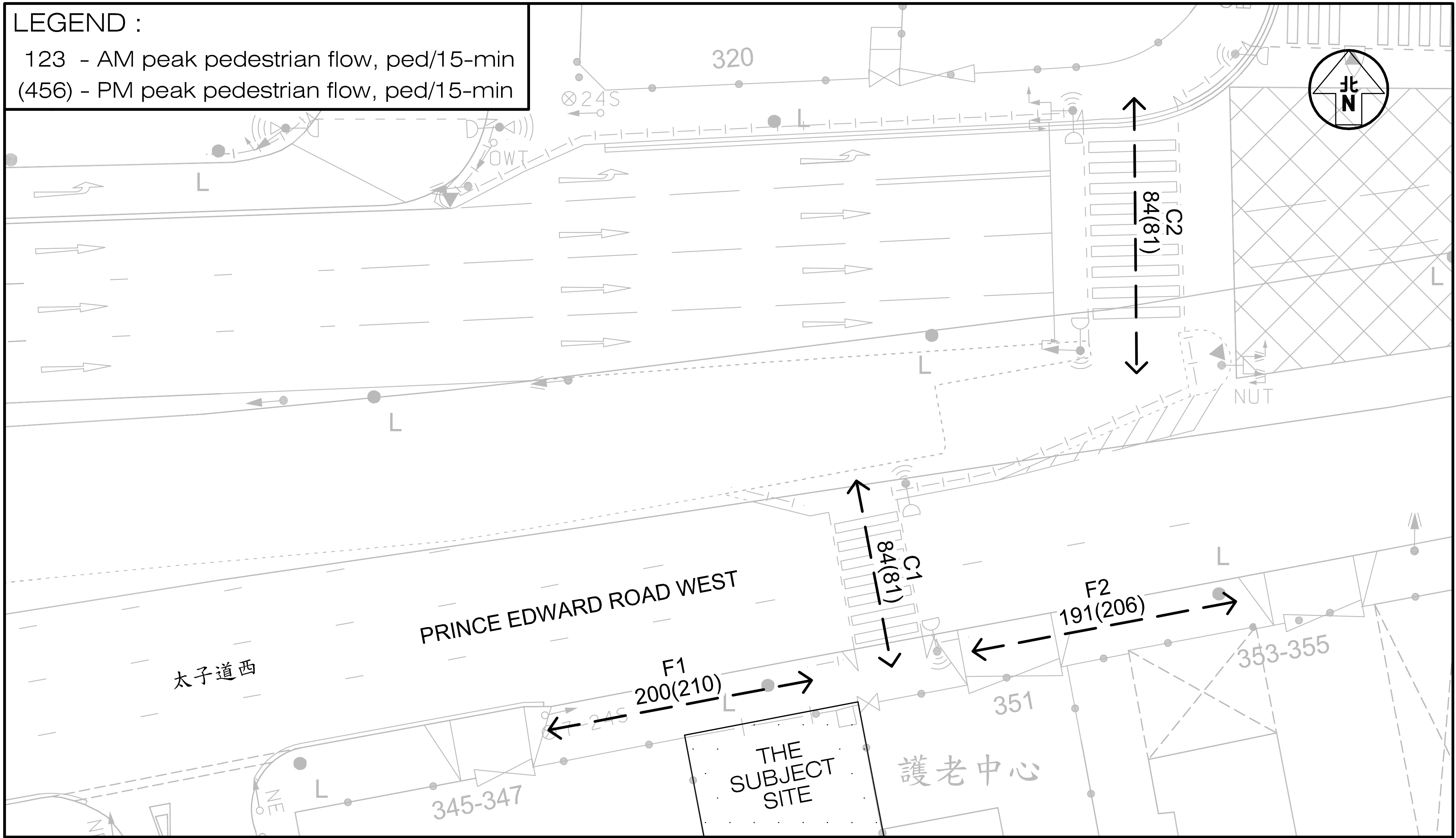
(456) - PM peak hour traffic flow, pcu / hr

Project Title	PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY) IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY J7350
Figure Title	2031 PEAK HOUR TRAFFIC FLOWS WITH THE PROPOSED ELDERLY HOME

Figure No.		Revision
4.3		R2A
Designed by	Drawn by	Checked by
T H C	C C L	K C
Scale in A4	Date	
N.T.S.	18 NOV 2024	

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road,
Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOB\J7350-J7399\J7350\R2\Fig 4.1 - 4.3 RevR2A.dwg



Project Title	PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY) IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY
	J7350
Figure Title	2031 PERK 15–MINUTE PEDESTRIAN FLOWS WITHOUT THE PROPOSED ELDERLY HOME

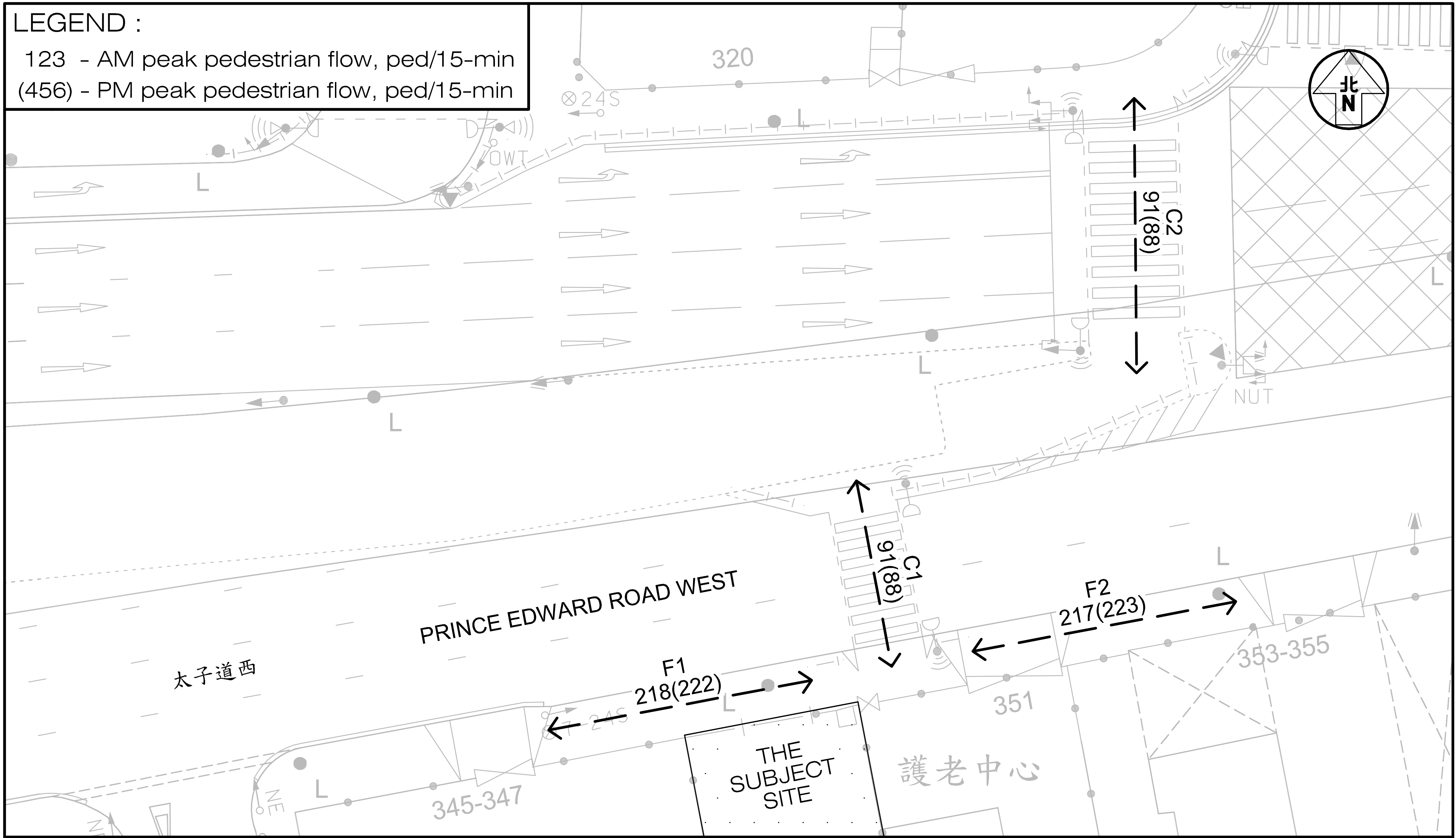
Figure No.	Revision
4.4	R2A

Designed by	Drawn by	Checked by
T H C	C C L	K C

Scale in A4	Date
1 : 500	18 NOV 2024

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road,
Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOB\J7350-J7399\J7350\R2\Fig 4.4 - 4.5 RevR2A.dwg



Project Title

PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY)
IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY

J7350

Figure Title

2031 PERK 15-MINUTE PEDESTRIAN FLOWS WITH THE PROPOSED ELDERLY HOME

Figure No.		Revision
4.5		R2A
Designed by	Drawn by	Checked by
T H C	C C L	K C
Scale in A4	Date	
1 : 500	18 NOV 2024	

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road,
Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOB\J7350-J7399\J7350\R2\Fig 4.4 - 4.5 RevR2A.dwg

Appendix A –
Junction Capacity Analysis

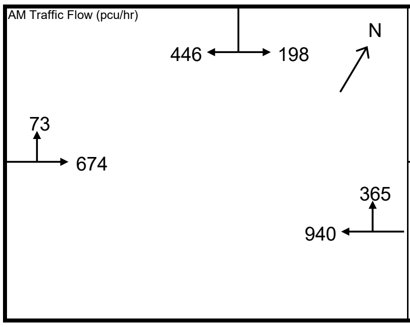
Signal Junction Analysis

Junction: Prince Edward Road West / Junction Road
Job Number: J7350
Scenario: Existing Condition
R2 / P.1-1
Design Year: 2024
Designed By:
Checked By:
Date: 18 November 2024

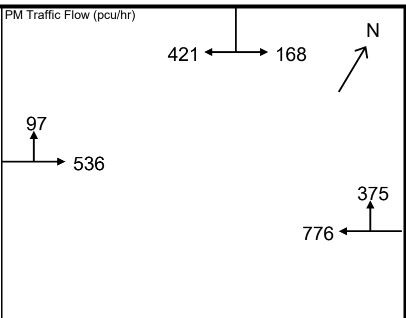
Approach		Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak					PM Peak				
							Turning %	Sat. Flow (pcu/hr)	Flow (pcu/hr)	y value	Critical y	Turning %	Sat. Flow (pcu/hr)	Flow (pcu/hr)	y value	Critical y
Prince Edward Road West EB	LT	A1	2	3.30	10.0		100	1691	73	0.043		100	1691	97	0.057	
	SA	A2	1,2	3.30				2085	225	0.108			2085	179	0.086	
	SA	A3	1,2	3.30				2085	225	0.108	0.108		2085	179	0.086	0.086
	SA	A4	1,2	3.30				2085	224	0.107			2085	178	0.085	
Prince Edward Road West WB	SA	B1	2,3	3.30				1945	453	0.233			1945	375	0.193	
	SA	B2	2,3	3.30				2085	487	0.233			2085	401	0.192	
	RT	B3	3	3.30	20.0		100	1940	365	0.188	0.188	100	1940	375	0.193	0.193
Junction Road SB	LT+RT	C1	4	3.20	10.0		100	1683	298	0.177	0.177	100	1683	272	0.162	0.162
	RT	C2	4	3.20	25.0		100	1958	346	0.177		100	1958	317	0.162	

pedestrian phase	P1	3, 4		min crossing time =	7	sec GM +	13	sec FGM =	20	sec
	P2	3		min crossing time =	5	sec GM +	9	sec FGM =	14	sec
	P3	1,4		min crossing time =	5	sec GM +	9	sec FGM =	14	sec
	P4	1		min crossing time =	7	sec GM +	5	sec FGM =	12	sec
	P5	1		min crossing time =	7	sec GM +	7	sec FGM =	14	sec

AM Traffic Flow (pcu/hr)



PM Traffic Flow (pcu/hr)

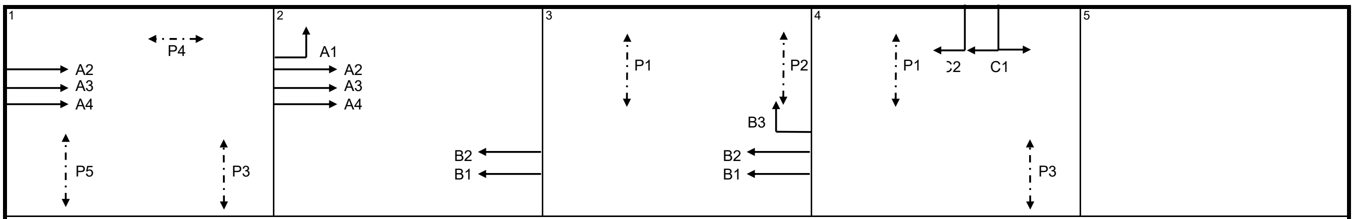


S=1940+100(W−3.25) S=2080+100(W−3.25)

S_M=S÷(1+1.5f/r) S_M=(S−230)÷(1+1.5f/r)

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.473	0.408	0.441	0.412
L (s)	12	39	12	39
C (s)	120	120	115	115
practical y	0.810	0.608	0.806	0.595
R.C. (%)	71%	49%	83%	44%

Note:



AM	G =	I/G = 5	G =	I/G =	G =	I/G = 5	G =	I/G = 5	G =	I/G =
	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =
PM	G =	I/G = 5	G =	I/G =	G =	I/G = 5	G =	I/G = 5	G =	I/G =
	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =

Signal Junction Analysis

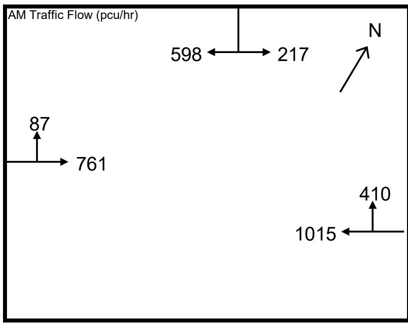
Junction: Prince Edward Road West / Junction Road   Job Number: J7350

Scenario: without Proposed Elderly Home   R2 / P.1-2

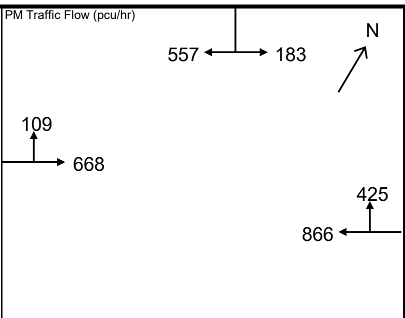
Design Year: 2031   Designed By: ____________   Checked By: ____________   Date: 18 November 2024

Approach	Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak Turning %	AM Peak Sat. Flow (pcu/hr)	AM Peak Flow (pcu/hr)	AM Peak y value	AM Peak Critical y	PM Peak Turning %	PM Peak Sat. Flow (pcu/hr)	PM Peak Flow (pcu/hr)	PM Peak y value	PM Peak Critical y
Prince Edward Road West EB LT	B1	2	3.30	10.0		100	1691	87	0.051		100	1691	109	0.065	
SA	B2	1,2	3.30				2085	254	0.122			2085	223	0.107	
SA	B3	1,2	3.30				2085	254	0.122	0.122		2085	223	0.107	0.107
SA	B4	1,2	3.30				2085	253	0.121			2085	222	0.107	
Prince Edward Road West WB SA	B1	2,3	3.30				1945	490	0.252			1945	418	0.215	
SA	B2	2,3	3.30				2085	525	0.252			2085	448	0.215	
RT	B3	3	3.30	20.0		100	1940	410	0.211	0.211	100	1940	425	0.219	0.219
Junction Road SB LT+RT	C1	4	3.20	10.0		100	1683	377	0.224	0.224	100	1683	342	0.203	0.203
RT	C2	4	3.20	25.0		100	1958	438	0.224		100	1958	398	0.203	
pedestrian phase	P1	3, 4		min crossing time =			7	sec GM +		13	sec FGM =		20	sec	
	P2	3		min crossing time =			5	sec GM +		9	sec FGM =		14	sec	
	P3	1,4		min crossing time =			5	sec GM +		9	sec FGM =		14	sec	
	P4	1		min crossing time =			7	sec GM +		5	sec FGM =		12	sec	
	P5	1		min crossing time =			7	sec GM +		7	sec FGM =		14	sec	

AM Traffic Flow (pcu/hr)



PM Traffic Flow (pcu/hr)

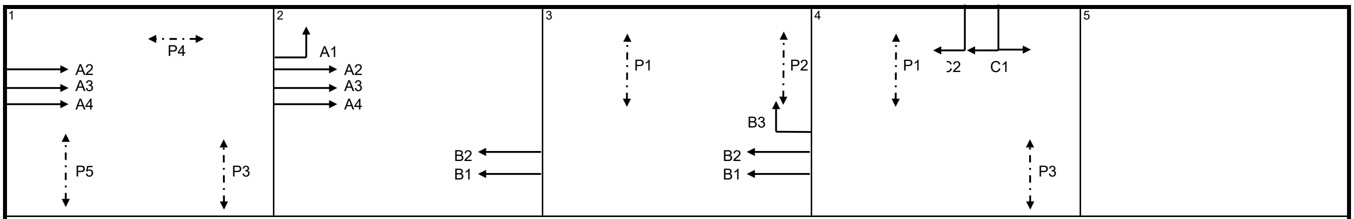


S=1940+100(W−3.25)   S=2080+100(W−3.25)

S_M=S÷(1+1.5f/r) S_M=(S−230)÷(1+1.5f/r)

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.557	0.486	0.529	0.487
L (s)	12	39	12	39
C (s)	120	120	115	115
practical y	0.810	0.608	0.806	0.595
R.C. (%)	45%	25%	52%	22%

Note:



AM	G =	I/G = 5	G =	I/G =	G =	I/G = 5	G =	I/G = 5	G =	I/G =
	G = 14	I/G = 2	G =	I/G = 5	G =	I/G = 5	G =	I/G = 16	G =	I/G =
PM	G =	I/G = 5	G =	I/G =	G =	I/G = 5	G =	I/G = 5	G =	I/G =
	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =

Signal Junction Analysis

Junction: Prince Edward Road West / Junction Road — Job Number: J7350

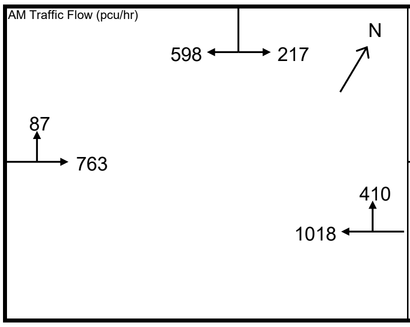
Scenario: with Proposed Elderly Home — R2 / P.1-3

Design Year: 2031 — Designed By: ____ — Checked By: ____ — Date: 18 November 2024

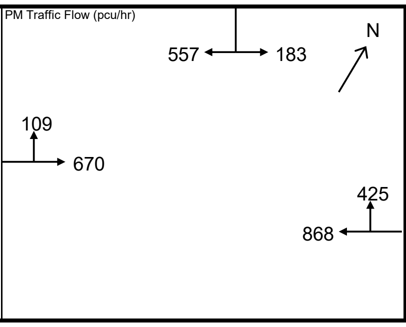
Approach		Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak Turning %	AM Peak Sat. Flow (pcu/hr)	AM Peak Flow (pcu/hr)	AM Peak y value	AM Peak Critical y	PM Peak Turning %	PM Peak Sat. Flow (pcu/hr)	PM Peak Flow (pcu/hr)	PM Peak y value	PM Peak Critical y
Prince Edward Road West EB	LT	B1	2	3.30	10.0		100	1691	87	0.051		100	1691	109	0.065	
	SA	B2	1,2	3.30				2085	254	0.122			2085	223	0.107	
	SA	B3	1,2	3.30				2085	254	0.122	0.122		2085	223	0.107	0.107
	SA	B4	1,2	3.30				2085	255	0.122			2085	224	0.108	
Prince Edward Road West WB	SA	B1	2,3	3.30				1945	491	0.252			1945	419	0.215	
	SA	B2	2,3	3.30				2085	527	0.253			2085	449	0.216	
	RT	B3	3	3.30	20.0		100	1940	410	0.211	0.211	100	1940	425	0.219	0.219
Junction Road SB	LT+RT	C1	4	3.20	10.0		100	1683	377	0.224	0.224	100	1683	342	0.203	0.203
	RT	C2	4	3.20	25.0		100	1958	438	0.224		100	1958	398	0.203	

pedestrian phase	P1	3, 4	min crossing time =	7	sec GM +	13	sec FGM =	20	sec
	P2	3	min crossing time =	5	sec GM +	9	sec FGM =	14	sec
	P3	1,4	min crossing time =	5	sec GM +	9	sec FGM =	14	sec
	P4	1	min crossing time =	7	sec GM +	5	sec FGM =	12	sec
	P5	1	min crossing time =	7	sec GM +	7	sec FGM =	14	sec

AM Traffic Flow (pcu/hr)



PM Traffic Flow (pcu/hr)

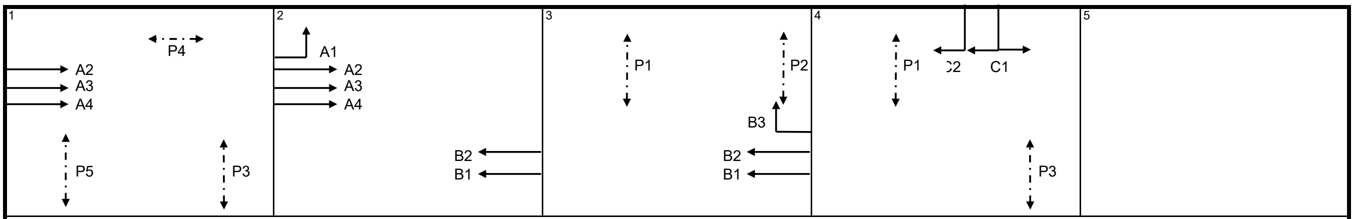


S=1940+100(W–3.25) S=2080+100(W–3.25)

S_M=S÷(1+1.5f/r) S_M=(S–230)÷(1+1.5f/r)

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.557	0.486	0.529	0.487
L (s)	12	39	12	39
C (s)	120	120	115	115
practical y	0.810	0.608	0.806	0.595
R.C. (%)	45%	25%	52%	22%

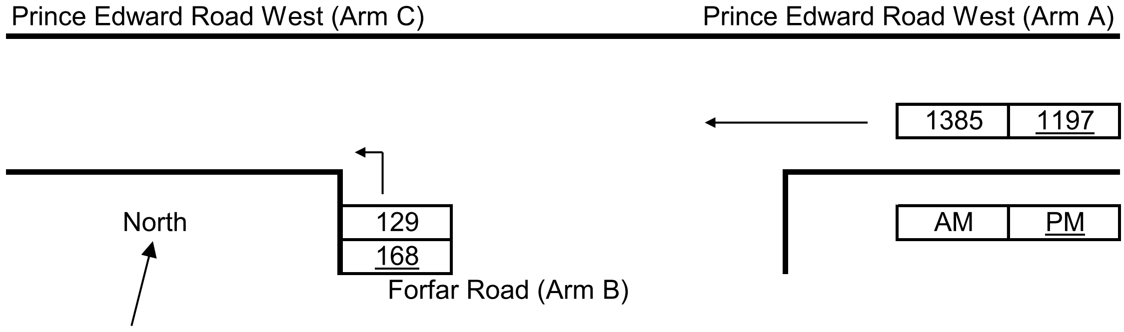
Note:



AM	G =	I/G = 5	G =	I/G =	G =	I/G = 5	G =	I/G = 5	G =	I/G =
	G = 14	I/G = 2	G =	I/G = 5	G =	I/G = 5	G =	I/G = 16	G =	I/G =
PM	G =	I/G = 5	G =	I/G =	G =	I/G = 5	G =	I/G = 5	G =	I/G =
	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =

Priority Junction Analysis

Junction:	Prince Edward Road West / Forfar Road				R2 / P.2-1
Design Year:	2024	Job Number:	J7350	Date:	18 November 2024
Scenario:	Existing Condition				



The predictive equations of capacity of movement are:

Q-BA = D[627 + 14W-CR - Y(0.364q-AC + 0.144q-AB + 0.229q-CA + 0.52q-CB)]

Q-BC = E[745 - Y(0.364q-AC + 0.144q-AB)]

Q-CB = F[745 - 0.364Y(q-AC + q-AB)]

The geometric parameters represented by D, E, F are:

D = [1 + 0.094(w-BA - 3.65)][1 + 0.0009(V-rBA - 120)][1 + 0.0006(V-lBA - 150)]

E = [1 + 0.094(w-BC - 3.65)][1 + 0.0009(V-rBC - 120)]

F = [1 + 0.094(w-CB - 3.65)][1 + 0.0009(V-rCB - 120)]

where Y = 1 - 0.0345W

q-AB, etc = the design flow of movement AB, etc

W = major road width

W-CR = central reserve width

w-BA, etc = lane width to vehicle

v-rBA, etc = visibility to the right for waiting vehicles in stream BA, etc

v-lBA, etc = visibility to the left for waiting vehicles in stream BA, etc

Geometry :	Input		Input		Input		Calculated	
	W	11.00	V-rBA		w-BA		D	0.5332
	W-CR	0.00	V-lBA		w-BC	4.00	E	1.0143
			V-rBC	100	w-CB		F	0.5860
			V-rCB				Y	0.6205

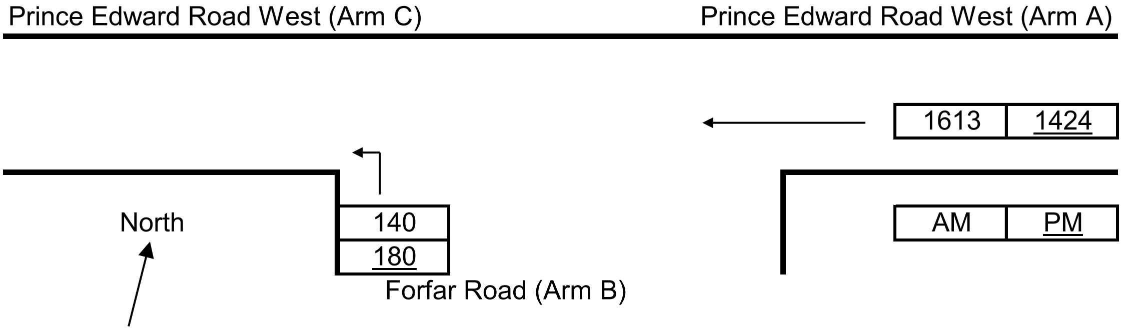
Analysis :

Traffic Flows, pcu/hr	AM	PM	Capacity, pcu/hr	AM	PM
q-CA	0	0	Q-BA	168	190
q-CB	0	0	Q-BC	438	481
q-AB	0	0	Q-CB	253	278
q-AC	1385	1197	Q-BAC	438	481
q-BA	0	0			
q-BC	129	168			
f	1.000	1.000			

Ratio-of-flow to Capacity	AM	PM
B-A	0.000	0.000
B-C	0.294	0.350
C-B	0.000	0.000
B-AC	0.294	0.350

Priority Junction Analysis

Junction: Prince Edward Road West / Forfar Road R2 / P.2-2
Design Year: 2031 Job Number: J7350 Date: 18 November 2024
Scenario: without Proposed Elderly Home



The predictive equations of capacity of movement are:
Q-BA = D[627 + 14W-CR - Y(0.364q-AC + 0.144q-AB + 0.229q-CA + 0.52q-CB)]
Q-BC = E[745 - Y(0.364q-AC + 0.144q-AB)]
Q-CB = F[745 - 0.364Y(q-AC + q-AB)]

The geometric parameters represented by D, E, F are:
D = [1 + 0.094(w-BA - 3.65)][1 + 0.0009(V-rBA - 120)][1 + 0.0006(V-lBA - 150)]
E = [1 + 0.094(w-BC - 3.65)][1 + 0.0009(V-rBC - 120)]
F = [1 + 0.094(w-CB - 3.65)][1 + 0.0009(V-rCB - 120)]

where Y = 1 - 0.0345W
q-AB, etc = the design flow of movement AB, etc
W = major road width
W-CR = central reserve width
w-BA, etc = lane width to vehicle
v-rBA, etc = visibility to the right for waiting vehicles in stream BA, etc
v-lBA, etc = visibility to the left for waiting vehicles in stream BA, etc

Geometry :	Input		Input		Input		Calculated	
	W	11.00	V-rBA		w-BA		D	0.5332
	W-CR	0.00	V-lBA		w-BC	4.00	E	1.0143
			V-rBC	100	w-CB		F	0.5860
			V-rCB				Y	0.6205

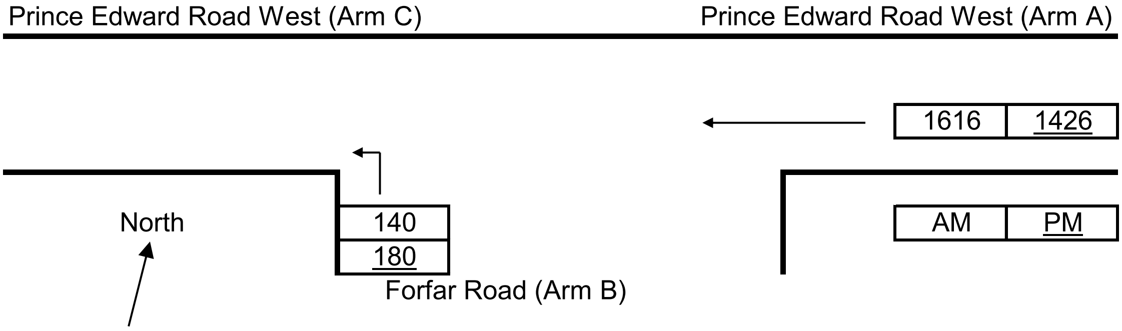
Analysis :

Traffic Flows, pcu/hr	AM	PM	Capacity, pcu/hr	AM	PM
q-CA	0	0	Q-BA	140	163
q-CB	0	0	Q-BC	386	430
q-AB	0	0	Q-CB	223	248
q-AC	1613	1424	Q-BAC	386	430
q-BA	0	0			
q-BC	140	180			
f	1.000	1.000			

Ratio-of-flow to Capacity	AM	PM
B-A	0.000	0.000
B-C	0.363	0.419
C-B	0.000	0.000
B-AC	0.363	0.419

Priority Junction Analysis

Junction:	Prince Edward Road West / Forfar Road				R2 / P.2-3
Design Year:	2031	Job Number:	J7350	Date:	18 November 2024
Scenario:	with Proposed Elderly Home				



The predictive equations of capacity of movement are:

Q-BA = D[627 + 14W-CR - Y(0.364q-AC + 0.144q-AB + 0.229q-CA + 0.52q-CB)]

Q-BC = E[745 - Y(0.364q-AC + 0.144q-AB)]

Q-CB = F[745 - 0.364Y(q-AC + q-AB)]

The geometric parameters represented by D, E, F are:

D = [1 + 0.094(w-BA - 3.65)][1 + 0.0009(V-rBA - 120)][1 + 0.0006(V-lBA - 150)]

E = [1 + 0.094(w-BC - 3.65)][1 + 0.0009(V-rBC - 120)]

F = [1 + 0.094(w-CB - 3.65)][1 + 0.0009(V-rCB - 120)]

where Y = 1 - 0.0345W

q-AB, etc = the design flow of movement AB, etc

W = major road width

W-CR = central reserve width

w-BA, etc = lane width to vehicle

v-rBA, etc = visibility to the right for waiting vehicles in stream BA, etc

v-lBA, etc = visibility to the left for waiting vehicles in stream BA, etc

Geometry :

Input		Input		Input		Calculated	
W	11.00	V-rBA		w-BA		D	0.5332
W-CR	0.00	V-lBA		w-BC	4.00	E	1.0143
		V-rBC	100	w-CB		F	0.5860
		V-rCB				Y	0.6205

Analysis :

Traffic Flows, pcu/hr	AM	PM	Capacity, pcu/hr	AM	PM
q-CA	0	0	Q-BA	140	163
q-CB	0	0	Q-BC	386	429
q-AB	0	0	Q-CB	223	248
q-AC	1616	1426	Q-BAC	386	429
q-BA	0	0			
q-BC	140	180			
f	1.000	1.000			

Ratio-of-flow to Capacity	AM	PM
B-A	0.000	0.000
B-C	0.364	0.419
C-B	0.000	0.000
B-AC	0.364	0.419

Signal Junction Analysis

Junction: Prince Edward Road West / Lomond Road — Job Number: J7350

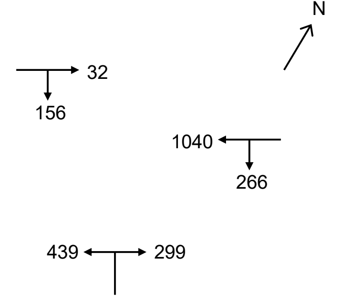
Scenario: Existing Condition — R2 / P.3-1

Design Year: 2024 — Designed By: ______ — Checked By: ______ — Date: 18 November 2024

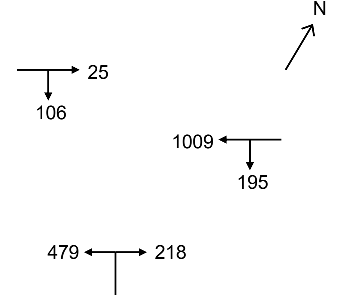
Approach		Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak Turning %	AM Peak Sat. Flow (pcu/hr)	AM Peak Flow (pcu/hr)	AM Peak y value	AM Peak Critical y	PM Peak Turning %	PM Peak Sat. Flow (pcu/hr)	PM Peak Flow (pcu/hr)	PM Peak y value	PM Peak Critical y
Lomond Road NB	LT	A1	2	3.10	10.0		100	1674	348	0.208	0.208	100	1674	329	0.197	0.197
	LT+RT	A2	2	3.10	15.0		100	1877	391	0.208		100	1877	368	0.196	
Prince Edward Road West EB	SA	B1	3	3.30				1945	32	0.016			1945	25	0.013	
	RT	B2	3	4.00	25.0		100	2033	156	0.077	0.077	100	2033	106	0.052	0.052
Prince Edward Road West WB	LT	C1	1	3.10	15.0		100	1750	266	0.152		100	1750	195	0.112	
	SA	C2	1	3.10				2065	347	0.168			2065	336	0.163	
	SA	C3	1	3.10				2065	347	0.168	0.168		2065	336	0.163	
	SA	C4	1	3.10				2065	346	0.167			2065	337	0.163	0.163

pedestrian phase	P1	1,3	min crossing time =	6	sec GM +	6	sec FGM =	12	sec
	P2	1,2	min crossing time =	5	sec GM +	7	sec FGM =	12	sec
	P3	1	min crossing time =	5	sec GM +	7	sec FGM =	12	sec
	P4	3	min crossing time =	8	sec GM +	11	sec FGM =	19	sec
	P5	2,3	min crossing time =	8	sec GM +	11	sec FGM =	19	sec
	P6	2	min crossing time =	5	sec GM +	7	sec FGM =	12	sec

AM Traffic Flow (pcu/hr)



PM Traffic Flow (pcu/hr)

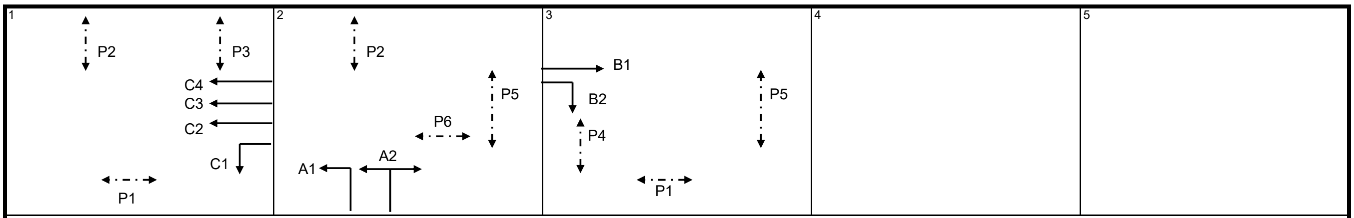


$S=1940+100(W-3.25)$ $S=2080+100(W-3.25)$

$S_M=S\div(1+1.5f/r)$ $S_M=(S-230)\div(1+1.5f/r)$

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.453	0.376	0.412	0.359
L (s)	16	33	16	33
C (s)	110	110	110	110
practical y	0.769	0.630	0.769	0.630
R.C. (%)	70%	68%	87%	75%

Note:



AM	G =	I/G = 6	G =	I/G = 5	G =	I/G = 8	G =	I/G =	G =	I/G =
	G =	I/G = 6	G =	I/G = 8	G = 19	I/G = 2	G =	I/G =	G =	I/G =
PM	G =	I/G = 6	G =	I/G = 5	G =	I/G = 8	G =	I/G =	G =	I/G =
	G =	I/G = 6	G =	I/G = 8	G = 19	I/G = 2	G =	I/G =	G =	I/G =

Signal Junction Analysis

Junction: Prince Edward Road West / Lomond Road Job Number: J7350

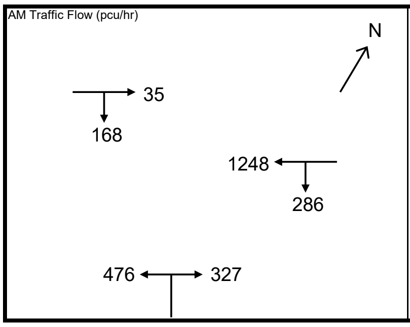
Scenario: without Proposed Elderly Home R2 / P.3-2

Design Year: 2031 Designed By: ____________ Checked By: ____________ Date: 18 November 2024

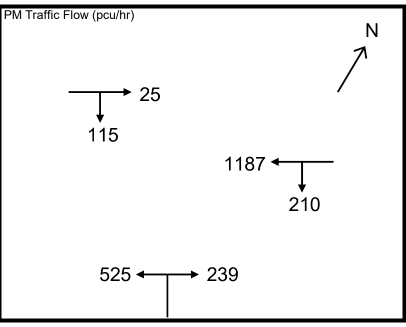
Approach	Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak Turning %	AM Peak Sat. Flow (pcu/hr)	AM Peak Flow (pcu/hr)	AM Peak y value	AM Peak Critical y	PM Peak Turning %	PM Peak Sat. Flow (pcu/hr)	PM Peak Flow (pcu/hr)	PM Peak y value	PM Peak Critical y
Lomond Road NB LT	A1	2	3.10	10.0		100	1674	378	0.226	0.226	100	1674	360	0.215	0.215
LT+RT	A2	2	3.10	15.0		100	1877	424	0.226		100	1877	404	0.215	
Prince Edward Road West EB SA	B1	3	3.30				1945	35	0.018			1945	25	0.013	
RT	B2	3	4.00	25.0		100	2033	168	0.083	0.083	100	2033	115	0.057	0.057
Prince Edward Road West WB LT	C1	1	3.10	15.0		100	1750	286	0.163		100	1750	210	0.120	
SA	C2	1	3.10				2065	416	0.201			2065	396	0.192	
SA	C3	1	3.10				2065	416	0.201			2065	396	0.192	0.192
SA	C4	1	3.10				2065	416	0.202	0.202		2065	395	0.191	

pedestrian phase	P1	1,3		min crossing time =	6	sec GM +	6	sec FGM =	12	sec
	P2	1,2		min crossing time =	5	sec GM +	7	sec FGM =	12	sec
	P3	1		min crossing time =	5	sec GM +	7	sec FGM =	12	sec
	P4	3		min crossing time =	8	sec GM +	11	sec FGM =	19	sec
	P5	2,3		min crossing time =	8	sec GM +	11	sec FGM =	19	sec
	P6	2		min crossing time =	5	sec GM +	7	sec FGM =	12	sec

AM Traffic Flow (pcu/hr)



PM Traffic Flow (pcu/hr)

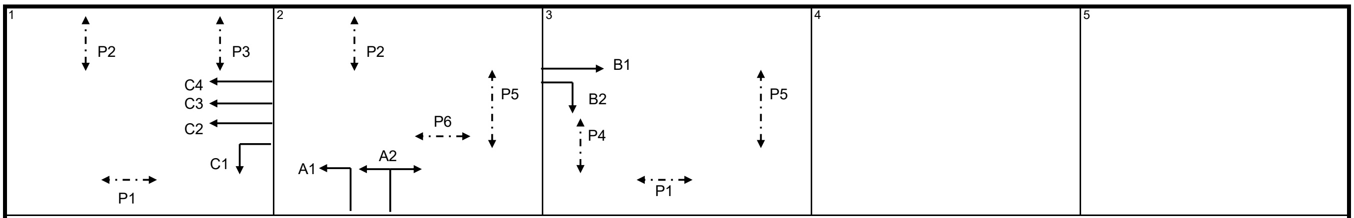


$S=1940+100(W-3.25)$ $S=2080+100(W-3.25)$

$S_M=S\div(1+1.5f/r)$ $S_M=(S-230)\div(1+1.5f/r)$

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.510	0.427	0.463	0.407
L (s)	16	33	16	33
C (s)	110	110	110	110
practical y	0.769	0.630	0.769	0.630
R.C. (%)	51%	47%	66%	55%

Note:



AM	G =		I/G =	6	G =		I/G =	5	G =		I/G =	8	G =		I/G =		G =		I/G =	
	G =		I/G =	6	G =		I/G =	8	G =	19	I/G =	2	G =		I/G =		G =		I/G =	
PM	G =		I/G =	6	G =		I/G =	5	G =		I/G =	8	G =		I/G =		G =		I/G =	
	G =		I/G =	6	G =		I/G =	8	G =	19	I/G =	2	G =		I/G =		G =		I/G =	

Signal Junction Analysis

Junction: Prince Edward Road West / Lomond Road — Job Number: J7350

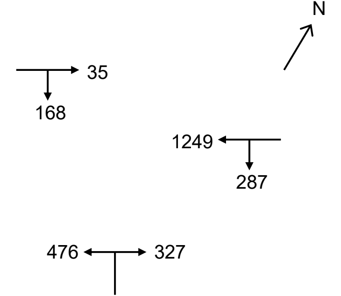
Scenario: with Proposed Elderly Home — R2 / P.3-3

Design Year: 2031 — Designed By: ____________ — Checked By: ____________ — Date: 18 November 2024

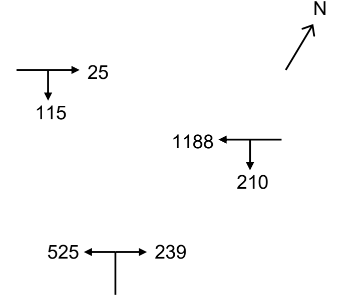
Approach	Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak Turning %	AM Peak Sat. Flow (pcu/hr)	AM Peak Flow (pcu/hr)	AM Peak y value	AM Peak Critical y	PM Peak Turning %	PM Peak Sat. Flow (pcu/hr)	PM Peak Flow (pcu/hr)	PM Peak y value	PM Peak Critical y
Lomond Road NB LT	A1	2	3.10	10.0		100	1674	378	0.226	0.226	100	1674	360	0.215	0.215
LT+RT	A2	2	3.10	15.0		100	1877	424	0.226		100	1877	404	0.215	
Prince Edward Road West EB SA	B1	3	3.30				1945	35	0.018			1945	25	0.013	
RT	B2	3	4.00	25.0		100	2033	168	0.083	0.083	100	2033	115	0.057	0.057
Prince Edward Road West WB LT	C1	1	3.10	15.0		100	1750	287	0.164		100	1750	210	0.120	
SA	C2	1	3.10				2065	416	0.201			2065	396	0.192	
SA	C3	1	3.10				2065	416	0.201			2065	396	0.192	0.192
SA	C4	1	3.10				2065	417	0.202	0.202		2065	396	0.192	

pedestrian phase	P1	1,3	min crossing time =	6	sec GM +	6	sec FGM =	12	sec
	P2	1,2	min crossing time =	5	sec GM +	7	sec FGM =	12	sec
	P3	1	min crossing time =	5	sec GM +	7	sec FGM =	12	sec
	P4	3	min crossing time =	8	sec GM +	11	sec FGM =	19	sec
	P5	2,3	min crossing time =	8	sec GM +	11	sec FGM =	19	sec
	P6	2	min crossing time =	5	sec GM +	7	sec FGM =	12	sec

AM Traffic Flow (pcu/hr)



PM Traffic Flow (pcu/hr)

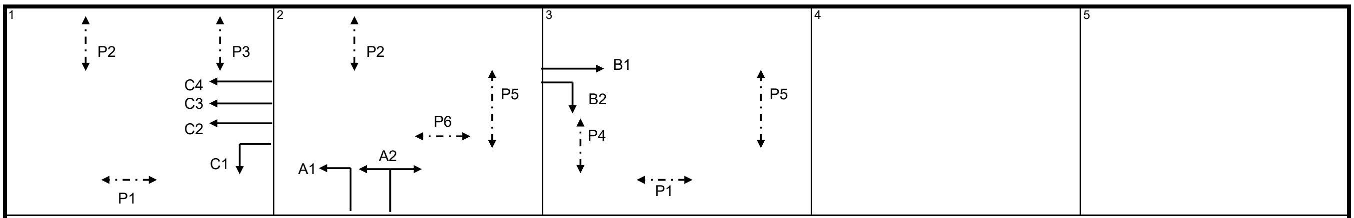


$S=1940+100(W-3.25)$ $S=2080+100(W-3.25)$

$S_M=S\div(1+1.5f/r)$ $S_M=(S-230)\div(1+1.5f/r)$

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.511	0.428	0.463	0.407
L (s)	16	33	16	33
C (s)	110	110	110	110
practical y	0.769	0.630	0.769	0.630
R.C. (%)	51%	47%	66%	55%

Note:



AM	G =	I/G = 6	G =	I/G = 5	G =	I/G = 8	G =	I/G =	G =	I/G =
	G =	I/G = 6	G =	I/G = 8	G = 19	I/G = 2	G =	I/G =	G =	I/G =
PM	G =	I/G = 6	G =	I/G = 5	G =	I/G = 8	G =	I/G =	G =	I/G =
	G =	I/G = 6	G =	I/G = 8	G = 19	I/G = 2	G =	I/G =	G =	I/G =

Signal Junction Analysis

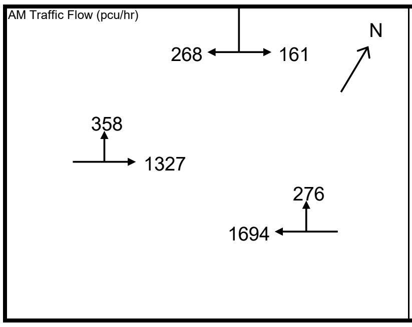
Junction: Argyle Street / Lomond Road Job Number: J7350

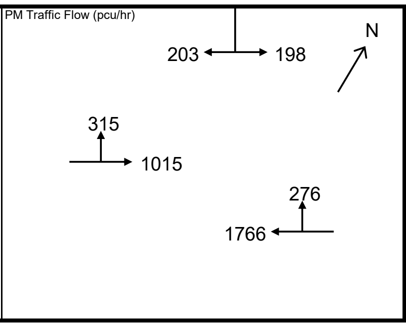
Scenario: Existing Condition R2 / P.4-1

Design Year: 2024 Designed By: Checked By: Date: 18 November 2024

Approach		Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak Turning %	AM Peak Sat. Flow (pcu/hr)	AM Peak Flow (pcu/hr)	AM Peak y value	AM Peak Critical y	PM Peak Turning %	PM Peak Sat. Flow (pcu/hr)	PM Peak Flow (pcu/hr)	PM Peak y value	PM Peak Critical y
Argyle Street EB	LT	A1	1	3.30	15.0		100	1768	358	0.202		100	1768	315	0.178	
	SA	A2	1	3.50				2105	663	0.315			2105	508	0.241	
	SA	A3	1	3.50				2105	664	0.315	0.315		2105	507	0.241	
Lomond Road SB	LT+RT	B1	3	3.00	10.0		100	1665	202	0.121		100	1665	189	0.113	
	RT	B2	3	3.00	15.0		100	1868	227	0.122	0.122	100	1868	212	0.113	0.113
Argyle Street WB	SA	C1	1	3.30				1945	539	0.277			1945	562	0.289	0.289
	SA	C2	1	3.30				2085	577	0.277			2085	602	0.289	
	SA	C3	1	3.30				2085	578	0.277			2085	602	0.289	
	RT	C4	2	3.30	15.0		100	1895	276	0.146	0.146	100	1895	276	0.146	0.146

pedestrian phase	P1	2,3	min crossing time =	5	sec GM +	9	sec FGM =	14	sec	
	P2	2	min crossing time =	5	sec GM +	9	sec FGM =	14	sec	
	P3	3	min crossing time =	8	sec GM +	11	sec FGM =	19	sec	
	P4	2	min crossing time =	8	sec GM +	9	sec FGM =	17	sec	
	P5	1,2	min crossing time =	5	sec GM +	7	sec FGM =	12	sec	
	P6	3	min crossing time =	5	sec GM +	5	sec FGM =	10	sec	



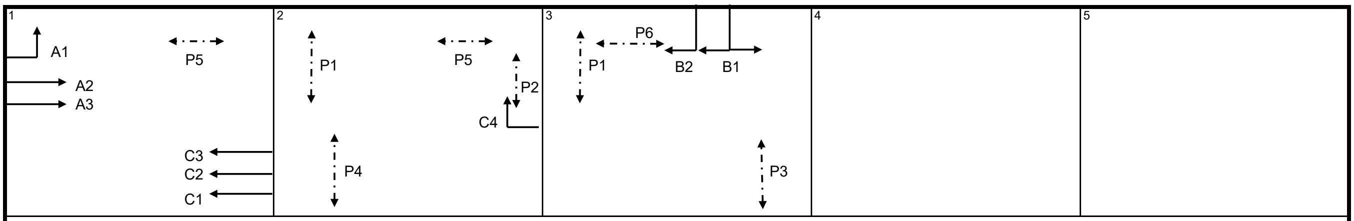


S=1940+100(W–3.25) S=2080+100(W–3.25)

S_M=S÷(1+1.5f/r) S_M=(S–230)÷(1+1.5f/r)

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.583		0.548	
L (s)	14		14	
C (s)	130		130	
practical y	0.803		0.803	
R.C. (%)	38%		47%	

Note:



AM	G =	I/G = 5	G =	I/G = 5	G =	I/G = 7	G =	I/G =	G =	I/G =
	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =
PM	G =	I/G = 5	G =	I/G = 5	G =	I/G = 7	G =	I/G =	G =	I/G =
	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =

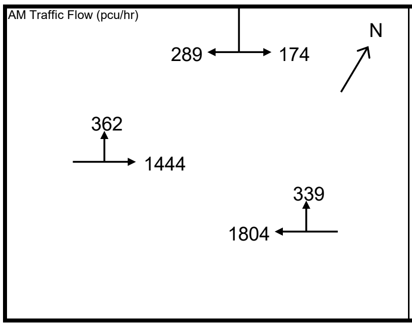
Signal Junction Analysis

Junction: Argyle Street / Lomond Road
Job Number: J7350
Scenario: without Proposed Elderly Home
R2 / P.4-2
Design Year: 2031
Designed By:
Checked By:
Date: 18 November 2024

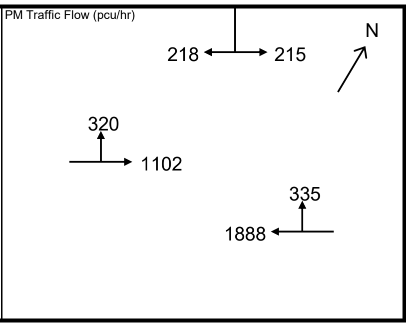
Approach		Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak					PM Peak				
							Turning %	Sat. Flow (pcu/hr)	Flow (pcu/hr)	y value	Critical y	Turning %	Sat. Flow (pcu/hr)	Flow (pcu/hr)	y value	Critical y
Argyle Street EB	LT	A1	1	3.30	15.0		100	1768	362	0.205		100	1768	320	0.181	
	SA	A2	1	3.50				2105	722	0.343			2105	551	0.262	
	SA	A3	1	3.50				2105	722	0.343	0.343		2105	551	0.262	
Lomond Road SB	LT+RT	B1	3	3.00	10.0		100	1665	218	0.131		100	1665	204	0.123	
	RT	B2	3	3.00	15.0		100	1868	245	0.131	0.131	100	1868	229	0.123	0.123
Argyle Street WB	SA	C1	1	3.30				1945	574	0.295			1945	601	0.309	0.309
	SA	C2	1	3.30				2085	615	0.295			2085	644	0.309	
	SA	C3	1	3.30				2085	615	0.295			2085	643	0.309	
	RT	C4	2	3.30	15.0		100	1895	339	0.179	0.179	100	1895	335	0.177	0.177

pedestrian phase	P1	2,3	min crossing time =	5	sec GM +	9	sec FGM =	14	sec
	P2	2	min crossing time =	5	sec GM +	9	sec FGM =	14	sec
	P3	3	min crossing time =	8	sec GM +	11	sec FGM =	19	sec
	P4	2	min crossing time =	8	sec GM +	9	sec FGM =	17	sec
	P5	1,2	min crossing time =	5	sec GM +	7	sec FGM =	12	sec
	P6	3	min crossing time =	5	sec GM +	5	sec FGM =	10	sec

AM Traffic Flow (pcu/hr)



PM Traffic Flow (pcu/hr)

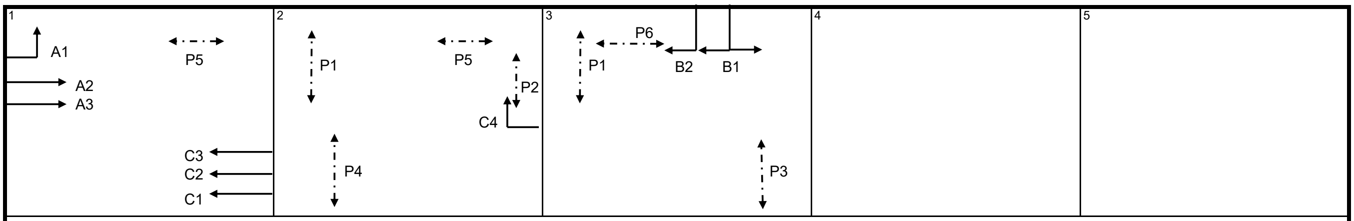


$S=1940+100(W-3.25)$ $S=2080+100(W-3.25)$

$S_M=S\div(1+1.5f/r)$ $S_M=(S-230)\div(1+1.5f/r)$

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.653		0.608	
L (s)	14		14	
C (s)	130		130	
practical y	0.803		0.803	
R.C. (%)	23%		32%	

Note:



AM	G =	I/G =	5	G =	I/G =	5	G =	I/G =	7	G =	I/G =		G =	I/G =						
	G =	I/G =		G =	I/G =		G =	I/G =		G =	I/G =		G =	I/G =						
PM	G =	I/G =	5	G =	I/G =	5	G =	I/G =	7	G =	I/G =		G =	I/G =						
	G =	I/G =		G =	I/G =		G =	I/G =		G =	I/G =		G =	I/G =						

Signal Junction Analysis

Junction: Argyle Street / Lomond Road Job Number: J7350

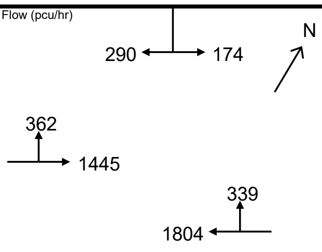
Scenario: with Proposed Elderly Home R2 / P.4-3

Design Year: 2031 Designed By: __________ Checked By: __________ Date: 18 November 2024

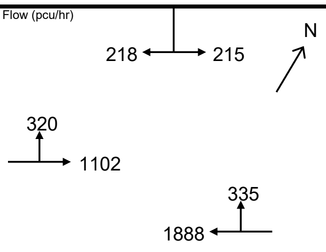
Approach		Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak					PM Peak				
							Turning %	Sat. Flow (pcu/hr)	Flow (pcu/hr)	y value	Critical y	Turning %	Sat. Flow (pcu/hr)	Flow (pcu/hr)	y value	Critical y
Argyle Street EB	LT	A1	1	3.30	15.0		100	1768	362	0.205		100	1768	320	0.181	
	SA	A2	1	3.50				2105	723	0.343			2105	551	0.262	
	SA	A3	1	3.50				2105	722	0.343	0.343		2105	551	0.262	
Lomond Road SB	LT+RT	B1	3	3.00	10.0		100	1665	218	0.131		100	1665	204	0.123	
	RT	B2	3	3.00	15.0		100	1868	246	0.131	0.131	100	1868	229	0.123	0.123
Argyle Street WB	SA	C1	1	3.30				1945	574	0.295			1945	601	0.309	0.309
	SA	C2	1	3.30				2085	615	0.295			2085	644	0.309	
	SA	C3	1	3.30				2085	615	0.295			2085	643	0.309	
	RT	C4	2	3.30	15.0		100	1895	339	0.179	0.179	100	1895	335	0.177	0.177

pedestrian phase	P1	2,3	min crossing time =	5	sec GM +	9	sec FGM =	14	sec
	P2	2	min crossing time =	5	sec GM +	9	sec FGM =	14	sec
	P3	3	min crossing time =	8	sec GM +	11	sec FGM =	19	sec
	P4	2	min crossing time =	8	sec GM +	9	sec FGM =	17	sec
	P5	1,2	min crossing time =	5	sec GM +	7	sec FGM =	12	sec
	P6	3	min crossing time =	5	sec GM +	5	sec FGM =	10	sec

AM Traffic Flow (pcu/hr)



PM Traffic Flow (pcu/hr)

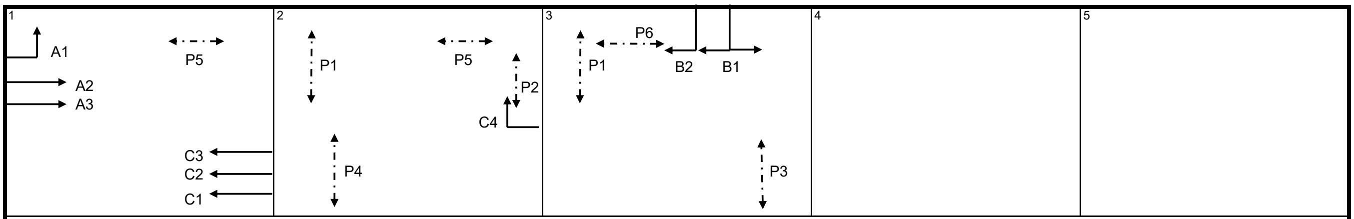


S=1940+100(W−3.25) S=2080+100(W−3.25)

S_M=S÷(1+1.5f/r) S_M=(S−230)÷(1+1.5f/r)

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.653		0.608	
L (s)	14		14	
C (s)	130		130	
practical y	0.803		0.803	
R.C. (%)	23%		32%	

Note:



AM	G =	I/G = 5	G =	I/G = 5	G =	I/G = 7	G =	I/G =	G =	I/G =
	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =
PM	G =	I/G = 5	G =	I/G = 5	G =	I/G = 7	G =	I/G =	G =	I/G =
	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =

Roundabout Analysis

Location	Ma Tau Chung Road / Prince Edward Road East / Prince Edward Road West / Argyle Street	R2 / P.5-1
Scenario	existing condition	

Design Year 2024 Job Number J7350 Date 18 November 2024

AM Peak

Arm	To A	To B	To C	To D	To E	To F	To G	To H	Total	q_c
From A	14	63	342	767					1187.05	895.55
From B	42	19	82	250					393.2	1707.4
From C	444	46	20	336					845.727	1137.95
From D	801	247	518	45					1611.95	585.45
From E										
From F										
From G										
From H										
Total	1301.85	375.2	962.65	1398.227					4037.927	

PM Peak

Arm	To A	To B	To C	To D	To E	To F	To G	To H	Total	q_c
From A	13	42	304	775					1134.65	834.65
From B	24	17	59	215					315.4	1713.85
From C	437	39	22	310					808.481	1106.2
From D	772	158	538	61					1528.95	552.35
From E										
From F										
From G										
From H										
Total	1246.65	255.45	923.05	1362.331					3787.481	

Legend

Arm	Road (in clockwise order)
A	Ma Tau Chung Road
B	Argyle Street
C	Prince Edward Road West
D	Prince Edward Road East
E	
F	
G	
H	

Geometric Parameters

Arm	e (m)	v (m)	r (m)	L (m)	D (m)	∅ (°)	S
From A	10.2	7.3	30.0	13.2	100	40	0.4
From B	7.8	5.4	25.0	6.6	100	20	0.6
From C	9.6	7.2	100.0	12.6	100	30	0.3
From D	9.6	7.2	100.0	60.0	100	60	0.1
From E							
From F							
From G							
From H							

Predictive Equation $Q_E = K(F - f_c q_c)$

Q_E	Entry Capacity
q_c	Circulating Flow across the Entry
K	$= 1-0.00347(\varnothing-30)-0.978[(1/r)-0.05]$
F	$= 303x_2$
f_c	$= 0.210t_D(1+0.2x_2)$
t_D	$= 1+0.5/(1+M)$
M	$= \exp[(D-60)/10]$
x_2	$= v+(e-v)/(1+2S)$
S	$= 1.6(e-v)/L$

Limitation

e	Entry Width	4.0 - 15.0 m
v	Approach Half Width	2.0 - 7.3 m
r	Entry Radius	6.0 - 100.0 m
L	Effective Length of Flare	1.0 - 100.0 m
D	Inscribed Circle Diameter	15 - 100 m
∅	Entry Angle	10° - 60°
S	Sharpness of Flare	0.0 - 3.0

Ratio-of-Flow to Capacity (RFC)

							Q_E		Entry Flow		RFC	
Arm	x_2	M	t_D	K	F	f_c	AM	PM	AM	PM	AM	PM
From A	9.003	54.598	1.009	0.982	2727.863	0.593	2156	2191	1187	1135	0.551	0.518
From B	6.509	54.598	1.009	1.044	1972.301	0.488	1190	1187	393	315	0.330	0.266
From C	8.691	54.598	1.009	1.039	2633.411	0.580	2050	2070	846	808	0.412	0.391
From D	9.328	54.598	1.009	0.935	2826.281	0.607	2310	2329	1612	1529	0.698	0.656
From E												
From F												
From G												
From H												

Roundabout Analysis

Location Ma Tau Chung Road / Prince Edward Road East / Prince Edward Road West / Argyle Street R2 / P.5-2

Scenario without proposed development

Design Year 2031 Job Number J7350 Date 18 November 2024

AM Peak

Arm	To A	To B	To C	To D	To E	To F	To G	To H	Total	q_c
From A	15	65	431	808					1320	1189
From B	50	23	96	260					429	2103
From C	467	56	22	382					929	1435
From D	849	261	549	278					1936	634
From E										
From F										
From G										
From H										
Total	1381	405	1098	1729					4612.963	

PM Peak

Arm	To A	To B	To C	To D	To E	To F	To G	To H	Total	q_c
From A	15	45	402	808					1269	1202
From B	30	18	71	225					344	2179
From C	475	60	26	364					925	1448
From D	796	170	575	353					1894	624
From E										
From F										
From G										
From H										
Total	1316	293	1074	1749					4432	

Legend

Arm	Road (in clockwise order)
A	Ma Tau Chung Road
B	Argyle Street
C	Prince Edward Road West
D	Prince Edward Road East
E	
F	
G	
H	

Geometric Parameters

Arm	e (m)	v (m)	r (m)	L (m)	D (m)	∅ (°)	S
From A	10.2	7.3	30.0	13.2	100.0	40.0	0.4
From B	7.8	5.4	25.0	6.6	100.0	20.0	0.6
From C	9.6	7.2	100.0	12.6	100.0	30.0	0.3
From D	9.6	7.2	100.0	60.0	100.0	60.0	0.1
From E							
From F							
From G							
From H							

Predictive Equation $Q_E = K(F - f_c q_c)$

Q_E	Entry Capacity
q_c	Circulating Flow across the Entry
K	$= 1-0.00347(\varnothing-30)-0.978[(1/r)-0.05]$
F	$= 303x_2$
f_c	$= 0.210t_D(1+0.2x_2)$
t_D	$= 1+0.5/(1+M)$
M	$= \exp[(D-60)/10]$
x_2	$= v+(e-v)/(1+2S)$
S	$= 1.6(e-v)/L$

Limitation

e	Entry Width	4.0 - 15.0 m
v	Approach Half Width	2.0 - 7.3 m
r	Entry Radius	6.0 - 100.0 m
L	Effective Length of Flare	1.0 - 100.0 m
D	Inscribed Circle Diameter	15 - 100 m
∅	Entry Angle	10° - 60°
S	Sharpness of Flare	0.0 - 3.0

Ratio-of-Flow to Capacity (RFC)

							Q_E		Entry Flow		RFC	
Arm	x_2	M	t_D	K	F	f_c	AM	PM	AM	PM	AM	PM
From A	9.003	54.598	1.009	0.982	2727.863	0.593	1985	1977	1320	1269	0.665	0.642
From B	6.509	54.598	1.009	1.044	1972.301	0.488	988	950	429	344	0.434	0.362
From C	8.691	54.598	1.009	1.039	2633.411	0.580	1871	1863	929	925	0.496	0.497
From D	9.328	54.598	1.009	0.935	2826.281	0.607	2283	2288	1936	1894	0.848	0.828
From E												
From F												
From G												
From H												

Roundabout Analysis

Location	Ma Tau Chung Road / Prince Edward Road East / Prince Edward Road West / Argyle Street	R2 / P.5-3
Scenario	without proposed development	

Design Year 2031 Job Number J7350 Date 18 November 2024

AM Peak

Arm	To A	To B	To C	To D	To E	To F	To G	To H	Total	q_c
From A	15	65	431	808					1320	1190
From B	50	23	96	260					429	2104
From C	467	56	23	383					930	1435
From D	849	261	549	278					1936	635
From E										
From F										
From G										
From H										
Total	1381	405	1099	1730					4614.623	

PM Peak

Arm	To A	To B	To C	To D	To E	To F	To G	To H	Total	q_c
From A	15	45	402	808					1269	1203
From B	30	18	71	225					344	2180
From C	475	60	27	365					928	1448
From D	796	170	575	353					1894	625
From E										
From F										
From G										
From H										
Total	1316	293	1075	1751					4435	

Legend

Arm	Road (in clockwise order)
A	Ma Tau Chung Road
B	Argyle Street
C	Prince Edward Road West
D	Prince Edward Road East
E	
F	
G	
H	

Geometric Parameters

Arm	e (m)	v (m)	r (m)	L (m)	D (m)	∅ (°)	S
From A	10.2	7.3	30.0	13.2	100.0	40.0	0.4
From B	7.8	5.4	25.0	6.6	100.0	20.0	0.6
From C	9.6	7.2	100.0	12.6	100.0	30.0	0.3
From D	9.6	7.2	100.0	60.0	100.0	60.0	0.1
From E							
From F							
From G							
From H							

Predictive Equation $Q_E = K(F - f_c q_c)$

Q_E	Entry Capacity
q_c	Circulating Flow across the Entry
K	$= 1-0.00347(\varnothing-30)-0.978[(1/r)-0.05]$
F	$= 303x_2$
f_c	$= 0.210t_D(1+0.2x_2)$
t_D	$= 1+0.5/(1+M)$
M	$= \exp[(D-60)/10]$
x_2	$= v+(e-v)/(1+2S)$
S	$= 1.6(e-v)/L$

Limitation

e	Entry Width	4.0 - 15.0 m
v	Approach Half Width	2.0 - 7.3 m
r	Entry Radius	6.0 - 100.0 m
L	Effective Length of Flare	1.0 - 100.0 m
D	Inscribed Circle Diameter	15 - 100 m
∅	Entry Angle	10° - 60°
S	Sharpness of Flare	0.0 - 3.0

Ratio-of-Flow to Capacity (RFC)

							Q_E		Entry Flow		RFC	
Arm	x_2	M	t_D	K	F	f_c	AM	PM	AM	PM	AM	PM
From A	9.003	54.598	1.009	0.982	2727.863	0.593	1985	1977	1320	1269	0.665	0.642
From B	6.509	54.598	1.009	1.044	1972.301	0.488	988	950	429	344	0.434	0.362
From C	8.691	54.598	1.009	1.039	2633.411	0.580	1871	1863	930	928	0.497	0.498
From D	9.328	54.598	1.009	0.935	2826.281	0.607	2282	2288	1936	1894	0.848	0.828
From E												
From F												
From G												
From H												

Signal Junction Analysis

Junction: Prince Edward Road West / La Salle Road Job Number: J7350

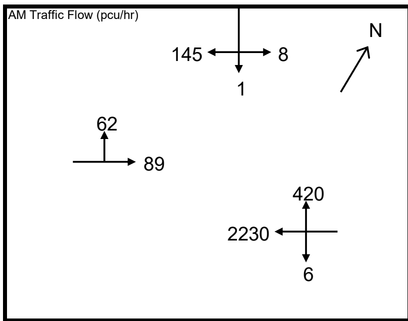
Scenario: Existing Condition R2 / P.6-1

Design Year: 2024 Designed By: ______ Checked By: ______ Date: 18 November 2024

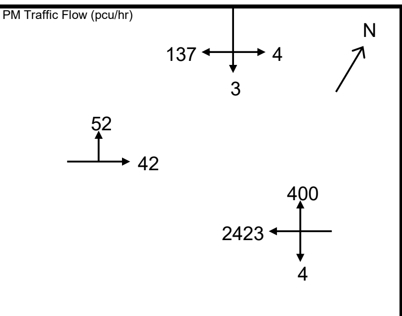
Approach	Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak Turning %	AM Peak Sat. Flow (pcu/hr)	AM Peak Flow (pcu/hr)	AM Peak y value	AM Peak Critical y	PM Peak Turning %	PM Peak Sat. Flow (pcu/hr)	PM Peak Flow (pcu/hr)	PM Peak y value	PM Peak Critical y
Prince Edward Road West EB LT+SA	A1	1	5.00	10.0		41	1992	151	0.076		55	1954	95	0.048	
La Salle Road SB LT+SA+RT	B1	3	3.10	6.0		100	1540	70	0.045	0.045	95	1556	66	0.042	0.042
RT	B2	3	3.00	14.0		100	1856	83	0.045		100	1856	78	0.042	
Prince Edward Road West WB LT+SA	C1	1,2	3.20	5.0		1	1931	714	0.370	0.370	1	1932	776	0.402	
SA	C2	1,2	3.00				2055	760	0.370			2055	825	0.401	0.401
SA	C3	1,2	3.00				2055	761	0.370			2055	826	0.402	
RT	C5	2	3.00	12.0		100	1827	420	0.230		100	1827	400	0.219	

pedestrian phase	P1	2		min crossing time =	5	sec GM +	5	sec FGM =	10	sec
	P2	3		min crossing time =	13	sec GM +	17	sec FGM =	30	sec
	P3	1,2		min crossing time =	6	sec GM +	6	sec FGM =	12	sec
	P4	3		min crossing time =	5	sec GM +	5	sec FGM =	10	sec

AM Traffic Flow (pcu/hr)



PM Traffic Flow (pcu/hr)

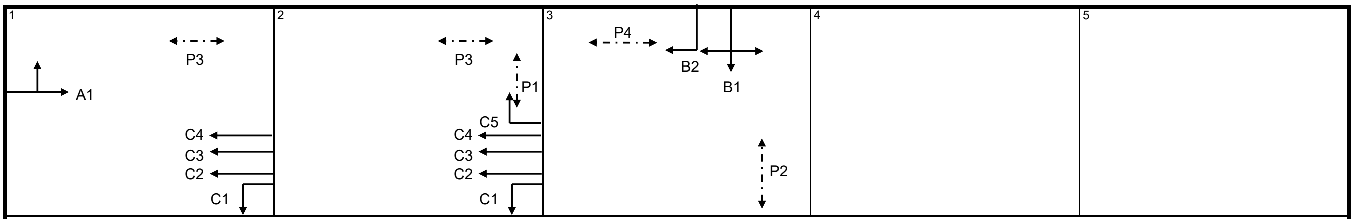


S=1940+100(W−3.25) S=2080+100(W−3.25)

S_M=S÷(1+1.5f/r) S_M=(S−230)÷(1+1.5f/r)

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.415	0.370	0.444	0.401
L (s)	10	38	10	38
C (s)	110	110	110	110
practical y	0.818	0.589	0.818	0.589
R.C. (%)	97%	59%	84%	47%

Note:



AM	G =	I/G =	G =	I/G = 5	G =	I/G = 7	G =	I/G =	G =	I/G =
	G =	I/G =	G =	I/G = 5	G = 30	I/G = 4	G =	I/G =	G =	I/G =
PM	G =	I/G =	G =	I/G = 5	G =	I/G = 7	G =	I/G =	G =	I/G =
	G =	I/G =	G =	I/G = 5	G = 30	I/G = 4	G =	I/G =	G =	I/G =

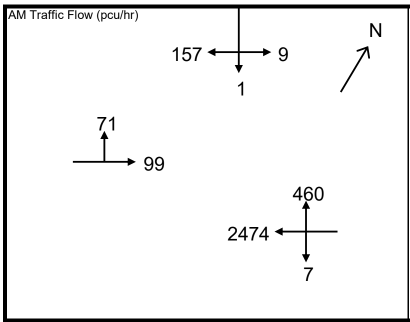
Signal Junction Analysis

Junction: Prince Edward Road West / La Salle Road   Job Number: J7350
Scenario: without Proposed Elderly Home   R2 / P.6-2
Design Year: 2031   Designed By: ____________   Checked By: ____________   Date: 18 November 2024

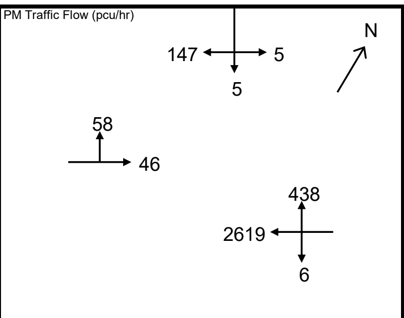
Approach	Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak					PM Peak				
						Turning %	Sat. Flow (pcu/hr)	Flow (pcu/hr)	y value	Critical y	Turning %	Sat. Flow (pcu/hr)	Flow (pcu/hr)	y value	Critical y
Prince Edward Road West EB LT+SA	A1	1	5.00	10.0		42	1990	169	0.085		55	1954	104	0.053	
La Salle Road SB LT+SA+RT	B1	3	3.10	6.0		100	1540	76	0.049	0.049	93	1562	72	0.046	0.046
RT	B2	3	3.00	14.0		100	1856	92	0.049		100	1856	85	0.046	
Prince Edward Road West WB LT+SA	C1	1,2	3.20	5.0		1	1930	793	0.411	0.411	1	1931	839	0.434	
SA	C2	1,2	3.00				2055	844	0.411			2055	893	0.435	0.435
SA	C3	1,2	3.00				2055	844	0.410			2055	893	0.435	
RT	C5	2	3.00	12.0		100	1827	460	0.252		100	1827	438	0.240	

pedestrian phase	P1	2		min crossing time =	5	sec GM +	5	sec FGM =	10	sec	
	P2	3		min crossing time =	13	sec GM +	17	sec FGM =	30	sec	
	P3	1,2		min crossing time =	6	sec GM +	6	sec FGM =	12	sec	
	P4	3		min crossing time =	5	sec GM +	5	sec FGM =	10	sec	

AM Traffic Flow (pcu/hr)



PM Traffic Flow (pcu/hr)

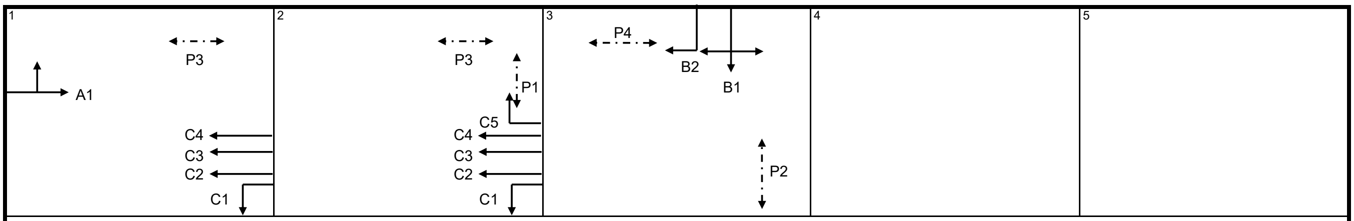


S=1940+100(W−3.25)   S=2080+100(W−3.25)

S_M=S÷(1+1.5f/r) S_M=(S−230)÷(1+1.5f/r)

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.460	0.411	0.481	0.435
L (s)	10	38	10	38
C (s)	110	110	110	110
practical y	0.818	0.589	0.818	0.589
R.C. (%)	78%	43%	70%	36%

Note:



AM	G =		I/G =		G =		I/G =	5	G =		I/G =	7	G =		I/G =		G =		I/G =	
	G =		I/G =		G =		I/G =	5	G =	30	I/G =	4	G =		I/G =		G =		I/G =	
PM	G =		I/G =		G =		I/G =	5	G =		I/G =	7	G =		I/G =		G =		I/G =	
	G =		I/G =		G =		I/G =	5	G =	30	I/G =	4	G =		I/G =		G =		I/G =	

Signal Junction Analysis

Junction: Prince Edward Road West / La Salle Road Job Number: J7350

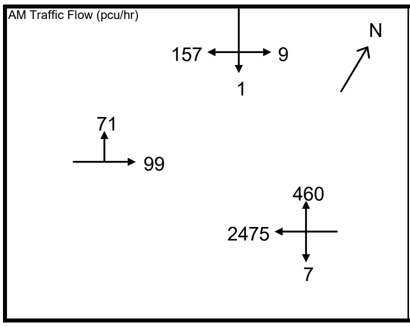
Scenario: with Proposed Elderly Home R2 / P.6-3

Design Year: 2031 Designed By: Checked By: Date: 18 November 2024

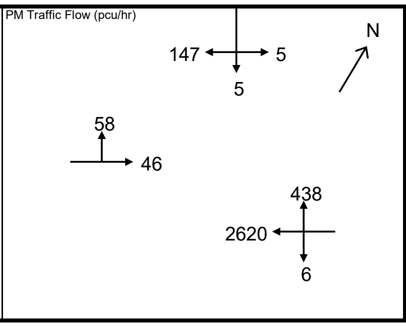
Approach	Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak Turning %	AM Peak Sat. Flow (pcu/hr)	AM Peak Flow (pcu/hr)	AM Peak y value	AM Peak Critical y	PM Peak Turning %	PM Peak Sat. Flow (pcu/hr)	PM Peak Flow (pcu/hr)	PM Peak y value	PM Peak Critical y
Prince Edward Road West EB LT+SA	A1	1	5.00	10.0		42	1990	169	0.085		55	1954	104	0.053	
La Salle Road SB LT+SA+RT	B1	3	3.10	6.0		100	1540	76	0.049	0.049	93	1562	72	0.046	0.046
RT	B2	3	3.00	14.0		100	1856	92	0.049		100	1856	85	0.046	
Prince Edward Road West WB LT+SA	C1	1,2	3.20	5.0		1	1930	793	0.411	0.411	1	1931	839	0.434	
SA	C2	1,2	3.00				2055	844	0.411			2055	893	0.435	0.435
SA	C3	1,2	3.00				2055	845	0.411			2055	894	0.435	
RT	C5	2	3.00	12.0		100	1827	460	0.252		100	1827	438	0.240	

pedestrian phase	P1	2		min crossing time =	5	sec GM +	5	sec FGM =	10	sec
	P2	3		min crossing time =	13	sec GM +	17	sec FGM =	30	sec
	P3	1,2		min crossing time =	6	sec GM +	6	sec FGM =	12	sec
	P4	3		min crossing time =	5	sec GM +	5	sec FGM =	10	sec

AM Traffic Flow (pcu/hr)



PM Traffic Flow (pcu/hr)

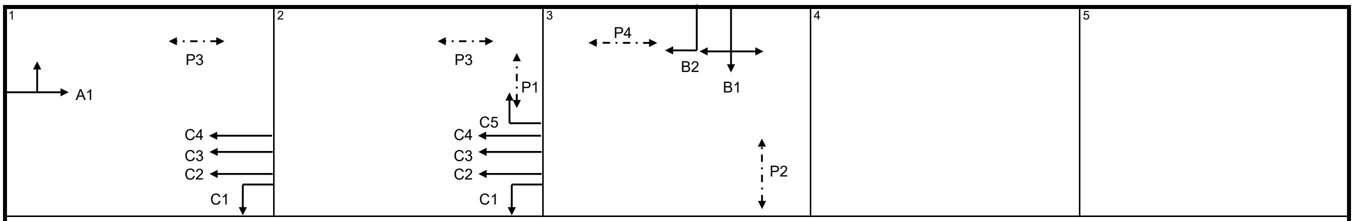


$S=1940+100(W-3.25)$ $S=2080+100(W-3.25)$

$S_M=S\div(1+1.5f/r)$ $S_M=(S-230)\div(1+1.5f/r)$

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.460	0.411	0.481	0.435
L (s)	10	38	10	38
C (s)	110	110	110	110
practical y	0.818	0.589	0.818	0.589
R.C. (%)	78%	43%	70%	36%

Note:



AM	G =		I/G =		G =		I/G =	5	G =		I/G =	7	G =		I/G =		G =		I/G =	
	G =		I/G =		G =		I/G =	5	G =	30	I/G =	4	G =		I/G =		G =		I/G =	
PM	G =		I/G =		G =		I/G =	5	G =		I/G =	7	G =		I/G =		G =		I/G =	
	G =		I/G =		G =		I/G =	5	G =	30	I/G =	4	G =		I/G =		G =		I/G =	

Appendix B – Result of Traffic Generation Surveys

TABLE B1 TRAFFIC GENERATED BY (A) 351 PRINCE EDWARD ROAD WEST IN KOWLOON CITY

No.	Vehicle Type	Arrival Time (hours)	Departure Time (hours)	Duration (min)	Activity
Weekday					
1	LGV	08:46	08:48	2	Goods Delivery
2	Private Car	10:22	10:30	8	Pick-up / Drop-off
3	Goods Van	10:48	10:54	6	Goods Delivery
4	Mini Coach	11:57	11:58	1	Pick-up / Drop-off
5	Private Car	12:00	12:05	5	Pick-up / Drop-off
6	Mini Coach	13:55	13:56	1	Pick-up / Drop-off
7	Private Car	16:33	16:41	8	Pick-up / Drop-off
8	Private Car	18:09	18:13	4	Pick-up / Drop-off
Saturday					
1	LGV	9:24	9:28	4	Goods Delivery
2	Taxi	10:34	10:38	2	Pick-up / Drop-off
3	Ambulance	10:43	10:57	14	Pick-up / Drop-off
4	Private Car	14:42	15:12	30	Parking
5	Private Car	16:44	17:17	33	Parking
6	Private Car	19:08	19:12	4	Pick-up / Drop-off
Sunday					
1	Private Car	11:29	11:45	16	Parking
2	Taxi	13:40	13:41	1	Pick-up / Drop-off
3	Private Car	15:35	15:40	5	Pick-up / Drop-off
4	Private Car	16:50	17:22	32	Parking
5	Taxi	17:30	17:31	1	Pick-up / Drop-off

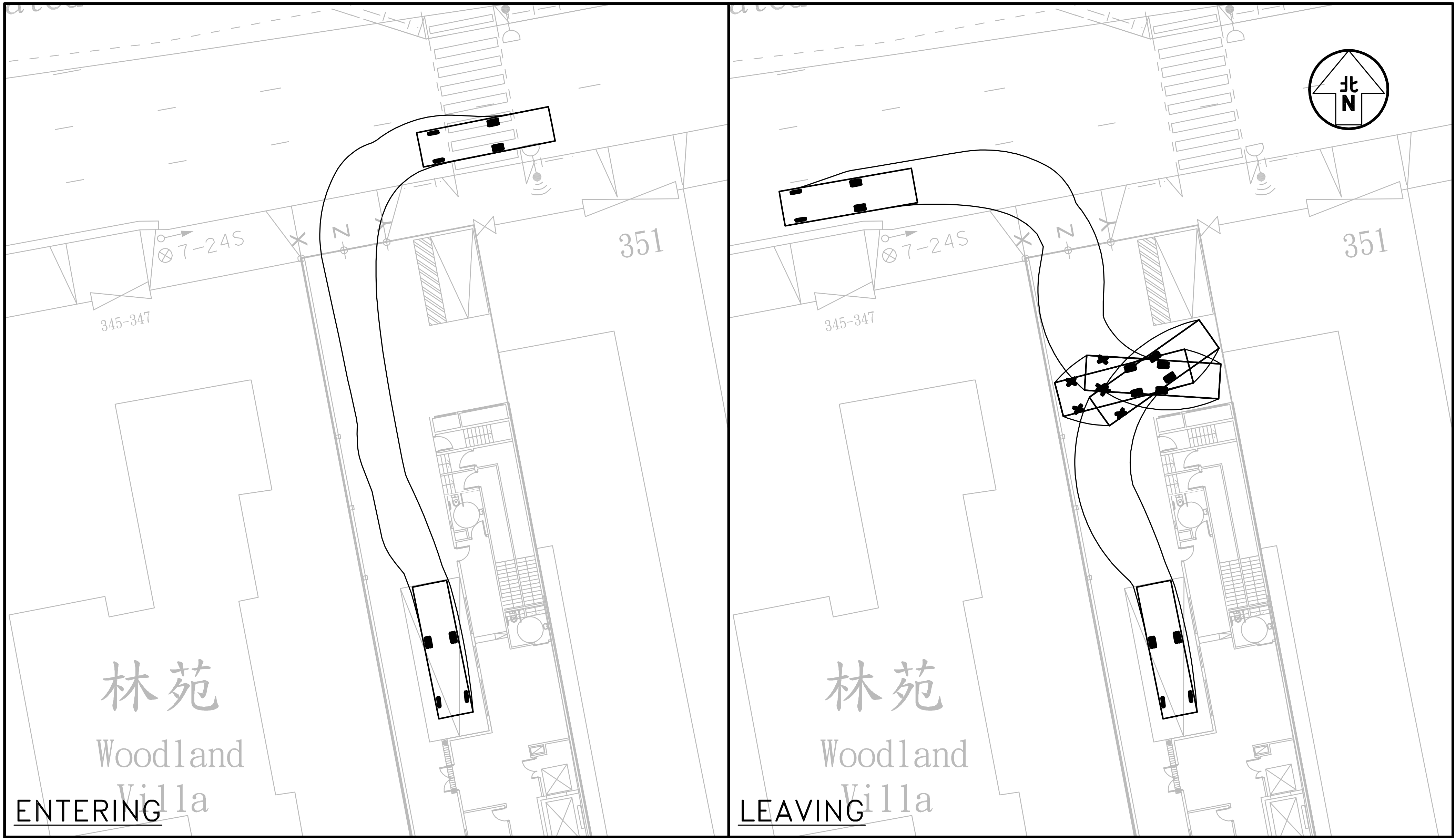
TABLE B2 TRAFFIC GENERATED BY (B) 8 KUNG LOK ROAD IN KWUN TONG

No.	**Vehicle Type**	**Arrival Time (hours)**	**Departure Time (hours)**	**Duration (min)**	**Activity**
	Weekday				
1	Taxi	08:36	08:37	1	Pick-up / Drop-off
2	Private Car	09:11	09:31	20	Parking
3	Taxi	09:43	09:47	4	Pick-up / Drop-off
4	Goods Van	09:54	09:57	3	Goods Delivery
5	Mini Coach	10:27	10:35	8	Pick-up / Drop-off
6	LGV	12:15	12:19	4	Goods Delivery
7	Taxi	12:54	12:56	2	Pick-up / Drop-off
8	Taxi	13:00	13:01	1	Pick-up / Drop-off
9	LGV	13:14	13:20	6	Goods Delivery
10	Taxi	14:21	14:23	2	Pick-up / Drop-off
11	Mini Coach	14:45	14:47	2	Pick-up / Drop-off
12	Ambulance	15:02	15:25	23	Pick-up / Drop-off
13	Taxi	15:49	15:51	2	Pick-up / Drop-off
14	Mini Coach	16:49	17:00	11	Pick-up / Drop-off
15	Private Car	17:56	18:23	27	Pick-up / Drop-off
	Saturday				
1	Taxi	08:32	08:33	1	Pick-up / Drop-off
2	Taxi	10:04	10:08	4	Pick-up / Drop-off
3	Goods Van	11:09	11:12	3	Goods Delivery
4	Taxi	11:35	11:36	1	Pick-up / Drop-off
5	Taxi	11:44	11:46	2	Pick-up / Drop-off
6	Private Car	12:02	12:30	28	Parking
7	LGV	12:58	13:05	7	Goods Delivery
8	Taxi	14:00	14:02	2	Pick-up / Drop-off
9	Private Car	14:05	14:48	43	Parking
10	Taxi	16:00	16:02	2	Pick-up / Drop-off
11	Private Car	16:14	16:34	20	Parking
12	Private Car	17:45	17:53	8	Pick-up / Drop-off
13	Taxi	17:55	17:57	2	Pick-up / Drop-off
14	Private Car	18:14	18:25	11	Pick-up / Drop-off
	Sunday				
1	Private Car	08:37	08:39	2	Pick-up / Drop-off
2	Taxi	08:42	08:43	1	Pick-up / Drop-off
3	Taxi	09:52	09:54	2	Pick-up / Drop-off
4	Private Car	10:56	10:58	2	Pick-up / Drop-off
5	Private Car	11:28	11:49	21	Parking
6	Private Car	12:01	12:16	15	Parking
7	Taxi	12:30	12:37	7	Pick-up / Drop-off
8	Taxi	14:07	14:09	2	Pick-up / Drop-off
9	Private Car	14:32	14:58	26	Parking
10	Private Car	15:08	15:15	7	Pick-up / Drop-off
11	Private Car	15:20	15:29	9	Pick-up / Drop-off
12	Taxi	15:46	15:47	1	Pick-up / Drop-off
13	Taxi	16:16	16:18	2	Pick-up / Drop-off
14	Private Car	16:59	17:45	46	Parking
15	Taxi	17:51	17:53	2	Pick-up / Drop-off

TABLE B3 TRAFFIC GENERATED BY (C) 88 KUNG LOK ROAD IN KWUN TONG

No.	Vehicle Type	Arrival Time (hours)	Departure Time (hours)	Duration (min)	Activity
	Weekday				
1	Taxi	09:07	09:08	1	Pick-up / Drop-off
2	LGV	09:35	09:46	11	Goods Delivery
3	Taxi	09:55	09:56	1	Pick-up / Drop-off
4	Taxi	10:02	10:03	1	Pick-up / Drop-off
5	Mini Coach	10:13	10:34	21	Pick-up / Drop-off
6	Mini Coach	11:19	11:38	19	Pick-up / Drop-off
7	Taxi	12:18	12:19	1	Pick-up / Drop-off
8	Goods Van	12:35	12:40	5	Goods Delivery
9	Private Car	12:47	12:48	1	Pick-up / Drop-off
10	Taxi	13:02	13:08	6	Pick-up / Drop-off
11	Mini Coach	13:14	13:23	9	Pick-up / Drop-off
12	Private Car	14:39	15:23	44	Parking
13	Private Car	16:48	17:22	34	Parking
	Saturday				
1	Taxi	08:27	08:28	1	Pick-up / Drop-off
2	LGV	08:44	08:48	4	Goods Delivery
3	Taxi	09:24	09:25	1	Pick-up / Drop-off
4	Taxi	11:17	11:18	1	Pick-up / Drop-off
5	Goods Van	12:10	12:23	13	Goods Delivery
6	Taxi	12:55	12:56	1	Pick-up / Drop-off
7	Goods Van	13:14	13:29	15	Goods Delivery
8	Taxi	13:39	13:40	1	Pick-up / Drop-off
9	Goods Van	13:51	13:54	3	Goods Delivery
10	Taxi	14:13	14:14	1	Pick-up / Drop-off
11	Private Car	15:39	16:10	31	Parking
12	Taxi	16:57	16:58	1	Pick-up / Drop-off
	Sunday				
1	Taxi	08:01	08:09	8	Pick-up / Drop-off
2	Ambulance	08:15	08:33	18	Pick-up / Drop-off
3	Taxi	09:13	09:16	3	Pick-up / Drop-off
4	Mini Coach	09:42	09:49	7	Pick-up / Drop-off
5	Private Car	09:54	09:59	5	Pick-up / Drop-off
6	Taxi	10:01	10:10	9	Pick-up / Drop-off
7	LGV	10:20	10:26	6	Goods Delivery
8	Private Car	10:35	10:39	4	Pick-up / Drop-off
9	Private Car	13:05	13:46	41	Parking
10	Private Car	14:26	14:28	2	Pick-up / Drop-off
11	Private Car	16:27	17:09	42	Parking

Appendix C – Swept Path Analysis



Project Title

PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY)
IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY

J7350

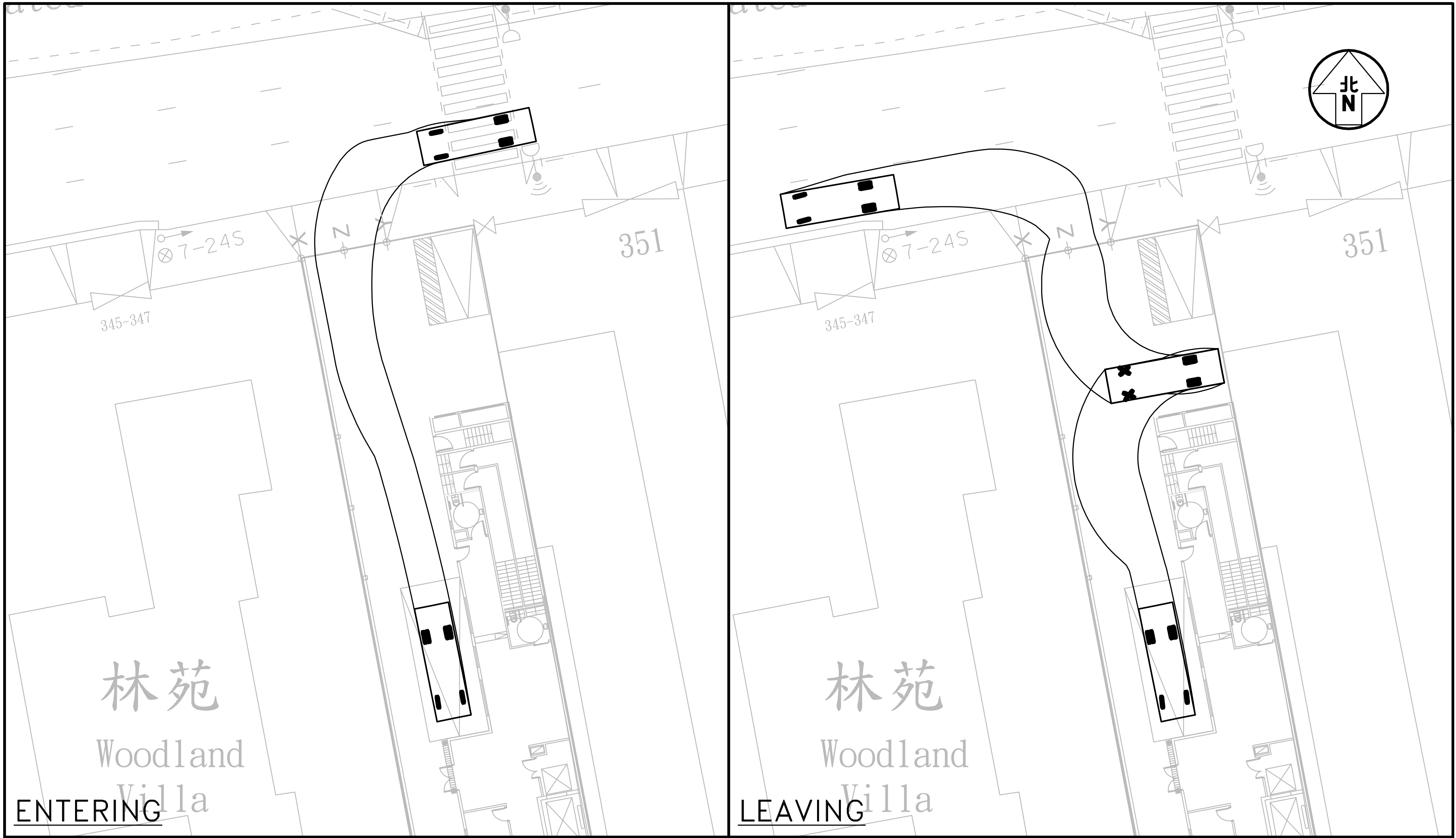
Figure Title

SWEPT PATH OF 8m MINI COACH ENTERING AND LEAVING THE LAY-BY

Figure No. SP/101		Revision R2A
Designed by T H C	Drawn by C C L	Checked by K C
Scale in A4 1 : 300	Date 18 NOV 2024	

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road,
Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOB\J7350-J7399\J7350\R2\Fig SP_101-106 RevR2A.dwg



Project Title
PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY)
IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY

J7350

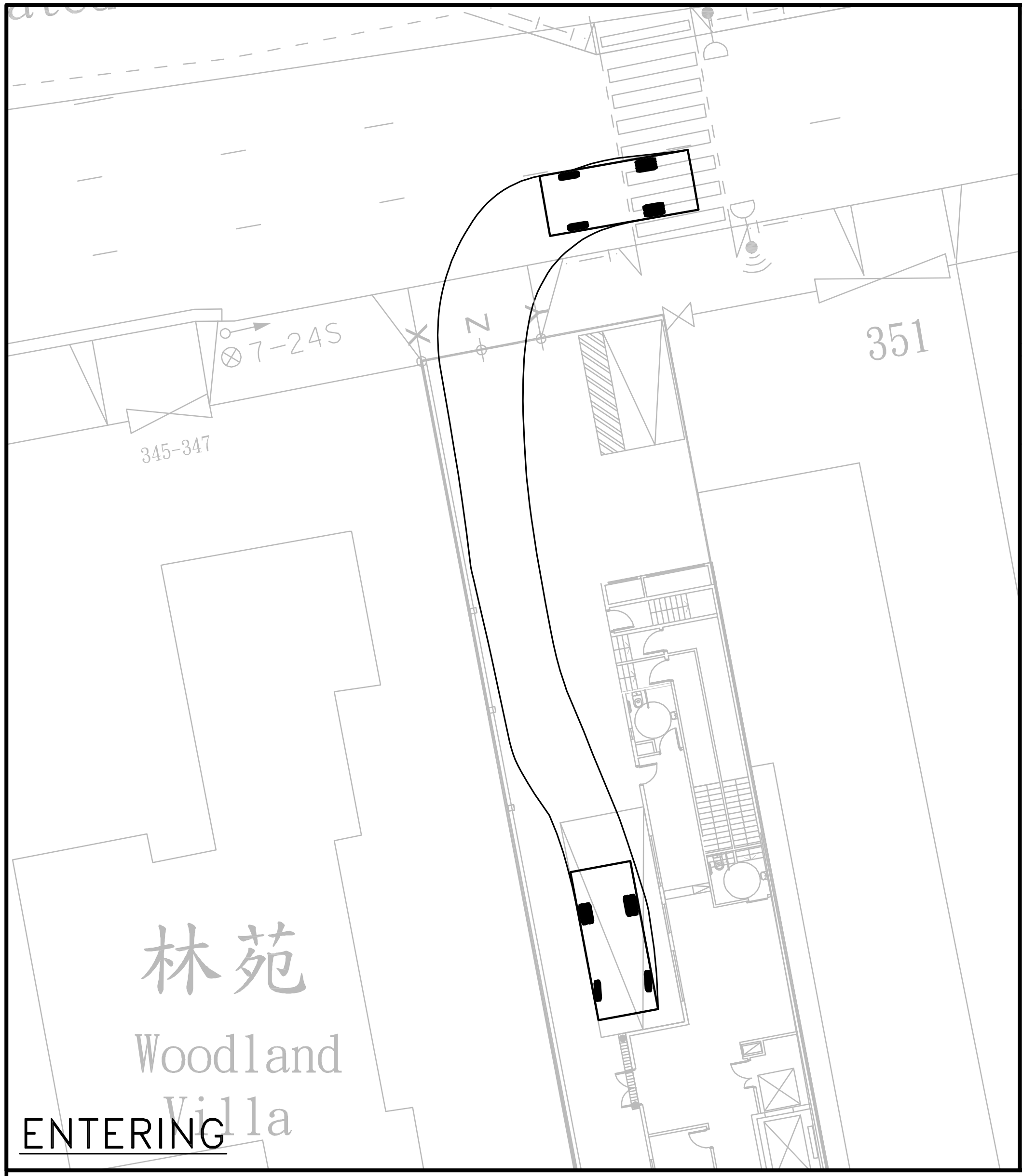
Figure Title

SWEPT PATH OF 7m LIGHT GOODS VEHICLE ENTERING AND LEAVING THE LAY-BY

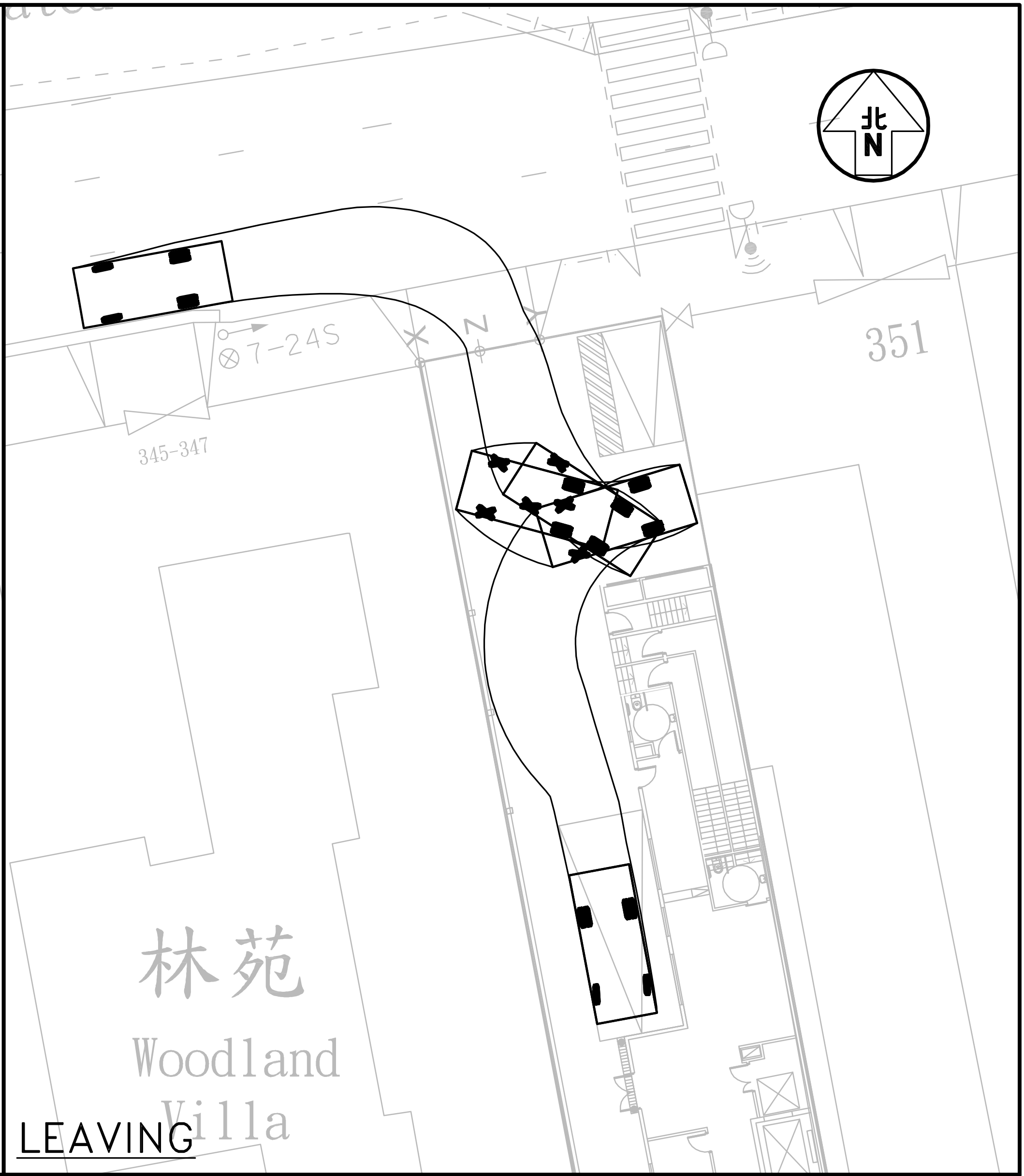
Figure No. SP/102			Revision R2A
Designed by T H C	Drawn by C C L		Checked by K C
Scale in A4 1 : 300	Date 18 NOV 2024		

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road,
Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOB\J7350-J7399\J7350\R2\Fig SP_101-106 RevR2A.dwg



ENTERING



LEAVING

Project Title

PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY)
IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY

J7350

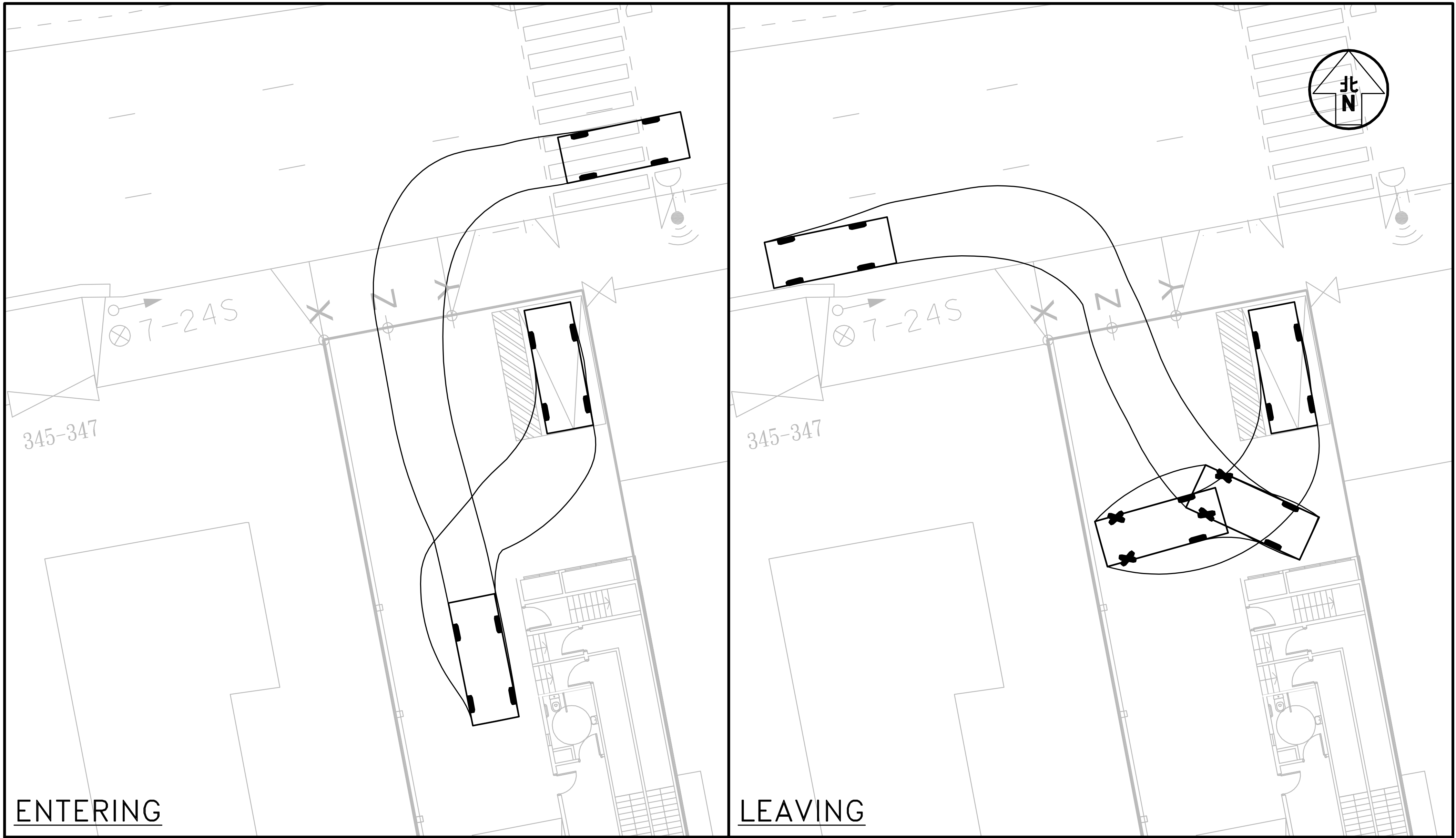
Figure Title

SWEPT PATH OF 6.5m AMBULANCE ENTERING AND LEAVING THE LAY-BY

Figure No.		Revision
SP/103		R2A
Designed by	Drawn by	Checked by
T H C	C C L	K C
Scale in A4	Date	
1 : 300	18 NOV 2024	

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road,
Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOB\J7350-J7399\J7350\R2\Fig SP_101-106 RevR2A.dwg



Project Title

PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY)
IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY

J7350

Figure Title

SWEPT PATH OF 5m PRIVATE CAR ENTERING
AND LEAVING THE CAR PARKING SPACE

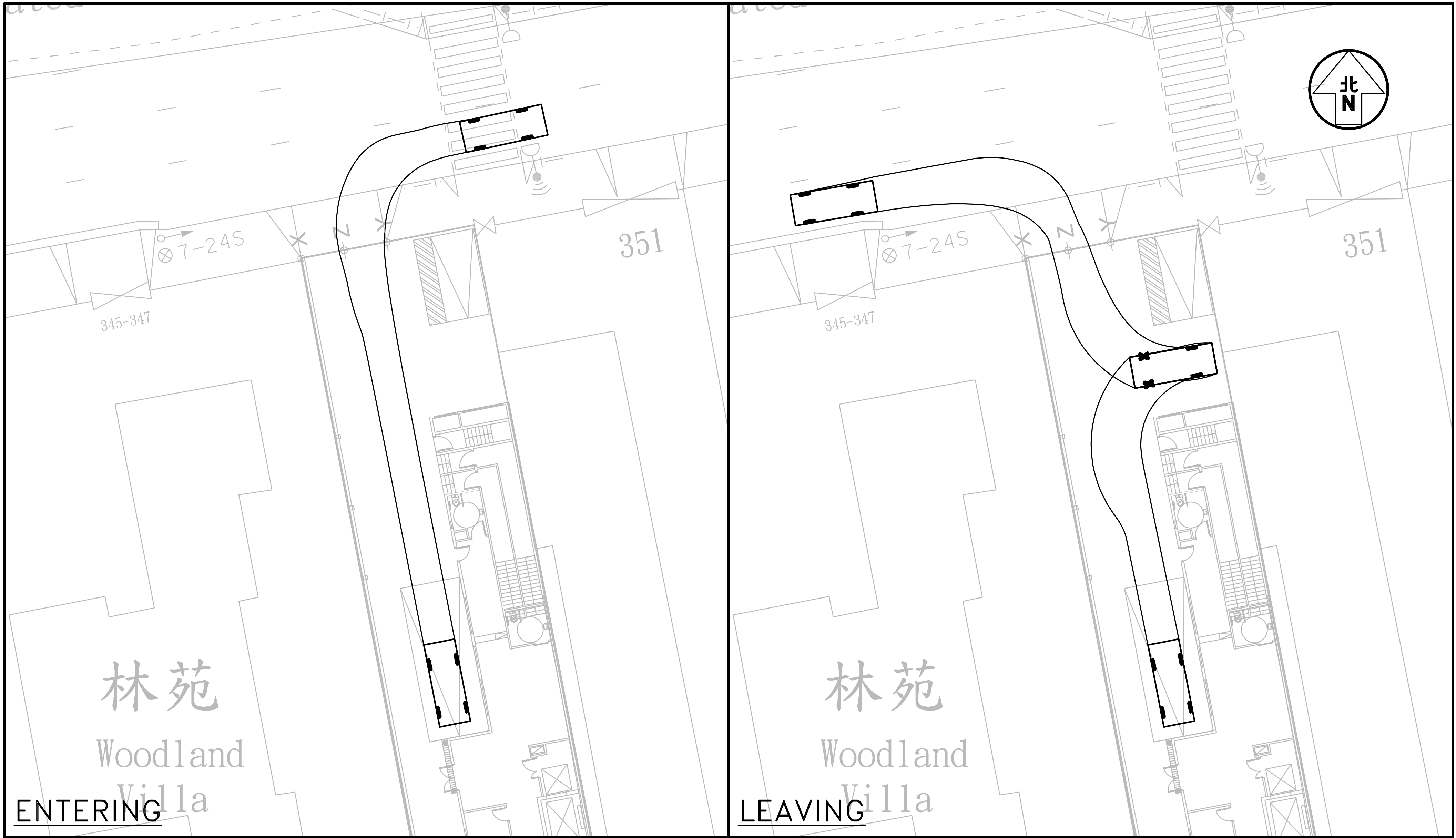
Figure No.	Revision
SP/104	R2A

Designed by	Drawn by	Checked by
T H C	C C L	K C

Scale in A4	Date
1 : 200	18 NOV 2024

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road,
Wan Chai, Hong Kong
Tel : (852) 2520 5990   Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOB\J7350-J7399\J7350\R2\Fig SP_101-106 RevR2A.dwg



Project Title

PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY)
IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY

J7350

Figure Title

SWEPT PATH OF 5m TAXI / PRIVATE CAR ENTERING AND LEAVING THE LAY-BY

Figure No.		Revision
SP/105		R2A

Designed by	Drawn by	Checked by
T H C	C C L	K C

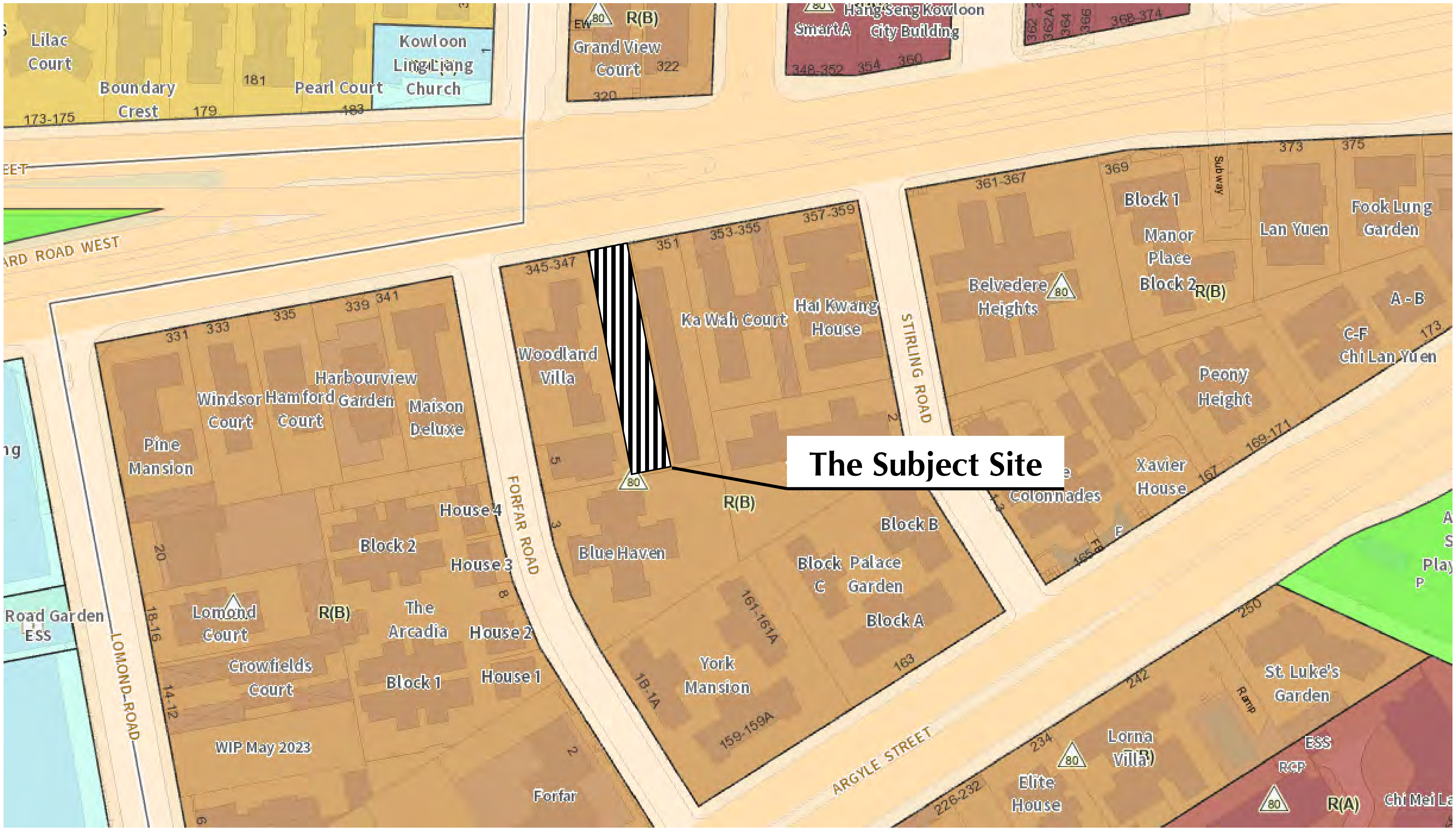
Scale in A4	Date
1 : 300	18 NOV 2024

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road,
Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOB\J7350-J7399\J7350\R2\Fig SP_101-106 RevR2A.dwg

Appendix D – Extract from OZP No. S/K10/30

APPROVED MA TAU KOK OUTLINE ZONING PLAN NO. S/K10/30



RESIDENTIAL (GROUP B)

Column 1 Uses always permitted	Column 2 Uses that may be permitted with or without conditions on application to the Town Planning Board
Flat	Ambulance Depot
Government Use (Police Reporting Centre, Post Office only)	Eating Place
House	Educational Institution
Library	Government Refuse Collection Point
Residential Institution	Government Use (not elsewhere specified)
School (in free-standing purpose-designed building only)	Hospital
Social Welfare Facility (on land designated “R(B)1” only)	Hotel
Utility Installation for Private Project	Institutional Use (not elsewhere specified)
	Mass Transit Railway Vent Shaft and/or Other Structure above Ground Level other than Entrances
	Off-course Betting Centre
	Office
	Petrol Filling Station
	Place of Entertainment
	Place of Recreation, Sports or Culture
	Private Club
	Public Clinic
	Public Convenience
	Public Transport Terminus or Station
	Public Utility Installation
	Public Vehicle Park (excluding container vehicle)
	Recyclable Collection Centre
	Religious Institution
	School (not elsewhere specified)
	Shop and Services
	Social Welfare Facility (not applicable to land designated “R(B)1”)
	Training Centre

Planning Intention

This zone is intended primarily for medium-density residential developments where commercial uses serving the residential neighbourhood may be permitted on application to the Town Planning Board.

(Please see next page)

Proposed Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone, at 349 Prince Edward Road West, Kowloon

(Planning Application No. A/K10/276)

Appendix III

Replacement Pages of Sewerage Impact Assessment

CHAPTERS

TABLES

FIGURES

APPENDICES

ground level). A new Ø225mm polyethylene (PE) pipe is proposed to connect the Proposed Development and the existing government manhole FMH4027438 (S1) of the public sewerage system. The proposed sewage pipe and the existing sewerage system in the vicinity of the subject site is shown in Figure 2.1 while the catchment in the vicinity of the Subject Site is shown in Figure 2.2.

2.4.4 Calculation of the sewage generation rate for the proposed development is given in Table 2.1.

Table 2.1 Estimated Peak Flow of the Proposed Development

Calculation for Sewage Generation Rate of the Proposed Development			
1. Proposed Elderly Home			
1a. Total number of beds	=	141	beds
1b. Total number of elderlies	=	141	people
1c. Design flow	=	190	litre/person/day -- (Special class in Table T-1 of GESF)
1d. Sewage Generation rate	=	26.8	m^3/day
2a. Total number of nursing staff	=	21	staff (Estimated based on Code of Practice for Residential Care Homes (Nursing Homes) for the Elderly)
2b. Design flow	=	280	litre/employee/day -- (refer to Table T-2 of GESF - J11 Community, Social & Personal Services)
2c. Sewage Generation rate	=	5.9	m^3/day
3a. Assumed area for RCHE communal facilities	=	247.3	m^2
3b. Assumed floor area per employee	=	30.3	m^2 per employee -- (refer to Table 8 of CIFSUS - Community, Social & Personal Services)
3c. Total number of employees	=	8	employees
3d. Design flow	=	280	litre/employee/day -- (refer to Table T-2 of GESF - J11 Community, Social & Personal Services)
3e. Sewage generation rate	=	2.3	m^3/day
Total Flow from Proposed Development			
Flow Rate	=	35.0	m^3/day
Contributing Population	=	129	people
Peaking factor	=	8	Refer to Table T-5 of GESF for population <1,000 incl. stormwater allowance
Peak Flow	=	3.2	litre/sec

2.5 Discussion

2.5.1 The average and peak flow rates from the proposed development are about 35 m^3/day and 3.2 litre/sec respectively.

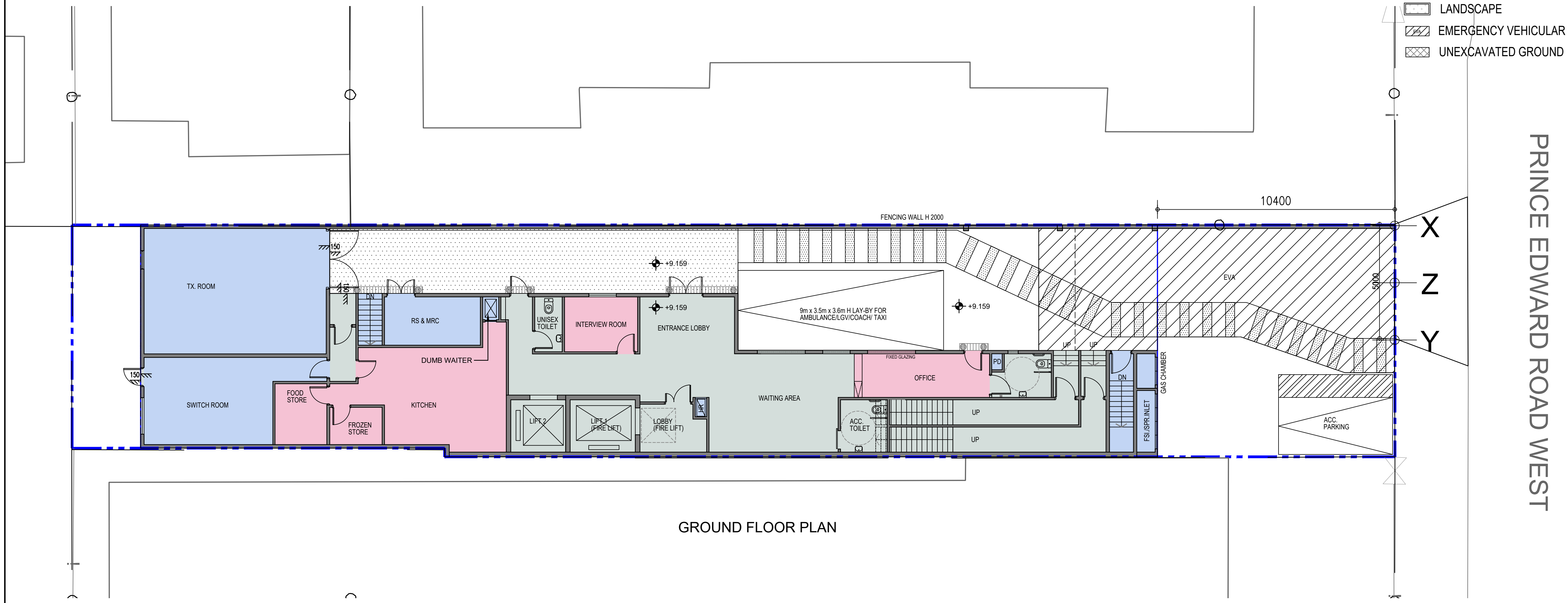
2.5.2 After calculating the appropriate capacities as mentioned above, the estimated sewage flow from the proposed development has been compared with the capacity of the existing sewerage system to determine whether it has adequate spare capacity to accommodate the flow from the proposed development and existing catchment area.

2.5.3 According to Table 4 of Appendix 2.1, it is found that the contribution from the sewage generated from the proposed development and surrounding catchment areas will be within 90% of the existing sewage system capacity. Therefore, the existing sewerage system is sufficient to cater for the sewage generated from the proposed development.

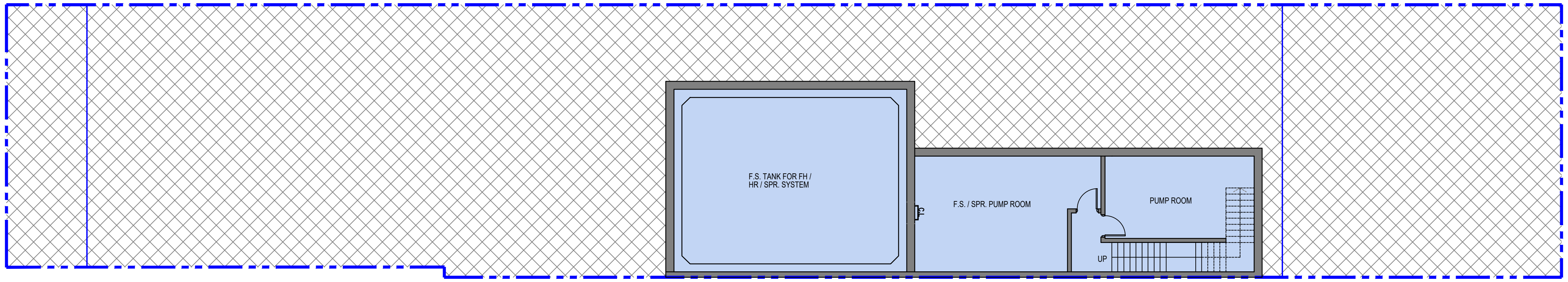
Appendix 1.1 Indicative MLP of the Proposed Development

LEGEND:

—	SITE BOUNDARY
🟨	WARD
🟥	ANCILLARY AREA
▩	COMMON / CIRCULATION SPACE
🟦	PLANT ROOM/ STAIRCASE TO U/G PLANT ROOM
▒	FOOTPATH
☐	LANDSCAPE
▨	EMERGENCY VEHICULAR ACCESS
▩	UNEXCAVATED GROUND



G/F LAYOUT 1:200



B/S LAYOUT 1:200

N

BD REF. NO.:

FSD REF. NO.:

REVISIONS AND SUBMISSIONS:

NO.:	DATE:	DETAILS:	CHECKED:

NOTES:

1. CONTENTS ON THIS DRAWING SHOW DESIGN INTENT ONLY CONTRACTOR IS RESPONSIBLE FOR DETAILED DESIGN OF THE INTERIOR FITTING-OUT. CONTRACTOR IS REQUIRED TO SUBMIT FULL SET SHOP DRAWINGS FOR ARCHITECT'S APPROVAL PRIOR TO FABRICATION AND SITE INSTALLATION.
2. STRUCTURAL CALCULATIONS IF REQUIRED AND RELATED SUPPORTING DATA SHOULD BE SUBMITTED FOR REVIEW AND APPROVAL.
3. TRUE COLOR SAMPLES OF MATERIALS SHOULD BE SUBMITTED FOR ARCHITECT'S APPROVAL PRIOR TO PROCUREMENT.
4. ALL FITTING/ ASSEMBLY AND MATERIALS SHOULD BE DESIGN & INSTALLED TO CONTRACT DRAWINGS AND SPECIFICATION, AND IN COMPLIANCE WITH ALL RELEVANT STATUTORY REQUIREMENTS.
5. DIMENSIONS BASED ON ON SITE MEASUREMENTS.

6. FINAL MATERIALS & FINISHES OF WALL,FLOOR,CEILING,WALL FIXTURE ETC. SHOULD BE REFER TO FINISHES AND MATERIALS SCHEDULE UNDER THE SPECIFICATION PROVIDED.

CLIENT/EMPLOYER:

PROJECT ARCHITECT/AUTHORIZED PERSON:

馬海

馬海(建築顧問)有限公司
Spence Robinson Limited

PROJECT STRUCTURAL ENGINEER/
PROJECT GEO-TECHNICAL ENGINEER:

張耀新建築工程師有限公司
Wilson & Associates Ltd

PROJECT E/M ENGINEER:

PROJECT LANDSCAPE CONSULTANT:

PROJECT QUANTITY SURVEYOR:

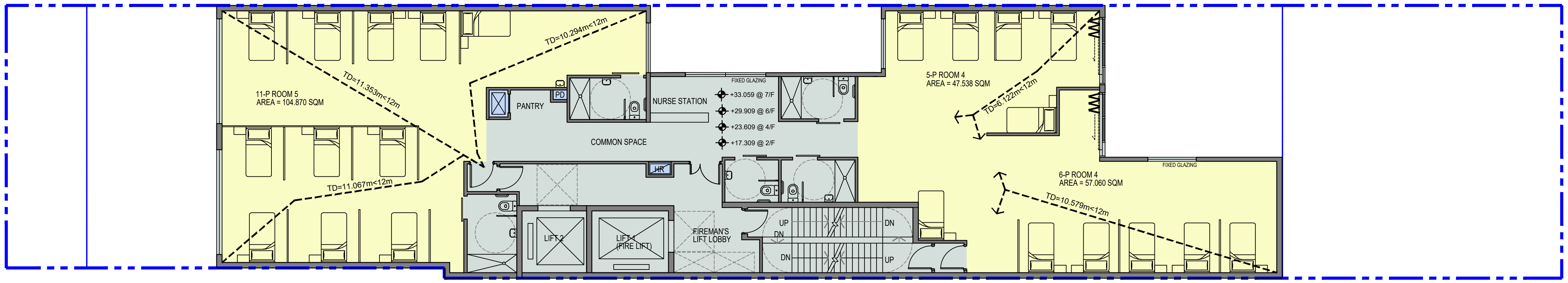
PROJECT:
PURPOSE BUILT C&A HOME DEVELOPMENT AT
349 PRINCE EDWARD ROAD WEST

DRAWING TITLE:

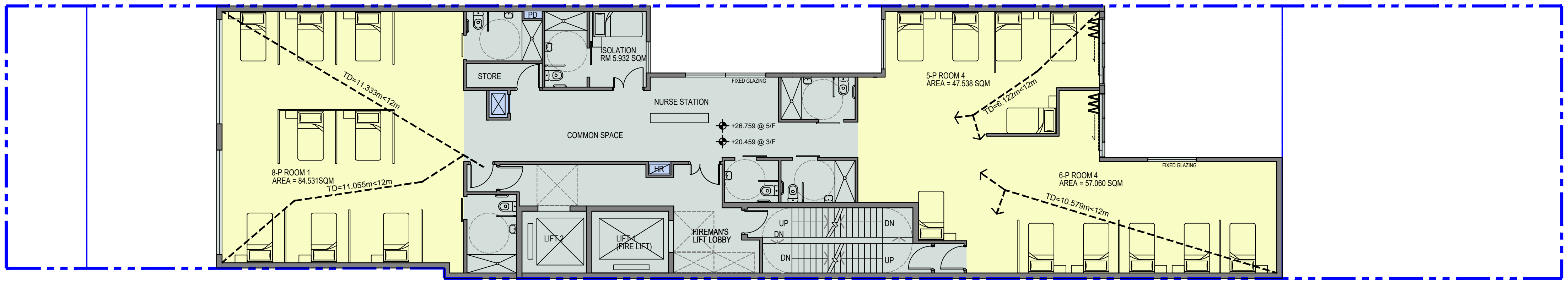
GROUND FLOOR PLAN &
BASEMENT FLOOR PLAN

DRAWN BY: CZ	DATE: NOV-2024	
CHECKED BY: CMD	APPROVED BY: KCY	
SCALE: 1:200	PAPER SIZE: A3	
PROJECT: PE 6170	DRAWING: GP-00	REVISION: V14

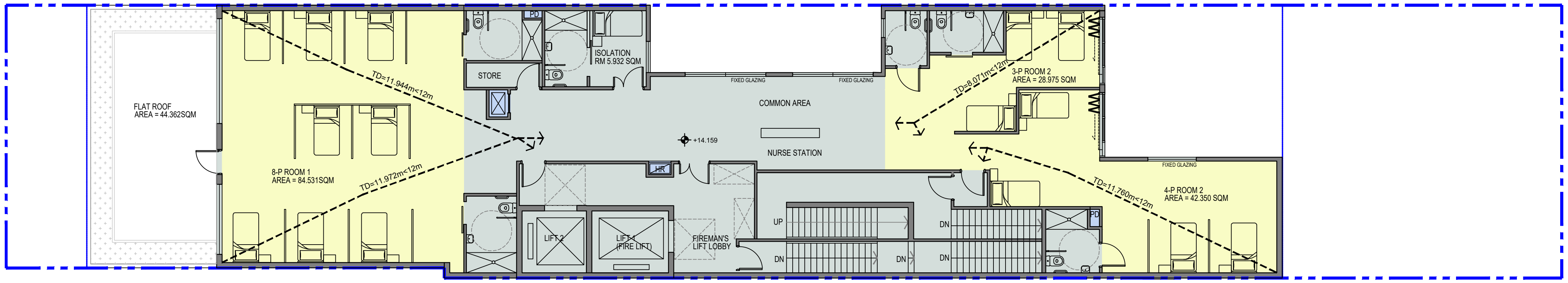
NOTES :
1. This drawing and design are copyright and no portion may be reproduced without the written permission of the Architect.
2. Use written dimensions or grid lines in preference to scaled dimensions. Measurements to existing work are to be checked on site.
3. This drawing is to be read in conjunction with the Architect's Specification and Conditions of Contract.
4. Prints not showing the last revision are to be cancelled.
5. Prints without an authorized signature in the checked and approved spaces below and after the last revision above are NOT vaild for use outside SRL.



2/F, 4/F, 6/F, 7/F LAYOUT 1:200



3/F, 5/F LAYOUT 1:200



1/F LAYOUT 1:200

LEGEND:

- — SITE BOUNDARY
- 🟨 WARD
- 🟥 ANCILLARY AREA
- ⬜ COMMON / CIRCULATION SPACE
- 🟦 PLANT ROOM/ STAIRCASE TO U/G PLANT ROOM
- ▒ FOOTPATH
- ▭ LANDSCAPE
- ▨ EMERGENCY VEHICULAR ACCESS
- ▩ UNEXCAVATED GROUND

NOS. OF BED
(9.5m²/ppl)

G/F	0
1/F	15
2/F	22
3/F	19
4/F	22
5/F	19
6/F	22
7/F	22
TOTAL	141

N

BD REF. NO.:
FSD REF. NO.:
REVISIONS AND SUBMISSIONS:

NO.:	DATE:	DETAILS:	CHECKED:

NOTES:
1. CONTENTS ON THIS DRAWING SHOW DESIGN INTENT ONLY CONTRACTOR IS RESPONSIBLE FOR DETAILED DESIGN OF THE INTERIOR FITTING-OUT. CONTRACTOR IS REQUIRED TO SUBMIT FULL SET SHOP DRAWINGS FOR ARCHITECT'S APPROVAL PRIOR TO FABRICATION AND SITE INSTALLATION.
2. STRUCTURAL CALCULATIONS IF REQUIRED AND RELATED SUPPORTING DATA SHOULD BE SUBMITTED FOR REVIEW AND APPROVAL.
3. TRUE COLOR SAMPLES OF MATERIALS SHOULD BE SUBMITTED FOR ARCHITECT'S APPROVAL PRIOR TO PROCUREMENT.
4. ALL FITTING/ ASSEMBLY AND MATERIALS SHOULD BE DESIGN & INSTALLED TO CONTRACT DRAWINGS AND SPECIFICATION, AND IN COMPLIANCE WITH ALL RELEVANT STATUTORY REQUIREMENTS.
5. DIMENSIONS BASED ON ON SITE MEASUREMENTS.

6. FINAL MATERIALS & FINISHES OF WALL,FLOOR,CEILING,WALL FIXTURE ETC. SHOULD BE REFER TO FINISHES AND MATERIALS SCHEDULE UNDER THE SPECIFICATION PROVIDED.

CLIENT/EMPLOYER:

PROJECT ARCHITECT/AUTHORIZED PERSON:
馬海
馬海(建築顧問)有限公司
Spence Robinson Limited

PROJECT STRUCTURAL ENGINEER/
PROJECT GEO-TECHNICAL ENGINEER:
張耀新建築工程師有限公司
Wilson & Associates Ltd

PROJECT E/M ENGINEER:

PROJECT LANDSCAPE CONSULTANT:

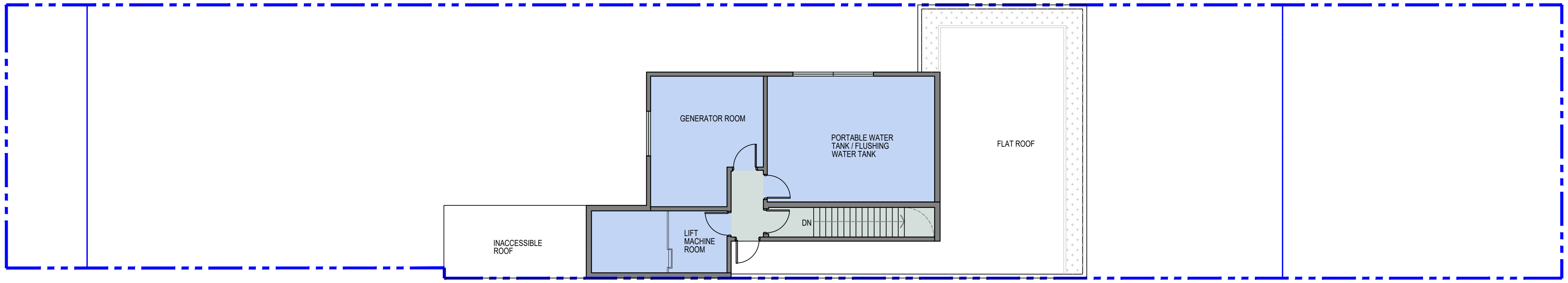
PROJECT QUANTITY SURVEYOR:

PROJECT:
PURPOSE BUILT C&A HOME DEVELOPMENT AT
349 PRINCE EDWARD ROAD WEST

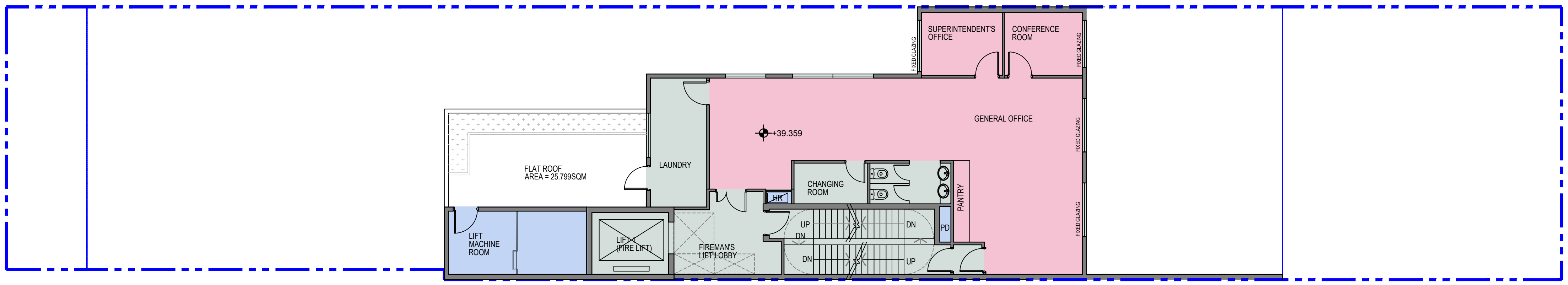
DRAWING TITLE:
FIRST FLOOR PLAN &
TYPICAL FLOOR PLAN (3/F,5/F) &
TYPICAL FLOOR PLAN (2/F,4/F,6/F& 7/F)

DRAWN BY: CZ
DATE: NOV-2024
CHECKED BY: CMD
APPROVED BY: KCY
SCALE: 1:200
PAPER SIZE: A3
PROJECT: PE 6170
DRAWING: GP-01
REVISION: V14

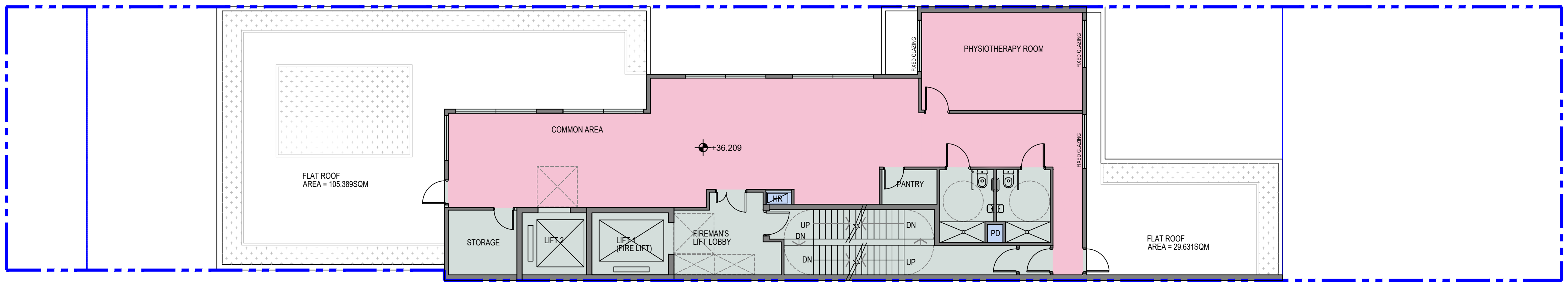
NOTES :
1. This drawing and design are copyright and no portion may be reproduced without the written permission of the Architect.
2. Use written dimensions or grid lines in preference to scaled dimensions. Measurements to existing work are to be checked on site.
3. This drawing is to be read in conjunction with the Architect's Specification and Conditions of Contract.
4. Prints not showing the last revision are to be cancelled.
5. Prints without an authorized signature in the checked and approved spaces below and after the last revision above are NOT vaild for use outside SRL.



ROOF LAYOUT 1:200



9/F LAYOUT 1:200



8/F LAYOUT 1:200

LEGEND:

— SITE BOUNDARY
🟨 WARD
🟥 ANCILLARY AREA
⬜ COMMON / CIRCULATION SPACE
🟦 PLANT ROOM/ STAIRCASE TO U/G PLANT ROOM
▦ FOOTPATH
▭ LANDSCAPE
▨ EMERGENCY VEHICULAR ACCESS
▩ UNEXCAVATED GROUND

NOS. OF BED
(9.5m²/ppl)

G/F	0
1/F	15
2/F	22
3/F	19
4/F	22
5/F	19
6/F	22
7/F	22
TOTAL	141

ANCILLARY AREA	
Floor Level	Area (m²)
G/F	59.183
1/F	0
2/F	0
3/F	0
4/F	0
5/F	0
6/F	0
7/F	0
8/F	108.709
9/F	79.448
TOTAL	247.338

N

BD REF. NO.:
FSD REF. NO.:
REVISIONS AND SUBMISSIONS:

NO.:	DATE:	DETAILS:	CHECKED:

NOTES:
1. CONTENTS ON THIS DRAWING SHOW DESIGN INTENT ONLY CONTRACTOR IS RESPONSIBLE FOR DETAILED DESIGN OF THE INTERIOR FITTING–OUT. CONTRACTOR IS REQUIRED TO SUBMIT FULL SET SHOP DRAWINGS FOR ARCHITECT'S APPROVAL PRIOR TO FABRICATION AND SITE INSTALLATION.
2. STRUCTURAL CALCULATIONS IF REQUIRED AND RELATED SUPPORTING DATA SHOULD BE SUBMITTED FOR REVIEW AND APPROVAL.
3. TRUE COLOR SAMPLES OF MATERIALS SHOULD BE SUBMITTED FOR ARCHITECT'S APPROVAL PRIOR TO PROCUREMENT.
4. ALL FITTING/ ASSEMBLY AND MATERIALS SHOULD BE DESIGN & INSTALLED TO CONTRACT DRAWINGS AND SPECIFICATION, AND IN COMPLIANCE WITH ALL RELEVANT STATUTORY REQUIREMENTS.
5. DIMENSIONS BASED ON ON SITE MEASUREMENTS.

6. FINAL MATERIALS & FINISHES OF WALL,FLOOR,CEILING,WALL FIXTURE ETC. SHOULD BE REFER TO FINISHES AND MATERIALS SCHEDULE UNDER THE SPECIFICATION PROVIDED.

CLIENT/EMPLOYER:

PROJECT ARCHITECT/AUTHORIZED PERSON:
馬海
馬海(建築顧問)有限公司
Spence Robinson Limited

PROJECT STRUCTURAL ENGINEER/
PROJECT GEO–TECHNICAL ENGINEER:
張耀新建築工程師有限公司
Wilson & Associates Ltd

PROJECT E/M ENGINEER:

PROJECT LANDSCAPE CONSULTANT:

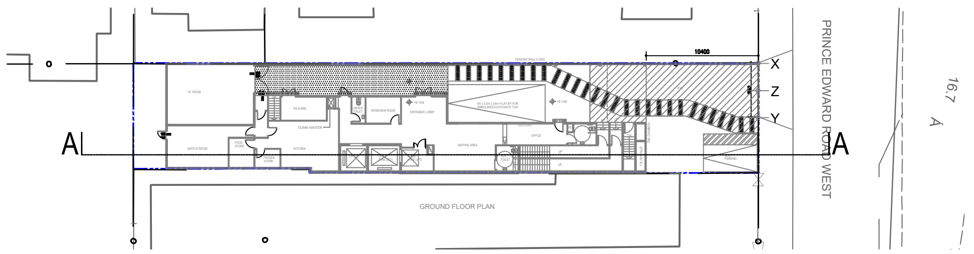
PROJECT QUANTITY SURVEYOR:

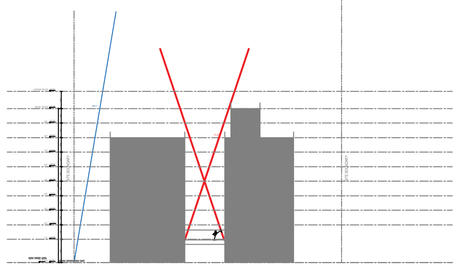
PROJECT:
PURPOSE BUILT C&A HOME DEVELOPMENT AT
349 PRINCE EDWARD ROAD WEST

DRAWING TITLE:
8/F & 9/F FLOOR PLAN &
ROOF FLOOR PLAN

DRAWN BY: CZ
DATE: NOV-2024
CHECKED BY: CMD
APPROVED BY: KCY
SCALE: 1:200
PAPER SIZE: A3
PROJECT: PE 6170
DRAWING: GP-02
REVISION: V14

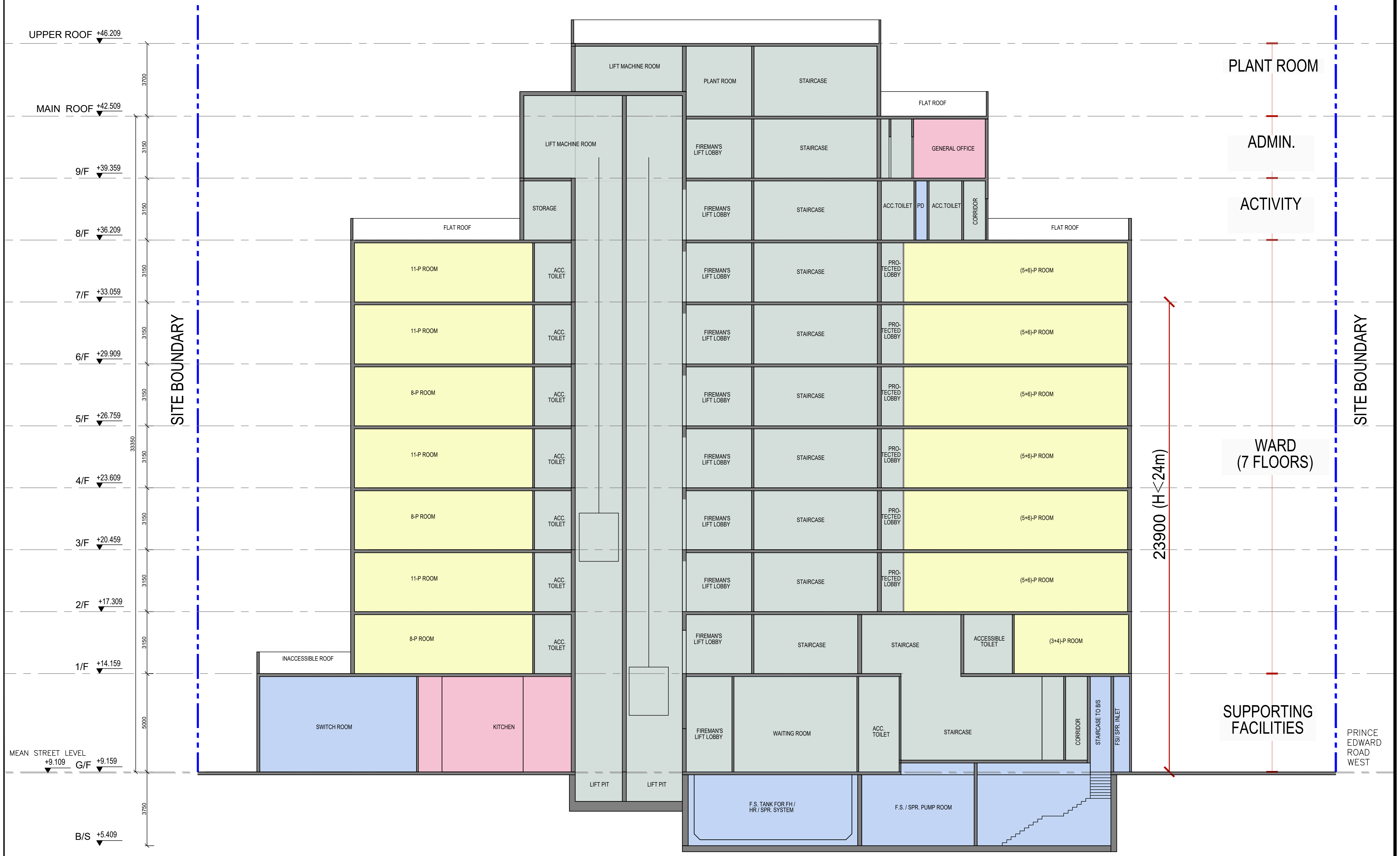
NOTES :
1. This drawing and design are copyright and no portion may be reproduced without the written permission of the Architect.
2. Use written dimensions or grid lines in preference to scaled dimensions. Measurements to existing work are to be checked on site.
3. This drawing is to be read in conjunction with the Architect's Specification and Conditions of Contract.
4. Prints not showing the last revision are to be cancelled.
5. Prints without an authorized signature in the checked and approved spaces below and after the last revision above are NOT vaild for use outside SRL.





LEGEND:

- ━ SITE BOUNDARY
- 🟨 WARD
- 🟥 ANCILLARY AREA
- ▨ COMMON / CIRCULATION SPACE
- 🟦 PLANT ROOM/ STAIRCASE TO U/G PLANT ROOM
- ▤ FOOTPATH
- ☐ LANDSCAPE
- ▧ EMERGENCY VEHICULAR ACCESS
- ▩ UNEXCAVATED GROUND



SECTION A-A 1:200

BD REF. NO.:
FSD REF. NO.:
REVISIONS AND SUBMISSIONS:

NO.:	DATE:	DETAILS:	CHECKED:

NOTES:
1. CONTENTS ON THIS DRAWING SHOW DESIGN INTENT ONLY CONTRACTOR IS RESPONSIBLE FOR DETAILED DESIGN OF THE INTERIOR FITTING–OUT. CONTRACTOR IS REQUIRED TO SUBMIT FULL SET SHOP DRAWINGS FOR ARCHITECT'S APPROVAL PRIOR TO FABRICATION AND SITE INSTALLATION.
2. STRUCTURAL CALCULATIONS IF REQUIRED AND RELATED SUPPORTING DATA SHOULD BE SUBMITTED FOR REVIEW AND APPROVAL.
3. TRUE COLOR SAMPLES OF MATERIALS SHOULD BE SUBMITTED FOR ARCHITECT'S APPROVAL PRIOR TO PROCUREMENT.
4. ALL FITTING/ ASSEMBLY AND MATERIALS SHOULD BE DESIGN & INSTALLED TO CONTRACT DRAWINGS AND SPECIFICATION, AND IN COMPLIANCE WITH ALL RELEVANT STATUTORY REQUIREMENTS.
5. DIMENSIONS BASED ON ON SITE MEASUREMENTS.
6. FINAL MATERIALS & FINISHES OF WALL,FLOOR,CEILING,WALL FIXTURE ETC. SHOULD BE REFER TO FINISHES AND MATERIALS SCHEDULE UNDER THE SPECIFICATION PROVIDED.

CLIENT/EMPLOYER:

PROJECT ARCHITECT/AUTHORIZED PERSON:
馬海
馬海(建築顧問)有限公司
Spence Robinson Limited

PROJECT STRUCTURAL ENGINEER/
PROJECT GEO-TECHNICAL ENGINEER:
張耀新建築工程師有限公司
Wilson & Associates Ltd

PROJECT E/M ENGINEER:

PROJECT LANDSCAPE CONSULTANT:

PROJECT QUANTITY SURVEYOR:

PROJECT:
PURPOSE BUILT C&A HOME DEVELOPMENT AT 349 PRINCE EDWARD ROAD WEST

DRAWING TITLE:
SECTION

DRAWN BY: CZ	DATE: NOV-2024	
CHECKED BY: CMD	APPROVED BY: KCY	
SCALE: 1:200	PAPER SIZE: A3	
PROJECT: PE 6170	DRAWING: GP-03	REVISION: V14

NOTES :
1. This drawing and design are copyright and no portion may be reproduced without the written permission of the Architect.
2. Use written dimensions or grid lines in preference to scaled dimensions. Measurements to existing work are to be checked on site.
3. This drawing is to be read in conjunction with the Architect's Specification and Conditions of Contract.
4. Prints not showing the last revision are to be cancelled.
5. Prints without an authorized signature in the checked and approved spaces below and after the last revision above are NOT vaild for use outside SRL.

Appendix 2.1 Detailed Sewerage Impact Assessment Calculations

Table 1 Calculation for Sewage Generation Rate of the Proposed Development at the Application Site

Proposed Development

1. Proposed Elderly Home

1a. Total number of beds = 141 beds

1b. Total number of elderlies = 141 people

1c. Design flow = 190 litre/person/day -- (Institutional and special class in Table T-1 of GESF)

1d. Sewage Generation rate = **26.8** m^3/day

2a. Total number of nursing staff = 21 staff (Estimated based on Code of Practice for Residential Care Homes (Nursing Homes) for the Elderly)

2b. Design flow = 280 litre/employee/day -- (refer to Table T-2 of GESF - J11 Community, Social & Personal Services)

2c. Sewage Generation rate = **5.9** m^3/day

3a. Assumed area for RCHE communal facilities = 247.3 m^2

3b. Assumed floor area per employee = 30.3 m^2 per employee -- (refer to Table 8 of CIFSUS - Community, Social & Personal Services)

3c. Total number of employees = 8 employees

3d. Design flow = 280 litre/employee/day -- (refer to Table T-2 of GESF - J11 Community, Social & Personal Services)

3e. Sewage generation rate = **2.3** m^3/day

Total Flow from Proposed Development

Flow Rate = 35.0 m^3/day

Contributing Population = 129 people

Peaking factor = 8 Refer to Table T-5 of GESF for population <1,000 incl. stormwater allowance

Peak Flow = **3.2** litre/sec

Table 2a Hydraulic Capacity of Existing Sewers at Prince Edward Road West

Segment	**Manhole Reference**	**Manhole Reference**	**Pipe Dia.**	**Pipe Length**	**Cover Level 1[2]**	**Cover Level 2[2]**	**Depth 1**	**Depth 2**	**Invert Level 1[3]**	**Invert Level 2[3]**	**g**	**k_s**	**s**	**v**	**V**	**Area**	**Q**	**Estimated Capacity**
			mm	**m**	**mPD**	**mPD**	**m**	**m**	**mPD**	**mPD**	**m/s^2**	**m**		**m^2/s**	**m/s**	**m^2**	**m^3/s**	**L/s**
S1-S2	FMH4027438	FMH4067900	300	12.2	9.38	9.10	1.7	1.7	7.80	7.40	9.81	0.0006	0.033	0.000001	2.86	0.07	0.20	202
S2-S3	FMH4067900	FMH4050809	300	1.8	9.10	9.10	1.7	2.2	7.40	6.90	9.81	0.0006	0.281	0.000001	8.39	0.07	0.59	593
S3-S4	FMH4050809	FMH4048825	675	4.9	9.10	9.06	2.2	2.2	6.89	6.85	9.81	0.003	0.009	0.000001	2.02	0.36	0.72	722
S4-S5	FMH4048825	FMH4048826	675	25.1	9.06	8.80	2.2	-	6.86	-	9.81	0.003	-	0.000001	-	0.36	-	-
S5-S6	FMH4048826	FMH4050810	675	25.0	8.80	8.94	-	-	-	-	9.81	0.003	-	0.000001	-	0.36	-	-
S6-S7	FMH4050810	FMH4048827	675	7.3	8.94	8.36	-	-	-	-	9.81	0.003	-	0.000001	-	0.36	-	-
S4-S7'	FMH4048825	FMH4048827	600	57.9	-	8.36	-	-	5.21	4.33	9.81	0.003	0.015	0.000001	2.43	0.28	0.69	687

Note:

[1] According to the Drainage Record Plans (DSD), the invert levels of several manholes are missing. According to planning application no. A/K10/261, a manhole survey was conducted to determine the depth and alignment of the concerned manholes. The survey results show that manhole FMH4067900 (S2) is connected to FMH4050809 (S3), which is different from the online Drainage Record Plans published by DSD. Since the invert levels of manholes downstream of S4 are not available in the Drainage Record Plan, interpolation is adopted to assess the hydraulic capacity of sewers at segment S4-S5-S6-S7 as shown in **Table 2b**.

[2] The cover levels of S2, S5 and S6 are referenced from the previous planning application no. A/K10/261.

[3] The incoming invert levels of S1-S2 and S2-S3, and outgoing invert levels of S2-S3 and S4-S5 are deduced by subtracting the depth from the cover level.

[4] g=gravitational acceleration; ks=equivalent sand roughness; s=gradient; v=kinematic viscosity of water; V=mean velocity

[5] The value of k_s = 0.6mm or 3mm are used for the calculation of slimed clayware sewer, poor condition (based on Table 5: Recommended roughness values in Sewerage Manual)

[6] The value of k_s = 3mm or 6mm are used for the calculation of slimed concrete sewer, poor condition (based on Table 5: Recommended roughness values in Sewerage Manual)

[7] The value of k_s = 1.5mm are used for the calculation of slimed PE sewer, poor condition (based on Table 5: Recommended roughness values in Sewerage Manual)

[8] The value of velocity (V) is referred to the Tables for the hydraulic design of pipes, sewers and channels (8th edition)

[9] Equation used: $V=-\sqrt{(8gDs)}\log(\frac{k_s}{3.7D}+\frac{2.51v}{D\sqrt{(2gDs)}})$

Table 2b Hydraulic Capacity of Existing Sewers at Prince Edward Road West - Overall hydraulic capacity of several segments

Segment	**Manhole Reference**	**Manhole Reference**	**Pipe Dia.**	**Pipe Length**	**Invert Level 1**	**Invert Level 2**	**g**	**k_s**	**s**	**v**	**V**	**Area**	**Q**	**Estimated Capacity**
			mm	**m**	**mPD**	**mPD**	**m/s^2**	**m**		**m^2/s**	**m/s**	**m^2**	**m^3/s**	**L/s**
S4-S5	FMH4048825	FMH4048826	675	25.1	6.86	6.48	9.81	0.0006	0.015	0.000001	3.24	0.36	1.16	1160
S5-S6	FMH4048826	FMH4050810	675	25.0	6.48	6.09	9.81	0.0006	0.015	0.000001	3.24	0.36	1.16	1160
S6-S7	FMH4050810	FMH4048827	675	7.3	6.09	5.98	9.81	0.0006	0.015	0.000001	3.24	0.36	1.16	1160

Note:

[1] The invert levels are calculated based on the assumption that S4-S5, S5-S6, and S6-S7 has the same gradient ("s") as S4-S7'.

Table 2c Hydraulic Capacity of Existing Sewers at Prince Edward Road West - after corrections

Segment	**Manhole Reference**	**Manhole Reference**	**Pipe Dia.**	**Pipe Length**	**Invert Level 1**	**Invert Level 2**	**g**	**k_s**	**s**	**v**	**V**	**Area**	**Q**	**Estimated Capacity**
			mm	**m**	**mPD**	**mPD**	**m/s^2**	**m**		**m^2/s**	**m/s**	**m^2**	**m^3/s**	**L/s**
S1-S2	FMH4027438	FMH4067900	300	12.2	7.80	7.40	9.81	0.0006	0.033	0.000001	2.86	0.07	0.20	202
S2-S3	FMH4067900	FMH4050809	300	1.8	7.40	6.90	9.81	0.0006	0.281	0.000001	8.39	0.07	0.59	593
S3-S4	FMH4050809	FMH4048825	675	4.9	6.89	6.85	9.81	0.003	0.009	0.000001	2.02	0.36	0.72	722
S4-S5	FMH4048825	FMH4048826	675	25.1	6.86	6.48	9.81	0.003	0.015	0.000001	2.62	0.36	0.94	939
S5-S6	FMH4048826	FMH4050810	675	25.0	6.48	6.09	9.81	0.003	0.015	0.000001	2.62	0.36	0.94	939
S6-S7	FMH4050810	FMH4048827	675	7.3	6.09	5.98	9.81	0.003	0.015	0.000001	2.62	0.36	0.94	939
S4-S7'	FMH4048825	FMH4048827	600	57.9	5.21	4.33	9.81	0.003	0.015	0.000001	2.43	0.28	0.69	687

Table 2d Hydraulic Capacity of Proposed Sewers at Prince Edward Road West

Segment	**Manhole Reference**	**Manhole Reference**	**Pipe Dia.**	**Pipe Length**	**Invert Level 1**	**Invert Level 2**	**g**	**k_s**	**s**	**v**	**V**	**Area**	**Q**	**Estimated Capacity**
			mm	**m**	**mPD**	**mPD**	**m/s^2**	**m**		**m^2/s**	**m/s**	**m^2**	**m^3/s**	**L/s**
S0-S1	Proposed TM	FMH4027438	225	6.2	7.85	7.80	9.81	0.0015	0.008	0.000001	1.03	0.04	0.04	41

Table 3a Calculation for Sewage Generation Rate of the Existing Surrounding Building

Catchment A

1. Windsor Court (333 Prince Edward Road West)

1a. Total number of residential units = 18 units
1b. Total number of residents = 49 people -- (2023 Population Census: Kowloon City District of 2.7)
1c. Design flow = 270 litre/person/day -- (Private R2 in Table T-1 of GESF)
1d. Sewage Generation rate = **13.1** m^3/day

2. Hamford Court (335 Prince Edward Road West)

1a. Total number of residential units = 24 units
1b. Total number of residents = 65 people -- (2023 Population Census: Kowloon City District of 2.7)
1c. Design flow = 270 litre/person/day -- (Private R2 in Table T-1 of GESF)
1d. Sewage Generation rate = **17.5** m^3/day

3. Harbourview Garden (339 Prince Edward Road West)

1a. Total number of residential units = 34 units
1b. Total number of residents = 92 people -- (2023 Population Census: Kowloon City District of 2.7)
1c. Design flow = 270 litre/person/day -- (Private R2 in Table T-1 of GESF)
1d. Sewage Generation rate = **24.8** m^3/day

4. Maison Deluxe (341 Prince Edward Road West)

1a. Total number of residential units = 33 units
1b. Total number of residents = 89 people -- (2023 Population Census: Kowloon City District of 2.7)
1c. Design flow = 270 litre/person/day -- (Private R2 in Table T-1 of GESF)
1d. Sewage Generation rate = **24.1** m^3/day

5. Woodland Vila (345-347 Prince Edward Road West)

1a. Total number of residential units = 35 units
1b. Total number of residents = 95 people -- (2023 Population Census: Kowloon City District of 2.7)
1c. Design flow = 270 litre/person/day -- (Private R2 in Table T-1 of GESF)
1d. Sewage Generation rate = **25.5** m^3/day

Sub-total Flow of Catchment A

Flow Rate = 105.0 m^3/day
Contributing Population = 389 people
Peaking factor = 8 Refer to Table T-5 of GESF for population <1,000 incl. stormwater allowance
Peak Flow = **9.7** litre/sec

Total Flow at Manhole S1 (FMH4027438), including Proposed Development

Flow Rate = 139.9 m^3/day
Contributing Population = 518 people
Peaking factor = 8 Refer to Table T-5 of GESF for population <1,000 incl. stormwater allowance
Peak Flow = **13.0** litre/sec

Table 3b-1 Full-bore assessment for the northern part of catchment B (Northern Portion)

Manhole Reference	Manhole Reference	Pipe Dia.	Pipe Length	Invert Level 1	Invert Level 2	g	k_s	s	v	V	Area	Q	Estimated Capacity
		mm	m	mPD	mPD	m/s^2	m		m^2/s	m/s	m^2	m^3/s	L/s
FMH4048815	FMH4050983	675	11.5	8.05	7.94	9.81	0.003	0.009	0.000001	2.01	0.36	0.72	718
FMH4050983	FMH4048817	675	13.5	7.94	7.82	9.81	0.003	0.009	0.000001	2.01	0.36	0.72	718
FMH4048817	FMH4048818	675	22.9	7.82	7.66	9.81	0.003	0.007	0.000001	1.77	0.36	0.63	635
FMH4048818	FMH4048820	675	10.7	7.66	7.60	9.81	0.003	0.006	0.000001	1.61	0.36	0.58	577
FMH4048820	FMH4051340	675	3.5	7.60	7.22	9.81	0.003	0.110	0.000001	7.03	0.36	2.52	2516
FMH4051340	FMH4048821	675	3.0	6.66	6.30	9.81	0.003	0.119	0.000001	7.34	0.36	2.63	2625
FMH4048821	FMH4048823	450	22.6	5.70	5.60	9.81	0.0006	0.004	0.000001	1.35	0.16	0.21	214
FMH4048823	FMH4050807	675	9.5	7.35	7.23	9.81	0.003	0.012	0.000001	2.37	0.36	0.85	849
FMH4050807	FMH4048824	675	3.4	7.05	7.03	9.81	0.003	0.0058	0.000001	1.62	0.36	0.58	**581**
FMH4048824	FMH4050808	675	14.3	7.03	6.92	9.81	0.003	0.0080	0.000001	1.90	0.36	0.68	678
FMH4050808	FMH4050809	675	2.3	6.92	6.89	9.81	0.003	0.0130	0.000001	2.42	0.36	0.87	866

Remarks:
(1) g=gravitational acceleration; k_s=equivalent sand roughness; s=gradient; v=kinematic viscosity of water; V=mean velocity
(2) Table 1a: The value of k_s = 3mm is used for the calculation of slimed **concrete** sewer, poor condition (based on Table 5: Recommended roughness values in Sewerage Manual)
(2) Table 1a: The value of k_s = 0.6mm is used for the calculation of slimed **clayware** sewer, poor condition (based on Table 5: Recommended roughness values in Sewerage Manual)
(4) The value of velocity (V) is referred to the Tables for the hydraulic design of pipes, sewers and channels (8th edition)
(5) Equation used: $V=-\sqrt{(8gDs)}\log(\frac{k_s}{3.7D}+\frac{2.51v}{D\sqrt{(2gDs)}})$

Table 3b-2 Calculation for Sewage Generation Rate of the Existing Surrounding Building

Catchment B (Southern Portion)

1. Ka Wah Court

1a. Total number of residential units = 27 units

1b. Total number of residents = 73 people -- (2023 Population Census: Kowloon City District of 2.7)

1c. Design flow = 270 litre/person/day -- (Private R2 in Table T-1 of GESF)

1d. Sewage Generation rate = **19.7** m^3/day

2. Prince Home for the Elderly (Prince Edward Road West 351, G/F) Reference: https://elderlyinfo.swd.gov.hk/en/content/prince-home-elderly

1a. Total number of bedspaces = 40 spaces

1b. Design flow = 190 litre/person/day -- (Institutional and special class in Table T-1 of GESF)

1a. Total number of Elderly Care Employee = 12 employees

1b. Design flow = 280 litre/person/day -- (J11 in Table T-2 of GESF)

1d. Sewage Generation rate = **11.0** m^3/day

3. Hung To for the Home (Prince Edward Road West 351, 1/F) Reference: https://www.elderlyinfo.swd.gov.hk/en/content/hung-home

1a. Total number of bedspaces = 48 spaces

1b. Design flow = 190 litre/person/day -- (Institutional and special class in Table T-1 of GESF)

1a. Total number of Elderly Care Employee = 9 employees

1b. Design flow = 280 litre/person/day -- (J11 in Table T-2 of GESF)

1d. Sewage Generation rate = **11.6** m^3/day

4. Kin Tat Home for the Aged (Prince Edward Road West 351, 2/F) Reference: https://www.elderlyinfo.swd.gov.hk/en/content/kin-tat-home-aged

1a. Total number of bedspaces = 47 spaces

1b. Design flow = 190 litre/person/day -- (Institutional and special class in Table T-1 of GESF)

1a. Total number of Elderly Care Employee = 13 employees

1b. Design flow = 280 litre/person/day -- (J11 in Table T-2 of GESF)

1d. Sewage Generation rate = **12.6** m^3/day

Catchment B (Northern Portion)

Sewage Generated from the northern portion of Catchment B = **581** litre/sec

Sub-total Flow of Catchment B

Flow Rate = 54.9 m^3/day

Contributing Population = 203 people

Peaking factor = 8 Refer to Table T-5 of GESF for population <1,000 incl. stormwater allowance

Peak Flow = **5.1** litre/sec

Peak Flow with the northern portion of Catchment B = **585.8** litre/sec

Total Flow at Manhole S3 (FMH4050809), including Proposed Development

Flow Rate = 194.8 m^3/day

Contributing Population = 721 people

Peaking factor = 8 Refer to Table T-5 of GESF for population <1,000 incl. stormwater allowance

Peak Flow = **18.0** litre/sec

Peak Flow with the northern portion of Catchment B = **598.7** litre/sec

Table 4 Comparison of the Hydraulic Capacity of Existing and Proposed Sewers for the Sewage generated from the Proposed Development and Surrounding Catchment Areas

Segment	Pipe Dia. (mm)	Pipe Length (m)	Gradient	Estimated Capacity (L/s)	Peak Flow from the Proposed Development only (L/s)	Contribution from the Proposed Development only (%)	Status	Peak Flow from the Proposed Development and Catchment Areas (L/s)	Contribution from the Proposed Development and the Surrounding Catchment Areas (%)	Status
S0-S1	225	6.2	0.008	41	3.2	7.9%	OK	3.2	7.9%	OK
S1-S2	300	12.2	0.033	202	3.2	1.6%	OK	13.0	6.4%	OK
S2-S3	300	1.8	0.281	593	3.2	0.5%	OK	13.0	2.2%	OK
S3-S4	675	4.9	0.009	722	3.2	0.4%	OK	598.7	82.9%	OK
S4-S5	675	25.1	0.015	939	3.2	0.3%	OK	598.7	63.8%	OK
S5-S6	675	25.0	0.015	939	3.2	0.3%	OK	598.7	63.8%	OK
S6-S7	675	7.3	0.015	939	3.2	0.3%	OK	598.7	63.8%	OK
S4-S7'	600	57.9	0.015	687	3.2	0.5%	OK	598.7	87.1%	OK

Remark:

According to a manhole survey conducted under planning application no. A/K10/261, the outlet of S5 is blocked and unable to be surveyed any further. For conservative purposes, both the calculations of S4-S5-S6-S7 and S4-S7' are shown in the above table, with no exceedance in either route. It should be noted that the sewage will be preferentially discharged to S4-S5-S6-S7, instead of S4-S7', due to the lower incoming invert level of the former.

Appendix IV

Replacement Pages of Noise Impact Assessment

2. TRAFFIC NOISE IMPACT ASSESSMENT

2.1 Introduction

2.1.1 In this assessment, road traffic noise impact from roads within 300m radius on the Proposed Development has been assessed. Practicable environmental mitigation measures have been recommended as appropriate.

2.2 Assessment Criteria

2.2.1 According to Chapter 9 of the HKPSG which provides guidance for environmental considerations in the planning of both public and private developments and the noise standards are prescribed, the maximum allowed road traffic noise level, measured in terms of L_{10} (1 hr), at typical facade of new dwellings and office uses is recommended to be 70 dB(A) and for isolation room with potential diagnostic treatment to be 55 dB(A).

2.3 Noise Sensitive Receivers for Road Traffic Noise Assessment

2.3.1 The proposed RCHE at the Application Site is a noise sensitive receiver (NSR) of road traffic noise impact. Representative assessment points have been assigned to the rooms with prescribed window for ventilation within G/F to 7/F and 9/F of the Proposed Development. The assessment area is provided in Figure 2.1. The locations and details of the representative NSRs selected for assessment are provided in Figures 2.2a to Figures 2.2e and Table 2.1 below, respectively.

Table 2.1 Representative NSRs for Road Traffic Noise Assessment

NSR	Description	Type of Use / Noise Criteria dB(A)	Assessment Level, mPD
RG01	Interview Room	Office/ 70	G/F at 10.4 mPD
R101	Wards	Dwelling/ 70	1/F at 15.4 mPD
R102	Wards	Dwelling/ 70	
R103	Isolation Room	Dwelling with potential medical treatment/ 55	
R104	Wards	Dwelling/ 70	
R105	Wards	Dwelling/ 70	
RT01	Wards	Dwelling/ 70	Typical Floors from 2/F to 7/F at 18.5 mPD to 34.3 mPD
RT02	Wards	Dwelling/ 70	
RT03	Wards	Dwelling/ 70	
RT04a	Wards	Dwelling/ 70	
RT04b	Isolation Room	Dwelling with potential medical treatment/ 55	
RT05	Wards	Dwelling/ 70	
RT06	Wards	Dwelling/ 70	
R901	General Office	Office/ 70	9/F at 40.6 mPD
R902	General Office	Office/ 70	

2.4 Assessment Methodology

2.4.1 As discussed in Section 2.2, according to HKPSG, the standard for road traffic noise level expressed in terms of L_{10}(1 hr) at the typical façades of the Proposed

Development is recommended to be 70 dB(A) for dwellings and office uses and 55 dB(A) for isolation room. The assessment is based on the prediction of the maximum L_{10} (1 hr) traffic noise level at NSRs of the Proposed Development due to the projected traffic on the adjacent road network for year 2042, which is considered as the maximum traffic projections within 15 years upon occupation of the Proposed Development in 2027. Traffic data was predicted by the project traffic consultant. Details of information on peak hour traffic volume and percentage of heavy vehicle of the road network within the 300m assessment area provided by the Project traffic consultant is presented in Appendix 2.1, which represents the worst-case scenario of the projected traffic flows. The projected peak hour traffic flow volume and percentage of heavy vehicles during the AM peak hour were used for the noise assessment, as they are generally higher than those in the afternoon.

2.4.2 The UK Department of Transport's procedures - "Calculation of Road Traffic Noise" (CRTN) has been used in the prediction of the road traffic noise at the representative NSRs of the Proposed Development within the Application Site. The existing topographic details, such as the existing houses and structures near the Application Site, have been considered in the assessment.

2.4.3 The noise prediction has been carried out using the *Road Noise Module 2.7.2 of Noise Map Enterprise Edition* software, which is a computerised model developed on the basis of the U.K. Department of Transport's CRTN procedures, and is acceptable to the EPD.

2.5 Prediction and Evaluation of Noise Impacts

2.5.1 An assessment on the road traffic noise level at the NSRs based on the above traffic flow data has been conducted. Noise mitigation measure which has already been incorporated in the design of the layout, and considered in the unmitigated scenario include the setback of RCHE block from the site boundary. The Proposed Development is also partially shielded by other surrounding existing buildings in the area.

2.5.2 A summary of the predicted road traffic noise levels at the representative NSRs is provided in Table 2.2. The predicted road traffic noise levels at some NSRs would exceed the relevant noise criteria of 70 dB(A) by up to 6 dB(A). The detailed unmitigated results are provided in Appendix 2.2.

Table 2.2 Summary of Predicted Unmitigated Road Traffic Noise Levels at Representative NSRs (AM peak)

NSR	Predicted Road Traffic Noise Level, $L_{10\ (1\text{-hour})}$, dB(A) (Unmitigated)
	AM
RG01	70
R101	76
R102	75
R103	49
R104	59
R105	61
RT01	75 - 76
RT02	75
RT03	50 - 51
RT04a	55 - 56
RT04b	49

NSR	Predicted Road Traffic Noise Level, $L_{10\ (1\text{-hour})}$, dB(A) (Unmitigated)
	AM
RT05	59 - 63
RT06	61 - 63
R901	57
R902	57

[1] Bolded values exceed the noise criteria of 55 dB(A) or 70 dB(A).

2.5.3 To mitigate the traffic noise impact, baffle type acoustic window are proposed in order to alleviate the noise levels to comply with the noise criteria.

Baffle Type Acoustic Balcony

2.5.4 Innovative noise mitigation measures are being explored in recent years. It is noted that EPD has published *ProPECC PN5/23 Application of Innovative Noise Mitigation Designs in Planning Private Residential Developments against Road Traffic Noise Impact*. According to EPD's website regarding innovative noise mitigation design and measures (http://www.epd.gov.hk/epd/Innovative/greeny/eng/index.html), different balconies and special design window systems have been implemented in public rental housing, private residential and hostel developments.

2.5.5 Based on the current proposed development, the setting and dimensions of the baffle-type acoustic design in ProPECC PN5/23 cannot be accommodated, and therefore it is not adopted. As a result, the design of acoustic window is drawn from another reference case with a more applicable design to suit the Proposed Development. The acoustic window (baffle type) from a reference case, i.e. approved planning application A/K22/29, is proposed to be equipped at the wards on the first floor to seventh floor of the RCHE which are directly facing Prince Edward Road West. The location of these acoustic window (baffle type) has been indicated in Figure 2.3a and Figure 2.3b.

2.5.6 According to the EA report of the approved planning application A/K22/29, a sound attenuation performance of 8.8 dB(A) can be achieved to a room of 38.3m^2 in area by an acoustic window (baffle type) with an outer opening size of 3.2m^2, 100mm gap width and 275mm overlapping width. The relevant pages of the said report have been extracts in Appendix 2.5.

2.5.7 For the proposed acoustic window (baffle type), the outer window opening shall be equal or smaller than 3.2m^2, the overlapping width shall be larger or equal to 275mm, while 100mm gap width shall be provided. The indicative design of the proposed acoustic window (baffle type) can be referred to Figure 2.4. Furthermore, the room sizes of the wards at the RCHE proposed with acoustic window (baffle type) range from around 29m^2 to 47.7m^2. In theory, the smaller the room size designed, the less will be the sound attenuation after adjustment. The sound attenuation for individual ward has been adjusted based on comparison of room size of the case in this Proposed Development and the reference case. Sound attenuation of the baffle type acoustic window adopted for the Proposed Development is estimated based on the reference project and presented in Appendix 2.4. The acoustic window (baffle type) is expected to provide at least 7.6 dB(A) of sound attenuation for the dormitories that are smaller in size than the reference case, after adjusting the sound attenuation. Meanwhile, the room sizes of the dormitories at the RCHE proposed with the acoustic window (baffle type) are larger than the one used in the reference case (A/K22/29). Therefore, the sound attenuation performance of the proposed acoustic window (baffle type) is not expected to be less than the reference case, which is equivalent to 8.8 dB(A). As a

3. FIXED NOISE IMPACT ASSESSMENT

3.1 Introduction

3.1.1 In this assessment, potential noise impacts arising from the nearby fixed noise sources within 300m radius on the Proposed Development has been assessed by general acoustic principle and Technical Memorandum for the Assessment of Noise from Places Other Than Domestic Premises, Public Places or Construction Sites (IND-TM). Practicable environmental mitigation measures would be recommended, where necessary.

3.2 Government Legislation and Standards

Noise Control Ordinance (NCO)

3.2.1 The Noise Control Ordinance (NCO) provides the statutory framework for the control of fixed plant. The Technical Memorandum for the Assessment of Noise from Places other than Domestic Premises, Public Places or Construction Sites (IND-TM) sets the criteria, Acceptable Noise Level (ANL), for governing noise from existing fixed plant / industrial noise sources.

Hong Kong Planning Standards and Guidelines (HKPSG)

3.2.2 The NCO requires that noise impacts from existing fixed noise sources shall comply with the Acceptable Noise Levels (ANL) laid down in Table 2 of IND-TM, which is influenced by the Area Sensitivity Rating (ASR) determined by the type of area containing the NSR.

3.2.3 The Application Site is located in an urban area and it is bounded by Prince Edward Road West to the north. According to The Annual Traffic Census 2022 published by Transport Department, Prince Edward Road West has an annual average daily traffic flow (AADT) of 41770. As the AADT is in excess of 30,000, Prince Edward Road West is considered as the influencing factor. An ASR of "C" will be adopted for façade facing Prince Edward Road West, and ASR of "B" will be adopted for the façade facing away from Prince Edward Road West. The ANL for ASRs "B" and "C" are depicted in Table 3.1.

Table 3.1 Relevant Noise Standard for Fixed Noise Sources

	Criteria in Relevant Time Periods	Acceptable Noise Level (ANL)
"B"	Day and Evening (07:00 – 23:00)	65 dB(A)
	Night (23:00 – 07:00)	55 dB(A)
"C"	Day and Evening (07:00 – 23:00)	70 dB(A)
	Night (23:00 – 07:00)	60 dB(A)

3.2.4 The ASRs proposed in this NIA are intended for assessment only. Nothing in the NIA shall bind the Noise Control Authority in the context of enforcement against any of the fixed plant / industrial noise sources identified and assessed in the future under the NCO.

3.2.5 Since the observed fixed noise sources (Section 3.3 refers) are existing uses, the ANL criteria is relevant and has been adopted.

3.3 Identification of Potential Noise Impacts

Fixed Noise Sources

3.3.1 Desktop study has been conducted to identify any presence of fixed noise source within 300m radius from the boundary of the Application Site. Site survey has been conducted in May 2024 to verify the presence of the fixed noise source. The locations of the existing fixed noise sources to be included in this assessment are indicated in Figure 3.1 to Figure 3.4. Fixed noise sources have also been found in the rooftop of EFCC Grace Church, Sheng Kung Hui Holy Trinity Church Centenary Bradbury Centre, Evangel Hospital and Holy Trinity Bradbury Centre Sheng Kui Hui. Since these fixed noise sources are fully blocked by surrounding buildings, they are not included in this assessment. The noise assessment assumed all equipment will be operating simultaneously and continuously as a worst-case scenario. The sound power level of the noise sources was referenced from product catalogues. The details of the fixed noise sources are presented in Appendix 3.1.

3.4 Noise Sensitive Receivers for Fixed Noise Assessment

3.4.1 Representative assessment points have been assigned to the wards of the Proposed Development overlooking the industrial noise sources. The NSRs are selected at 1m away from the façade of openable window for ventilation purpose. The locations and details of the representative NSRs selected for assessment are provided in Figure 3.5 and Table 3.2 below, respectively.

Table 3.2 Representative NSRs for Fixed Noise Assessment

NSR	Description
FN01	Ward
FN02	Ward
FN03	Ward
FN04	Ward
FN05	Ward

3.5 Assessment Methodology

3.5.1 As the premises were not accessible for site measurement, information such as types of noise source and Sound Power Levels (SWLs) of noisy equipment were referenced from representative catalogues available in the market (Appendix 3.1 refers). The potential type of noise sources and SWLs were assumed to be same as other facilities of similar operation.

3.5.2 To predict the noise level at the future noise sensitive uses, the following correction factors have been accounted for:

- Distance correction: based on the shortest horizontal distance between the identified noise sources and the NSR, the distance correction is projected based on standard acoustical principle for point source;
- Although it is unlikely that all the identified fixed noise sources will be in operation simultaneously, to be conservative, it has been assumed that all the identified noise sources are in operation at the same time, which also represents a worst-case scenario. Noise sources are assumed to operate continuously instead of in occasion as observed onsite and all noise sources are regarded as point source;

- Façade correction: a +3dB(A) correction is applied to account for noise reflection from façade.
- Tonal correction: +3 dB(A) correction is applied to account for the presence of certain tonal Components of the noise.

3.5.3 Corrected Noise Level (CNL) at the representative NSRs of the Proposed Development can be calculated by applying the above corrections to the measured SWL of the noise sources in accordance with the following formula:

$$\text{CNL} = \text{SWL} + C_{dist} + C_{fac} + C_{bar} + C_{tone}$$

Where,

CNL is the corrected noise level at the Assessment Point in dB(A)

SWL is the sound power level of the fixed plant in dB(A)

C_{dist} is the distance correction in dB(A) in accordance with the Technical Memorandum on Noise from Construction Works Other than Percussive Piling

C_{fac} is façade correction, +3 dB(A)

C_{bar} is screening correction, -5 dB(A) for partial screening and -10 dB(A) for complete screening by structure

C_{tone} is the tonal correction.

3.6 Prediction and Evaluation of Noise Impacts

Fixed Noise Assessment Results

3.6.1 Based on the assumptions mentioned above and information of noise sources in Section 3.3, noise level estimation for the selected NSRs at the Application Site has been conducted. The predicted industrial noise levels at the representative NSRs are summarised in Table 3.3. The details are presented in Appendix 3.2.

Table 3.3 Predicted Unmitigated Fixed Noise Levels at Representative NSRs

NSR[1]	Acceptable Noise Level (ANL)		Predicted Unmitigated Noise Level, dB(A)	
	Day and Evening	Night	Day and Evening (07:00 – 23:00)	Night (23:00 – 07:00)
FN01	70	60	52	49
FN02	65	55	53	49
FN03	65	55	53	49
FN04	65	55	53	49
FN05	65	55	52	45

Notes:
[1] The assessment only includes NSRs which reply on opened windows for ventilation.

3.6.2 Based on the proposed layout, the calculated fixed noise levels at all NSRs comply with the noise criteria. No adverse fixed noise impact is anticipated at the Application Site.

3.7 Conclusion

3.7.1 Noise impacts due to existing fixed noise sources within 300m radius of the Application Site have been examined. Based on the proposed layout, no adverse fixed noise impact on the Proposed Development is anticipated.

Figures

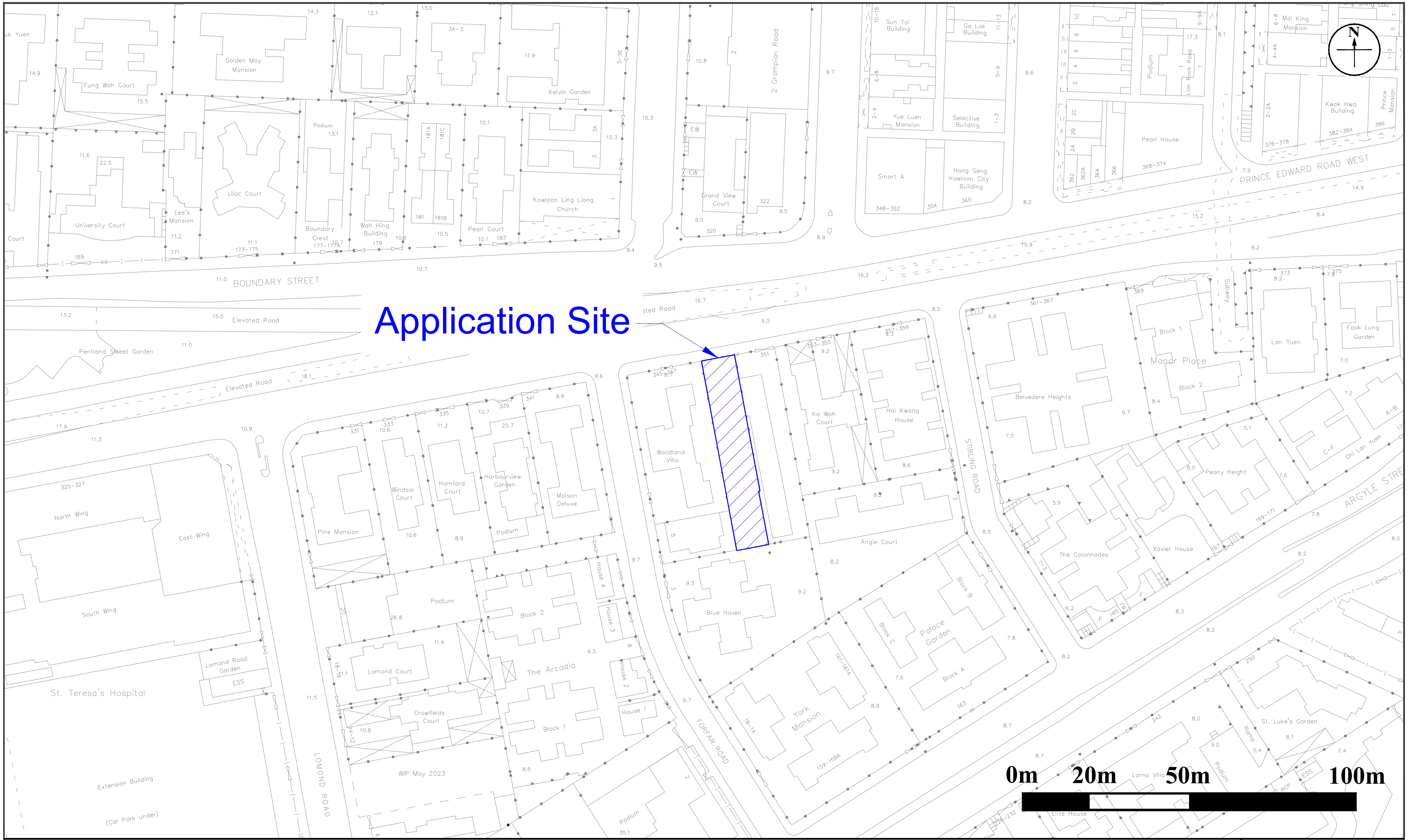


Figure: 1.1

Title: Application Site & Its Environ

Project: Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon

RAMBOLL

Drawn by: VS

Checked by: KY

Rev.: 1.1

Date: Aug 2024

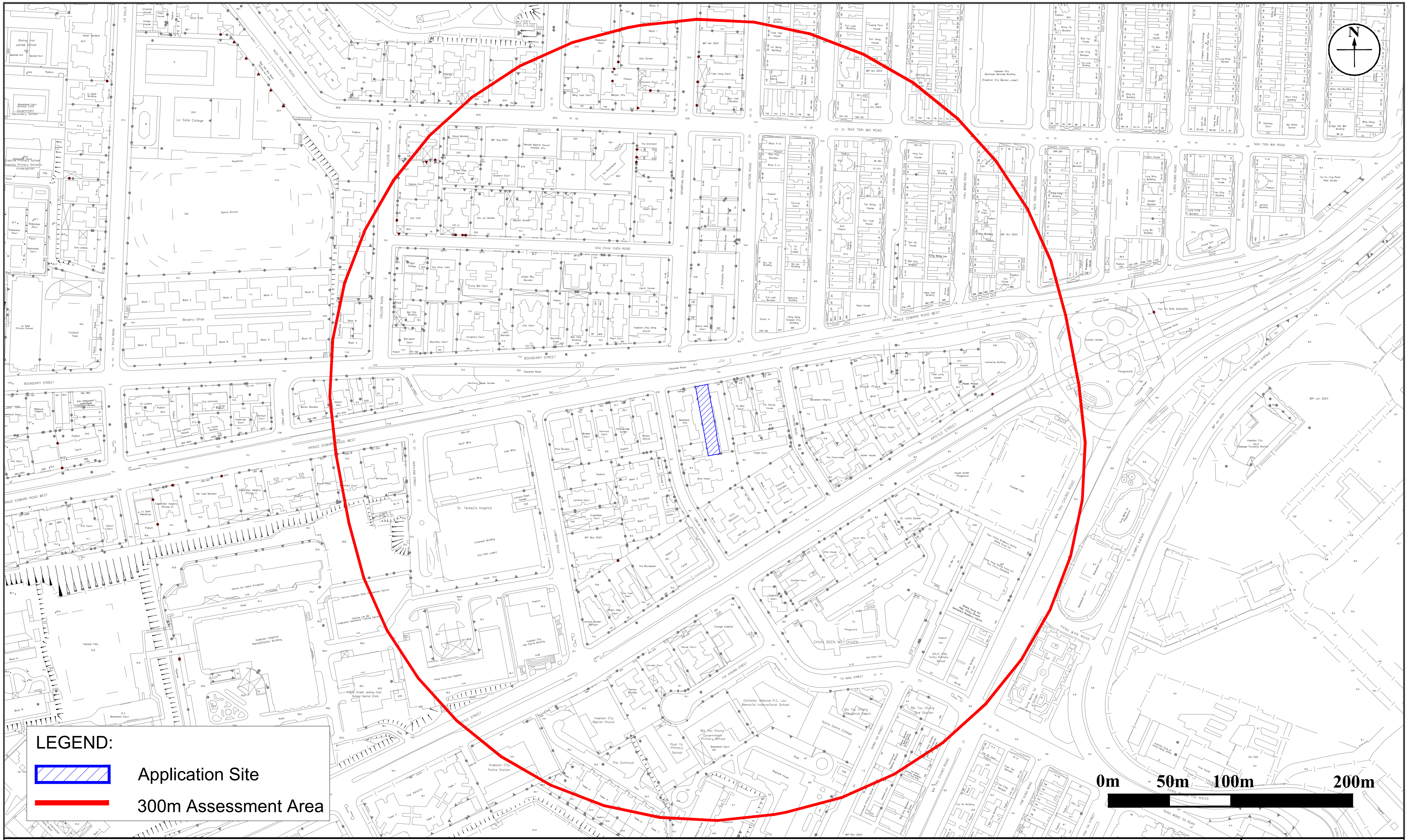


Figure: 2.1

Title: Traffic Noise Assessment Area

Project: Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon

RAMBOLL

Drawn by: VS
Checked by: KY
Rev.: 1.1
Date: Aug 2024

Legend:

▭	Site Boundary
●	Representative NSRs for TNIA

Figure: 2.2a

Title: Representative NSRs for Traffic Noise Impact Assessment (G/F)

Project: Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon

RAMBOLL

Drawn by: VS

Checked by: KY

Rev.: 2.0

Date: Nov 2024

Figure: 2.2b

Title: Representative NSRs for Traffic Noise Impact Assessment (1/F)

Project: Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon

Drawn by: VS
Checked by: KY
Rev.: 2.0
Date: Nov 2024

Figure: 2.2c

Title: Representative NSRs for Traffic Noise Impact Assessment
(Typical Floors - 2/F, 4/F, 6/F & 7/F)

Project: Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon

RAMBOLL

Drawn by: VS
Checked by: KY
Rev.: 2.0
Date: Nov 2024

Legend:

▭ Site Boundary

● Representative NSRs for TNIA

Figure: 2.2d

Title: Representative NSRs for Traffic Noise Impact Assessment (Typical Floors - 3/F & 5/F)

Project: Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon

RAMBOLL

Drawn by: VS

Checked by: KY

Rev.: 2.0

Date: Nov 2024

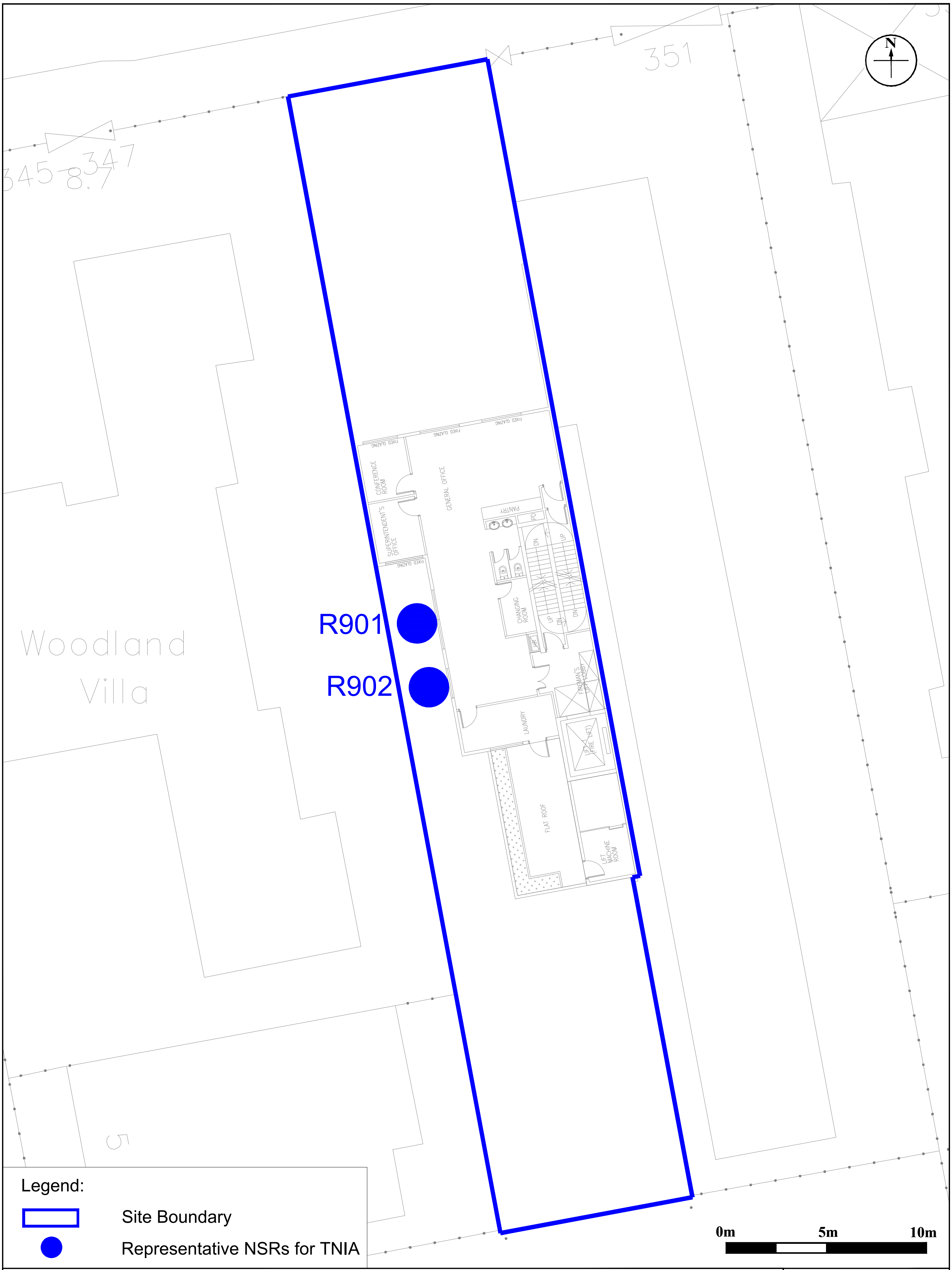


Figure: 2.2e

Title: Representative NSRs for Traffic Noise Impact Assessment (9/F)

Project: Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon

RAMBOLL

Drawn by:	VS
Checked by:	KY
Rev.:	2.0
Date:	Nov 2024

Legend:

▭	Site Boundary
●	Representative NSRs for TNIA
🟩	Acoustic Window (Baffle Type)

Figure: 2.3a

Title: Proposed Noise Mitigation Measures for Traffic Noise Impact Assessment (1/F)

Project: Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon

RAMBOLL

Drawn by: VS
Checked by: KY
Rev.: 2.0
Date: Nov 2024

Legend:

▭	Site Boundary
●	Representative NSRs for TNIA
🟩	Acoustic Window (Baffle Type)

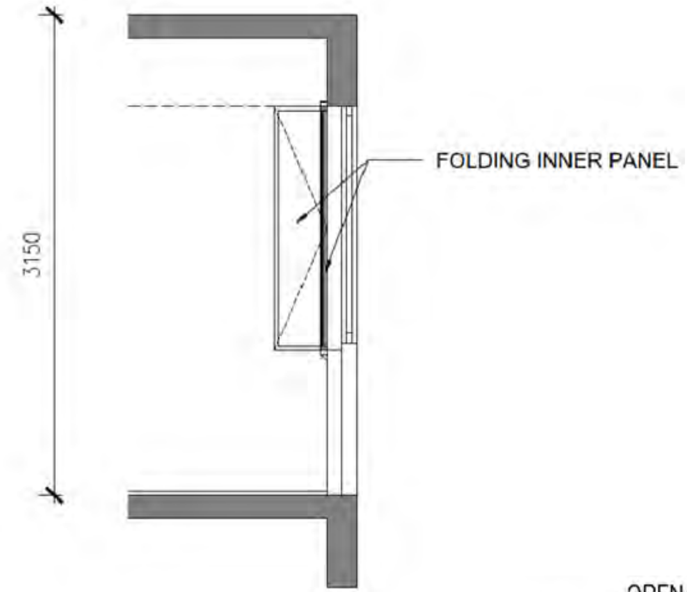
Figure: 2.3b

Title: Proposed Noise Mitigation Measures for Traffic Noise Impact Assessment (Typical Floors - 2/F to 7/F)

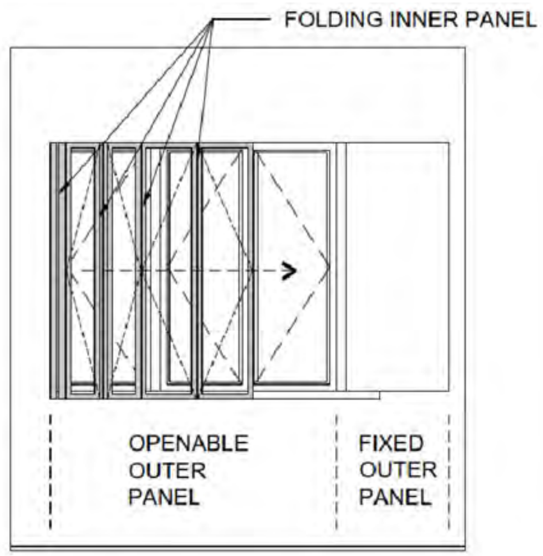
Project: Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon

RAMBOLL

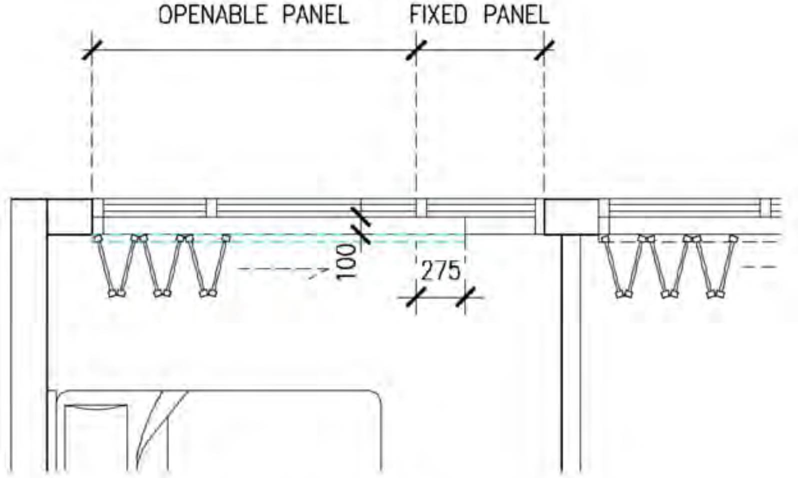
Drawn by: VS
Checked by: KY
Rev.: 2.0
Date: Nov 2024



SECTION 1:50



ELEVATION (VIEW FROM INSIDE) 1:50



PLAN 1:50

Figure: 2.4

Title: Indicative Design of Baffle Type Acoustic Window

Project: Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon

Drawn by: VS
Checked by: KY
Rev.: 1.1
Date: Aug 2024

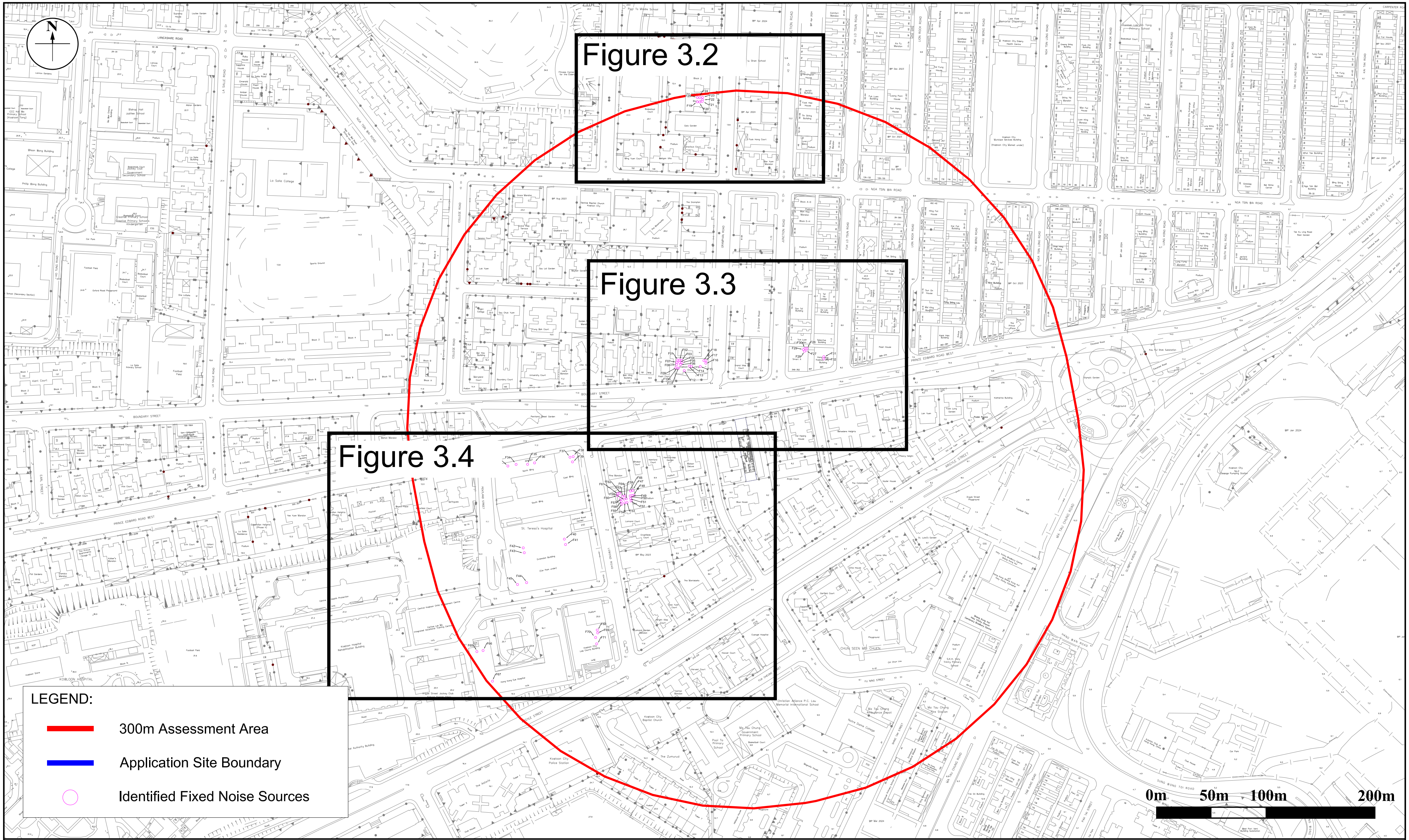


Figure: 3.1

Title: Location of Fixed Noise Sources (Sheet 1 of 4)

Project: Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon

Drawn by: EC
Checked by: KY
Rev.: 2.0
Date: Nov 2024

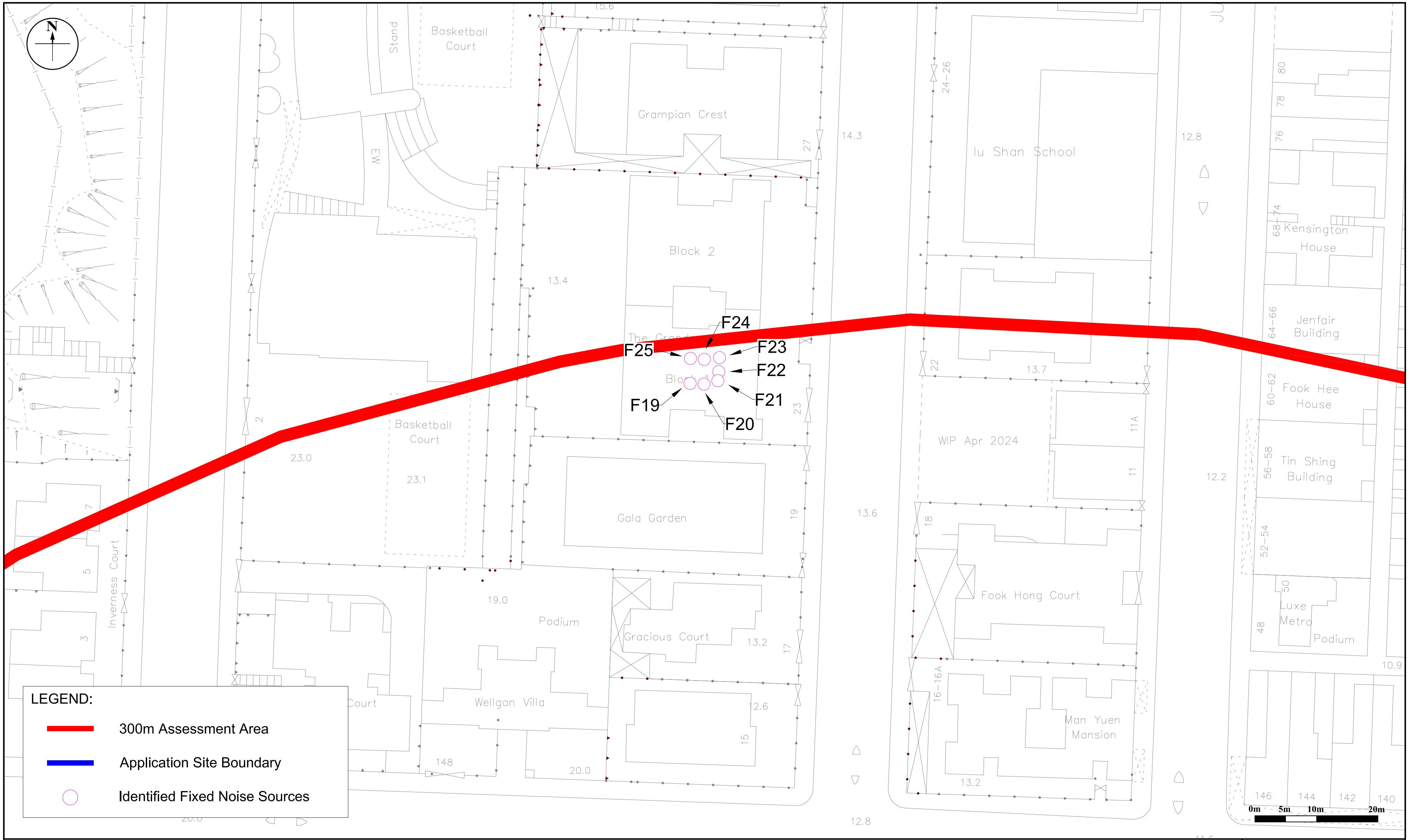


Figure: 3.2

Title: Location of Fixed Noise Sources (Sheet 2 of 4)

Project: Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon

Drawn by: EC
Checked by: KY
Rev.: 2.0
Date: Nov 2024

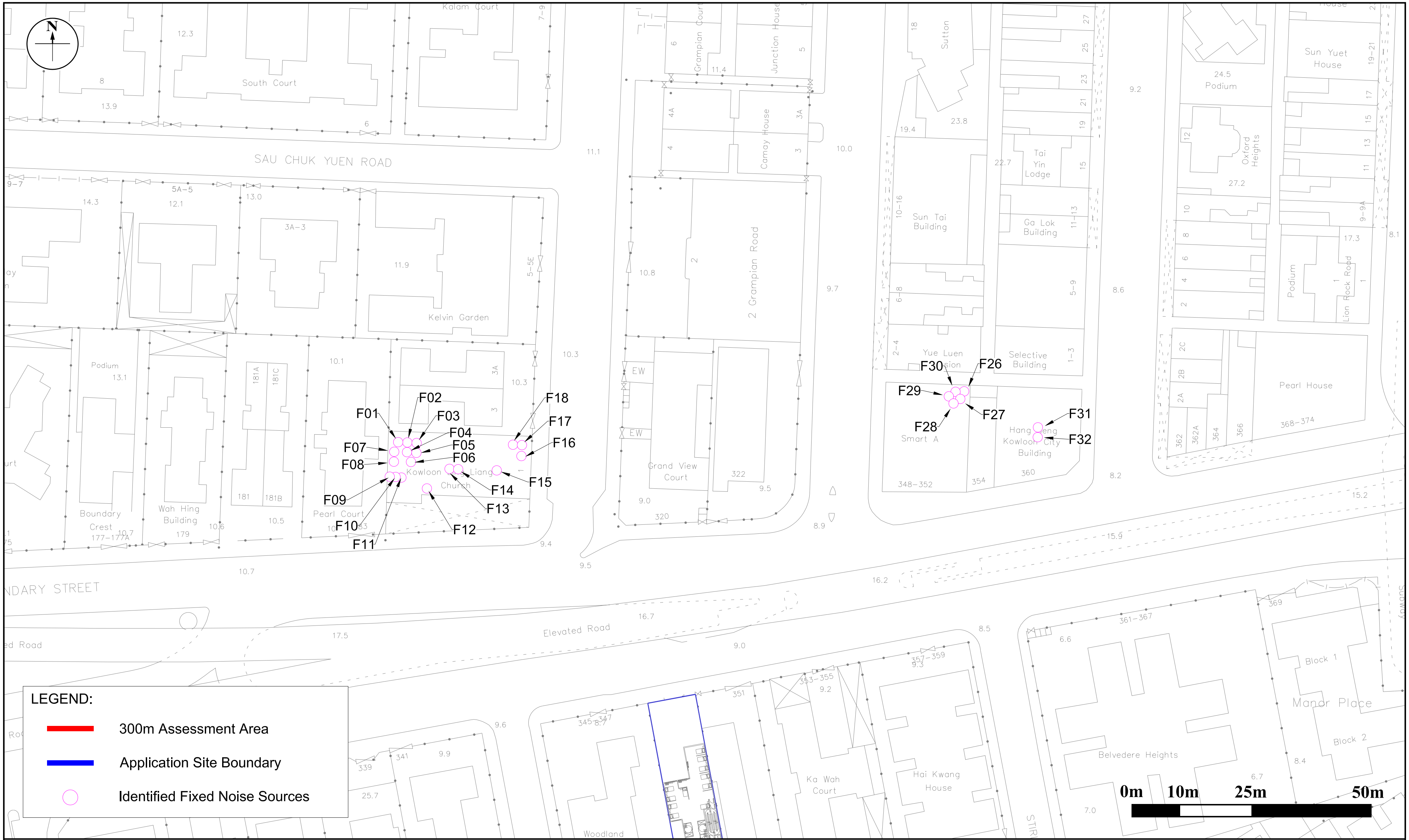


Figure: 3.3

Title: Location of Fixed Noise Sources (Sheet 3 of 4)

Project: Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon

RAMBOLL

Drawn by: EC

Checked by: KY

Rev.: 2.0

Date: Nov 2024

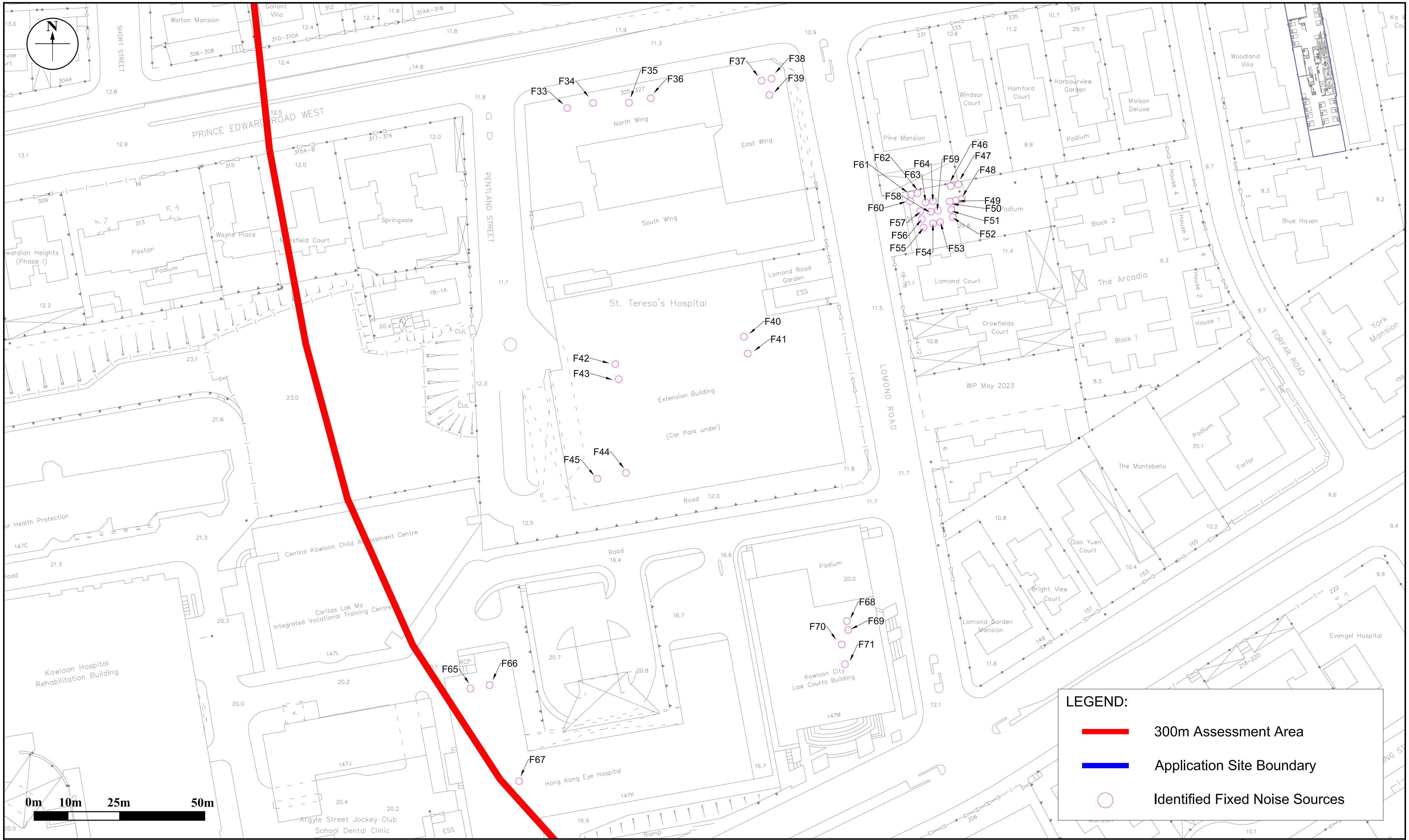


Figure: 3.4

Title: Location of Fixed Noise Sources (Sheet 4 of 4)

Project: Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon

Drawn by: EC
Checked by: KY
Rev.: 2.0
Date: Nov 2024

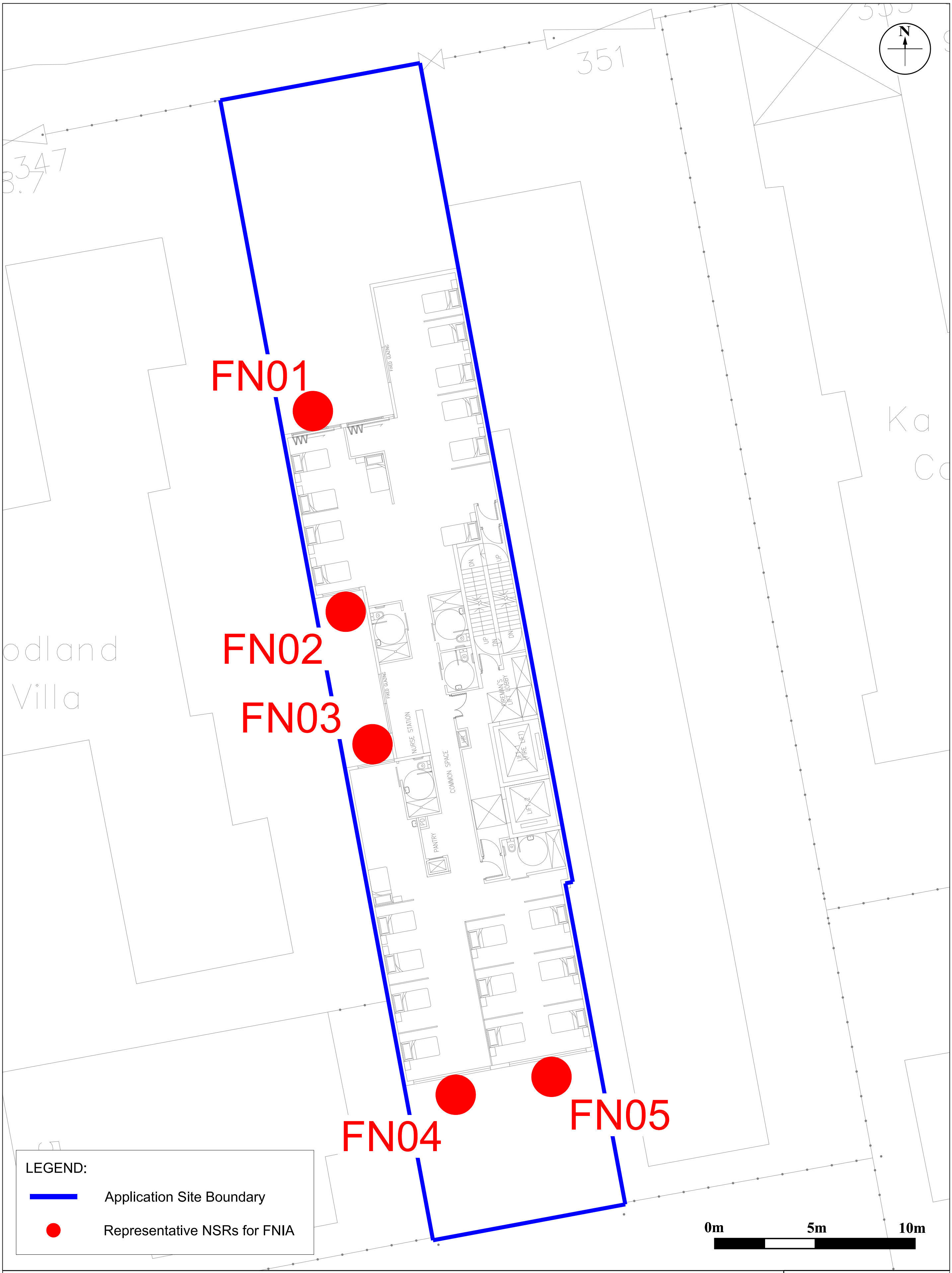


Figure: 3.5

Title: Location of Representative Noise Sensitive Receivers for Fixed Noise Impact Assessment

Project: Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon

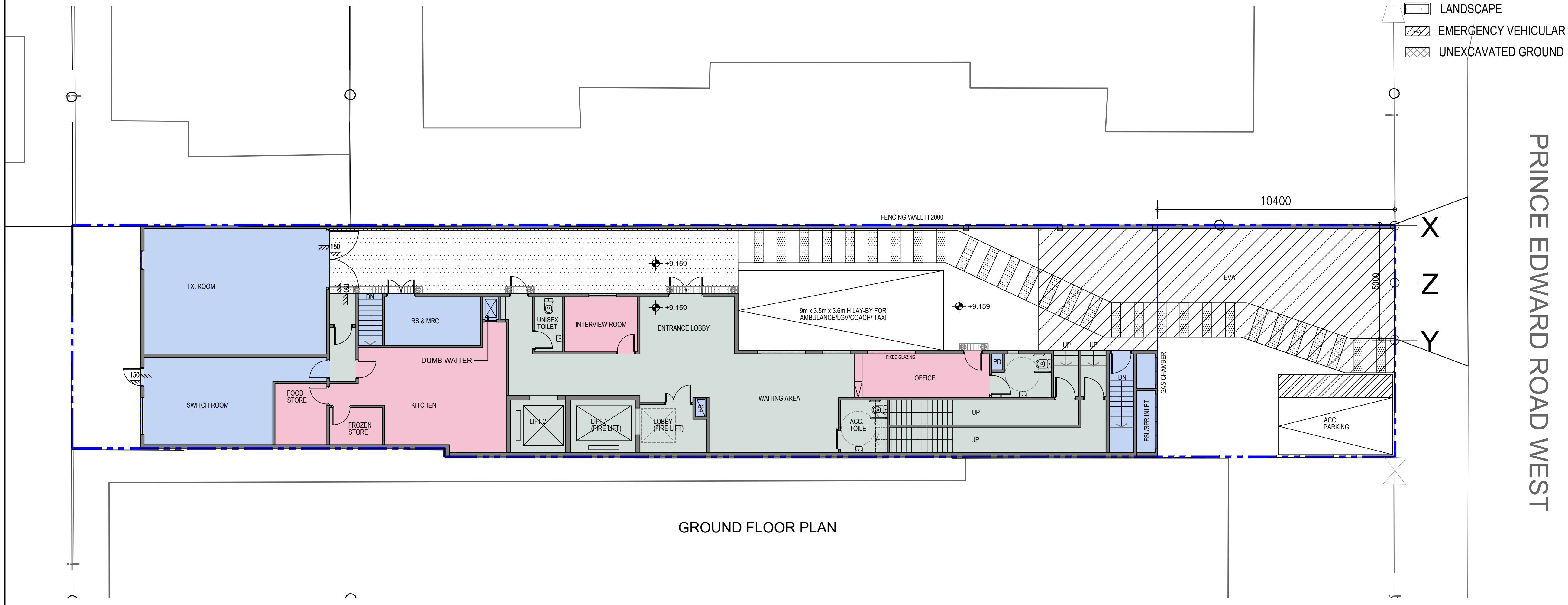
Drawn by: EC
Checked by: KY
Rev.: 2.0
Date: Nov 2024

Appendix 1.1

Detailed Layout of the Proposed Development

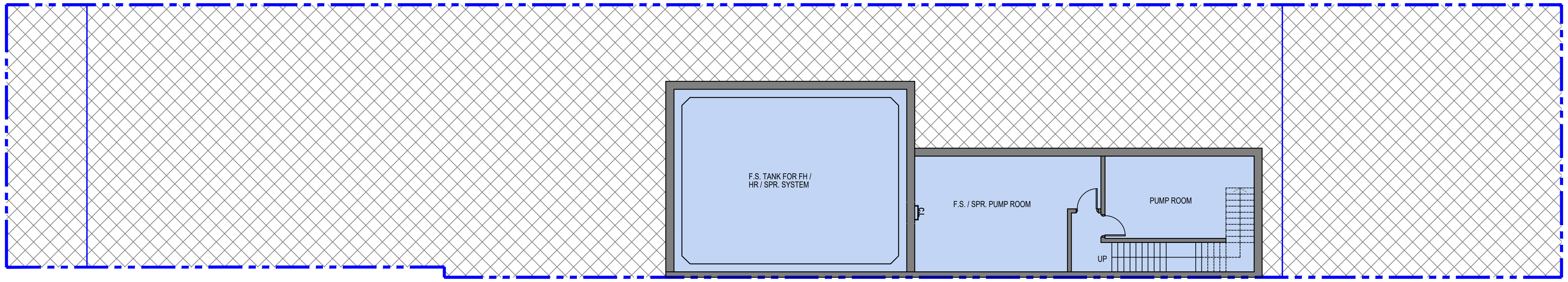
LEGEND:

- SITE BOUNDARY
- 🟨 WARD
- 🟥 ANCILLARY AREA
- ▨ COMMON / CIRCULATION SPACE
- 🟦 PLANT ROOM/ STAIRCASE TO U/G PLANT ROOM
- ▨ FOOTPATH
- ☐ LANDSCAPE
- ▨ EMERGENCY VEHICULAR ACCESS
- ▨ UNEXCAVATED GROUND



GROUND FLOOR PLAN

G/F LAYOUT 1:200



B/S LAYOUT 1:200

N

BD REF. NO.:

FSD REF. NO.:

REVISIONS AND SUBMISSIONS:

NO.:	DATE:	DETAILS:	CHECKED:

NOTES:

1. CONTENTS ON THIS DRAWING SHOW DESIGN INTENT ONLY CONTRACTOR IS RESPONSIBLE FOR DETAILED DESIGN OF THE INTERIOR FITTING–OUT. CONTRACTOR IS REQUIRED TO SUBMIT FULL SET SHOP DRAWINGS FOR ARCHITECT'S APPROVAL PRIOR TO FABRICATION AND SITE INSTALLATION.
2. STRUCTURAL CALCULATIONS IF REQUIRED AND RELATED SUPPORTING DATA SHOULD BE SUBMITTED FOR REVIEW AND APPROVAL.
3. TRUE COLOR SAMPLES OF MATERIALS SHOULD BE SUBMITTED FOR ARCHITECT'S APPROVAL PRIOR TO PROCUREMENT.
4. ALL FITTING/ ASSEMBLY AND MATERIALS SHOULD BE DESIGN & INSTALLED TO CONTRACT DRAWINGS AND SPECIFICATION, AND IN COMPLIANCE WITH ALL RELEVANT STATUTORY REQUIREMENTS.
5. DIMENSIONS BASED ON ON SITE MEASUREMENTS.

6. FINAL MATERIALS & FINISHES OF WALL,FLOOR,CEILING,WALL FIXTURE ETC. SHOULD BE REFER TO FINISHES AND MATERIALS SCHEDULE UNDER THE SPECIFICATION PROVIDED.

CLIENT/EMPLOYER:

PROJECT ARCHITECT/AUTHORIZED PERSON:

馬海
馬海(建築顧問)有限公司
Spence Robinson Limited

PROJECT STRUCTURAL ENGINEER/
PROJECT GEO–TECHNICAL ENGINEER:

張耀新建築工程師有限公司
Wilson & Associates Ltd

PROJECT E/M ENGINEER:

PROJECT LANDSCAPE CONSULTANT:

PROJECT QUANTITY SURVEYOR:

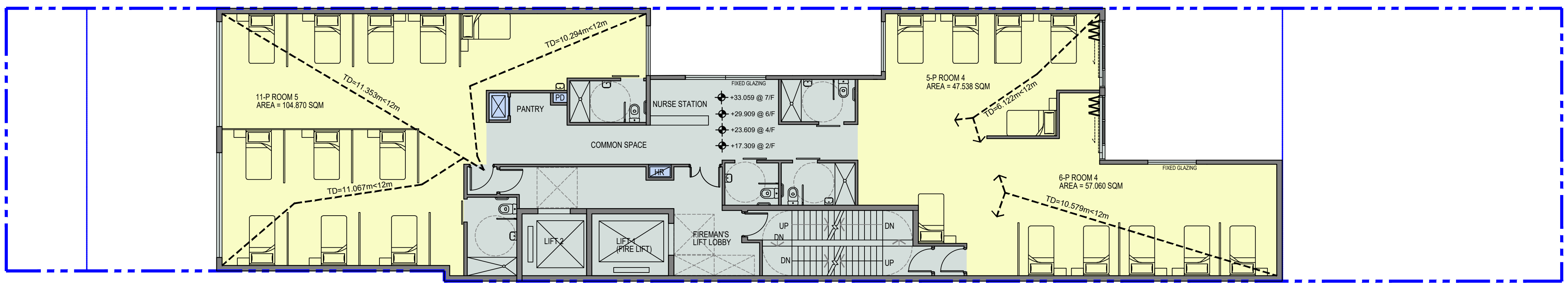
PROJECT:
PURPOSE BUILT C&A HOME DEVELOPMENT AT
349 PRINCE EDWARD ROAD WEST

DRAWING TITLE:

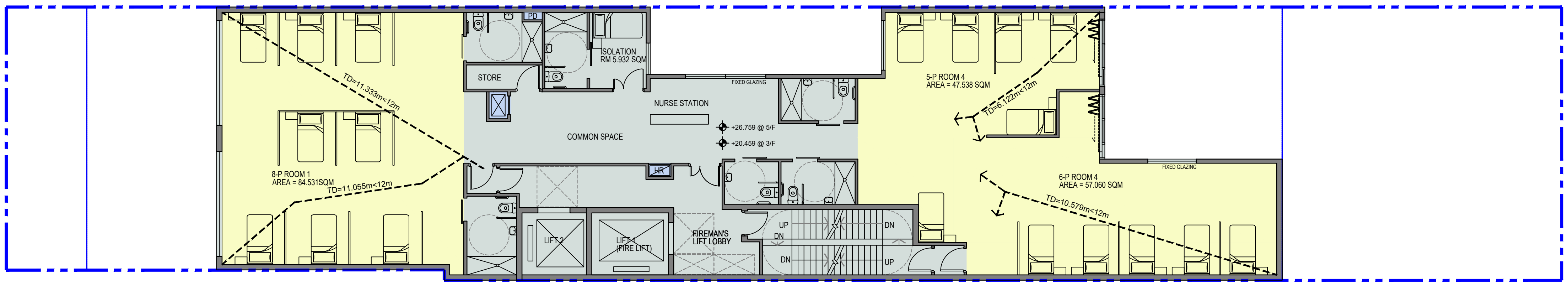
GROUND FLOOR PLAN &
BASEMENT FLOOR PLAN

DRAWN BY: CZ
DATE: NOV-2024
CHECKED BY: CMD
APPROVED BY: KCY
SCALE: 1:200
PAPER SIZE: A3
PROJECT: PE 6170
DRAWING: GP-00
REVISION: V14

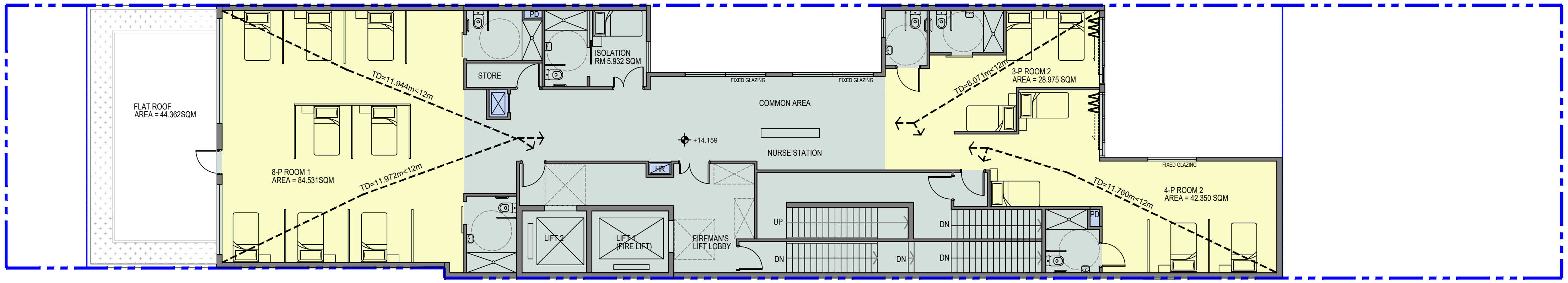
NOTES :
1. This drawing and design are copyright and no portion may be reproduced without the written permission of the Architect.
2. Use written dimensions or grid lines in preference to scaled dimensions. Measurements to existing work are to be checked on site.
3. This drawing is to be read in conjunction with the Architect's Specification and Conditions of Contract.
4. Prints not showing the last revision are to be cancelled.
5. Prints without an authorized signature in the checked and approved spaces below and after the last revision above are NOT vaild for use outside SRL.



2/F, 4/F, 6/F, 7/F LAYOUT 1:200



3/F, 5/F LAYOUT 1:200



1/F LAYOUT 1:200

LEGEND:

—	SITE BOUNDARY
🟨	WARD
🟥	ANCILLARY AREA
⬜	COMMON / CIRCULATION SPACE
🟦	PLANT ROOM/ STAIRCASE TO U/G PLANT ROOM
▤	FOOTPATH
▭	LANDSCAPE
▨	EMERGENCY VEHICULAR ACCESS
▩	UNEXCAVATED GROUND

NOS. OF BED
(9.5m²/ppl)

G/F	0
1/F	15
2/F	22
3/F	19
4/F	22
5/F	19
6/F	22
7/F	22
TOTAL	141

N

BD REF. NO.:

FSD REF. NO.:

REVISIONS AND SUBMISSIONS:

NO.:	DATE:	DETAILS:	CHECKED:

NOTES:
1. CONTENTS ON THIS DRAWING SHOW DESIGN INTENT ONLY CONTRACTOR IS RESPONSIBLE FOR DETAILED DESIGN OF THE INTERIOR FITTING–OUT. CONTRACTOR IS REQUIRED TO SUBMIT FULL SET SHOP DRAWINGS FOR ARCHITECT'S APPROVAL PRIOR TO FABRICATION AND SITE INSTALLATION.
2. STRUCTURAL CALCULATIONS IF REQUIRED AND RELATED SUPPORTING DATA SHOULD BE SUBMITTED FOR REVIEW AND APPROVAL.
3. TRUE COLOR SAMPLES OF MATERIALS SHOULD BE SUBMITTED FOR ARCHITECT'S APPROVAL PRIOR TO PROCUREMENT.
4. ALL FITTING/ ASSEMBLY AND MATERIALS SHOULD BE DESIGN & INSTALLED TO CONTRACT DRAWINGS AND SPECIFICATION, AND IN COMPLIANCE WITH ALL RELEVANT STATUTORY REQUIREMENTS.
5. DIMENSIONS BASED ON ON SITE MEASUREMENTS.

6. FINAL MATERIALS & FINISHES OF WALL,FLOOR,CEILING,WALL FIXTURE ETC. SHOULD BE REFER TO FINISHES AND MATERIALS SCHEDULE UNDER THE SPECIFICATION PROVIDED.

CLIENT/EMPLOYER:

PROJECT ARCHITECT/AUTHORIZED PERSON:

馬海

馬海(建築顧問)有限公司
Spence Robinson Limited

PROJECT STRUCTURAL ENGINEER/
PROJECT GEO–TECHNICAL ENGINEER:

張耀新建築工程師有限公司
Wilson & Associates Ltd

PROJECT E/M ENGINEER:

PROJECT LANDSCAPE CONSULTANT:

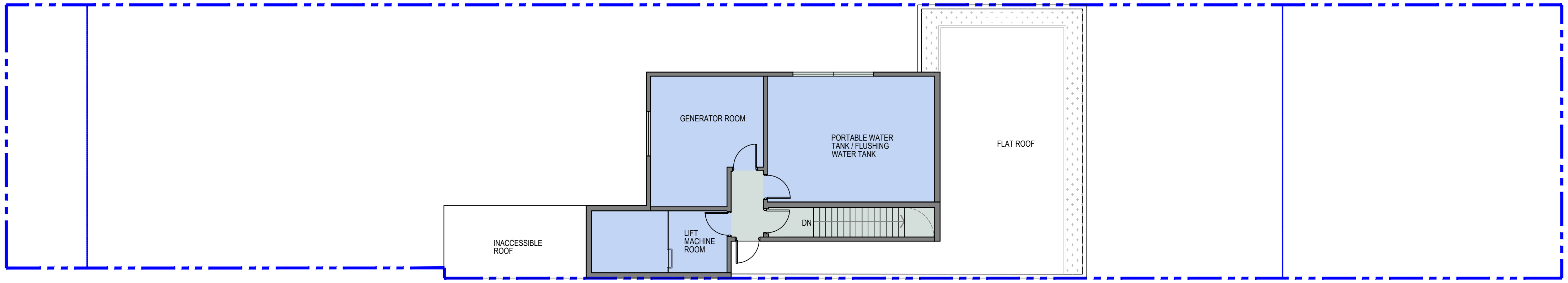
PROJECT QUANTITY SURVEYOR:

PROJECT:
PURPOSE BUILT C&A HOME DEVELOPMENT AT
349 PRINCE EDWARD ROAD WEST

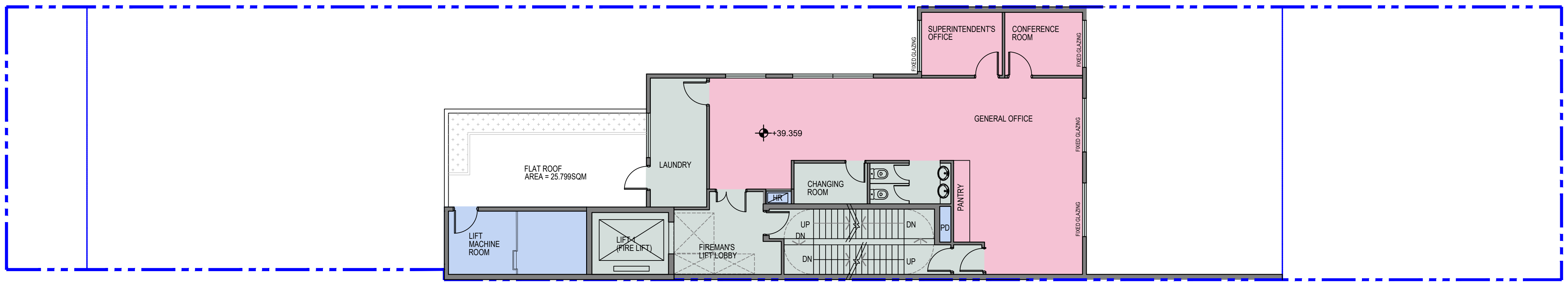
DRAWING TITLE:
FIRST FLOOR PLAN &
TYPICAL FLOOR PLAN (3/F,5/F) &
TYPICAL FLOOR PLAN (2/F,4/F,6/F& 7/F)

DRAWN BY: CZ	DATE: NOV-2024	
CHECKED BY: CMD	APPROVED BY: KCY	
SCALE: 1:200	PAPER SIZE: A3	
PROJECT: PE 6170	DRAWING: GP-01	REVISION: V14

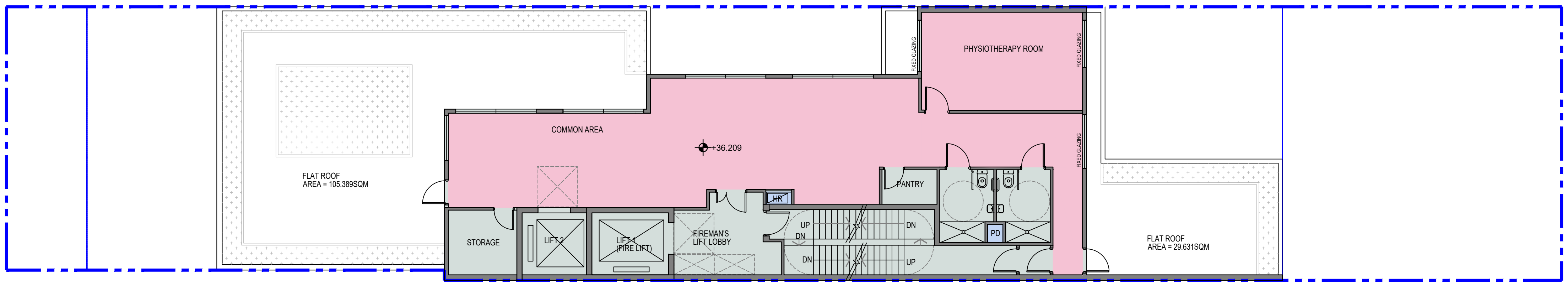
NOTES :
1. This drawing and design are copyright and no portion may be reproduced without the written permission of the Architect.
2. Use written dimensions or grid lines in preference to scaled dimensions. Measurements to existing work are to be checked on site.
3. This drawing is to be read in conjunction with the Architect's Specification and Conditions of Contract.
4. Prints not showing the last revision are to be cancelled.
5. Prints without an authorized signature in the checked and approved spaces below and after the last revision above are NOT vaild for use outside SRL.



ROOF LAYOUT 1:200



9/F LAYOUT 1:200



8/F LAYOUT 1:200

LEGEND:

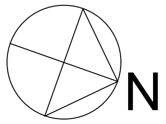
- — SITE BOUNDARY
- 🟨 WARD
- 🟥 ANCILLARY AREA
- ⬜ COMMON / CIRCULATION SPACE
- 🟦 PLANT ROOM/ STAIRCASE TO U/G PLANT ROOM
- ▒ FOOTPATH
- ▭ LANDSCAPE
- ▨ EMERGENCY VEHICULAR ACCESS
- ▩ UNEXCAVATED GROUND

NOS. OF BED
(9.5m²/ppl)

G/F	0
1/F	15
2/F	22
3/F	19
4/F	22
5/F	19
6/F	22
7/F	22
TOTAL	141

ANCILLARY AREA

Floor Level	Area (m²)
G/F	59.183
1/F	0
2/F	0
3/F	0
4/F	0
5/F	0
6/F	0
7/F	0
8/F	108.709
9/F	79.448
TOTAL	247.338



BD REF. NO.:
FSD REF. NO.:

REVISIONS AND SUBMISSIONS:

NO.:	DATE:	DETAILS:	CHECKED:

NOTES:
1. CONTENTS ON THIS DRAWING SHOW DESIGN INTENT ONLY CONTRACTOR IS RESPONSIBLE FOR DETAILED DESIGN OF THE INTERIOR FITTING–OUT. CONTRACTOR IS REQUIRED TO SUBMIT FULL SET SHOP DRAWINGS FOR ARCHITECT'S APPROVAL PRIOR TO FABRICATION AND SITE INSTALLATION.
2. STRUCTURAL CALCULATIONS IF REQUIRED AND RELATED SUPPORTING DATA SHOULD BE SUBMITTED FOR REVIEW AND APPROVAL.
3. TRUE COLOR SAMPLES OF MATERIALS SHOULD BE SUBMITTED FOR ARCHITECT'S APPROVAL PRIOR TO PROCUREMENT.
4. ALL FITTING/ ASSEMBLY AND MATERIALS SHOULD BE DESIGN & INSTALLED TO CONTRACT DRAWINGS AND SPECIFICATION, AND IN COMPLIANCE WITH ALL RELEVANT STATUTORY REQUIREMENTS.
5. DIMENSIONS BASED ON ON SITE MEASUREMENTS.
6. FINAL MATERIALS & FINISHES OF WALL,FLOOR,CEILING,WALL FIXTURE ETC. SHOULD BE REFER TO FINISHES AND MATERIALS SCHEDULE UNDER THE SPECIFICATION PROVIDED.

CLIENT/EMPLOYER:

PROJECT ARCHITECT/AUTHORIZED PERSON:
馬海
馬海(建築顧問)有限公司
Spence Robinson Limited

PROJECT STRUCTURAL ENGINEER/
PROJECT GEO–TECHNICAL ENGINEER:
張耀新建築工程師有限公司
Wilson & Associates Ltd

PROJECT E/M ENGINEER:

PROJECT LANDSCAPE CONSULTANT:

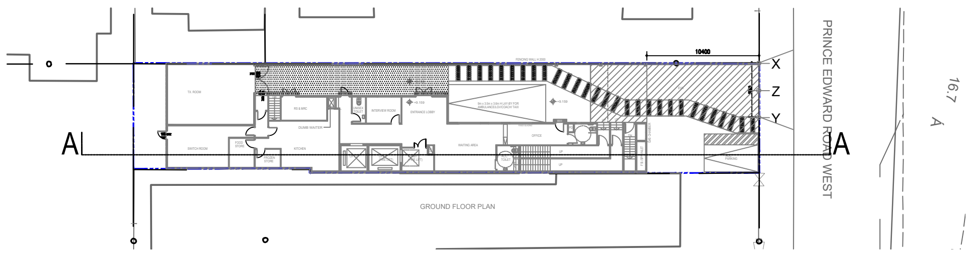
PROJECT QUANTITY SURVEYOR:

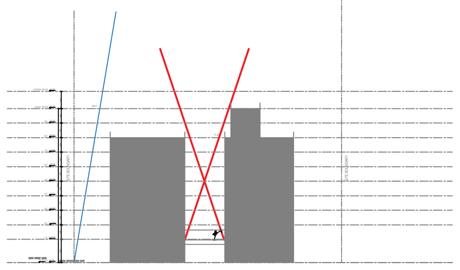
PROJECT:
PURPOSE BUILT C&A HOME DEVELOPMENT AT
349 PRINCE EDWARD ROAD WEST

DRAWING TITLE:
8/F & 9/F FLOOR PLAN &
ROOF FLOOR PLAN

DRAWN BY: CZ
DATE: NOV-2024
CHECKED BY: CMD
APPROVED BY: KCY
SCALE: 1:200
PAPER SIZE: A3
PROJECT: PE 6170
DRAWING: GP-02
REVISION: V14

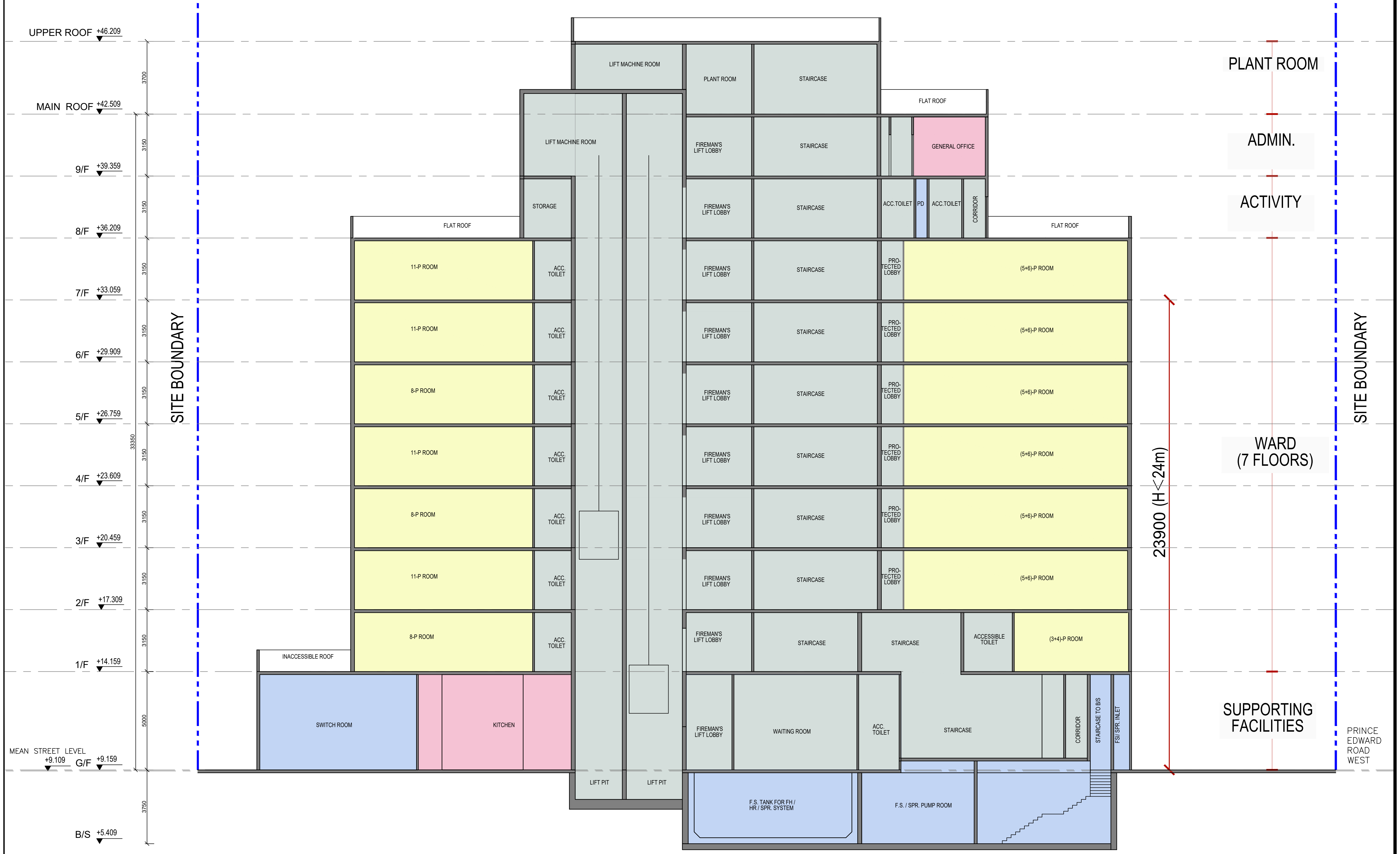
NOTES :
1. This drawing and design are copyright and no portion may be reproduced without the written permission of the Architect.
2. Use written dimensions or grid lines in preference to scaled dimensions. Measurements to existing work are to be checked on site.
3. This drawing is to be read in conjunction with the Architect's Specification and Conditions of Contract.
4. Prints not showing the last revision are to be cancelled.
5. Prints without an authorized signature in the checked and approved spaces below and after the last revision above are NOT vaild for use outside SRL.





LEGEND:

- ━ SITE BOUNDARY
- 🟨 WARD
- 🟥 ANCILLARY AREA
- ▨ COMMON / CIRCULATION SPACE
- 🟦 PLANT ROOM/ STAIRCASE TO U/G PLANT ROOM
- ▨ FOOTPATH
- ☐ LANDSCAPE
- ▨ EMERGENCY VEHICULAR ACCESS
- ▨ UNEXCAVATED GROUND



SECTION A-A 1:200

BD REF. NO.:

FSD REF. NO.:

REVISIONS AND SUBMISSIONS:

NO.:	DATE:	DETAILS:	CHECKED:

NOTES:

1. CONTENTS ON THIS DRAWING SHOW DESIGN INTENT ONLY CONTRACTOR IS RESPONSIBLE FOR DETAILED DESIGN OF THE INTERIOR FITTING-OUT. CONTRACTOR IS REQUIRED TO SUBMIT FULL SET SHOP DRAWINGS FOR ARCHITECT'S APPROVAL PRIOR TO FABRICATION AND SITE INSTALLATION.
2. STRUCTURAL CALCULATIONS IF REQUIRED AND RELATED SUPPORTING DATA SHOULD BE SUBMITTED FOR REVIEW AND APPROVAL.
3. TRUE COLOR SAMPLES OF MATERIALS SHOULD BE SUBMITTED FOR ARCHITECT'S APPROVAL PRIOR TO PROCUREMENT.
4. ALL FITTING/ ASSEMBLY AND MATERIALS SHOULD BE DESIGN & INSTALLED TO CONTRACT DRAWINGS AND SPECIFICATION, AND IN COMPLIANCE WITH ALL RELEVANT STATUTORY REQUIREMENTS.
5. DIMENSIONS BASED ON ON SITE MEASUREMENTS.
6. FINAL MATERIALS & FINISHES OF WALL,FLOOR,CEILING,WALL FIXTURE ETC. SHOULD BE REFER TO FINISHES AND MATERIALS SCHEDULE UNDER THE SPECIFICATION PROVIDED.

CLIENT/EMPLOYER:

PROJECT ARCHITECT/AUTHORIZED PERSON:

馬海
馬海(建築顧問)有限公司
Spence Robinson Limited

PROJECT STRUCTURAL ENGINEER/
PROJECT GEO-TECHNICAL ENGINEER:

張耀新建築工程師有限公司
Wilson & Associates Ltd

PROJECT E/M ENGINEER:

PROJECT LANDSCAPE CONSULTANT:

PROJECT QUANTITY SURVEYOR:

PROJECT:
PURPOSE BUILT C&A HOME DEVELOPMENT AT
349 PRINCE EDWARD ROAD WEST

DRAWING TITLE:

SECTION

DRAWN BY:	DATE:	
CZ	NOV-2024	
CHECKED BY:	APPROVED BY:	
CMD	KCY	
SCALE:	PAPER SIZE:	
1:200	A3	
PROJECT:	DRAWING:	REVISION:
PE 6170	GP-03	V14

NOTES :
1. This drawing and design are copyright and no portion may be reproduced without the written permission of the Architect.
2. Use written dimensions or grid lines in preference to scaled dimensions. Measurements to existing work are to be checked on site.
3. This drawing is to be read in conjunction with the Architect's Specification and Conditions of Contract.
4. Prints not showing the last revision are to be cancelled.
5. Prints without an authorized signature in the checked and approved spaces below and after the last revision above are NOT vaild for use outside SRL.

Appendix 2.1

Traffic Forecast

By Fax
2528 6343

運輸署
Transport Department

本署檔案 Our Ref. : (KRKZ8) in TD KR146/193/P-43
來函檔號 Your Ref. : J7350/3
電話 Tel. : 2399 2512
圖文傳真 Fax : 2397 8046
電郵 Email :

27 September 2024

CKM Asia Limited
21st Floor, Methodist House
36 Hennessy Road, Wan Chai
Hong Kong
(Attn. Mr. CHIN Kim Meng)

Dear Sir/Madam,

Proposed Residential Care Home for the Elderly
at 349 Prince Edward Road West, Kowloon City
Traffic Forecast for Traffic Noise Impact Assessment

I refer to your captioned submission dated 10.9.2024.

I have no comment on the methodology of the traffic forecast from traffic engineering point of view provided that the traffic volume estimated in the forecast will only be used for conducting Noise Impact Assessment.

Yours faithfully,

(LI Hon-yeung, Simon)
for Commissioner for Transport

市區(九龍)及新界分區辦事處
Urban (Kln.) & NT Regional Office
九龍聯運街三十號旺角政府合署七樓及八樓
7th & 8th Floors, Mong Kok Government Offices, 30 Luen Wan Street, Kowloon.
圖文傳真 Fax No.: 2381 3799 (新界區) (NTRO) 2397 8046 (九龍市區) (U(K)RO)
網址 Web Site: http://www.td.gov.hk

Vicky Shek

From: CKM Asia <mail@ckmasia.com.hk>
Sent: Monday, November 25, 2024 3:37 PM
To: Vicky Shek
Cc: Ava Lo; Zhu Chong De; Chi Mai Dao; Katie Yu; Jolene Wong; Gladys Ng
Subject: RE: 349 Prince Edward Road West - Traffic Forecast

Dear Ramboll,

Further to our email of 30th September 2024, we confirm that the traffic forecasting methodology endorsed by Transport Department has been strictly adopted in producing the 2042 traffic forecast for the Traffic Noise Impact Assessment study.

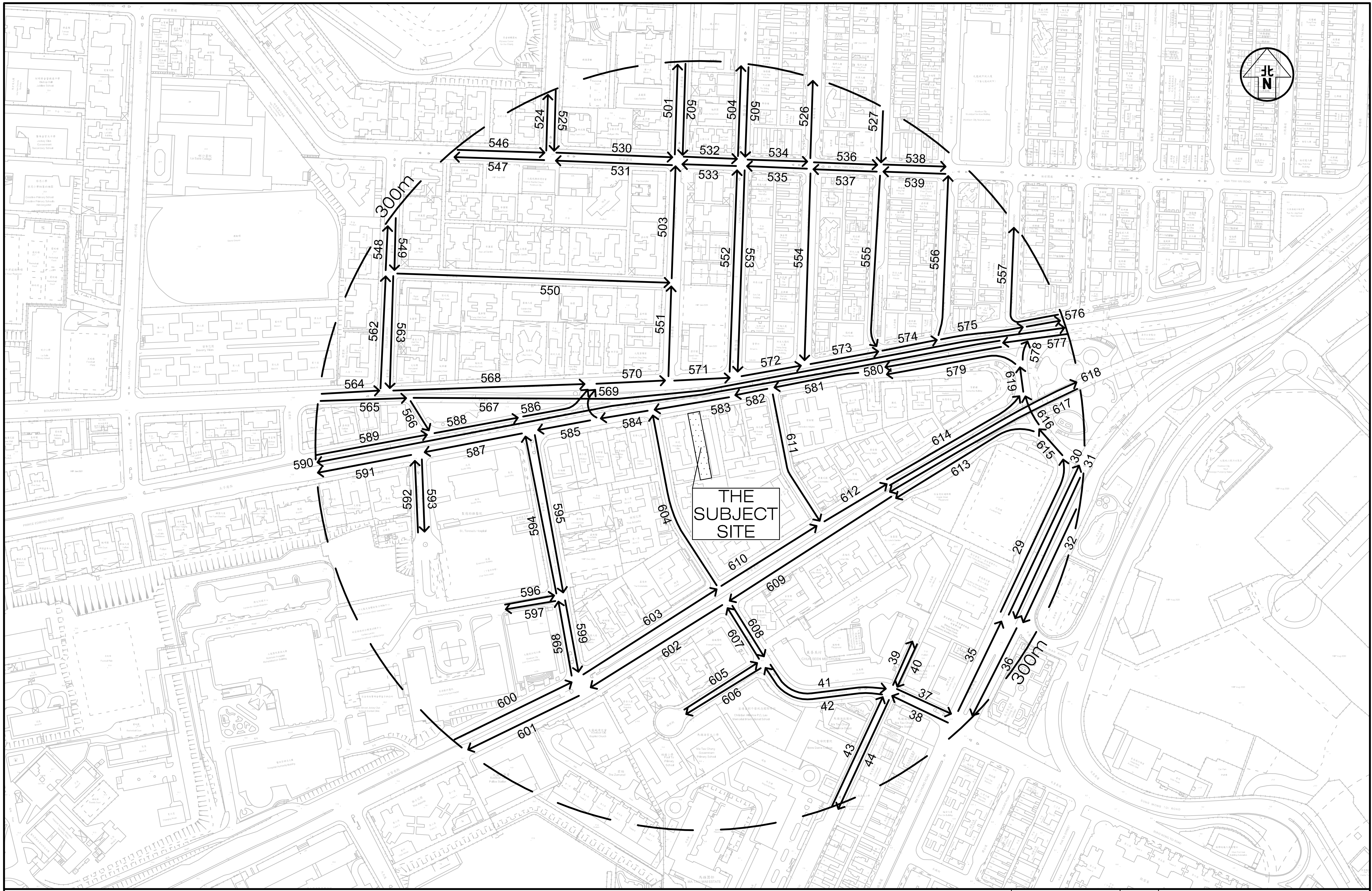
Thank you for your attention.

Regards,

H.C. Tang

CKM Asia Limited
Traffic and Transportation Planning Consultants
Phone: (852) 2520 5990
Fax: (852) 2528 6343
Email: mail@ckmasia.com.hk
Website: www.ckmasia.com.hk
Address: 21/F, Methodist House, 36 Hennessy Road, Wan Chai, Hong Kong

---



Project Title

PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY) AT
349 PRINCE EDWARD ROAD WEST, KOWLOON

Figure Title

LOCATION OF TRAFFIC DATA FOR TRAFFIC NOISE IMPACT ASSESSMENT

J7350

Figure No. TNIA/PERW

Revision A

Designed by YCK

Drawn by CCL

Checked by THC

Scale in A3 1 : 3,000

Date 10 SEP 2024

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road
Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOB\J7350-J7399\J7350\Fig TNIA_PERW RevA.dwg

TABLE 1 – PEAK HOUR TRAFFIC FLOW AND VEHICLE COMPOSITION

YEAR 2042 TRAFFIC FORECAST

Date : 10 September 2024 **Job No.: J7350**

Link ID	Road Section	From Road	To Road	Speed Limit (km/hr)	AM Peak Hour		
					Traffic Flows (veh/hr)	Vehicle Composition	
						LV	HV
L029	Ma Tau Chung Road (NB)	Ma Tau Chung Road	Kowloon City Roundabout	50	1,250	70%	30%
L030	Ma Tau Chung Road Flyover (NB)	Ma Tau Chung Road	Prince Edward Road East	50	1,200	78%	22%
L031	Ma Tau Chung Road Flyover (SB)	Prince Edward Road East	Ma Tau Chung Road	50	1,000	78%	22%
L032	Ma Tau Chung Road (SB)	Kowloon City Roundabout	Hang Wan Road	50	1,250	68%	32%
L035	Ma Tau Chung Road (NB)	Sung Wong Toi Road	Ma Tau Chung Road Flyover	50	2,400	74%	26%
L036	Ma Tau Chung Road (SB)	Hang Wan Road	Sung Wong Toi Road	50	1,650	72%	28%
L037	Fu Ning Street (EB)	Shing Tak Street	Ma Tau Chung Road	50	50	0%	100%
L038	Fu Ning Street (WB)	Ma Tau Chung Road	Shing Tak Street	50	700	83%	17%
L039	Access Road to Chun Seen Mei Chuen (NB)	Fu Ning Street	Cul de sac	50	50	87%	13%
L040	Access Road to Chun Seen Mei Chuen (SB)	Cul de sac	Fu Ning Street	50	50	73%	27%
L041	Fu Ning Street (EB)	Fuk Cheung Street	Shing Tak Street	50	250	86%	14%
L042	Fu Ning Street (WB)	Shing Tak Street	Fuk Cheung Street	50	600	83%	17%
L043	Shing Tak Street (NB)	Ma Tau Kok Road	Fu Ning Street	50	50	0%	100%
L044	Shing Tak Street (SB)	Fu Ning Street	Ma Tau Kok Road	50	350	84%	16%
L501	Grampian Road (NB)	Nga Tsin Wai Road	Dumbarton Road	50	300	72%	28%
L502	Grampian Road (SB)	Dumbarton Road	Nga Tsin Wai Road	50	150	84%	16%
L503	Grampian Road (NB)	Sau Chuk Yuen Road	Nga Tsin Wai Road	50	600	68%	32%
L504	Junction Road (NB)	Nga Tsin Wai Road	Carpenter Road	50	300	70%	30%
L505	Junction Road (SB)	Carpenter Road	Nga Tsin Wai Road	50	800	75%	25%
L524	Inverness Road (NB)	Nga Tsin Wai Road	Dumbarton Road	50	350	84%	16%
L525	Inverness Road (SB)	Dumbarton Road	Nga Tsin Wai Road	50	250	89%	11%
L526	Fuk Lo Tsun Road (NB)	Nga Tsin Wai Road	Carpenter Road	50	250	75%	25%
L527	Lion Rock Road (SB)	Carpenter Road	Nga Tsin Wai Road	50	350	84%	16%
L530	Nga Tsin Wai Road (EB)	Inverness Road	Grampian Road	50	350	89%	11%
L531	Nga Tsin Wai Road (WB)	Grampian Road	Inverness Road	50	700	83%	17%
L532	Nga Tsin Wai Road (EB)	Grampian Road	Junction Road	50	550	77%	23%
L533	Nga Tsin Wai Road (WB)	Junction Road	Grampian Road	50	500	84%	16%
L534	Nga Tsin Wai Road (EB)	Junction Road	Fuk Lo Tsun Road	50	750	80%	20%
L535	Nga Tsin Wai Road (WB)	Fuk Lo Tsun Road	Junction Road	50	450	84%	16%
L536	Nga Tsin Wai Road (EB)	Fuk Lo Tsun Road	Lion Rock Road	50	300	70%	30%
L537	Nga Tsin Wai Road (WB)	Lion Rock Road	Fuk Lo Tsun Road	50	550	84%	16%
L538	Nga Tsin Wai Road (EB)	Lion Rock Road	Hau Wong Road	50	400	73%	27%
L539	Nga Tsin Wai Road (WB)	Hau Wong Road	Lion Rock Road	50	550	83%	17%
L546	Nga Tsin Wai Road (EB)	College Road	Inverness Road	50	450	86%	14%
L547	Nga Tsin Wai Road (WB)	Inverness Road	College Road	50	700	83%	17%
L548	College Road (NB)	Sau Chuk Yuen Road	Nga Tsin Wai Road	50	250	80%	20%
L549	College Road (SB)	Nga Tsin Wai Road	Sau Chuk Yuen Road	50	300	92%	8%
L550	Sau Chuk Yuen Road (EB)	College Road	Grampian Road	50	200	96%	4%
L551	Grampian Road (NB)	Boundary Street	Sau Chuk Yuen Road	50	450	57%	43%
L552	Junction Road (NB)	Prince Edward Road West	Nga Tsin Wai Road	50	500	77%	23%
L553	Junction Road (SB)	Nga Tsin Wai Road	Prince Edward Road West	50	750	76%	24%
L554	Fuk Lo Tsun Road (SB)	Nga Tsin Wai Road	Prince Edward Road West	50	300	95%	5%
L555	Lion Rock Road (SB)	Nga Tsin Wai Road	Prince Edward Road West	50	250	83%	17%
L556	Hau Wong Road (NB)	Prince Edward Road West	Nga Tsin Wai Road	50	400	91%	9%
L557	Nga Tsin Long Road (NB)	Nga Tsin Wai Road	Nga Tsin Wai Road	50	100	86%	14%
L562	College Road (NB)	Boundary Street	Sau Chuk Yuen Road	50	300	84%	16%
L563	College Road (SB)	Sau Chuk Yuen Road	Boundary Street	50	200	90%	10%
L564	Boundary Street (EB)	Short Street	College Road	50	850	63%	37%
L565	Boundary Street (EB)	Short Street	Pentland Street	50	1,700	81%	19%
L566	Pentland Street (SB)	Boundary Street	Prince Edward Road West	50	150	95%	5%
L567	Boundary Street Flyover (EB)	Pentland Street	Prince Edward Road East	50	1,550	80%	20%
L568	Boundary Street (EB)	College Road	Prince Edward Road East	50	700	60%	40%
L569	Slip Road of Prince Edward Road West (EB)	Prince Edward Road East	Boundary Street	50	250	82%	18%
L570	Boundary Street (EB)	Slip Road of Prince Edward Road	Grampian Road	50	1,300	72%	28%
L571	Prince Edward Road West (EB)	Grampian Road	Junction Road	50	900	80%	20%
L572	Prince Edward Road West (EB)	Junction Road	Fuk Lo Tsun Road	50	1,000	78%	22%
L573	Prince Edward Road West (EB)	Fuk Lo Tsun Road	Lion Rock Road	50	1,300	82%	18%
L574	Prince Edward Road West (EB)	Lion Rock Road	Hau Wong Road	50	1,550	82%	18%
L575	Prince Edward Road West (EB)	Hau Wong Road	Kowloon City Roundabout	50	1,150	79%	21%
L576	Kowloon City Roundabout (EB)	Prince Edward Road West	Prince Edward Road West	50	2,350	74%	26%
L577	Prince Edward Road West Flyover (WB)	Prince Edward Road East	Slip Road of Prince Edward Road	50	1,900	78%	22%
L578	Kowloon City Roundabout (NB)	Prince Edward Road West	Prince Edward Road West	50	1,250	70%	30%
L579	Slip Road of Prince Edward Road West (WB)	Kowloon City Roundabout	Prince Edward Road West	50	1,100	71%	29%
L580	Slip Road of Prince Edward Road West (WB)	Prince Edward Road West Flyover	Prince Edward Road West	50	600	78%	22%
L581	Prince Edward Road West (WB)	Slip Road of Prince Edward Road	Stirling Road	50	1,650	74%	26%
L582	Prince Edward Road West (WB)	Stirling Road	Junction Road	50	1,400	73%	27%
L583	Prince Edward Road West (WB)	Junction Road	Forfar Road	50	1,600	73%	27%
L584	Prince Edward Road West (WB)	Forfar Road	Slip Road of Prince Edward Road	50	1,700	72%	28%
L585	Prince Edward Road West (WB)	Slip Road of Prince Edward Road	Lomond Road	50	1,500	71%	29%
L586	Prince Edward Road West (EB)	Lomond Road	Boundary Street	50	400	88%	12%
L587	Prince Edward Road West (WB)	Lomond Road	Pentland Street	50	1,650	69%	31%
L588	Prince Edward Road West (EB)	Pentland Street	Lomond Road	50	250	90%	10%
L589	Prince Edward Road West (EB)	Short Street	Pentland Street	50	100	83%	17%
L590	Prince Edward Road West Flyover (WB)	Slip Road of Prince Edward Road	Prince Edward Road West	50	1,350	78%	22%
L591	Prince Edward Road West (WB)	Pentland Street	Prince Edward Road West	50	1,550	68%	32%
L592	Pentland Street (NB)	Cul de sac	Prince Edward Road West	50	150	94%	6%
L593	Pentland Street (SB)	Prince Edward Road West	Cul de sac	50	250	96%	4%
L594	Lomond Road (NB)	Access Road to Hong Kong Eye	Prince Edward Road West	50	800	80%	20%
L595	Lomond Road (SB)	Prince Edward Road West	Access Road to Hong Kong Eye	50	500	87%	13%
L596	Access Road to Hong Kong Eye Hospital (EB)	Cul de sac	Lomond Road	50	350	83%	17%
L597	Access Road to Hong Kong Eye Hospital (WB)	Lomond Road	Cul de sac	50	250	91%	9%
L598	Lomond Road (NB)	Argyle Street	Access Road to Hong Kong Eye	50	700	83%	17%

TABLE 1 – PEAK HOUR TRAFFIC FLOW AND VEHICLE COMPOSITION

YEAR 2042 TRAFFIC FORECAST

Date : 10 September 2024 **Job No.: J7350**

Link ID	Road Section	From Road	To Road	Speed Limit (km/hr)	AM Peak Hour		
					Traffic Flows (veh/hr)	Vehicle Composition	
						LV	HV
L599	Lomond Road (SB)	Access Road to Hong Kong Eye	Argyle Street	50	500	87%	13%
L600	Argyle Street (EB)	Tin Kwong Road	Lomond Road	50	1,650	70%	30%
L601	Argyle Street (WB)	Lomond Road	Tin Kwong Road	50	2,100	82%	18%
L602	Argyle Street (WB)	Fu Ning Street	Lomond Road	50	2,150	81%	19%
L603	Argyle Street (EB)	Lomond Road	Forfar Road	50	1,500	69%	31%
L604	Forfar Road (NB)	Argyle Street	Prince Edward Road West	50	150	54%	46%
L605	Fuk Cheung Street (EB)	Cul de sac	Fu Ning Street	50	100	69%	31%
L606	Fuk Cheung Street (WB)	Fu Ning Street	Cul de sac	50	100	73%	27%
L607	Fu Ning Street (NB)	Fuk Cheung Street	Argyle Street	50	600	82%	18%
L608	Fu Ning Street (SB)	Argyle Street	Fuk Cheung Street	50	250	85%	15%
L609	Argyle Street (WB)	Argyle Street Flyover	Fu Ning Street	50	1,800	81%	19%
L610	Argyle Street (EB)	Forfar Road	Stirling Road	50	1,350	70%	30%
L611	Stirling Road (SB)	Prince Edward Road West	Argyle Street	50	250	77%	23%
L612	Argyle Street (EB)	Stirling Road	Argyle Street Flyover	50	1,600	71%	29%
L613	Argyle Street (WB)	Kowloon City Roundabout	Argyle Street	50	350	70%	30%
L614	Argyle Street (EB)	Argyle Street	Kowloon City Roundabout	50	400	75%	25%
L615	Kowloon City Roundabout (NB)	Ma Tau Chung Road	Argyle Street	50	2,300	70%	30%
L616	Kowloon City Roundabout (NB)	Argyle Street	Argyle Street	50	1,950	70%	30%
L617	Argyle Street Flyover (WB)	Prince Edward Road West	Argyle Street	50	1,450	84%	16%
L618	Argyle Street Flyover (EB)	Argyle Street	Prince Edward Road West	50	1,250	70%	30%
L619	Kowloon City Roundabout (NB)	Argyle Street	Prince Edward Road West	50	2,300	71%	29%

Note: "LV" includes motorcycle, private car and taxi
"HV" includes light / medium / heavy goods vehicle, public / private light bus, non-franchised bus and franchised bus

TABLE 1 – PEAK HOUR TRAFFIC FLOW AND VEHICLE COMPOSITION

YEAR 2042 TRAFFIC FORECAST

Date : 10 September 2024 **Job No.: J7350**

Link ID	Road Section	From Road	To Road	Speed Limit (km/hr)	PM Peak Hour		
					Traffic Flows (veh/hr)	Vehicle Composition	
						LV	HV
L029	Ma Tau Chung Road (NB)	Ma Tau Chung Road	Kowloon City Roundabout	50	1,250	72%	28%
L030	Ma Tau Chung Road Flyover (NB)	Ma Tau Chung Road	Prince Edward Road East	50	1,250	82%	18%
L031	Ma Tau Chung Road Flyover (SB)	Prince Edward Road East	Ma Tau Chung Road	50	1,000	80%	20%
L032	Ma Tau Chung Road (SB)	Kowloon City Roundabout	Hang Wan Road	50	1,200	74%	26%
L035	Ma Tau Chung Road (NB)	Sung Wong Toi Road	Ma Tau Chung Road Flyover	50	2,450	77%	23%
L036	Ma Tau Chung Road (SB)	Hang Wan Road	Sung Wong Toi Road	50	1,700	75%	25%
L037	Fu Ning Street (EB)	Shing Tak Street	Ma Tau Chung Road	50	50	0%	100%
L038	Fu Ning Street (WB)	Ma Tau Chung Road	Shing Tak Street	50	750	88%	12%
L039	Access Road to Chun Seen Mei Chuen (NB)	Fu Ning Street	Cul de sac	50	50	95%	5%
L040	Access Road to Chun Seen Mei Chuen (SB)	Cul de sac	Fu Ning Street	50	50	96%	4%
L041	Fu Ning Street (EB)	Fuk Cheung Street	Shing Tak Street	50	150	87%	13%
L042	Fu Ning Street (WB)	Shing Tak Street	Fuk Cheung Street	50	650	89%	11%
L043	Shing Tak Street (NB)	Ma Tau Kok Road	Fu Ning Street	50	50	0%	100%
L044	Shing Tak Street (SB)	Fu Ning Street	Ma Tau Kok Road	50	200	85%	16%
L501	Grampian Road (NB)	Nga Tsin Wai Road	Dumbarton Road	50	250	78%	22%
L502	Grampian Road (SB)	Dumbarton Road	Nga Tsin Wai Road	50	100	63%	37%
L503	Grampian Road (NB)	Sau Chuk Yuen Road	Nga Tsin Wai Road	50	600	78%	22%
L504	Junction Road (NB)	Nga Tsin Wai Road	Carpenter Road	50	350	74%	26%
L505	Junction Road (SB)	Carpenter Road	Nga Tsin Wai Road	50	700	80%	20%
L524	Inverness Road (NB)	Nga Tsin Wai Road	Dumbarton Road	50	200	79%	21%
L525	Inverness Road (SB)	Dumbarton Road	Nga Tsin Wai Road	50	200	88%	12%
L526	Fuk Lo Tsun Road (NB)	Nga Tsin Wai Road	Carpenter Road	50	250	91%	9%
L527	Lion Rock Road (SB)	Carpenter Road	Nga Tsin Wai Road	50	400	89%	11%
L530	Nga Tsin Wai Road (EB)	Inverness Road	Grampian Road	50	200	81%	19%
L531	Nga Tsin Wai Road (WB)	Grampian Road	Inverness Road	50	600	85%	15%
L532	Nga Tsin Wai Road (EB)	Grampian Road	Junction Road	50	450	76%	24%
L533	Nga Tsin Wai Road (WB)	Junction Road	Grampian Road	50	450	87%	13%
L534	Nga Tsin Wai Road (EB)	Junction Road	Fuk Lo Tsun Road	50	650	80%	20%
L535	Nga Tsin Wai Road (WB)	Fuk Lo Tsun Road	Junction Road	50	500	83%	17%
L536	Nga Tsin Wai Road (EB)	Fuk Lo Tsun Road	Lion Rock Road	50	300	67%	33%
L537	Nga Tsin Wai Road (WB)	Lion Rock Road	Fuk Lo Tsun Road	50	650	83%	17%
L538	Nga Tsin Wai Road (EB)	Lion Rock Road	Hau Wong Road	50	350	71%	29%
L539	Nga Tsin Wai Road (WB)	Hau Wong Road	Lion Rock Road	50	650	83%	17%
L546	Nga Tsin Wai Road (EB)	College Road	Inverness Road	50	300	79%	21%
L547	Nga Tsin Wai Road (WB)	Inverness Road	College Road	50	700	86%	14%
L548	College Road (NB)	Sau Chuk Yuen Road	Nga Tsin Wai Road	50	200	75%	25%
L549	College Road (SB)	Nga Tsin Wai Road	Sau Chuk Yuen Road	50	150	90%	10%
L550	Sau Chuk Yuen Road (EB)	College Road	Grampian Road	50	100	92%	8%
L551	Grampian Road (NB)	Boundary Street	Sau Chuk Yuen Road	50	500	76%	24%
L552	Junction Road (NB)	Prince Edward Road West	Nga Tsin Wai Road	50	550	81%	19%
L553	Junction Road (SB)	Nga Tsin Wai Road	Prince Edward Road West	50	700	79%	21%
L554	Fuk Lo Tsun Road (SB)	Nga Tsin Wai Road	Prince Edward Road West	50	300	86%	14%
L555	Lion Rock Road (SB)	Nga Tsin Wai Road	Prince Edward Road West	50	350	89%	11%
L556	Hau Wong Road (NB)	Prince Edward Road West	Nga Tsin Wai Road	50	350	93%	7%
L557	Nga Tsin Long Road (NB)	Nga Tsin Wai Road	Nga Tsin Wai Road	50	150	86%	14%
L562	College Road (NB)	Boundary Street	Sau Chuk Yuen Road	50	200	76%	24%
L563	College Road (SB)	Sau Chuk Yuen Road	Boundary Street	50	100	88%	13%
L564	Boundary Street (EB)	Short Street	College Road	50	900	75%	25%
L565	Boundary Street (EB)	Short Street	Pentland Street	50	1,550	86%	14%
L566	Pentland Street (SB)	Boundary Street	Prince Edward Road West	50	150	92%	8%
L567	Boundary Street Flyover (EB)	Pentland Street	Prince Edward Road East	50	1,450	85%	15%
L568	Boundary Street (EB)	College Road	Prince Edward Road East	50	800	76%	24%
L569	Slip Road of Prince Edward Road West (EB)	Prince Edward Road East	Boundary Street	50	200	77%	23%
L570	Boundary Street (EB)	Slip Road of Prince Edward Road	Grampian Road	50	1,300	79%	21%
L571	Prince Edward Road West (EB)	Grampian Road	Junction Road	50	800	81%	19%
L572	Prince Edward Road West (EB)	Junction Road	Fuk Lo Tsun Road	50	850	80%	20%
L573	Prince Edward Road West (EB)	Fuk Lo Tsun Road	Lion Rock Road	50	1,150	82%	18%
L574	Prince Edward Road West (EB)	Lion Rock Road	Hau Wong Road	50	1,450	84%	16%
L575	Prince Edward Road West (EB)	Hau Wong Road	Kowloon City Roundabout	50	1,150	81%	19%
L576	Kowloon City Roundabout (EB)	Prince Edward Road West	Prince Edward Road West	50	2,400	76%	24%
L577	Prince Edward Road West Flyover (WB)	Prince Edward Road East	Slip Road of Prince Edward Road	50	1,800	81%	19%
L578	Kowloon City Roundabout (NB)	Prince Edward Road West	Prince Edward Road West	50	1,250	72%	28%
L579	Slip Road of Prince Edward Road West (WB)	Kowloon City Roundabout	Prince Edward Road West	50	1,150	74%	26%
L580	Slip Road of Prince Edward Road West (WB)	Prince Edward Road West Flyover	Prince Edward Road West	50	400	81%	19%
L581	Prince Edward Road West (WB)	Slip Road of Prince Edward Road	Stirling Road	50	1,500	76%	24%
L582	Prince Edward Road West (WB)	Stirling Road	Junction Road	50	1,350	75%	25%
L583	Prince Edward Road West (WB)	Junction Road	Forfar Road	50	1,500	75%	25%
L584	Prince Edward Road West (WB)	Forfar Road	Slip Road of Prince Edward Road	50	1,650	75%	25%
L585	Prince Edward Road West (WB)	Slip Road of Prince Edward Road	Lomond Road	50	1,450	75%	25%
L586	Prince Edward Road West (EB)	Lomond Road	Boundary Street	50	300	90%	10%
L587	Prince Edward Road West (WB)	Lomond Road	Pentland Street	50	1,750	75%	25%
L588	Prince Edward Road West (EB)	Pentland Street	Lomond Road	50	200	94%	6%
L589	Prince Edward Road West (EB)	Short Street	Pentland Street	50	50	95%	5%
L590	Prince Edward Road West Flyover (WB)	Slip Road of Prince Edward Road	Prince Edward Road West	50	1,400	81%	19%
L591	Prince Edward Road West (WB)	Pentland Street	Prince Edward Road West	50	1,750	75%	25%
L592	Pentland Street (NB)	Cul de sac	Prince Edward Road West	50	200	99%	1%
L593	Pentland Street (SB)	Prince Edward Road West	Cul de sac	50	200	98%	2%
L594	Lomond Road (NB)	Access Road to Hong Kong Eye	Prince Edward Road West	50	800	86%	14%
L595	Lomond Road (SB)	Prince Edward Road West	Access Road to Hong Kong Eye	50	400	93%	7%
L596	Access Road to Hong Kong Eye Hospital (EB)	Cul de sac	Lomond Road	50	300	75%	25%
L597	Access Road to Hong Kong Eye Hospital (WB)	Lomond Road	Cul de sac	50	100	93%	7%
L598	Lomond Road (NB)	Argyle Street	Access Road to Hong Kong Eye	50	700	87%	13%

TABLE 1 – PEAK HOUR TRAFFIC FLOW AND VEHICLE COMPOSITION

YEAR 2042 TRAFFIC FORECAST

Date : 10 September 2024 **Job No.: J7350**

Link ID	Road Section	From Road	To Road	Speed Limit (km/hr)	PM Peak Hour		
					Traffic Flows (veh/hr)	Vehicle Composition	
						LV	HV
L599	Lomond Road (SB)	Access Road to Hong Kong Eye	Argyle Street	50	500	85%	15%
L600	Argyle Street (EB)	Tin Kwong Road	Lomond Road	50	1,350	76%	24%
L601	Argyle Street (WB)	Lomond Road	Tin Kwong Road	50	2,250	89%	11%
L602	Argyle Street (WB)	Fu Ning Street	Lomond Road	50	2,350	89%	11%
L603	Argyle Street (EB)	Lomond Road	Forfar Road	50	1,250	73%	27%
L604	Forfar Road (NB)	Argyle Street	Prince Edward Road West	50	200	79%	21%
L605	Fuk Cheung Street (EB)	Cul de sac	Fu Ning Street	50	100	91%	9%
L606	Fuk Cheung Street (WB)	Fu Ning Street	Cul de sac	50	50	83%	17%
L607	Fu Ning Street (NB)	Fuk Cheung Street	Argyle Street	50	700	90%	10%
L608	Fu Ning Street (SB)	Argyle Street	Fuk Cheung Street	50	150	85%	15%
L609	Argyle Street (WB)	Argyle Street Flyover	Fu Ning Street	50	1,800	88%	12%
L610	Argyle Street (EB)	Forfar Road	Stirling Road	50	1,050	72%	28%
L611	Stirling Road (SB)	Prince Edward Road West	Argyle Street	50	200	82%	18%
L612	Argyle Street (EB)	Stirling Road	Argyle Street Flyover	50	1,250	73%	27%
L613	Argyle Street (WB)	Kowloon City Roundabout	Argyle Street	50	300	77%	23%
L614	Argyle Street (EB)	Argyle Street	Kowloon City Roundabout	50	300	73%	27%
L615	Kowloon City Roundabout (NB)	Ma Tau Chung Road	Argyle Street	50	2,350	73%	27%
L616	Kowloon City Roundabout (NB)	Argyle Street	Argyle Street	50	2,100	73%	27%
L617	Argyle Street Flyover (WB)	Prince Edward Road West	Argyle Street	50	1,550	90%	10%
L618	Argyle Street Flyover (EB)	Argyle Street	Prince Edward Road West	50	950	74%	26%
L619	Kowloon City Roundabout (NB)	Argyle Street	Prince Edward Road West	50	2,400	73%	27%

Note: "LV" includes motorcycle, private car and taxi

"HV" includes light / medium / heavy goods vehicle, public / private light bus, non-franchised bus and franchised bus

Appendix 2.2

Traffic Noise Impact Assessment Results

(Unmitigated Scenario)

Appendix 2.2 - Predicted Road Traffic Noise Levels at Representative NSRs For Year 2042 AM Peak Hour (Unmitigated Scenario)

RCHE - G/F

	NSR	RG01
Floor	**mPD**	L10 1-hour, dB(A)
G/F	10.4	70
Noise Criteria		70
Compliance ?		Yes

RCHE - 1/F

	NSR	R101	R102	R103	R104	R105
Floor	**mPD**	L10 1-hour, dB(A)				
1/F	15.4	76	75	49	59	61
Noise Criteria		70	70	55	70	70
Compliance ?		No	No	Yes	Yes	Yes

RCHE - Typical Floors (2/F-7/F)

	NSR	RT01	RT02	RT03	RT04a	RT04b	RT05	RT06
Floor	**mPD**	L10 1-hour, dB(A)						
2/F	18.5	76	75	50	55	-	59	61
3/F	21.7	76	75	50	-	49	60	61
4/F	24.8	76	75	50	55	-	61	61
5/F	28.0	76	75	50	-	49	62	62
6/F	31.1	76	75	50	55	-	62	62
7/F	34.3	75	75	51	56	-	63	63
Max. Level,dB(A)		76	75	51	56	49	63	63
Noise Criteria		70	70	70	70	55	70	70
Compliance ?		No	No	Yes	Yes	Yes	Yes	Yes

RCHE - 9/F

	NSR	R901	R902
Floor	**mPD**	L10 1-hour, dB(A)	
9/F	40.6	57	57
Noise Criteria		70	70
Compliance ?		Yes	Yes

Compliance Rate

No. of units counted with noise exceedance:	14
Total no. of units at Application Site	36
Compliance Rate (%):	61.1%

Appendix 2.3

Traffic Noise Impact Assessment Results

(Mitigated Scenario)

Appendix 2.3 - (AM Peak) Predicted Road Traffic Noise Reduction Level (L10, dB(A)) during AM Peak Hour of Year 2042 with Noise Mitigation Measures at Proposed Development - Mitigated Scenario

		RG01	R101	R102	R103	R104	R105	RT01	RT02	RT03	RT04a	RT04b	RT05	RT06	R901	R902
Noise Mitigation		-	Acw	Acw	-	-	-	Acw	Acw	-	-	-	-	-	-	-
Floor	mPD	L10 1-hour, dB(A)														
G/F	10.4	-	/					/							/	
1/F	15.4	/	7.6	8.8	-	-	-									
2/F	18.5		/					8.8	8.8	-	-	-	-	-		
3/F	21.7							8.8	8.8	-	-	-	-	-		
4/F	24.8							8.8	8.8	-	-	-	-	-		
5/F	28							8.8	8.8	-	-	-	-	-		
6/F	31.1							8.8	8.8	-	-	-	-	-		
7/F	34.3							8.8	8.8	-	-	-	-	-		
9/F	40.6							/							-	-

Noise mitigation measures:	Baffle Type Acoustic Window (Acw)

**Please refer to Appendix 2.4 for the above calculated noise reduction level for Baffle Type Acoustic Window.

Appendix 2.3 - (AM Peak) Predicted Road Traffic Noise Reduction Level (L10, dB(A)) during AM Peak Hour of Year 2042 with Noise Mitigation Measures at Proposed Development - Mitigated Scenario

		RG01	R101	R102	R103	R104	R105	RT01	RT02	RT03	RT04a	RT04b	RT05	RT06	R901	R902
Noise Mitigation		-	Acw	Acw	-	-	-	Acw	Acw	-	-	-	-	-	-	-
Floor	mPD	L10 1-hour, dB(A)														
G/F	10.4	70	/					/							/	
1/F	15.4	/	69	67	49	59	61									
2/F	18.5		/					67	67	50	55	-	59	61		
3/F	21.7							67	66	50	-	49	60	61		
4/F	24.8							67	66	50	55	-	61	61		
5/F	28							67	66	50	-	49	62	62		
6/F	31.1							67	66	50	55	-	62	62		
7/F	34.3							67	66	51	56	-	63	63		
9/F	40.6							/							57	57
Max. Level,dB(A)		70	69	67	49	59	61	67	67	51	56	49	63	63	57	57
Noise Criteria		70	70	70	55	70	70	70	70	70	70	55	70	70	70	70
Compliance?		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

**The predicted noise level is not the actual noise level at the external facade after the application of baffle type acoustic window . These predicted noise levels are the equivalent noise levels at 1m from the external facade after accounting the reduction in noise levels inside the flat offered by the proposed baffle type acoustic window.

Compliance Rate

No. of units counted with noise exceedance:	0
Total no. of units at Subject Site	36
Compliance Rate (%):	100.0%

Appendix 2.4

Estimation of Maximum Allowed Sound Attenuation of Baffle Type Acoustic Window

Appendix 2.4 - Estimation of Maximum Allowed Sound Attenuation of Baffle Type Acoustic Window

Table of Major Parameters and Room Size of Proposed Development and Corresponding Reference Case, and Sound Attenuation Adjustment

Floor	Room	NSR IDs	Window/ Door	Proposed Development						Reference Case							Adjustment: 10xlog(RA / RAref) (adjust downward only), dB(A) (RAref)	Adjusted sound attenuation, dB(A)
				Outer opening area, m2	Inner opening area, m2	Air gap, m	Overlapping length, m	MPA applied? ***	Room area (RA), m2	Outer opening area, m2	Inner opening area, m2	Air gap, m	Overlapping length, m	MPA applied?	Room area (RAref), m2	Ref. sound attenuation, dB(A)		
1/F	Ward	R101	Window	2.33	1.12	0.1	0.275	No	28.98	3.2	3.8	0.1	0.275	No	38.3	8.8	-1.2	7.6
1/F	Ward	R102	Window	3.18	0.12	0.1	0.275	No	42.35	3.2	3.8	0.1	0.275	No	38.3	8.8	0.0	8.8
2/F-7-F	Ward	RT01	Window	2.33	1.12	0.1	0.275	No	47.65	3.2	3.8	0.1	0.275	No	38.3	8.8	0.0	8.8
2/F-7-F	Ward	RT02	Window	3.18	0.12	0.1	0.275	No	47.80	3.2	3.8	0.1	0.275	No	38.3	8.8	0.0	8.8

The dimensions of major parameters for the proposed baffle type acoustic window for the Proposed Development as shown in the above table, are subject to detailed design stage.

Appendix 2.5

Extracted Pages from Approved Planning Application A/K22/29

3.7 Proposed Noise Mitigation Measures

3.7.1 The following noise mitigation measures are considered and incorporated in the MLP.

a. Acoustic Window (Baffle Type)

According to a precedent case of redevelopment of ex-North Point Estate site to comprehensive development with residential uses (hereinafter referred to as the "Reference Case" for simplicity's sake), acoustic windows (baffle type) are adopted for flats facing roads (Island Eastern Corridor) for the purpose of reducing road traffic noise impact. According to onsite noise measurement, such innovate acoustic window system (opening size of 3.2m^2; 100mm gap; 275mm overlapping) at living room area (about 38.3m^2) can reduce noise level by 8.8 dB(A).

Acoustic window (baffle type) refers to the type of window that has an inner glass panel behind an outer window, both readily openable, for creating an air gap for the supply of fresh air with noise mitigation effect (see Appendix 3.5). It comprises two glazing:

i. The outer window opening; and
ii. The inner panel.

The "designed setting" to reduce noise entry to indoor area is that the inner panel is installed behind the outer window opening so that noise outside cannot pass through the opening window and enter indoor area directly. Noise needs to pass through the gap between the inner panel and outer façade in order to enter indoor area. The design can enable natural ventilation through the gap between the outer façade and inner sliding panel on one hand (although extent of natural ventilation may be inferior to the case without the inner sliding panel behind) and prevent most noise from entering indoor environment on the other hand.

In the Proposed Development, the configurations of the optimised acoustic windows design are shown in Appendix 3.5. With the optimised configurations, the noise reduction effectiveness of the acoustic windows in this Proposed Development (i.e. opening size and gap not more than Reference Case; overlapping not less than Reference Case) should not be worse than the Reference Case, it is anticipated that the proposed acoustic window (Baffle Type) should have at least the same noise reduction performance when noise enters from outdoor to indoor area.

The sound attenuation performance of acoustic window is determined with reference to the redevelopment project of ex-North Point Estate. The noise reduction of enhanced acoustic balcony without MPA applied at living room of reference case reaches 8.8 dB(A) (For living room of 38.3m^2, with outer opening of about 3.2m^2, air gap of 100mm and overlapping length of 275mm). The outer window opening of dormitory is around 3.14 m^2, which is smaller than that of the reference case of 3.2m^2. In addition, air gap of 100mm and overlapping length of 375mm will be provided which is no worse than the reference case (see Appendix 3.5).

It is noted that the room size of typical dormitories is ranged from approximately 40 m^2 to 50m^2, which is larger than the living room of 38.3m^2 in reference case. Therefore, the base case of RCHE supposed with larger window opening will even perform worse, leading to higher noise reduction of the acoustic window system. Therefore, the maximum sound reduction performance of the acoustic window applied at typical dormitories should not be less than that in reference case, which is equivalent to 8.8 dB(A).

As for the Staff Dormitory/ Sleep-in Room at 3/F, its room size is around 25m^2, which is smaller than the living room area of the reference case. It is considered that the amount of sound energy that can enter to room indoors should be proportional to the area of the window opening and in turn correlated to the room size. Therefore, an adjustment on the sound attenuation of acoustic window is made using ratio of room size of Staff Dormitory and Reference Case (which represents the ratio of sound energy that can enter indoor area) and then converted to decibel scale using 10 x log function. In this case, the sound attenuation of acoustic window in staff dormitory is determined as 6.9 dB(A) (i.e. 8.8 + 10 x log(25/38.3)), which is higher than the required noise reduction by 0.4 dB(A).

For Isolation/ Quiet Room, acoustic window (Baffle Type) is proposed where noise exceedance is found (with maximum of 2 dBA exceedance). It is noted that the room size of these room is ranged from around 9m^2 to 10m^2, which is larger than the bedroom in reference case (room size of about 6.8m^2 with outer opening of about 0.7 m^2 and noise reduction performance of 6.9 dB(A)). Same principle for dormitories applies to these Isolation/ Quiet Room should not be worse than that of the reference case and can attain the noise reduction of maximum 6.9 dB(A).

b. Fixed Glazing

For some locations where ventilation opening is not necessary but exposing to the major road traffic noise source that possibly lead to noise exceedance, they will be dedicated as fixed glazing.

3.7.2 Figure 3.2 shows the proposed noise mitigation measures.

3.8 Assessment Result with Proposed Noise Mitigation Measures

3.8.1 The predicted road traffic noise levels at the selected representative NSRs based on the noise mitigation measures discussed above were assessed.

3.8.2 The result in Appendix 3.4 indicated no non-compliance of road traffic noise standard is found with the proposed noise mitigation measures in place.

3.9 Conclusion

3.9.1 Road traffic noise impact assessment has been carried out for the proposed development.

3.9.2 Practical and effective noise mitigation measures have been explored which include and acoustic window (baffle type) and fixed glazing. With the proposed noise mitigation measures in place, the road traffic noise level can comply with relevant standards.

Appendix 3.1

Inventory of Potential Fixed Noise Sources

Noise Source ID	Description of Noise Sources	Sources	SWL, dB(A), L_{eq} (30 min)				Source Location		Directivity Factor (Q)	No. of Plant
		Existing/ Planned	Daytime & Evening Time (0700-2300)	Ref	Nighttime (2300-0700)	Ref	X	Y		
F01	VRV at the roof of Kowloon Ling Liang Church	Existing	71	[19]	OFF	[19]	837213.04	820947.14	2	1
F02	VRV at the roof of Kowloon Ling Liang Church	Existing	71	[19]	OFF	[19]	837214.96	820947.08	2	1
F03	VRV at the roof of Kowloon Ling Liang Church	Existing	71	[19]	OFF	[19]	837216.91	820946.96	2	1
F04	VRV at the roof of Kowloon Ling Liang Church	Existing	71	[19]	OFF	[19]	837214.89	820945.05	2	1
F05	VRV at the roof of Kowloon Ling Liang Church	Existing	71	[19]	OFF	[19]	837216.86	820944.91	2	1
F06	VRV at the roof of Kowloon Ling Liang Church	Existing	71	[20]	OFF	[20]	837215.72	820942.99	2	1
F07	VRV at the roof of Kowloon Ling Liang Church	Existing	65	[21]	OFF	[21]	837212.22	820945.13	2	1
F08	VRV at the roof of Kowloon Ling Liang Church	Existing	65	[21]	OFF	[21]	837212.14	820943.05	2	1
F09	Condensing Unit at the roof of Kowloon Ling Liang Church	Existing	57	[17]	OFF	[17]	837211.27	820939.92	2	1
F10	Condensing Unit at the roof of Kowloon Ling Liang Church	Existing	57	[17]	OFF	[17]	837212.50	820939.85	2	1
F11	VRV at the roof of Kowloon Ling Liang Church	Existing	68	[16]	OFF	[16]	837213.72	820939.72	2	1
F12	VRV at the roof of Kowloon Ling Liang Church	Existing	58	[11]	OFF	[11]	837219.06	820937.44	2	1
F13	Condensing Unit at the roof of Kowloon Ling Liang Church	Existing	57	[17]	OFF	[17]	837223.80	820941.55	2	1
F14	Condensing Unit at the roof of Kowloon Ling Liang Church	Existing	57	[17]	OFF	[17]	837225.61	820941.47	2	1
F15	Condensing Unit at the roof of Kowloon Ling Liang Church	Existing	67	[18]	OFF	[18]	837233.69	820941.23	2	1
F16	VRV at the roof of Kowloon Ling Liang Church	Existing	68	[22]	OFF	[22]	837238.86	820944.23	2	1
F17	VRV at the roof of Kowloon Ling Liang Church	Existing	68	[22]	OFF	[22]	837238.98	820946.53	2	1
F18	VRV at the roof of Kowloon Ling Liang Church	Existing	68	[22]	OFF	[22]	837237.10	820946.61	2	1
F19	Chiller at the roof of The Grandeur (Block 1)	Existing	68	[22]	OFF	[22]	837231.03	821184.01	2	1
F20	Chiller at the roof of The Grandeur (Block 1)	Existing	68	[22]	OFF	[22]	837233.30	821183.90	2	1
F21	Chiller at the roof of The Grandeur (Block 1)	Existing	68	[22]	OFF	[22]	837235.54	821184.46	2	1
F22	Chiller at the roof of The Grandeur (Block 1)	Existing	68	[22]	OFF	[22]	837235.70	821185.93	2	1
F23	Chiller at the roof of The Grandeur (Block 1)	Existing	68	[22]	OFF	[22]	837235.81	821188.20	2	1
F24	Chiller at the roof of The Grandeur (Block 1)	Existing	68	[22]	OFF	[22]	837233.35	821187.91	2	1
F25	Chiller at the roof of The Grandeur (Block 1)	Existing	68	[22]	OFF	[22]	837231.09	821188.08	2	1
F26	Cooling Tower at the roof of Smart A	Existing	82	[1]	OFF	[1]	837331.64	820957.79	2	1
F27	Chiller at the roof of Smart A	Existing	83	[6]	OFF	[6]	837330.83	820956.20	2	1
F28	Chiller at the roof of Smart A	Existing	83	[6]	OFF	[6]	837329.41	820955.25	2	1
F29	Chiller at the roof of Smart A	Existing	83	[6]	OFF	[6]	837328.42	820956.74	2	1
F30	Chiller at the roof of Smart A	Existing	83	[6]	OFF	[6]	837329.83	820957.69	2	1
F31	Chiller at the roof of Hang Seng Kowloon City Building	Existing	92	[9]	OFF	[9]	837347.09	820950.24	2	1
F32	Chiller at the roof of Hang Seng Kowloon City Building	Existing	92	[9]	OFF	[9]	837347.05	820948.18	2	1
F33	Cooling Tower at the roof of St.Teresa Hospital (North Wing)	Existing	88	[2]	88	[2]	837057.24	820849.86	2	1
F34	Cooling Tower at the roof of St.Teresa Hospital (North Wing)	Existing	88	[2]	88	[2]	837064.78	820851.35	2	1
F35	Cooling Tower at the roof of St.Teresa Hospital (North Wing)	Existing	88	[2]	88	[2]	837075.31	820851.44	2	1
F36	Cooling Tower at the roof of St.Teresa Hospital (North Wing)	Existing	88	[2]	88	[2]	837081.72	820852.75	2	1
F37	Chiller at the roof of St.Teresa Hospital (East Wing)	Existing	98	[8]	98	[8]	837114.21	820857.93	2	1
F38	Chiller at the roof of St.Teresa Hospital (East Wing)	Existing	98	[8]	98	[8]	837117.13	820858.51	2	1
F39	Chiller at the roof of St.Teresa Hospital (East Wing)	Existing	98	[8]	98	[8]	837116.49	820853.68	2	1
F40	Chiller at the roof of St.Teresa Hospital (Extension Building)	Existing	85	[10]	85	[10]	837109.05	820782.82	2	1
F41	Chiller at the roof of St.Teresa Hospital (Extension Building)	Existing	85	[10]	85	[10]	837110.13	820777.87	2	1
F42	Chiller at the roof of St.Teresa Hospital (Extension Building)	Existing	85	[10]	85	[10]	837071.33	820774.80	2	1
F43	Chiller at the roof of St.Teresa Hospital (Extension Building)	Existing	85	[10]	85	[10]	837072.30	820770.34	2	1
F44	Chiller at the roof of St.Teresa Hospital (Extension Building)	Existing	96	[7]	96	[7]	837074.42	820742.90	2	1
F45	Chiller at the roof of St.Teresa Hospital (Extension Building)	Existing	96	[7]	96	[7]	837066.10	820741.17	2	1
F46	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	72	[15]	72	[15]	837169.72	820826.96	2	1
F47	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	70	[14]	70	[14]	837171.90	820827.47	2	1
F48	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	70	[14]	70	[14]	837172.81	820823.15	2	1
F49	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	70	[14]	70	[14]	837171.13	820822.82	2	1
F50	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	70	[14]	70	[14]	837169.41	820822.47	2	1
F51	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	72	[15]	72	[15]	837169.86	820820.07	2	1

Noise Source ID	Description of Noise Sources	Sources	SWL, dB(A), L_{eq} (30 min)				Source Location		Directivity Factor (Q)	No. of Plant
		Existing/ Planned	Daytime & Evening Time (0700-2300)	Ref	Nighttime (2300-0700)	Ref	X	Y		
F52	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	72	[15]	72	[15]	837170.27	820817.88	2	1
F53	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	68	[12]	68	[12]	837166.58	820816.43	2	1
F54	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	71	[13]	71	[13]	837164.49	820816.02	2	1
F55	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	72	[15]	72	[15]	837161.68	820814.84	2	1
F56	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	70	[14]	70	[14]	837161.20	820817.27	2	1
F57	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	72	[15]	72	[15]	837160.74	820819.64	2	1
F58	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	72	[15]	72	[15]	837163.84	820819.49	2	1
F59	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	72	[15]	72	[15]	837165.93	820819.85	2	1
F60	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	72	[15]	72	[15]	837157.84	820822.57	2	1
F61	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	70	[14]	70	[14]	837158.12	820824.51	2	1
F62	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	70	[14]	70	[14]	837159.94	820824.91	2	1
F63	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	72	[15]	72	[15]	837162.33	820822.22	2	1
F64	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	70	[14]	70	[14]	837164.48	820822.63	2	1
F65	Chiller at the roof of Hong Kong Eye Hospital	Existing	97	[5]	97	[5]	837028.79	820679.62	2	1
F66	Chiller at the roof of Hong Kong Eye Hospital	Existing	97	[5]	97	[5]	837034.44	820680.60	2	1
F67	Chiller at the roof of Hong Kong Eye Hospital	Existing	96	[7]	96	[7]	837043.09	820652.45	2	1
F68	Cooling Tower at the roof of Kowloon City Law Courts Building	Existing	92	[3]	OFF	[3]	837139.21	820699.38	2	1
F69	Cooling Tower at the roof of Kowloon City Law Courts Building	Existing	92	[3]	OFF	[3]	837139.68	820696.82	2	1
F70	Chiller at the roof of Kowloon City Law Courts Building	Existing	94	[4]	OFF	[4]	837137.74	820692.56	2	1
F71	Chiller at the roof of Kowloon City Law Courts Building	Existing	94	[4]	OFF	[4]	837138.67	820686.74	2	1

Notes:

[1] The noise level is referenced to Ryowo FT-20.
[2] The noise level is referenced to Ryowo FC-300.
[3] The noise level is referenced to Ryowo FWS-127-7.5.
[4] The noise level is referenced to Trane CGAM 70.
[5] The noise level is referenced to Trane RTAC 300 .
[6] The noise level is referenced to York YLCA 0080 T-TP.
[7] The noise level is referenced to York YLAA 0485SE.
[8] The noise level is referenced to York YCAS 0835 EB.
[9] The noise level is referenced to Carrier 30RB 090R.
[10] The noise level is referenced to McQuay MCS135.1.
[11] The noise level is referenced to Mitsubishi FDC125VS.
[12] The noise level is referenced to Mitsubishi FDC400KXE6.
[13] The noise level is referenced to Mitsubishi FDC450KXE6.
[14] The noise level is referenced to Mitsubishi FDC504KXE6.
[15] The noise level is referenced to Mitsubishi FDC560KXE6.
[16] The noise level is referenced to Daikin RU08K.
[17] The noise level is referenced to Daikin R50GV1.
[18] The noise level is referenced to Daikin R125FU.
[19] The noise level is referenced to Daikin RUXYQ12AB.
[20] The noise level is referenced to Daikin RXYQ216PBYD.
[21] The noise level is referenced to Daikin RXYQ72PBYD.
[22] The noise level is referenced to Daikin RXYQ96PBYD.

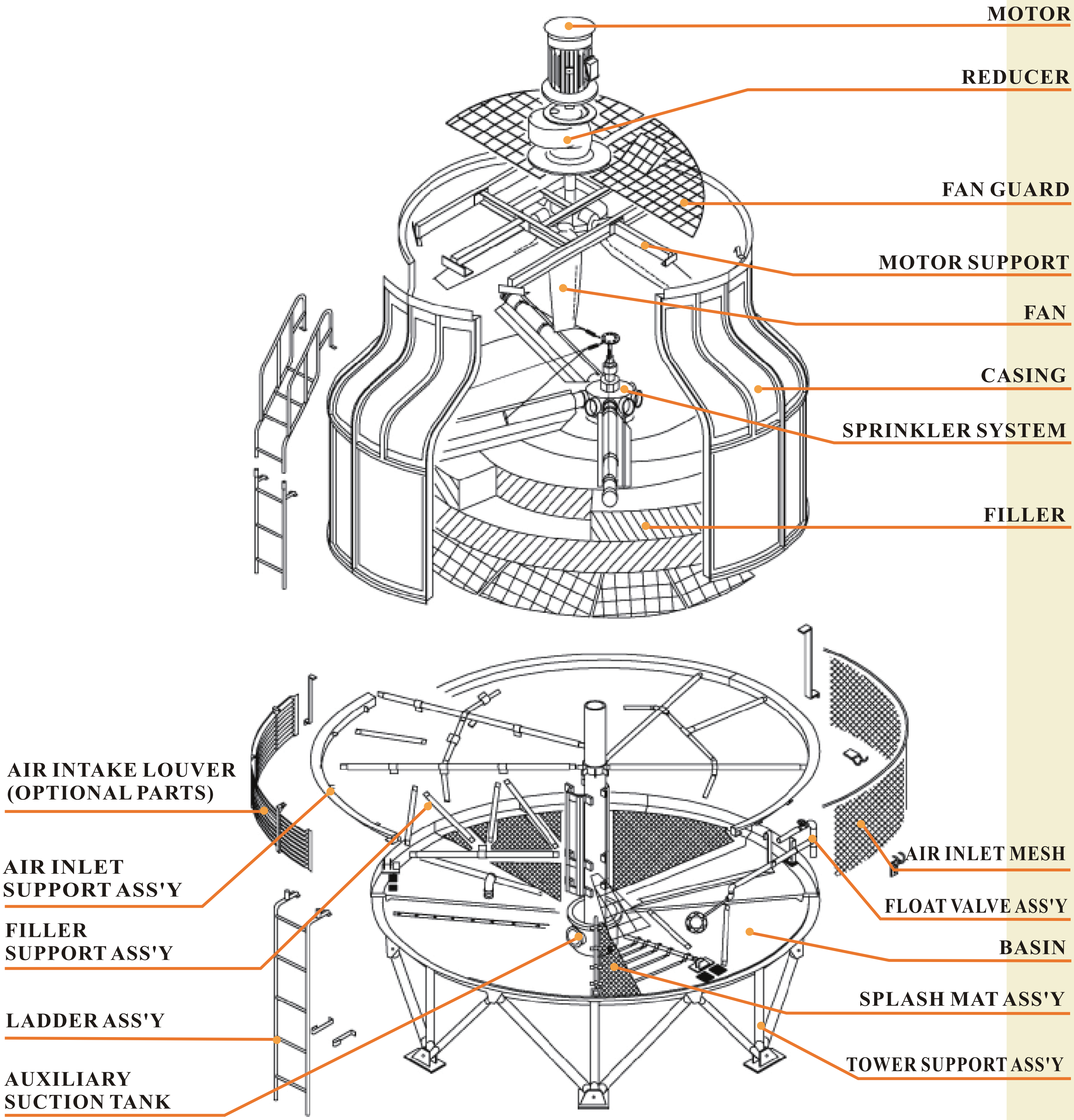
Catalogue of Ryowo FT-20

菱和
ryowo™

FRP COUNTER FLOW FT SERIES

COOLING TOWER

STRUCTURE



PRINCIPLE OF OPERATION

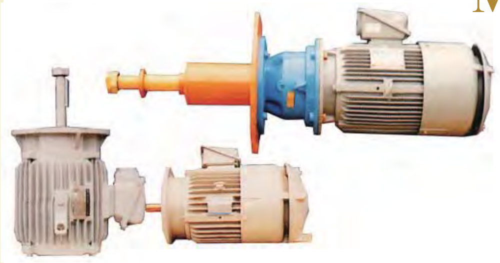
Hot water is distributed over the filler through the low velocity automatic sprinkler system and is mixed with the upward draft of ambient air causing evaporation and thus heat is removed from the water. The cooled water falls into the basin and is pumped to the heat sources for recirculation.

COMPONENT FUNCTION & FEATURE

AXIAL FAN

All fans are induced-draft axial type with adjustable pitch. Material chosen are non-corrosion of plastic, FRP or alu-minium alloy. The high efficiency design ensures low running cost and the lowest possible noise level . Fan blade pitches is factory set and balanced.

MOTOR



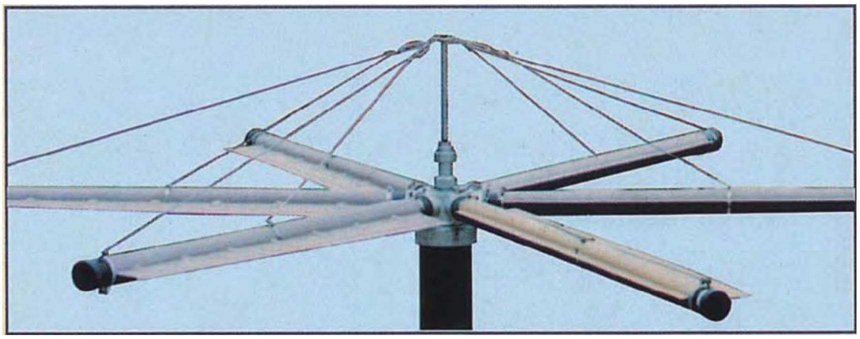
The motors, totally enclosed, fan cooled flange type, 380V/ 3ph/ 50 Hz, induction weather proof, are specially designed for RYOWO. Motors from 5.5 kw and up are Y- start and below are direct-on-line start.

TRANSMISSION SYSTEM

The fans of small models are designed to be driven by low speed motor of 6,8,10 or 12 poles which can minimise the numbers of transmission parts used. For large models, the fans are vee-belt or gear driven with 4 poles motors so the speed of fans can be adjustable to suit various application.

SPRINKLER SYSTEM

Automatic rotary sprinkler system with rotary head and sprinkler pipe distributes the hot water over the entire face area of the filler. Sprinkler pipes are non-clogging, require low-pressure to operate, and assures uniform water flow with minimal operating pump head. The F.R.P. eliminators attached to sprinkler pipes are specifically designed for Low pre Ssure drop and minimises the drift loss of water.

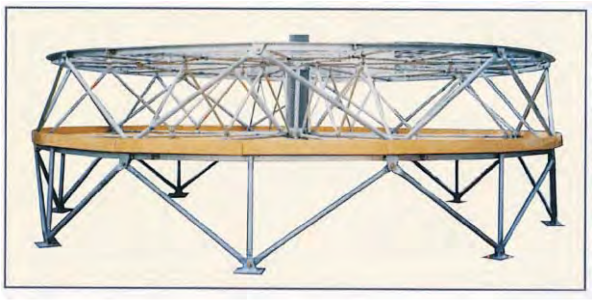


COMPONENT FUNCTION & FEATURE

CASING & BASIN

F.R.P. (fibreglass reinforced polyester) formed casings are durable, non-corrosive, weather-proof, and light weight. Cylindrical form is shaped to fully withstand wind pressure, vibration and such F.R.P. casings obliviate need for painting, reduce maintenance costs and guarantee long dependable service.

Bowl-shape basins are also made from F.R.P. with built in socket or flanged outlets for piping connections. For large models, a F.R.P. aux. suction tank is employed and fitted with piping flanges or sockets.



STEEL STRUCTURE

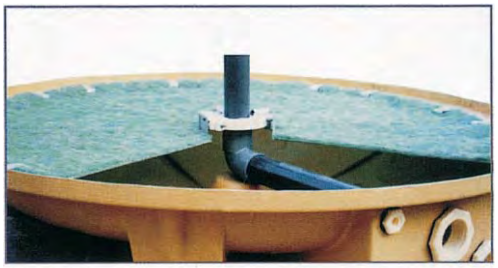
All supporting steel members are hot-dip galvanized to minimise rusting and corrosion ensuring long service life even in corrosive atmosphere. The stainless hardware members are also available upon request.

FILLER

High performance RYOWO V-30 film filler is the heart of the tower. The specially formed PVC sheets maximize the air/water contact area and minimise air pressure drop to assure efficient heat transfer while keeping fan power requirement low. It is virtually immune to corrosion and decay.

Eliminator

Specially made drift eliminator consisted of 2 types of sheets forms a “v” shape path for the transmission of the cooling tower discharge air stream. The small water droplets in the stream impact the surfaces of the drift eliminator sheets and are separated from the stream such that the drift loss ratio maintain at less than 0.001% of circulating water flow rate.



SPLASH MAT (LOW NOISE MODELS)

Specially designed noise absorbing splash mat is provided for low noise models on the water basin to minimise the unpleasant water dripping noise in the basin.

SPECIFICATION FOR FT SERIES

SPECIFICATION FOR FT SERIES

ITEM	MODEL			FT-8	FT-10	FT-15	FT-20	FT-25	FT-30	FT-40	FT-50	FT-60	FT-80	FT-100	FT-125	FT-150	FT-175	FT-200	FT-225	FT-250	FT-300	FT-350	FT-400	FT-500	FT-600	FT-700	FT-800	FT-1000
Capacity	27 ℃ WB	Circulating water flow rate	m^3/ hr	6.2	7.8	11.7	15.6	19.5	23.4	31.2	39.1	46.9	62.5	78.1	97.7	117.2	136.7	156.2	175.8	195.3	234.4	273.4	312.5	390.6	468.7	546.8	625.0	781.2
		Make-up water (Approx.)	m^3/ hr	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.6	0.7	0.9	1.1	1.4	1.7	2.0	2.2	2.5	2.8	3.4	3.9	4.5	5.6	6.7	7.8	8.9	11.2
	28 ℃ WB	Circulating water flow rate	m^3/ hr	5.6	7.4	10.6	14.4	17.8	21.5	28.7	36.3	42.5	58.8	70.6	88.2	107.5	125.0	142.5	160.0	176.2	212.5	250.0	287.5	337.5	431.2	512.4	575.0	718.7
		Make-up water (Approx.)	m^3/ hr	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.6	0.8	1.0	1.3	1.5	1.8	2.0	2.3	2.5	3.0	3.6	4.1	4.8	6.2	7.3	8.2	10.3
		Air flow rate (Approx.)	m^3/ min	70	85	140	160	230	280	330	420	450	700	830	950	1150	1200	1250	1600	1750	2000	2200	2450	2700	3500	3750	5000	5400
		Hot water temperature	ºC	37																								
		Cold water temperature	ºC	32																								
Overall Dimension		Diameter (φ)	mm	920	920	1160	1160	1490	1660	1660	1890	2100	2100	2900	2900	2900	3310	3310	3960	3960	4360	4760	4760	5600	6600	6600	7600	7600
		Height (H)	mm	1560	1700	1585	1835	1945	1885	2035	2110	2300	2475	2910	3110	3110	3300	3450	3920	3920	3990	4195	4255	4590	5310	5510	5660	5860
		Height (w/o motor) (m)	mm	1390	1530	1395	1645	1760	1720	1785	1860	1980	2155	2590	2790	2790	2880	3030	3300	3300	3290	3495	3495	3830	4470	4670	4720	4940
Material		Air inlet mesh		PVC																								
		Basin		FRP																								
		Casing		FRP																								
		Eliminator		FRP																								
		Fan		ABS Plastic								FRP					Aluminium alloy								FRP			
		Filler		PVC																								
		Motor support		Steel (Hot-dip galvanized)																								
		Sprinkler head		ABS Plastic										Aluminium alloy														
		Sprinkler pipe		PVC pipe																								
		Stand pipe		PVC pipe																								
		Structure		Steel (Hot-dip galvanized)																								
Fan		TYPE		Axial-flow																								
		Diameter	mm	550	640			770		930		1200		1500			1800		2400				3000		3400		3700	
		Speed	rpm					970				750					600		450				375		314			
		Driven type		Direct driven															Belt driven						Gear driven			
Motor		TYPE		Totally enclosed fan cooled outdoor 3 phase induction motor																								
		Power source		380V / 3 / 50Hz																								
		Rated output	kw	0.18		0.37		0.75		1.5				2.2			3.7		5.5		7.5		11		15		22	
		No of pole	Pole	6								8					10		4									
Distribution System		TYPE		Automatic sprinkler system																								
		Inlet dia	mm	40		50		80				100		125		150			200					250			300	
		Outlet dia		15		20		40						65					75					100	75		100	
		No of outlet		4								6		4					6						8		10	
Piping		Inlet	mm	40		50		80				100		125		150			200					250			300	
		Outlet	mm	40		50		80				100		125		150			200					250			300	
		Drain	mm	25										50					80					100				
		Overflow	mm	25										50					80					100				
		Float valve	mm	15								20					25		32					50			80	
		Manual make-up	mm	15										20			25		32					50			80	
Weight		Dry weight	Kg	56	65	75	85	105	130	150	180	250	270	500	540	580	870	900	1300	1350	1550	1720	2050	2450	3950	4050	4700	4900
		Operating weight	Kg	140	150	200	210	290	370	390	550	840	860	1600	1640	1680	2170	2200	2700	2750	3350	3720	3950	6150	9350	9450	11900	12100
Noise Level		Sound pressure level	dBA	45.5	47	48	50	52	54	58	59	58	59	61	61.5	62	62	62	63	63	64	64.5	61.5	62	65	66	73	74

NOTE : Nominal cooling capacity is based on 13 ℓ / min / RT (1 RT=3,900 Kcal / hr) at 37ºC inlet water tpmperature, 32ºC outlet water temperature and 27ºC ambient wet bulb temperature.

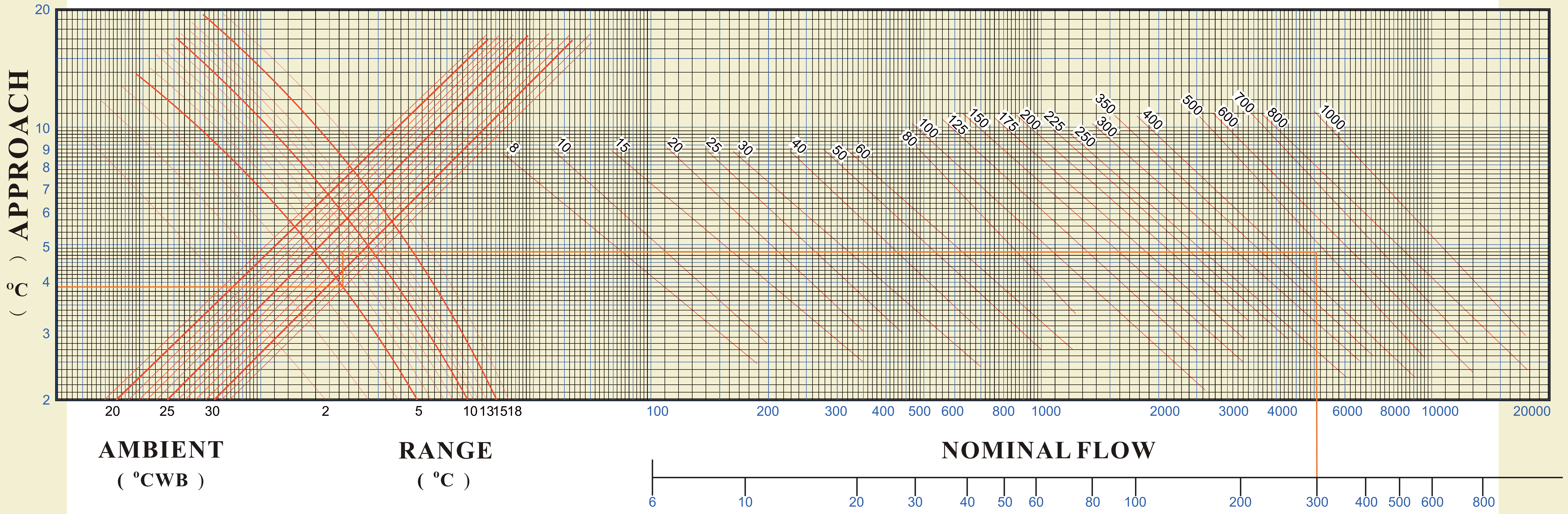
The SPLs are measured 16m horizontally from the edge of the tower at 1.5m above the foundation level.

Pump head is obtained by adding resistance of piping/condenser and the tower height(H).

The unit dimension in this catalogue is metric. Specifications listed in this catalogue are subject to change without further noticefor technical improvement of our products.

FT OR FT/LN SERIES QUICK SELECTION TABLE

(20°CWB~30°CWB)



EXAMPLE:

RATE	:300m^3/hr
INLET WATER TEMP	:37°C
OUTLET WATER TEMP	:32°C
WET BULB TEMP	:28°C

RANGE: INLET WATER TEMP-OUTLET WATER TEMP

: 37°C - 32°C = 5°C

APPROACH: OUTLET WATER TEMP -WET BULB TEMP

: 37°C - 32°C = 5°C

TOWER SELECTED: FT - 500 OR FT/LN - 500

COOLING TOWER	CT							
NOMINAL FLOW	m^3/hr							
INLET WATER	HWT°C							
OUTLET WATER	CWT°C							
AMBIENT WB	WB°C							
RANGE	(HWT-CWT)°C							
APPROACH	(CWT-WB)°C							
MODEL								

SPECIFICATION FOR FT/LN(LOW NOISE TYPE)

SPECIFICATION FOR FT/LN(LOW NOISE TYPE)

ITEM	MODEL			FT/LN 8	FT/LN 10	FT/LN 15	FT/LN 20	FT/LN 25	FT/LN 30	FT/LN 40	FT/LN 50	FT/LN 60	FT/LN 80	FT/LN 100	FT/LN 125	FT/LN 150	FT/LN 175	FT/LN 200	FT/LN 225	FT/LN 250	FT/LN 300	FT/LN 350	FT/LN 400	FT/LN 500	FT/LN 600	FT/LN 700	FT/LN 800	FT/LN 1000
Capacity	27 °C WB	Circulating water flow rate	m^3/ hr	6.2	7.8	11.7	15.6	19.5	23.4	31.2	39.1	46.9	62.5	78.1	97.7	117.2	136.7	156.2	175.8	195.3	234.4	273.4	312.5	390.6	468.7	546.8	625.0	781.2
		Make-up water (Approx.)	m^3/ hr	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.6	0.7	0.9	1.1	1.4	1.7	2.0	2.2	2.5	2.8	3.4	3.9	4.5	5.6	6.7	7.8	8.9	11.2
	28 °C WB	Circulating water flow rate	m^3/ hr	5.6	7.1	10.6	14.4	17.8	21.5	28.7	36.3	42.5	58.8	70.6	88.2	107.5	125.0	142.5	160.0	176.2	212.5	250.0	287.5	337.5	431.2	512.4	575.0	718.7
		Make-up water (Approx.)	m^3/ hr	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.6	0.8	1.0	1.3	1.5	1.8	2.0	2.3	2.5	3.0	3.6	4.1	4.8	6.2	7.3	8.2	10.3
	Air flow rate (Approx.)		m^3/ min	70	85	140	160	230	280	330	420	450	700	830	950	1150	1200	1250	1600	1750	2000	2200	2450	2700	3500	3750	5000	5400
	Hot water temperature		°C	37																								
	Cold water temperature		°C	32																								
Overall Dimension	Diameter		mm	920	1160	1160	1490	1660	1660	1890	1890	2100	2100	2900	2900	2900	3310	3310	3960	3960	4360	4760	4760	5600	6600	6600	7600	7600
	Height (H)		mm	1755	1620	1870	1945	1885	2145	2220	2220	2340	2515	3060	3260	3260	3450	3600	3920	3920	3990	4195	4255	4590	5310	5510	5660	5860
	Height (w/o motor) (m)		mm	1530	1395	1645	1760	1720	1785	1860	1860	1980	2155	2590	2790	2790	2880	3030	3300	3300	3290	3495	3495	3830	4470	4670	4720	4940
Material	Air inlet mesh			PVC																								
	Basin			FRP																								
	Casing			FRP																								
	Eliminator			FRP																								
	Fan			ABS Plastic					Aluminium alloy																FRP			
	Filler			PVC																								
	Motor support			Steel (Hot-dip galvanized)																								
	Sprinkler head			ABS Plastic										Aluminium alloy														
	Sprinkler pipe			PVC pipe																								
	Stand pipe			PVC pipe																								
	Structure			Steel (Hot-dip galvanized)																								
	Splash mat			Nylon																								
Fan	TYPE			Axial-flow																								
	Diameter		mm	640		770			930			1200		1500			1800		2400				3000		3400		3700	
	Speed		rpm	750					600			500		440			375						314		257			
	Driven type			Direct driven										Belt driven											Gear driven			
Motor	TYPE			Totally enclosed fan cooled outdoor 3 phase induction motor																								
	Power source			380V / 3 / 50Hz																								
	Rated output		kw	0.2		0.37			1.1			1.5		3.7					5.5		7.5		11		15		22	
	No of pole		Pole	8					10			12		4														
Distribution System	TYPE			Automatic sprinkler system																								
	Inlet dia		mm	40	50		80					100		125		150			200					250			300	
	Outlet dia			15	20		40							65					75					100	75		100	
	No of outlet			4								6		4					6						8		10	
Piping	Inlet		mm	40	50		80					100		125		150			200					250			300	
	Outlet		mm	40	50		80					100		125		150			200					250			300	
	Drain		mm	25										50					80					100				
	Overflow		mm	25										50					80					100				
	Float valve		mm	15								20					25		32					50			80	
	Manual make-up		mm	15										20			25		32					50			80	
Weight	Dry weight		Kg	80	85	100	125	145	240	280	290	380	400	600	640	680	970	1000	1400	1450	1700	1920	2250	2650	4250	4350	5100	5300
	Operating weight		Kg	160	205	220	290	375	470	625	635	970	990	1700	1740	1780	2270	2300	2800	2850	3500	3920	4250	6350	9650	9750	12300	12500
Noise Level	Sound pressure level		dBA	40	41	42.5	43.5	44.5	46	47	48	48	49.5	52	52.5	53	54	54.5	55	55	56	57	58	60	62	62.5	65	66

GUARANTEE:

All components are guaranteed against defective material for a period of one (1) year.

When return to RYOWO with transportation prepaid , all parts found by factory inspection to be defective will be repaired replaced without charge , FOB HONG KONG.

No liability will be assumed for loss or damage resulting from misuse of products.

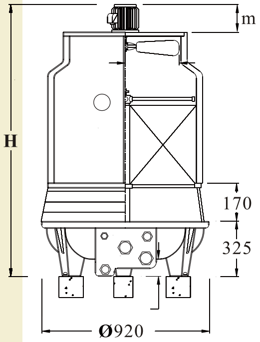
APPLICATION

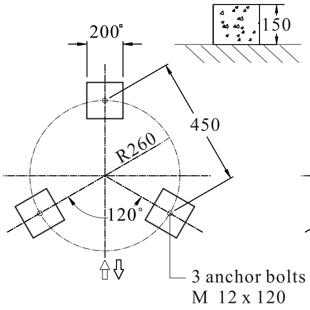
For inquiry on RYOWO cooling towers , please contact local agents and specify the following conditions:

a). Circulating water flow
b). Inlet water temperature
c). outlet water temperature
d). ambient wet bulb temperature
e). power sources-voltage & frequency

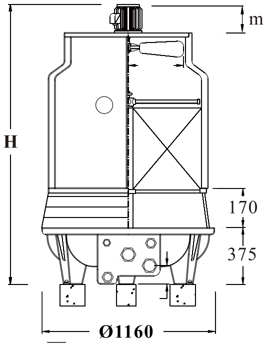
TOWER FOUNDATION

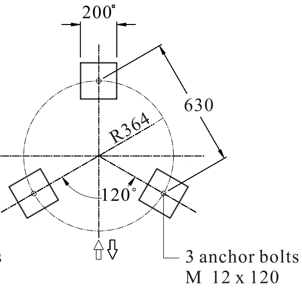
FT-8 10 FT/LN-8



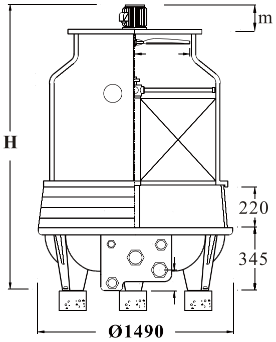


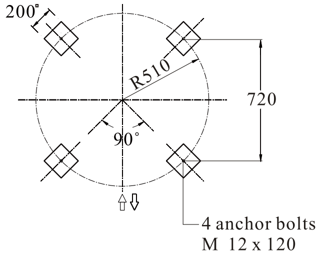
FT-15·20 FT/LN-10 15



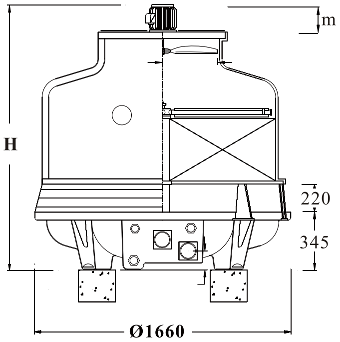


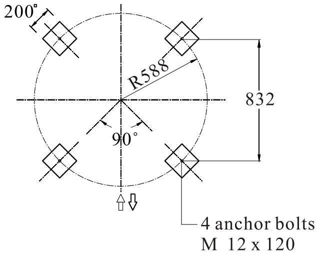
FT-25 FT/LN-20



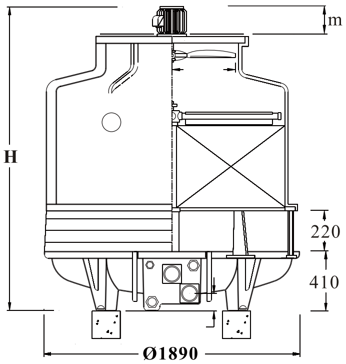


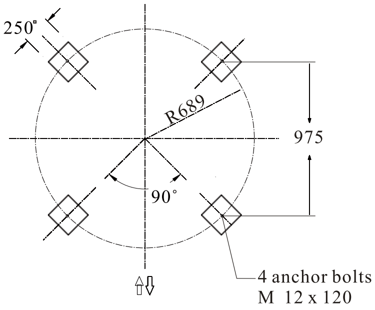
FT-30 40 FT/LN-25 30



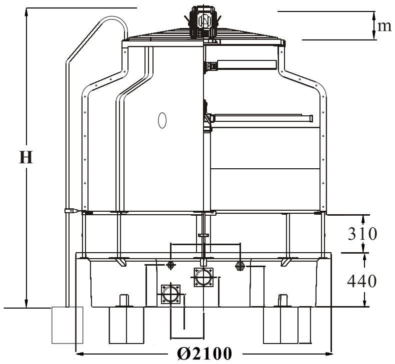


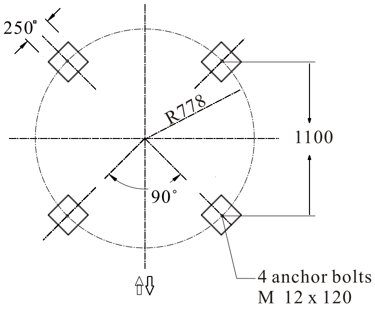
FT-50 FT/LN-40·50



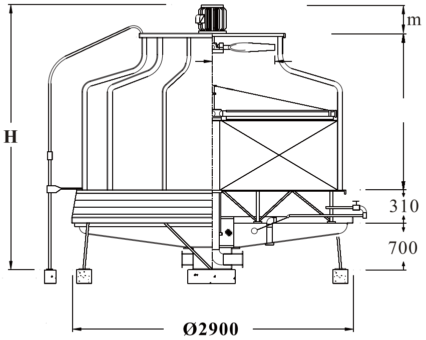


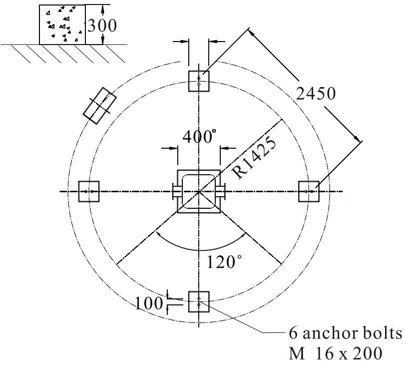
FT · FT/LN-60·80





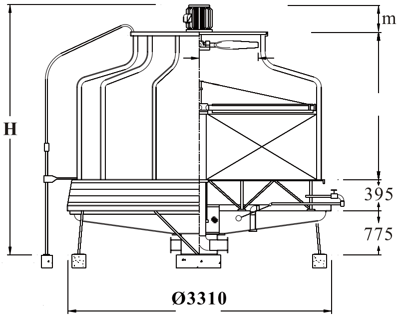
FT · FT/LN-100 · 125·150

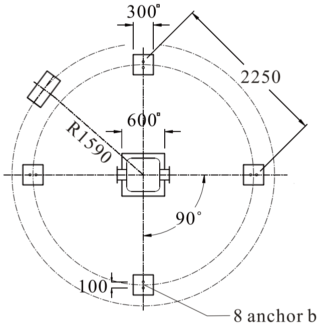




TOWER FOUNDATION

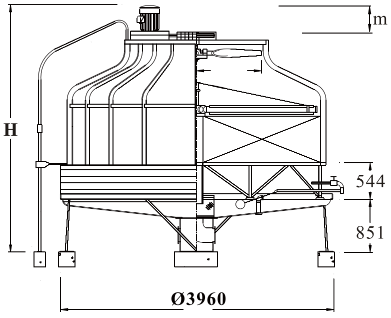
FT· FT/LN-175· 200

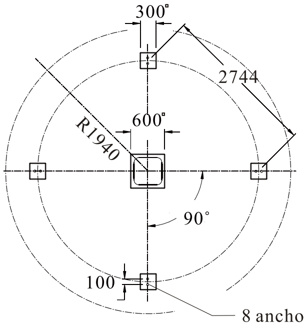




8 anchor bolts
M 16 x 200

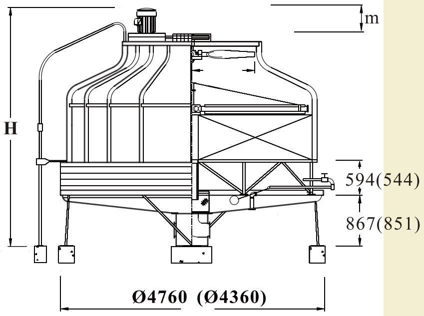
FT· FT/LN-225·250

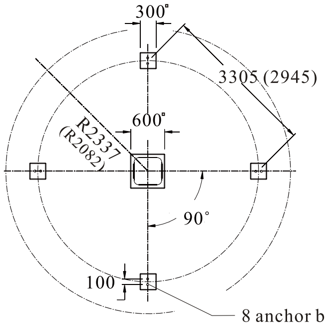




8 anchor bolts
M 16 x 200

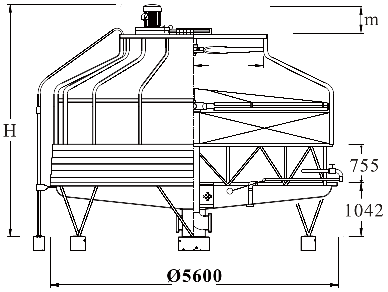
FT· FT/LN-(300) ·350·400

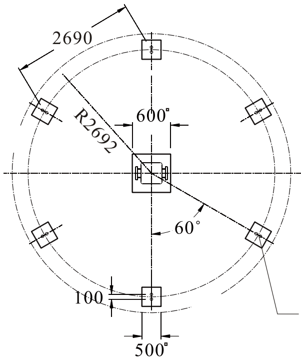




8 anchor bolts
M 16 x 200

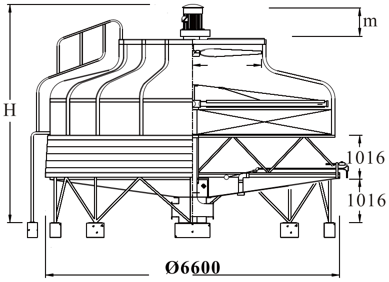
FT· FT/LN- 500

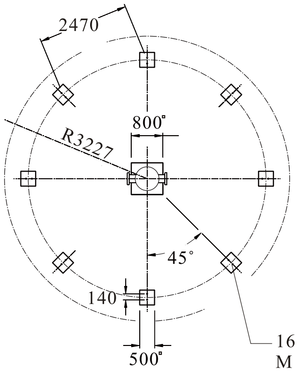




12 anchor bolts
M 16 x 200

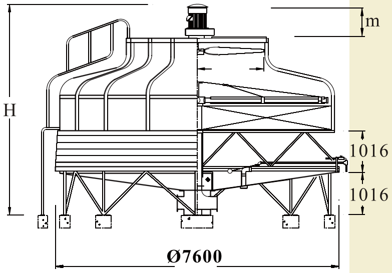
FT· FT/LN-600 · 700

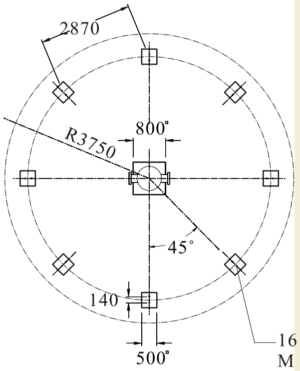




16 anchor bolts
M 20 x 200

FT· FT/LN-800 · 1000





16 anchor bolts
M 20 x 200

AVAILABLE OPTIONAL ACCESSORIES

DISCHARGE HOOD

This option is available on small models. It provides another direction of discharge air leaving the tower. It is made of F.R.P. with services door and wiring mesh on the air outlet.

HIGH TEMPERATURE FILLER

For high temperature operation such as waste water treatment , P.P. filler can withstand up to 80℃inlet water. (Special arrangement should be made for other components, please contact us for details.)

STAINLESS STEEL COMPONENTS

As an option, we can provide type 304 stainless steel major steel members, bolts and nuts.

TWO-SPEED MOTOR

As an option, two-speed motor can be provided in 4P/6P single winding configeration. A considerable reduction in noise and energy management can be achieved.

F.R.P. AIR INLET LOUVER

Inlet louver constructed of F.R.P. material can be provided, which matches the rest of tower and prevents water splashing out from the tower.

BASIN HEATERS

Electric immersion heaters with thermostat and control box are available to keep the basin water from freezing in sub-zero weather.

BODY COLOR

Cooling tower installed on the roof of building may be barely noticeable from the ground, and a colored cooling tower matching to building color will make it "good look".

JOB REFERENCES

FT-400 X 2
Bank of China, Shen Zhen

FT/LN-600 X 11
Hotel Lisboa, Macau

FT-1000 X 3
FT-500 X 10

CITIC Plaza, Guangzhou

FT/LN-300 X 6
Hong Kong University

FT-200 X 2
Miami University, U.S.A

RYOWO (HOLDING) CO .,LTD.

Rm. 1218, Angyle Centre 1,
688 Nathan Rd., MongKok,
Kowloon, Hong Kong

Tel : (852) 23918381
Fax: (852) 27893802

Http://www.ryowo.com
e-mail: ryinfo@ryowo.com

DONGGUAN RYOWO COOLING TOWER CO., LTD.

No.263 MeiJing Road West,Dalang,Dongguan,Guangdong,PRC

Tel : (86)-769 89399698 (86)-769 89399699
Fax: (86)-769 82973398 Postal Code: 523795

ryowo™

COOLING TOWER MANUFACTURER SINCE 1978

BROCH -EN-(03)-2013

KTA
PLANNING LIMITED
規劃顧問有限公司

UNIT K, 16/F, MG TOWER
133 HOI BUN ROAD, KWUN TONG
KOWLOON, HONG KONG
九龍觀塘海濱道133號
萬兆豐中心16樓K室
電話TEL (852) 3426 8451
傳真FAX (852) 3426 9737
電郵EMAIL kta@ktaplanning.com

By Hand and Email

Our Ref: S3120/349_PERW/24/004Lg

5 December 2024

Secretary, Town Planning Board
15/F, North Point Government Offices
333 Java Road
North Point
Hong Kong

Dear Sir/Madam,

Proposed Social Welfare Facility
(Residential Care Home for the Elderly)
in "Residential (Group B)" Zone
at 349 Prince Edward Road West, Kowloon
(Planning Application No. A/K10/276)
Further Information No. 2

Reference is made to the captioned S16 Planning Application submitted to the Town Planning Board ("TPB") on 30 August 2024 and the Further Information No.1 submitted to the TPB on 27 November 2024.

In response to the further departmental comment received, please find attached the replacement page of the Schematic Architectural Drawing, which contains rectification to the typo found in the annotation.

Should you have any queries in relation to the above, please do not hesitate to contact the undersigned at [redacted] or Mr Wilson Man at [redacted].

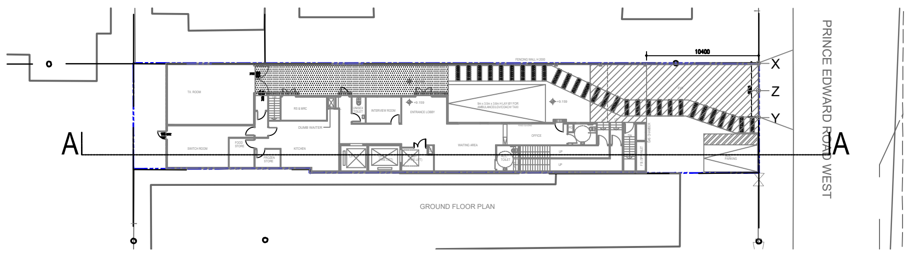
Thank you for your kind attention.

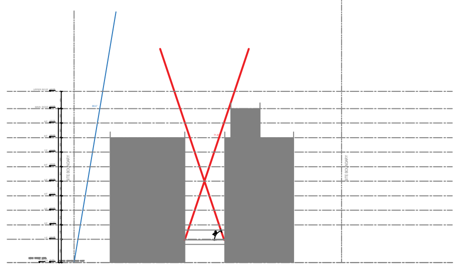
Yours faithfully
For and on behalf of
KTA PLANNING LIMITED

PP. Gladys Ng

cc. KDPO – Ms Jenny Lai (By email)
the Applicant & Team

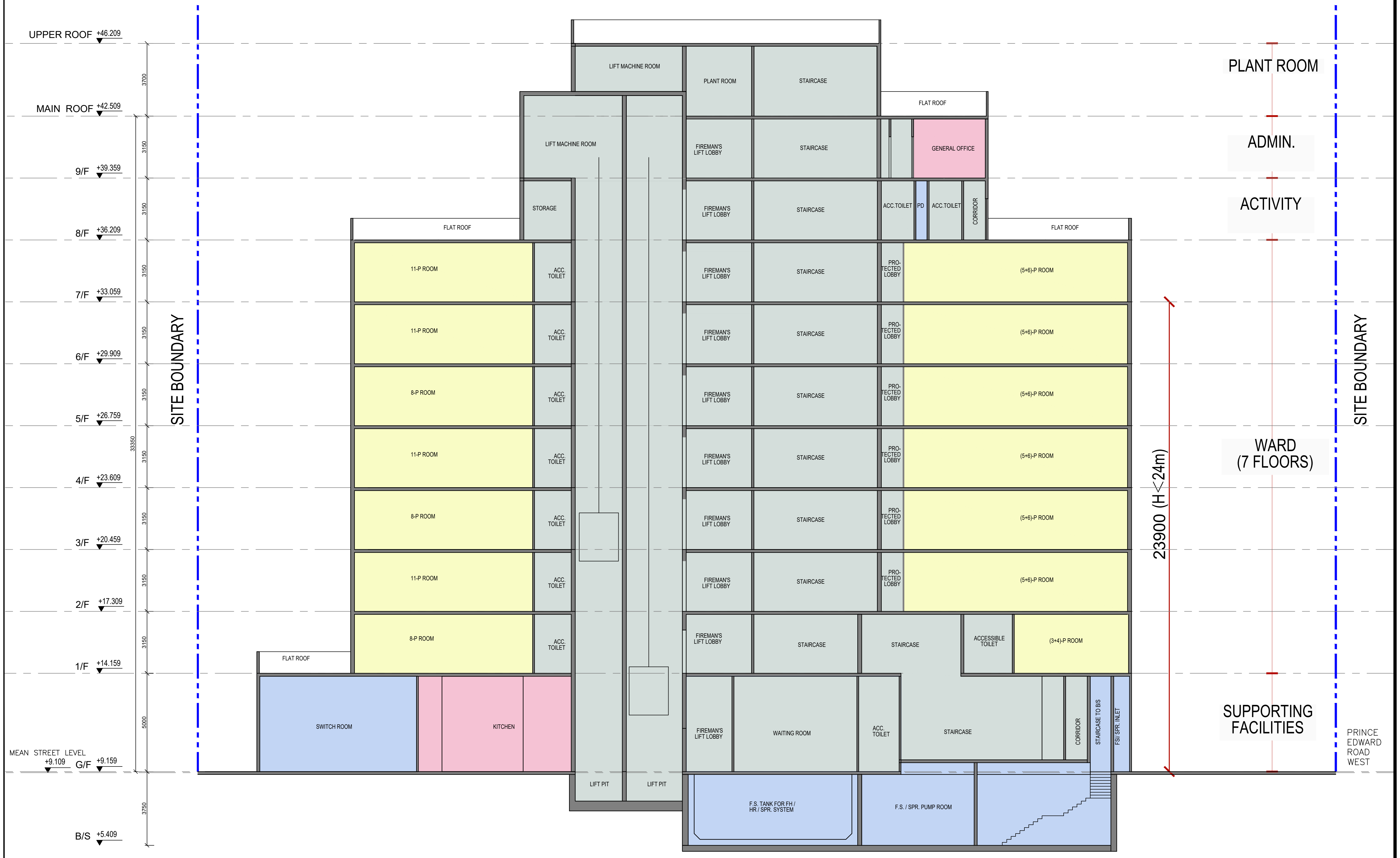
GN/WM/vy





LEGEND:

—	SITE BOUNDARY
🟨	WARD
🟥	ANCILLARY AREA
▨	COMMON / CIRCULATION SPACE
🟦	PLANT ROOM/ STAIRCASE TO U/G PLANT ROOM
▨	FOOTPATH
☐	LANDSCAPE
▨	EMERGENCY VEHICULAR ACCESS
▨	UNEXCAVATED GROUND



SECTION A-A 1:200

BD REF. NO.:
FSD REF. NO.:
REVISIONS AND SUBMISSIONS:

NO.:	DATE:	DETAILS:	CHECKED:

NOTES:
1. CONTENTS ON THIS DRAWING SHOW DESIGN INTENT ONLY CONTRACTOR IS RESPONSIBLE FOR DETAILED DESIGN OF THE INTERIOR FITTING–OUT. CONTRACTOR IS REQUIRED TO SUBMIT FULL SET SHOP DRAWINGS FOR ARCHITECT'S APPROVAL PRIOR TO FABRICATION AND SITE INSTALLATION.
2. STRUCTURAL CALCULATIONS IF REQUIRED AND RELATED SUPPORTING DATA SHOULD BE SUBMITTED FOR REVIEW AND APPROVAL.
3. TRUE COLOR SAMPLES OF MATERIALS SHOULD BE SUBMITTED FOR ARCHITECT'S APPROVAL PRIOR TO PROCUREMENT.
4. ALL FITTING/ ASSEMBLY AND MATERIALS SHOULD BE DESIGN & INSTALLED TO CONTRACT DRAWINGS AND SPECIFICATION, AND IN COMPLIANCE WITH ALL RELEVANT STATUTORY REQUIREMENTS.
5. DIMENSIONS BASED ON ON SITE MEASUREMENTS.
6. FINAL MATERIALS & FINISHES OF WALL,FLOOR,CEILING,WALL FIXTURE ETC. SHOULD BE REFER TO FINISHES AND MATERIALS SCHEDULE UNDER THE SPECIFICATION PROVIDED.

CLIENT/EMPLOYER:

PROJECT ARCHITECT/AUTHORIZED PERSON:
馬海
馬海（建築顧問）有限公司
Spence Robinson Limited

PROJECT STRUCTURAL ENGINEER/
PROJECT GEO-TECHNICAL ENGINEER:
張耀新建築工程師有限公司
Wilson & Associates Ltd

PROJECT E/M ENGINEER:

PROJECT LANDSCAPE CONSULTANT:

PROJECT QUANTITY SURVEYOR:

PROJECT:
PURPOSE BUILT C&A HOME DEVELOPMENT AT 349 PRINCE EDWARD ROAD WEST

DRAWING TITLE:
SECTION

DRAWN BY: CZ	DATE: NOV-2024	
CHECKED BY: CMD	APPROVED BY: KCY	
SCALE: 1:200	PAPER SIZE: A3	
PROJECT: PE 6170	DRAWING: GP-03	REVISION: V14

NOTES :
1. This drawing and design are copyright and no portion may be reproduced without the written permission of the Architect.
2. Use written dimensions or grid lines in preference to scaled dimensions. Measurements to existing work are to be checked on site.
3. This drawing is to be read in conjunction with the Architect's Specification and Conditions of Contract.
4. Prints not showing the last revision are to be cancelled.
5. Prints without an authorized signature in the checked and approved spaces below and after the last revision above are NOT vaild for use outside SRL.

KTA
PLANNING LIMITED
規劃顧問有限公司

UNIT K, 16/F, MG TOWER
133 HOI BUN ROAD, KWUN TONG
KOWLOON, HONG KONG
九龍觀塘海濱道133號
萬兆豐中心16樓K室
電話TEL (852) 3426 8451
傳真FAX (852) 3426 9737
電郵EMAIL kta@ktaplanning.com

By Hand and Email

Our Ref: S3120/349_PERW/24/006Lg

27 January 2025

Secretary, Town Planning Board
15/F, North Point Government Offices
333 Java Road
North Point
Hong Kong

Dear Sir/Madam,

Proposed Social Welfare Facility
(Residential Care Home for the Elderly)
in "Residential (Group B)" Zone
at 349 Prince Edward Road West, Kowloon
(Planning Application No. A/K10/276)
Further Information No. 3

Reference is made to the captioned S16 Planning Application submitted to the Town Planning Board ("TPB") on 30 August 2024 and the comments received from various Government Departments via emails from the Kowloon District Planning Office between 12 December 2024 and 20 December 2024.

In response to the departmental comments received, please find attached 4 hard copies of the Further Information ("F.I.") submission. The submission document consists of:

Response-to-Comment Table
Appendix I Updated Schematic Architectural Drawings
Appendix II Replacement Pages of Noise Impact Assessment

Should you have any queries in relation to the above, please do not hesitate to contact the undersigned at [redacted] or Mr Wilson Man at [redacted].

Thank you for your kind attention.

Yours faithfully
For and on behalf of
KTA PLANNING LIMITED

Gladys Ng

cc. KDPO – Ms Jenny Lai (By email)
the Applicant & Team

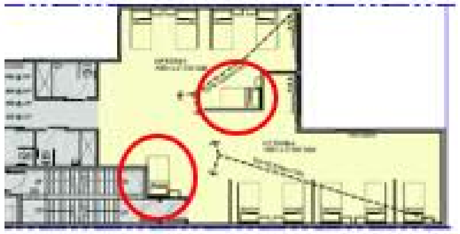
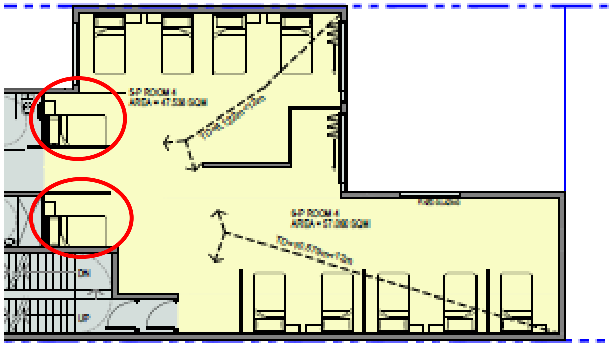
GN/WM/vy

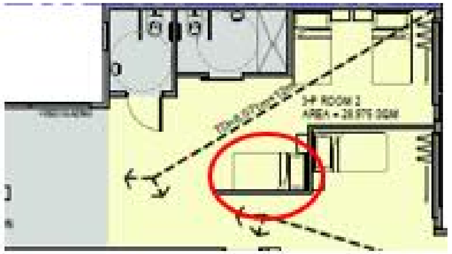
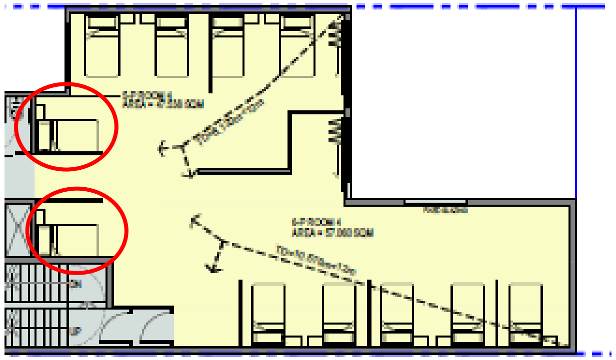
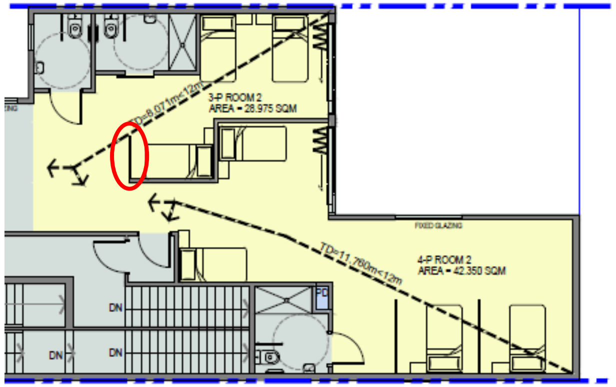
Proposed Social Welfare Facility (Residential Care Home for the Elderly) in “Residential (Group B)” Zone, at 349 Prince Edward Road West, Kowloon

(Planning Application No. A/K10/276)

Response-to-Comment Table

Comments	Summary & Response
Comments from Social Welfare Department: **(Contact Person: Mr Michael PANG Tel: 2116 5939)**	
1. Item (b) Building Height – (2) and (3): Our comment in Oct 2024 remains valid. As the applicant confirmed that the ancillary facilities on 8/F and 9/F could be accessible by elderly residents under the supervision of RCHE staff, the applicant should draw attention to paragraph 5.3.4 of the CoP that the DSW may consider and authorise the relaxation of the concerned RCHE's height restriction on the premise that the part of the RCHE complies with additional fire safety requirements. The additional fire safety requirements cover the two aspects of building fire safety design and management of RCHEs with a view to meeting the needs of rescue, evacuation and contingency management of RCHEs. Details of the requirements are set out at Annex 5.1 of the CoP. In this regard, the applicant is advised to review the layout plan while advice from the Fire Services Department has to be sought for additional fire safety requirements if the ancillary facilities (physiotherapy room, common area) and flat roof will be accessed by residents of the proposed RCHE.	Fire safety concerns for elderly residents have been thoroughly reviewed for any activities to be taking place on the 8th floor (physiotherapy room, common area, flat roof) in relation to the height restriction (24m above ground) of a RCHE. The following fire safety measures have been incorporated into the design of the proposed RCHE: • Elderly residents would have access to 8/F for activities under the supervision of RCHE staff only, whereas 9/F would only be used as staff office for facilities management purpose. • Elderly residents participating in activities on the 8th floor would have unobstructed access to the fire-protected lift lobby area, which would include fire compartments designed to contain and control the spread of fire, leading to discharge points that ensure a safe evacuation to an ultimate place of safety. • Residents engaging in activities on the 8th floor will be supervised by RCHE staff and permitted to access the flat roof area, which is designated as a fire-protected zone to address any fire safety concerns. • A fire lift with unobstructed access would be provided for residents with limited mobility during fire incidents. The proposed layout would fully comply with the fire safety requirements, featuring two evacuation routes to offer alternatives in the event that one route is being blocked. These routes would have sufficient width to accommodate wheelchairs and stretchers.

Comments	Summary & Response
	According to the reply from Fire Services Department (FSD) on 24 January 2025 (**Annex A refers**), there is no additional Fire Service Installations required for the proposed ancillary facilities (physiotherapy room and common area) and flat roof on the 8th floor of the subject building. Detailed Fire Services requirements will be formulated upon receipt of formal submission of general building plans.
2. Item (d) Building Design – (7): It is noted that some beds were separated by partition walls to provide personal areas. Partition walls, though not fully enclosed as mentioned in the R-to-C, would obstruct natural lighting and ventilation inside the dormitories. Please revisit whether these arrangements could meet the statutory requirement that "Habitation /dormitory areas shall be provided with openable / prescribed window." Furthermore, the disposition of some beds, circled in red below, seemed unable to address the privacy concerns. Please review.  2/F, 4/F, 6/F & 7/F	Please note that the beds would be separated by low partition walls with a height of 1.5 meters. This design prevents the creation of enclosed spaces, allowing natural lighting and ventilation without obstruction. Additionally, it provides sufficient privacy for the elderly residents. Please find the updated layout in the revised schematic architectural drawings (**Appendix I refers**), with the new bed arrangement addressing the privacy concerns of the elderly residents.  2/F, 4/F, 6/F & 7/F

Comments	Summary & Response
 3/F, 5/F  1/F	 3/F, 5/F  1/F

Comments	Summary & Response
3. Item (e) Lighting and Ventilation – (11): From service point of view, we have no objection on the arrangement so as to comply with the statutory requirement. After the reduction of number of beds, would the applicant please revise the layout plan and the total number of beds for our consideration.	Please refer to the revised schematic architectural drawings in **Appendix I** for the updated layout of beds. The layout of the 2nd to 7th floors has been adjusted to change the number of beds on both the northern and southern sides of the RCHE. The number of beds does not have to be reduced to meet the 9-meter limitation measured from a prescribed window. Therefore, the total number of beds will remain at 141.
4. Item (e) Lighting and Ventilation – (12): The applicant is reminded that mechanical ventilation system is also required to be provided in the entire RCHE. For details of heating, lighting and ventilation requirements for an RCHE, among others, including the requirements on fresh air intake of mechanical ventilation system, please refer to paragraph 4.9 of the CoP.	Noted, the entire RCHE will be provided with both adequate natural ventilation and mechanical ventilation system to fulfil all relevant guidelines and regulations.
Comments from Transport Department: **(Contact Person: Mr Simon LI Tel: 2399 2512)** **Specific comment**	
1. Table 3.1 – The applicant shall tabulate the existing internal parking, loading and unloading facilities for the reference elderly homes at 8 Kung Lok Road and 88 Kung Lok Road for the ease of comparison. We maintain our view that the proposed provision of only 1 parking space for private cars (accessible) and 1 lay-by for share use by taxi, private car and ambulance, LGV and mini coach for the proposed elderly home with 141 beds is not sufficient;	The provision of internal transport facilities at the surveyed elderly homes obtained from site observation is presented in Table 1.

Comments	Summary & Response
	TABLE 1 DETAILS OF surveyed ELDERLY HOMES

TABLE 1 DETAILS OF surveyed ELDERLY HOMES

Location of Elderly Home	**No. of Beds**	**No. of Space**	
		Parking	**Loading / Unloading**
(A) 351 Prince Edward Road West, Kowloon City	135	0	1
(B) 8 Kung Lok Road, Kwun Tong	266	0	1
(C) 88 Kung Lok Road, Kwun Tong	226	3	1
Overall	**<u>627</u>**	**<u>3</u>** **(1 per 209 beds)**	**<u>3</u>** **(1 per 209 beds)**

Table 1 shows, on average, 1 parking space and 1 loading / unloading bay is provided for every 209 beds.

Based on the above findings, the provision of 1 parking space (related to visitation) and 1 loading / unloading bay (related to pick-up / drop-off and goods delivery) for the Proposed Elderly Home with 141 beds, which is considered sufficient; it is some 48% more than the 3 surveyed elderly homes.

<table>
<tr><th>Comments</th><th>Summary & Response</th></tr>
<tr><td>2. Please state the exact date of the survey taken at the elderly homes being referenced to and supplement the relevant survey record e.g. photo records, to justify the reliability of your traffic generation survey; and</td><td>The dates of the survey taken at the elderly homes have been presented in Table 2 below.
TABLE 2 SURVEY DATES AT ELDERLY HOMES
<table>
<tr><th rowspan="2">Location of Elderly Home</th><th colspan="3">Survey Date</th></tr>
<tr><th>Weekday</th><th>Saturday</th><th>Sunday</th></tr>
<tr><td>(A) 351 Prince Edward Road West, Kowloon City</td><td>21 Jun 2024 (Friday)</td><td>22 Jun 2024</td><td>3 Nov 2024</td></tr>
<tr><td>(B) 8 Kung Lok Road, Kwun Tong</td><td>1 Nov 2024 (Friday)</td><td>2 Nov 2024</td><td>3 Nov 2024</td></tr>
<tr><td>(C) 88 Kung Lok Road, Kwun Tong</td><td>1 Nov 2024 (Friday)</td><td>2 Nov 2024</td><td>3 Nov 2024</td></tr>
</table>
Site photos taken during the traffic generation surveys are presented below:</td></tr>
</table>

Comments	Summary & Response
	(A) 351 Prince Edward Road West, Kowloon City  (B) 8 Kung Lok Road, Kwun Tong 

Comments	Summary & Response
	(C) 88 Kung Lok Road, Kwun Tong 

Comments	Summary & Response
3. The adequacy of the waiting space on refuge islands of staggered crossings in the vicinity of the proposed development shall be assessed.	The performance of waiting area on the refuge island in-between signalised pedestrian crossings C1 and C2 has been assessed and illustrated in Table 3.

TABLE 3 PERFORMANCE OF WAITING AREA ON REFUGE ISLAND

Scenario	**Existing Condition**		**2031 without Proposed Elderly Home**		**2031 with Proposed Elderly Home**	
	AM Peak	**PM Peak**	**AM Peak**	**PM Peak**	**AM Peak**	**PM Peak**
Two-way Peak Pedestrian Flows (ped/15-min) [a]	78	75	84	81	91	88
Cycle Time (s) [b]	120	115	120	115	120	115
No. of Signal Cycle per 15-minute interval [c] = 3600 ÷ [b] ÷ 4	7.5	7.8	7.5	7.8	7.5	7.8
Average No. of Pedestrians at Waiting Area (ped/cycle) [d] = [a] ÷ [c]	10.4	9.6	11.2	10.4	12.1	11.3
Area of Refuge Island (m^2) [e] (1)	55.5					
Pedestrian Space (m^2/ped) = [e] ÷ [d]	5.3	5.8	5.0	5.3	4.6	4.9
LOS (2)	**B**	**A**	**B**	**B**	**B**	**B**

Note: (1) To err on the high side, dead area of 0.5m on the back of footpath is excluded from calculation of the waiting area

(2) Description of level-of-service (LOS) extracted from Highway Capacity Manual (HCM) 2000:

<table>
<tr><th>Comments</th><th>Summary & Response</th></tr>
<tr><td></td><td>
<table>
<tr><th>LOS</th><th>Space (m^2/ped)</th></tr>
<tr><td>A</td><td>> 5.6</td></tr>
<tr><td>B</td><td>3.7 – 5.6</td></tr>
<tr><td>C</td><td>2.2 – 3.7</td></tr>
<tr><td>D</td><td>1.4 – 2.2</td></tr>
<tr><td>E</td><td>0.75 – 1.4</td></tr>
<tr><td>F</td><td>≤ 0.75</td></tr>
</table>

Table 3 shows that the waiting area on the refuge island would operate with LOS B during the peak periods in 2031. This is considered acceptable from traffic engineering point of view.</td></tr>
<tr><td><u>Comments from Environmental Protection Department:</u>
(Contact Person: Ms PP HSU Tel: 2835 1151)

Comments on Appendix 4 Replacement Pages of Noise Impact Assessment</td><td></td></tr>
<tr><td>1. Section 2.4.1 - Please stated the TD's endorsement on the traffic forecast data has been included in the Appendix 2.1 in the main text.</td><td>Noted. Section 2.4.1 has been revised (Appendix II refers).</td></tr>
<tr><td>2. Section 2.5.2 - Please include the no. of units and the compliance rate in the main text.</td><td>Noted. Section 2.5.2 and Appendix 2.2 have been revised (Appendix II refers). The total number of units in the proposed development is 26. Below is a table displaying the calculation method used to determine the total number of units for the proposed development.</td></tr>
</table>

Comments	Summary & Response
	<table><tr><td>Floor</td><td>No. of units</td></tr><tr><td>G/F</td><td>1</td></tr><tr><td>1/F</td><td>4</td></tr><tr><td>2/F, 4/F, 6/F & 7/F</td><td>12 (3 units x 4 floors)</td></tr><tr><td>3/F & 5/F</td><td>8 (4 units x 2 floors)</td></tr><tr><td>9/F</td><td>1</td></tr><tr><td>**Total no. of units**</td><td>**26**</td></tr></table>
3. Section 3.3.1 - Referring to the previous comment, those rooftop chillers at EFCC Grace Church, Sheng Kung Hui Holy Trinity Church Centenary Bradbury Centre, Evangel Hospital and Holy Trinity Bradbury Centre Sheng Kung Hui were identified as fixed noise sources. Please demonstrate there is no direct line of sight, or they should be included in the quantitative fixed noise impact assessment.	The sightline analysis can be found in **Attachment A** of this RtoC. The height of the representative NSRs is around 34.3mPD. For EFCC Grace Church (28.3mPD), view towards the rooftop chillers is fully blocked by the structure of the Proposed Development itself (36.2mPD). For Sheng Kung Hui Holy Trinity Church Centenary Bradbury Centre (35.8mPD), view towards the rooftop chillers is fully blocked by Lorna Villa (42.8mPD) and Palace Garden Block A and Block C (42.7mPD). For Evangel Hospital (26.9mPD), view towards the rooftop chillers is fully blocked by York Mansion (43.4mPD) and Blue Haven (43.5mPD). For Holy Trinity Bradbury Centre Sheng Kung Hui (19.1mPD), view towards the rooftop chillers is fully blocked by Chi Mei Lau (29.6mPD), St. Luke's Garden (32.2mPD) and Palace Garden Block B (42.7mPD). Since views towards all the above fixed noise sources are fully blocked by surrounding buildings or the Proposed Development, there is no direct line of

Comments	Summary & Response
	sight to the planned NSRs. Hence, these have been excluded from the quantitative fixed noise impact assessment.
4. Appendix 3.1 - As the SWP in the inventory of fixed noise sources are updated, the consultant should provide an updated prediction of fixed noise source impact on the representative NSRs.	Appendix 3.1 has been revised (**Appendix II** refers).
5. Appendix 3.2 - Referring to the previous comments, please review the Z coordinate of the source location in the table and review the screening correction of F36-42 and F49-67 for all representative NSRs. However, Appendix 3.2 is not provided.	Appendix 3.2 has been provided (**Appendix II** refers).
6. Section 3.6.2 - Referring to the previous comment, please include the assessment for planned fixed noise source at the proposed development.	There will be no planned fixed noise sources at the development as split-type air conditioning will be adopted for the Proposed Development.
7. Noise Model - Referring to the previous, please seek the latest information from the relevant Authority to demonstrate the validity of the extent of the low noise road surfacing materials on the road sections marked below in the noise assessment model and provide the updated noise model.	The Highway Department's confirmation regarding no low-noise road surfacing materials applied at Lomond Road and Junction Road has been included in Appendix 2.1. Overall, no low-noise road surfacing materials has been considered for any road sections in the noise model.

Consolidated by: **KTA Planning Limited**
Date: **27 January 2025**

List of Appendices

Appendix I	Updated Schematic Architectural Drawings
Appendix II	Replacement Pages of Noise Impact Assessment

Annex A

From: ming_kei_lee@hkfsd.gov.hk <ming_kei_lee@hkfsd.gov.hk> **On Behalf Of** sdo_np@hkfsd.gov.hk
Sent: Friday, January 24, 2025 10:36 AM
To: Zhu Chong De <czhu@spencerobinson.com>
Cc: do_np_1@hkfsd.gov.hk; ado_np_11@hkfsd.gov.hk; sso_np_25@hkfsd.gov.hk
Subject: Fw: Fire Safety Enquires for Proposed Social Welfare Facility (Residential Care Home for Elderly) at 349 Prince Edward Road West, Kowloon

Dear Chongde Zhu,

I refer to your preceding email.
Based on your submitted information, there is no additional Fire Service Installations required for your proposed ancillary facilities (physiotherapy room and common area) and flat roof on the 8th floor of the subject building. Detailed Fire Services requirements will be formulated upon receipt of formal submission of general building plans.

Should you have any enquiries, please contact Mr. LO Hin-fan at 3971 4625 or his supervisor, Mr. CHAN King-keung at 3971 4612.

Best Regards,

LEE Ming-kei
Senior Divisional Officer
New Projects Division
Fire Safety Command
Hong Kong Fire Services Department
Office : 3971 4600
Fax : 2722 6234

Fire Safety Enquires for Proposed Social Welfare Facility (Residential Care Home for Elderly) at 349 Prince Edward Road West, Kowloon

19/12/2024 10:22

From:	Zhu Chong De <czhu@spencerobinson.com>
To:	"hkfsdenq@hkfsd.gov.hk" <hkfsdenq@hkfsd.gov.hk>
Cc:	Kwok Cheung Yuen <kcyuen@spencerobinson.com>, Chi Mai Dao <cmdao@spencerobinson.com>, "'Kwong, Jason'" <Jason.Kwong@colliers.com>, "'Leung, Ocean'" <Ocean.Leung@colliers.com>, Ava Lo <ava@carnarvonplaza.com.hk>, "adrain@carnarvonplaza.com.hk" <adrain@carnarvonplaza.com.hk>, Wilson Man <wilsonman@ktaplanning.com>, Katie Yu <KYU@ramboll.com>, Vicky Shek <VYTSHEK@ramboll.com>, 'CKM Asia' <mail@ckmasia.com.hk>

[attachment "FSD_Fire Safety Enquires on Proposed Social Welfare Facility_SRL.pdf" deleted by ming_kei LEE/FSD/HKSARG]

Dear Sir / Madam,

We are Spence Robinson Limited, currently undertaking an architectural design project for a Proposed Social Welfare Facility (Residential Care Home for the Elderly) (RCHE) located at 349 Prince Edward Road West, Kowloon City. As the project progresses to the planning application stage, we have received comments from the Social Welfare Department (SWD) and are advised to seek guidance from the Fire Services Department regarding additional fire safety requirements for the ancillary facilities (physiotherapy room and common area) and flat roof on the 8th floor, which will be accessed by elderly residents of the proposed RCHE.

We kindly request your assistance in providing advice concerning the queries raised above.

Enclosed with this letter, please find a copy of the schematic architectural drawings and the comments from the SWD, along with our proposed response for your review.

Should you need any clarification, please contact our Mr. Kwok Cheung YUEN or Chongde Zhu at 2544 7007.

Regards,
Chongde Zhu

Architectural Assistant | czhu@spencerobinson.com
SRL | Units 2207-11, 22nd Floor, Tins Enterprises Centre, 777 Lai Chi Kok Road Kowloon, Hong Kong | Tel: (852)2544 7007 | Fax: (852)2543 9975
Enquiry email: spenrobi@netvigator.com | Website: www.spencerobinson.com

馬海

Spence Robinson Limited

Architects · Project Managers · Interior Designers

Proposed Social Welfare Facility (Residential Care Home for the Elderly) in “Residential (Group B)” Zone,
at 349 Prince Edward Road West, Kowloon

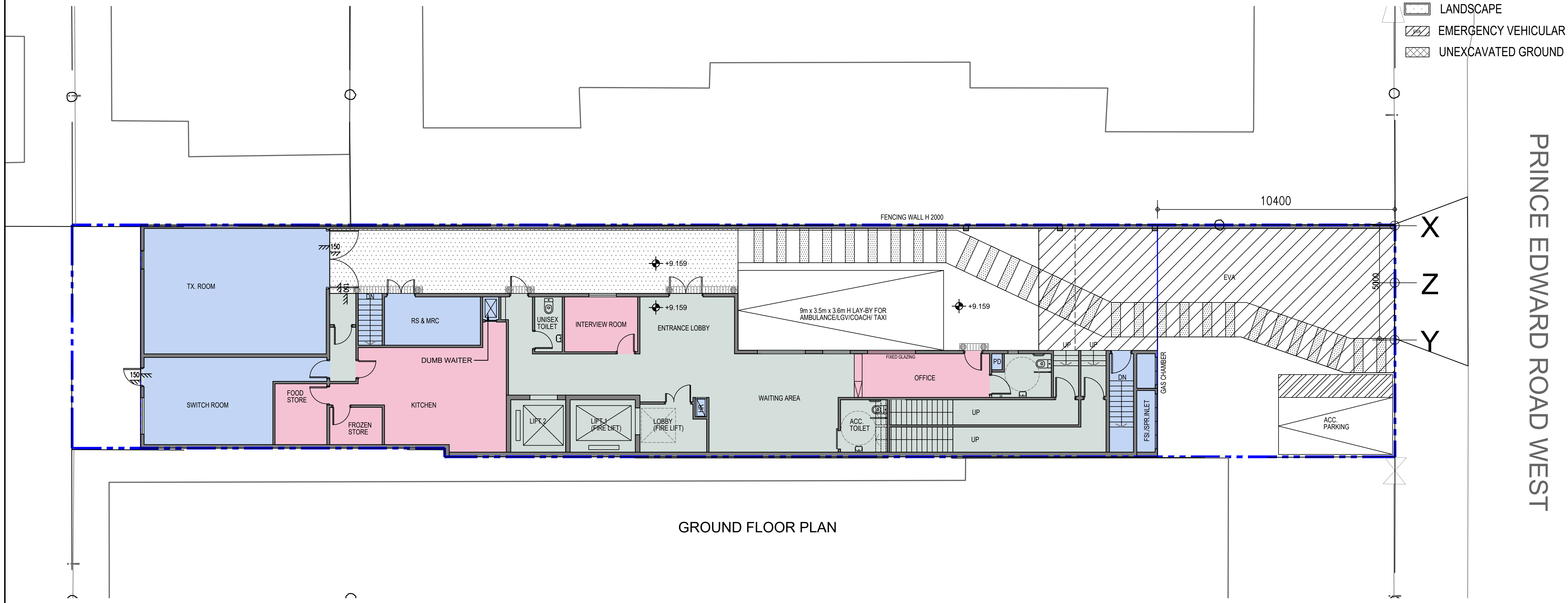
(Planning Application No. A/K10/276)

Appendix I

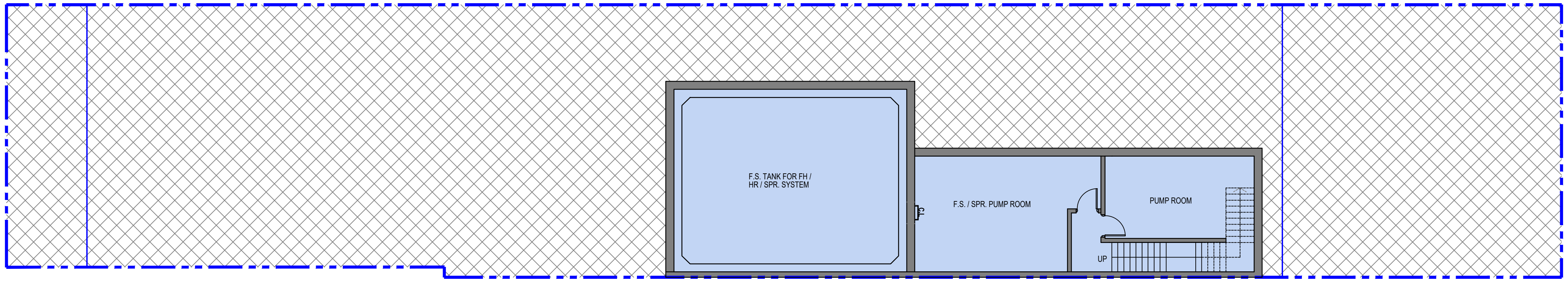
Updated Schematic Architectural Drawings

LEGEND:

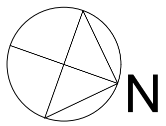
—	SITE BOUNDARY
🟨	WARD
🟥	ANCILLARY AREA
▨	COMMON / CIRCULATION SPACE
🟦	PLANT ROOM/ STAIRCASE TO U/G PLANT ROOM
▨	FOOTPATH
☐	LANDSCAPE
▨	EMERGENCY VEHICULAR ACCESS
▨	UNEXCAVATED GROUND



G/F LAYOUT 1:200



B/S LAYOUT 1:200



BD REF. NO.:

FSD REF. NO.:

REVISIONS AND SUBMISSIONS:

NO.:	DATE:	DETAILS:	CHECKED:

NOTES:
1. CONTENTS ON THIS DRAWING SHOW DESIGN INTENT ONLY CONTRACTOR IS RESPONSIBLE FOR DETAILED DESIGN OF THE INTERIOR FITTING-OUT. CONTRACTOR IS REQUIRED TO SUBMIT FULL SET SHOP DRAWINGS FOR ARCHITECT'S APPROVAL PRIOR TO FABRICATION AND SITE INSTALLATION.
2. STRUCTURAL CALCULATIONS IF REQUIRED AND RELATED SUPPORTING DATA SHOULD BE SUBMITTED FOR REVIEW AND APPROVAL.
3. TRUE COLOR SAMPLES OF MATERIALS SHOULD BE SUBMITTED FOR ARCHITECT'S APPROVAL PRIOR TO PROCUREMENT.
4. ALL FITTING/ ASSEMBLY AND MATERIALS SHOULD BE DESIGN & INSTALLED TO CONTRACT DRAWINGS AND SPECIFICATION, AND IN COMPLIANCE WITH ALL RELEVANT STATUTORY REQUIREMENTS.
5. DIMENSIONS BASED ON ON SITE MEASUREMENTS.

6. FINAL MATERIALS & FINISHES OF WALL,FLOOR,CEILING,WALL FIXTURE ETC. SHOULD BE REFER TO FINISHES AND MATERIALS SCHEDULE UNDER THE SPECIFICATION PROVIDED.

CLIENT/EMPLOYER:

PROJECT ARCHITECT/AUTHORIZED PERSON:

馬海

馬海(建築顧問)有限公司
Spence Robinson Limited

PROJECT STRUCTURAL ENGINEER/
PROJECT GEO-TECHNICAL ENGINEER:

張耀新建築工程師有限公司
Wilson & Associates Ltd

PROJECT E/M ENGINEER:

PROJECT LANDSCAPE CONSULTANT:

PROJECT QUANTITY SURVEYOR:

PROJECT:
PURPOSE BUILT C&A HOME DEVELOPMENT AT
349 PRINCE EDWARD ROAD WEST

DRAWING TITLE:

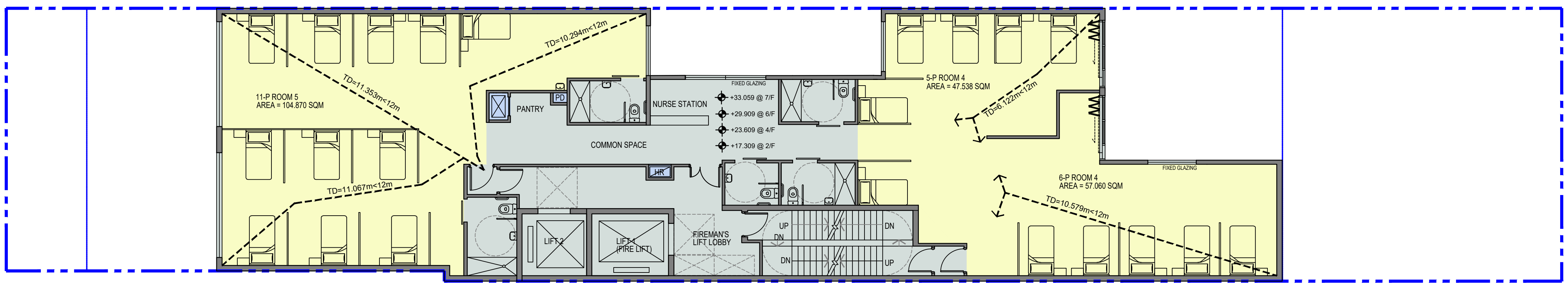
GROUND FLOOR PLAN &
BASEMENT FLOOR PLAN

DRAWN BY: CZ
DATE: NOV-2024
CHECKED BY: CMD
APPROVED BY: KCY
SCALE: 1:200
PAPER SIZE: A3
PROJECT: PE 6170
DRAWING: GP-00
REVISION: V14

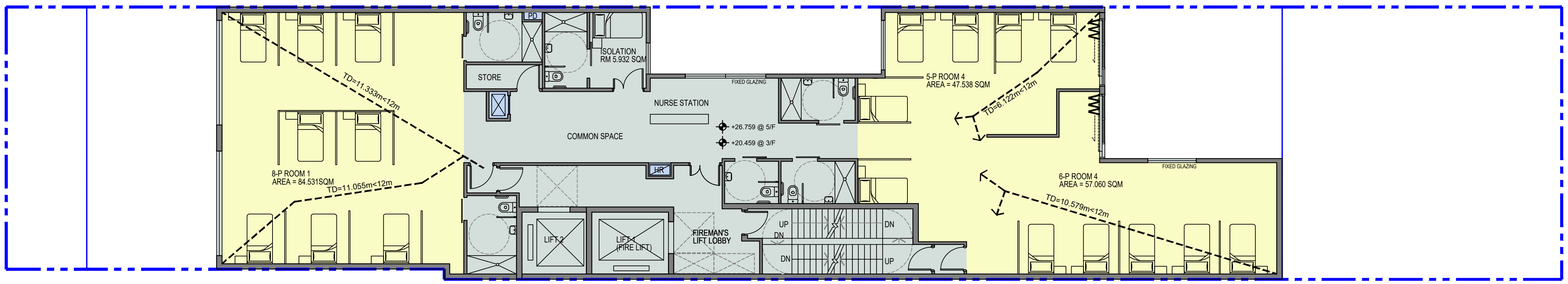
NOTES :
1. This drawing and design are copyright and no portion may be reproduced without the written permission of the Architect.
2. Use written dimensions or grid lines in preference to scaled dimensions. Measurements to existing work are to be checked on site.
3. This drawing is to be read in conjunction with the Architect's Specification and Conditions of Contract.
4. Prints not showing the last revision are to be cancelled.
5. Prints without an authorized signature in the checked and approved spaces below and after the last revision above are NOT vaild for use outside SRL.

LEGEND:

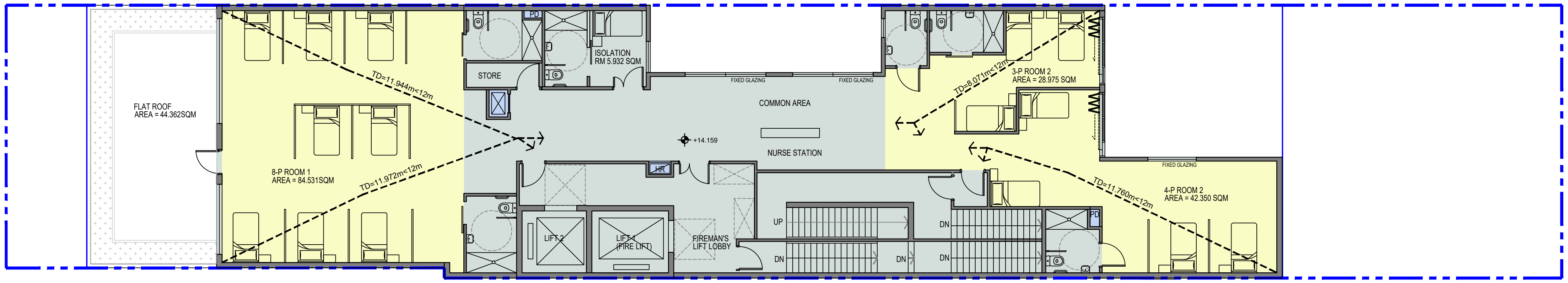
- ▬ SITE BOUNDARY
- 🟨 WARD
- 🟥 ANCILLARY AREA
- ▨ COMMON / CIRCULATION SPACE
- 🟦 PLANT ROOM/ STAIRCASE TO U/G PLANT ROOM
- ▨ FOOTPATH
- ☐ LANDSCAPE
- ▨ EMERGENCY VEHICULAR ACCESS
- ▨ UNEXCAVATED GROUND



2/F, 4/F, 6/F, 7/F LAYOUT 1:200



3/F, 5/F LAYOUT 1:200



1/F LAYOUT 1:200

NOS. OF BED
(9.5m²/ppl)

G/F	0
1/F	15
2/F	22
3/F	19
4/F	22
5/F	19
6/F	22
7/F	22
TOTAL	141

N

BD REF. NO.:

FSD REF. NO.:

REVISIONS AND SUBMISSIONS:

NO.:	DATE:	DETAILS:	CHECKED:

NOTES:

1. CONTENTS ON THIS DRAWING SHOW DESIGN INTENT ONLY CONTRACTOR IS RESPONSIBLE FOR DETAILED DESIGN OF THE INTERIOR FITTING-OUT. CONTRACTOR IS REQUIRED TO SUBMIT FULL SET SHOP DRAWINGS FOR ARCHITECT'S APPROVAL PRIOR TO FABRICATION AND SITE INSTALLATION.
2. STRUCTURAL CALCULATIONS IF REQUIRED AND RELATED SUPPORTING DATA SHOULD BE SUBMITTED FOR REVIEW AND APPROVAL.
3. TRUE COLOR SAMPLES OF MATERIALS SHOULD BE SUBMITTED FOR ARCHITECT'S APPROVAL PRIOR TO PROCUREMENT.
4. ALL FITTING/ ASSEMBLY AND MATERIALS SHOULD BE DESIGN & INSTALLED TO CONTRACT DRAWINGS AND SPECIFICATION, AND IN COMPLIANCE WITH ALL RELEVANT STATUTORY REQUIREMENTS.
5. DIMENSIONS BASED ON ON SITE MEASUREMENTS.

6. FINAL MATERIALS & FINISHES OF WALL,FLOOR,CEILING,WALL FIXTURE ETC. SHOULD BE REFER TO FINISHES AND MATERIALS SCHEDULE UNDER THE SPECIFICATION PROVIDED.

CLIENT/EMPLOYER:

PROJECT ARCHITECT/AUTHORIZED PERSON:

馬海
馬海(建築顧問)有限公司
Spence Robinson Limited

PROJECT STRUCTURAL ENGINEER/
PROJECT GEO-TECHNICAL ENGINEER:

張耀新建築工程師有限公司
Wilson & Associates Ltd

PROJECT E/M ENGINEER:

PROJECT LANDSCAPE CONSULTANT:

PROJECT QUANTITY SURVEYOR:

PROJECT:
PURPOSE BUILT C&A HOME DEVELOPMENT AT
349 PRINCE EDWARD ROAD WEST

DRAWING TITLE:

FIRST FLOOR PLAN &
TYPICAL FLOOR PLAN (3/F,5/F) &
TYPICAL FLOOR PLAN (2/F,4/F,6/F& 7/F)

DRAWN BY: CZ	DATE: NOV-2024	
CHECKED BY: CMD	APPROVED BY: KCY	
SCALE: 1:200	PAPER SIZE: A3	
PROJECT: PE 6170	DRAWING: GP-01	REVISION: V14

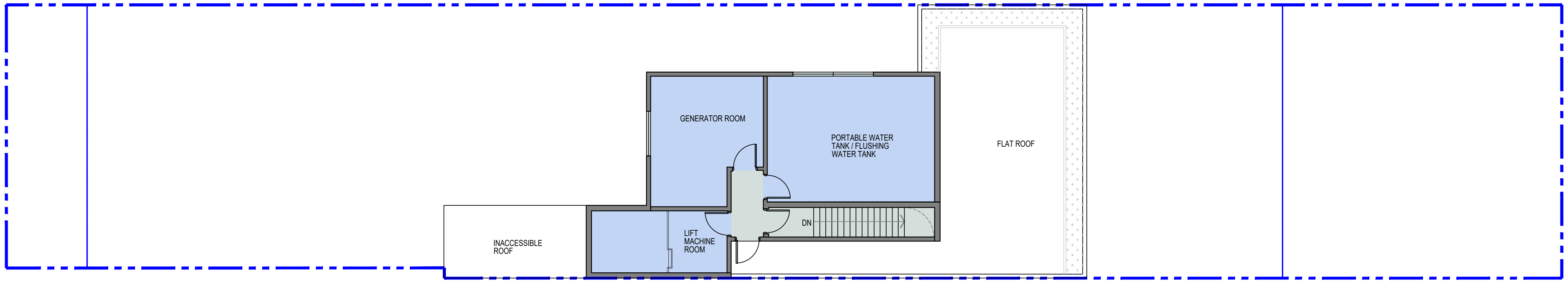
NOTES :
1. This drawing and design are copyright and no portion may be reproduced without the written permission of the Architect.
2. Use written dimensions or grid lines in preference to scaled dimensions. Measurements to existing work are to be checked on site.
3. This drawing is to be read in conjunction with the Architect's Specification and Conditions of Contract.
4. Prints not showing the last revision are to be cancelled.
5. Prints without an authorized signature in the checked and approved spaces below and after the last revision above are NOT vaild for use outside SRL.

LEGEND:

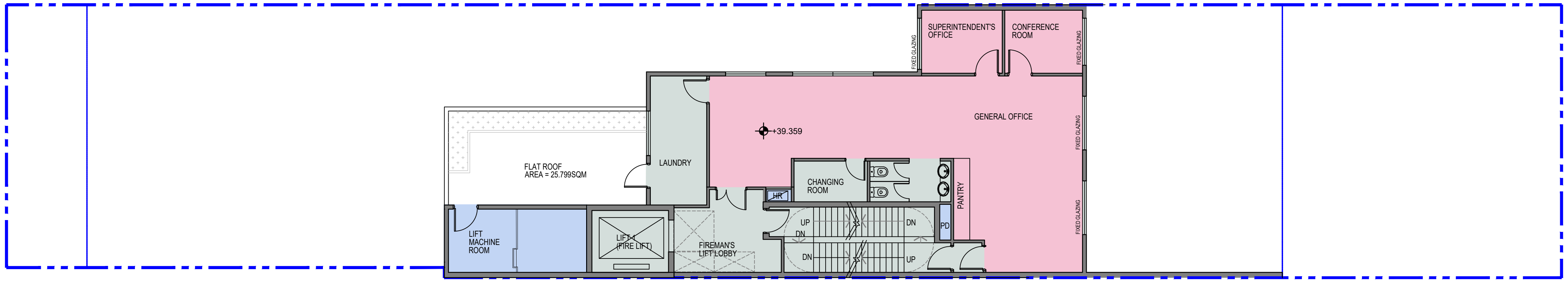
- ━ SITE BOUNDARY
- 🟨 WARD
- 🟥 ANCILLARY AREA
- ▨ COMMON / CIRCULATION SPACE
- 🟦 PLANT ROOM/ STAIRCASE TO U/G PLANT ROOM
- ░ FOOTPATH
- ☐ LANDSCAPE
- ▧ EMERGENCY VEHICULAR ACCESS
- ▩ UNEXCAVATED GROUND

NOS. OF BED
(9.5m²/ppl)

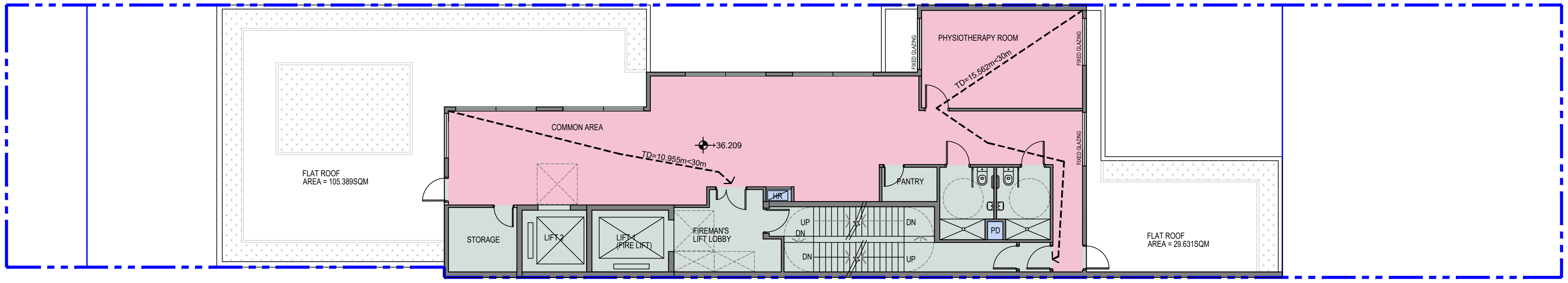
G/F	0
1/F	15
2/F	22
3/F	19
4/F	22
5/F	19
6/F	22
7/F	22
TOTAL	141



ROOF LAYOUT 1:200



9/F LAYOUT 1:200



8/F LAYOUT 1:200

N

BD REF. NO.:
FSD REF. NO.:
REVISIONS AND SUBMISSIONS:

NO.:	DATE:	DETAILS:	CHECKED:

NOTES:
1. CONTENTS ON THIS DRAWING SHOW DESIGN INTENT ONLY CONTRACTOR IS RESPONSIBLE FOR DETAILED DESIGN OF THE INTERIOR FITTING–OUT. CONTRACTOR IS REQUIRED TO SUBMIT FULL SET SHOP DRAWINGS FOR ARCHITECT'S APPROVAL PRIOR TO FABRICATION AND SITE INSTALLATION.
2. STRUCTURAL CALCULATIONS IF REQUIRED AND RELATED SUPPORTING DATA SHOULD BE SUBMITTED FOR REVIEW AND APPROVAL.
3. TRUE COLOR SAMPLES OF MATERIALS SHOULD BE SUBMITTED FOR ARCHITECT'S APPROVAL PRIOR TO PROCUREMENT.
4. ALL FITTING/ ASSEMBLY AND MATERIALS SHOULD BE DESIGN & INSTALLED TO CONTRACT DRAWINGS AND SPECIFICATION, AND IN COMPLIANCE WITH ALL RELEVANT STATUTORY REQUIREMENTS.
5. DIMENSIONS BASED ON ON SITE MEASUREMENTS.
6. FINAL MATERIALS & FINISHES OF WALL,FLOOR,CEILING,WALL FIXTURE ETC. SHOULD BE REFER TO FINISHES AND MATERIALS SCHEDULE UNDER THE SPECIFICATION PROVIDED.

CLIENT/EMPLOYER:

PROJECT ARCHITECT/AUTHORIZED PERSON:
馬海
馬海(建築顧問)有限公司
Spence Robinson Limited

PROJECT STRUCTURAL ENGINEER/
PROJECT GEO–TECHNICAL ENGINEER:
張耀新建築工程師有限公司
Wilson & Associates Ltd

PROJECT E/M ENGINEER:

PROJECT LANDSCAPE CONSULTANT:

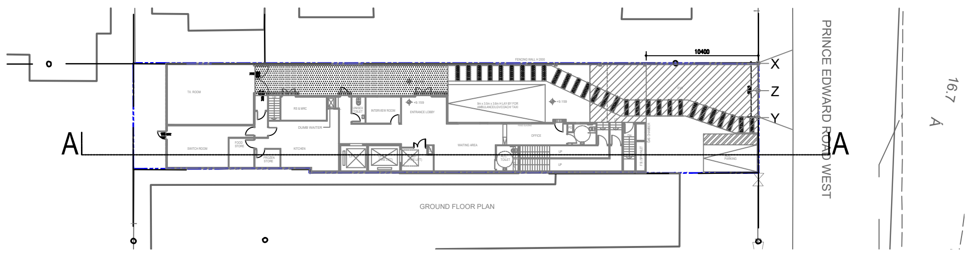
PROJECT QUANTITY SURVEYOR:

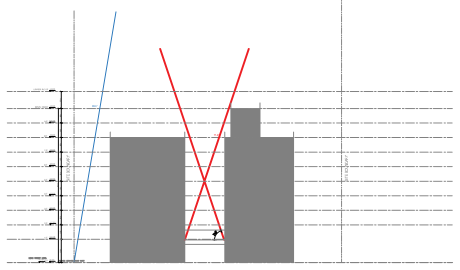
PROJECT:
PURPOSE BUILT C&A HOME DEVELOPMENT AT
349 PRINCE EDWARD ROAD WEST

DRAWING TITLE:
8/F & 9/F FLOOR PLAN &
ROOF FLOOR PLAN

DRAWN BY: CZ
DATE: NOV-2024
CHECKED BY: CMD
APPROVED BY: KCY
SCALE: 1:200
PAPER SIZE: A3
PROJECT: PE 6170
DRAWING: GP-02
REVISION: V14

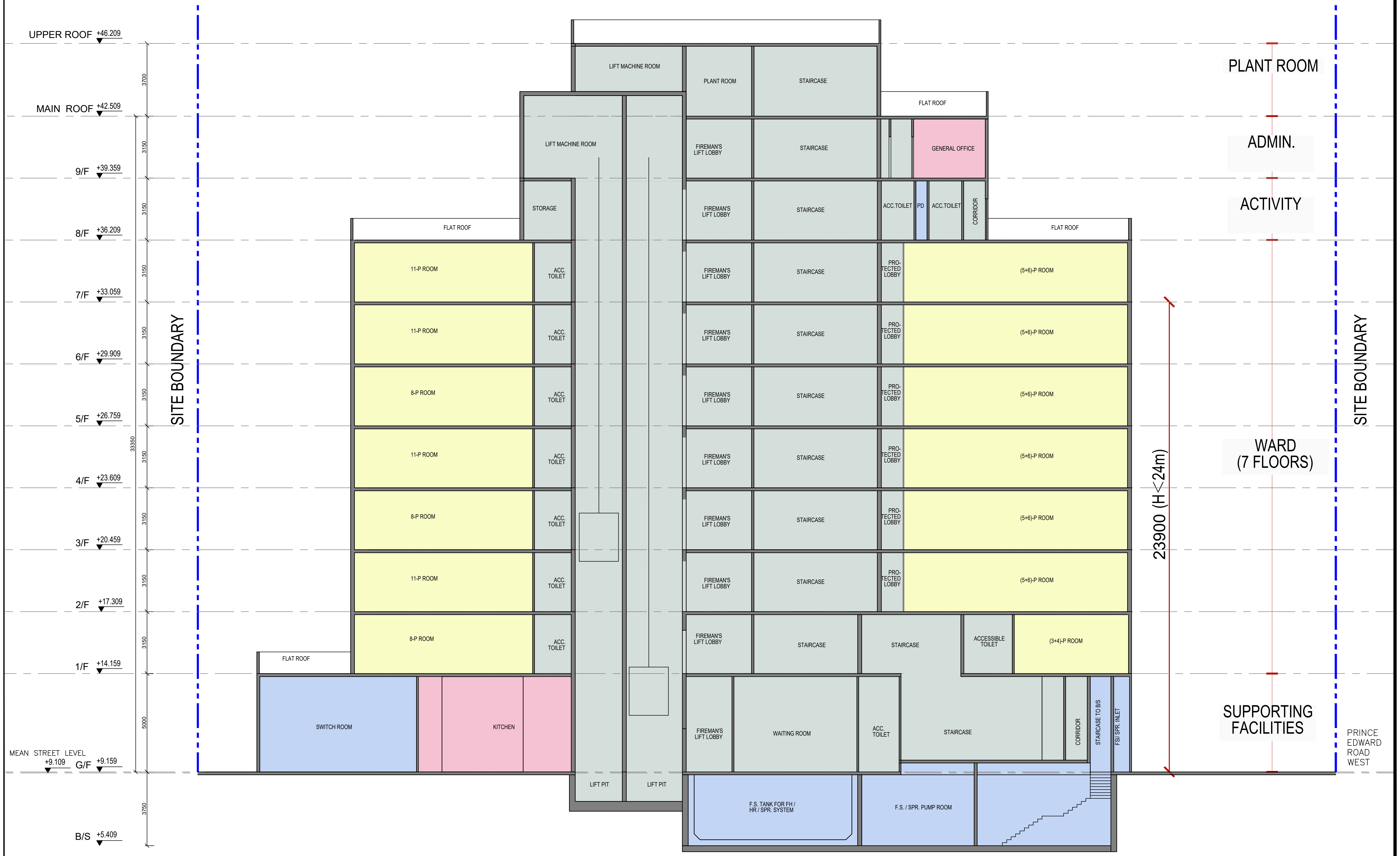
NOTES :
1. This drawing and design are copyright and no portion may be reproduced without the written permission of the Architect.
2. Use written dimensions or grid lines in preference to scaled dimensions. Measurements to existing work are to be checked on site.
3. This drawing is to be read in conjunction with the Architect's Specification and Conditions of Contract.
4. Prints not showing the last revision are to be cancelled.
5. Prints without an authorized signature in the checked and approved spaces below and after the last revision above are NOT vaild for use outside SRL.





LEGEND:

—	SITE BOUNDARY
🟨	WARD
🟥	ANCILLARY AREA
▨	COMMON / CIRCULATION SPACE
🟦	PLANT ROOM/ STAIRCASE TO U/G PLANT ROOM
▨	FOOTPATH
☐	LANDSCAPE
▨	EMERGENCY VEHICULAR ACCESS
▨	UNEXCAVATED GROUND



SECTION A-A 1:200

BD REF. NO.:

FSD REF. NO.:

REVISIONS AND SUBMISSIONS:

NO.:	DATE:	DETAILS:	CHECKED:

NOTES:
1. CONTENTS ON THIS DRAWING SHOW DESIGN INTENT ONLY CONTRACTOR IS RESPONSIBLE FOR DETAILED DESIGN OF THE INTERIOR FITTING–OUT. CONTRACTOR IS REQUIRED TO SUBMIT FULL SET SHOP DRAWINGS FOR ARCHITECT'S APPROVAL PRIOR TO FABRICATION AND SITE INSTALLATION.
2. STRUCTURAL CALCULATIONS IF REQUIRED AND RELATED SUPPORTING DATA SHOULD BE SUBMITTED FOR REVIEW AND APPROVAL.
3. TRUE COLOR SAMPLES OF MATERIALS SHOULD BE SUBMITTED FOR ARCHITECT'S APPROVAL PRIOR TO PROCUREMENT.
4. ALL FITTING/ ASSEMBLY AND MATERIALS SHOULD BE DESIGN & INSTALLED TO CONTRACT DRAWINGS AND SPECIFICATION, AND IN COMPLIANCE WITH ALL RELEVANT STATUTORY REQUIREMENTS.
5. DIMENSIONS BASED ON ON SITE MEASUREMENTS.
6. FINAL MATERIALS & FINISHES OF WALL,FLOOR,CEILING,WALL FIXTURE ETC. SHOULD BE REFER TO FINISHES AND MATERIALS SCHEDULE UNDER THE SPECIFICATION PROVIDED.

CLIENT/EMPLOYER:

PROJECT ARCHITECT/AUTHORIZED PERSON:

馬海
馬海（建築顧問）有限公司
Spence Robinson Limited

PROJECT STRUCTURAL ENGINEER/
PROJECT GEO–TECHNICAL ENGINEER:

張耀新建築工程師有限公司
Wilson & Associates Ltd

PROJECT E/M ENGINEER:

PROJECT LANDSCAPE CONSULTANT:

PROJECT QUANTITY SURVEYOR:

PROJECT:
PURPOSE BUILT C&A HOME DEVELOPMENT AT 349 PRINCE EDWARD ROAD WEST

DRAWING TITLE:
SECTION

DRAWN BY: CZ	DATE: NOV-2024
CHECKED BY: CMD	APPROVED BY: KCY
SCALE: 1:200	PAPER SIZE: A3

PROJECT: PE 6170	DRAWING: GP-03	REVISION: V14

NOTES :
1. This drawing and design are copyright and no portion may be reproduced without the written permission of the Architect.
2. Use written dimensions or grid lines in preference to scaled dimensions. Measurements to existing work are to be checked on site.
3. This drawing is to be read in conjunction with the Architect's Specification and Conditions of Contract.
4. Prints not showing the last revision are to be cancelled.
5. Prints without an authorized signature in the checked and approved spaces below and after the last revision above are NOT vaild for use outside SRL.

Appendix II

Replacement Pages of Noise Impact Assessment

Date	15 January 2025
Prepared by	Vicky Shek Environmental Consultant
Signed	
Approved by	Katie Yu Senior Manager
Signed	
Project Reference	WSLPE349EI00
Document No.	R9501_v3.0.docx

Ramboll Hong Kong Limited

21/F, BEA Harbour View Centre
56 Gloucester Road, Wan Chai, Hong Kong

Tel: (852) 3465 2888
Fax: (852) 3465 2899
Email: hkinfo@ramboll.com

Q:\Projects\WSLPE349EI00\04 Deliverables\01 NIA Report\R9501_v3.0.docx

CHAPTERS

TABLES

FIGURES

APPENDICES

Development is recommended to be 70 dB(A) for dwellings and office uses and 55 dB(A) for isolation room. The assessment is based on the prediction of the maximum L_{10} (1 hr) traffic noise level at NSRs of the Proposed Development due to the projected traffic on the adjacent road network for year 2042, which is considered as the maximum traffic projections within 15 years upon occupation of the Proposed Development in 2027. Traffic data was predicted by the project traffic consultant. Details of information on peak hour traffic volume and percentage of heavy vehicle of the road network within the 300m assessment area, provided by the project traffic consultant and representing the worst-case scenario of projected traffic flows, along with the Transport Department's endorsement of the traffic forecast data, are presented in Appendix 2.1. The projected peak hour traffic flow volume and percentage of heavy vehicles during the AM peak hour were used for the noise assessment, as they are generally higher than those in the afternoon. The Highway Department's confirmation regarding no low-noise road surfacing materials applied at Lomond Road and Junction Road is also included in Appendix 2.1. Overall, no low-noise road surfacing materials are considered for any road sections in the noise model.

2.4.2 The UK Department of Transport's procedures - "Calculation of Road Traffic Noise" (CRTN) has been used in the prediction of the road traffic noise at the representative NSRs of the Proposed Development within the Application Site. The existing topographic details, such as the existing houses and structures near the Application Site, have been considered in the assessment.

2.4.3 The noise prediction has been carried out using the *Road Noise Module 2.7.2 of Noise Map Enterprise Edition* software, which is a computerised model developed on the basis of the U.K. Department of Transport's CRTN procedures, and is acceptable to the EPD.

2.5 Prediction and Evaluation of Noise Impacts

2.5.1 An assessment on the road traffic noise level at the NSRs based on the above traffic flow data has been conducted. Noise mitigation measure which has already been incorporated in the design of the layout, and considered in the unmitigated scenario include the setback of RCHE block from the site boundary. The Proposed Development is also partially shielded by other surrounding existing buildings in the area.

2.5.2 A summary of the predicted road traffic noise levels at the representative NSRs is provided in Table 2.2. The predicted road traffic noise levels at some NSRs would exceed the relevant noise criteria of 70 dB(A) by up to 6 dB(A). The number of units counted with noise exceedance is 14 out of 26; hence, the compliance rate for predicted road traffic noise levels at the representative NSRs during the Year 2042 AM Peak Hour in the unmitigated scenario is 46.2%. The detailed unmitigated results are provided in Appendix 2.2.

Table 2.2 Summary of Predicted Unmitigated Road Traffic Noise Levels at Representative NSRs (AM peak)

NSR	Predicted Road Traffic Noise Level, $L_{10\ (1\text{-hour})}$, dB(A) (Unmitigated)
	AM
RG01	70
R101	76
R102	75
R103	49
R104	59

Figure: 2.2b

Title: Representative NSRs for Traffic Noise Impact Assessment (1/F)

Project: Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon

Drawn by:	VS
Checked by:	KY
Rev.:	3.0
Date:	Jan 2025

Legend:

▭	Site Boundary
●	Representative NSRs for TNIA

Figure: 2.2c

Title: Representative NSRs for Traffic Noise Impact Assessment
(Typical Floors - 2/F, 4/F, 6/F & 7/F)

Project: Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon

RAMBOLL

Drawn by: VS
Checked by: KY
Rev.: 3.0
Date: Jan 2025

Legend:

▭	Site Boundary
●	Representative NSRs for TNIA

Figure: 2.2d

Title: Representative NSRs for Traffic Noise Impact Assessment (Typical Floors - 3/F & 5/F)

Project: Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon

Drawn by: VS
Checked by: KY
Rev.: 3.0
Date: Jan 2025

Legend:

▭	Site Boundary
●	Representative NSRs for TNIA
🟩	Acoustic Window (Baffle Type)

Figure: 2.3a

Title: Proposed Noise Mitigation Measures for Traffic Noise Impact Assessment (1/F)

Project: Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon

RAMBOLL

Drawn by: VS
Checked by: KY
Rev.: 3.0
Date: Jan 2025

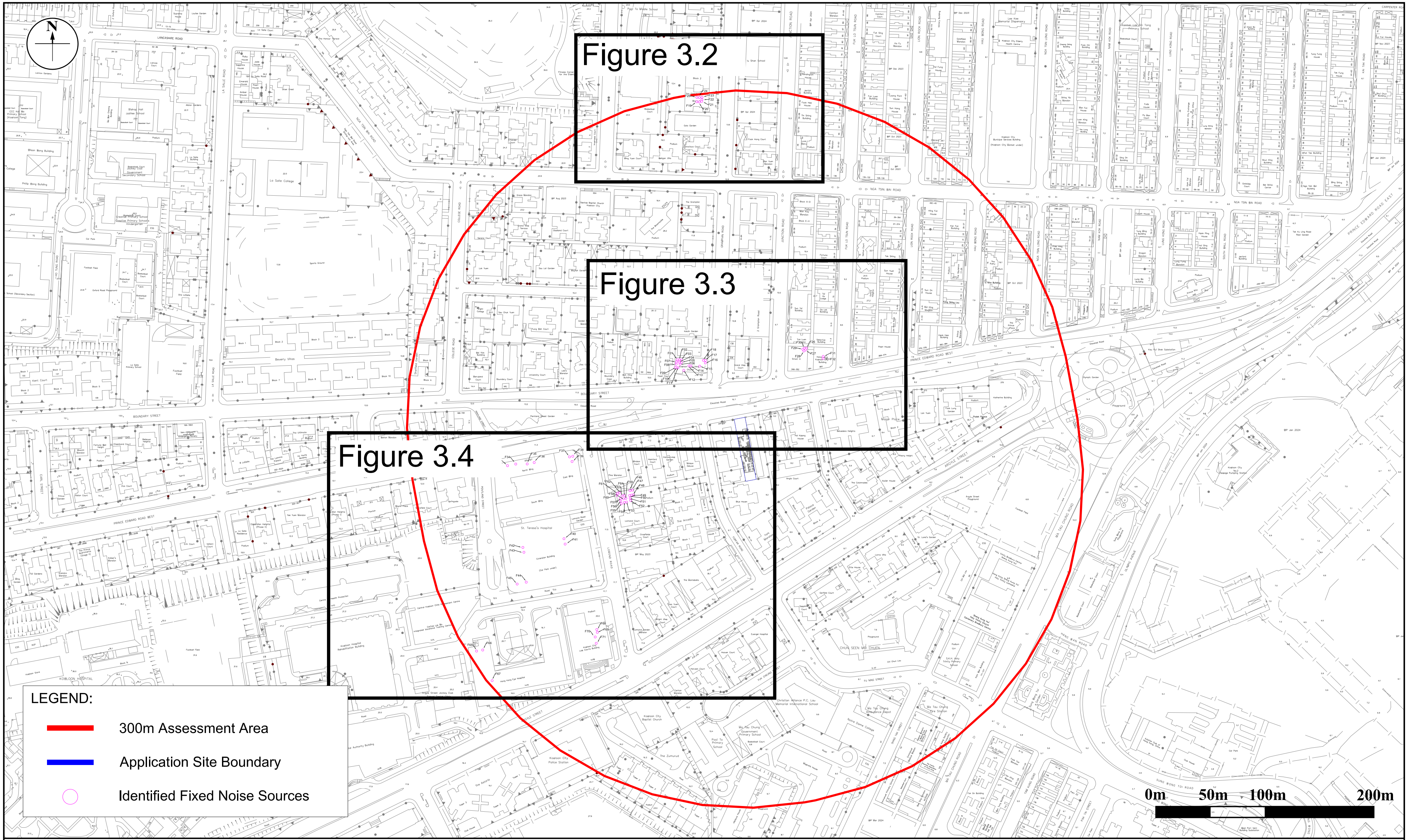
Figure: 2.3b

Title: Proposed Noise Mitigation Measures for Traffic Noise Impact Assessment (Typical Floors - 2/F to 7/F)

Project: Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon

RAMBOLL

Drawn by: VS
Checked by: KY
Rev.: 3.0
Date: Jan 2025



LEGEND:

🟥 300m Assessment Area

🟦 Application Site Boundary

○ Identified Fixed Noise Sources

Figure: 3.1

Title: Location of Fixed Noise Sources (Sheet 1 of 4)

Project: Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon

RAMBOLL

Drawn by: EC

Checked by: KY

Rev.: 2.0

Date: Nov 2024

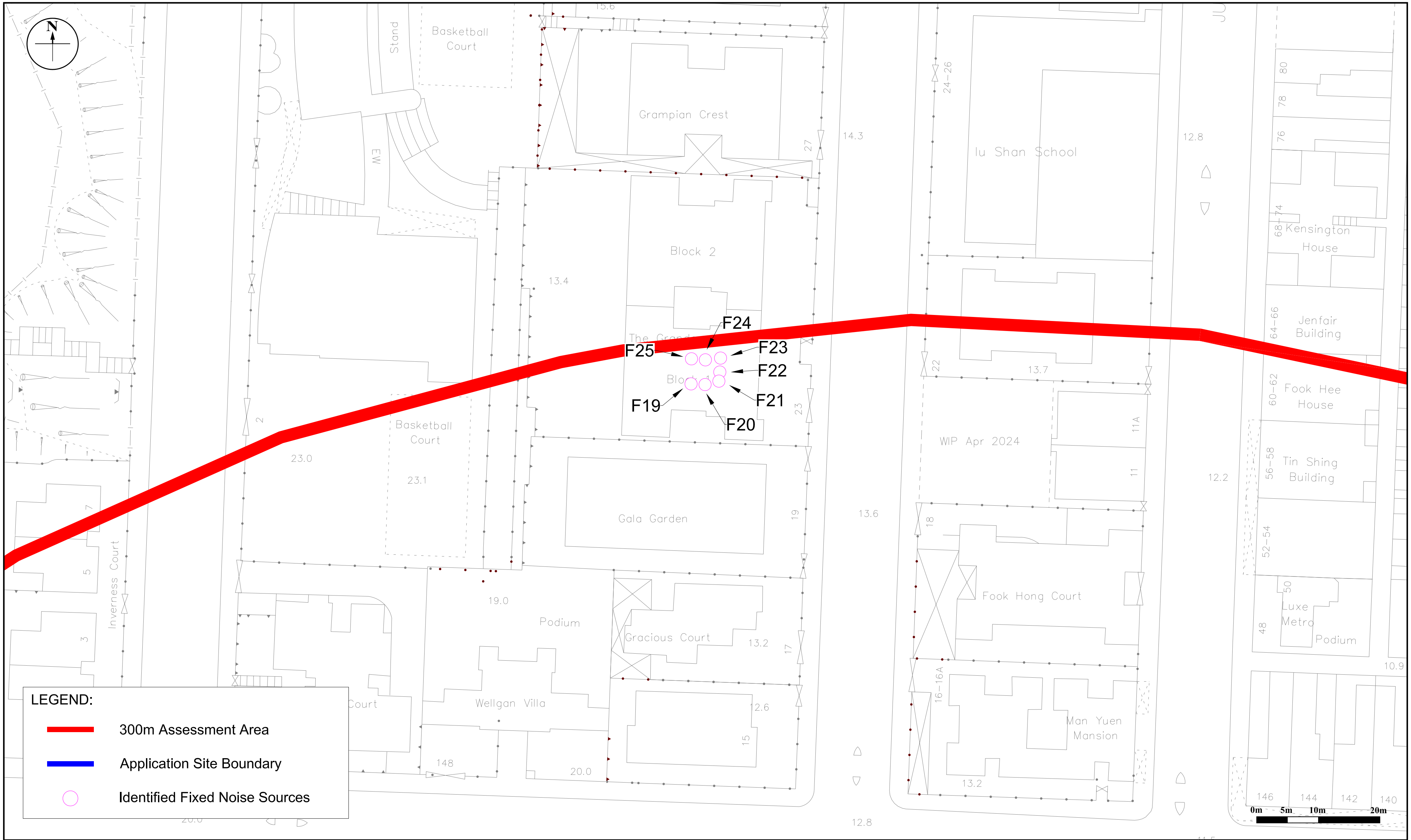


Figure: 3.2

Title: Location of Fixed Noise Sources (Sheet 2 of 4)

Project: Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon

RAMBOLL

Drawn by: EC
Checked by: KY
Rev.: 2.0
Date: Nov 2024

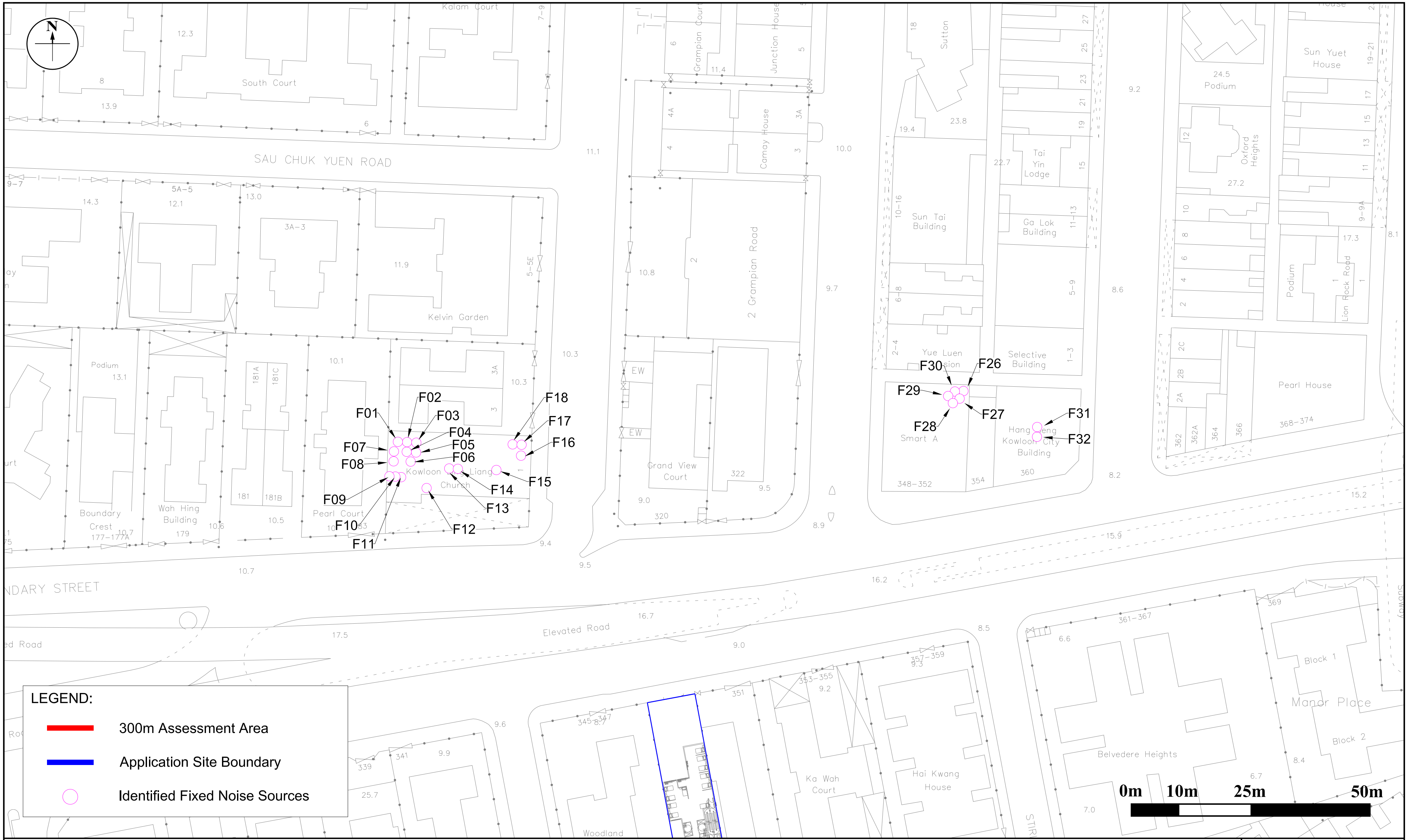


Figure:	3.3	RAMBØLL	
Title:	Location of Fixed Noise Sources (Sheet 3 of 4)	Drawn by:	EC
		Checked by:	KY
Project:	Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon	Rev.:	2.0
		Date:	Nov 2024

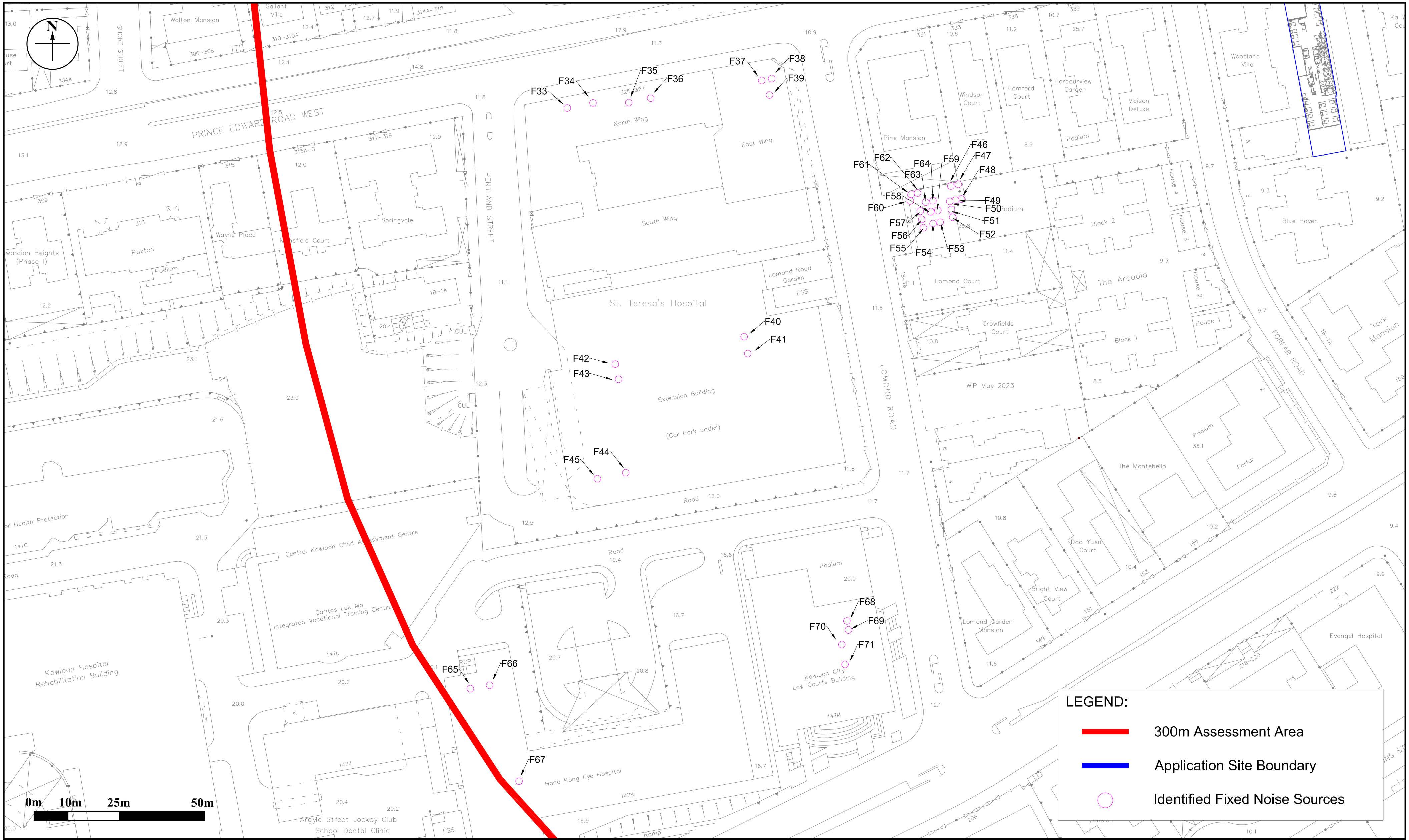


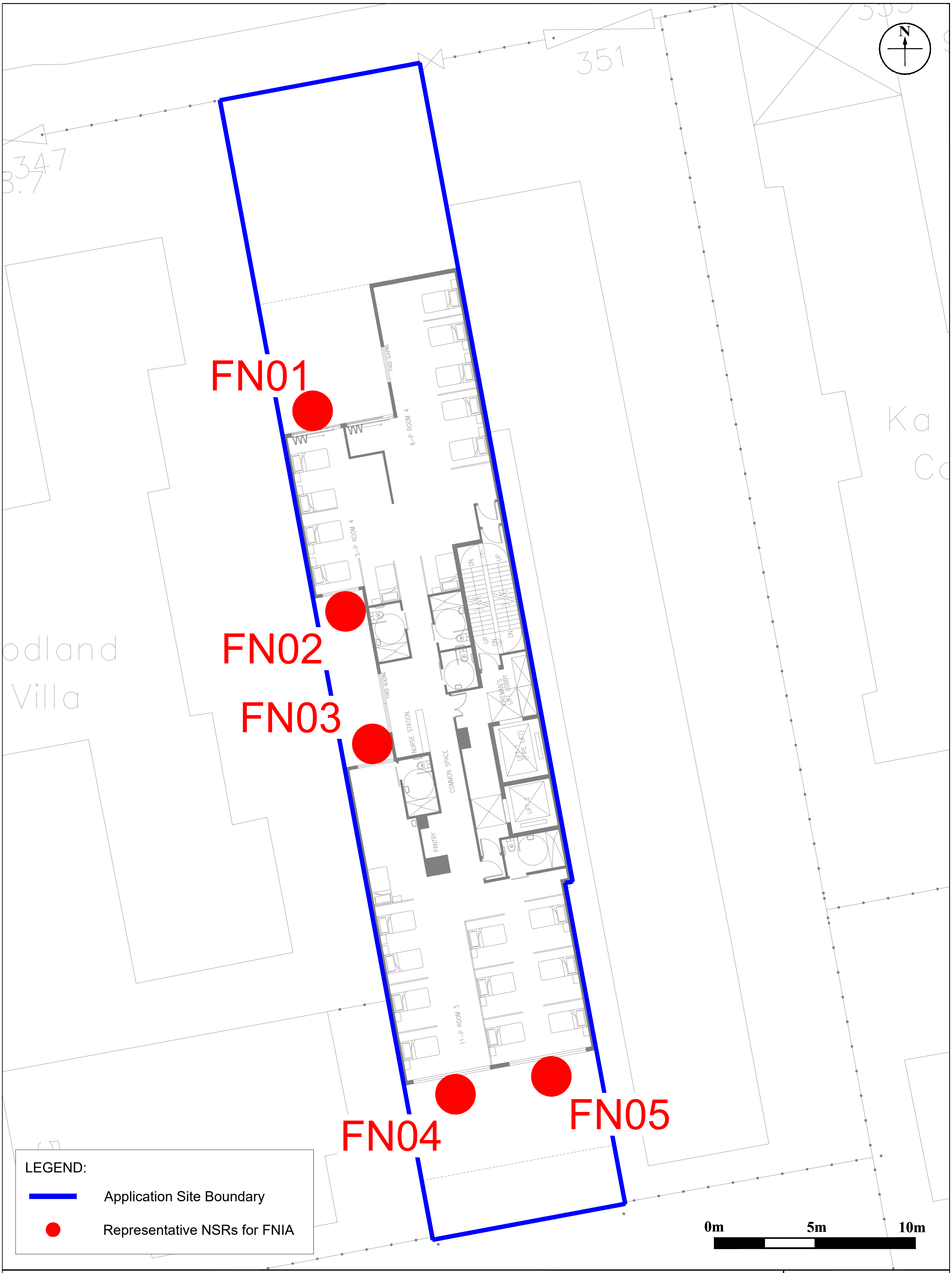
Figure: 3.4

Title: Location of Fixed Noise Sources (Sheet 4 of 4)

Project: Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon

RAMBOLL

Drawn by:	EC
Checked by:	KY
Rev.:	2.0
Date:	Nov 2024



LEGEND:

▬	Application Site Boundary
●	Representative NSRs for FNIA

Figure: 3.5

Title: Location of Representative Noise Sensitive Receivers for Fixed Noise Impact Assessment

Project: Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon

RAMBOLL

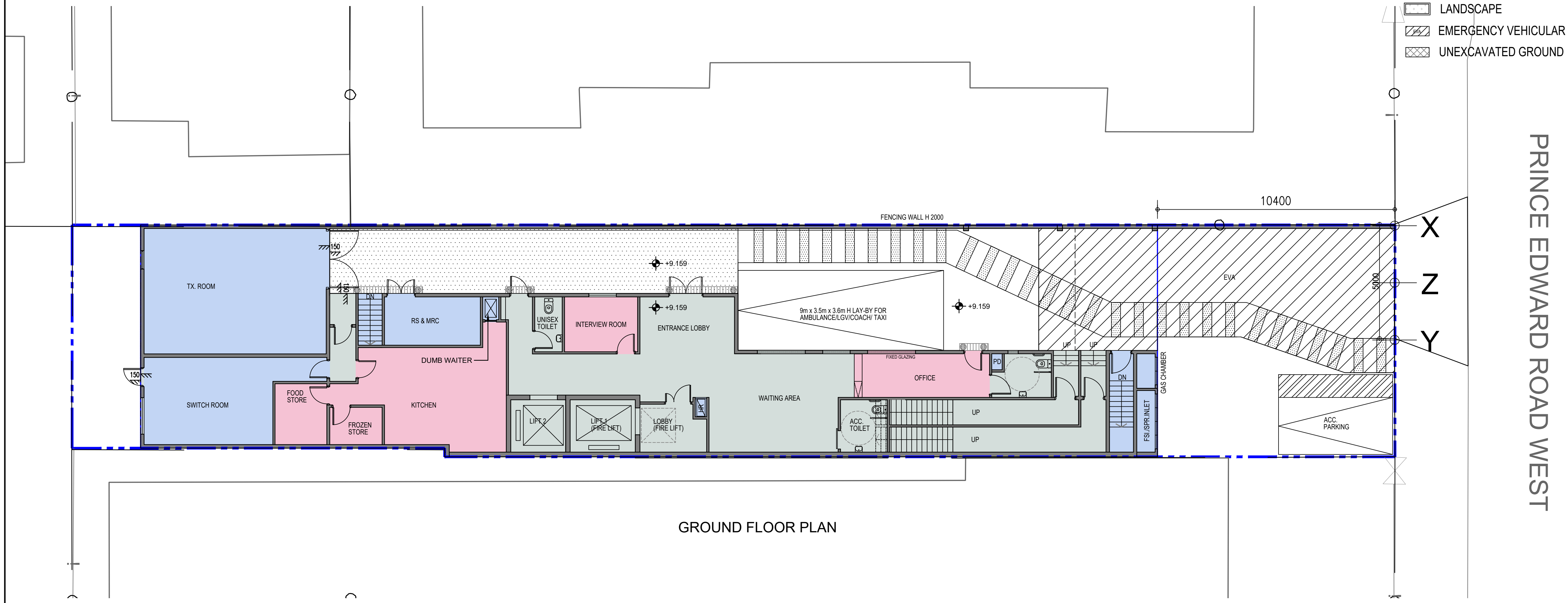
Drawn by: EC
Checked by: KY
Rev.: 3.0
Date: Jan 2025

Appendix 1.1

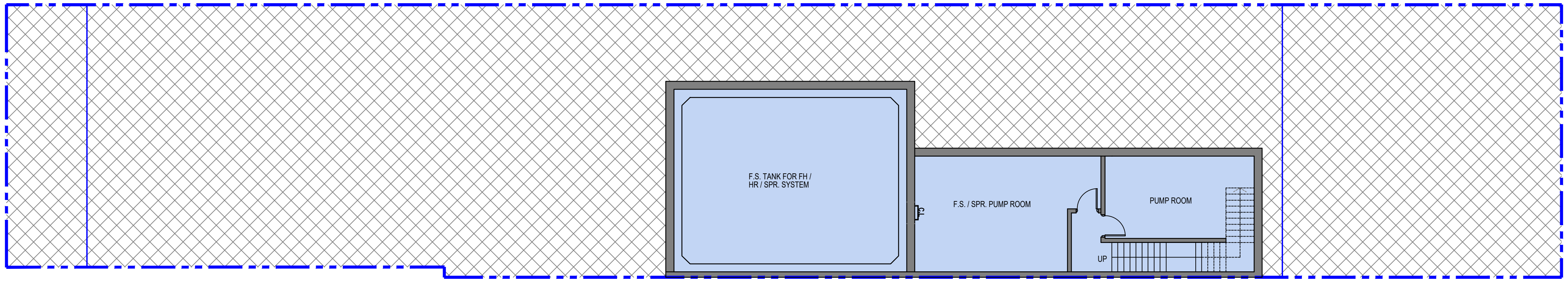
Detailed Layout of the Proposed Development

LEGEND:

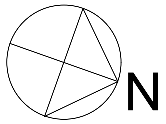
- ▬ SITE BOUNDARY
- 🟨 WARD
- 🟥 ANCILLARY AREA
- ⬜ COMMON / CIRCULATION SPACE
- 🟦 PLANT ROOM/ STAIRCASE TO U/G PLANT ROOM
- ░ FOOTPATH
- ☐ LANDSCAPE
- ▨ EMERGENCY VEHICULAR ACCESS
- ▩ UNEXCAVATED GROUND



G/F LAYOUT 1:200



B/S LAYOUT 1:200



BD REF. NO.:
FSD REF. NO.:

REVISIONS AND SUBMISSIONS:

NO.:	DATE:	DETAILS:	CHECKED:

NOTES:
1. CONTENTS ON THIS DRAWING SHOW DESIGN INTENT ONLY CONTRACTOR IS RESPONSIBLE FOR DETAILED DESIGN OF THE INTERIOR FITTING–OUT. CONTRACTOR IS REQUIRED TO SUBMIT FULL SET SHOP DRAWINGS FOR ARCHITECT'S APPROVAL PRIOR TO FABRICATION AND SITE INSTALLATION.
2. STRUCTURAL CALCULATIONS IF REQUIRED AND RELATED SUPPORTING DATA SHOULD BE SUBMITTED FOR REVIEW AND APPROVAL.
3. TRUE COLOR SAMPLES OF MATERIALS SHOULD BE SUBMITTED FOR ARCHITECT'S APPROVAL PRIOR TO PROCUREMENT.
4. ALL FITTING/ ASSEMBLY AND MATERIALS SHOULD BE DESIGN & INSTALLED TO CONTRACT DRAWINGS AND SPECIFICATION, AND IN COMPLIANCE WITH ALL RELEVANT STATUTORY REQUIREMENTS.
5. DIMENSIONS BASED ON ON SITE MEASUREMENTS.

6. FINAL MATERIALS & FINISHES OF WALL,FLOOR,CEILING,WALL FIXTURE ETC. SHOULD BE REFER TO FINISHES AND MATERIALS SCHEDULE UNDER THE SPECIFICATION PROVIDED.

CLIENT/EMPLOYER:

PROJECT ARCHITECT/AUTHORIZED PERSON:

馬海

馬海(建築顧問)有限公司
Spence Robinson Limited

PROJECT STRUCTURAL ENGINEER/
PROJECT GEO-TECHNICAL ENGINEER:

PROJECT E/M ENGINEER:

PROJECT LANDSCAPE CONSULTANT:

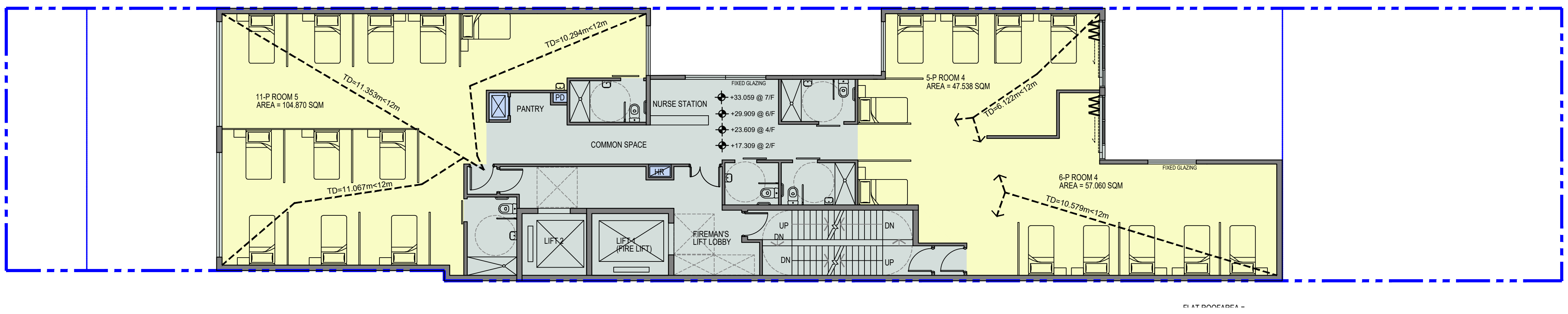
PROJECT QUANTITY SURVEYOR:

PROJECT:
PURPOSE BUILT C&A HOME DEVELOPMENT AT
349 PRINCE EDWARD ROAD WEST

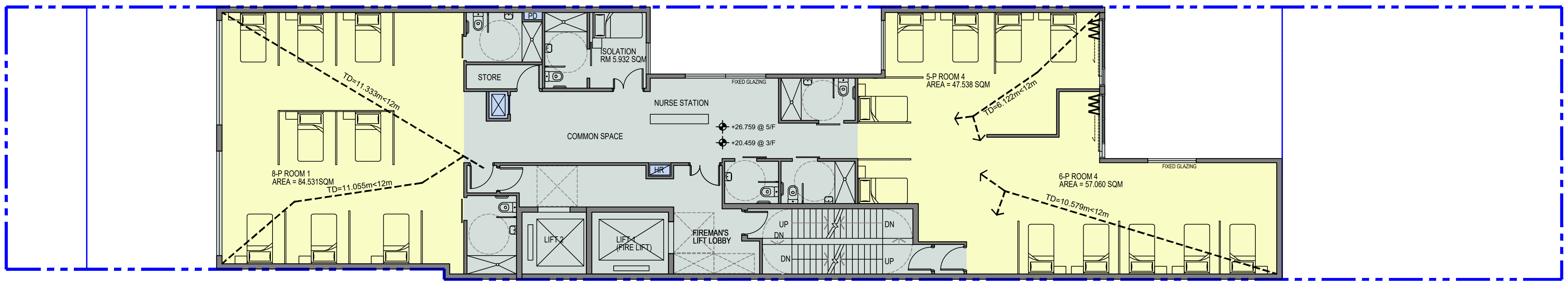
DRAWING TITLE:
GROUND FLOOR PLAN &
BASEMENT FLOOR PLAN

DRAWN BY: CZ
DATE: DEC-2024
CHECKED BY: CMD
APPROVED BY: KCY
SCALE: 1:200
PAPER SIZE: A3
PROJECT: PE 6170
DRAWING: GP-00
REVISION: V14

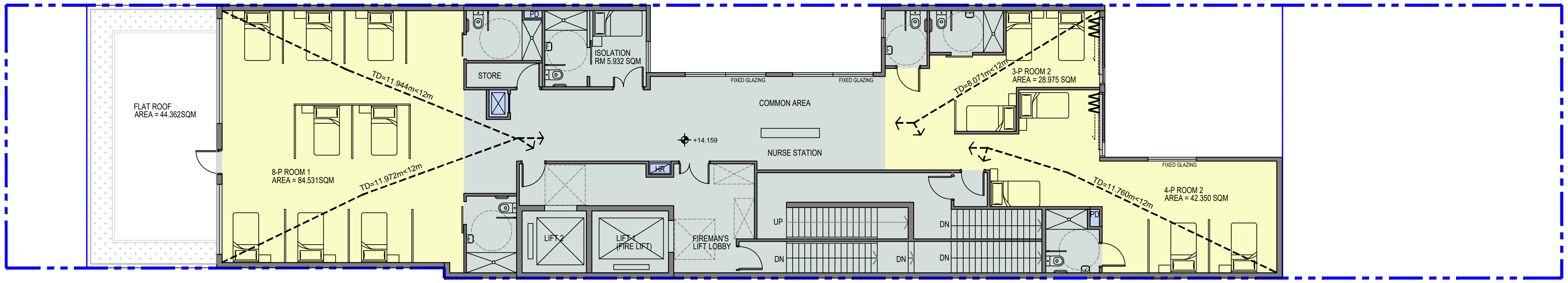
NOTES :
1. This drawing and design are copyright and no portion may be reproduced without the written permission of the Architect.
2. Use written dimensions or grid lines in preference to scaled dimensions. Measurements to existing work are to be checked on site.
3. This drawing is to be read in conjunction with the Architect's Specification and Conditions of Contract.
4. Prints not showing the last revision are to be cancelled.
5. Prints without an authorized signature in the checked and approved spaces below and after the last revision above are NOT vaild for use outside SRL.



2/F, 4/F, 6/F, 7/F LAYOUT 1:200



3/F, 5/F LAYOUT 1:200



1/F LAYOUT 1:200

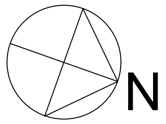
LEGEND:

- — SITE BOUNDARY
- 🟨 WARD
- 🟥 ANCILLARY AREA
- ▨ COMMON / CIRCULATION SPACE
- 🟦 PLANT ROOM/ STAIRCASE TO U/G PLANT ROOM
- ▨ FOOTPATH
- ☐ LANDSCAPE
- ▨ EMERGENCY VEHICULAR ACCESS
- ▨ UNEXCAVATED GROUND

NOS. OF BED
(9.5m²/ppl)

G/F	0
1/F	15
2/F	22
3/F	19
4/F	22
5/F	19
6/F	22
7/F	22
TOTAL	141

ANCILLARY AREA	
Floor Level	Area (m²)
G/F	59.183
1/F	0
2/F	0
3/F	0
4/F	0
5/F	0
6/F	0
7/F	0
8/F	108.709
9/F	79.448
TOTAL	247.338



BD REF. NO.:
FSD REF. NO.:
REVISIONS AND SUBMISSIONS:

NO.:	DATE:	DETAILS:	CHECKED:

NOTES:

1. CONTENTS ON THIS DRAWING SHOW DESIGN INTENT ONLY CONTRACTOR IS RESPONSIBLE FOR DETAILED DESIGN OF THE INTERIOR FITTING–OUT. CONTRACTOR IS REQUIRED TO SUBMIT FULL SET SHOP DRAWINGS FOR ARCHITECT'S APPROVAL PRIOR TO FABRICATION AND SITE INSTALLATION.
2. STRUCTURAL CALCULATIONS IF REQUIRED AND RELATED SUPPORTING DATA SHOULD BE SUBMITTED FOR REVIEW AND APPROVAL.
3. TRUE COLOR SAMPLES OF MATERIALS SHOULD BE SUBMITTED FOR ARCHITECT'S APPROVAL PRIOR TO PROCUREMENT.
4. ALL FITTING/ ASSEMBLY AND MATERIALS SHOULD BE DESIGN & INSTALLED TO CONTRACT DRAWINGS AND SPECIFICATION, AND IN COMPLIANCE WITH ALL RELEVANT STATUTORY REQUIREMENTS.
5. DIMENSIONS BASED ON ON SITE MEASUREMENTS.

6. FINAL MATERIALS & FINISHES OF WALL,FLOOR,CEILING,WALL FIXTURE ETC. SHOULD BE REFER TO FINISHES AND MATERIALS SCHEDULE UNDER THE SPECIFICATION PROVIDED.

CLIENT/EMPLOYER:

PROJECT ARCHITECT/AUTHORIZED PERSON:
馬海
馬海 (建築顧問) 有限公司
Spence Robinson Limited

PROJECT STRUCTURAL ENGINEER/
PROJECT GEO–TECHNICAL ENGINEER:
張耀新建築工程師有限公司
Wilson & Associates Ltd

PROJECT E/M ENGINEER:

PROJECT LANDSCAPE CONSULTANT:

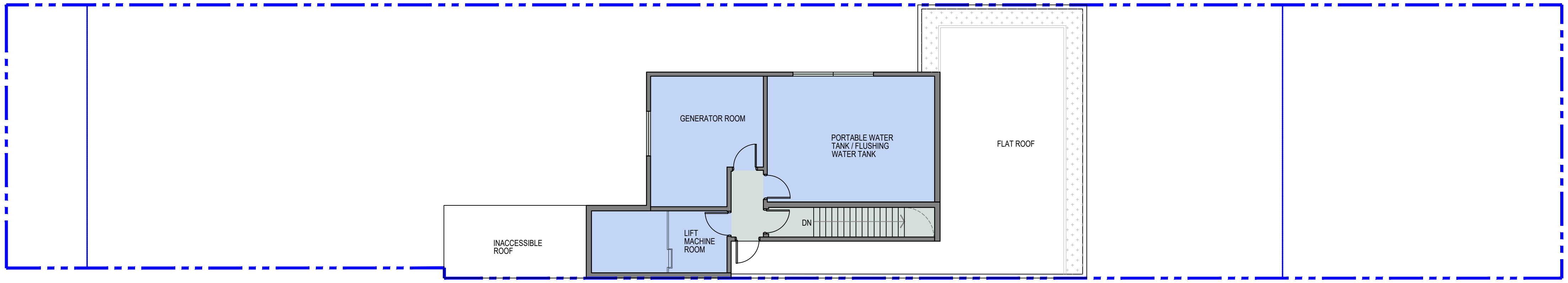
PROJECT QUANTITY SURVEYOR:

PROJECT:
PURPOSE BUILT C&A HOME DEVELOPMENT AT
349 PRINCE EDWARD ROAD WEST

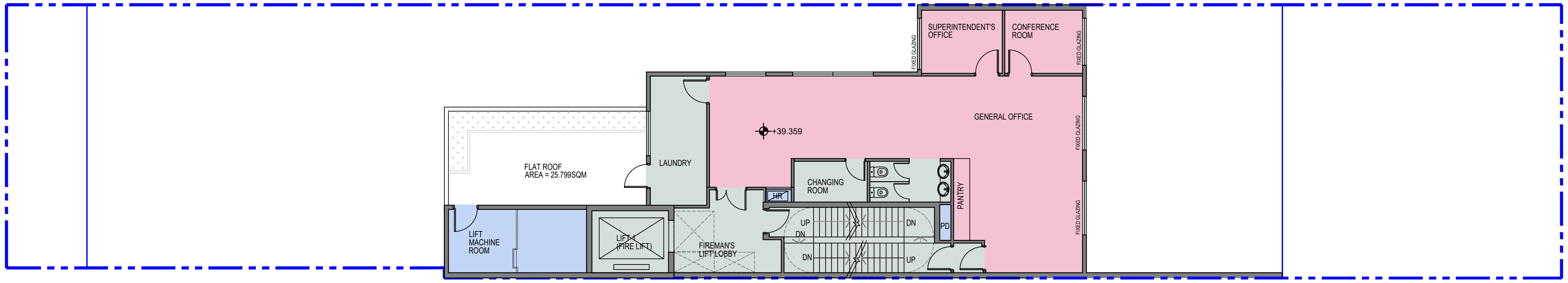
DRAWING TITLE:
FIRST FLOOR PLAN &
TYPICAL FLOOR PLAN (3/F,5/F) &
TYPICAL FLOOR PLAN (2/F,4/F,6/F& 7/F)

DRAWN BY: CZ
DATE: DEC-2024
CHECKED BY: CMD
APPROVED BY: KCY
SCALE: 1:200
PAPER SIZE: A3
PROJECT: PE 6170
DRAWING: GP-01
REVISION: V14

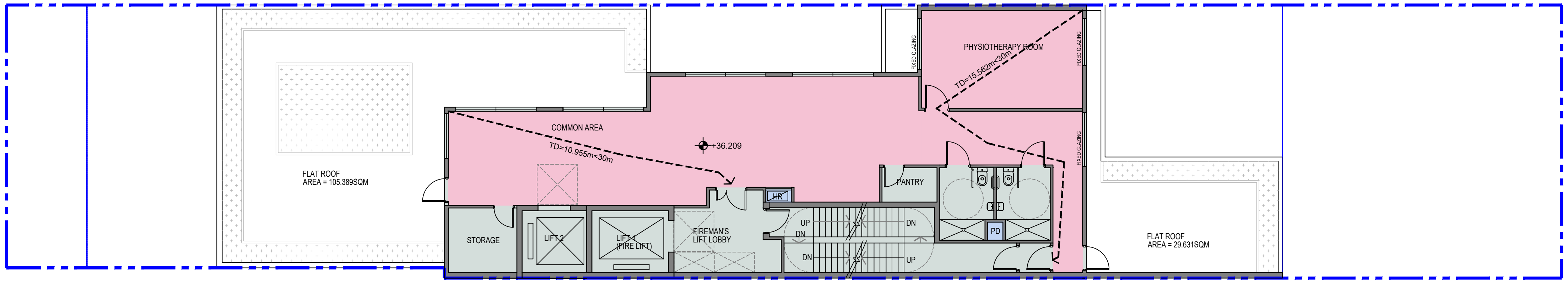
NOTES :
1. This drawing and design are copyright and no portion may be reproduced without the written permission of the Architect.
2. Use written dimensions or grid lines in preference to scaled dimensions. Measurements to existing work are to be checked on site.
3. This drawing is to be read in conjunction with the Architect's Specification and Conditions of Contract.
4. Prints not showing the last revision are to be cancelled.
5. Prints without an authorized signature in the checked and approved spaces below and after the last revision above are NOT vaild for use outside SRL.



ROOF LAYOUT 1:200



9/F LAYOUT 1:200



8/F LAYOUT 1:200

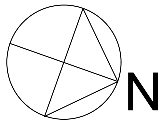
LEGEND:

—	SITE BOUNDARY
🟨	WARD
🟥	ANCILLARY AREA
▨	COMMON / CIRCULATION SPACE
🟦	PLANT ROOM/ STAIRCASE TO U/G PLANT ROOM
▨	FOOTPATH
▭	LANDSCAPE
▨	EMERGENCY VEHICULAR ACCESS
▨	UNEXCAVATED GROUND

NOS. OF BED (9.5m²/ppl)

G/F	0
1/F	15
2/F	22
3/F	19
4/F	22
5/F	19
6/F	22
7/F	22
TOTAL	141

ANCILLARY AREA	
Floor Level	Area (m²)
G/F	59.183
1/F	0
2/F	0
3/F	0
4/F	0
5/F	0
6/F	0
7/F	0
8/F	108.709
9/F	79.448
TOTAL	247.338



BD REF. NO.:
FSD REF. NO.:

REVISIONS AND SUBMISSIONS:

NO.:	DATE:	DETAILS:	CHECKED:

NOTES:

1. CONTENTS ON THIS DRAWING SHOW DESIGN INTENT ONLY CONTRACTOR IS RESPONSIBLE FOR DETAILED DESIGN OF THE INTERIOR FITTING–OUT. CONTRACTOR IS REQUIRED TO SUBMIT FULL SET SHOP DRAWINGS FOR ARCHITECT'S APPROVAL PRIOR TO FABRICATION AND SITE INSTALLATION.
2. STRUCTURAL CALCULATIONS IF REQUIRED AND RELATED SUPPORTING DATA SHOULD BE SUBMITTED FOR REVIEW AND APPROVAL.
3. TRUE COLOR SAMPLES OF MATERIALS SHOULD BE SUBMITTED FOR ARCHITECT'S APPROVAL PRIOR TO PROCUREMENT.
4. ALL FITTING/ ASSEMBLY AND MATERIALS SHOULD BE DESIGN & INSTALLED TO CONTRACT DRAWINGS AND SPECIFICATION, AND IN COMPLIANCE WITH ALL RELEVANT STATUTORY REQUIREMENTS.
5. DIMENSIONS BASED ON ON SITE MEASUREMENTS.

6. FINAL MATERIALS & FINISHES OF WALL,FLOOR,CEILING,WALL FIXTURE ETC. SHOULD BE REFER TO FINISHES AND MATERIALS SCHEDULE UNDER THE SPECIFICATION PROVIDED.

CLIENT/EMPLOYER:

PROJECT ARCHITECT/AUTHORIZED PERSON:

馬海

馬海(建築顧問)有限公司
Spence Robinson Limited

PROJECT STRUCTURAL ENGINEER/
PROJECT GEO–TECHNICAL ENGINEER:

張耀新建築工程師有限公司
Wilson & Associates Ltd

PROJECT E/M ENGINEER:

PROJECT LANDSCAPE CONSULTANT:

PROJECT QUANTITY SURVEYOR:

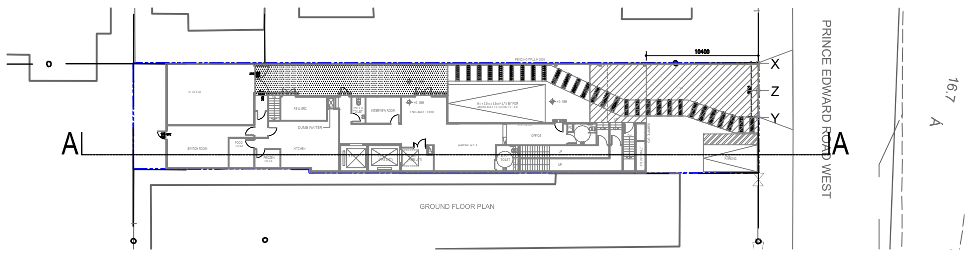
PROJECT:
PURPOSE BUILT C&A HOME DEVELOPMENT AT
349 PRINCE EDWARD ROAD WEST

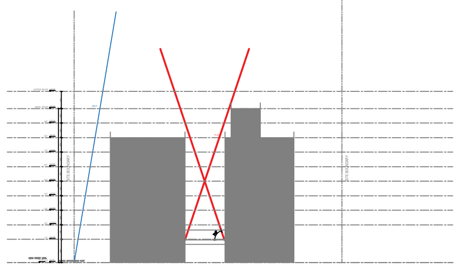
DRAWING TITLE:
8/F & 9/F FLOOR PLAN &
ROOF FLOOR PLAN

DRAWN BY: CZ	DATE: DEC-2024
CHECKED BY: CMD	APPROVED BY: KCY
SCALE: 1:200	PAPER SIZE: A3

PROJECT: PE 6170	DRAWING: GP-02	REVISION: V14

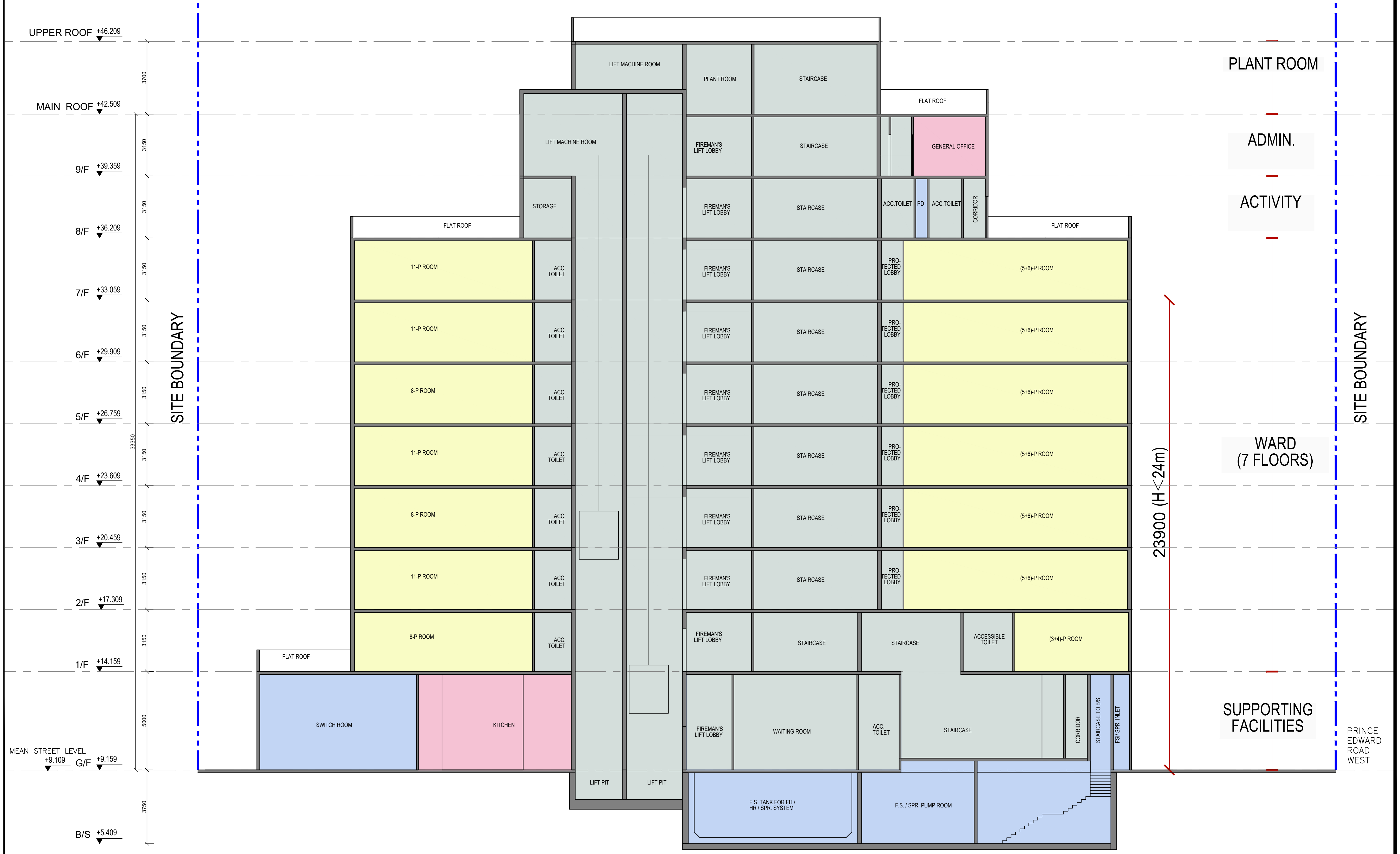
NOTES :
1. This drawing and design are copyright and no portion may be reproduced without the written permission of the Architect.
2. Use written dimensions or grid lines in preference to scaled dimensions. Measurements to existing work are to be checked on site.
3. This drawing is to be read in conjunction with the Architect's Specification and Conditions of Contract.
4. Prints not showing the last revision are to be cancelled.
5. Prints without an authorized signature in the checked and approved spaces below and after the last revision above are NOT vaild for use outside SRL.





LEGEND:

—	SITE BOUNDARY
🟨	WARD
🟥	ANCILLARY AREA
▨	COMMON / CIRCULATION SPACE
🟦	PLANT ROOM/ STAIRCASE TO U/G PLANT ROOM
▨	FOOTPATH
☐	LANDSCAPE
▨	EMERGENCY VEHICULAR ACCESS
▨	UNEXCAVATED GROUND



SECTION A-A 1:200

BD REF. NO.:
FSD REF. NO.:

REVISIONS AND SUBMISSIONS:

NO.:	DATE:	DETAILS:	CHECKED:

NOTES:
1. CONTENTS ON THIS DRAWING SHOW DESIGN INTENT ONLY CONTRACTOR IS RESPONSIBLE FOR DETAILED DESIGN OF THE INTERIOR FITTING–OUT. CONTRACTOR IS REQUIRED TO SUBMIT FULL SET SHOP DRAWINGS FOR ARCHITECT'S APPROVAL PRIOR TO FABRICATION AND SITE INSTALLATION.
2. STRUCTURAL CALCULATIONS IF REQUIRED AND RELATED SUPPORTING DATA SHOULD BE SUBMITTED FOR REVIEW AND APPROVAL.
3. TRUE COLOR SAMPLES OF MATERIALS SHOULD BE SUBMITTED FOR ARCHITECT'S APPROVAL PRIOR TO PROCUREMENT.
4. ALL FITTING/ ASSEMBLY AND MATERIALS SHOULD BE DESIGN & INSTALLED TO CONTRACT DRAWINGS AND SPECIFICATION, AND IN COMPLIANCE WITH ALL RELEVANT STATUTORY REQUIREMENTS.
5. DIMENSIONS BASED ON ON SITE MEASUREMENTS.
6. FINAL MATERIALS & FINISHES OF WALL,FLOOR,CEILING,WALL FIXTURE ETC. SHOULD BE REFER TO FINISHES AND MATERIALS SCHEDULE UNDER THE SPECIFICATION PROVIDED.

CLIENT/EMPLOYER:

PROJECT ARCHITECT/AUTHORIZED PERSON:
馬海
馬海（建築顧問）有限公司
Spence Robinson Limited

PROJECT STRUCTURAL ENGINEER/
PROJECT GEO–TECHNICAL ENGINEER:
張耀新建築工程師有限公司
Wilson & Associates Ltd

PROJECT E/M ENGINEER:

PROJECT LANDSCAPE CONSULTANT:

PROJECT QUANTITY SURVEYOR:

PROJECT:
PURPOSE BUILT C&A HOME DEVELOPMENT AT
349 PRINCE EDWARD ROAD WEST

DRAWING TITLE:
SECTION

DRAWN BY: CZ	DATE: DEC-2024	
CHECKED BY: CMD	APPROVED BY: KCY	
SCALE: 1:200	PAPER SIZE: A3	
PROJECT: PE 6170	DRAWING: GP-03	REVISION: V14

NOTES :
1. This drawing and design are copyright and no portion may be reproduced without the written permission of the Architect.
2. Use written dimensions or grid lines in preference to scaled dimensions. Measurements to existing work are to be checked on site.
3. This drawing is to be read in conjunction with the Architect's Specification and Conditions of Contract.
4. Prints not showing the last revision are to be cancelled.
5. Prints without an authorized signature in the checked and approved spaces below and after the last revision above are NOT vaild for use outside SRL.

Appendix 2.1

Traffic Forecast

By Fax
2528 6343

運輸署
Transport Department

本署檔案 Our Ref. : (KRKZ8) in TD KR146/193/P-43
來函檔號 Your Ref. : J7350/3
電話 Tel. : 2399 2512
圖文傳真 Fax : 2397 8046
電郵 Email :

27 September 2024

CKM Asia Limited
21st Floor, Methodist House
36 Hennessy Road, Wan Chai
Hong Kong
(Attn. Mr. CHIN Kim Meng)

Dear Sir/Madam,

Proposed Residential Care Home for the Elderly
at 349 Prince Edward Road West, Kowloon City
Traffic Forecast for Traffic Noise Impact Assessment

I refer to your captioned submission dated 10.9.2024.

I have no comment on the methodology of the traffic forecast from traffic engineering point of view provided that the traffic volume estimated in the forecast will only be used for conducting Noise Impact Assessment.

Yours faithfully,

Simon

(LI Hon-yeung, Simon)
for Commissioner for Transport

市區(九龍)及新界分區辦事處
Urban (Kln.) & NT Regional Office
九龍聯運街三十號旺角政府合署七樓及八樓
7th & 8th Floors, Mong Kok Government Offices, 30 Luen Wan Street, Kowloon.
圖文傳真 Fax No.: 2381 3799 (新界區) (NTRO) 2397 8046 (九龍市區) (U(K)RO)
網址 Web Site: http://www.td.gov.hk

Vicky Shek

From: CKM Asia <mail@ckmasia.com.hk>
Sent: Monday, November 25, 2024 3:37 PM
To: Vicky Shek
Cc: Ava Lo; Zhu Chong De; Chi Mai Dao; Katie Yu; Jolene Wong; Gladys Ng
Subject: RE: 349 Prince Edward Road West - Traffic Forecast

Dear Ramboll,

Further to our email of 30th September 2024, we confirm that the traffic forecasting methodology endorsed by Transport Department has been strictly adopted in producing the 2042 traffic forecast for the Traffic Noise Impact Assessment study.

Thank you for your attention.

Regards,

H.C. Tang

CKM Asia Limited
Traffic and Transportation Planning Consultants
Phone: (852) 2520 5990
Fax: (852) 2528 6343
Email: mail@ckmasia.com.hk
Website: www.ckmasia.com.hk
Address: 21/F, Methodist House, 36 Hennessy Road, Wan Chai, Hong Kong

---

Vicky Shek

From: dekckb.u@hyd.gov.hk
Sent: Monday, January 13, 2025 6:33 PM
To: Vicky Shek
Cc: diowkckb1.u@hyd.gov.hk
Subject: Re: Fw: Low Noise Road Surfacing Materials on the Road Sections near Prince Edward Road West (A/K10/276)

Dear Vicky,

As discussed, further to the below e-mail, please be advised that we are carrying out regular maintenance works across Kowloon City including the concern 2 nos. road sections. And the existing low-noise surfacing at Lomond Road and Junction Road are being replaced with HMSMA(10mm) normal flexible surfacing. As such the current extent of the low-noise road surfacing are not clearly defined on site. In summary, for impact assessment purpose, please considered normal flexible surfacing for the concern road sections.

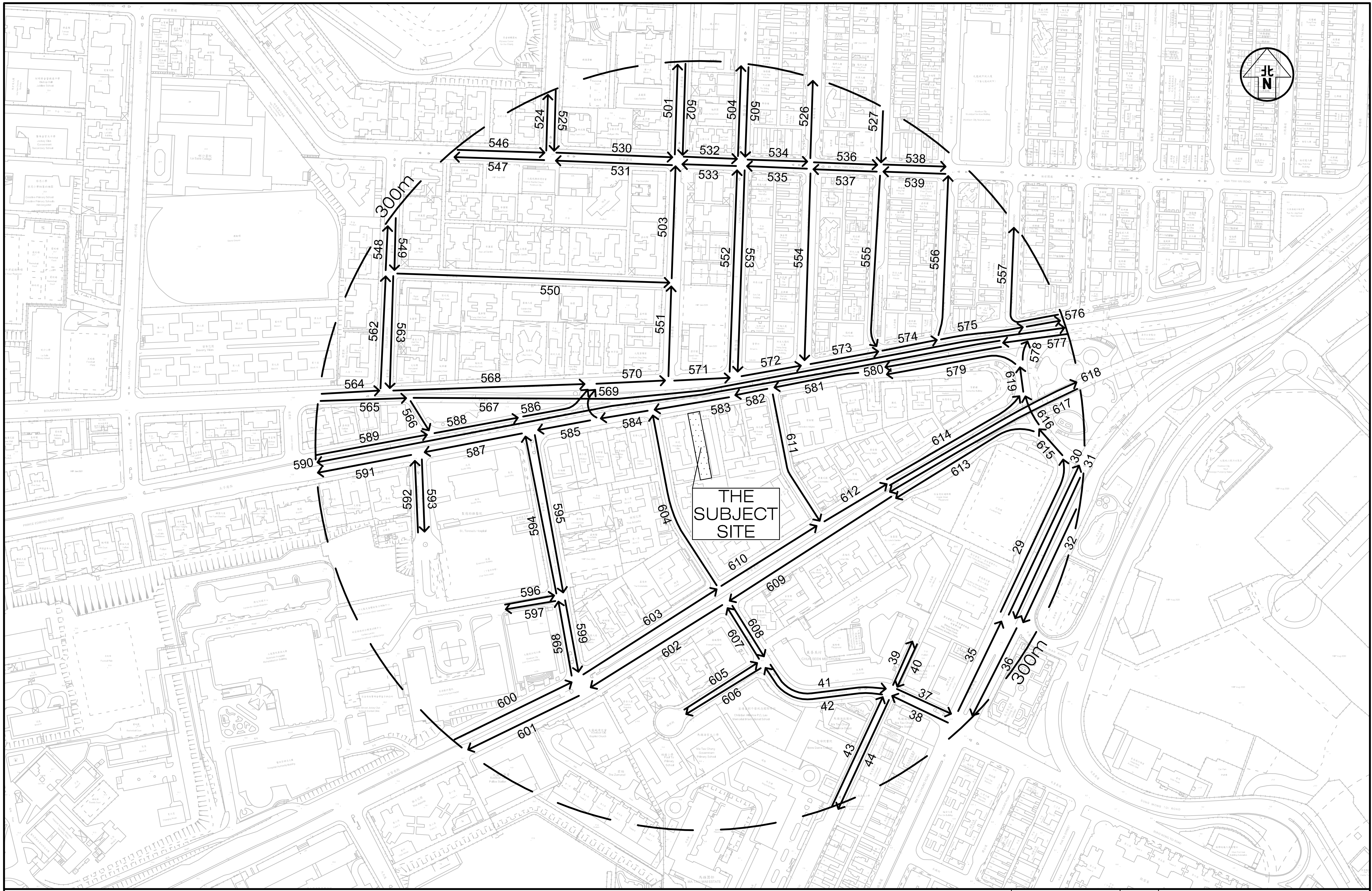
Thanks,

Peter

NG Cheuk Hang, Peter
DE/KC&KB, HyD
Tel: 2707 7341

www.hyd.gov.hk

From: Cheuk Hang NG/HYD/HKSARG



Project Title

PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY) AT
349 PRINCE EDWARD ROAD WEST, KOWLOON

Figure Title

LOCATION OF TRAFFIC DATA FOR TRAFFIC NOISE IMPACT ASSESSMENT

J7350	Figure No. TNIA/PERW		Revision A
Designed by Y C K	Drawn by C C L	Checked by T H C	
Scale in A3 1 : 3,000	Date 10 SEP 2024		

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road
Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOB\J7350-J7399\J7350\Fig TNIA_PERW RevA.dwg

TABLE 1 – PEAK HOUR TRAFFIC FLOW AND VEHICLE COMPOSITION

YEAR 2042 TRAFFIC FORECAST

Date : 10 September 2024 **Job No.: J7350**

Link ID	Road Section	From Road	To Road	Speed Limit (km/hr)	AM Peak Hour		
					Traffic Flows (veh/hr)	Vehicle Composition	
						LV	HV
L029	Ma Tau Chung Road (NB)	Ma Tau Chung Road	Kowloon City Roundabout	50	1,250	70%	30%
L030	Ma Tau Chung Road Flyover (NB)	Ma Tau Chung Road	Prince Edward Road East	50	1,200	78%	22%
L031	Ma Tau Chung Road Flyover (SB)	Prince Edward Road East	Ma Tau Chung Road	50	1,000	78%	22%
L032	Ma Tau Chung Road (SB)	Kowloon City Roundabout	Hang Wan Road	50	1,250	68%	32%
L035	Ma Tau Chung Road (NB)	Sung Wong Toi Road	Ma Tau Chung Road Flyover	50	2,400	74%	26%
L036	Ma Tau Chung Road (SB)	Hang Wan Road	Sung Wong Toi Road	50	1,650	72%	28%
L037	Fu Ning Street (EB)	Shing Tak Street	Ma Tau Chung Road	50	50	0%	100%
L038	Fu Ning Street (WB)	Ma Tau Chung Road	Shing Tak Street	50	700	83%	17%
L039	Access Road to Chun Seen Mei Chuen (NB)	Fu Ning Street	Cul de sac	50	50	87%	13%
L040	Access Road to Chun Seen Mei Chuen (SB)	Cul de sac	Fu Ning Street	50	50	73%	27%
L041	Fu Ning Street (EB)	Fuk Cheung Street	Shing Tak Street	50	250	86%	14%
L042	Fu Ning Street (WB)	Shing Tak Street	Fuk Cheung Street	50	600	83%	17%
L043	Shing Tak Street (NB)	Ma Tau Kok Road	Fu Ning Street	50	50	0%	100%
L044	Shing Tak Street (SB)	Fu Ning Street	Ma Tau Kok Road	50	350	84%	16%
L501	Grampian Road (NB)	Nga Tsin Wai Road	Dumbarton Road	50	300	72%	28%
L502	Grampian Road (SB)	Dumbarton Road	Nga Tsin Wai Road	50	150	84%	16%
L503	Grampian Road (NB)	Sau Chuk Yuen Road	Nga Tsin Wai Road	50	600	68%	32%
L504	Junction Road (NB)	Nga Tsin Wai Road	Carpenter Road	50	300	70%	30%
L505	Junction Road (SB)	Carpenter Road	Nga Tsin Wai Road	50	800	75%	25%
L524	Inverness Road (NB)	Nga Tsin Wai Road	Dumbarton Road	50	350	84%	16%
L525	Inverness Road (SB)	Dumbarton Road	Nga Tsin Wai Road	50	250	89%	11%
L526	Fuk Lo Tsun Road (NB)	Nga Tsin Wai Road	Carpenter Road	50	250	75%	25%
L527	Lion Rock Road (SB)	Carpenter Road	Nga Tsin Wai Road	50	350	84%	16%
L530	Nga Tsin Wai Road (EB)	Inverness Road	Grampian Road	50	350	89%	11%
L531	Nga Tsin Wai Road (WB)	Grampian Road	Inverness Road	50	700	83%	17%
L532	Nga Tsin Wai Road (EB)	Grampian Road	Junction Road	50	550	77%	23%
L533	Nga Tsin Wai Road (WB)	Junction Road	Grampian Road	50	500	84%	16%
L534	Nga Tsin Wai Road (EB)	Junction Road	Fuk Lo Tsun Road	50	750	80%	20%
L535	Nga Tsin Wai Road (WB)	Fuk Lo Tsun Road	Junction Road	50	450	84%	16%
L536	Nga Tsin Wai Road (EB)	Fuk Lo Tsun Road	Lion Rock Road	50	300	70%	30%
L537	Nga Tsin Wai Road (WB)	Lion Rock Road	Fuk Lo Tsun Road	50	550	84%	16%
L538	Nga Tsin Wai Road (EB)	Lion Rock Road	Hau Wong Road	50	400	73%	27%
L539	Nga Tsin Wai Road (WB)	Hau Wong Road	Lion Rock Road	50	550	83%	17%
L546	Nga Tsin Wai Road (EB)	College Road	Inverness Road	50	450	86%	14%
L547	Nga Tsin Wai Road (WB)	Inverness Road	College Road	50	700	83%	17%
L548	College Road (NB)	Sau Chuk Yuen Road	Nga Tsin Wai Road	50	250	80%	20%
L549	College Road (SB)	Nga Tsin Wai Road	Sau Chuk Yuen Road	50	300	92%	8%
L550	Sau Chuk Yuen Road (EB)	College Road	Grampian Road	50	200	96%	4%
L551	Grampian Road (NB)	Boundary Street	Sau Chuk Yuen Road	50	450	57%	43%
L552	Junction Road (NB)	Prince Edward Road West	Nga Tsin Wai Road	50	500	77%	23%
L553	Junction Road (SB)	Nga Tsin Wai Road	Prince Edward Road West	50	750	76%	24%
L554	Fuk Lo Tsun Road (SB)	Nga Tsin Wai Road	Prince Edward Road West	50	300	95%	5%
L555	Lion Rock Road (SB)	Nga Tsin Wai Road	Prince Edward Road West	50	250	83%	17%
L556	Hau Wong Road (NB)	Prince Edward Road West	Nga Tsin Wai Road	50	400	91%	9%
L557	Nga Tsin Long Road (NB)	Nga Tsin Wai Road	Nga Tsin Wai Road	50	100	86%	14%
L562	College Road (NB)	Boundary Street	Sau Chuk Yuen Road	50	300	84%	16%
L563	College Road (SB)	Sau Chuk Yuen Road	Boundary Street	50	200	90%	10%
L564	Boundary Street (EB)	Short Street	College Road	50	850	63%	37%
L565	Boundary Street (EB)	Short Street	Pentland Street	50	1,700	81%	19%
L566	Pentland Street (SB)	Boundary Street	Prince Edward Road West	50	150	95%	5%
L567	Boundary Street Flyover (EB)	Pentland Street	Prince Edward Road East	50	1,550	80%	20%
L568	Boundary Street (EB)	College Road	Prince Edward Road East	50	700	60%	40%
L569	Slip Road of Prince Edward Road West (EB)	Prince Edward Road East	Boundary Street	50	250	82%	18%
L570	Boundary Street (EB)	Slip Road of Prince Edward Road	Grampian Road	50	1,300	72%	28%
L571	Prince Edward Road West (EB)	Grampian Road	Junction Road	50	900	80%	20%
L572	Prince Edward Road West (EB)	Junction Road	Fuk Lo Tsun Road	50	1,000	78%	22%
L573	Prince Edward Road West (EB)	Fuk Lo Tsun Road	Lion Rock Road	50	1,300	82%	18%
L574	Prince Edward Road West (EB)	Lion Rock Road	Hau Wong Road	50	1,550	82%	18%
L575	Prince Edward Road West (EB)	Hau Wong Road	Kowloon City Roundabout	50	1,150	79%	21%
L576	Kowloon City Roundabout (EB)	Prince Edward Road West	Prince Edward Road West	50	2,350	74%	26%
L577	Prince Edward Road West Flyover (WB)	Prince Edward Road East	Slip Road of Prince Edward Road	50	1,900	78%	22%
L578	Kowloon City Roundabout (NB)	Prince Edward Road West	Prince Edward Road West	50	1,250	70%	30%
L579	Slip Road of Prince Edward Road West (WB)	Kowloon City Roundabout	Prince Edward Road West	50	1,100	71%	29%
L580	Slip Road of Prince Edward Road West (WB)	Prince Edward Road West Flyover	Prince Edward Road West	50	600	78%	22%
L581	Prince Edward Road West (WB)	Slip Road of Prince Edward Road	Stirling Road	50	1,650	74%	26%
L582	Prince Edward Road West (WB)	Stirling Road	Junction Road	50	1,400	73%	27%
L583	Prince Edward Road West (WB)	Junction Road	Forfar Road	50	1,600	73%	27%
L584	Prince Edward Road West (WB)	Forfar Road	Slip Road of Prince Edward Road	50	1,700	72%	28%
L585	Prince Edward Road West (WB)	Slip Road of Prince Edward Road	Lomond Road	50	1,500	71%	29%
L586	Prince Edward Road West (EB)	Lomond Road	Boundary Street	50	400	88%	12%
L587	Prince Edward Road West (WB)	Lomond Road	Pentland Street	50	1,650	69%	31%
L588	Prince Edward Road West (EB)	Pentland Street	Lomond Road	50	250	90%	10%
L589	Prince Edward Road West (EB)	Short Street	Pentland Street	50	100	83%	17%
L590	Prince Edward Road West Flyover (WB)	Slip Road of Prince Edward Road	Prince Edward Road West	50	1,350	78%	22%
L591	Prince Edward Road West (WB)	Pentland Street	Prince Edward Road West	50	1,550	68%	32%
L592	Pentland Street (NB)	Cul de sac	Prince Edward Road West	50	150	94%	6%
L593	Pentland Street (SB)	Prince Edward Road West	Cul de sac	50	250	96%	4%
L594	Lomond Road (NB)	Access Road to Hong Kong Eye	Prince Edward Road West	50	800	80%	20%
L595	Lomond Road (SB)	Prince Edward Road West	Access Road to Hong Kong Eye	50	500	87%	13%
L596	Access Road to Hong Kong Eye Hospital (EB)	Cul de sac	Lomond Road	50	350	83%	17%
L597	Access Road to Hong Kong Eye Hospital (WB)	Lomond Road	Cul de sac	50	250	91%	9%
L598	Lomond Road (NB)	Argyle Street	Access Road to Hong Kong Eye	50	700	83%	17%

TABLE 1 – PEAK HOUR TRAFFIC FLOW AND VEHICLE COMPOSITION

YEAR 2042 TRAFFIC FORECAST

Date : 10 September 2024 **Job No.: J7350**

Link ID	Road Section	From Road	To Road	Speed Limit (km/hr)	AM Peak Hour		
					Traffic Flows (veh/hr)	Vehicle Composition	
						LV	HV
L599	Lomond Road (SB)	Access Road to Hong Kong Eye	Argyle Street	50	500	87%	13%
L600	Argyle Street (EB)	Tin Kwong Road	Lomond Road	50	1,650	70%	30%
L601	Argyle Street (WB)	Lomond Road	Tin Kwong Road	50	2,100	82%	18%
L602	Argyle Street (WB)	Fu Ning Street	Lomond Road	50	2,150	81%	19%
L603	Argyle Street (EB)	Lomond Road	Forfar Road	50	1,500	69%	31%
L604	Forfar Road (NB)	Argyle Street	Prince Edward Road West	50	150	54%	46%
L605	Fuk Cheung Street (EB)	Cul de sac	Fu Ning Street	50	100	69%	31%
L606	Fuk Cheung Street (WB)	Fu Ning Street	Cul de sac	50	100	73%	27%
L607	Fu Ning Street (NB)	Fuk Cheung Street	Argyle Street	50	600	82%	18%
L608	Fu Ning Street (SB)	Argyle Street	Fuk Cheung Street	50	250	85%	15%
L609	Argyle Street (WB)	Argyle Street Flyover	Fu Ning Street	50	1,800	81%	19%
L610	Argyle Street (EB)	Forfar Road	Stirling Road	50	1,350	70%	30%
L611	Stirling Road (SB)	Prince Edward Road West	Argyle Street	50	250	77%	23%
L612	Argyle Street (EB)	Stirling Road	Argyle Street Flyover	50	1,600	71%	29%
L613	Argyle Street (WB)	Kowloon City Roundabout	Argyle Street	50	350	70%	30%
L614	Argyle Street (EB)	Argyle Street	Kowloon City Roundabout	50	400	75%	25%
L615	Kowloon City Roundabout (NB)	Ma Tau Chung Road	Argyle Street	50	2,300	70%	30%
L616	Kowloon City Roundabout (NB)	Argyle Street	Argyle Street	50	1,950	70%	30%
L617	Argyle Street Flyover (WB)	Prince Edward Road West	Argyle Street	50	1,450	84%	16%
L618	Argyle Street Flyover (EB)	Argyle Street	Prince Edward Road West	50	1,250	70%	30%
L619	Kowloon City Roundabout (NB)	Argyle Street	Prince Edward Road West	50	2,300	71%	29%

Note: "LV" includes motorcycle, private car and taxi
"HV" includes light / medium / heavy goods vehicle, public / private light bus, non-franchised bus and franchised bus

TABLE 1 – PEAK HOUR TRAFFIC FLOW AND VEHICLE COMPOSITION

YEAR 2042 TRAFFIC FORECAST

Date : 10 September 2024

Job No.: J7350

Link ID	Road Section	From Road	To Road	Speed Limit (km/hr)	PM Peak Hour	
					Traffic Flows (veh/hr)	Vehicle Composition	
						LV	HV
L029	Ma Tau Chung Road (NB)	Ma Tau Chung Road	Kowloon City Roundabout	50	1,250	72%	28%
L030	Ma Tau Chung Road Flyover (NB)	Ma Tau Chung Road	Prince Edward Road East	50	1,250	82%	18%
L031	Ma Tau Chung Road Flyover (SB)	Prince Edward Road East	Ma Tau Chung Road	50	1,000	80%	20%
L032	Ma Tau Chung Road (SB)	Kowloon City Roundabout	Hang Wan Road	50	1,200	74%	26%
L035	Ma Tau Chung Road (NB)	Sung Wong Toi Road	Ma Tau Chung Road Flyover	50	2,450	77%	23%
L036	Ma Tau Chung Road (SB)	Hang Wan Road	Sung Wong Toi Road	50	1,700	75%	25%
L037	Fu Ning Street (EB)	Shing Tak Street	Ma Tau Chung Road	50	50	0%	100%
L038	Fu Ning Street (WB)	Ma Tau Chung Road	Shing Tak Street	50	750	88%	12%
L039	Access Road to Chun Seen Mei Chuen (NB)	Fu Ning Street	Cul de sac	50	50	95%	5%
L040	Access Road to Chun Seen Mei Chuen (SB)	Cul de sac	Fu Ning Street	50	50	96%	4%
L041	Fu Ning Street (EB)	Fuk Cheung Street	Shing Tak Street	50	150	87%	13%
L042	Fu Ning Street (WB)	Shing Tak Street	Fuk Cheung Street	50	650	89%	11%
L043	Shing Tak Street (NB)	Ma Tau Kok Road	Fu Ning Street	50	50	0%	100%
L044	Shing Tak Street (SB)	Fu Ning Street	Ma Tau Kok Road	50	200	85%	16%
L501	Grampian Road (NB)	Nga Tsin Wai Road	Dumbarton Road	50	250	78%	22%
L502	Grampian Road (SB)	Dumbarton Road	Nga Tsin Wai Road	50	100	63%	37%
L503	Grampian Road (NB)	Sau Chuk Yuen Road	Nga Tsin Wai Road	50	600	78%	22%
L504	Junction Road (NB)	Nga Tsin Wai Road	Carpenter Road	50	350	74%	26%
L505	Junction Road (SB)	Carpenter Road	Nga Tsin Wai Road	50	700	80%	20%
L524	Inverness Road (NB)	Nga Tsin Wai Road	Dumbarton Road	50	200	79%	21%
L525	Inverness Road (SB)	Dumbarton Road	Nga Tsin Wai Road	50	200	88%	12%
L526	Fuk Lo Tsun Road (NB)	Nga Tsin Wai Road	Carpenter Road	50	250	91%	9%
L527	Lion Rock Road (SB)	Carpenter Road	Nga Tsin Wai Road	50	400	89%	11%
L530	Nga Tsin Wai Road (EB)	Inverness Road	Grampian Road	50	200	81%	19%
L531	Nga Tsin Wai Road (WB)	Grampian Road	Inverness Road	50	600	85%	15%
L532	Nga Tsin Wai Road (EB)	Grampian Road	Junction Road	50	450	76%	24%
L533	Nga Tsin Wai Road (WB)	Junction Road	Grampian Road	50	450	87%	13%
L534	Nga Tsin Wai Road (EB)	Junction Road	Fuk Lo Tsun Road	50	650	80%	20%
L535	Nga Tsin Wai Road (WB)	Fuk Lo Tsun Road	Junction Road	50	500	83%	17%
L536	Nga Tsin Wai Road (EB)	Fuk Lo Tsun Road	Lion Rock Road	50	300	67%	33%
L537	Nga Tsin Wai Road (WB)	Lion Rock Road	Fuk Lo Tsun Road	50	650	83%	17%
L538	Nga Tsin Wai Road (EB)	Lion Rock Road	Hau Wong Road	50	350	71%	29%
L539	Nga Tsin Wai Road (WB)	Hau Wong Road	Lion Rock Road	50	650	83%	17%
L546	Nga Tsin Wai Road (EB)	College Road	Inverness Road	50	300	79%	21%
L547	Nga Tsin Wai Road (WB)	Inverness Road	College Road	50	700	86%	14%
L548	College Road (NB)	Sau Chuk Yuen Road	Nga Tsin Wai Road	50	200	75%	25%
L549	College Road (SB)	Nga Tsin Wai Road	Sau Chuk Yuen Road	50	150	90%	10%
L550	Sau Chuk Yuen Road (EB)	College Road	Grampian Road	50	100	92%	8%
L551	Grampian Road (NB)	Boundary Street	Sau Chuk Yuen Road	50	500	76%	24%
L552	Junction Road (NB)	Prince Edward Road West	Nga Tsin Wai Road	50	550	81%	19%
L553	Junction Road (SB)	Nga Tsin Wai Road	Prince Edward Road West	50	700	79%	21%
L554	Fuk Lo Tsun Road (SB)	Nga Tsin Wai Road	Prince Edward Road West	50	300	86%	14%
L555	Lion Rock Road (SB)	Nga Tsin Wai Road	Prince Edward Road West	50	350	89%	11%
L556	Hau Wong Road (NB)	Prince Edward Road West	Nga Tsin Wai Road	50	350	93%	7%
L557	Nga Tsin Long Road (NB)	Nga Tsin Wai Road	Nga Tsin Wai Road	50	150	86%	14%
L562	College Road (NB)	Boundary Street	Sau Chuk Yuen Road	50	200	76%	24%
L563	College Road (SB)	Sau Chuk Yuen Road	Boundary Street	50	100	88%	13%
L564	Boundary Street (EB)	Short Street	College Road	50	900	75%	25%
L565	Boundary Street (EB)	Short Street	Pentland Street	50	1,550	86%	14%
L566	Pentland Street (SB)	Boundary Street	Prince Edward Road West	50	150	92%	8%
L567	Boundary Street Flyover (EB)	Pentland Street	Prince Edward Road East	50	1,450	85%	15%
L568	Boundary Street (EB)	College Road	Prince Edward Road East	50	800	76%	24%
L569	Slip Road of Prince Edward Road West (EB)	Prince Edward Road East	Boundary Street	50	200	77%	23%
L570	Boundary Street (EB)	Slip Road of Prince Edward Road	Grampian Road	50	1,300	79%	21%
L571	Prince Edward Road West (EB)	Grampian Road	Junction Road	50	800	81%	19%
L572	Prince Edward Road West (EB)	Junction Road	Fuk Lo Tsun Road	50	850	80%	20%
L573	Prince Edward Road West (EB)	Fuk Lo Tsun Road	Lion Rock Road	50	1,150	82%	18%
L574	Prince Edward Road West (EB)	Lion Rock Road	Hau Wong Road	50	1,450	84%	16%
L575	Prince Edward Road West (EB)	Hau Wong Road	Kowloon City Roundabout	50	1,150	81%	19%
L576	Kowloon City Roundabout (EB)	Prince Edward Road West	Prince Edward Road West	50	2,400	76%	24%
L577	Prince Edward Road West Flyover (WB)	Prince Edward Road East	Slip Road of Prince Edward Road	50	1,800	81%	19%
L578	Kowloon City Roundabout (NB)	Prince Edward Road West	Prince Edward Road West	50	1,250	72%	28%
L579	Slip Road of Prince Edward Road West (WB)	Kowloon City Roundabout	Prince Edward Road West	50	1,150	74%	26%
L580	Slip Road of Prince Edward Road West (WB)	Prince Edward Road West Flyover	Prince Edward Road West	50	400	81%	19%
L581	Prince Edward Road West (WB)	Slip Road of Prince Edward Road	Stirling Road	50	1,500	76%	24%
L582	Prince Edward Road West (WB)	Stirling Road	Junction Road	50	1,350	75%	25%
L583	Prince Edward Road West (WB)	Junction Road	Forfar Road	50	1,500	75%	25%
L584	Prince Edward Road West (WB)	Forfar Road	Slip Road of Prince Edward Road	50	1,650	75%	25%
L585	Prince Edward Road West (WB)	Slip Road of Prince Edward Road	Lomond Road	50	1,450	75%	25%
L586	Prince Edward Road West (EB)	Lomond Road	Boundary Street	50	300	90%	10%
L587	Prince Edward Road West (WB)	Lomond Road	Pentland Street	50	1,750	75%	25%
L588	Prince Edward Road West (EB)	Pentland Street	Lomond Road	50	200	94%	6%
L589	Prince Edward Road West (EB)	Short Street	Pentland Street	50	50	95%	5%
L590	Prince Edward Road West Flyover (WB)	Slip Road of Prince Edward Road	Prince Edward Road West	50	1,400	81%	19%
L591	Prince Edward Road West (WB)	Pentland Street	Prince Edward Road West	50	1,750	75%	25%
L592	Pentland Street (NB)	Cul de sac	Prince Edward Road West	50	200	99%	1%
L593	Pentland Street (SB)	Prince Edward Road West	Cul de sac	50	200	98%	2%
L594	Lomond Road (NB)	Access Road to Hong Kong Eye	Prince Edward Road West	50	800	86%	14%
L595	Lomond Road (SB)	Prince Edward Road West	Access Road to Hong Kong Eye	50	400	93%	7%
L596	Access Road to Hong Kong Eye Hospital (EB)	Cul de sac	Lomond Road	50	300	75%	25%
L597	Access Road to Hong Kong Eye Hospital (WB)	Lomond Road	Cul de sac	50	100	93%	7%
L598	Lomond Road (NB)	Argyle Street	Access Road to Hong Kong Eye	50	700	87%	13%

TABLE 1 – PEAK HOUR TRAFFIC FLOW AND VEHICLE COMPOSITION

YEAR 2042 TRAFFIC FORECAST

Date : 10 September 2024 **Job No.: J7350**

Link ID	Road Section	From Road	To Road	Speed Limit (km/hr)	PM Peak Hour		
					Traffic Flows (veh/hr)	Vehicle Composition	
						LV	HV
L599	Lomond Road (SB)	Access Road to Hong Kong Eye	Argyle Street	50	500	85%	15%
L600	Argyle Street (EB)	Tin Kwong Road	Lomond Road	50	1,350	76%	24%
L601	Argyle Street (WB)	Lomond Road	Tin Kwong Road	50	2,250	89%	11%
L602	Argyle Street (WB)	Fu Ning Street	Lomond Road	50	2,350	89%	11%
L603	Argyle Street (EB)	Lomond Road	Forfar Road	50	1,250	73%	27%
L604	Forfar Road (NB)	Argyle Street	Prince Edward Road West	50	200	79%	21%
L605	Fuk Cheung Street (EB)	Cul de sac	Fu Ning Street	50	100	91%	9%
L606	Fuk Cheung Street (WB)	Fu Ning Street	Cul de sac	50	50	83%	17%
L607	Fu Ning Street (NB)	Fuk Cheung Street	Argyle Street	50	700	90%	10%
L608	Fu Ning Street (SB)	Argyle Street	Fuk Cheung Street	50	150	85%	15%
L609	Argyle Street (WB)	Argyle Street Flyover	Fu Ning Street	50	1,800	88%	12%
L610	Argyle Street (EB)	Forfar Road	Stirling Road	50	1,050	72%	28%
L611	Stirling Road (SB)	Prince Edward Road West	Argyle Street	50	200	82%	18%
L612	Argyle Street (EB)	Stirling Road	Argyle Street Flyover	50	1,250	73%	27%
L613	Argyle Street (WB)	Kowloon City Roundabout	Argyle Street	50	300	77%	23%
L614	Argyle Street (EB)	Argyle Street	Kowloon City Roundabout	50	300	73%	27%
L615	Kowloon City Roundabout (NB)	Ma Tau Chung Road	Argyle Street	50	2,350	73%	27%
L616	Kowloon City Roundabout (NB)	Argyle Street	Argyle Street	50	2,100	73%	27%
L617	Argyle Street Flyover (WB)	Prince Edward Road West	Argyle Street	50	1,550	90%	10%
L618	Argyle Street Flyover (EB)	Argyle Street	Prince Edward Road West	50	950	74%	26%
L619	Kowloon City Roundabout (NB)	Argyle Street	Prince Edward Road West	50	2,400	73%	27%

Note: "LV" includes motorcycle, private car and taxi
"HV" includes light / medium / heavy goods vehicle, public / private light bus, non-franchised bus and franchised bus

Appendix 2.2

Traffic Noise Impact Assessment Results

(Unmitigated Scenario)

Appendix 2.2 - Predicted Road Traffic Noise Levels at Representative NSRs For Year 2042 AM Peak Hour (Unmitigated Scenario)

RCHE - G/F

	NSR	RG01
Floor	mPD	L10 1-hour, dB(A)
G/F	10.4	70
Noise Criteria		70
Compliance ?		Yes

RCHE - 1/F

	NSR	R101	R102	R103	R104	R105
Floor	mPD	L10 1-hour, dB(A)				
1/F	15.4	76	75	49	59	61
Noise Criteria		70	70	55	70	70
Compliance ?		No	No	Yes	Yes	Yes

RCHE - Typical Floors (2/F-7/F)

	NSR	RT01	RT02	RT03	RT04a	RT04b	RT05	RT06
Floor	mPD	L10 1-hour, dB(A)						
2/F	18.5	76	75	50	55	-	59	61
3/F	21.7	76	75	50	-	49	60	61
4/F	24.8	76	75	50	55	-	61	62
5/F	28.0	76	75	50	-	49	62	62
6/F	31.1	76	75	50	55	-	62	62
7/F	34.3	75	75	51	56	-	63	63
Max. Level,dB(A)		76	75	51	56	49	63	63
Noise Criteria		70	70	70	70	55	70	70
Compliance ?		No	No	Yes	Yes	Yes	Yes	Yes

RCHE - 9/F

	NSR	R901	R902
Floor	mPD	L10 1-hour, dB(A)	
9/F	40.6	57	57
Noise Criteria		70	70
Compliance ?		Yes	Yes

Compliance Rate

No. of units counted with noise exceedance:	14
Total no. of units at Application Site	26
Compliance Rate (%):	46.2%

Appendix 2.3

Traffic Noise Impact Assessment Results

(Mitigated Scenario)

Appendix 2.3 - (AM Peak) Predicted Road Traffic Noise Reduction Level (L10, dB(A)) during AM Peak Hour of Year 2042 with Noise Mitigation Measures at Proposed Development - Mitigated Scenario

		RG01	R101	R102	R103	R104	R105	RT01	RT02	RT03	RT04a	RT04b	RT05	RT06	R901	R902
Noise Mitigation		-	Acw	Acw	-	-	-	Acw	Acw	-	-	-	-	-	-	-
Floor	mPD	L10 1-hour, dB(A)														
G/F	10.4	-	/					/							/	
1/F	15.4	/	7.6	8.8	-	-	-									
2/F	18.5		/					8.8	8.8	-	-	-	-	-		
3/F	21.7							8.8	8.8	-	-	-	-	-		
4/F	24.8							8.8	8.8	-	-	-	-	-		
5/F	28							8.8	8.8	-	-	-	-	-		
6/F	31.1							8.8	8.8	-	-	-	-	-		
7/F	34.3							8.8	8.8	-	-	-	-	-		
9/F	40.6							/							-	-

Noise mitigation measures:	Baffle Type Acoustic Window (Acw)

**Please refer to Appendix 2.4 for the above calculated noise reduction level for Baffle Type Acoustic Window.

Appendix 2.3 - (AM Peak) Predicted Road Traffic Noise Reduction Level (L10, dB(A)) during AM Peak Hour of Year 2042 with Noise Mitigation Measures at Proposed Development - Mitigated Scenario

		RG01	R101	R102	R103	R104	R105	RT01	RT02	RT03	RT04a	RT04b	RT05	RT06	R901	R902
Noise Mitigation		-	Acw	Acw	-	-	-	Acw	Acw	-	-	-	-	-	-	-
Floor	mPD	L10 1-hour, dB(A)														
G/F	10.4	70	/					/							/	
1/F	15.4	/	69	67	49	59	61									
2/F	18.5		/					67	67	50	55	-	59	61		
3/F	21.7							67	66	50	-	49	60	61		
4/F	24.8							67	66	50	55	-	61	62		
5/F	28							67	66	50	-	49	62	62		
6/F	31.1							67	66	50	55	-	62	62		
7/F	34.3							67	66	51	56	-	63	63		
9/F	40.6							/							57	57
Max. Level,dB(A)		70	69	67	49	59	61	67	67	51	56	49	63	63	57	57
Noise Criteria		70	70	70	55	70	70	70	70	70	70	55	70	70	70	70
Compliance?		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

**The predicted noise level is not the actual noise level at the external facade after the application of baffle type acoustic window . These predicted noise levels are the equivalent noise levels at 1m from the external facade after accounting the reduction in noise levels inside the flat offered by the proposed baffle type acoustic window.

Compliance Rate

No. of units counted with noise exceedance:	0
Total no. of units at Subject Site	26
Compliance Rate (%):	100.0%

Appendix 2.4

Estimation of Maximum Allowed Sound Attenuation of Baffle Type Acoustic Window

Appendix 2.4 - Estimation of Maximum Allowed Sound Attenuation of Baffle Type Acoustic Window

Table of Major Parameters and Room Size of Proposed Development and Corresponding Reference Case, and Sound Attenuation Adjustment

Floor	Room	NSR IDs	Window/ Door	Proposed Development						Reference Case							Adjustment: 10xlog(RA / RAref) (adjust downward only), dB(A) (RAref)	Adjusted sound attenuation, dB(A)
				Outer opening area, m2	Inner opening area, m2	Air gap, m	Overlapping length, m	MPA applied? ***	Room area (RA), m2	Outer opening area, m2	Inner opening area, m2	Air gap, m	Overlapping length, m	MPA applied?	Room area (RAref), m2	Ref. sound attenuation, dB(A)		
1/F	Ward	R101	Window	2.33	1.12	0.1	0.275	No	28.98	3.2	3.8	0.1	0.275	No	38.3	8.8	-1.2	7.6
1/F	Ward	R102	Window	3.18	0.12	0.1	0.275	No	42.35	3.2	3.8	0.1	0.275	No	38.3	8.8	0.0	8.8
2/F-7-F	Ward	RT01	Window	2.33	1.12	0.1	0.275	No	47.65	3.2	3.8	0.1	0.275	No	38.3	8.8	0.0	8.8
2/F-7-F	Ward	RT02	Window	3.18	0.12	0.1	0.275	No	47.80	3.2	3.8	0.1	0.275	No	38.3	8.8	0.0	8.8

The dimensions of major parameters for the proposed baffle type acoustic window for the Proposed Development as shown in the above table, are subject to detailed design stage.

Appendix 3.1

Inventory of Potential Fixed Noise Sources

Noise Source ID	Description of Noise Sources	Sources	SWL, dB(A), L_{eq} (30 min)				Source Location		Directivity Factor (Q)	No. of Plant
		Existing/ Planned	Daytime & Evening Time (0700-2300)	Ref	Nighttime (2300-0700)	Ref	X	Y		
F01	VRV at the roof of Kowloon Ling Liang Church	Existing	71	[19]	OFF	[19]	837213.04	820947.14	2	1
F02	VRV at the roof of Kowloon Ling Liang Church	Existing	71	[19]	OFF	[19]	837214.96	820947.08	2	1
F03	VRV at the roof of Kowloon Ling Liang Church	Existing	71	[19]	OFF	[19]	837216.91	820946.96	2	1
F04	VRV at the roof of Kowloon Ling Liang Church	Existing	71	[19]	OFF	[19]	837214.89	820945.05	2	1
F05	VRV at the roof of Kowloon Ling Liang Church	Existing	71	[19]	OFF	[19]	837216.86	820944.91	2	1
F06	VRV at the roof of Kowloon Ling Liang Church	Existing	71	[20]	OFF	[20]	837215.72	820942.99	2	1
F07	VRV at the roof of Kowloon Ling Liang Church	Existing	65	[21]	OFF	[21]	837212.22	820945.13	2	1
F08	VRV at the roof of Kowloon Ling Liang Church	Existing	65	[21]	OFF	[21]	837212.14	820943.05	2	1
F09	Condensing Unit at the roof of Kowloon Ling Liang Church	Existing	57	[17]	OFF	[17]	837211.27	820939.92	2	1
F10	Condensing Unit at the roof of Kowloon Ling Liang Church	Existing	57	[17]	OFF	[17]	837212.50	820939.85	2	1
F11	VRV at the roof of Kowloon Ling Liang Church	Existing	68	[16]	OFF	[16]	837213.72	820939.72	2	1
F12	VRV at the roof of Kowloon Ling Liang Church	Existing	58	[11]	OFF	[11]	837219.06	820937.44	2	1
F13	Condensing Unit at the roof of Kowloon Ling Liang Church	Existing	57	[17]	OFF	[17]	837223.80	820941.55	2	1
F14	Condensing Unit at the roof of Kowloon Ling Liang Church	Existing	57	[17]	OFF	[17]	837225.61	820941.47	2	1
F15	Condensing Unit at the roof of Kowloon Ling Liang Church	Existing	67	[18]	OFF	[18]	837233.69	820941.23	2	1
F16	VRV at the roof of Kowloon Ling Liang Church	Existing	68	[22]	OFF	[22]	837238.86	820944.23	2	1
F17	VRV at the roof of Kowloon Ling Liang Church	Existing	68	[22]	OFF	[22]	837238.98	820946.53	2	1
F18	VRV at the roof of Kowloon Ling Liang Church	Existing	68	[22]	OFF	[22]	837237.10	820946.61	2	1
F19	Chiller at the roof of The Grandeur (Block 1)	Existing	68	[22]	OFF	[22]	837231.03	821184.01	2	1
F20	Chiller at the roof of The Grandeur (Block 1)	Existing	68	[22]	OFF	[22]	837233.30	821183.90	2	1
F21	Chiller at the roof of The Grandeur (Block 1)	Existing	68	[22]	OFF	[22]	837235.54	821184.46	2	1
F22	Chiller at the roof of The Grandeur (Block 1)	Existing	68	[22]	OFF	[22]	837235.70	821185.93	2	1
F23	Chiller at the roof of The Grandeur (Block 1)	Existing	68	[22]	OFF	[22]	837235.81	821188.20	2	1
F24	Chiller at the roof of The Grandeur (Block 1)	Existing	68	[22]	OFF	[22]	837233.35	821187.91	2	1
F25	Chiller at the roof of The Grandeur (Block 1)	Existing	68	[22]	OFF	[22]	837231.09	821188.08	2	1
F26	Cooling Tower at the roof of Smart A	Existing	82	[1]	OFF	[1]	837331.64	820957.79	2	1
F27	Chiller at the roof of Smart A	Existing	83	[6]	OFF	[6]	837330.83	820956.20	2	1
F28	Chiller at the roof of Smart A	Existing	83	[6]	OFF	[6]	837329.41	820955.25	2	1
F29	Chiller at the roof of Smart A	Existing	83	[6]	OFF	[6]	837328.42	820956.74	2	1
F30	Chiller at the roof of Smart A	Existing	83	[6]	OFF	[6]	837329.83	820957.69	2	1
F31	Chiller at the roof of Hang Seng Kowloon City Building	Existing	92	[9]	OFF	[9]	837347.09	820950.24	2	1
F32	Chiller at the roof of Hang Seng Kowloon City Building	Existing	92	[9]	OFF	[9]	837347.05	820948.18	2	1
F33	Cooling Tower at the roof of St.Teresa Hospital (North Wing)	Existing	88	[2]	88	[2]	837057.24	820849.86	2	1
F34	Cooling Tower at the roof of St.Teresa Hospital (North Wing)	Existing	88	[2]	88	[2]	837064.78	820851.35	2	1
F35	Cooling Tower at the roof of St.Teresa Hospital (North Wing)	Existing	88	[2]	88	[2]	837075.31	820851.44	2	1
F36	Cooling Tower at the roof of St.Teresa Hospital (North Wing)	Existing	88	[2]	88	[2]	837081.72	820852.75	2	1
F37	Chiller at the roof of St.Teresa Hospital (East Wing)	Existing	98	[8]	98	[8]	837114.21	820857.93	2	1
F38	Chiller at the roof of St.Teresa Hospital (East Wing)	Existing	98	[8]	98	[8]	837117.13	820858.51	2	1
F39	Chiller at the roof of St.Teresa Hospital (East Wing)	Existing	98	[8]	98	[8]	837116.49	820853.68	2	1
F40	Chiller at the roof of St.Teresa Hospital (Extension Building)	Existing	85	[10]	85	[10]	837109.05	820782.82	2	1
F41	Chiller at the roof of St.Teresa Hospital (Extension Building)	Existing	85	[10]	85	[10]	837110.13	820777.87	2	1
F42	Chiller at the roof of St.Teresa Hospital (Extension Building)	Existing	85	[10]	85	[10]	837071.33	820774.80	2	1
F43	Chiller at the roof of St.Teresa Hospital (Extension Building)	Existing	85	[10]	85	[10]	837072.30	820770.34	2	1
F44	Chiller at the roof of St.Teresa Hospital (Extension Building)	Existing	96	[7]	96	[7]	837074.42	820742.90	2	1
F45	Chiller at the roof of St.Teresa Hospital (Extension Building)	Existing	96	[7]	96	[7]	837066.10	820741.17	2	1
F46	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	72	[15]	72	[15]	837169.72	820826.96	2	1
F47	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	70	[14]	70	[14]	837171.90	820827.47	2	1
F48	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	70	[14]	70	[14]	837172.81	820823.15	2	1
F49	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	70	[14]	70	[14]	837171.13	820822.82	2	1
F50	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	70	[14]	70	[14]	837169.41	820822.47	2	1
F51	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	72	[15]	72	[15]	837169.86	820820.07	2	1

Noise Source ID	Description of Noise Sources	Sources	SWL, dB(A), L_{eq} (30 min)				Source Location		Directivity Factor (Q)	No. of Plant
		Existing/ Planned	Daytime & Evening Time (0700-2300)	Ref	Nighttime (2300-0700)	Ref	X	Y		
F52	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	72	[15]	72	[15]	837170.27	820817.88	2	1
F53	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	68	[12]	68	[12]	837166.58	820816.43	2	1
F54	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	71	[13]	71	[13]	837164.49	820816.02	2	1
F55	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	72	[15]	72	[15]	837161.68	820814.84	2	1
F56	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	70	[14]	70	[14]	837161.20	820817.27	2	1
F57	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	72	[15]	72	[15]	837160.74	820819.64	2	1
F58	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	72	[15]	72	[15]	837163.84	820819.49	2	1
F59	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	72	[15]	72	[15]	837165.93	820819.85	2	1
F60	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	72	[15]	72	[15]	837157.84	820822.57	2	1
F61	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	70	[14]	70	[14]	837158.12	820824.51	2	1
F62	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	70	[14]	70	[14]	837159.94	820824.91	2	1
F63	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	72	[15]	72	[15]	837162.33	820822.22	2	1
F64	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	70	[14]	70	[14]	837164.48	820822.63	2	1
F65	Chiller at the roof of Hong Kong Eye Hospital	Existing	97	[5]	97	[5]	837028.79	820679.62	2	1
F66	Chiller at the roof of Hong Kong Eye Hospital	Existing	97	[5]	97	[5]	837034.44	820680.60	2	1
F67	Chiller at the roof of Hong Kong Eye Hospital	Existing	96	[7]	96	[7]	837043.09	820652.45	2	1
F68	Cooling Tower at the roof of Kowloon City Law Courts Building	Existing	92	[3]	OFF	[3]	837139.21	820699.38	2	1
F69	Cooling Tower at the roof of Kowloon City Law Courts Building	Existing	92	[3]	OFF	[3]	837139.68	820696.82	2	1
F70	Chiller at the roof of Kowloon City Law Courts Building	Existing	94	[4]	OFF	[4]	837137.74	820692.56	2	1
F71	Chiller at the roof of Kowloon City Law Courts Building	Existing	94	[4]	OFF	[4]	837138.67	820686.74	2	1

Notes:

[1] The noise level is referenced to Ryowo FT-20.
[2] The noise level is referenced to Ryowo FC-300.
[3] The noise level is referenced to Ryowo FWS-127-7.5.
[4] The noise level is referenced to Trane CGAM 70.
[5] The noise level is referenced to Trane RTAC 300 .
[6] The noise level is referenced to York YLCA 0080 T-TP.
[7] The noise level is referenced to York YLAA 0485SE.
[8] The noise level is referenced to York YCAS 0835 EB.
[9] The noise level is referenced to Carrier 30RB 090R.
[10] The noise level is referenced to McQuay MCS135.1.
[11] The noise level is referenced to Mitsubishi FDC125VS.
[12] The noise level is referenced to Mitsubishi FDC400KXE6.
[13] The noise level is referenced to Mitsubishi FDC450KXE6.
[14] The noise level is referenced to Mitsubishi FDC504KXE6.
[15] The noise level is referenced to Mitsubishi FDC560KXE6.
[16] The noise level is referenced to Daikin RU08K.
[17] The noise level is referenced to Daikin R50GV1.
[18] The noise level is referenced to Daikin R125FU.
[19] The noise level is referenced to Daikin RUXYQ12AB.
[20] The noise level is referenced to Daikin RXYQ216PBYD.
[21] The noise level is referenced to Daikin RXYQ72PBYD.
[22] The noise level is referenced to Daikin RXYQ96PBYD.

Catalogue of Ryowo FT-20

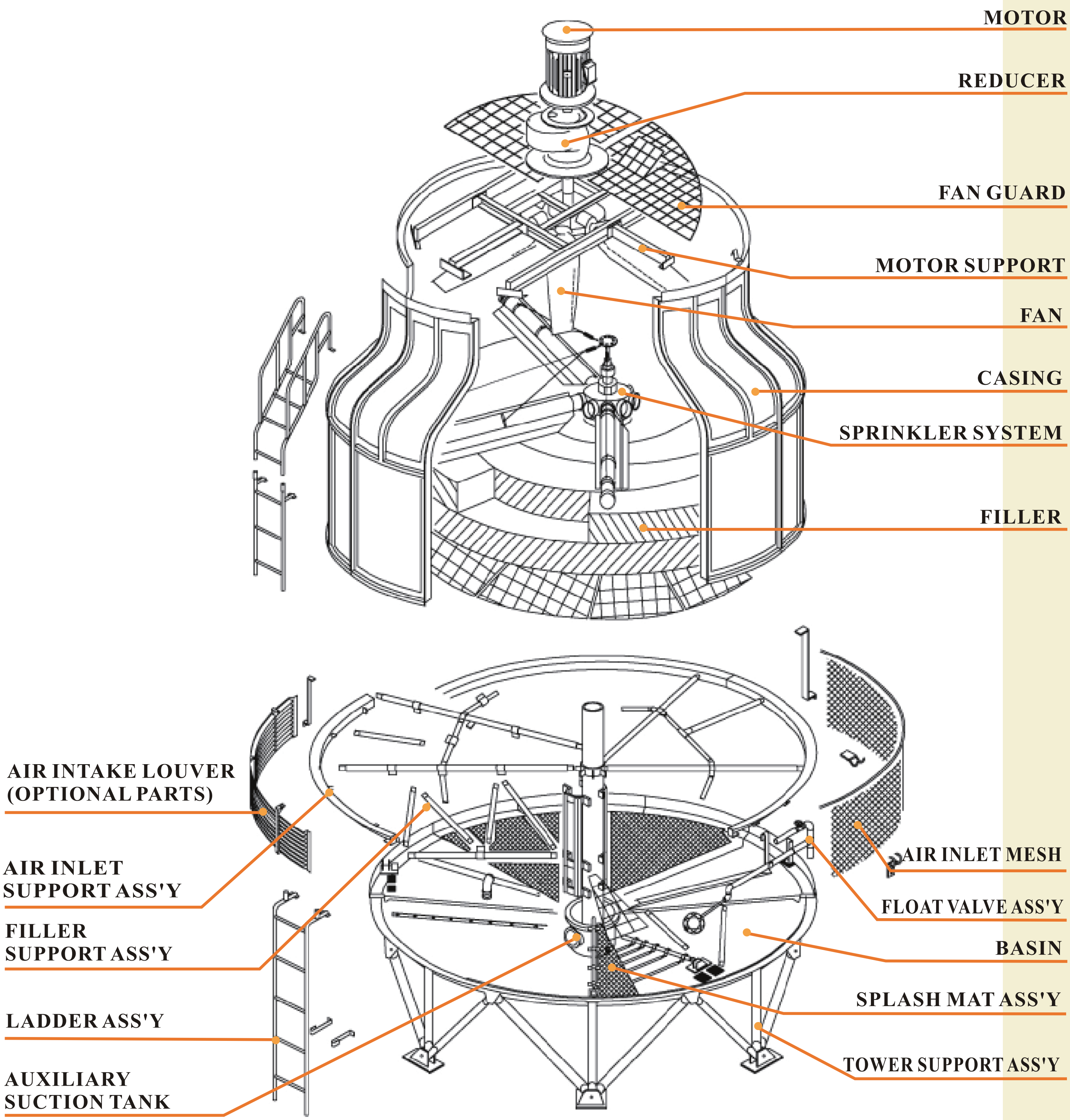
菱和

ryowo™

FRP COUNTER FLOW FT SERIES

COOLING TOWER

STRUCTURE



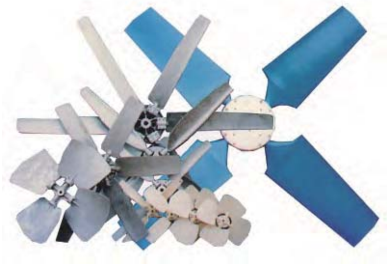
PRINCIPLE OF OPERATION

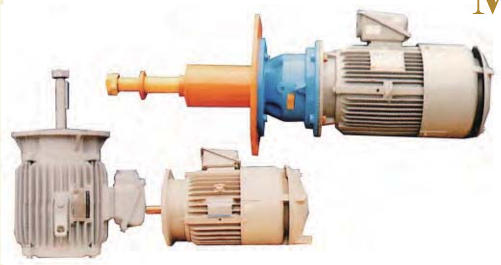
Hot water is distributed over the filler through the low velocity automatic sprinkler system and is mixed with the upward draft of ambient air causing evaporation and thus heat is removed from the water. The cooled water falls into the basin and is pumped to the heat sources for recirculation.

COMPONENT FUNCTION & FEATURE

AXIAL FAN

All fans are induced-draft axial type with adjustable pitch. Material chosen are non-corrosion of plastic, FRP or alu-minium alloy. The high efficiency design ensures low running cost and the lowest possible noise level . Fan blade pitches is factory set and balanced.



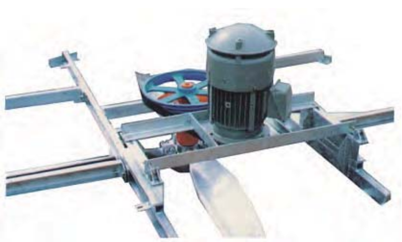


MOTOR

The motors, totally enclosed, fan cooled flange type, 380V/ 3ph/ 50 Hz, induction weather proof, are specially designed for RYOWO. Motors from 5.5 kw and up are Y- start and below are direct-on-line start.

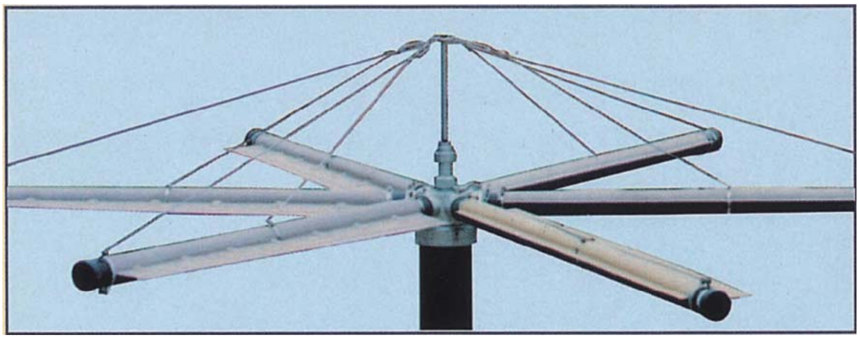
TRANSMISSION SYSTEM

The fans of small models are designed to be driven by low speed motor of 6,8,10 or 12 poles which can minimise the numbers of transmission parts used. For large models, the fans are vee-belt or gear driven with 4 poles motors so the speed of fans can be adjustable to suit various application.



SPRINKLER SYSTEM

Automatic rotary sprinkler system with rotary head and sprinkler pipe distributes the hot water over the entire face area of the filler. Sprinkler pipes are non-clogging, require low-pressure to operate, and assures uniform water flow with minimal operating pump head. The F.R.P. eliminators attached to sprinkler pipes are specifically designed for Low pre Ssure drop and minimises the drift loss of water.

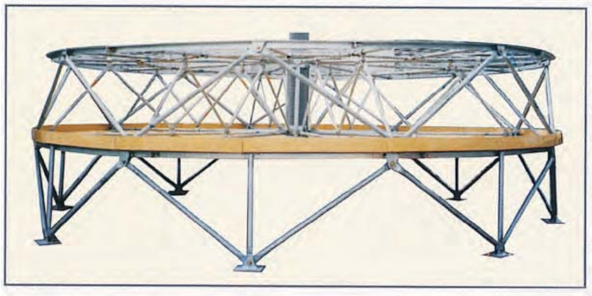


COMPONENT FUNCTION & FEATURE

CASING & BASIN

F.R.P. (fibreglass reinforced polyester) formed casings are durable, non-corrosive, weather-proof, and light weight. Cylindrical form is shaped to fully withstand wind pressure, vibration and such F.R.P. casings obliviate need for painting, reduce maintenance costs and guarantee long dependable service.

Bowl-shape basins are also made from F.R.P. with built in socket or flanged outlets for piping connections. For large models, a F.R.P. aux. suction tank is employed and fitted with piping flanges or sockets.



STEEL STRUCTURE

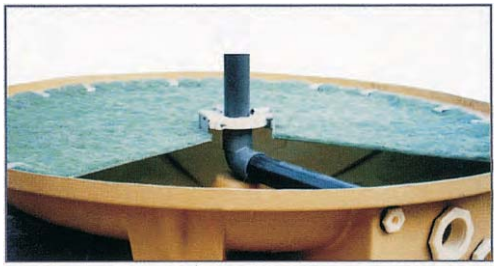
All supporting steel members are hot-dip galvanized to minimise rusting and corrosion ensuring long service life even in corrosive atmosphere. The stainless hardware members are also available upon request.

FILLER

High performance RYOWO V-30 film filler is the heart of the tower. The specially formed PVC sheets maximize the air/water contact area and minimise air pressure drop to assure efficient heat transfer while keeping fan power requirement low. It is virtually immune to corrosion and decay.

Eliminator

Specially made drift eliminator consisted of 2 types of sheets forms a “v” shape path for the transmission of the cooling tower discharge air stream. The small water droplets in the stream impact the surfaces of the drift eliminator sheets and are separated from the stream such that the drift loss ratio maintain at less than 0.001% of circulating water flow rate.



SPLASH MAT (LOW NOISE MODELS)

Specially designed noise absorbing splash mat is provided for low noise models on the water basin to minimise the unpleasant water dripping noise in the basin.

SPECIFICATION FOR FT SERIES

SPECIFICATION FOR FT SERIES

ITEM	MODEL			FT-8	FT-10	FT-15	FT-20	FT-25	FT-30	FT-40	FT-50	FT-60	FT-80	FT-100	FT-125	FT-150	FT-175	FT-200	FT-225	FT-250	FT-300	FT-350	FT-400	FT-500	FT-600	FT-700	FT-800	FT-1000
Capacity	27 ℃ WB	Circulating water flow rate	m^3/ hr	6.2	7.8	11.7	15.6	19.5	23.4	31.2	39.1	46.9	62.5	78.1	97.7	117.2	136.7	156.2	175.8	195.3	234.4	273.4	312.5	390.6	468.7	546.8	625.0	781.2
		Make-up water (Approx.)	m^3/ hr	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.6	0.7	0.9	1.1	1.4	1.7	2.0	2.2	2.5	2.8	3.4	3.9	4.5	5.6	6.7	7.8	8.9	11.2
	28 ℃ WB	Circulating water flow rate	m^3/ hr	5.6	7.4	10.6	14.4	17.8	21.5	28.7	36.3	42.5	58.8	70.6	88.2	107.5	125.0	142.5	160.0	176.2	212.5	250.0	287.5	337.5	431.2	512.4	575.0	718.7
		Make-up water (Approx.)	m^3/ hr	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.6	0.8	1.0	1.3	1.5	1.8	2.0	2.3	2.5	3.0	3.6	4.1	4.8	6.2	7.3	8.2	10.3
		Air flow rate (Approx.)	m^3/ min	70	85	140	160	230	280	330	420	450	700	830	950	1150	1200	1250	1600	1750	2000	2200	2450	2700	3500	3750	5000	5400
		Hot water temperature	℃	37																								
		Cold water temperature	℃	32																								
Overall Dimension		Diameter (φ)	mm	920	920	1160	1160	1490	1660	1660	1890	2100	2100	2900	2900	2900	3310	3310	3960	3960	4360	4760	4760	5600	6600	6600	7600	7600
		Height (H)	mm	1560	1700	1585	1835	1945	1885	2035	2110	2300	2475	2910	3110	3110	3300	3450	3920	3920	3990	4195	4255	4590	5310	5510	5660	5860
		Height (w/o motor) (m)	mm	1390	1530	1395	1645	1760	1720	1785	1860	1980	2155	2590	2790	2790	2880	3030	3300	3300	3290	3495	3495	3830	4470	4670	4720	4940
Material		Air inlet mesh		PVC																								
		Basin		FRP																								
		Casing		FRP																								
		Eliminator		FRP																								
		Fan		ABS Plastic								FRP					Aluminium alloy								FRP			
		Filler		PVC																								
		Motor support		Steel (Hot-dip galvanized)																								
		Sprinkler head		ABS Plastic										Aluminium alloy														
		Sprinkler pipe		PVC pipe																								
		Stand pipe		PVC pipe																								
		Structure		Steel (Hot-dip galvanized)																								
Fan		TYPE		Axial-flow																								
		Diameter	mm	550	640			770		930		1200		1500			1800		2400				3000		3400		3700	
		Speed	rpm					970				750					600		450				375		314			
		Driven type		Direct driven															Belt driven						Gear driven			
Motor		TYPE		Totally enclosed fan cooled outdoor 3 phase induction motor																								
		Power source		380V / 3 / 50Hz																								
		Rated output	kw	0.18		0.37		0.75		1.5				2.2			3.7		5.5		7.5		11		15		22	
		No of pole	Pole	6								8					10		4									
Distribution System		TYPE		Automatic sprinkler system																								
		Inlet dia	mm	40		50		80				100		125		150			200					250			300	
		Outlet dia		15		20		40						65					75					100	75		100	
		No of outlet		4								6		4					6						8		10	
Piping		Inlet	mm	40		50		80				100		125		150			200					250			300	
		Outlet	mm	40		50		80				100		125		150			200					250			300	
		Drain	mm					25						50					80					100				
		Overflow	mm					25						50					80					100				
		Float valve	mm					15				20					25		32					50			80	
		Manual make-up	mm					15						20			25		32					50			80	
Weight		Dry weight	Kg	56	65	75	85	105	130	150	180	250	270	500	540	580	870	900	1300	1350	1550	1720	2050	2450	3950	4050	4700	4900
		Operating weight	Kg	140	150	200	210	290	370	390	550	840	860	1600	1640	1680	2170	2200	2700	2750	3350	3720	3950	6150	9350	9450	11900	12100
Noise Level		Sound pressure level	dBA	45.5	47	48	50	52	54	58	59	58	59	61	61.5	62	62	62	63	63	64	64.5	61.5	62	65	66	73	74

NOTE : Nominal cooling capacity is based on 13 ℓ / min / RT (1 RT=3,900 Kcal / hr) at 37°C inlet water tpmperature, 32°C outlet water temperature and 27°C ambient wet bulb temperature.

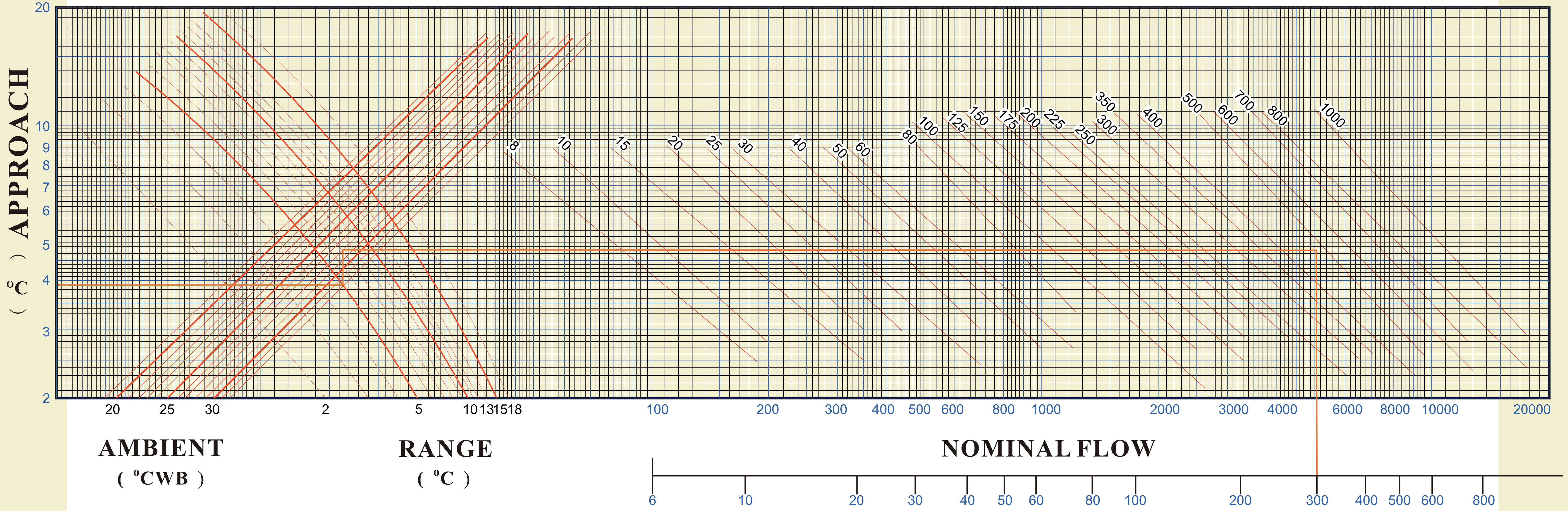
The SPLs are measured 16m horizontally from the edge of the tower at 1.5m above the foundation level.

Pump head is obtained by adding resistance of piping/condenser and the tower height(H).

The unit dimension in this catalogue is metric. Specifications listed in this catalogue are subject to change without further noticefor technical improvement of our products.

FT OR FT/LN SERIES QUICK SELECTION TABLE

(20°CWB~30°CWB)



EXAMPLE:

RATE	:300m³/hr
INLET WATER TEMP	:37°C
OUTLET WATER TEMP	:32°C
WET BULB TEMP	:28°C

RANGE: INLET WATER TEMP-OUTLET WATER TEMP

: 37°C - 32°C = 5°C

APPROACH: OUTLET WATER TEMP -WET BULB TEMP

: 37°C - 32°C = 5°C

TOWER SELECTED: FT - 500 OR FT/LN - 500

COOLING TOWER	CT							
NOMINAL FLOW	m³/hr							
INLET WATER	HWT°C							
OUTLET WATER	CWT°C							
AMBIENT WB	WB°C							
RANGE	(HWT-CWT)°C							
APPROACH	(CWT-WB)°C							
MODEL								

SPECIFICATION FOR FT/LN(LOW NOISE TYPE)

SPECIFICATION FOR FT/LN(LOW NOISE TYPE)

ITEM	MODEL			FT/LN 8	FT/LN 10	FT/LN 15	FT/LN 20	FT/LN 25	FT/LN 30	FT/LN 40	FT/LN 50	FT/LN 60	FT/LN 80	FT/LN 100	FT/LN 125	FT/LN 150	FT/LN 175	FT/LN 200	FT/LN 225	FT/LN 250	FT/LN 300	FT/LN 350	FT/LN 400	FT/LN 500	FT/LN 600	FT/LN 700	FT/LN 800	FT/LN 1000
Capacity	27 °C WB	Circulating water flow rate	m^3/ hr	6.2	7.8	11.7	15.6	19.5	23.4	31.2	39.1	46.9	62.5	78.1	97.7	117.2	136.7	156.2	175.8	195.3	234.4	273.4	312.5	390.6	468.7	546.8	625.0	781.2
		Make-up water (Approx.)	m^3/ hr	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.6	0.7	0.9	1.1	1.4	1.7	2.0	2.2	2.5	2.8	3.4	3.9	4.5	5.6	6.7	7.8	8.9	11.2
	28 °C WB	Circulating water flow rate	m^3/ hr	5.6	7.1	10.6	14.4	17.8	21.5	28.7	36.3	42.5	58.8	70.6	88.2	107.5	125.0	142.5	160.0	176.2	212.5	250.0	287.5	337.5	431.2	512.4	575.0	718.7
		Make-up water (Approx.)	m^3/ hr	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.6	0.8	1.0	1.3	1.5	1.8	2.0	2.3	2.5	3.0	3.6	4.1	4.8	6.2	7.3	8.2	10.3
	Air flow rate (Approx.)		m^3/ min	70	85	140	160	230	280	330	420	450	700	830	950	1150	1200	1250	1600	1750	2000	2200	2450	2700	3500	3750	5000	5400
	Hot water temperature		°C	37																								
	Cold water temperature		°C	32																								
Overall Dimension	Diameter		mm	920	1160	1160	1490	1660	1660	1890	1890	2100	2100	2900	2900	2900	3310	3310	3960	3960	4360	4760	4760	5600	6600	6600	7600	7600
	Height (H)		mm	1755	1620	1870	1945	1885	2145	2220	2220	2340	2515	3060	3260	3260	3450	3600	3920	3920	3990	4195	4255	4590	5310	5510	5660	5860
	Height (w/o motor) (m)		mm	1530	1395	1645	1760	1720	1785	1860	1860	1980	2155	2590	2790	2790	2880	3030	3300	3300	3290	3495	3495	3830	4470	4670	4720	4940
Material	Air inlet mesh			PVC																								
	Basin			FRP																								
	Casing			FRP																								
	Eliminator			FRP																								
	Fan			ABS Plastic					Aluminium alloy																FRP			
	Filler			PVC																								
	Motor support			Steel (Hot-dip galvanized)																								
	Sprinkler head			ABS Plastic										Aluminium alloy														
	Sprinkler pipe			PVC pipe																								
	Stand pipe			PVC pipe																								
	Structure			Steel (Hot-dip galvanized)																								
	Splash mat			Nylon																								
Fan	TYPE			Axial-flow																								
	Diameter		mm	640		770			930			1200		1500			1800		2400				3000		3400		3700	
	Speed		rpm	750					600			500		440			375						314		257			
	Driven type			Direct driven										Belt driven											Gear driven			
Motor	TYPE			Totally enclosed fan cooled outdoor 3 phase induction motor																								
	Power source			380V / 3 / 50Hz																								
	Rated output		kw	0.2		0.37			1.1			1.5		3.7					5.5		7.5		11		15		22	
	No of pole		Pole	8					10			12		4														
Distribution System	TYPE			Automatic sprinkler system																								
	Inlet dia		mm	40	50		80					100		125		150			200					250			300	
	Outlet dia			15	20		40							65					75					100	75		100	
	No of outlet			4								6		4					6						8		10	
Piping	Inlet		mm	40	50		80					100		125		150			200					250			300	
	Outlet		mm	40	50		80					100		125		150			200					250			300	
	Drain		mm	25										50					80					100				
	Overflow		mm	25										50					80					100				
	Float valve		mm	15								20					25		32					50			80	
	Manual make-up		mm	15										20			25		32					50			80	
Weight	Dry weight		Kg	80	85	100	125	145	240	280	290	380	400	600	640	680	970	1000	1400	1450	1700	1920	2250	2650	4250	4350	5100	5300
	Operating weight		Kg	160	205	220	290	375	470	625	635	970	990	1700	1740	1780	2270	2300	2800	2850	3500	3920	4250	6350	9650	9750	12300	12500
Noise Level	Sound pressure level		dBA	40	41	42.5	43.5	44.5	46	47	48	48	49.5	52	52.5	53	54	54.5	55	55	56	57	58	60	62	62.5	65	66

GUARANTEE:

All components are guaranteed against defective material for a period of one (1) year.

When return to RYOWO with transportation prepaid , all parts found by factory inspection to be defective will be repaired replaced without charge , FOB HONG KONG.

No liability will be assumed for loss or damage resulting from misuse of products.

APPLICATION

For inquiry on RYOWO cooling towers , please contact local agents and specify the following conditions:

a). Circulating water flow

b). Inlet water temperature

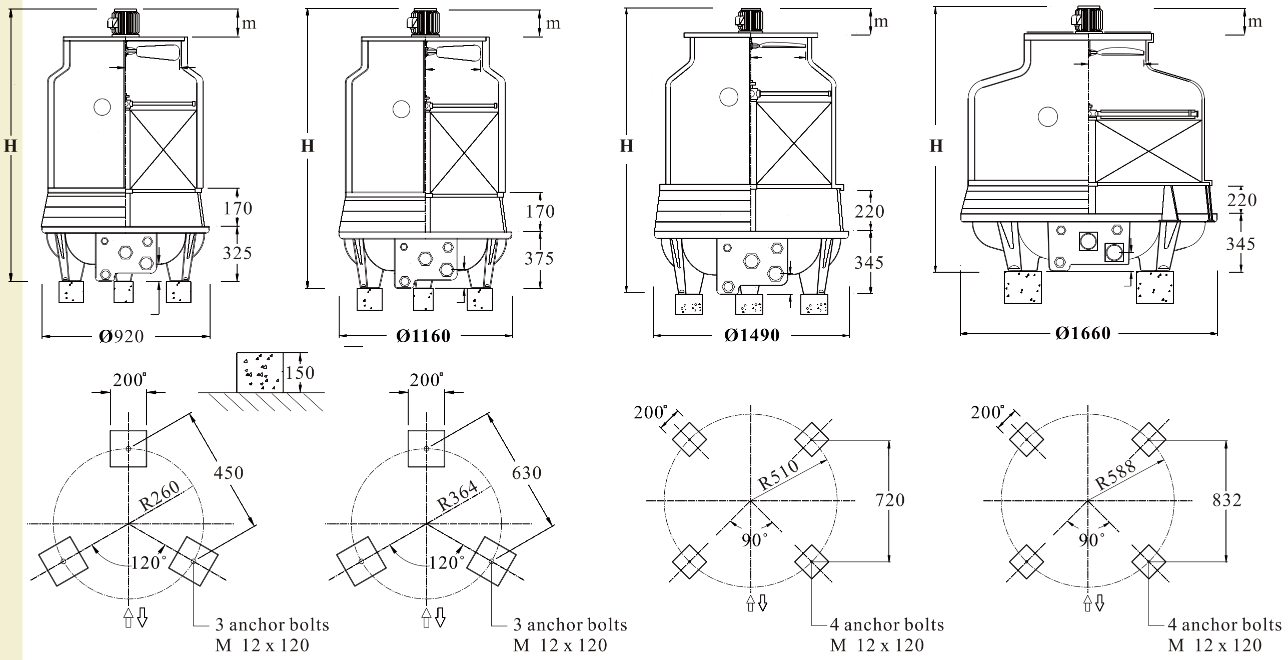
c). outlet water temperature

d). ambient wet bulb temperature

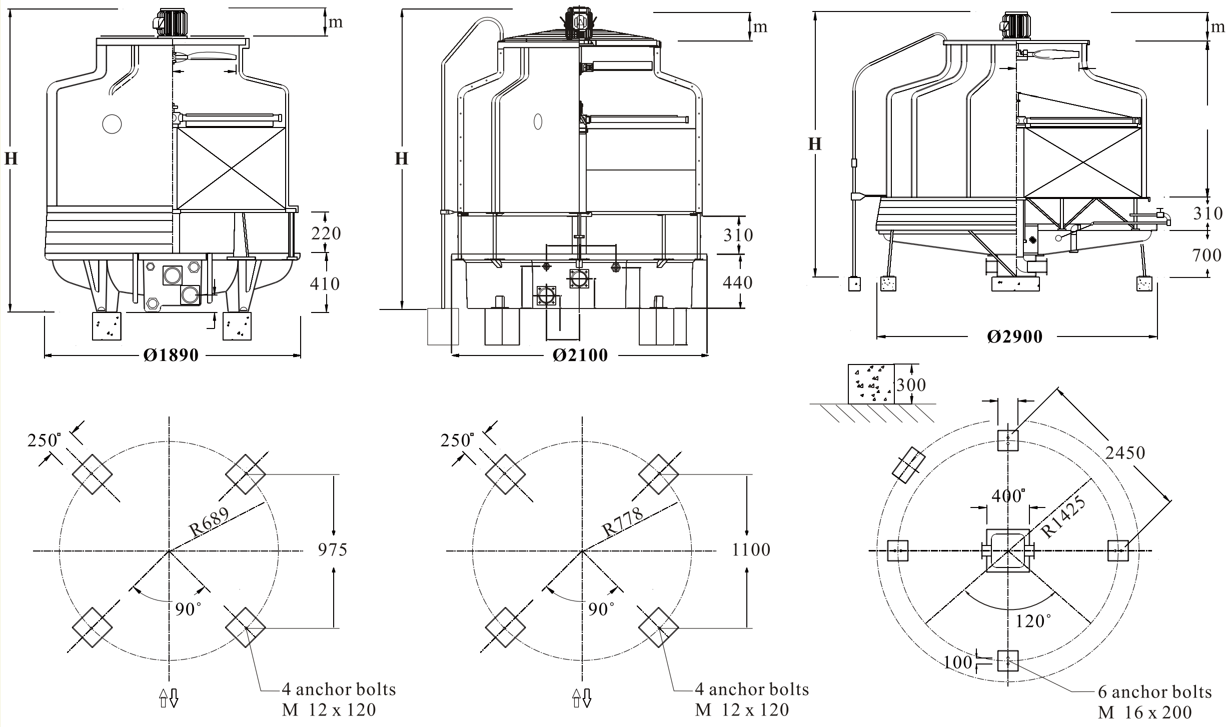
e). power sources-voltage & frequency

TOWER FOUNDATION

FT-8 10 FT/LN-8 FT-15·20 FT/LN-10 15 FT-25 FT/LN-20 FT-30 40 FT/LN-25 30

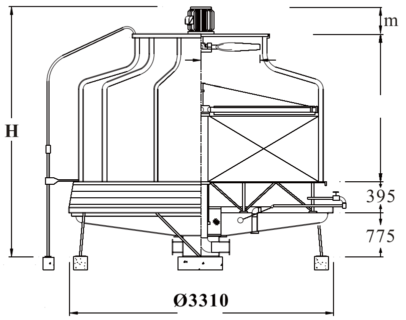


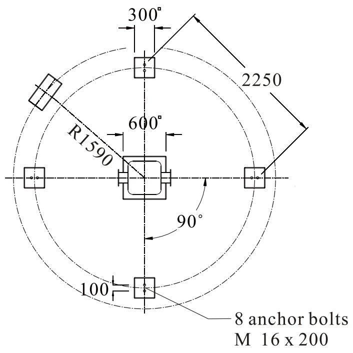
FT-50 FT/LN-40·50 FT · FT/LN-60·80 FT · FT/LN-100 · 125·150



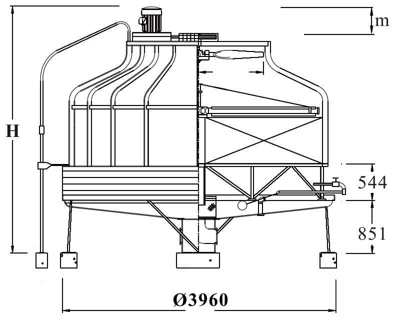
TOWER FOUNDATION

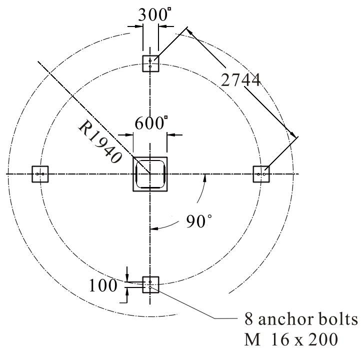
FT· FT/LN-175· 200



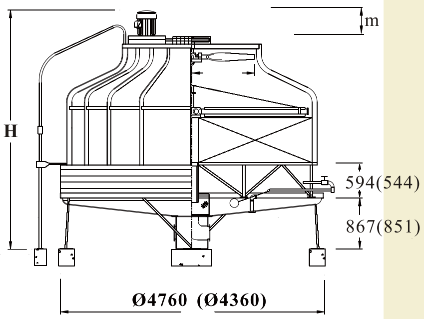


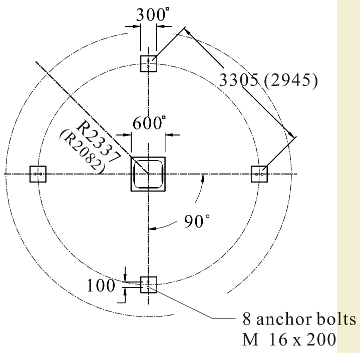
FT· FT/LN-225·250



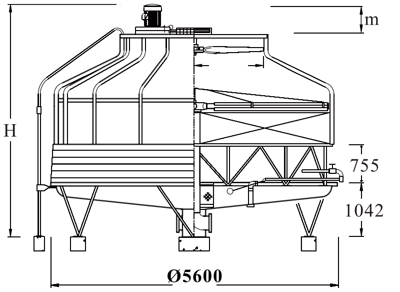


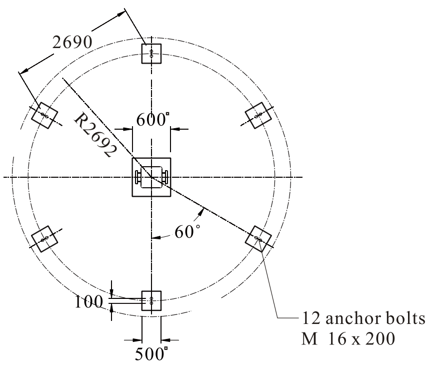
FT· FT/LN-(300) ·350·400



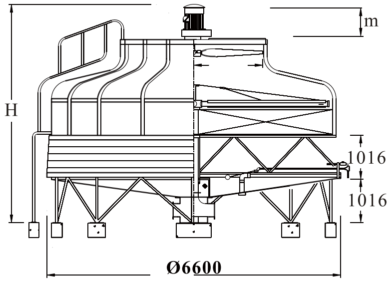


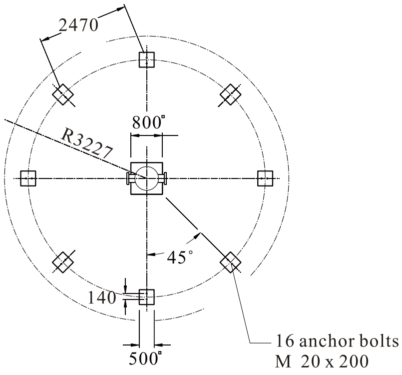
FT· FT/LN- 500



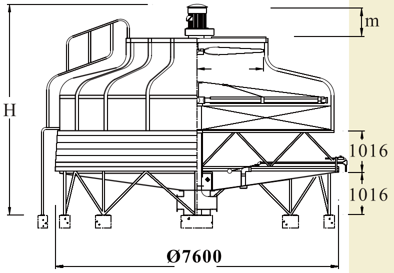


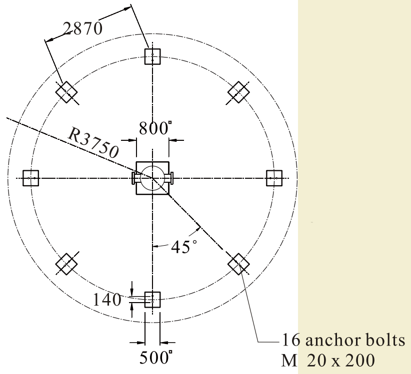
FT· FT/LN-600 · 700





FT· FT/LN-800 · 1000





AVAILABLE OPTIONAL ACCESSORIES

DISCHARGE HOOD

This option is available on small models. It provides another direction of discharge air leaving the tower. It is made of F.R.P. with services door and wiring mesh on the air outlet.

HIGH TEMPERATURE FILLER

For high temperature operation such as waste water treatment , P.P. filler can withstand up to 80℃inlet water. (Special arrangement should be made for other components, please contact us for details.)

STAINLESS STEEL COMPONENTS

As an option, we can provide type 304 stainless steel major steel members, bolts and nuts.

TWO-SPEED MOTOR

As an option, two-speed motor can be provided in 4P/6P single winding configeration. A considerable reduction in noise and energy management can be achieved.

F.R.P. AIR INLET LOUVER

Inlet louver constructed of F.R.P. material can be provided, which matches the rest of tower and prevents water splashing out from the tower.

BASIN HEATERS

Electric immersion heaters with thermostat and control box are available to keep the basin water from freezing in sub-zero weather.

BODY COLOR

Cooling tower installed on the roof of building may be barely noticeable from the ground, and a colored cooling tower matching to building color will make it "good look".

JOB REFERENCES

FT-400 X 2
Bank of China, Shen Zhen

FT/LN-600 X 11
Hotel Lisboa, Macau

FT-1000 X 3
FT-500 X 10

CITIC Plaza, Guangzhou

FT/LN-300 X 6
Hong Kong University

FT-200 X 2
Miami University, U.S.A

RYOWO (HOLDING) CO .,LTD.

Rm. 1218, Angyle Centre 1,
688 Nathan Rd., MongKok,
Kowloon, Hong Kong

Tel : (852) 23918381
Fax: (852) 27893802

Http://www.ryowo.com
e-mail: ryinfo@ryowo.com

DONGGUAN RYOWO COOLING TOWER CO., LTD.

No.263 MeiJing Road West,Dalang,Dongguan,Guangdong,PRC

Tel : (86)-769 89399698
(86)-769 89399699
Fax: (86)-769 82973398
Postal Code: 523795

ryowo™

COOLING TOWER MANUFACTURER SINCE 1978

BROCH -EN-(03)-2013

Appendix 3.2

Fixed Noise Impact Assessment Results

Prediction of Fixed Noise Source Impact on Planned NSR

NSR Labels	Nature of Use	Existing/ Planned Uses	Location		ASR	Noise Criteria (ANL), L_{eq} (30 min)		Noise Source ID	Description of Noise Sources	SWL, dB(A), L_{eq} (30 min)		Source Location			Directivity Factor (Q)	No. of Plant	% on-time within 30min (Daytime Peak)	% on-time within 30min (Night-time Peak)	Distance to NSR, d (m)	Correction for, dB(A)							Noise Impact at NSR, dB(A)	
			X	Y		Daytime & Evening Time (0700-2300)	Nighttime (2300-0700)			Daytime & Evening Time (0700-2300)	Nighttime (2300-0700)	X	Y	Z, mPD						Distance	% on time (Daytime)	% on time (Night-time)	Screening by Features [1]	Silencer	Tonality	Facade	Daytime & Evening Period	Night-time
FN01	Residential	Planned	837270	820877	C	70	60	F01	VRV at the roof of Kowloon Ling Liang Church	71	OFF	837213	820947	0.0	2	1	100.0%	N.A.	90	-47.1	0	N.A.	0	0	3	3	29.9	N.A.
								F02	VRV at the roof of Kowloon Ling Liang Church	71	OFF	837215	820947	0.0	2	1	100.0%	N.A.	89	-47.0	0	N.A.	0	0	3	3	30.0	N.A.
								F03	VRV at the roof of Kowloon Ling Liang Church	71	OFF	837217	820947	0.0	2	1	100.0%	N.A.	88	-46.9	0	N.A.	0	0	3	3	30.1	N.A.
								F04	VRV at the roof of Kowloon Ling Liang Church	71	OFF	837215	820945	0.0	2	1	100.0%	N.A.	88	-46.9	0	N.A.	0	0	3	3	30.1	N.A.
								F05	VRV at the roof of Kowloon Ling Liang Church	71	OFF	837217	820945	0.0	2	1	100.0%	N.A.	86	-46.7	0	N.A.	0	0	3	3	30.3	N.A.
								F06	VRV at the roof of Kowloon Ling Liang Church	71	OFF	837216	820943	0.0	2	1	100.0%	N.A.	85	-46.6	0	N.A.	0	0	3	3	30.4	N.A.
								F07	VRV at the roof of Kowloon Ling Liang Church	65	OFF	837212	820945	0.0	2	1	100.0%	N.A.	89	-47.0	0	N.A.	0	0	3	3	24.0	N.A.
								F08	VRV at the roof of Kowloon Ling Liang Church	65	OFF	837212	820943	0.0	2	1	100.0%	N.A.	88	-46.9	0	N.A.	0	0	3	3	24.1	N.A.
								F09	Condensing Unit at the roof of Kowloon Ling Liang Church	57	OFF	837211	820940	0.0	2	1	100.0%	N.A.	86	-46.7	0	N.A.	0	0	3	3	16.3	N.A.
								F10	Condensing Unit at the roof of Kowloon Ling Liang Church	57	OFF	837213	820940	0.0	2	1	100.0%	N.A.	85	-46.6	0	N.A.	0	0	3	3	16.4	N.A.
								F11	VRV at the roof of Kowloon Ling Liang Church	68	OFF	837214	820940	0.0	2	1	100.0%	N.A.	84	-46.5	0	N.A.	0	0	3	3	27.5	N.A.
								F12	VRV at the roof of Kowloon Ling Liang Church	58	OFF	837219	820937	0.0	2	1	100.0%	N.A.	79	-46.0	0	N.A.	0	0	3	3	18.0	N.A.
								F13	Condensing Unit at the roof of Kowloon Ling Liang Church	57	OFF	837224	820942	0.0	2	1	100.0%	N.A.	79	-46.0	0	N.A.	0	0	3	3	17.0	N.A.
								F14	Condensing Unit at the roof of Kowloon Ling Liang Church	57	OFF	837226	820941	0.0	2	1	100.0%	N.A.	78	-45.9	0	N.A.	0	0	3	3	17.1	N.A.
								F15	Condensing Unit at the roof of Kowloon Ling Liang Church	67	OFF	837234	820941	0.0	2	1	100.0%	N.A.	74	-45.4	0	N.A.	0	0	3	3	27.6	N.A.
								F16	VRV at the roof of Kowloon Ling Liang Church	68	OFF	837239	820944	0.0	2	1	100.0%	N.A.	74	-45.4	0	N.A.	0	0	3	3	28.6	N.A.
								F17	VRV at the roof of Kowloon Ling Liang Church	68	OFF	837239	820947	0.0	2	1	100.0%	N.A.	76	-45.6	0	N.A.	0	0	3	3	28.4	N.A.
								F18	VRV at the roof of Kowloon Ling Liang Church	68	OFF	837237	820947	0.0	2	1	100.0%	N.A.	77	-45.7	0	N.A.	0	0	3	3	28.3	N.A.
								F19	Chiller at the roof of The Grandeur (Block 1)	68	OFF	837231	821184	0.0	2	1	100.0%	N.A.	310	-57.8	0	N.A.	0	0	3	3	16.2	N.A.
								F20	Chiller at the roof of The Grandeur (Block 1)	68	OFF	837233	821184	0.0	2	1	100.0%	N.A.	309	-57.8	0	N.A.	0	0	3	3	16.2	N.A.
								F21	Chiller at the roof of The Grandeur (Block 1)	68	OFF	837236	821184	0.0	2	1	100.0%	N.A.	309	-57.8	0	N.A.	0	0	3	3	16.2	N.A.
								F22	Chiller at the roof of The Grandeur (Block 1)	68	OFF	837236	821186	0.0	2	1	100.0%	N.A.	311	-57.9	0	N.A.	0	0	3	3	16.1	N.A.
								F23	Chiller at the roof of The Grandeur (Block 1)	68	OFF	837236	821188	0.0	2	1	100.0%	N.A.	313	-57.9	0	N.A.	0	0	3	3	16.1	N.A.
								F24	Chiller at the roof of The Grandeur (Block 1)	68	OFF	837233	821188	0.0	2	1	100.0%	N.A.	313	-57.9	0	N.A.	0	0	3	3	16.1	N.A.
								F25	Chiller at the roof of The Grandeur (Block 1)	68	OFF	837231	821188	0.0	2	1	100.0%	N.A.	314	-57.9	0	N.A.	0	0	3	3	16.1	N.A.
								F26	Cooling Tower at the roof of Smart A	82	OFF	837332	820958	0.0	2	1	100.0%	N.A.	102	-48.1	0	N.A.	-10	0	3	3	29.9	N.A.
								F27	Chiller at the roof of Smart A	83	OFF	837331	820956	0.0	2	1	100.0%	N.A.	100	-48.0	0	N.A.	-10	0	3	3	31.0	N.A.
								F28	Chiller at the roof of Smart A	83	OFF	837329	820955	0.0	2	1	100.0%	N.A.	98	-47.9	0	N.A.	-10	0	3	3	31.1	N.A.
								F29	Chiller at the roof of Smart A	83	OFF	837328	820957	0.0	2	1	100.0%	N.A.	99	-47.9	0	N.A.	-10	0	3	3	31.1	N.A.
								F30	Chiller at the roof of Smart A	83	OFF	837330	820958	0.0	2	1	100.0%	N.A.	101	-48.0	0	N.A.	-10	0	3	3	31.0	N.A.
								F31	Chiller at the roof of Hang Seng Kowloon City Building	92	OFF	837347	820950	0.0	2	1	100.0%	N.A.	106	-48.5	0	N.A.	-10	0	3	3	39.0	N.A.
								F32	Chiller at the roof of Hang Seng Kowloon City Building	92	OFF	837347	820948	0.0	2	1	100.0%	N.A.	105	-48.4	0	N.A.	-10	0	3	3	39.1	N.A.
								F33	Cooling Tower at the roof of St.Teresa Hospital (North Wing)	88	88	837057	820850	0.0	2	1	100.0%	100.0%	214	-54.6	0	0	-10	0	3	3	29.4	29.4
								F34	Cooling Tower at the roof of St.Teresa Hospital (North Wing)	88	88	837065	820851	0.0	2	1	100.0%	100.0%	207	-54.3	0	0	-10	0	3	3	29.7	29.7
								F35	Cooling Tower at the roof of St.Teresa Hospital (North Wing)	88	88	837075	820851	0.0	2	1	100.0%	100.0%	196	-53.9	0	0	-10	0	3	3	30.1	30.1
								F36	Cooling Tower at the roof of St.Teresa Hospital (North Wing)	88	88	837082	820853	0.0	2	1	100.0%	100.0%	190	-53.6	0	0	-10	0	3	3	30.4	30.4
								F37	Chiller at the roof of St.Teresa Hospital (East Wing)	98	98	837114	820858	0.0	2	1	100.0%	100.0%	157	-51.9	0	0	-10	0	3	3	42.1	42.1
								F38	Chiller at the roof of St.Teresa Hospital (East Wing)	98	98	837117	820859	0.0	2	1	100.0%	100.0%	154	-51.7	0	0	-10	0	3	3	42.3	42.3
								F39	Chiller at the roof of St.Teresa Hospital (East Wing)	98	98	837116	820854	0.0	2	1	100.0%	100.0%	155	-51.8	0	0	-10	0	3	3	42.2	42.2
								F40	Chiller at the roof of St.Teresa Hospital (Extension Building)	85	85	837109	820783	0.0	2	1	100.0%	100.0%	186	-53.4	0	0	-10	0	3	3	27.6	27.6
								F41	Chiller at the roof of St.Teresa Hospital (Extension Building)	85	85	837110	820778	0.0	2	1	100.0%	100.0%	188	-53.5	0	0	-10	0	3	3	27.5	27.5
								F42	Chiller at the roof of St.Teresa Hospital (Extension Building)	85	85	837071	820775	0.0	2	1	100.0%	100.0%	223	-55.0	0	0	-10	0	3	3	26.0	26.0
								F43	Chiller at the roof of St.Teresa Hospital (Extension Building)	85	85	837072	820770	0.0	2	1	100.0%	100.0%	225	-55.0	0	0	-10	0	3	3	26.0	26.0
								F44	Chiller at the roof of St.Teresa Hospital (Extension Building)	96	96	837074	820743	0.0	2	1	100.0%	100.0%	237	-55.5	0	0	-10	0	3	3	36.5	36.5
								F45	Chiller at the roof of St.Teresa Hospital (Extension Building)	96	96	837066	820741	0.0	2	1	100.0%	100.0%	245	-55.8	0	0	-10	0	3	3	36.2	36.2
								F46	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837170	820827	0.0	2	1	100.0%	100.0%	112	-49.0	0	0	0	0	3	3	28.5	28.5
								F47	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837172	820827	0.0	2	1	100.0%	100.0%	110	-48.8	0	0	0	0	3	3	27.2	27.2
								F48	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837173	820823	0.0	2	1	100.0%	100.0%	111	-48.9	0	0	0	0	3	3	27.1	27.1
								F49	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837171	820823	0.0	2	1	100.0%	100.0%	113	-49.0	0	0	0	0	3	3	27.0	27.0
								F50	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837169	820822	0.0	2	1	100.0%	100.0%	114	-49.2	0	0	0	0	3	3	26.8	26.8
								F51	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837170	820820	0.0	2	1	100.0%	100.0%	115	-49.2	0	0	0	0	3	3	28.3	28.3
								F52	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837170	820818	0.0	2	1	100.0%	100.0%	116	-49.3	0	0	0	0	3	3	28.2	28.2
								F53	VRV at the roof of St. Teresa Hospital (Staff Quarter)	68	68	837167	820816	0.0	2	1	100.0%	100.0%	120	-49.6	0	0	0	0	3	3	24.4	24.4
								F54	VRV at the roof of St. Teresa Hospital (Staff Quarter)	71	71	837164	820816	0.0	2	1	100.0%	100.0%	122	-49.7	0	0	0	0	3	3	26.8	26.8
								F55	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837162	820815	0.0	2	1	100.0%	100.0%	125	-49.9	0	0	0	0	3	3	27.6	27.6
								F56	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837161	820817	0.0	2	1	100.0%	100.0%	124	-49.9	0	0	0	0	3	3	26.1	26.1
								F57	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837161	820820	0.0	2	1	100.0%	100.0%	123	-49.8	0	0	0	0	3	3	27.7	27.7
								F58	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837164	820819	0.0	2	1	100.0%	100.0%	121	-49.6	0	0	0	0	3	3	27.9	27.9
								F59	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837166	820820	0.0	2	1	100.0%	100.0%	119	-49.5	0	0	0	0	3	3	28.0	28.0
								F60	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837158	820823	0.0	2	1	100.0%	100.0%	125	-49.9	0	0	0	0	3	3	27.6	27.6
								F61	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837158	820825	0.0	2	1	100.0%	100.0%	124	-49.8	0	0	0	0	3	3	26.2	26.2
								F62	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837160	820825	0.0	2	1	100.0%	100.0%	122	-49.7	0	0	0	0	3	3	26.3	26.3
								F63	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837162	820822	0.0	2	1	100.0%	100.0%	121	-49.6	0	0	0	0	3	3	27.9	27.9
								F64	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837164	820823	0.0	2	1	100.0%	100.0%	119	-49.5	0	0	0	0	3	3	26.5	26.5
								F65	Chiller at the roof of Hong Kong Eye Hospital	97	97	837029	820680	0.0	2	1	100.0%	100.0%	312	-57.9	0	0	-10	0	3	3	35.1	35.1
								F66	Chiller at the roof of Hong Kong Eye Hospital	97	97	837034	820681	0.0	2	1	100.0%	100.0%	307	-57.7	0	0	-10	0	3	3	35.3	35.3
								F67	Chiller at the roof of Hong Kong Eye Hospital	96	96	837043	820652	0.0	2	1	100.0%	100.0%	319	-58.1	0	0	-10	0	3	3	33.9	33.9
								F68	Cooling Tower at the roof of Kowloon City Law Courts Building	92	OFF	837139	820699	0.0	2	1	100.0%	N.A.	220	-54.9	0	N.A.	-5	0	3	3	38.1	N.A.
								F69	Cooling Tower at the roof of Kowloon City Law Courts Building	92	OFF	837140	820697	0.0	2	1	100.0%	N.A.	222	-54.9	0	N.A.	-5	0	3	3	38.1	N.A.
								F70	Chiller at the roof of Kowloon City Law Courts Building	94	OFF	837138	820693	0.0	2	1	100.0%	N.A.	227	-55.1	0	N.A.	-5	0	3	3	39.9	N.A.
								F71	Chiller at the roof of Kowloon City Law Courts Building	94	OFF	837139	820687	0.0	2	1	100.0%	N.A.	231	-55.3	0	N.A.	-5	0	3	3	39.7	N.A.
																										Total =	**52**	**49**

Prediction of Fixed Noise Source Impact on Planned NSR

NSR Labels	Nature of Use	Existing/ Planned Uses	Location		ASR	Noise Criteria (ANL), L_{eq} (30 min)		Noise Source ID	Description of Noise Sources	SWL, dB(A), L_{eq} (30 min)		Source Location			Directivity Factor (Q)	No. of Plant	% on-time within 30min (Daytime Peak)	% on-time within 30min (Night-time Peak)	Distance to NSR, d (m)	Correction for, dB(A)							Noise Impact at NSR, dB(A)	
			X	Y		Daytime & Evening Time (0700-2300)	Nighttime (2300-0700)			Daytime & Evening Time (0700-2300)	Nighttime (2300-0700)	X	Y	Z, mPD						Distance	% on time (Daytime)	% on time (Night-time)	Screening by Features [1]	Silencer	Tonality	Facade	Daytime & Evening Period	Night-time
FN02	Residential	Planned	837272	820867	B	65	55	F33	Cooling Tower at the roof of St.Teresa Hospital (North Wing)	88	88	837057	820850	0.0	2	1	100.0%	100.0%	215	-54.7	0	0	-10	0	3	3	29.3	29.3
								F34	Cooling Tower at the roof of St.Teresa Hospital (North Wing)	88	88	837065	820851	0.0	2	1	100.0%	100.0%	207	-54.3	0	0	-10	0	3	3	29.7	29.7
								F35	Cooling Tower at the roof of St.Teresa Hospital (North Wing)	88	88	837075	820851	0.0	2	1	100.0%	100.0%	197	-53.9	0	0	-10	0	3	3	30.1	30.1
								F36	Cooling Tower at the roof of St.Teresa Hospital (North Wing)	88	88	837082	820853	0.0	2	1	100.0%	100.0%	190	-53.6	0	0	-10	0	3	3	30.4	30.4
								F37	Chiller at the roof of St.Teresa Hospital (East Wing)	98	98	837114	820858	0.0	2	1	100.0%	100.0%	158	-52.0	0	0	-10	0	3	3	42.0	42.0
								F38	Chiller at the roof of St.Teresa Hospital (East Wing)	98	98	837117	820859	0.0	2	1	100.0%	100.0%	155	-51.8	0	0	-10	0	3	3	42.2	42.2
								F39	Chiller at the roof of St.Teresa Hospital (East Wing)	98	98	837116	820854	0.0	2	1	100.0%	100.0%	156	-51.8	0	0	-10	0	3	3	42.2	42.2
								F40	Chiller at the roof of St.Teresa Hospital (Extension Building)	85	85	837109	820783	0.0	2	1	100.0%	100.0%	183	-53.2	0	0	-10	0	3	3	27.8	27.8
								F41	Chiller at the roof of St.Teresa Hospital (Extension Building)	85	85	837110	820778	0.0	2	1	100.0%	100.0%	184	-53.3	0	0	-10	0	3	3	27.7	27.7
								F42	Chiller at the roof of St.Teresa Hospital (Extension Building)	85	85	837071	820775	0.0	2	1	100.0%	100.0%	220	-54.9	0	0	-10	0	3	3	26.1	26.1
								F43	Chiller at the roof of St.Teresa Hospital (Extension Building)	85	85	837072	820770	0.0	2	1	100.0%	100.0%	221	-54.9	0	0	-10	0	3	3	26.1	26.1
								F44	Chiller at the roof of St.Teresa Hospital (Extension Building)	96	96	837074	820743	0.0	2	1	100.0%	100.0%	233	-55.3	0	0	-10	0	3	3	36.7	36.7
								F45	Chiller at the roof of St.Teresa Hospital (Extension Building)	96	96	837066	820741	0.0	2	1	100.0%	100.0%	241	-55.6	0	0	-10	0	3	3	36.4	36.4
								F46	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837170	820827	0.0	2	1	100.0%	100.0%	109	-48.8	0	0	0	0	3	3	28.7	28.7
								F47	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837172	820827	0.0	2	1	100.0%	100.0%	107	-48.6	0	0	0	0	3	3	27.4	27.4
								F48	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837173	820823	0.0	2	1	100.0%	100.0%	108	-48.7	0	0	0	0	3	3	27.3	27.3
								F49	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837171	820823	0.0	2	1	100.0%	100.0%	110	-48.8	0	0	0	0	3	3	27.2	27.2
								F50	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837169	820822	0.0	2	1	100.0%	100.0%	111	-48.9	0	0	0	0	3	3	27.1	27.1
								F51	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837170	820820	0.0	2	1	100.0%	100.0%	112	-49.0	0	0	0	0	3	3	28.5	28.5
								F52	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837170	820818	0.0	2	1	100.0%	100.0%	113	-49.0	0	0	0	0	3	3	28.5	28.5
								F53	VRV at the roof of St. Teresa Hospital (Staff Quarter)	68	68	837167	820816	0.0	2	1	100.0%	100.0%	117	-49.3	0	0	0	0	3	3	24.7	24.7
								F54	VRV at the roof of St. Teresa Hospital (Staff Quarter)	71	71	837164	820816	0.0	2	1	100.0%	100.0%	119	-49.5	0	0	0	0	3	3	27.0	27.0
								F55	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837162	820815	0.0	2	1	100.0%	100.0%	122	-49.7	0	0	0	0	3	3	27.8	27.8
								F56	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837161	820817	0.0	2	1	100.0%	100.0%	121	-49.7	0	0	0	0	3	3	26.3	26.3
								F57	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837161	820820	0.0	2	1	100.0%	100.0%	121	-49.6	0	0	0	0	3	3	27.9	27.9
								F58	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837164	820819	0.0	2	1	100.0%	100.0%	118	-49.4	0	0	0	0	3	3	28.1	28.1
								F59	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837166	820820	0.0	2	1	100.0%	100.0%	116	-49.3	0	0	0	0	3	3	28.2	28.2
								F60	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837158	820823	0.0	2	1	100.0%	100.0%	122	-49.7	0	0	0	0	3	3	27.8	27.8
								F61	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837158	820825	0.0	2	1	100.0%	100.0%	121	-49.7	0	0	0	0	3	3	26.3	26.3
								F62	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837160	820825	0.0	2	1	100.0%	100.0%	119	-49.5	0	0	0	0	3	3	26.5	26.5
								F63	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837162	820822	0.0	2	1	100.0%	100.0%	118	-49.4	0	0	0	0	3	3	28.1	28.1
								F64	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837164	820823	0.0	2	1	100.0%	100.0%	116	-49.3	0	0	0	0	3	3	26.7	26.7
								F65	Chiller at the roof of Hong Kong Eye Hospital	97	97	837029	820680	0.0	2	1	100.0%	100.0%	307	-57.7	0	0	-10	0	3	3	35.3	35.3
								F66	Chiller at the roof of Hong Kong Eye Hospital	97	97	837034	820681	0.0	2	1	100.0%	100.0%	302	-57.6	0	0	-10	0	3	3	35.4	35.4
								F67	Chiller at the roof of Hong Kong Eye Hospital	96	96	837043	820652	0.0	2	1	100.0%	100.0%	313	-57.9	0	0	-10	0	3	3	34.1	34.1
								F68	Cooling Tower at the roof of Kowloon City Law Courts Building	92	OFF	837139	820699	0.0	2	1	100.0%	N.A.	214	-54.6	0	N.A.	0	0	3	3	43.4	N.A.
								F69	Cooling Tower at the roof of Kowloon City Law Courts Building	92	OFF	837140	820697	0.0	2	1	100.0%	N.A.	215	-54.7	0	N.A.	0	0	3	3	43.3	N.A.
								F70	Chiller at the roof of Kowloon City Law Courts Building	94	OFF	837138	820693	0.0	2	1	100.0%	N.A.	220	-54.8	0	N.A.	0	0	3	3	45.2	N.A.
								F71	Chiller at the roof of Kowloon City Law Courts Building	94	OFF	837139	820687	0.0	2	1	100.0%	N.A.	224	-55.0	0	N.A.	0	0	3	3	45.0	N.A.
																										Total =	53	49
FN03	Residential	Planned	837273	820860	B	65	55	F01	VRV at the roof of Kowloon Ling Liang Church	71	OFF	837213	820947	0.0	2	1	100.0%	N.A.	106	-48.5	0	N.A.	0	0	3	3	28.5	N.A.
								F02	VRV at the roof of Kowloon Ling Liang Church	71	OFF	837215	820947	0.0	2	1	100.0%	N.A.	104	-48.4	0	N.A.	0	0	3	3	28.6	N.A.
								F03	VRV at the roof of Kowloon Ling Liang Church	71	OFF	837217	820947	0.0	2	1	100.0%	N.A.	103	-48.3	0	N.A.	0	0	3	3	28.7	N.A.
								F04	VRV at the roof of Kowloon Ling Liang Church	71	OFF	837215	820945	0.0	2	1	100.0%	N.A.	103	-48.2	0	N.A.	0	0	3	3	28.8	N.A.
								F05	VRV at the roof of Kowloon Ling Liang Church	71	OFF	837217	820945	0.0	2	1	100.0%	N.A.	102	-48.1	0	N.A.	0	0	3	3	28.9	N.A.
								F06	VRV at the roof of Kowloon Ling Liang Church	71	OFF	837216	820943	0.0	2	1	100.0%	N.A.	101	-48.1	0	N.A.	0	0	3	3	28.9	N.A.
								F07	VRV at the roof of Kowloon Ling Liang Church	65	OFF	837212	820945	0.0	2	1	100.0%	N.A.	104	-48.4	0	N.A.	0	0	3	3	22.6	N.A.
								F08	VRV at the roof of Kowloon Ling Liang Church	65	OFF	837212	820943	0.0	2	1	100.0%	N.A.	103	-48.2	0	N.A.	0	0	3	3	22.8	N.A.
								F09	Condensing Unit at the roof of Kowloon Ling Liang Church	57	OFF	837211	820940	0.0	2	1	100.0%	N.A.	101	-48.1	0	N.A.	0	0	3	3	14.9	N.A.
								F10	Condensing Unit at the roof of Kowloon Ling Liang Church	57	OFF	837213	820940	0.0	2	1	100.0%	N.A.	100	-48.0	0	N.A.	0	0	3	3	15.0	N.A.
								F11	VRV at the roof of Kowloon Ling Liang Church	68	OFF	837214	820940	0.0	2	1	100.0%	N.A.	99	-47.9	0	N.A.	0	0	3	3	26.1	N.A.
								F12	VRV at the roof of Kowloon Ling Liang Church	58	OFF	837219	820937	0.0	2	1	100.0%	N.A.	94	-47.5	0	N.A.	0	0	3	3	16.5	N.A.
								F13	Condensing Unit at the roof of Kowloon Ling Liang Church	57	OFF	837224	820942	0.0	2	1	100.0%	N.A.	95	-47.6	0	N.A.	0	0	3	3	15.4	N.A.
								F14	Condensing Unit at the roof of Kowloon Ling Liang Church	57	OFF	837226	820941	0.0	2	1	100.0%	N.A.	94	-47.5	0	N.A.	0	0	3	3	15.5	N.A.
								F15	Condensing Unit at the roof of Kowloon Ling Liang Church	67	OFF	837234	820941	0.0	2	1	100.0%	N.A.	90	-47.1	0	N.A.	0	0	3	3	25.9	N.A.
								F16	VRV at the roof of Kowloon Ling Liang Church	68	OFF	837239	820944	0.0	2	1	100.0%	N.A.	91	-47.1	0	N.A.	0	0	3	3	26.9	N.A.
								F17	VRV at the roof of Kowloon Ling Liang Church	68	OFF	837239	820947	0.0	2	1	100.0%	N.A.	93	-47.3	0	N.A.	0	0	3	3	26.7	N.A.
								F18	VRV at the roof of Kowloon Ling Liang Church	68	OFF	837237	820947	0.0	2	1	100.0%	N.A.	93	-47.4	0	N.A.	0	0	3	3	26.6	N.A.
								F33	Cooling Tower at the roof of St.Teresa Hospital (North Wing)	88	88	837057	820850	0.0	2	1	100.0%	100.0%	216	-54.7	0	0	-10	0	3	3	29.3	29.3
								F34	Cooling Tower at the roof of St.Teresa Hospital (North Wing)	88	88	837065	820851	0.0	2	1	100.0%	100.0%	208	-54.4	0	0	-10	0	3	3	29.6	29.6
								F35	Cooling Tower at the roof of St.Teresa Hospital (North Wing)	88	88	837075	820851	0.0	2	1	100.0%	100.0%	198	-53.9	0	0	-10	0	3	3	30.1	30.1
								F36	Cooling Tower at the roof of St.Teresa Hospital (North Wing)	88	88	837082	820853	0.0	2	1	100.0%	100.0%	191	-53.6	0	0	-10	0	3	3	30.4	30.4
								F37	Chiller at the roof of St.Teresa Hospital (East Wing)	98	98	837114	820858	0.0	2	1	100.0%	100.0%	159	-52.0	0	0	-10	0	3	3	42.0	42.0
								F38	Chiller at the roof of St.Teresa Hospital (East Wing)	98	98	837117	820859	0.0	2	1	100.0%	100.0%	156	-51.9	0	0	-10	0	3	3	42.1	42.1
								F39	Chiller at the roof of St.Teresa Hospital (East Wing)	98	98	837116	820854	0.0	2	1	100.0%	100.0%	157	-51.9	0	0	-10	0	3	3	42.1	42.1
								F40	Chiller at the roof of St.Teresa Hospital (Extension Building)	85	85	837109	820783	0.0	2	1	100.0%	100.0%	181	-53.2	0	0	-10	0	3	3	27.8	27.8
								F41	Chiller at the roof of St.Teresa Hospital (Extension Building)	85	85	837110	820778	0.0	2	1	100.0%	100.0%	182	-53.2	0	0	-10	0	3	3	27.8	27.8
								F42	Chiller at the roof of St.Teresa Hospital (Extension Building)	85	85	837071	820775	0.0	2	1	100.0%	100.0%	219	-54.8	0	0	-10	0	3	3	26.2	26.2
								F43	Chiller at the roof of St.Teresa Hospital (Extension Building)	85	85	837072	820770	0.0	2	1	100.0%	100.0%	220	-54.8	0	0	-10	0	3	3	26.2	26.2
								F44	Chiller at the roof of St.Teresa Hospital (Extension Building)	96	96	837074	820743	0.0	2	1	100.0%	100.0%	231	-55.3	0	0	-10	0	3	3	36.7	36.7
								F45	Chiller at the roof of St.Teresa Hospital (Extension Building)	96	96	837066	820741	0.0	2	1	100.0%	100.0%	239	-55.6	0	0	-10	0	3	3	36.4	36.4
								F46	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837170	820827	0.0	2	1	100.0%	100.0%	108	-48.7	0	0	0	0	3	3	28.8	28.8
								F47	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837172	820827	0.0	2	1	100.0%	100.0%	106	-48.5	0	0	0	0	3	3	27.5	27.5
								F48	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837173	820823	0.0	2	1	100.0%	100.0%	107	-48.6	0	0	0	0	3	3	27.4	27.4
								F49	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837171	820823	0.0	2	1	100.0%	100.0%	108	-48.7	0	0	0	0	3	3	27.3	27.3
								F50	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837169	820822	0.0	2	1	100.0%	100.0%	110	-48.8	0	0	0	0	3	3	27.2	27.2
								F51	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837170	820820	0.0	2	1	100.0%	100.0%	111	-48.9	0	0	0	0	3	3	28.6	28.6
								F52	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837170	820818	0.0	2	1	100.0%	100.0%	111	-48.9	0	0	0	0	3	3	28.6	28.6
								F53	VRV at the roof of St. Teresa Hospital (Staff Quarter)	68	68	837167	820816	0.0	2	1	100.0%	100.0%	115	-49.2	0	0	0	0	3	3	24.8	24.8
								F54	VRV at the roof of St. Teresa Hospital (Staff Quarter)	71	71	837164	820816	0.0	2	1	100.0%	100.0%	117	-49.4	0	0	0	0	3	3	27.1	27.1
								F55	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837162	820815	0.0	2	1	100.0%	100.0%	120	-49.6	0	0	0	0	3	3	27.9	27.9
								F56	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837161	820817	0.0	2	1	100.0%	100.0%	120	-49.6	0	0	0	0	3	3	26.4	26.4
								F57	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837161	820820	0.0	2	1	100.0%	100.0%	119	-49.5	0	0	0	0	3	3	28.0	28.0
								F58	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837164	820819	0.0	2	1	100.0%	100.0%	116	-49.3	0	0	0	0	3	3	28.2	28.2
								F59	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837166	820820	0.0	2	1	100.0%	100.0%	114	-49.2	0	0	0	0	3	3	28.3	28.3
								F60	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837158	820823	0.0	2	1	100.0%	100.0%	121	-49.7	0	0	0	0	3	3	27.8	27.8
								F61	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837158	820825	0.0	2	1	100.0%	100.0%	120	-49.6	0	0	0	0	3	3	26.4	26.4
								F62	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837160	820825	0.0	2	1	100.0%	100.0%	118	-49.5	0	0	0	0	3	3	26.5	26.5
								F63	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837162	820822	0.0	2	1	100.0%	100.0%	117	-49.4	0	0	0	0	3	3	28.1	28.1
								F64	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837164	820823	0.0	2	1	100.0%	100.0%	115	-49.2	0	0	0	0	3	3	26.8	26.8
								F65	Chiller at the roof of Hong Kong Eye Hospital	97	97	837029	820680	0.0	2	1	100.0%	100.0%	304	-57.6	0	0	-10	0	3	3	35.4	35.4
								F66	Chiller at the roof of Hong Kong Eye Hospital	97	97	837034	820681	0.0	2	1	100.0%	100.0%	299	-57.5	0	0	-10	0	3	3	35.5	35.5
								F67	Chiller at the roof of Hong Kong Eye Hospital	96	96	837043	820652	0.0	2	1	100.0%	100.0%	310	-57.8	0	0	-10	0	3	3	34.2	34.2
								F68	Cooling Tower at the roof of Kowloon City Law Courts Building	92	OFF	837139	820699	0.0	2	1	100.0%	N.A.	209	-54.4	0	N.A.	0	0	3	3	43.6	N.A.
								F69	Cooling Tower at the roof of Kowloon City Law Courts Building	92	OFF	837140	820697	0.0	2	1	100.0%	N.A.	211	-54.5	0	N.A.	0	0	3	3	43.5	N.A.
								F70	Chiller at the roof of Kowloon City Law Courts Building	94	OFF	837138	820693	0.0	2	1	100.0%	N.A.	215	-54.7	0	N.A.	0	0	3	3	45.3	N.A.
								F71	Chiller at the roof of Kowloon City Law Courts Building	94	OFF	837139	820687	0.0	2	1	100.0%	N.A.	219	-54.8	0	N.A.	0	0	3	3	45.2	N.A.
																										Total =	53	49

Prediction of Fixed Noise Source Impact on Planned NSR

NSR Labels	Nature of Use	Existing/ Planned Uses	Location		ASR	Noise Criteria (ANL), L_{eq} (30 min)		Noise Source ID	Description of Noise Sources	SWL, dB(A), L_{eq} (30 min)		Source Location			Directivity Factor (Q)	No. of Plant	% on-time within 30min (Daytime Peak)	% on-time within 30min (Night-time Peak)	Distance to NSR, d (m)	Correction for, dB(A)							Noise Impact at NSR, dB(A)	
			X	Y		Daytime & Evening Time (0700-2300)	Nighttime (2300-0700)			Daytime & Evening Time (0700-2300)	Nighttime (2300-0700)	X	Y	Z, mPD						Distance	% on time (Daytime)	% on time (Night-time)	Screening by Features [1]	Silencer	Tonality	Facade	Daytime & Evening Period	Night-time
FN04	Residential	Planned	837277	820843	B	65	55	F33	Cooling Tower at the roof of St.Teresa Hospital (North Wing)	88	88	837057	820850	0.0	2	1	100.0%	100.0%	220	-54.8	0	0	-10	0	3	3	29.2	29.2
								F34	Cooling Tower at the roof of St.Teresa Hospital (North Wing)	88	88	837065	820851	0.0	2	1	100.0%	100.0%	212	-54.5	0	0	-10	0	3	3	29.5	29.5
								F35	Cooling Tower at the roof of St.Teresa Hospital (North Wing)	88	88	837075	820851	0.0	2	1	100.0%	100.0%	202	-54.1	0	0	-10	0	3	3	29.9	29.9
								F36	Cooling Tower at the roof of St.Teresa Hospital (North Wing)	88	88	837082	820853	0.0	2	1	100.0%	100.0%	196	-53.8	0	0	-10	0	3	3	30.2	30.2
								F37	Chiller at the roof of St.Teresa Hospital (East Wing)	98	98	837114	820858	0.0	2	1	100.0%	100.0%	164	-52.3	0	0	-10	0	3	3	41.7	41.7
								F38	Chiller at the roof of St.Teresa Hospital (East Wing)	98	98	837117	820859	0.0	2	1	100.0%	100.0%	161	-52.1	0	0	-10	0	3	3	41.9	41.9
								F39	Chiller at the roof of St.Teresa Hospital (East Wing)	98	98	837116	820854	0.0	2	1	100.0%	100.0%	161	-52.1	0	0	-10	0	3	3	41.9	41.9
								F40	Chiller at the roof of St.Teresa Hospital (Extension Building)	85	85	837109	820783	0.0	2	1	100.0%	100.0%	178	-53.0	0	0	-10	0	3	3	28.0	28.0
								F41	Chiller at the roof of St.Teresa Hospital (Extension Building)	85	85	837110	820778	0.0	2	1	100.0%	100.0%	179	-53.1	0	0	-10	0	3	3	27.9	27.9
								F42	Chiller at the roof of St.Teresa Hospital (Extension Building)	85	85	837071	820775	0.0	2	1	100.0%	100.0%	217	-54.7	0	0	-10	0	3	3	26.3	26.3
								F43	Chiller at the roof of St.Teresa Hospital (Extension Building)	85	85	837072	820770	0.0	2	1	100.0%	100.0%	217	-54.7	0	0	-10	0	3	3	26.3	26.3
								F44	Chiller at the roof of St.Teresa Hospital (Extension Building)	96	96	837074	820743	0.0	2	1	100.0%	100.0%	226	-55.1	0	0	-10	0	3	3	36.9	36.9
								F45	Chiller at the roof of St.Teresa Hospital (Extension Building)	96	96	837066	820741	0.0	2	1	100.0%	100.0%	234	-55.4	0	0	-10	0	3	3	36.6	36.6
								F46	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837170	820827	0.0	2	1	100.0%	100.0%	109	-48.7	0	0	0	0	3	3	28.8	28.8
								F47	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837172	820827	0.0	2	1	100.0%	100.0%	106	-48.5	0	0	0	0	3	3	27.5	27.5
								F48	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837173	820823	0.0	2	1	100.0%	100.0%	106	-48.5	0	0	0	0	3	3	27.5	27.5
								F49	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837171	820823	0.0	2	1	100.0%	100.0%	108	-48.7	0	0	0	0	3	3	27.3	27.3
								F50	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837169	820822	0.0	2	1	100.0%	100.0%	110	-48.8	0	0	0	0	3	3	27.2	27.2
								F51	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837170	820820	0.0	2	1	100.0%	100.0%	110	-48.8	0	0	0	0	3	3	28.7	28.7
								F52	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837170	820818	0.0	2	1	100.0%	100.0%	110	-48.8	0	0	0	0	3	3	28.7	28.7
								F53	VRV at the roof of St. Teresa Hospital (Staff Quarter)	68	68	837167	820816	0.0	2	1	100.0%	100.0%	114	-49.1	0	0	0	0	3	3	24.9	24.9
								F54	VRV at the roof of St. Teresa Hospital (Staff Quarter)	71	71	837164	820816	0.0	2	1	100.0%	100.0%	116	-49.3	0	0	0	0	3	3	27.2	27.2
								F55	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837162	820815	0.0	2	1	100.0%	100.0%	119	-49.5	0	0	0	0	3	3	28.0	28.0
								F56	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837161	820817	0.0	2	1	100.0%	100.0%	119	-49.5	0	0	0	0	3	3	26.5	26.5
								F57	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837161	820820	0.0	2	1	100.0%	100.0%	119	-49.5	0	0	0	0	3	3	28.0	28.0
								F58	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837164	820819	0.0	2	1	100.0%	100.0%	116	-49.3	0	0	0	0	3	3	28.2	28.2
								F59	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837166	820820	0.0	2	1	100.0%	100.0%	114	-49.1	0	0	0	0	3	3	28.4	28.4
								F60	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837158	820823	0.0	2	1	100.0%	100.0%	121	-49.7	0	0	0	0	3	3	27.8	27.8
								F61	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837158	820825	0.0	2	1	100.0%	100.0%	120	-49.6	0	0	0	0	3	3	26.4	26.4
								F62	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837160	820825	0.0	2	1	100.0%	100.0%	119	-49.5	0	0	0	0	3	3	26.5	26.5
								F63	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837162	820822	0.0	2	1	100.0%	100.0%	117	-49.3	0	0	0	0	3	3	28.2	28.2
								F64	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837164	820823	0.0	2	1	100.0%	100.0%	114	-49.2	0	0	0	0	3	3	26.8	26.8
								F65	Chiller at the roof of Hong Kong Eye Hospital	97	97	837029	820680	0.0	2	1	100.0%	100.0%	297	-57.5	0	0	-10	0	3	3	35.5	35.5
								F66	Chiller at the roof of Hong Kong Eye Hospital	97	97	837034	820681	0.0	2	1	100.0%	100.0%	292	-57.3	0	0	-10	0	3	3	35.7	35.7
								F67	Chiller at the roof of Hong Kong Eye Hospital	96	96	837043	820652	0.0	2	1	100.0%	100.0%	302	-57.6	0	0	-10	0	3	3	34.4	34.4
								F68	Cooling Tower at the roof of Kowloon City Law Courts Building	92	OFF	837139	820699	0.0	2	1	100.0%	N.A.	199	-54.0	0	N.A.	0	0	3	3	44.0	N.A.
								F69	Cooling Tower at the roof of Kowloon City Law Courts Building	92	OFF	837140	820697	0.0	2	1	100.0%	N.A.	200	-54.0	0	N.A.	0	0	3	3	44.0	N.A.
								F70	Chiller at the roof of Kowloon City Law Courts Building	94	OFF	837138	820693	0.0	2	1	100.0%	N.A.	205	-54.2	0	N.A.	0	0	3	3	45.8	N.A.
								F71	Chiller at the roof of Kowloon City Law Courts Building	94	OFF	837139	820687	0.0	2	1	100.0%	N.A.	209	-54.4	0	N.A.	0	0	3	3	45.6	N.A.
																										Total =	53	49
FN05	Residential	Planned	837282	820844	B	65	55	F40	Chiller at the roof of St.Teresa Hospital (Extension Building)	85	85	837109	820783	0	2	1	100.00%	100.00%	183	-53.3	0	0	-10	0	3	3	27.7	27.7
								F41	Chiller at the roof of St.Teresa Hospital (Extension Building)	85	85	837110	820778	0	2	1	100.00%	100.00%	184	-53.3	0	0	-10	0	3	3	27.7	27.7
								F42	Chiller at the roof of St.Teresa Hospital (Extension Building)	85	85	837071	820775	0	2	1	100.00%	100.00%	222	-54.9	0	0	-10	0	3	3	26.1	26.1
								F43	Chiller at the roof of St.Teresa Hospital (Extension Building)	85	85	837072	820770	0	2	1	100.00%	100.00%	222	-54.9	0	0	-10	0	3	3	26.1	26.1
								F44	Chiller at the roof of St.Teresa Hospital (Extension Building)	96	96	837074	820743	0	2	1	100.00%	100.00%	231	-55.3	0	0	-10	0	3	3	36.7	36.7
								F45	Chiller at the roof of St.Teresa Hospital (Extension Building)	96	96	837066	820741	0	2	1	100.00%	100.00%	239	-55.6	0	0	-10	0	3	3	36.4	36.4
								F46	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837170	820827	0	2	1	100.00%	100.00%	113	-49.1	0	0	0	0	3	3	28.4	28.4
								F47	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837172	820827	0	2	1	100.00%	100.00%	111	-48.9	0	0	0	0	3	3	27.1	27.1
								F48	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837173	820823	0	2	1	100.00%	100.00%	111	-48.9	0	0	0	0	3	3	27.1	27.1
								F49	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837171	820823	0	2	1	100.00%	100.00%	113	-49.0	0	0	0	0	3	3	27.0	27.0
								F50	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837169	820822	0	2	1	100.00%	100.00%	114	-49.2	0	0	0	0	3	3	26.8	26.8
								F51	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837170	820820	0	2	1	100.00%	100.00%	114	-49.2	0	0	0	0	3	3	28.3	28.3
								F52	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837170	820818	0	2	1	100.00%	100.00%	115	-49.2	0	0	0	0	3	3	28.3	28.3
								F53	VRV at the roof of St. Teresa Hospital (Staff Quarter)	68	68	837167	820816	0	2	1	100.00%	100.00%	118	-49.5	0	0	0	0	3	3	24.5	24.5
								F54	VRV at the roof of St. Teresa Hospital (Staff Quarter)	71	71	837164	820816	0	2	1	100.00%	100.00%	121	-49.6	0	0	0	0	3	3	26.9	26.9
								F55	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837162	820815	0	2	1	100.00%	100.00%	124	-49.8	0	0	0	0	3	3	27.7	27.7
								F56	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837161	820817	0	2	1	100.00%	100.00%	124	-49.8	0	0	0	0	3	3	26.2	26.2
								F57	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837161	820820	0	2	1	100.00%	100.00%	124	-49.8	0	0	0	0	3	3	27.7	27.7
								F58	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837164	820819	0	2	1	100.00%	100.00%	121	-49.6	0	0	0	0	3	3	27.9	27.9
								F59	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837166	820820	0	2	1	100.00%	100.00%	118	-49.5	0	0	0	0	3	3	28.0	28.0
								F60	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837158	820823	0	2	1	100.00%	100.00%	126	-50.0	0	0	0	0	3	3	27.5	27.5
								F61	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837158	820825	0	2	1	100.00%	100.00%	125	-50.0	0	0	0	0	3	3	26.0	26.0
								F62	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837160	820825	0	2	1	100.00%	100.00%	123	-49.8	0	0	0	0	3	3	26.2	26.2
								F63	VRV at the roof of St. Teresa Hospital (Staff Quarter)	72	72	837162	820822	0	2	1	100.00%	100.00%	121	-49.7	0	0	0	0	3	3	27.8	27.8
								F64	VRV at the roof of St. Teresa Hospital (Staff Quarter)	70	70	837164	820823	0	2	1	100.00%	100.00%	119	-49.5	0	0	0	0	3	3	26.5	26.5
								F65	Chiller at the roof of Hong Kong Eye Hospital	97	97	837029	820680	0	2	1	100.00%	100.00%	302	-57.6	0	0	-10	0	3	3	35.4	35.4
								F66	Chiller at the roof of Hong Kong Eye Hospital	97	97	837034	820681	0	2	1	100.00%	100.00%	296	-57.4	0	0	-10	0	3	3	35.6	35.6
								F67	Chiller at the roof of Hong Kong Eye Hospital	96	96	837043	820652	0	2	1	100.00%	100.00%	306	-57.7	0	0	-10	0	3	3	34.3	34.3
								F68	Cooling Tower at the roof of Kowloon City Law Courts Building	92	OFF	837139	820699	0	2	1	100.00%	N.A.	203	-54.1	0	N.A.	0	0	3	3	43.9	N.A.
								F69	Cooling Tower at the roof of Kowloon City Law Courts Building	92	OFF	837140	820697	0	2	1	100.00%	N.A.	204	-54.2	0	N.A.	0	0	3	3	43.8	N.A.
								F70	Chiller at the roof of Kowloon City Law Courts Building	94	OFF	837138	820693	0	2	1	100.00%	N.A.	209	-54.4	0	N.A.	0	0	3	3	45.6	N.A.
								F71	Chiller at the roof of Kowloon City Law Courts Building	94	OFF	837139	820687	0	2	1	100.00%	N.A.	212	-54.5	0	N.A.	0	0	3	3	45.5	N.A.
																										Total =	52	45

Notes:

[1] Screening by structures resulting in rough noise attenuation of 10 dB(A) for full screening and 5 dB(A) for partial screening.

PLANNING LIMITED
規劃顧問有限公司

UNIT K, 16/F, MG TOWER
133 HOI BUN ROAD, KWUN TONG
KOWLOON, HONG KONG
九龍觀塘海濱道133號
萬兆豐中心16樓K室
電話TEL (852) 3426 8451
傳真FAX (852) 3426 9737
電郵EMAIL kta@ktaplanning.com

By Email

Our Ref: S3120/349_PERW/24/007Lg

5 March 2025

Secretary, Town Planning Board
15/F, North Point Government Offices
333 Java Road
North Point
Hong Kong

Dear Sir/Madam,

Proposed Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon (Planning Application No. A/K10/276)
Further Information No. 4

Reference is made to the captioned S16 Planning Application submitted to the Town Planning Board ("TPB") on 30 August 2024 and the comments received from Social Welfare Department via email from the Kowloon District Planning Office on 18 February 2025.

In response to the departmental comments received, we have prepared and attached herewith a Response-to-Comment Table for your consideration.

Should you have any queries in relation to the above, please do not hesitate to contact the undersigned at [redacted] or Mr Wilson Man at [redacted].

Thank you for your kind attention.

Yours faithfully
For and on behalf of
KTA PLANNING LIMITED

Gladys Ng

Encl.

cc. KDPO – Ms Jenny Lai (By email)
the Applicant & Team

GN/WM/vy

Proposed Social Welfare Facility (Residential Care Home for the Elderly) in “Residential (Group B)” Zone, at 349 Prince Edward Road West, Kowloon

(Planning Application No. A/K10/276)

Response-to-Comment Table

Proposed Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone, at 349 Prince Edward Road West, Kowloon

(Planning Application No. A/K10/276)

Comments	Summary & Response
Comments from Social Welfare Department: **(Contact Person: Mr Michael PANG Tel: 2116 5939)**	
1. While the applicant stated that the facilities accommodated on 9/F would only be used as staff office for facilities management purpose, ancillary facilities accommodated on 8/F, including the physiotherapy room, common area, flat roof of the proposed RCHE to which the residents will have access, are situated at a height more than 24 m above the ground floor. The applicant is advised to review the layout plan of 8/F which is accessible by residents. Please note that any additional fire safety requirements of Fire Services Installations and management of the proposed RCHE with a view to meeting the needs of rescue, evacuation and contingency management would have to be fulfilled when the proposal is assessed on case-by-case basis in consultation with the Fire Services Department during the licence application stage.	Noted. The applicant is prepared to seek approval from the Social Welfare Department ("SWD") for relaxing the 24m building height restriction of the proposed ancillary facilities of the RCHE during the license application stage. According to the Code of Practice for Residential Care Homes (Elderly Person), "*Director of Social Welfare may consider and authorise the relaxation of the concerned RCHE's height restriction on the premise that the part of the RCHE complies with additional fire safety requirements.*" In this connection, the architect has sought advice from the Fire Services Department ("FSD") to confirm that no additional fire service installations will be required for the proposed ancillary facilities (physiotherapy room and common area) and flat roof on the 8th floor of the subject building. In any event, no part of the dormitory use will be situated at a height more than 24m above the ground floor. Detailed design will be subject to approval by the Buildings Department and further consideration by SWD and other relevant Government department(s) to ensure the proposed RCHE will comply with all relevant requirements.
2. No further comments on the understanding that the proposed RCHE will comply with all statutory and licensing requirements in relation to Heating, Lighting and Ventilation as stipulated in the Residential Care Homes (Elderly Persons) Ordinance, its subsidiary legislation and the latest version of the Code of Practice for Residential Care Homes (Elderly Persons).	Noted.

Comments	Summary & Response
3. No further comments on the understanding that the proposed RCHE will comply with all statutory and licensing requirements in relation to Heating, Lighting and Ventilation as stipulated in the Residential Care Homes (Elderly Persons) Ordinance, its subsidiary legislation and the latest version of the Code of Practice for Residential Care Homes (Elderly Persons).	Noted.

Consolidated by: **KTA Planning Limited**
Date: **26 February 2025**

KTA
PLANNING LIMITED
規劃顧問有限公司

UNIT K, 16/F, MG TOWER
133 HOI BUN ROAD, KWUN TONG
KOWLOON, HONG KONG
九龍觀塘海濱道133號
萬兆豐中心16樓K室
電話TEL (852) 3426 8451
傳真FAX (852) 3426 9737
電郵EMAIL kta@ktaplanning.com

By Email

Our Ref: S3120/349_PERW/24/008Lg

6 March 2025

Secretary, Town Planning Board
15/F, North Point Government Offices
333 Java Road
North Point
Hong Kong

Dear Sir/Madam,

Proposed Social Welfare Facility
(Residential Care Home for the Elderly)
in "Residential (Group B)" Zone
at 349 Prince Edward Road West, Kowloon
(Planning Application No. A/K10/276)
Further Information No. 5

Reference is made to the captioned S16 Planning Application submitted to the Town Planning Board ("TPB") on 30 August 2024.

Please be kindly confirmed that no cooling tower will be installed within the proposed development, as the proposed RCHE will be equipped with split-type air conditioning system.

Should you have any queries in relation to the above, please do not hesitate to contact the undersigned at [redacted] or Mr Wilson Man at [redacted].

Thank you for your kind attention.

Yours faithfully
For and on behalf of
KTA PLANNING LIMITED

Gladys Ng

cc. KDPO – Ms Jenny Lai (By email)
the Applicant & Team

GN/WM/vy

Previous Application within the "Residential (Group B)" ("R(B)") on the Approved Ma Tau Kok Outline Zoning Plan No. S/K10/30

No.	Application No.	Proposed Use(s)/Development(s)	Date of Approval	Decision	Approval Condition(s)
1.	A/K10/261	Proposed Social Welfare Facility (Residential Care Home for the Elderly)	3.1.2020 (MPC)	Approved with condition(s)	(a)

Approval Condition

(a) the submission of an updated Noise Impact Assessment and the implementation of the noise mitigation measures identified therein for the proposed development to the satisfaction of the Director of Environmental Protection or of the Town Planning Board.

☐Urgent ☐Return receipt ☐Expand Group ☐Restricted ☐Prevent Copy

---

From: [redacted]
Sent: 2024-11-07 星期四 02:35:22
To: tpbpd/PLAND <tpbpd@pland.gov.hk>
Subject: A/K10/276 349 Prince Edward Road West RICHE

A/K10/276

349 Prince Edward Road West

Site area: About 582.925m²

Zoning: "Res (Group B)"

Applied Development: Residential Care Home for the Elderly / 141 Beds (91) / PR 5 (3.92) / 11 Stories (8) / 2 Vehicle Parking

Dear TPB Members,

261 Approved 3 Jan 2020. Applicant back looking to squeeze more beds in, originally the average unit size of the proposed RHCE was about 11.5m2.

A number of members were not supportive of the plan

> 52. *Members generally considered that the demand for RCHE was keen. While some Members considered that the application should be approved to meet the demand for RHCE, they were of the view that, **given the narrow elongated shape of the site, the proposed scheme with the current layout design, which de facto would meet the bare minimum floor space requirement for RCHE, was not desirable and could not provide a quality living environment for the elderly**. There was concern on whether SWD's guidelines on the provision of RCHE could be improved.*
> 53. *A Member strongly opposed to the application as the current design of the proposed RCHE was not up to the standard nowadays and an approval of the application would contravene the purpose of the Town Planning Ordinance to promote the health, safety, convenience and **general welfare** of the community. The Member considered that the Government should be more proactive in facilitating quality provision of RCHE.*

Again, strong objections to the complete lack of any outdoor area and Open Space where residents could sit and absorb some Vit D. There is no park area close by where the more mobile could relax.

It is unconscionable that operators come up with plans like this and that TPB would approve them.

Hopefully current members will object to the application and demand that more humane living conditions be provided.

Mary Mulvihill

☐Urgent ☐Return receipt ☐Expand Group ☐Restricted ☐Prevent Copy

---

From: [redacted]
To: tpbpd <tpbpd@pland.gov.hk>
Date: Tuesday, 13 August 2019 9:13 PM HKT
Subject: Re: A/K10/261 349 Prince Edward Road West RICHE

Dear TPB Members,

Should read **NO** Open Space.

Some activity rooms added but no external facilities. Going forward elderly care facilities must have OS, balcony or terrace so that wheel chair bound tenants can enjoy some natural sunlight and exposure to the world outside.

Yet again no information on applicant even though it is very likely that tax payer revenue will be funneled into the project in the form of subvention, etc.

Mary Mulvihill

From: [redacted]
To: "tpbpd" <tpbpd@pland.gov.hk>
Sent: Saturday, April 27, 2019 3:29:23 AM
Subject: A/K10/261 349 Prince Edward Road West RICHE

A/K10/261
349 Prince Edward Road West
Site area : About 582.925m²
Zoning : "Res (Group B)"
Applied Development : Residential Care Home for the Elderly / 91 Units / 2 Vehicle Parking

Dear TPB Members,

While fully supporting the provision of care homes for the elderly, one has to question if this site is appropriate for the proposed use. A long, low rise building sandwiched between tall towers raises questions about ventilation and natural light, particularly as the corridors are planned for the more open side.

There is also a significant lack of community space with just two small activity rooms. Where would the tenants mingle? Would they be confined to their rooms? Unfortunately the roof is filled with utilities when a roof garden could have provided some open space.

There is **on OS** on the ground floor.

I cannot find standards for this type of facility except for floor area with which this application appears to comply.

10.2.28 The floor area requirements for different types of RCS vary. **In general, for an RCHE with 100 places, a NOFA of 1 354m2 / NUFA 2,166m2 is required**. These floor area requirements are for general reference only and should be applied flexibly.

Members please raise questions with regard to the suitability of this site for the purpose.

Our elderly deserve a comfortable and convivial environment.

Mary Mulvihill

☐Urgent ☐Return receipt ☐Expand Group ☐Restricted ☐Prevent Copy

2

From: [redacted]
Sent: 2024-12-21 星期六 15:06:05
To: tpbpd/PLAND <tpbpd@pland.gov.hk>
Subject: Re: A/K10/276（太子道西 349 號）

本人反對上述規劃申請，理由如下：-

1，在優質的住宅地建立安老院與週圍住宅環境格格不入。

2，新建的安老院將令到該處較低密度的傳統住宅區價值下降，使業主們財產減縮。業主們很多都是長住該區的較年長者，財富減縮，徒令他們活得更不開心。香港社會現在需要更多開心和安心的市民，若只有謀求利潤的安老院發展商開心，那是因小失大，滿足極少數者卻 犧牲多數者，對香港社會的穩定性大大不利。

3， 就算對住在新建的安老院 之長者，由於 他們現在尚未出現，不算為持份者，他們的利益未能確定，也不知道他們是否會 滿意所居住的環境； 因為這片土地長而窄， 建造出來的 院舍環境 必然 不寬敞，窗戶坐向難有隱私 ，設備也有限； 與其他 不在市區 地段 的安老設施來比較， 實在是極不理想，不是有效的土地規劃。假若 發展商 是希望 建造 安老豪宅， 這 只會為他們 謀取暴利， 因為地價 可以 減少， 但 他們 的經營策略 卻 以豪宅 為定位，收費就可以超高。 所以，無論是 建造一般的安老宿位 抑或是富貴的 長者 宿位 ，兩者 都 不是有利於 用家 或 香港整體（包括政府） 的利益。

4， 現在政府也鼓勵 年長者可考慮 到大灣區安老， 並提供很多政策 支援。 所以， 在 九龍城這片 優質的住宅地段 內 建造 小數目的安老 宿位， 和 政府的 規劃政策 有所違背。

5， 這片土地 坐 在太子道西 繁忙的 道路上 ，來探訪 長者的訪客 會加重 道路的 人流車流（現時的行人路寬度並不適宜過多途人，請城規會諸君實地考察）； 而且 長者往往需要 很多 救援運輸的設施， 這 不單 再加重道路的使用負荷， 並且 繁忙的 道路 對 救援人員 也極 不方便。

6，政府 現在財赤嚴重， 若把住宅用地 改為 安老用地， 政府所 收得的地價 亦會減少。 因此批準 發展商 這個 改變用途計劃 只會是 得不償失（益可發展商卻害了庫房）， 引起 很多市民的不滿（樓價下跌、養老積蓄縮水）， 而且這亦不是一個 良好的 土地規劃。

基於上述理由， 本人 極力反對 標題 的 規劃申請， 希望 城規會各委員 審慎 審議。

一個香港土生土長的長者市民
何鏡煒謹上

取得 Android 版 Outlook

香港浸會大學
HONG KONG BAPTIST UNIVERSITY

☐Urgent ☐Return receipt ☐Expand Group ☐Restricted ☐Prevent Copy

---

3

致城市規劃委員會秘書：
專人送遞或郵遞:香港北角渣華道 333 號北角政府合署 15 樓
傳真 ：2877 0245 或 2522 8426
電郵: tpbpd@pland.gov.hk

To : Secretary, Town Planning Board
By hand or post : 15/F, North Point Government Offices, 333 Java Road, North Point, Hong Kong
By Fax : 2877 0245 or 2522 8426
By e-mail : tpbpd@pland.gov.hk

有關的規劃申請編號 The application no. to which the comment relates
A/K10/276Received on 27/11/2024

意見詳情 (如有需要，請另頁說明)
Details of the Comment (use separate sheet if necessary)

Please See Attached.

「提意見人」姓名/名稱 Name of person/company making this comment ____________________

簽署 Signature ____________________ (王藹如)

THE INCORPORATED OWNERS OF WOODLAND VILLA 林苑

日期 Date 20/12/2024

致：城市規劃委員會秘書
有關規劃申請編號 A/K10/276 的反對意見詳情如下：

擬議安老院選址不當，樓宇設計欠周全，令周圍環境及衛生等問題加劇惡化，帶來不同層面的負面影響。林苑大廈業主一致表達不贊成擬議安老院的興建。

1. 擬議安老院與毗鄰環境用途並不相容，亦不協調 ：

1.1 整段太子道住宅，居住密度較低，居住空間較寬敞，屬較優化居住環境，例如由九龍城露明道口沿路東向至迴旋處世運花園附近這段路，均屬傳統住宅房屋(太子道 351 號除外)，自樹一格，惟擬議安老院屬商業用途，地形狹長， 圖則顯示其建築緊貼隔鄰安老院，且樓高十一層 ，屬密集式居住間隔，與毗鄰環境用途既不協調，亦不相容。

1.2 若放寬擬議地段的地則用途，將容許商業運作，逐步蠶食太子道本屬優化住宅地段的城市面貌，帶來規劃發展上突兀及不協調的影響。

2. 擬議安老院不合常理地貼近毗鄰，將造成不同層面的環境干擾：

2.1 擬議安老院與左側（西向）樓宇間距， 最短僅 5000 毫米 ，即僅約兩部轎車長度， 院舍設計高十一層，每層最少有十三組窗，正向面對毗鄰窗户，雙方可近距離對望。因院舍屬商業運作，每天絡繹不絕的訪客，將嚴重干擾毗鄰住戶的私隱，打擾他們原本享有的私人空間。

2.2 擬議安老院與右側（東向）樓宇間距更少，差不多緊貼毗鄰，建成後將堵塞了他們的窗戶，完全漠視他們原本享有的權利，更談不上與毗鄰環境相容。過近的樓宇間距，不但干擾私人生活空間，亦會帶來噪音污染、垃圾棄置、污水排放、冷氣排氣口熱風等問題。

3. 擬議安老院缺乏緩衝空間，過度密集，影響衛生環境、污水排放及空氣流通：

3.1 長者屬高風險羣組，特性是低抗力弱，容易感染疾病和傳染病。因應病菌不同的潛伏期，往往發現病發時，病菌早已傳播開去。擬議安老院環境密集，未能提供適當緩衝空間，以保障院內長者及護理職員的健康。此外，該棟突然增多

的樓宇使用者, 對污水排放處理, 特別是新增的樓宇排污水渠, 如何有效連結街外的污水排放系統, 以避免可能引發的社區疫症爆發危機, 至關重要。

3.2 一般安老院會因應天氣和院內情況，把冷氣關掉，可節省能源，使機器有休息的機會。 重要的是，仗長者對冷氣空調有一定的抗拒，開窗本可使空氣流通，可惜擬議安老院因過分貼近鄰舍窗戶，剝削了長者可以選擇開窗的權利。

4 擬議安老院引發的交通問題

4.1 擬議安老院門外的泊車需求，肯定比普通住戶多。因應長者體弱問題，除了身體不適或急病時需召喚救護車外，也包括接在長者定期覆診的復康車輛。 是類車輛, 或停泊在路旁等候, 或在開動/出入時切線換線, 將嚴重影響該路段的交通流量，甚至引致交通擠塞問題。

4.2 院外路段，由於聯合道口右轉入太子道的兩條行車路線，恰巧設有一組交通燈位，此令太子道西行往旺角的車輛，必須由三線收窄至二線，一旦上述相關車輛經常停留該路段，勢將出現樽頸效應，引致交通阻塞。

4.3 據觀察所見，正處上述路段的太子道 351 號樓宇，實為另一安老院，其樓高三層，不時有前述相關車輛停泊路旁，而議擬安老院更高達 11 層，可想而知，相應引發的交通阻塞問題，何只倍增!

5. 擬議安老院選址及設計不當：

5.1 該地段有先天性缺憾，地形狹長，前身為臨時停車場，其地盤的闊度約相等於 2-3 部轎車的長度，建築設計非常局限。有限的空間能否為長者提供有質素、可活動的居住空間，實在成疑。

5.2 十一層高的設計，狹窄的消防通道，顯示對疏散時的風險評估，缺乏週詳考慮。 遇上突發事故，例如失火，需用緊急通道快速撤離，院舍內狹窄的長廊、高密度的宿位、緊連的間隔、再加上十一層高的樓層，均不利於疏散各層行動不便的長者。其中潛藏的安全隱憂，不容忽視。待意外發生後，才追究責任，代價實在太大。

6. 土地資源使用論點:

6.1 一般而言，市區內還未發展成熟的土地資源，日漸減少. 把比較昂貴的住宅地皮發展重建,實有助政府增加收入,舒緩財困,從開源角度考慮,住宅地皮改作安老院舍,會否符合經濟效益?

6.2 社區安老服務，應較多著眼於長者的全方位身心照顧，因此近年一直有往大灣區轉移的趨勢(包括廣東計劃、福建計劃等)：面積較寬敞、設施較周全、收費較廉宜. 長者其實也有其他選擇,不一定需要擠迫在區內狹窄而純粹提供住宿的院舍。

總結：

若容許改變地則用途興建擬議安老院，該地段只會像勉強擠迫出來的侷促空間，將會為各持份者帶來干擾及壓迫感，引起不同層面的環境、衛生、私隱、交通及安全風險等問題。以上各因素帶來的困擾，冀城規會慎重考慮，爲社區發展把關。

附件：相片乙張，粉紅部分為太子道西 351 號樓宇，灰色部分為擬議興建的安老院用地，右邊灰白色部分則為林苑與擬議建築用地之間的圍牆。

提意見人名稱 ：李王藹如 (林苑業主立案法團主席)

簽署 ： 林苑

日期：20/12/2024

☐Urgent ☐Return receipt ☐Expand Group ☐Restricted ☐Prevent Copy

3附加

From: [redacted]
Sent: 2024-12-20 星期五 17:00:09
To: tpbpd/PLAND <tpbpd@pland.gov.hk>
Cc: [redacted]
Subject: Comment relates to Application No. A/K10/276 received on 27/11/2024
Attachment: 致城市規劃委員會秘書 covering page signed 2024 1220.pdf; 致城市規劃委員會秘書信件 p1 p2 2024 1220.pdf; 致城市規畫委員會秘書信件 p3signed page.pdf; A K10 276 安老院地址照片.pdf

To : Secretary , Town Planning Board
From : The Incorporated Owners of Woodland Villa

Attached is the letter entailing the comments from The Incorporated Owners of Woodland Villa regarding the application A/K10/276 received on 27/11/2024 . The same letter with signature from the Chairlady , 李王藹如 , of The Incorporated Owners of Woodland Villa will be sent by registered mail to the Secretary, Town Planning Board. Your attention to our factual comments will be appreciated. Thank you.

Yours sincerely,
Ng Bun Shun, Winfired
Secretary,
The Incorporated Owners of Woodland Villa
c.c. chairlady- 李王藹如 [redacted]

致城市規劃委員會秘書：
專人送遞或郵遞:香港北角渣華道 333 號北角政府合署 15 樓
傳真 ：2877 0245 或 2522 8426
電郵: tpbpd@pland.gov.hk

To : Secretary, Town Planning Board
By hand or post : 15/F, North Point Government Offices, 333 Java Road, North Point, Hong Kong
By Fax : 2877 0245 or 2522 8426
By e-mail : tpbpd@pland.gov.hk

有關的規劃申請編號 The application no. to which the comment relates
A/K10/276Received on 27/11/2024

意見詳情 (如有需要，請另頁說明)
Details of the Comment (use separate sheet if necessary)

Please See Attached.

「提意見人」姓名/名稱 Name of person/company making this comment ____________________

簽署 Signature ____________________ 日期 Date 20/12/2024

致：城市規劃委員會秘書
有關規劃申請編號 A/K10/276 的反對意見詳情如下：

擬議安老院選址不當，樓宇設計欠周全，令周圍環境及衛生等問題加劇惡化，帶來不同層面的負面影響。林苑大廈業主一致表達不贊成擬議安老院的興建。

1. 擬議安老院與毗鄰環境用途並不相容，亦不協調 ：

1.1 整段太子道住宅，居住密度較低，居住空間較寬敞，屬較優化居住環境，例如由九龍城露明道口沿路東向至迴旋處世運花園附近這段路，均屬傳統住宅房屋(太子道 351 號除外)，自樹一格，惟擬議安老院屬商業用途，地形狹長， 圖則顯示其建築緊貼隔鄰安老院，且樓高十一層 ，屬密集式居住間隔，與毗鄰環境用途既不協調，亦不相容。

1.2 若放寬擬議地段的地則用途，將容許商業運作，逐步蠶食太子道本屬優化住宅地段的城市面貌，帶來規劃發展上突兀及不協調的影響。

2. 擬議安老院不合常理地貼近毗鄰，將造成不同層面的環境干擾：

2.1 擬議安老院與左側（西向）樓宇間距， 最短僅 5000 毫米 ，即僅約兩部轎車長度， 院舍設計高十一層，每層最少有十三組窗，正向面對毗鄰窗户，雙方可近距離對望。因院舍屬商業運作，每天絡繹不絕的訪客，將嚴重干擾毗鄰住戶的私隱，打擾他們原本享有的私人空間。

2.2 擬議安老院與右側（東向）樓宇間距更少，差不多緊貼毗鄰，建成後將堵塞了他們的窗戶，完全漠視他們原本享有的權利，更談不上與毗鄰環境相容。過近的樓宇間距，不但干擾私人生活空間，亦會帶來噪音污染、垃圾棄置、污水排放、冷氣排氣口熱風等問題。

3. 擬議安老院缺乏緩衝空間，過度密集，影響衛生環境、污水排放及空氣流通：

3.1 長者屬高風險羣組，特性是低抗力弱，容易感染疾病和傳染病。因應病菌不同的潛伏期，往往發現病發時，病菌早已傳播開去。擬議安老院環境密集，未能提供適當緩衝空間，以保障院內長者及護理職員的健康。此外，該棟突然增多

的樓宇使用者, 對污水排放處理, 特別是新增的樓宇排污水渠, 如何有效連結街外的污水排放系統, 以避免可能引發的社區疫症爆發危機, 至關重要。

3.2 一般安老院會因應天氣和院內情況，把冷氣關掉，可節省能源，使機器有休息的機會。 重要的是，仗長者對冷氣空調有一定的抗拒, 開窗本可使空氣流通，可惜擬議安老院因過分貼近鄰舍窗戶，剝削了長者可以選擇開窗的權利。

4 擬議安老院引發的交通問題

4.1 擬議安老院門外的泊車需求，肯定比普通住戶多。因應長者體弱問題，除了身體不適或急病時需召喚救護車外，也包括接在長者定期覆診的復康車輛。 是類車輛, 或停泊在路旁等候, 或在開動/出入時切線換線, 將嚴重影響該路段的交通流量，甚至引致交通擠塞問題。

4.2 院外路段，由於聯合道口右轉入太子道的兩條行車路線，恰巧設有一組交通燈位，此令太子道西行往旺角的車輛，必須由三線收窄至二線，一旦上述相關車輛經常停留該路段，勢將出現樽頸效應，引致交通阻塞。

4.3 據觀察所見，正處上述路段的太子道 351 號樓宇，實為另一安老院，其樓高三層，不時有前述相關車輛停泊路旁，而議擬安老院更高達 11 層，可想而知，相應引發的交通阻塞問題，何只倍增!

5. 擬議安老院選址及設計不當：

5.1 該地段有先天性缺憾，地形狹長，前身為臨時停車場，其地盤的闊度約相等於 2-3 部轎車的長度，建築設計非常局限。有限的空間能否為長者提供有質素、可活動的居住空間，實在成疑。

5.2 十一層高的設計，狹窄的消防通道，顯示對疏散時的風險評估，缺乏週詳考慮。 遇上突發事故，例如失火，需用緊急通道快速撤離，院舍內狹窄的長廊、高密度的宿位、緊連的間隔、再加上十一層高的樓層，均不利於疏散各層行動不便的長者。其中潛藏的安全隱憂，不容忽視。待意外發生後，才追究責任，代價實在太大。

6. 土地資源使用論點:

6.1 一般而言，市區內還未發展成熟的土地資源，日漸減少. 把比較昂貴的住宅地皮發展重建,實有助政府增加收入,舒緩財困,從開源角度考慮,住宅地皮改作安老院舍,會否符合經濟效益?

6.2 社區安老服務，應較多著眼於長者的全方位身心照顧，因此近年一直有往大灣區轉移的趨勢(包括廣東計劃、福建計劃等)：面積較寬敞、設施較周全、收費較廉宜. 長者其實也有其他選擇,不一定需要擠迫在區內狹窄而純粹提供住宿的院舍。

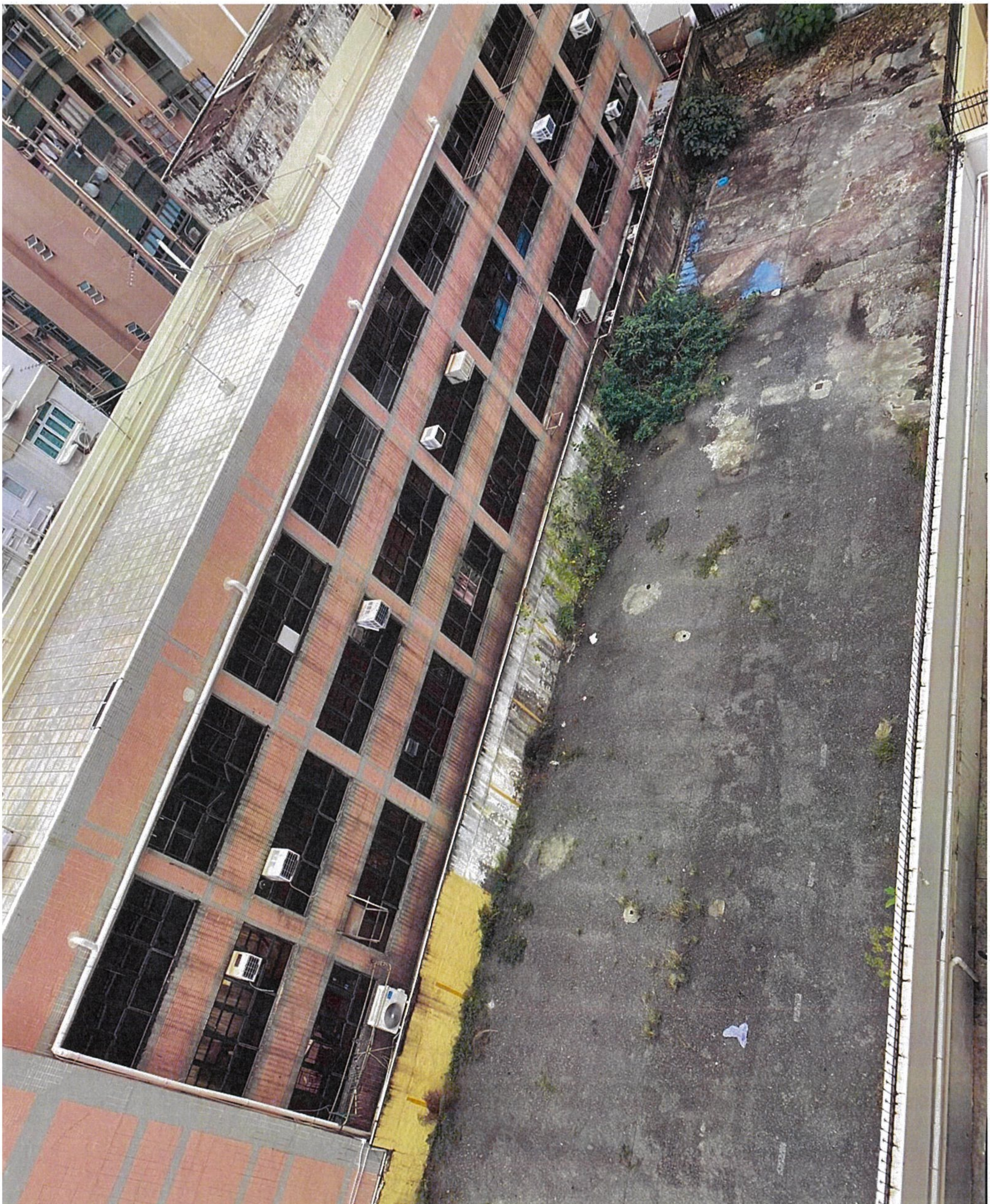
總結：

若容許改變地則用途興建擬議安老院，該地段只會像勉強擠迫出來的侷促空間，將會為各持份者帶來干擾及壓迫感，引起不同層面的環境、衛生、私隱、交通及安全風險等問題。以上各因素帶來的困擾，冀城規會慎重考慮，爲社區發展把關。

附件：相片乙張，粉紅部分為太子道西 351 號樓宇，灰色部分為擬議興建的安老院用地，右邊灰白色部分則為林苑與擬議建築用地之間的圍牆。

提意見人名稱 ：李王藹如 (林苑業主立案法團主席)

簽署 ： 林苑 日期：20/12/2024



嘉華閣業主立案法團

4

The Incorporated Owners of Ka Wah Court

信件編號 ：KWC-L003-2024

致：規劃署
香港北角渣華道三百三十三號
北角政府合署

傳真： 2897 9502

20 DEC 2024

敬啟者，

[redacted]嘉華閣反對通知書

有關：九龍城太子道西 349 號
擬議社會福利設施(安老院)
(申請編號：A/K10/276 - 申請人提交的進一步資料)

本公司「宏信物業管理有限公司」為[redacted]「嘉華閣」之物業管理人。茲知悉 貴署通知 (林苑-九龍城太子道西 345-347 號)信函 (檔案編號:TPB/A/K10/276) 擬議於九龍城太子道西 349 號建立社會福利設施(安老院)事宜。

就題述擬議，嘉華閣業主立案法團代表嘉華閣各業戶向 貴署作出强烈反對，玆因於九龍太子道西 356 號已設有安老院設施，倘再於九龍城太子道西 349 號建立社會福利設施(安老院)，此舉勢必嚴重影響周邊相關交通及現有同區住戶使用公共設施資源。因此，現特致函及嘉華閣各業戶聯署反對通知書 (詳情敬請參閱附件)，祈 貴署予以體諒，將上述擬議方案擱置。

倘貴署對上述事宜仍有任何查詢，煩請於辦公時間內致電[redacted]與管理公司職員游小姐聯絡。

祈請批准，謹此致謝！

嘉華閣業主立案法團
宏信物業管理有限公司 代行
2024 年 12 月 17 日

DC/cy

嘉華閣業主立案法團

The Incorporated Owners of Ka Wah Court

(附件)

[redacted]嘉華閣業戶聯署反對
九龍城太子道西 349 號
擬議社會福利設施(安老院)通知書

單位	業主簽名	單位	業主簽名
[redacted]		[redacted]	
[redacted]		[redacted]	譚少蘭
[redacted]	王欽志	[redacted]	
[redacted]	Chun Hin Wong	[redacted]	程芝英
[redacted]		[redacted]	梁壽花
[redacted]		[redacted]	
[redacted]			
[redacted]			
[redacted]			
[redacted]			
[redacted]			
[redacted]	周建賢		
[redacted]	趙子南		
[redacted]			
[redacted]			

嘉華閣業主立案法團

4附加

The Incorporated Owners of Ka Wah Court

信件編號：KWC-L004-2024

致：發展局
香港添馬添美道 2 號
政府總部西翼 18 樓

傳真： 2845 3489

敬啟者，

[redacted]嘉華閣反對通知書

有關：九龍城太子道西 349 號
擬議社會福利設施(安老院)
(申請編號：A/K10/276 - 申請人提交的進一步資料)

本公司「宏信物業管理有限公司」為[redacted]「嘉華閣」之物業管理人。茲知悉 貴署通知（林苑-九龍城太子道西 345-347 號)信函（檔案編號:TPB/A/K10/276）擬議於九龍城太子道西 349 號建立社會福利設施(安老院)事宜。

就題述擬議，嘉華閣業主立案法團代表嘉華閣各業戶向 貴署作出强烈反對，玆因於九龍太子道西 356 號已設有安老院設施，倘再於九龍城太子道西 349 號建立社會福利設施(安老院)，此舉勢必嚴重影響周邊相關交通及現有同區住戶使用公共設施資源。因此，現特致函及嘉華閣各業戶聯署反對通知書（詳情敬請參閱附件)，祈 貴署予以體諒，將上述擬議方案擱置。

倘貴署對上述事宜仍有任何查詢，煩請於辦公時間內致電[redacted]與管理公司職員游小姐聯絡。

祈請批准，謹此致謝！

嘉華閣業主立案法團
宏信物業管理有限公司 代行
2024 年 12 月 17 日

DC/cy

嘉華閣業主立案法團

The Incorporated Owners of Ka Wah Court

(附件)

[redacted]嘉華閣業戶聯署反對 九龍城太子道西 349 號 擬議社會福利設施(安老院)通知書

	單位	業主簽名	單位	業主簽名
1	[redacted]	劉	[redacted]	[illegible]
2	[redacted]		[redacted]	
3	[redacted]	王至力	[redacted]	譚少蘭
4	[redacted]	Chan Hin Wing	[redacted]	
5	[redacted]	周志儀	[redacted]	張文英
6	[redacted]		[redacted]	陳春君
7	[redacted]		[redacted]	
8	[redacted]			
9	[redacted]			
10	[redacted]			
11	[redacted]			
12	[redacted]			
13	[redacted]			
14	[redacted]	周鴻賢		

☐Urgent ☐Return receipt ☐Expand Group ☐Restricted ☐Prevent Copy 5

From: [redacted]
Sent: 2025-02-16 星期日 05:03:43
To: tpbpd/PLAND <tpbpd@pland.gov.hk>
Subject: Re: A/K10/276 349 Prince Edward Road West RICHE

Dear TPB Members,

So 141sq.m OS has now been conveniently added to the Gist. Cannot find any reference to this in the Response to Comments but presumably this is the Flat Roof at 1/F / 8/F and 10/F. The 8 and 10/Fs are above the 24mt height stipulated for RCHE. Are we really to believe when RCHE are well known to suffer staff shortages that there would be someone present to accompany the elderly?

This indicates that the facilities are merely box ticking and that the residents would have very limited access to the facilities.

While none of the government depts appear to consider this issue, hopefully members will be more diligent and ask questions.

Mary Mulvihill

> **From:** [redacted]
> **To:** tpbpd <tpbpd@pland.gov.hk>
> **Date:** Monday, 23 December 2024 2:14 AM HKT
> **Subject:** Re: A/K10/276 349 Prince Edward Road West RICHE
>
> There is a problem with the further info files, cannot be accessed
>
> > **From:** [redacted]
> > **To:** tpbpd <tpbpd@pland.gov.hk>
> > **Date:** Thursday, 7 November 2024 2:35 AM HKT
> > **Subject:** A/K10/276 349 Prince Edward Road West RICHE
> >
> > A/K10/276
> >
> > 349 Prince Edward Road West
> >
> > Site area: About 582.925m²
> >
> > Zoning: "Res (Group B)"
> >
> > Applied Development: Residential Care Home for the Elderly / 141 Beds (91) / PR 5 (3.92) / 11 Stories (8) / 2 Vehicle Parking
> >
> > Dear TPB Members,

261 Approved 3 Jan 2020. Applicant back looking to squeeze more beds in, originally the average unit size of the proposed RHCE was about 11.5m2.

A number of members were not supportive of the plan

52. *Members generally considered that the demand for RCHE was keen. While some Members considered that the application should be approved to meet the demand for RHCE, they were of the view that,* ***given the narrow elongated shape of the site, the proposed scheme with the current layout design, which de facto would meet the bare minimum floor space requirement for RCHE, was not desirable and could not provide a quality living environment for the elderly****. There was concern on whether SWD's guidelines on the provision of RCHE could be improved.*
53. *A Member strongly opposed to the application as the current design of the proposed RCHE was not up to the standard nowadays and an approval of the application would contravene the purpose of the Town Planning Ordinance to promote the health, safety, convenience and* ***general welfare*** *of the community. The Member considered that the Government should be more proactive in facilitating quality provision of RCHE.*

Again, strong objections to the complete lack of any outdoor area and Open Space where residents could sit and absorb some Vit D. There is no park area close by where the more mobile could relax.

It is unconscionable that operators come up with plans like this and that TPB would approve them.

Hopefully current members will object to the application and demand that more humane living conditions be provided.

Mary Mulvihill

From: [redacted]
To: tpbpd <tpbpd@pland.gov.hk>
Date: Tuesday, 13 August 2019 9:13 PM HKT
Subject: Re: A/K10/261 349 Prince Edward Road West RICHE

Dear TPB Members,

Should read **NO** Open Space.

Some activity rooms added but no external facilities. Going forward elderly care facilities must have OS, balcony or terrace so that wheel chair bound tenants can enjoy some natural sunlight and exposure to the world outside.

Yet again no information on applicant even though it is very likely that tax payer revenue will be funneled into the project in the form of subvention, etc.

☐Urgent ☐Return receipt ☐Expand Group ☐Restricted ☐Prevent Copy

Mary Mulvihill

From: [redacted]
To: "tpbpd" <tpbpd@pland.gov.hk>
Sent: Saturday, April 27, 2019 3:29:23 AM
Subject: A/K10/261 349 Prince Edward Road West RICHE

A/K10/261
349 Prince Edward Road West
Site area : About 582.925m²
Zoning : "Res (Group B)"
Applied Development : Residential Care Home for the Elderly / 91 Units / 2 Vehicle Parking

Dear TPB Members,

While fully supporting the provision of care homes for the elderly, one has to question if this site is appropriate for the proposed use. A long, low rise building sandwiched between tall towers raises questions about ventilation and natural light, particularly as the corridors are planned for the more open side.

There is also a significant lack of community space with just two small activity rooms. Where would the tenants mingle? Would they be confined to their rooms? Unfortunately the roof is filled with utilities when a roof garden could have provided some open space.

There is **on OS** on the ground floor.

I cannot find standards for this type of facility except for floor area with which this application appears to comply.

10.2.28 The floor area requirements for different types of RCS vary. **In general, for an RCHE with 100 places, a NOFA of 1 354m2 / NUFA 2,166m2 is required**. These floor area requirements are for general reference only and should be applied flexibly.

Members please raise questions with regard to the suitability of this site for the purpose.

Our elderly deserve a comfortable and convivial environment.

Mary Mulvihill

6

致城市規劃委員會秘書：
專人送遞或郵遞:香港北角渣華道 333 號北角政府合署 15 樓
傳真 ：2877 0245 或 2522 8426
電郵: tpbpd@pland.gov.hk

To : Secretary, Town Planning Board
By hand or post : 15/F, North Point Government Offices, 333 Java Road, North Point, Hong Kong
By Fax : 2877 0245 or 2522 8426
By e-mail : tpbpd@pland.gov.hk

RECEIVED
2 6 FEB 2025
Town Planning Board

有關的規劃申請編號 The application no. to which the comment relates
A/K10/276Received on 27/01/2025

意見詳情 (如有需要，請另頁說明)
Details of the Comment (use separate sheet if necessary)

Please See Attached.

「提意見人」姓名/名稱 Name of person/company making this comment ________________

簽署 Signature 王藹 Ho 林苑 日期 Date 25/2/2025
(林苑業主立案法團主席)

致：城市規劃委員會秘書

因應城規會 2025 年 1 月 2 7 日收到並上載之擬議安老院申請文件 A/K10/276 (進一步資料)，林苑業主立案法團咸表强烈反對，意見如下：

1. 擬議安老院的設計，對鄰舍居民，並不友善。彼處狹長地段，與毗鄰左邊 345-347 號林苑，及右邊 353 號嘉華閣、351 號護老中心，並排面向太子道西。從規劃圖則估計，該樓宇長逾 40 m，距林苑東面外牆最近衹有 4 m (即 6、7 步之遙) 。由於林苑東牆及嘉華閣西牆建有頗多窗戶，兩苑住戶日常生活、作息環境，勢必大受影響。試想想：作為距離僅 4 m 的鄰居林苑住戶，我們將面向怎樣的一幢長逾 40 m、高達 11 層樓房的平行外牆？當中，將面臨的滋擾和壓迫感，不難理解：衹要一推開窗，便見高牆，視野無存，情何以堪？

2. 擬議安老院東、西兩面外牆，欠缺提供立面 (Elevation) 圖則。作為－座商業運作樓宇，選址在純粹住宅樓宇隔壁，理應顧及可能帶來的私隱、滋擾、噪音等問題，並恰當反映在外牆圖則設計上，可惜有關期望，卻資料欠奉，規劃並不周詳。

3. 一般相隔甚近的樓宇窗戶設計，會利用直角或斜角，避卻面對面互照。惟擬議安老院設置直視窗戶，按照圖則內比例尺估計，視野距離僅約 5 至 6 m (大約 10 步距離) ，衹要室內人士，雙方正向直望，衣服面容、眼耳口鼻，均清晰可見，且室內行動，隨時一覽無遺。咫尺距離，完全漠視居室用戶應受尊重的私隱權利。

4. 擬議安老院或安裝水塔（Cooling Tower），以調節室溫及加強空氣流通，惟數目及安裝位置，無從得知。一般而言，水塔多放置於屋頂平台，運作時，可持續發出低頻噪音，此對附近居民將帶來煩悶、不安及困擾。此外，水氣經蒸騰作用產生的水滴，若被喉管或不明環境因素污染，散發四周，後果亦不堪設想。

5. 總結：圖則本身有地型狹長的限制，意圖把商業運作模式硬切入該申請地段，卻疏忽協調周邊環境因素，冷待鄰里和諧，擬議安老院將是一個突兀和不合理的存在。懇請城規會慎重審議，擱置方案。

提意見人名稱 : 李王藹如 (林苑業主立案法團主席)

簽署： 林苑 林苑 日期：25 Feb., 2025

附件：林苑業主聯署反對擬議安老院申請文件 A/K10/276

林苑業主立案法團
THE INCORPORATED OWNERS OF WOODLAND VILLA
九龍太子道西 345-347 號林苑地下 電話: 27114385

林苑業戶聯署反對九龍城太子道西 349 號擬議社會福利設施(安老院)通知書

單位	業主簽名	單位	業主簽名
[redacted]		[redacted]	
[redacted]	Esther Yiu	[redacted]	Natalie
[redacted]	林美華	[redacted]	SChan
[redacted]		[redacted]	
[redacted]		[redacted]	譚善兒.
[redacted]	Cynthia	[redacted]	Calvin Chan
[redacted]		[redacted]	
[redacted]		[redacted]	
[redacted]		[redacted]	
[redacted]		[redacted]	
[redacted]	黃婉儀	[redacted]	
[redacted]		[redacted]	
[redacted]	Willy Lee	[redacted]	
[redacted]		[redacted]	
[redacted]		[redacted]	
[redacted]		[redacted]	
[redacted]		[redacted]	
[redacted]	Raymond Lu		

☐Urgent ☐Return receipt ☐Expand Group ☐Restricted ☐Prevent Copy ☐Confidential

6 附加

From: [redacted]
Sent: 2025-02-25 星期二 20:05:48
To: tpbpd/PLAND <tpbpd@pland.gov.hk>
Cc: [redacted]
Subject: Comments related to A/K10/276 received on 27/01/2025
Attachment: 致城市規劃委員會秘書信件 Covering page signed 2025 0225.pdf; 致城市規劃委員會秘書信件 Particulars of commenter 2025 0225.pdf; 致城市規劃委員會秘書信件 p1 2025 0225.pdf; 致城市規劃委員會秘書信件 p2 signed 2025 0225.pdf; 附件_林苑業主聯署反對擬議安老院申請文件 A_K10_276.pdf

To : Secretary , Town Planning Board
From : The Incorporated Owners of Woodland Villa

Attached is the letter entailing the comments from The Incorporated Owners of Woodland Villa regarding the application A/K10/276 received on 27/1/2025 and the document of "林苑業主聯署反對擬議安老院申請文件 A/K10/276". The original letter with signature from the Chairlady , 李王藹如 , of The Incorporated Owners of Woodland Villa will be sent by registered mail to the Secretary, Town Planning Board.

Your attention to the factual comments and opposition from the owners of Woodland Villa will be appreciated. Thank you.

Yours sincerely,
Ng Bun Shun, Winfired
Secretary,
The Incorporated Owners of Woodland Villa
c.c. chairlady- 李王藹如 ([redacted])

致城市規劃委員會秘書：
專人送遞或郵遞:香港北角渣華道 333 號北角政府合署 15 樓
傳真 ：2877 0245 或 2522 8426
電郵: tpbpd@pland.gov.hk

To : Secretary, Town Planning Board
By hand or post : 15/F, North Point Government Offices, 333 Java Road, North Point, Hong Kong
By Fax : 2877 0245 or 2522 8426
By e-mail : tpbpd@pland.gov.hk

有關的規劃申請編號 The application no. to which the comment relates
A/K10/276Received on 27/01/2025

意見詳情 (如有需要，請另頁說明)
Details of the Comment (use separate sheet if necessary)

Please See Attached.

「提意見人」姓名/名稱 Name of person/company making this comment ____________________

簽署 Signature 王藹 林苑 日期 Date 25/2/2025
(林苑業主立案法團主席)

致：城市規劃委員會秘書

因應城規會 2025 年 1 月 2 7 日收到並上載之擬議安老院申請文件 A/K10/276 (進一步資料)，林苑業主立案法團咸表强烈反對，意見如下：

1. 擬議安老院的設計，對鄰舍居民，並不友善。彼處狹長地段，與毗鄰左邊 345-347 號林苑，及右邊 353 號嘉華閣、351 號護老中心，並排面向太子道西。從規劃圖則估計，該樓宇長逾 40 m，距林苑東面外牆最近衹有 4 m (即 6、7 步之遙) 。由於林苑東牆及嘉華閣西牆建有頗多窗戶，兩苑住戶日常生活、作息環境，勢必大受影響。試想想：作為距離僅 4 m 的鄰居林苑住戶，我們將面向怎樣的一幢長逾 40 m、高達 11 層樓房的平行外牆？當中，將面臨的滋擾和壓迫感，不難理解：衹要一推開窗，便見高牆，視野無存，情何以堪？

2. 擬議安老院東、西兩面外牆，欠缺提供立面 （Elevation) 圖則。作為一座商業運作樓宇，選址在純粹住宅樓宇隔壁，理應顧及可能帶來的私隱、滋擾、噪音等問題，並恰當反映在外牆圖則設計上，可惜有關期望，卻資料欠奉，規劃並不周詳。

3. 一般相隔甚近的樓宇窗戶設計，會利用直角或斜角，避卻面對面互照。惟擬議安老院設置直視窗戶，按照圖則內比例尺估計，視野距離僅約 5 至 6 m (大約 10 步距離) ，衹要室內人士，雙方正向直望，衣服面容、眼耳口鼻，均清晰可見，且室內行動，隨時一覽無遺。咫尺距離，完全漠視居室用戶應受尊重的私隱權利。

4. 擬議安老院或安裝水塔（Cooling Tower），以調節室溫及加強空氣流通，惟數目及安裝位置，無從得知。一般而言，水塔多放置於屋頂平台，運作時，可持續發出低頻噪音，此對附近居民將帶來煩悶、不安及困擾。此外，水氣經蒸騰作用產生的水滴，若被喉管或不明環境因素污染，散發四周，後果亦不堪設想。

5. 總結：圖則本身有地型狹長的限制，意圖把商業運作模式硬切入該申請地段，卻疏忽協調周邊環境因素，冷待鄰里和諧，擬議安老院將是一個突兀和不合理的存在。懇請城規會慎重審議，擱置方案。

提意見人名稱：李王藹如 (林苑業主立案法團主席)

簽署：林苑 日期：25 Feb., 2025

附件：林苑業主聯署反對擬議安老院申請文件 A/K10/276

林苑業主立案法團
THE INCORPORATED OWNERS OF WOODLAND VILLA
九龍太子道西 345-347 號林苑地下 電話: 27114385

林苑業戶聯署反對九龍城太子道西 349 號擬議社會福利設施(安老院)通知書

單位	業主簽名	單位	業主簽名
[redacted]		[redacted]	
[redacted]	Esther Yiu	[redacted]	Natalie
[redacted]	林美華	[redacted]	SChan
[redacted]		[redacted]	
[redacted]		[redacted]	譚善兒.
[redacted]	Cynthia	[redacted]	CALVIN CHAN
[redacted]		[redacted]	
[redacted]		[redacted]	
[redacted]		[redacted]	
[redacted]		[redacted]	
[redacted]	黃, 婉儀	[redacted]	
[redacted]		[redacted]	
[redacted]	Willy Lee	[redacted]	
[redacted]		[redacted]	
[redacted]		[redacted]	
[redacted]		[redacted]	
[redacted]		[redacted]	
[redacted]	Raymond Lee		

Detailed Comments of Government Departments

1. Comments of the Director of Environmental Protection (DEP):

(i) Based on the submission, with the implementation of recommended mitigation measures, insurmountable environmental impacts associated with the proposed development for residential care home for the elderly are not anticipated. The key findings are set out below:

(a) Air Quality
the minimum separation distance between the proposed development and the nearest road kerb of Prince Edward Road West satisfied relevant vehicular emission buffer distance requirement (Primary Distributor > 20m) as stipulated in the Hong Kong Planning Standards and Guidelines. Adverse air quality impact is not anticipated;

(b) Noise
with noise mitigation measures such as baffle type acoustic window, 100% road traffic noise compliance rate for the proposed development is achieved. Also, the fixed noise level at the proposed development have been predicted and complied with relevant standard under worst case scenario. The fixed plants from the operation of the proposed development will be designed to comply with the relevant noise standard for planning purpose. Insurmountable noise impact is not anticipated; and

(c) Sewage
based on the sewerage impact assessment, the capacity of the existing public sewerage system will be sufficient to cater for the sewage generated from the proposed development and the surrounding catchment areas. No adverse sewage impact is expected;

(ii) Comments on noise impact assessment

Technical Comments
(1) Appendix 2.2

- The no. of units counted with noise exceedance is incorrect, there should be 8 units with noise exceedance, and 14 NAPs with noise exceedance. Therefore, please revised and update the compliance rate.

(2) Appendix 3.2

- Referring to the previous comment, please review the z-coordinate in the table as they are all 0.

- Please also review the screening correction of fixed noise sources F33-F45 for representative noise sensitive receivers FN01-FN05.

(3) S.3.3.1

- Referring to item 3 of Response-to-Comments (R-to-C) (**Appendix Ie**), Attachment A should be attached to provide sightline analysis but it is missing.

(4) S.3.6.2

- Referring to item 6 of R-to-C (**Appendix Ie**), please provide details on the planned fixed noise sources such as location or any mitigation measures required.

Recommended Advisory Clauses

(a) to note the comments of the District Lands Officer/Kowloon East, Lands Department (LandsD) that the proposed Residential Care Home for the Elderly (RCHE) development is in breach of the existing lease conditions. If the subject application is approved by the Town Planning Board, the applicant has to apply to LandsD for a lease modification to implement the proposal. However, there is no guarantee that the lease modification would be granted or approved. Such application if received, will be considered by LandsD acting in its capacity as the landlord at its sole discretion. If the application is approved, it will be subject to such terms and conditions including, inter alia, payment of premium and administrative fee as may be imposed by LandsD.

(b) to note the comments of the Chief Building Surveyor/Kowloon, Buildings Department (BD):

(i) all building works are subject to compliance with the Buildings Ordinance (BO) and its allied regulations;

(ii) the applicant is reminded that the following issues should be addressed when making application for approval of plans for carrying out of building works under the BO:

a. RCHE, which is for habitation, is a domestic use under the BO and should be accountable for domestic site coverage and plot ratio under the BO. Subject to compliance with the relevant criteria stipulated in Practice Note for Authorized Persons, Registered Structural Engineers and Registered Geotechnical Engineers (PNAP) APP-172, application for modification may be considered at building plan submission stage for treating RCHE as non-domestic building for the purposes of regulations 19, 20, 21 and 22 of the Building (Planning) Regulations (B(P)R) and allowing non-provision of open space for RCHE under regulation 25 of the B(P)R;

b. there is no existing lane pattern in the vicinity of the proposed development. BD may, on application, favorably consider exercising discretion under section 42 of the BO to grant modification to permit the non-provision of service lane for the RCHE;

c. access and facilities for persons with a disability shall be provided in accordance with B(P)R 72 and Design Manual: Barrier Free Access 2008 (2024 Edition);

d. natural lighting and ventilation should be provided to rooms used for habitation and for the purposes of office and kitchen complying with Part IV of B(P)R;

e. adequate means of escape shall be provided to the subject premises in compliance with the regulation 41(1) of the Building (Planning) Regulation (B(P)R); and

f. Emergency Vehicular Access (EVA) should be provided in accordance with B(P)R 41D and Section 6, Part D of the Code of Practice for Fire Safety in Buildings 2011.

(iii) Before any new building works are carried out, prior approval and consent from the Building Authority under the BO should be obtained, unless the works fall within the scope of designated minor works that can be carried out under the simplified requirements specified in the Building (Minor Works) Regulation or such works are exempted works. An Authorized Person should be appointed to ensure that any building works are implemented in compliance with the BO.

(iv) Detailed comments under the BO on individual sites for private developments such as permissible plot ratio, site coverage, means of escape, fire resisting construction, service lane, EVA, natural lighting and ventilation, barrier free access and facilities, compliance with sustainable building design guidelines, etc. will be formulated at the building plan submission stage.

(c) to note the comments of the Director of Social Welfare that the applicant is reminded that, for a RCHE licence to be issued, the intended RCHE has to comply with the licensing requirements as stipulated in the Residential Care Homes (Elderly Persons) Ordinance, Cap. 459, and its subsidiary legislation and the latest version of the Code of Practice for Residential Care Homes (Elderly Persons) (CoP).

(d) to note the comments of the Director of Fire Services (D of FS) that water supplies for firefighting and fire service installations should be provided to the satisfaction of the D of FS under regulatory regimes; and detailed fire services requirements will be formulated upon receipt of formal submission of general building plans. Requirements as stipulated in the CoP should be strictly followed. The height restrictions as stipulated in section 20 of Residential Care Homes (Elderly Persons) Regulation, Cap. 459A shall be observed.

(e) to note the comments of the Commissioner for Transport that the applicant is advised to include control measures to minimize kerbside activities by rehabus/ambulance in view of the heavy traffic flows at Princes Edward Road West and the close proximity of the Site to the signal controlled crossing.

(f) to note the comments of Commissioner of Police:

(i) Prince Edward Road West is a 'Full length Traffic Impact Assessment route' connecting Kowloon West and Kowloon East region, pick up/drop off on Prince Edward Road West outside the proposed elderly home for the staff own convenience should be restricted; and

(ii) if road works or road closure for construction (e.g. hoarding erection on public footpath) is subsequently required, Hong Kong Police Force (Attn.: OC RMO KW) should be furnished a set of temporary traffic arrangement (TTA) plans in order to facilitate his further assessment.

(g) to note the comments of Chief Town Planner/Urban Design and Landscape, Planning Department that the applicant is reminded that approval of the section 16 application under Town Planning Ordinance does not imply approval of the site coverage of greenery requirements under PNAP APP-152. The site coverage of greenery calculation should be submitted separately to BD for approval as appropriate; and

(h) to note the comments of Director of Environmental Protection that noise generated from activities carried out in industrial or commercial premises (e.g. ventilation systems and cooling towers) are subject to control under the Noise Control Ordinance. These activities should comply with the noise standards as stipulated in the relevant Technical Memorandum.