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

2401274 22/5 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/K10/275
	Date Received 收到日期	22 MAY 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。

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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)

Hong Kong Housing Authority

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)

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）	Junction of Sung Wong Toi Road and To Kwa Wan Road
(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 Gross Site Area: 4,100 (Subject to detailed survey) sq.m 平方米 ☑About 約 ☑Gross floor area 總樓面面積 Not more than 36,900 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）	4,100 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 A)"
(f)	Current use(s) 現時用途	Former Lok Sin Tong Benevolent Society Transitional Housing and Former Kowloon Animal Management Centre of Agriculture Fisheries and Conservation Department (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) Change of use within existing building or part thereof
第(i)類 更改現有建築物或其部分內的用途

☐ Type (ii) Diversion of stream / excavation of land / filling of land / filling of pond as required under Notes of Statutory Plan(s)
第(ii)類 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) Public utility installation / Utility installation for private project
第(iii)類 公用事業設施裝置/私人發展計劃的公用設施裝置

☑ Type (iv) Minor relaxation of stated development restriction(s) as provided under Notes of Statutory Plan(s)
第(iv)類 略為放寬於法定圖則《註釋》內列明的發展限制

☑ Type (v) Use / development other than (i) to (iii) above
第(v)類 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 .....100..... mPD 米 (主水平基準上) to 至 .....130.....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 minor relaxation of building height restriction for public housing development (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 36,900 ..... sq.m 平方米	☐About 約
Proposed plot ratio 擬議地積比率	Not more than 9.0	☐About 約
Proposed site coverage 擬議上蓋面積	37.5 ..... %	☑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	37 domestic storeys on 4 storeys podium..... storeys 層 ☐ include 包括.....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	Not more than 130..... mPD 米(主水平基準上)	☐About 約
	..... m 米	☐About 約

Part 6 (Cont'd) 第 6 部分 (續)

☑ Domestic part 住用部分

GFA 總樓面面積 ..... 30,750 ..... sq. m 平方米 ☑About 約

number of Units 單位數目 ..... About 756 .....

average unit size 單位平均面積 ..... 40.7 .....sq. m 平方米 ☑About 約

estimated number of residents 估計住客數目 ..... About 1,876 .....

☑ Non-domestic part 非住用部分 Total non-domestic GFA: About 6,150 sq.m 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 ..... 230 ..... 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)

HA's Office ('Government Use') and social welfare facilities (subject to change as per SWD's request at detailed design stage.)

☐ 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 ..... 1,876 ..... 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]
1	G/F	Lobby and ancillary facilities
	1/F - 3/F	HA's Office ('Government Use'), welfare facilities, carpark, landscape area
	4/F - 37/F	Residential units

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

Podium garden, recreational facilities and circulation area

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)

2028/29

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)) Sung Wong Toi Road and To Kwa Wan Road ☐ 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: 64 (Domestic), 5 (Visitor), 5 (HA's Office) and 2 (Retail and commercial) Motorcycle Parking Spaces 電單車車位: 6 Light Goods Vehicle Parking Spaces 輕型貨車泊車位: 3 Medium Goods Vehicle Parking Spaces 中型貨車泊車位: Nil Heavy Goods Vehicle Parking Spaces 重型貨車泊車位: Nil Others (Please Specify) 其他 (請列明): Nil
	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: Nil Coach Spaces 旅遊巴車位: Nil Light Goods Vehicle Spaces 輕型貨車車位: Nil Medium Goods Vehicle Spaces 中型貨車車位: Nil Heavy Goods Vehicle Spaces 重型貨車車位: 2 (Domestic) Others (Please Specify) 其他 (請列明): Nil
	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..... sq.m 平方米 ☐About 約 Depth of excavation 挖土深度 .....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

Mr. CHAN King Kong, Theron
Name in Block Letters 姓名（請以正楷填寫）

Chief Planning Officer/1
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 RPP248

on behalf of 代表 Hong Kong Housing Authority

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

Date 日期 20.5.2024 (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	Junction of Sung Wong Toi Road and To Kwa Wan Road
Site area 地盤面積	4,100 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 A)"
Applied use/ development 申請用途/發展	Proposed minor relaxation of building height restriction for public housing development

			sq.m 平方米		Plot Ratio 地積比率	
(i)	Gross floor area and/or plot ratio 總樓面面積及／或地積比率	Domestic 住用	30,750	☐ About 約 ☑ Not more than 不多於	7.5	☐About 約 ☑Not more than 不多於
		Non-domestic 非住用	6,150	☐ About 約 ☑ Not more than 不多於	1.5	☐About 約 ☑Not more than 不多於
(ii)	No. of blocks 幢數	Domestic 住用				
		Non-domestic 非住用				
		Composite 綜合用途	1			

(iii) Building height/No. of storeys 建築物高度／層數	Domestic 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)*
	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)
		130	mPD 米(主水平基準上) ☑ (Not more than 不多於)
		37	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		37.5 %	☑ About 約
(v) No. of units 單位數目		756	
(vi) Open space 休憩用地	Private 私人	1,876 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	
	Private Car Parking Spaces 私家車車位	64 (Domestic), 5 (Visitor), 5 (HA's Office) and 2 (Retail and commercial)
	Motorcycle Parking Spaces 電單車車位	6
	Light Goods Vehicle Parking Spaces 輕型貨車泊車位	3
	Medium Goods Vehicle Parking Spaces 中型貨車泊車位	Nil
	Heavy Goods Vehicle Parking Spaces 重型貨車泊車位	Nil
	Others (Please Specify) 其他 (請列明)	Nil
	Total no. of vehicle loading/unloading bays/lay-bys 上落客貨車位／停車處總數	
	Taxi Spaces 的士車位	Nil
	Coach Spaces 旅遊巴車位	Nil
	Light Goods Vehicle Spaces 輕型貨車車位	Nil
	Medium Goods Vehicle Spaces 中型貨車位	Nil
	Heavy Goods Vehicle Spaces 重型貨車車位	2 (Domestic)
	Others (Please Specify) 其他 (請列明)	Nil

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）	☐	☑
Visual Appraisal		

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。

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香港房屋委員會
Hong Kong Housing Authority

本署檔號 Our Ref. HD(P) 8/3/KN94
來函檔號 Your Ref.

電話 Tel No. 2761 5301
圖文傳真 Fax No. 2761 5870

20 May 2024
By Hand

Secretary, Town Planning Board
15/F, North Point Government Offices
333 Java Road, North Point
Hong Kong

Dear Sir/Madam,

Section 16 Planning Application for Proposed Minor Relaxation of Building Height Restriction for the Proposed Public Housing Development at To Kwa Wan Road, Ma Tau Kok

We submit herewith one hard copy of Form No. S.16-I and four hard copies and one soft copy (to be uploaded to the hyperlink from the Board) of the Supporting Planning Statement for the captioned planning application.

Should you have any queries or need further information, please contact Ms. Belinda Lau, Senior Planning Officer/5 at [redacted]. Thank you.

Yours faithfully,

(Theron Chan)
for Director of Housing

Encl.

S.16 PLANNING APPLICATION FOR

Proposed Minor Relaxation of Building Height Restriction for the Proposed Public Housing Development at To Kwa Wan Road, Ma Tau Kok

Supporting Planning Statement

May 2024

香港房屋委員會
Hong Kong Housing Authority

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Executive Summary

This planning application is submitted by the Hong Kong Housing Authority (HA) as the project proponent to seek approval from the Town Planning Board (TPB) under Section 16 of the Town Planning Ordinance for minor relaxation of the building height (BH) restriction from 100mPD to 130mPD (+ 30%) for the public housing development at To Kwa Wan Road, Ma Tau Kok (the Application Site).

The Application Site falls within an area zoned "Residential (Group A)" under the Approved Ma Tau Kok Outline Zoning Plan No. S/K10/30, subject to a maximum domestic plot ratio (PR) of 7.5 for a domestic building or 9.0 for a building that is partly domestic and partly non-domestic and BH restriction of +100mPD.

The Application site is small with about 4,100m^2. Given its various site constraints, a minor relaxation of the BH restriction from 100mPD to 130mPD is proposed with a view to maximise flat production and to provide about 5% of the total attainable domestic gross floor area for social welfare facilities by fully utilizing the permitted domestic and non-domestic PR of the Application Site. The proposed BH restriction is also compatible with the BH profile in the area. With the proposed minor relaxation, the Application Site is able to produce about 756 public housing units, representing an increase of 84 units (+12.5%).

The proposed minor relaxation of the BH restriction is in-line with Government's policy to maximise the development potential of public housing land and address the space shortfall of the welfare sector while addressing site constraints. Findings of relevant technical assessments have indicated that the proposed development will not impose any insurmountable impacts in visual, air ventilation, traffic, sewerage, drainage, water supply, environmental, landscape and gas risk aspects.

In view of the above, the TPB is sincerely requested to give favourable consideration on the proposed minor relaxation of the BH restriction of the Application Site.

行政摘要

(聲明：此中文譯本僅供參考，如中文譯本和英文原文有差異時，應以英文原文為準。)

本規劃申請是由香港房屋委員會（下稱「房委會」）向城市規劃委員會（下稱「城規會」）提出，根據《城市規劃條例》第 16 條，向城規會申請規劃許可，略為放寬位於土瓜灣道公營房屋發展計劃（下稱「申請地盤」）的建築物高度限制由主水平基準上 100 米增加至 130 米（增加百分之三十）。

申請地盤位於根據《馬頭角分區計劃大綱核准圖編號 S/K10/30》上的「住宅(甲類)」地帶內，受限於最高地積比率整幢為住用建築物的為 7.5 倍，一幢建築物內住用與非住用各佔部分的為 9.0 倍以及建築物高度限制的主水平基準上 100 米。

申請地盤面積僅約4,100平方米。由於地盤狹小及受制於多種發展限制，建議申請略為放寬申請地盤的建築物高度限制由主水平基準上100米增加至130米，以充分運用允許的最大住用及非住用地積比率來提供更多公營房屋單位及約百分之五總住用樓面面積作社福設施用途。擬議建築物高度與該區的建築物高度概況兼容。申請地盤在擬議的略為放寬申請下，將可增建 84個單位（增加百分之十二點五），即提供約 756個為公營房屋單位。

擬議略為放寬非建築用地及建築物高度限制符合政府政策，在地盤限制下有效運用公營房屋地盤發展潛力，並應付社福設施的殷切需求。各項技術評估顯示擬議發展不會在視覺、空氣流通、交通、排污、排水、供水、環境、景觀及氣體風險方面構成不可克服的影響。

基於以上各點，懇請城規會從優考慮略為放寬申請地盤的非建築用地及建築物高度限制。

1. INTRODUCTION

1.1 This planning application seeks the Town Planning Board (TPB)'s approval under Section 16 of the Town Planning Ordinance for proposed minor relaxation of the building height (BH) restriction from 100mPD to 130mPD for the proposed public housing development at To Kwa Wan Road, Ma Tau Kok (**Plan 1**) (the Application Site).

2. SITE CONTEXT

Background

2.1 The Application Site, with a gross area of about 0.41 hectares (ha), is located at the eastern part of Ma Tau Kok. In response to the invitation in 2021 Policy Address (PA) to conduct a study on redevelopment of Ma Tau Wai Estate, the Application Site is intended to rehouse some affected tenants as the pump-priming reception resource to kick start the redevelopment process. The Application Site was occupied by Lok Sin Tong Benevolent Society (LST) as transitional housing and Agriculture, Fisheries and Conservation Department (AFCD) as Kowloon Animal Management Centre (KAMC). The portion of the site occupied for transitional housing has been handed over to HA for construction in December 2023. AFCD will vacate the animals and facilities to the new Animal Management and Animal Welfare Building Complex at Kai Tak and the portion of KAMC is scheduled to be handed over to HA by July 2024.

Planning Context

2.2 The Application Site has a net site area of about 0.41 ha. It is currently zoned "Residential (Group A)" under the Approved Ma Tau Kok Outline Zoning Plan No. S/K10/30, subject to a maximum domestic plot ratio (PR) of 7.5 for a domestic building or 9.0 for a building that is partly domestic and partly non-domestic and BH restriction of +100mPD.

Surrounding Land Uses and Existing Building Height

2.3 The Application Site is located at the edge of high-density residential cluster. The surroundings are:

- To the northeast of the Subject Site is the "Other Specified Uses" annotated "Stadium" ("OU(Stadium)") zone on the Approved Kai Tak Outline Zoning Plan No. S/K22/8 and is subject to approved planning applications No. A/K22/17 and A/K22/28. The BH of the Main Stadium of Kai Tak Sports Park is 70mPD under approved application No. A/K22/17 while the BH of proposed hotel and office locating at the northern west of Main Stadium are 60.15mPD and 57mPD

respectively under the approved application No. A/K22/28.

- To the northwest of the Subject Site is a series of planned developments in the Comprehensive Development Area ("CDA") zones including Application No. A/K10/256 and A/K10/259 submitted by the respective owners for proposed comprehensive residential development with 'Shop and Services' and 'Eating Place' in the "CDA(2)" zone, as well as Application No. A/K10/265 for proposed comprehensive residential and commercial (shop and services) development in the "CDA(3)" zone. All these applications are approved with a maximum BH of 100mPD. Across Sung Wong Toi Road is a planned public open space (i.e. Sung Wong Toi Park).

- To the southeast of the Subject Site, across To Kwa Wan Road is a Government, Institution or Community (GIC) facility of To Kwa Wan Road sewage pumping station at 13.4mPD, proposed Hong Kong Housing Society (HKHS)'s dedicated rehousing estate (DRE) at 100mPD and the Urban Renewal Authority Ming Lun Street / Ma Tau Kok Road Development Scheme (KC-018) and To Kwa Wan Road / Ma Tau Kok Road Development Scheme (KC-019) at 120mPD.

- To the southwest, located next to the Subject Site is a proposed GIC redevelopment by the Hong Kong Society for the Blind (HKSB) for a welfare services block accommodating the existing HKSB's facilities with additional welfare facilities. The proposed welfare block will be redeveloped with a BH of 61.2mPD. Across Mok Cheong Street is another planned CDA development of the "13 Streets" with a BH restriction of 100mPD.

Site Constraints

2.4 The constraints in the Application Site (**Plan 2**) include:

a) the Application Site is small and congested;

b) the domestic block has to be setback by 10m along To Kwa Wan Road and Sung Wong Toi Road in response to the severe traffic noise and air quality issue due to vehicular emission; and

c) the domestic block has to be setback by 200m from the chimney of the Towngas Ma Tau Kok Control Centre at the southwest of the Application Site as per air quality control stipulated in the Hong Kong Planning Standards and Guidelines (HKPSG).

3. DEVELOPMENT PROPOSAL

The Proposed Scheme for the Public Housing Development at To Kwa Wan Road

3.1 Taking into account the site constraints as mentioned in Para. 2.4 and the aim to optimise development potential, the Proposed Scheme proposes a BH restriction of 130mPD. The mean site formation level is +4.29mPD. The differences in key parameters of the Proposed Scheme as compared against the OZP-compliant Scheme are summarised in **Table 1** below.

Table 1 – Comparison between the OZP-compliant Scheme and the Proposed Scheme

Development Parameters	**OZP-compliant Scheme^ [A] (Plan 3a)**	**Proposed Scheme [B] (Plan 3b)**	**Difference [B] - [A]**
Gross Site Area / Net Site Area (ha)	About 0.41	About 0.41	-
Achievable Total PR *Domestic* *Non-domestic*	About 6.70 *About 6.59* *About 0.11*	About 9.0 *About 7.5* *About 1.5*	+ 2.3 (+34.3%)
Maximum Building Height (main roof level)	Not exceeding +100mPD	Not exceeding +130mPD	+30m (+30%)
Flat Production	672	756	+84 (+12.5%)
Design Population	About 1,706	About 1,876	+170 (+9.96%)
Number of Social Welfare Facility	Nil	3	+3

^ OZP-compliant Scheme is derived from the BH restriction under the Approved Ma Tau Kok Outline Zoning Plan No. S/K10/30.

3.2 The proposed public housing development consists of one public housing block (37 domestic storeys) on podium (4 storeys with podium garden). Garden and recreational facilities, welfare facilities, HA's office ('Government use') and car parking spaces would be provided as non-domestic facilities in the podium (**Plan 3)**. Not less than 1,876m^2 local open space in accordance with the HKPSG requirement of 1m^2 per person will be provided. Please refer to **Plan 3a-1 to 4** for the OZP-compliant Scheme, **Plan 3b-1 to 7** for the Proposed Scheme and **Plan 4** for the Conceptual Landscape Master Plan.

3.3 The key development parameters of the Proposed Scheme are summarised in **Table 2** below.

Table 2 – Key Development Parameters of the Proposed Scheme

Development Parameters	**Proposed Scheme**
Site Area (about)[1] Gross/Net	0.41 ha
Maximum PR - **Domestic** - **Non-domestic**	9.0 7.5 1.5
Maximum Total Gross Floor Area (GFA)	Domestic: About 30,750m^2 Non-Domestic: About 6,150m^2
Maximum Building Height (main roof level)	+130mPD
Number of Blocks	1
No. of Storey	37 domestic storeys on 4 storeys podium
Maximum Site Coverage	37.5%
Flat Production	756
Design Population[2]	About 1,876
Green Coverage (% of Gross Site Area)	At least 20% and aim to provide 30% as far as feasible
Recreation Facilities	
Local Open Space	Not less than 1,876m^2
Children/Communal Play Area	Not less than 150.08m^2
Social Welfare Facilities	About 2,114 m^2 GFA About 5% of total domestic GFA (subject to change as per SWD's request at detailed design stage)
Office Facilities	
HA's Office ('Government Use')	About 1,488m^2 GFA
Retail Facilities	
Retails and Commercial	About 230 m^2 GFA
Parking Facilities[3]	
Private Car Parking (Domestic)	64 (including 2 accessible parking spaces)
Private Car Parking (Visitor)	5
Private Car Parking (HA's Office)	5
Private Car Parking (Retail and	2

Development Parameters	Proposed Scheme
Commercial)	
Motorcycle Parking	6
Light Goods Vehicles (LGV) Parking (Domestic)	3
Loading/ Unloading (L/UL) (Domestic)	2 (L/UL for service vehicles; overnight shared-use parking[4] for M/HGV and coaches/buses are allowed in the podium of estate.)

1 Subject to detailed survey.
2 Based on actual flat mix.
3 Parking provisions as agreed with TD.
4 Overnight parking requirement should be applied with due consideration of the site constraint and local situation.

Implementation Programme

3.4 HA commenced piling works in February 2024 for building completion in 2028/29 tentatively.

4. JUSTIFICATIONS AND PLANNING MERITS

Provide more public housing units

4.1 As at the first quarter of 2024, the average waiting time for general applicant was 5.7 years. The proposed minor relaxation of BH restriction would increase the public housing production, which is in line with the Government's policy to better utilize land resources in order to meet the imminent housing need.

Optimising Development Potential

4.2 Site-specific domestic block design has been adopted responding to site constraints and opportunities whilst optimizing development potential. The domestic block has to be setback for 10m in response to the severe traffic noise and air quality issue due to vehicular emission at To Kwa Wan Road and Sung Wong Toi Road, and 200m from the chimneys of the Towngas Ma Tau Kok Control Centre at the southwest of the site as per air quality control stipulated in the HKPSG. In order to fully utilise the permitted domestic and non-domestic PR of the Application Site to accommodate non-domestic uses, including social welfare facilities, parking provision at high-end of the HKPSG, retails and HA's office without compromising flat production, a Section 16 planning application for minor relaxation of BH restriction from 100mPD to 130mPD would be required.

In Line with Government's Policy to Address the Space Shortfall of the Welfare

Sector

4.3 The 2020 PA invited the Hong Kong Housing Authority to explore setting aside a GFA equivalent to about 5% of attainable domestic GFA in public housing projects for the provision of social welfare facilities to address the space shortfall of the welfare sector. In response to the PA's initiative, social welfare facilities with about 5% of the total attainable domestic GFA as agreed with Social Welfare Department will be provided, subject to change as per SWD's request at detailed design stage and confirmation on funding.

Compatible with Surrounding Development Context

4.4 The Application Site, which is zoned "R(A)", is intended primarily for high density development. It is located in the high-rise cluster of existing/ planned residential developments along the Sung Wong Toi Road (including Sky Tower (159mPD), CDA Developments (100mPD) (Planning Applications No. A/K10/256, 259 and 265) and To Kwa Wan Road (including HKHS's DRE (100mPD), URA's Development Schemes KC-018 & KC-019 (120mPD) and Grand Waterfront (175.5mPD) in the vicinity. Therefore, the proposed BH at the Application Site (i.e. 130mPD) will be compatible with its surroundings in terms of building heights, massing and land use.

No Adverse Visual, Air Ventilation and Technical Implications

No Adverse Impact on Visual Aspect

4.5 The proposed development will stand in harmony with the existing and planned visual townscape. A Visual Appraisal (**Appendix 1**) for the minor relaxation of maximum BH Restriction from 100mPD to 130mPD at the Application Site has been conducted and concluded that the overall visual impacts ranged from negligible to moderate. In consideration of the intended building height profile as mentioned in the Explanatory Statement of the Approved Ma Tau Kok Outline Zoning Plan No. S/K10/30, a paper (TFKT/C06/2023) on Proposed Minor Relaxation of Building Height Restriction for the Public Housing Development at To Kwa Wan Road, Ma Tau Kok was submitted to the Task Force on Kai Tak Harbourfront Development (KTTF) in June 2023 to seek Members' views on the proposal. The KTTF had no objection to the proposed minor relaxation of BH restriction of the proposed development. Furthermore, to ameliorate the visual impact, the design measures like façade treatment and color will be adopted and studied to enhance the aesthetic quality of the building outlook at the later stage. Associated green measures would be applied where appropriate. With implementation of the above mitigation measures, the visual impacts due to the increase in BH restriction

will be acceptable.

No Adverse Impact on Air Ventilation Aspect

4.6 The Application Site does not fall within the categories of which an Air Ventilation Assessment (AVA) is required in accordance with the joint HPLB-ETWB Technical Circular No. 1/06 on AVAs. With reference to the AVA Expert Evaluation on Ma Tau Kok Area (2008), the Application Site does not fall within any identified air path. As such, it is not anticipated that the proposal would induce any significant adverse air ventilation impact on the surrounding pedestrian wind environment. A quantitative AVA will be carried out to assess the air ventilation impact of the proposed development at the detailed design stage.

No Adverse Impact on Environmental Aspect

4.7 An Environmental Assessment Study (EAS) based on the current housing layout has been conducted to evaluate and address the potential road traffic noise, fixed noise and air quality **(Appendix 2)**. No insurmountable impact on the environmental aspect is anticipated. EPD has no adverse comments to the proposed development from environmental point of view.

No Adverse Impact on Gas Risk Associated with Potentially Hazardous Installations

4.8 The proposed public housing development partially falls within the 300-meter consultation zone (CZ) of the Ma Tau Kok Gas Plant, which is a potentially hazardous installation (PHI) as defined in Chapter 12 of the HKPSG. Given the potential increase in population within the CZ, a Quantitative Risk Assessment (QRA) was prepared to assess the risk of the proposed development in relation to the PHI. The QRA was submitted to the Coordinating Committee on Land-use Planning and Control Relating to Potentially Hazardous Installations (CCPHI) for assessment on 27 March 2024. The QRA concluded that the risk associated with the PHI including the population of the proposed development and surrounding area are in compliance with Hong Kong Risk Guidelines. EMSD has no adverse comments to the proposed development from risk point of view.

No Adverse Traffic and Infrastructural Implications

4.9 Since there is no increase in plot ratio and GFA, no adverse impact on the traffic and infrastructural is anticipated.

5. CONCLUSION

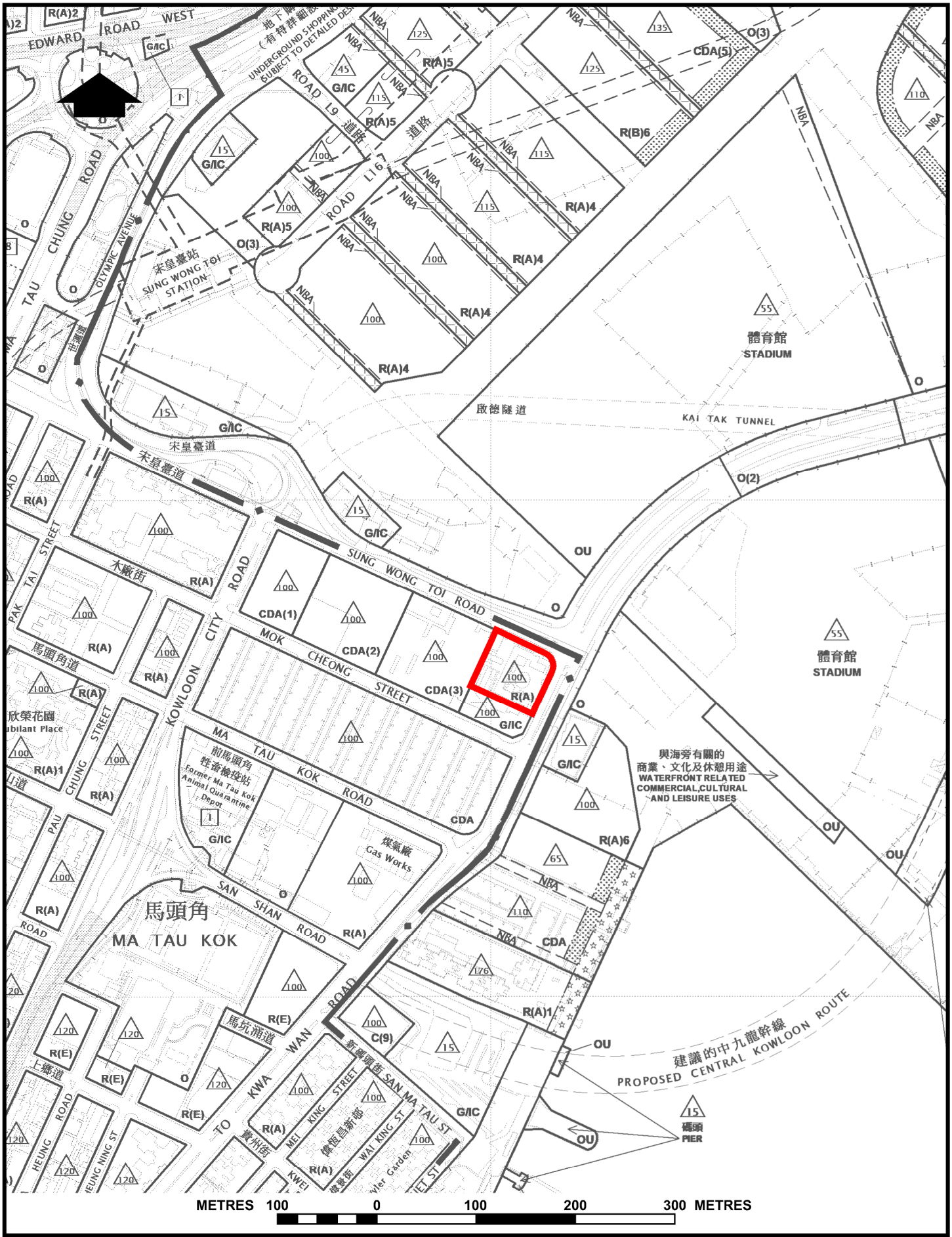
5.1 This planning application is submitted under Section 16 of the Town Planning Ordinance

for the proposed minor relaxation of BH Restriction from 100mPD to 130mPD for the public housing development at To Kwa Wan Road in order to fully utilize the permitted domestic and non-domestic PR of the Application Site. The proposed development is in line with the Government's initiatives in meeting the pressing demand for affordable housing and providing social welfare facilities equivalent to about 5% of the total attainable domestic GFA.

5.2 The proposed BH restriction of 130mPD is optimised taking into consideration the site constraints and it is compatible with the surrounding area. The proposed development will have no insurmountable impacts in terms of visual, air ventilation, traffic, sewerage, drainage, water supply, environmental and landscape aspects.

5.3 In view of the above, the TPB is sincerely requested to give favourable consideration on the proposed minor relaxation of the BH restriction of the Application Site.

HOUSING DEPARTMENT
May 2024



LOCATION PLAN
TO KWA WAN ROAD

HOUSING DEPARTMENT
PLANNING SECTIONS

PLAN 1

DATE :
5. 3. 2024

BASE EXTRACTED FROM OZP No. S/K10/30

24_0185KLN_Plan1

Plan 2

SUNG WONG TOI ROAD

TO KWA WAN ROAD

92

100

10m

100 mPD

10m

Workshop

The Hong Kong Society For the Blind Bradbury Care and Attention Home for the Aged Blind

The Hong Kong Society For the Blind Factory Cum Sheltered Workshop

13 15 17 19

CUL

4.3 4.2 4.0 3.9 3.7

LEGEND:-

- SITE BOUNDARY
- BUILDING HEIGHT RESTRICTION UNDER OZP (NOT MORE THAN 100mPD)
- TRAFFIC NOISE
- AIR QUALITY SETBACK (10M)
- AIR BUFFER ZONE (200m SEPARATION DISTANCE FROM EXISTING CHIMNEYS)

PROJECT TITLE

PROPOSED PUBLIC HOUSING DEVELOPMENT AT TO KWA WAN ROAD, KOWLOON CITY

DRAWING TITLE

SITE CONSTRAINTS PLAN

SCALE 1:500(A3)

房 屋 署
HOUSING DEPARTMENT

DRAWING NO. KC06/A/LO-01

DATE: 03/04/2024

Plan 3a-1

SUNG WONG TOI ROAD

BLOCK 1

10.70

4.20

12.90

98.24

113.015

10.70

92

100

Workshop

13

15

17

19

The Hong Kong Society For the Blind Bradbury Care and Attention Home for the Aged Blind

The Hong Kong Society For the Blind Factory Cum Sheltered Workshop

TO KWA WAN ROAD

CUL

CUL

CUL

4.3

4.2

4.3

4.3

4.0

4.2

3.7

3.9

3.7

E

Kwa Wan Road

LEGEND:-

- SITE BOUNDARY
- DOMESTIC BLOCK
- MAIN ENTRANCE
- ENTRANCE FOR WELFARE AND HA'S OFFICE
- VEHICULAR ENTRANCE

PROJECT TITLE

PROPOSED PUBLIC HOUSING DEVELOPMENT AT TO KWA WAN ROAD, KOWLOON CITY

DRAWING TITLE

INDICATIVE MASTER LAYOUT PLAN (OZP-COMPLIANT SCHEME)

SCALE 1:500(A3)

房 屋 署
HOUSING DEPARTMENT

DRAWING NO. KC06/A/LO-11

DATE: 03/04/2024

SUNG WONG TOI ROAD

92

100

Workshop

E&M/
OTHER
SERVICES

RETAIL

DOMESTIC LIFT LOBBY

4.20

4.00

E&M/
OTHER
SERVICES

E&M/
OTHER
SERVICES

CARPARK

The Hong Kong Society
For the Blind Bradbury Care
and Attention Home
for the Aged Blind

The Hong Kong Society
For the Blind Factory
Cum Sheltered Workshop

13

15

17

19

TO KWA WAN ROAD

CUL

CUL

CUL

4.3

4.2

4.3

4.3

4.0

4.2

3.7

3.9

3.7

Kwa Wan Road
Station

LEGEND:-

SITE BOUNDARY

DOMESTIC LIFT LOBBY

RETAIL

E&M/ OTHER SERVICES/ CARPARK

PROJECT TITLE

PROPOSED PUBLIC HOUSING DEVELOPMENT AT TO KWA WAN ROAD, KOWLOON CITY

DRAWING TITLE

GROUND FLOOR PLAN
(OZP-COMPLIANT SCHEME)

SCALE 1:500(A3)

房 屋 署
HOUSING DEPARTMENT

DRAWING NO. KC06/A/LO-12

DATE: 03/04/2024

SUNG WONG TOI ROAD

BLOCK 1

10.70

12.90

10.70

92

100

Workshop

13

15

17

19

The Hong Kong Society
For the Blind Bradbury Care
and Attention Home
for the Aged Blind

The Hong Kong Society
For the Blind Factory
Cum Sheltered Workshop

TO KWA WAN ROAD

To Kwa Wan Road
Pumping Station

CUL

CUL

CUL

4.3

4.2

4.3

4.3

4.0

4.2

3.7

3.9

3.7

LEGEND:-

SITE BOUNDARY

DOMESTIC BLOCK

PROJECT TITLE

PROPOSED PUBLIC HOUSING DEVELOPMENT AT TO KWA WAN ROAD, KOWLOON CITY

DRAWING TITLE

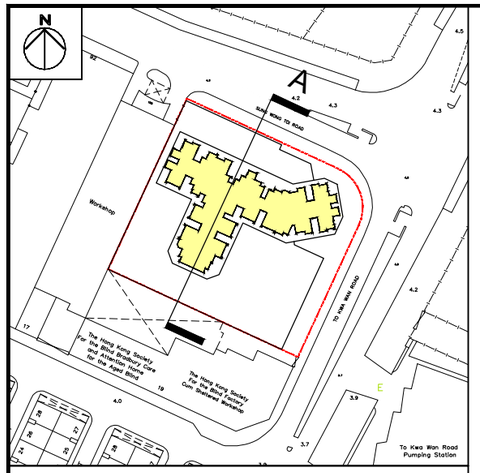
FIRST FLOOR PLAN
(OZP-COMPLIANT SCHEME)

SCALE 1:500(A3)

房 屋 署
HOUSING DEPARTMENT

DRAWING NO. KC06/A/LO-13

DATE: 03/04/2024



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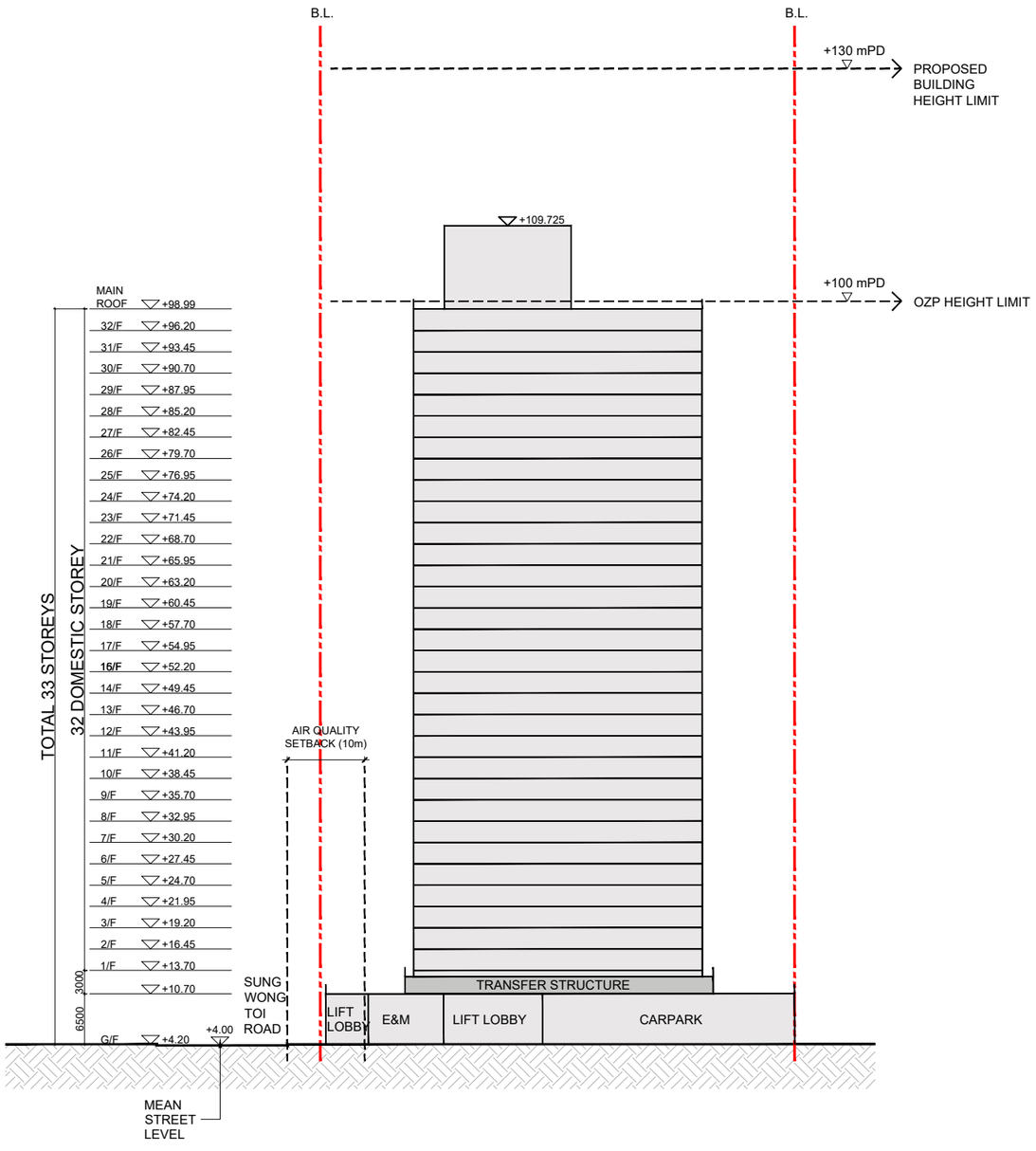


LEGEND:-

SITE BOUNDARY

PROJECT TITLE

PROPOSED PUBLIC HOUSING DEVELOPMENT AT TO KWA WAN ROAD, KOWLOON CITY

DRAWING TITLE

SITE SECTION
(OZP-COMPLIANT SCHEME)

SCALE 1:750(A3)

房 屋 署
HOUSING DEPARTMENT

DRAWING NO. KC06/A/LO-14

DATE: 03/04/2024

Plan 3b-1

SUNG WONG TOI ROAD

BLOCK 1

10.70
23.59
14.90
4.20
25.90
128.49
143.265
19.70
23.59

92
100
Workshop
13
15
17
19

The Hong Kong Society For the Blind Bradbury Care and Attention Home for the Aged Blind

The Hong Kong Society For the Blind Factory Cum Sheltered Workshop

TO KWA WAN ROAD

CUL
CUL
CUL

4.3
4.2
4.3
4.3
4.0
4.2
3.7
3.9
3.7

Kwa Wan Road
Station

LEGEND:-

- SITE BOUNDARY
- DOMESTIC BLOCK
- MAIN ENTRANCE
- ENTRANCE FOR WELFARE AND HA'S OFFICE
- VEHICULAR ENTRANCE

PROJECT TITLE

PROPOSED PUBLIC HOUSING DEVELOPMENT AT TO KWA WAN ROAD, KOWLOON CITY

DRAWING TITLE

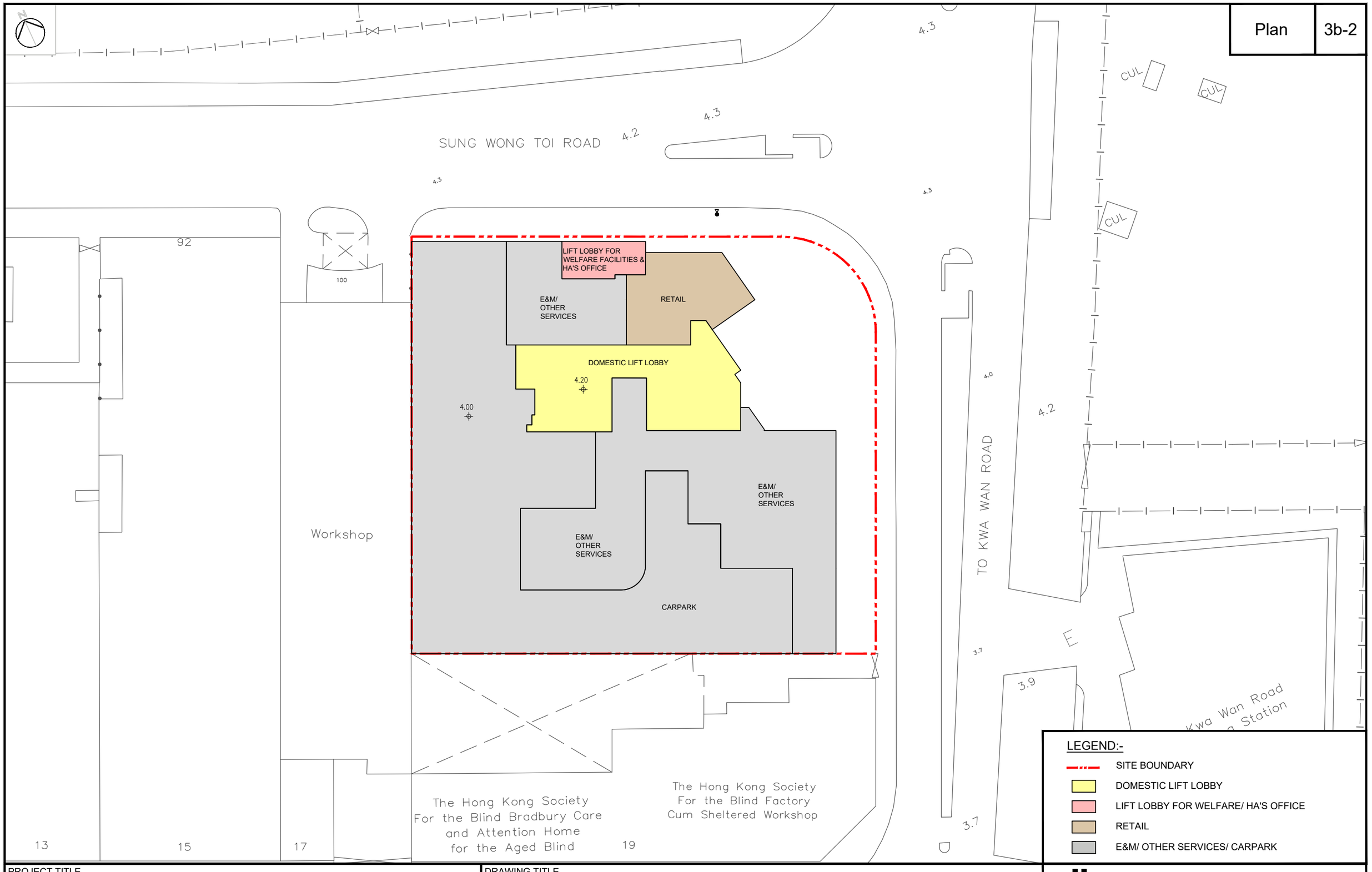
INDICATIVE MASTER LAYOUT PLAN (PROPOSED SCHEME)

SCALE 1:500(A3)

房 屋 署
HOUSING DEPARTMENT

DRAWING NO. KC06/A/LO-21

DATE: 03/04/2024



LEGEND:-

- SITE BOUNDARY
- DOMESTIC LIFT LOBBY
- LIFT LOBBY FOR WELFARE/ HA'S OFFICE
- RETAIL
- E&M/ OTHER SERVICES/ CARPARK

PROJECT TITLE

PROPOSED PUBLIC HOUSING DEVELOPMENT AT TO KWA WAN ROAD, KOWLOON CITY

DRAWING TITLE

GROUND FLOOR PLAN (PROPOSED SCHEME)

SCALE 1:500(A3)

房 屋 署
HOUSING DEPARTMENT

DRAWING NO. KC06/A/LO-22

DATE: 03/04/2024

SUNG WONG TOI ROAD

LIFT LOBBY FOR WELFARE FACILITIES & HA'S OFFICE

CARPARK

10.70

E&M/ OTHER SERVICES

DOMESTIC LIFT LOBBY

E&M/ OTHER SERVICES

92

100

Workshop

13

15

17

19

The Hong Kong Society For the Blind Bradbury Care and Attention Home for the Aged Blind

The Hong Kong Society For the Blind Factory Cum Sheltered Workshop

TO KWA WAN ROAD

CUL

CUL

CUL

To Kwa Wan Road Pumping Station

4.3

4.2

4.3

4.3

4.0

4.2

3.7

3.9

3.7

LEGEND:-

- SITE BOUNDARY
- DOMESTIC LIFT LOBBY
- LIFT LOBBY FOR WELFARE/ HA'S OFFICE
- E&M/ OTHER SERVICES/ CARPARK

PROJECT TITLE

PROPOSED PUBLIC HOUSING DEVELOPMENT AT TO KWA WAN ROAD, KOWLOON CITY

DRAWING TITLE

FIRST FLOOR PLAN (PROPOSED SCHEME)

SCALE 1:500(A3)

房 屋 署
HOUSING DEPARTMENT

DRAWING NO. KC06/A/LO-23

DATE: 03/04/2024

SUNG WONG TOI ROAD

LIFT LOBBY FOR WELFARE FACILITIES & HA'S OFFICE

LANDSCAPED AREA

DOMESTIC LIFT LOBBY

E&M/ OTHER SERVICES

WELFARE FACILITIES / HA'S OFFICE (GOVERNMENT USE)

14.90

TO KWA WAN ROAD

92

100

Workshop

The Hong Kong Society For the Blind Bradbury Care and Attention Home for the Aged Blind

The Hong Kong Society For the Blind Factory Cum Sheltered Workshop

13 15 17 19

CUL

4.3 4.2 4.0 3.9 3.7

LEGEND:-

- SITE BOUNDARY
- DOMESTIC LIFT LOBBY
- LIFT LOBBY FOR WELFARE/ HA'S OFFICE
- WELFARE FACILITIES / HA'S OFFICE (GOVERNMENT USE)
- E&M/ OTHER SERVICES

PROJECT TITLE

PROPOSED PUBLIC HOUSING DEVELOPMENT AT TO KWA WAN ROAD, KOWLOON CITY

DRAWING TITLE

SECOND FLOOR PLAN (PROPOSED SCHEME)

SCALE 1:500(A3)

房 屋 署
HOUSING DEPARTMENT

DRAWING NO. KC06/A/LO-24

DATE: 03/04/2024

SUNG WONG TOI ROAD

LIFT LOBBY FOR WELFARE FACILITIES & HA'S OFFICE

DOMESTIC LIFT LOBBY
19.70

E&M/ OTHER SERVICES

E&M/ OTHER SERVICES

LANDSCAPED AREA
19.70

WELFARE FACILITIES / HA'S OFFICE (GOVERNMENT USE)

TO KWA WAN ROAD

92

100

Workshop

The Hong Kong Society For the Blind Bradbury Care and Attention Home for the Aged Blind

The Hong Kong Society For the Blind Factory Cum Sheltered Workshop

13 15 17 19

CUL CUL CUL

4.3 4.2 4.3 4.3 4.0 4.2 3.7 3.9 3.7

Kwa Wan Road

LEGEND:-

- SITE BOUNDARY
- DOMESTIC LIFT LOBBY
- LIFT LOBBY FOR WELFARE/ HA'S OFFICE
- WELFARE FACILITIES / HA'S OFFICE (GOVERNMENT USE)
- E&M/ OTHER SERVICES

PROJECT TITLE

PROPOSED PUBLIC HOUSING DEVELOPMENT AT TO KWA WAN ROAD, KOWLOON CITY

DRAWING TITLE

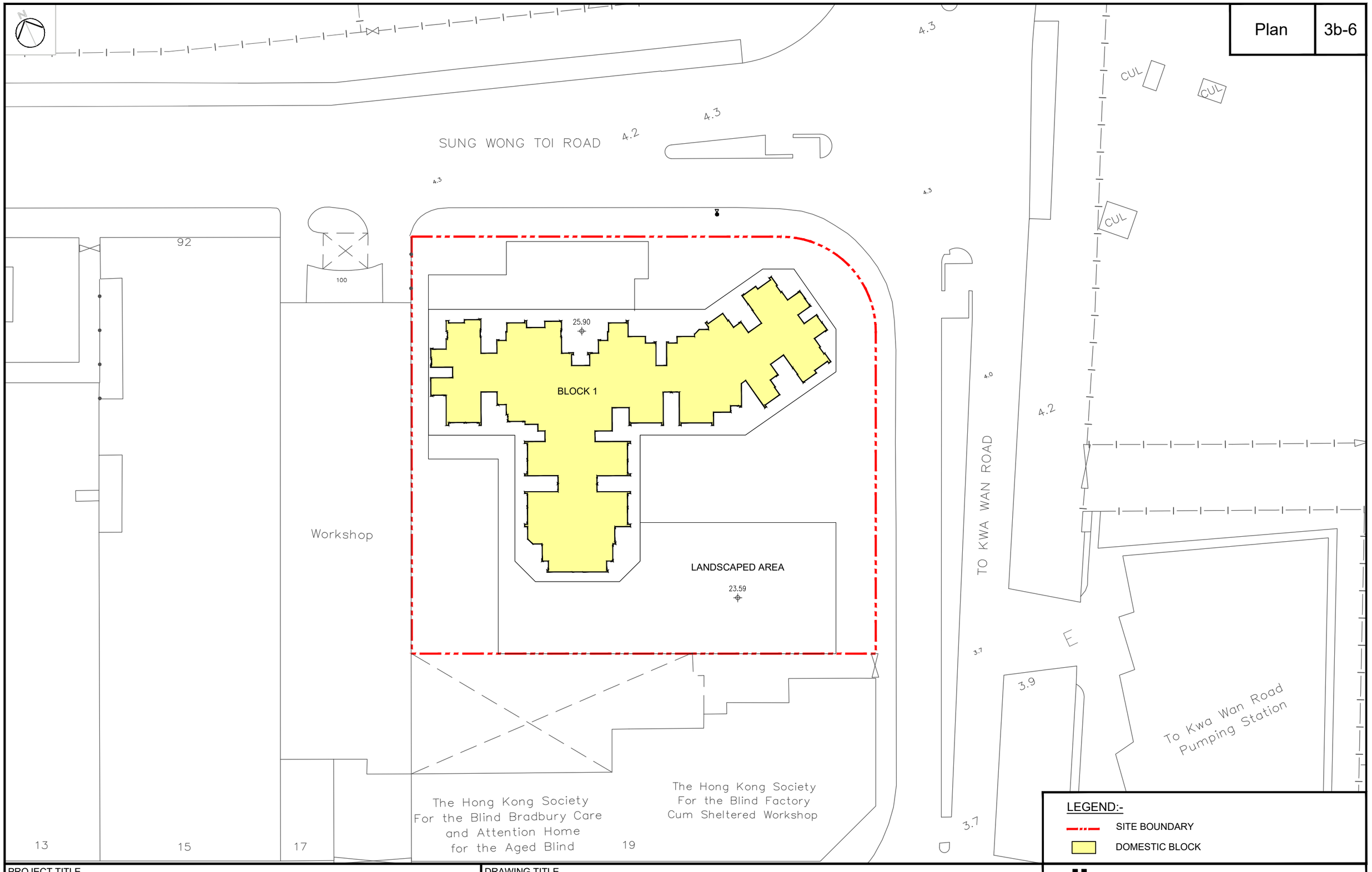
THIRD FLOOR PLAN (PROPOSED SCHEME)

SCALE 1:500(A3)

房 屋 署
HOUSING DEPARTMENT

DRAWING NO. KC06/A/LO-25

DATE: 03/04/2024



PROJECT TITLE

PROPOSED PUBLIC HOUSING DEVELOPMENT AT TO KWA WAN ROAD, KOWLOON CITY

DRAWING TITLE

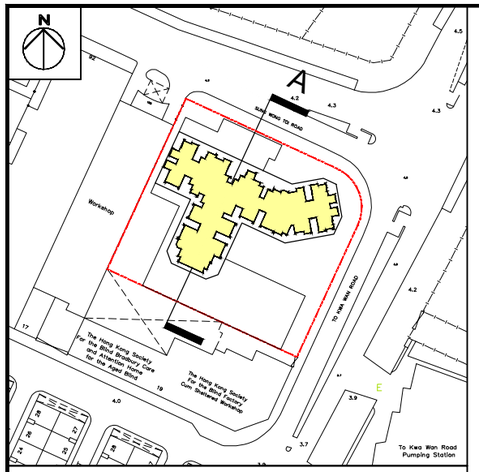
FORTH FLOOR PLAN
(PROPOSED SCHEME)

SCALE 1:500(A3)

房 屋 署
HOUSING DEPARTMENT

DRAWING NO. KC06/A/LO-26

DATE: 03/04/2024



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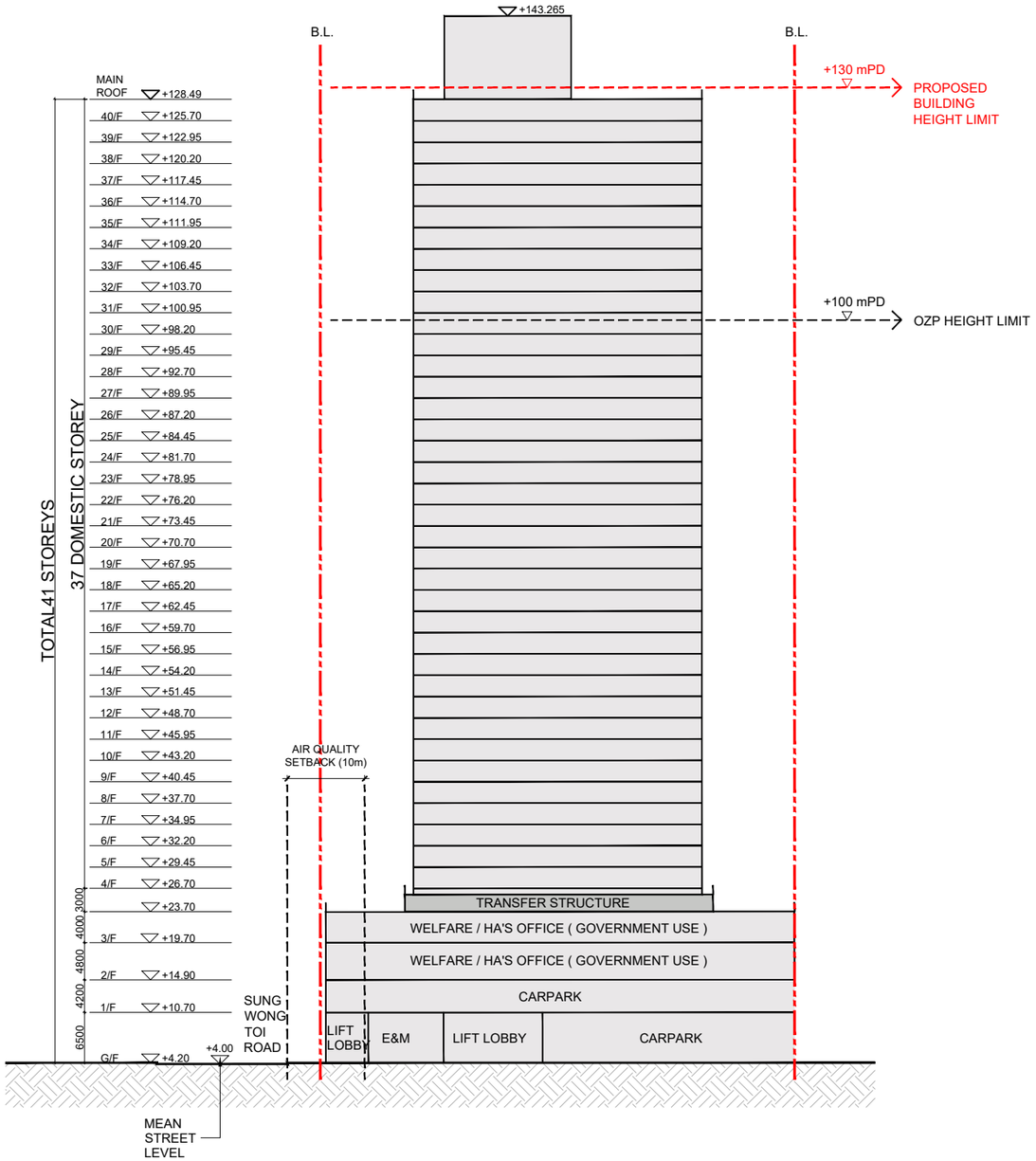


LEGEND:-

SITE BOUNDARY

PROJECT TITLE

PROPOSED PUBLIC HOUSING DEVELOPMENT AT TO KWA WAN ROAD, KOWLOON CITY

DRAWING TITLE

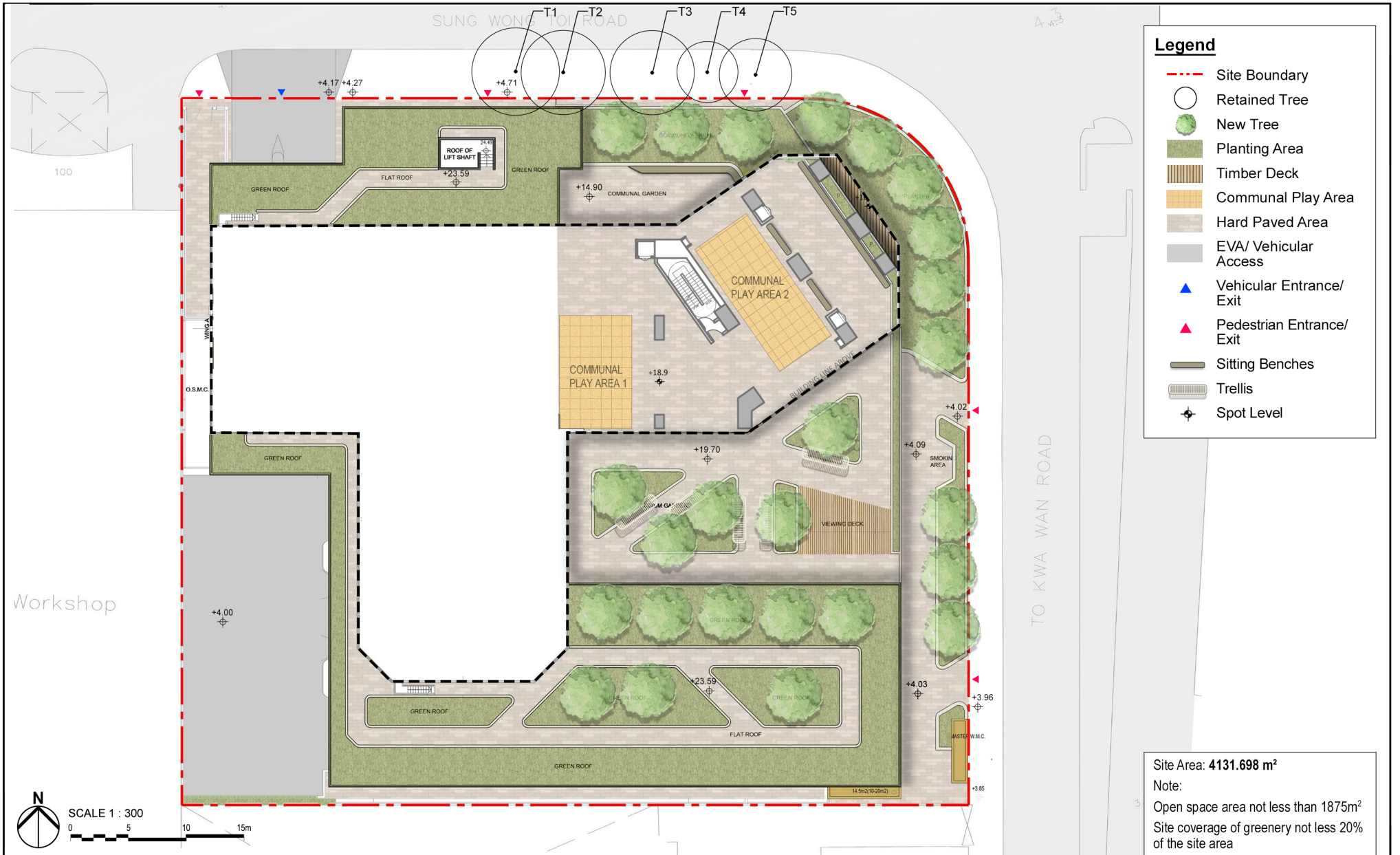
SITE SECTION (PROPOSED SCHEME)

SCALE 1:750(A3)

房 屋 署
HOUSING DEPARTMENT

DRAWING NO. KC06/A/LO-27

DATE: 03/04/2024



Legend

- Site Boundary
- Retained Tree
- New Tree
- Planting Area
- Timber Deck
- Communal Play Area
- Hard Paved Area
- EVA/ Vehicular Access
- Vehicular Entrance/ Exit
- Pedestrian Entrance/ Exit
- Sitting Benches
- Trellis
- Spot Level

Site Area: **4131.698 m²**

Note:

Open space area not less than 1875m²

Site coverage of greenery not less 20% of the site area

PROJECT TITLE

PROPOSED PUBLIC HOUSING DEVELOPMENT AT TO KWA WAN ROAD, KOWLOON CITY

DRAWING TITLE

LANDSCAPE MASTER PLAN - OVERALL

SCALE 1:300(A3)

房 屋 署
HOUSING DEPARTMENT

DRAWING NO. KC06/L/LO-01

DATE: 03/04/2024

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Proposed Minor Relaxation of the Building Height Restriction for the Proposed Public Housing Development at To Kwa Wan Road, Ma Tau Kok

Visual Appraisal

May 2024

香港房屋委員會
Hong Kong Housing Authority

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1. Introduction

1.1 This Visual Appraisal (VA) is prepared in support of the Section 16 planning application for minor relaxation of building height (BH) restriction for the proposed public housing development (the Proposed Development) at To Kwa Wan Road (the Subject Site) (**Plan 1)**.

1.2 The site is located at the junction of To Kwa Wan Road and Sung Wong Toi Road, and is currently zoned as "Residential (Group A) with a BH restriction of 100mPD on the Approved Ma Tau Kok Outline Zoning Plan (OZP) No. S/K10/30. In order to fully utilize the development potential of the Proposed Development to accommodate non-domestic uses, including social welfare facilities, parking provision at high-end of the HKPSG, retails and HA's office without compromising flat production, a Section 16 planning application for minor relaxation of BH restriction from 100mPD to 130mPD would be required.

1.3 This VA is prepared in accordance with Town Planning Board Guidelines on Submission of Visual Impact Assessment for Planning Applications to the Town Planning Board (TPB PG-No. 41). The purpose of this VA is to assess the potential visual impact of the minor relaxation of BH restriction for the Proposed Development from 100mPD to 130mPD (i.e. adding 3 storeys podium and 5 domestic storeys) to the surrounding areas, and present sufficient information in a structured manner to facilitate the Town Planning Board to consider the visual effects brought by the Proposed Development. The relevant appraisal in relation to visual composition, visual obstruction and permeability, effect on public viewers and effect on visual resources **are focused on the changes between the OZP-compliant scheme and the proposed scheme (Plan 5a and 5b** refer).

2. Visual Context and Visual Elements

2.1 The Subject Site is a flat land located at the junction of To Kwa Wan Road and Sung Wong Toi Road in Ma Tau Kok, as illustrated in **Plan 1**.

2.2 Major features surrounding the Subject Site and their respective height restrictions are summarised below and illustrated in **Plan 3**:

- To the northeast of the Subject Site is the "Other Specified Uses" annotated "Stadium" ("OU(Stadium)") zone on the approved Kai Tak Outline Zoning Plan (OZP) No. S/K22/8 and is subject to approved planning applications No. A/K22/17 and A/K22/28. The BH of the Main Stadium of Kai Tak Sports Park is 70mPD

under approved application No. A/K22/17 while the BH of proposed hotel and office locating at the northern west of Main Stadium are 60.2mPD and 57mPD respectively under the approved application No. A/K22/28.

- To the northwest of the Subject Site is a series of planned developments in the Comprehensive Development Area ("CDA") zones including Application Nos. A/K10/256 and A/K10/259 submitted by the respective owners for proposed comprehensive residential development with 'Shop and Services' and 'Eating Place' in the "CDA(2)" zone, as well as Application No. A/K10/265 for proposed comprehensive residential and commercial (shop and services) development in the "CDA(3)" zone. All these applications were approved with a maximum BH of 100mPD. Across Sung Wong Toi Road is a planned public open space (i.e. Sung Wong Toi Park).

- To the southeast of the Subject Site, across To Kwa Wan Road is a Government, Institution or Community (GIC) facility of To Kwa Wan Road sewage pumping station at 13.4mPD, proposed Hong Kong Housing Society (HKHS)'s dedicated rehousing estate (DRE) at 100mPD and the Urban Renewal Authority Ming Lun Street / Ma Tau Kok Road Development Scheme (KC-018) and To Kwa Wan Road / Ma Tau Kok Road Development Scheme (KC-019) at 120mPD.

- To the southwest, located next to the Subject Site is a proposed GIC redevelopment by the Hong Kong Society for the Blind (HKSB) for a welfare services block accommodating the existing HKSB's facilities with additional welfare facilities. The proposed welfare block will be redeveloped with a BH of 61.2mPD. Across Mok Cheong Street is another planned CDA development of the "13 Streets" with a BH restriction of 100mPD.

3. The Development Proposal

3.1 The Proposed Development consists of one public housing block (37 domestic storeys) on podium (4 storeys with podium garden). Garden and recreational facilities, welfare facilities, HA's office ('Government use') and carparking spaces would be provided as non-domestic facilities in the podium.

3.2 The key development parameters of the Proposed Development are summarised in **Table 1** below:

Table 1 – Key Development Parameters of the Proposed Development

Parameters	**Proposed Scheme**
Gross Site Area	About 0.415 ha
Net Site Area	About 0.415 ha
Maximum Plot Ratio - Domestic - Non-domestic	 7.5 1.5
Maximum Building Height (to Main Roof) (**Plan 5b**)	130mPD
Number of Domestic Block	1
Number of Flats	About 756

Note: The development parameters are subject to detailed site survey and design.

4. Assessment Area

4.1 An Assessment Area is delineated for the VA to cover the area of visual influence from the identified key public VPs. The assessment boundary is set out with regard to the size of the development, the site context, and the distance and location of the VSRs.

4.2 As per the TPB PG – No. 41, the Assessment Area (i.e. visual envelope) should be determined having regard to the size of the Proposed Development, its potential visibility from the selected key public VPs and the actual site and surrounding topographical conditions by ground inspection. As cited in the TPB PG – No. 41, when the viewer is at a distance equals to three times of the height of the building, the viewer will tend to see the building as part of a group rather than a single building. Given that the building height of the Proposed Development is about 128mPD, with a mean ground level of about 4mPD, a radius of 372m (i.e. about 124m x 3) from the closest point of the Proposed Development has been set as a starting point in defining the boundary of the Assessment Area, as illustrated in **Plan 3**.

4.3 Additionally, as per Para. 4.5 of the TPB PG – No. 41, it is not practical to protect private views and it is far more important to protect public views. Key kinetic and static VPs, such as popular areas used by the public or tourists for outdoor activities, recreation, rest, sitting-out, leisure, walking and sight-seeing, and prominent travel routes have been taken into consideration when selecting the VPs.

5. Identification and Classification of VPs

5.1 The Proposed Development is considered as harbourfront development, the assessment

area will be extended to the opposite side of the harbour. As such, the visually sensitive receivers (VSRs) in Quarry Bay Park and North Point Public Pier have been identified. Additionally, VSRs are also identified as in nearby parks/open spaces users and other passers-by in the neighbourhood. In this regard, a total of eight key public VPs (including three long-range, four medium-range and one short-range) have been selected which best represent public views to the Proposed Development from relevant VSRs (**Table 2** and **Plans 2 & 3**).

Table 2 – Identified Viewing Points

View Points	Distance / Direction (Approx.)	Height in mPD (Approx.)	Visually Sensitive Receiver(s)	Popularity of Public	Nature of Viewpoints	Visual Quality/ Visual Sensitivity
VP1 Quarry Bay Park	4,480m / Southeast	3.8	Visitors who travel or engage in recreational activities	Frequent	Active/ Passive recreation	Good/ Medium
VP2 North Point Public Pier	3,180m / South	4.0	Visitors of the Pier	Frequent	Passive recreation	Good / Medium
VP3 Kai Tak Elevated Landscaped Deck	1,140m / Southeast	13.6	Users of the Deck	Occasional	Passive recreation	Fair / Medium
VP4 Sung Wong Toi Playground	570m / Northwest	6.4	Users of the Playground	Occasional	Active/ Passive recreation	Fair / Medium
VP5 Planned Open Space at San Ma Tau Street	460m / South	3.9	Users of the bus terminus and Pier / Users of the Open Space (in the future)	Transient / Occasional (in the future)	Pedestrians / Passive recreation (in the future)	Fair / Medium to High
VP6 Planned Open Space on Shing Kai Road	290m / Northeast	4.7	Users of the Open Space	Occasional	Active and passive recreation	Fair / Medium to High
VP7 Cattle Depot Artist Village	270m / Southwest	4.5	Visitors of the Artist Village	Occasional	Passive recreation	Fair / Low

View Points	Distance / Direction (Approx.)	Height in mPD (Approx.)	Visually Sensitive Receiver(s)	Popularity of Public	Nature of Viewpoints	Visual Quality/ Visual Sensitivity
VP8 Mok Cheong Street	100m / Southwest	4.3	General public	Transient	Pedestrians	Fair / Medium to High

5.2 Evaluations of the Identified VPs are set out below:

VP1: Quarry Bay Park (at the height of about 3.8mPD)

5.3 This VP at Quarry Bay Park represents a long-range view at approximately 4,480m to the southeast of the Subject Site. It is one of the strategic vantage points listed in the Hong Kong Planning Standards and Guidelines (HKPSG), which the Subject Site falls within the protected ridgeline boundary. This large park is popular among the locals with the major appeal of offering wide open views of Victoria Harbour. Besides, the park also forms a common route for users to travel between Quarry Bay, Tai Koo and Sai Wan Ho. The VSRs at this VP are mainly visitors who travel or engage in various recreational activities, their visual sensitivity is considered **medium**.

VP2: North Point Public Pier (at the height of about 4.0mPD)

5.4 This VP at North Point Public Pier represents a long-range view at approximately 3,180m to the south of the Subject Site. The area surrounding the pier is occupied by residential and commercial developments. The pier provides ferry connections to Hung Hom, Kowloon City and Kwun Tong. The VSRs at this VP are mainly users of the pier and visitors to the surrounding developments, their visual sensitivity is considered **medium**.

VP3: Kai Tak Elevated Landscaped Deck (at the height of about 13.6mPD)

5.5 This VP at Kai Tak Elevated Landscaped Deck represents a long-range view at approximately 1,140m to the southeast of the Subject Site. Opened in 2021, the Elevated Landscaped Decks atop Shing Fung Road allow visitors to enjoy the wide open views of Hong Kong Island and Central Kowloon. The VSRs at this VP are mainly occasional visitors who engage in various recreational activities on the deck, their visual sensitivity is considered **medium**.

VP4: Sung Wong Toi Playground (at the height of about 6.4mPD)

5.6 This VP at Sung Wong Toi Playground represents a medium-range view at approximately 570m to the northwest of the Subject Site. The playground consists of three recreational facilities provided along Olympic Avenue, with a basketball court to the south, a garden in the centre and a pet playground to the north. The playground is only visited by the general public occasionally. The VSRs at this VP are mainly visitors who engage in various recreational and sports activities with short duration of sights, their visual sensitivity is considered **medium**.

VP5: Planned Open Space at San Ma Tau Street (at the height of about 3.9mPD)

5.7 This VP at San Ma Tau Street represents a medium-range view at approximately 460m to the south of the Subject Site. It is currently the Kowloon City Ferry Pier Bus Terminus. This VP is a planned open space of a waterfront promenade, adjoining a planned landscaped deck atop a public transport interchange, which would link up the harbourfronts of Hung Hom and Kai Tak. Despite being an open space in the future, the views to the north and southwest are still confined by surrounding residential high-rises and particularly dominant by Grand Waterfront. Currently, the street has a moderate pedestrian level, which the VSRs at this VP are mainly travelers who use the bus terminus and Kowloon City Ferry Pier. Taking into account that this VP is a planned open space, visual sensitivity is considered **medium to high**.

VP6: Planned Open Space on Shing Kai Road (at the height of about 4.7mPD)

5.8 This VP at the planned open space on Shing Kai Road represents a medium-range view at approximately 290m to the northeast of the Subject Site. The open space is located on an overhead walkway that span across Shing Kai Road and it is currently still under construction. Upon completion, it would act as the main plaza for Kai Tak Sports Park that seamlessly connects the two sides, while providing recreational space for visitors to enjoy. The VSRs at this VP are mainly visitors who gather and engage in various recreational activities at the plaza, their visual sensitivity is considered **medium to high**.

VP7: Cattle Depot Artist Village (at the height of about 4.5mPD)

5.9 This VP at Cattle Depot Artist Village represents a medium-range view at approximately 270m to the southwest of the Subject Site. The village is managed by the Development Bureau and is currently leased to about 20 art groups showcasing exhibitions and

performances. The village is only visited by the general public occasionally. The VSRs at this VP are mainly visitors who explore and walk around the village with short duration of sights, their visual sensitivity is considered **low**.

VP8: Mok Cheong Street (at the height of about 4.3mPD)

5.10 This VP at Mok Cheong Street represents a short-range view at approximately 100m to the southwest of the Subject Site. While the current number of pedestrians on this section of Mok Cheong Street is low, planned CDA redevelopments on both sides would greatly enhance the popularity of the area. It is expected that Mok Cheong Street would be part of a major travel route for the locals once the CDAs are completed. The VSRs at this VP are mainly pedestrians who walk along Mok Cheong Street, their visual sensitivity is considered **medium to high**.

6. Assessment of Visual Impacts

6.1 Photomontages on **Plans 6 to 13** illustrate the existing condition and the future situation with the differences between the OZP-compliant scheme and the Proposed Scheme. Indicative massing of the surrounding planned and committed developments are also illustrated in the photomontages.

VP1: Quarry Bay Park (Plan 6)

Visual Composition, Obstruction and Permeability

6.2 The visual composition of this VP is dominated by a panoramic view of Victoria Harbour and waterfront developments in Central Kowloon and Kai Tak with the ridgelines of Beacon Hill and Lion Rock in the background. While the Subject Site is in the direct line of sight in the existing view, it is expected that the Proposed Development would be predominately screened by future redevelopments in the vicinity of the Subject Site, including the proposed HKHS's DRE at 100mPD and the proposed URA's development schemes at 120mPD; only the top part of the Proposed Development could be visible. A small portion of the in-land areas of Ma Tau Kok and Beacon Hill would be obstructed by the Proposed Development. Based on the above, the increased portion of 30m of the Proposed Development is generally compatible and acceptable within the future visual context of Kai Tak. This consideration takes into account the building height profiles from Sky Tower at 159mPD; Grand Waterfront at 175.5 mPD and the proposed URA's Development Scheme at 120mPD.

Effect on Visual Resources and Public Viewers

6.3 Visual resources at this VP include Victoria Harbour, the Kowloon ridgelines and the open sky. The Proposed Development at 130mPD would not intrude into the 20% building-free zone below the ridgeline of Beacon Hill as stipulated in the HKPSG. At more than 4,000m away from the Subject Site, VSRs at this VP would view the Proposed Development as part of the Ma Tau Kok waterfront rather than a single building. With a difference of 30m in BH, the Proposed Development is unlikely to significantly degrade the visual amenity being enjoyed from the VP. It can be concluded that the extent of visual changes on public views induced by the Proposed Development is **negligible** and visual resources would remain largely unaffected.

6.4 In view of the medium visual sensitivity of VSRs at this VP, the resultant overall visual impact would be **negligible**.

VP2: North Point Public Pier (Plan 7)

Visual Composition, Obstruction and Permeability

6.5 The visual composition of this VP is dominated by a panoramic view of Victoria Harbour and waterfront developments in Central Kowloon and Kai Tak with the ridgelines of Lion Rock and Kowloon Peak in the background. The existing view towards the Subject Site at this VP has been partially obstructed by the high-rise residential development of Grand Waterfront at 175.5mPD at Ma Tau Kok waterfront. It is expected that the Proposed Development would be screened completely by future redevelopments in the vicinity of the Subject Site, including the proposed HKHS's DRE at 100mPD and the proposed URA's development schemes at 120mPD. Based on the above, the change in visual composition and permeability at this VP is considered negligible.

Effect on Visual Resources and Public Viewers

6.6 Similar to VP1, visual resources at this VP include Victoria Harbour, the Kowloon ridgelines and the open sky. At more than 3,000m away from the Subject Site, VSRs at this VP would see the Proposed Development as part of the Ma Tau Kok skyline rather than a single building. The Proposed Development is screened off by the other planned developments and it can be concluded that the extent of visual changes on public views induced by the Proposed Development is **negligible** and visual resources would remain unaffected.

6.7 In view of the medium visual sensitivity of VSRs at this VP, the resultant overall visual

impact would be **negligible**.

VP3: Kai Tak Elevated Landscaped Deck (Plan 8)

Visual Composition, Obstruction and Permeability

6.8 The visual composition of this VP is dominated by planned open spaces and parks at Kai Tak with the high-rises of Kowloon and ridgeline of Beacon Hill in the background. Currently the Elevated Landscaped Deck is surrounded by construction sites of the Kai Tak Development Area, which includes the Metro Park and Sports Park at 70mPD. While the Subject Site can be directly spotted in the existing view, the Proposed Development would be predominantly screened by the proposed HKHS's DRE at 100mPD. The two "R(B)4" sites (i.e. Kai Tak Development Sites 4E1 and 4E2) at 95mPD adjacent to the Landscaped Deck would also greatly limit the viewing angle at this VP. The in-land areas of Ma Tau Kok and the open sky from this VP would be slightly obstructed by the Proposed Development. The increased portion of 30m of the Proposed Development is generally compatible with the surrounding built-up area.

Effect on Visual Resources and Public Viewers

6.9 Visual resources at this VP include large open space and parks at Kai Tak, ridgeline and the open sky. These visual resources would remain largely unaffected by the increase portion of 30m of the Proposed Development. At more than 1,000m away from the Subject Site, VSRs at this VP would see the proposed development as a component of the Ma Tau Kok waterfront rather than a single building in front of the Main Stadium of Kai Tak Sports Park. With a difference of 30m in BH, the Proposed Development is unlikely to significant degrade the visual amenity being enjoyed from the VP. It can be concluded that the extent of visual changes on public views induced by the Proposed Development is **slight**.

6.10 In view of the medium visual sensitivity of VSRs at this VP, the resultant overall visual impact would be **slightly adverse**.

VP4: Sung Wong Toi Playground (Plan 9)

Visual Composition, Obstruction and Permeability

6.11 The visual composition of this VP is dominated by the ventilation building of Sung Wong Toi Station and planned open space in front, with the Sky Tower at 159mPD and the open sky at the back. Majority of the Proposed Development and other future developments near the harbourfront of Ma Tau Kok would be partially screened by the trees at the

planned open space. Compared to the OZP-compliant Scheme, the current wide open sky view is expected to be partially blocked by the Proposed Development. Notwithstanding, the increased portion of 30m of the Proposed Development is still generally compatible with the built environment, with respect to a stepped building height profile from Sky Tower at 159mPD and the proposed CDA development of the approved planning application No. A/K10/265 at 100mPD.

Effect on Visual Resources and Public Viewers

6.12 Visual resources at this VP include vegetation and trees at the planned open space in front and the open sky view. As only a minimal portion of the sky view could be screened off by the increased portion of 30m of the Proposed Development while other visual resources would remain unaffected, it can be concluded that the extent of visual changes on public views induced by the Proposed Development is **slight**.

6.13 In view of the medium visual sensitivity of VSRs at this VP, the resultant overall visual impact would be **slightly adverse**.

VP5: Planned Open Space at San Ma Tau Street (Plan 10)

Visual Composition, Obstruction and Permeability

6.14 The visual composition of this VP is dominated by the Grand Waterfront at 175.5mPD and the open sky view. The Proposed Development is expected to be fully screened by the Grand Waterfront and the future high-rise developments, including the proposed URA's development schemes of Ming Lun Street/Ma Tau Kok Road and To Kwa Wan Road/Ma Tau Kok Road at 120mPD. Thus, the Proposed Development would not be visible from this VP at all. No visual obstruction would be induced by the Proposed Development at this VP as a result.

Effect on Visual Resources and Public Viewers

6.15 Visual Resources at this VP include the wide open sky. Existing quality of view at this VP is not high as it is dominated by the high-rise development of Grand Waterfront. As the Proposed Development would be entirely screened by the Grand Waterfront, existing visual resources remain unaffected and no visual changes would be observed at this VP. It can be concluded that the extent of visual changes on public views induced by the Proposed Development is **negligible**.

6.16 The increase portion of 30m of the proposed development is not visible at this VP and

the resultant overall visual impact would be **negligible**.

VP6: Planned Open Space on Shing Kai Road (Plan 11)

Visual Composition, Obstruction and Permeability

6.17 The visual composition of this VP is dominated by the high-rise residential developments such as Sky Tower at 159mPD, Metropolitan Rise at 138mPD and Celestial Heights at 150mPD in the background. It is expected that the increase portion of 30m of the Proposed Development would be directly visible from this VP, with part of the building screened off by trees and the proposed hotel and permitted office and commercial development of the approved planning application No. A/K22/28. Existing view towards the in-land areas of To Kwa Wan and the open sky is expected to be partially blocked by the Proposed Development. The effect of the partial loss of open sky view due to the Proposed Development is similar to that of the OZP-compliant Scheme given the slight magnitude of change.

Effect on Visual Resources and Public Viewers

6.18 Visual Resources at this VP include the wide open sky. Existing quality of view at this VP is not high. It is expected that a significant amount of open sky would be blocked by the increase portion of 30m of the Proposed Development, the planned developments at 100mPD at the CDA sites, Sky Tower at 159mPD and the Main Stadium of the Kai Tak Sports Ground. The visual change would be easily noticed by VSRs due to the close proximity of this VP from the Subject Site. It can be concluded that the extent of visual changes on public views induced by the Proposed Development is **moderate**.

6.19 In view of the medium to high visual sensitivity of VSRs at this VP, the resultant overall visual impact would be **moderately adverse**.

VP7: Cattle Depot Artist Village (Plan 12)

Visual Composition, Obstruction and Permeability

6.20 The visual composition of this VP is dominated by the historical buildings of the artist village and the buildings of the "13 Streets" in the background. Small portion of a naphtha reforming plant at the Towngas Production Plant can also be identified behind the artist village from this VP. While the increase portion of 30m of the Proposed Development would be completely screened by the planned CDA development of the "13 Streets" with a maximum BH restriction of 100mPD adjacent to the artist village. No visual obstruction would be induced by the Proposed Development at this VP as a

result.

Effect on Visual Resources and Public Viewers

6.21 Visual resources at this VP include the wide open sky. It is expected that a significant amount of open sky would be blocked by the planned CDA development of "13 Streets". As the Proposed Development would be entirely screened by the planned CDA development of "13 Streets", existing visual resources remain unaffected by the Proposed Development and no visual changes due to the Proposed Development would be observed at this VP. It can be concluded that the extent of visual changes on public views induced by the Proposed Development is **negligible**.

6.22 The increase portion of 30m of the Proposed Development is not visible at this VP and the resultant overall visual impact would be **negligible**.

VP8: Mok Cheong Street (Plan 13)

Visual Composition, Obstruction and Permeability

6.23 The visual composition of this VP is dominated by Kai It Building and the proposed HKSB welfare services block on the northern side, and the open sky view. To Kwa Wan Road SPS is partially visible at the end of the street. Substantial changes to the visual composition of this VP are anticipated by the proposed HKSB welfare services block at 61.2mPD, the proposed CDA development at 100mPD (Planning Application No. A/K10/265) and a proposed HKHS's DRE at 100mPD. It is expected that the Proposed Development would be completely screened by the proposed CDA development at 100mPD (Planning Application No. A/K10/265). No visual obstruction would be induced by the Proposed Development at this VP as a result.

Effect on Visual Resources and Public Viewers

6.24 Visual Resources at this VP include the open sky, and in the future a planned open space and plantings at the proposed DRE. As the Proposed Development would be entirely screened by the proposed CDA development at 100mPD (Planning Application No. A/K10/265), existing visual resources remain unaffected by the Proposed Development and no visual changes due to the Proposed Development would be observed at this VP. It can be concluded that the extent of visual changes on public views induced by the Proposed Development is **negligible**.

6.25 The increase portion of 30m of the Proposed Development is not visible at this VP and

the resultant overall visual impact would be **negligible**.

7. Conclusion

7.1 This VA assesses the visual impacts of the Proposed Development against the OZP-compliant scheme at the selected key public VPs. The visual impact of all VPs are summarised in **Table 3** below:

Table 3 – Summary of the Overall Visual Impacts

View Points	**Magnitude of Visual Change** (Negligible, Slight, Moderate, Substantial)	**Visual Sensitivity of VSRs** (Low, Medium, High)	**Resultant Overall Visual Impact** (Negligible, Slightly Adverse, Moderately Adverse, Significantly Adverse)
VP1 Quarry Bay Park	Negligible	Medium	Negligible
VP2 North Point Public Pier	Negligible	Medium	Negligible
VP3 Kai Tak Elevated Landscaped Deck	Slight	Medium	Slightly Adverse
VP4 Sung Wong Toi Playground	Slight	Medium	Slightly Adverse
VP5 Planned Open Space at San Ma Tau Street	Negligible	Medium to High	Negligible
VP6 Planned Open Space on Shing Kai Road	Moderate	Medium to High	Moderately Adverse
VP7 Cattle Depot Artist Village	Negligible	Low	Negligible
VP8 Mok Cheong Street	Negligible	Medium to High	Negligible

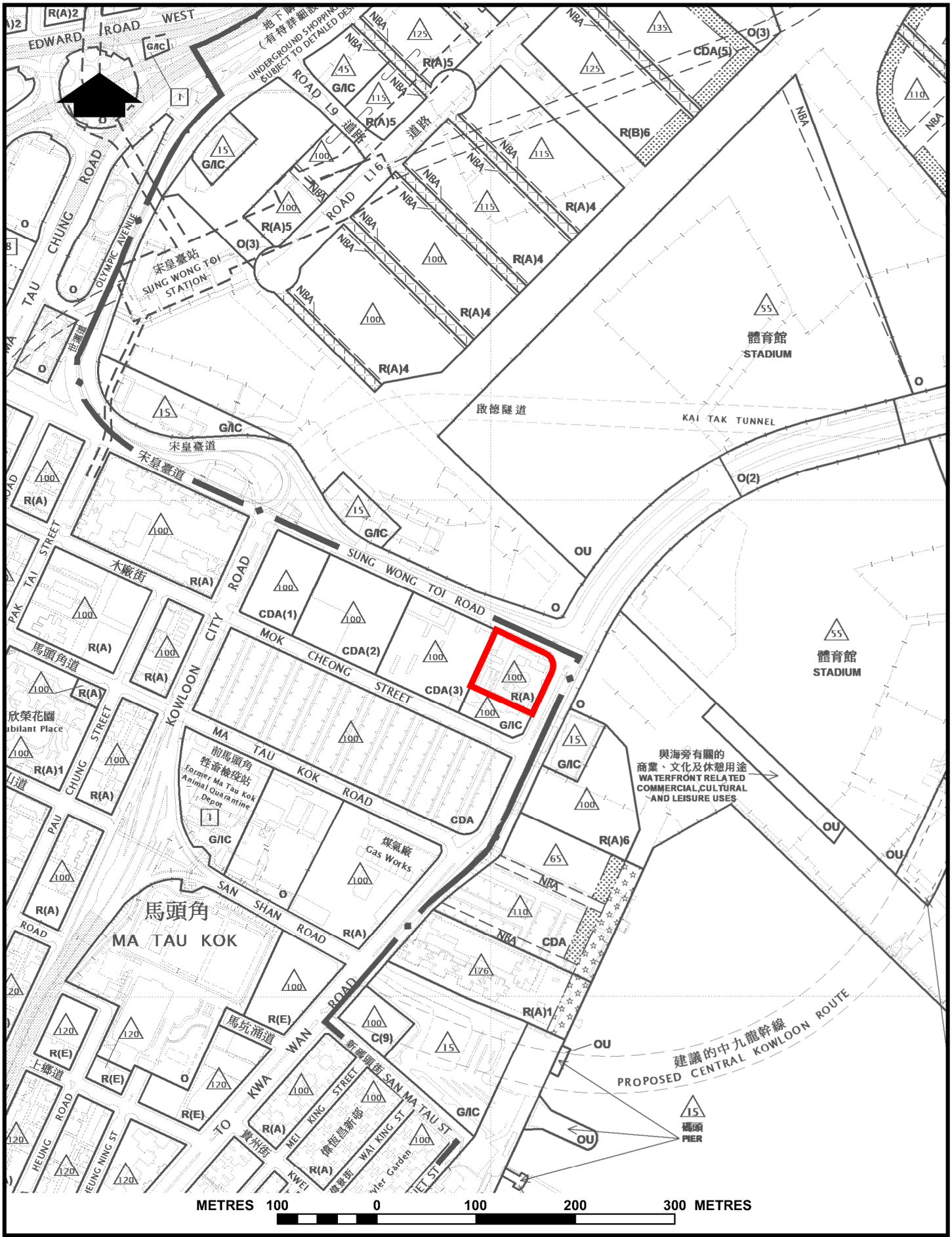
7.2 Based on the above analysis, the Proposed Development with BH restriction of 130mPD will have “negligible” to “moderately adverse” visual impact on the VPs. The

development is however in line with the housing policy to optimise the development potential and to increase the public housing land supply, as well as to facilitate the redevelopment of Ma Tau Wai Estate.

7.3 The following mitigation measures of the Proposed Development are recommended to minimise the visual impact when appropriate (**Plan 14** refers):

- To arrange building form and disposition to enhance visual permeability;
- To adopt appropriate colour scheme for the building and provision of greening and landscaping to soften the building mass; and
- To articulate and vary building massing and façades, including the podium edges to add visual interest and contribute to the pedestrian scale environment.

HOUSING DEPARTMENT
May 2024



LOCATION PLAN
TO KWA WAN ROAD

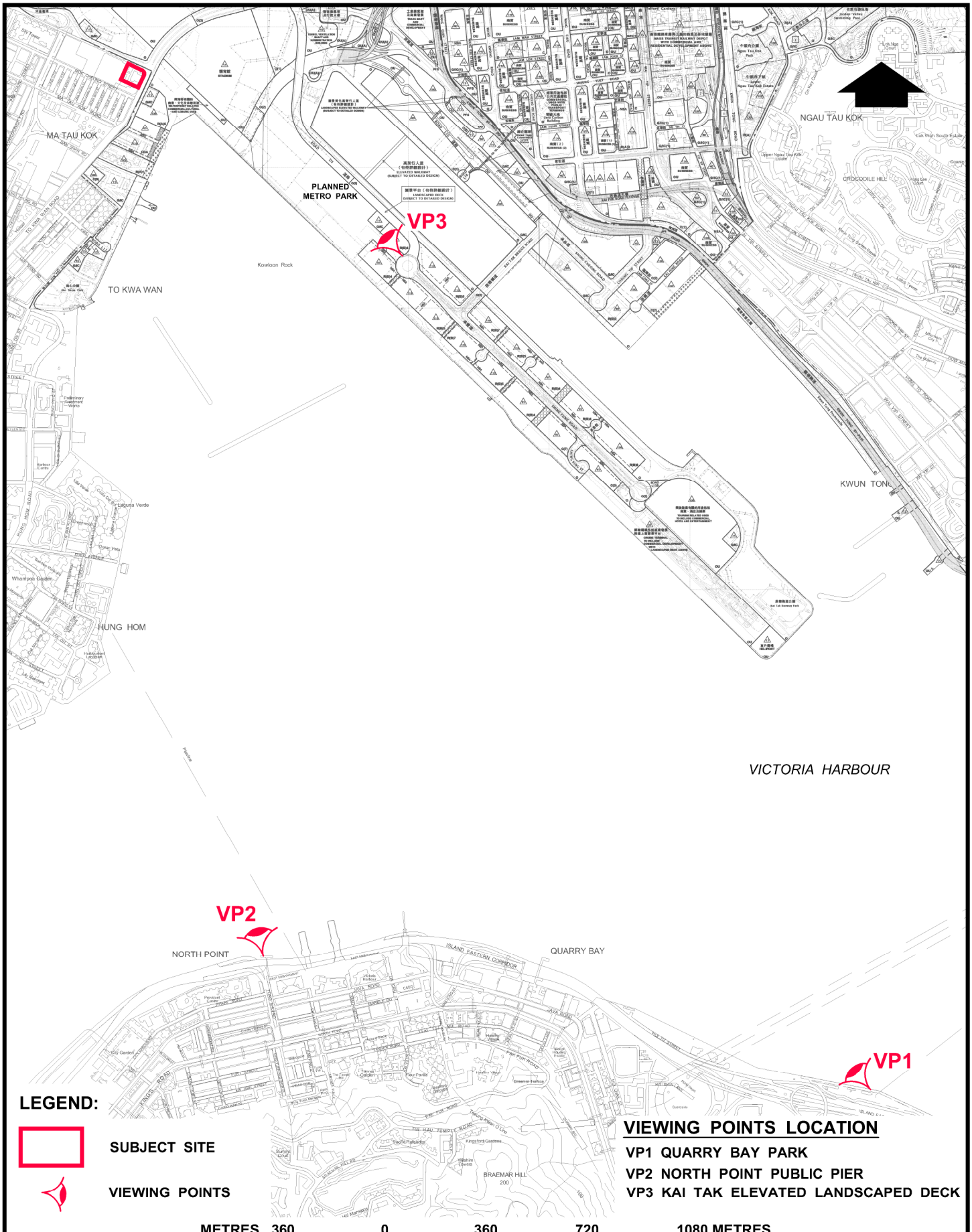
HOUSING DEPARTMENT
PLANNING SECTIONS

PLAN 1

DATE :
5. 3. 2024

BASE EXTRACTED FROM OZP No. S/K10/30

24_0185KLN_Plan1



TO KWA WAN ROAD
LOCATION OF VIEWING POINTS 1 TO 3

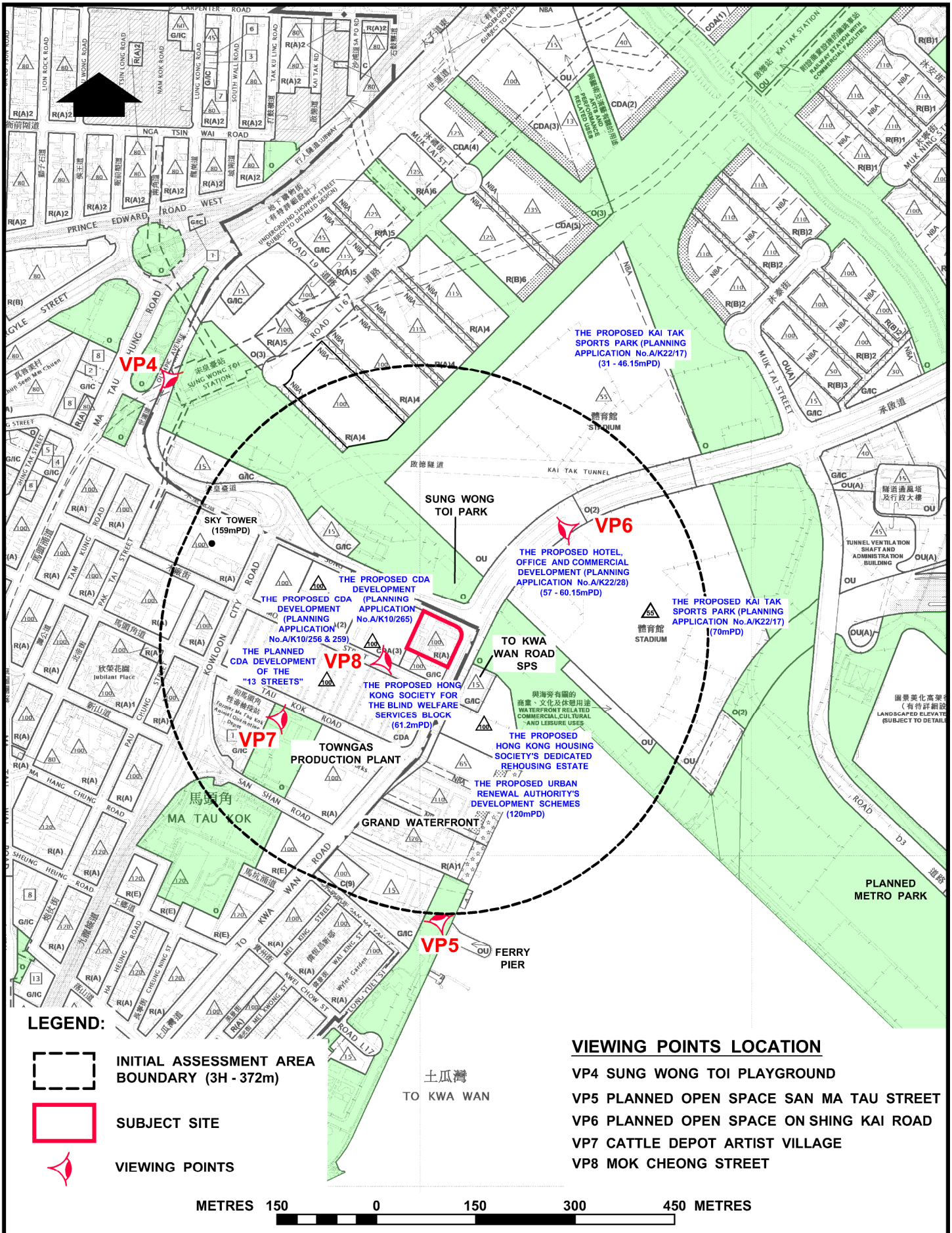
HOUSING DEPARTMENT
PLANNING SECTIONS

PLAN 2

DATE :
5. 3. 2024

BASE EXTRACTED FROM SHT. No. 11-NE, OZP Nos. S/K13/32 & S/K22/8

24_0185KLN_Plan2



TO KWA WAN ROAD
LOCATION OF VIEWING POINTS 4 TO 8

HOUSING DEPARTMENT
PLANNING SECTIONS

PLAN 3

DATE : 11. 4. 2024

BASE EXTRACTED FROM OZP Nos. S/K10/30 & S/K22/8

24_0231KLN_Plan3

SUNG WONG TOI ROAD

PROPOSED BHR: 130mPD

BLOCK 1

10m

10m

10.70

23.59

14.90

4.20

25.90

128.49

143.265

19.70

23.59

92

Workshop

The Hong Kong Society For the Blind Bradbury Care and Attention Home for the Aged Blind

The Hong Kong Society For the Blind Factory Cum Sheltered Workshop

TO KWA WAN ROAD

CUL

CUL

CUL

R

13

15

17

19

LEGEND:-

- SITE BOUNDARY
- DOMESTIC BLOCK
- MAIN ENTRANCE
- ENTRANCE FOR WELFARE AND HA'S OFFICE
- VEHICULAR ENTRANCE
- AIR QUALITY SETBACK (10M)
- AIR BUFFER ZONE (200m SEPARATION DISTANCE FROM EXISTING CHIMNEYS)
- LANDSCAPE AREA

PROJECT TITLE

PROPOSED PUBLIC HOUSING DEVELOPMENT AT TO KWA WAN ROAD, KOWLOON CITY

DRAWING TITLE

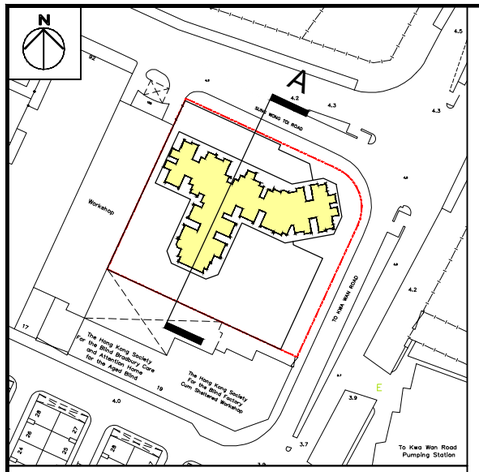
INDICATIVE MASTER LAYOUT PLAN (PROPOSED SCHEME)

SCALE 1:500(A3)

房 屋 署
HOUSING DEPARTMENT

DRAWING NO. KC06/A/LO-21

DATE: 03/04/2024



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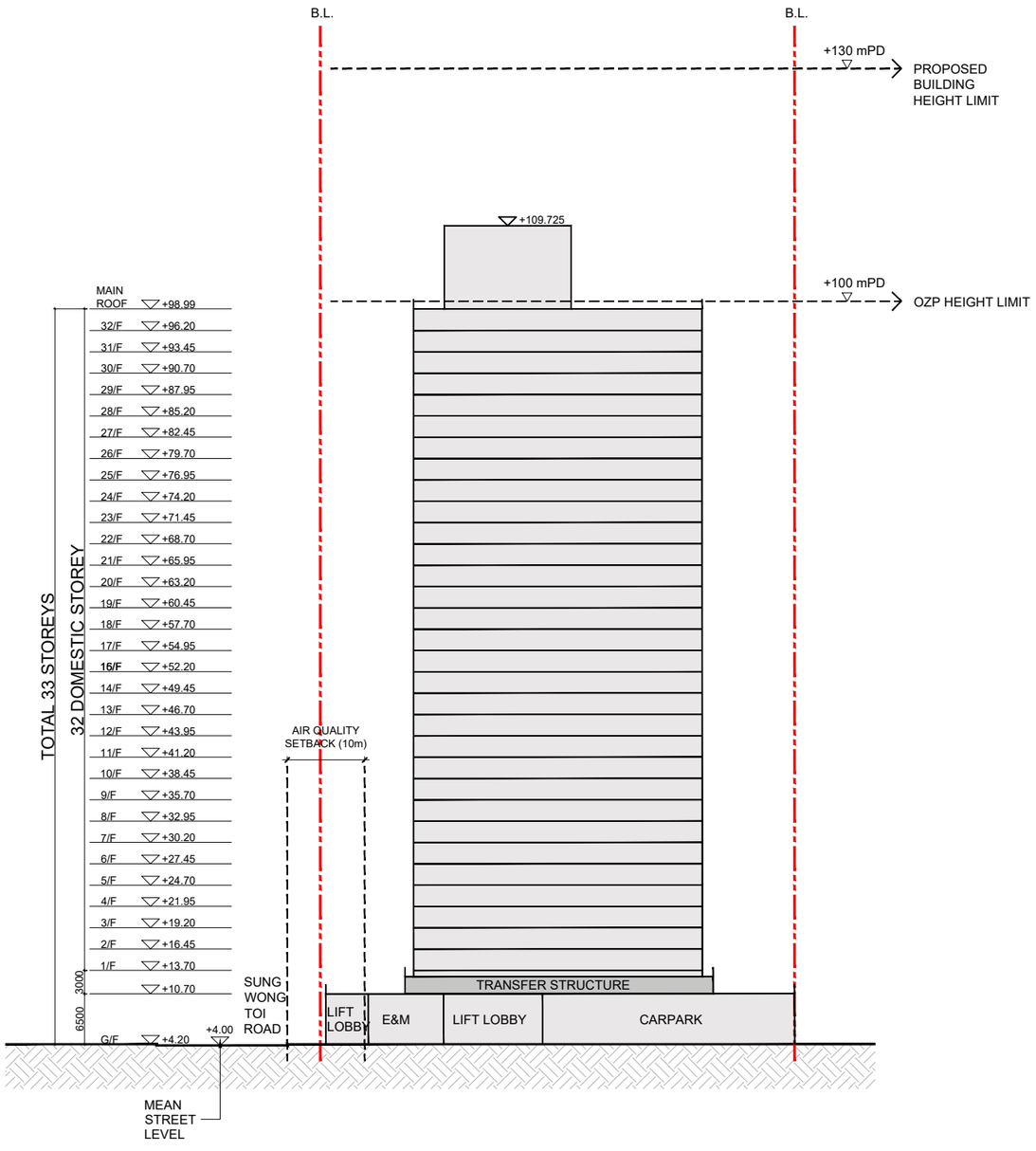


LEGEND:-

SITE BOUNDARY

PROJECT TITLE

PROPOSED PUBLIC HOUSING DEVELOPMENT AT TO KWA WAN ROAD, KOWLOON CITY

DRAWING TITLE

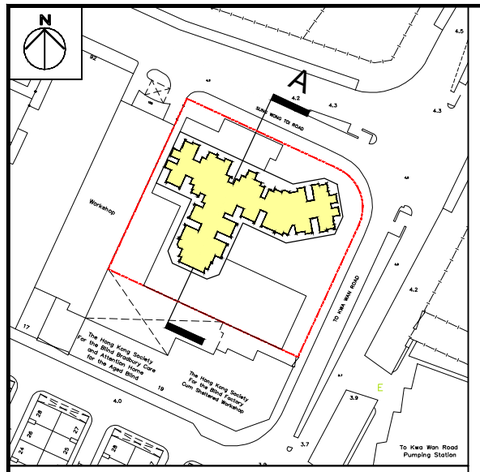
INDICATIVE SITE SECTION (OZP-COMPLIANT SCHEME)

SCALE 1:750(A3)

房 屋 署
HOUSING DEPARTMENT

DRAWING NO. KC06/A/LO-14

DATE: 03/04/2024



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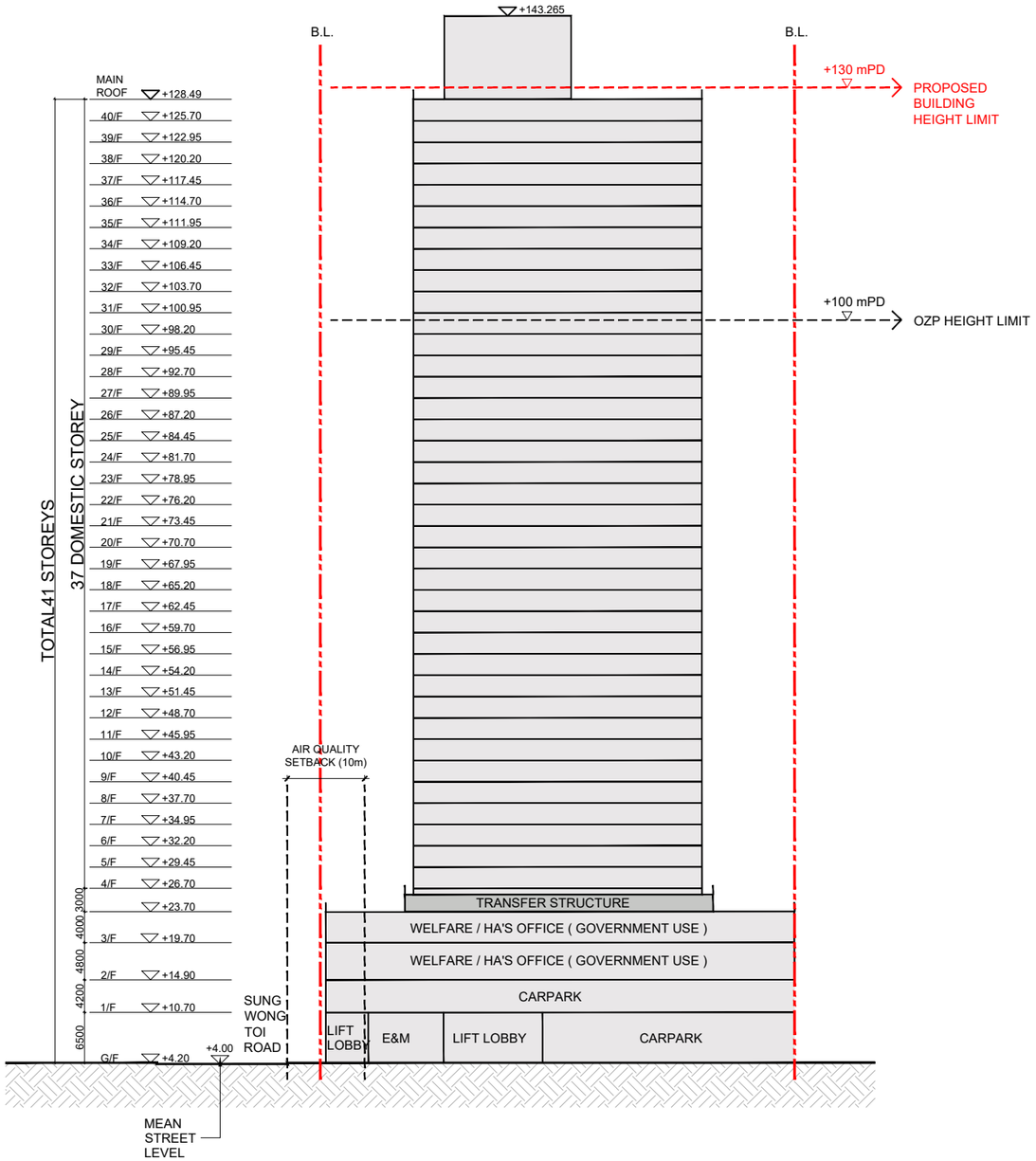


LEGEND:-

SITE BOUNDARY

PROJECT TITLE

PROPOSED PUBLIC HOUSING DEVELOPMENT AT TO KWA WAN ROAD, KOWLOON CITY

DRAWING TITLE

INDICATIVE SITE SECTION (PROPOSED SCHEME)

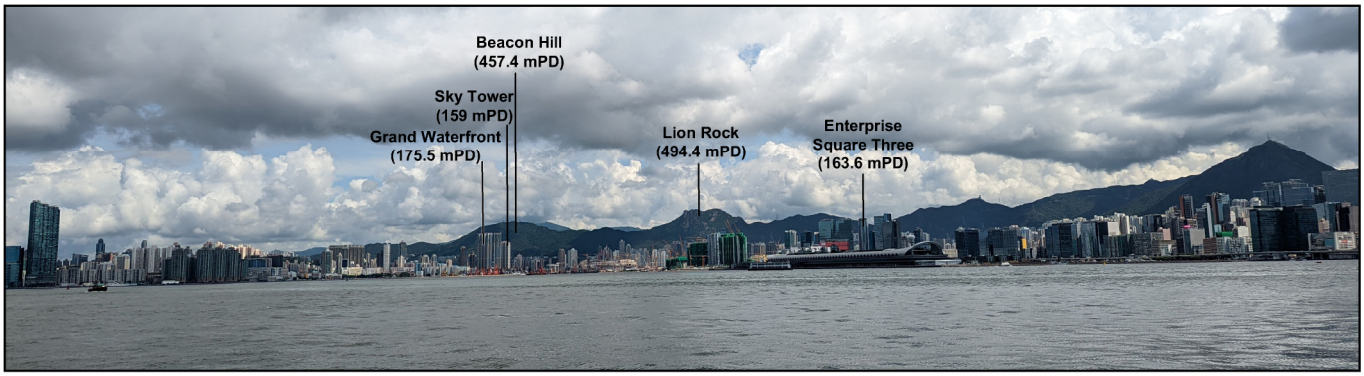
SCALE 1:750(A3)

房 屋 署
HOUSING DEPARTMENT

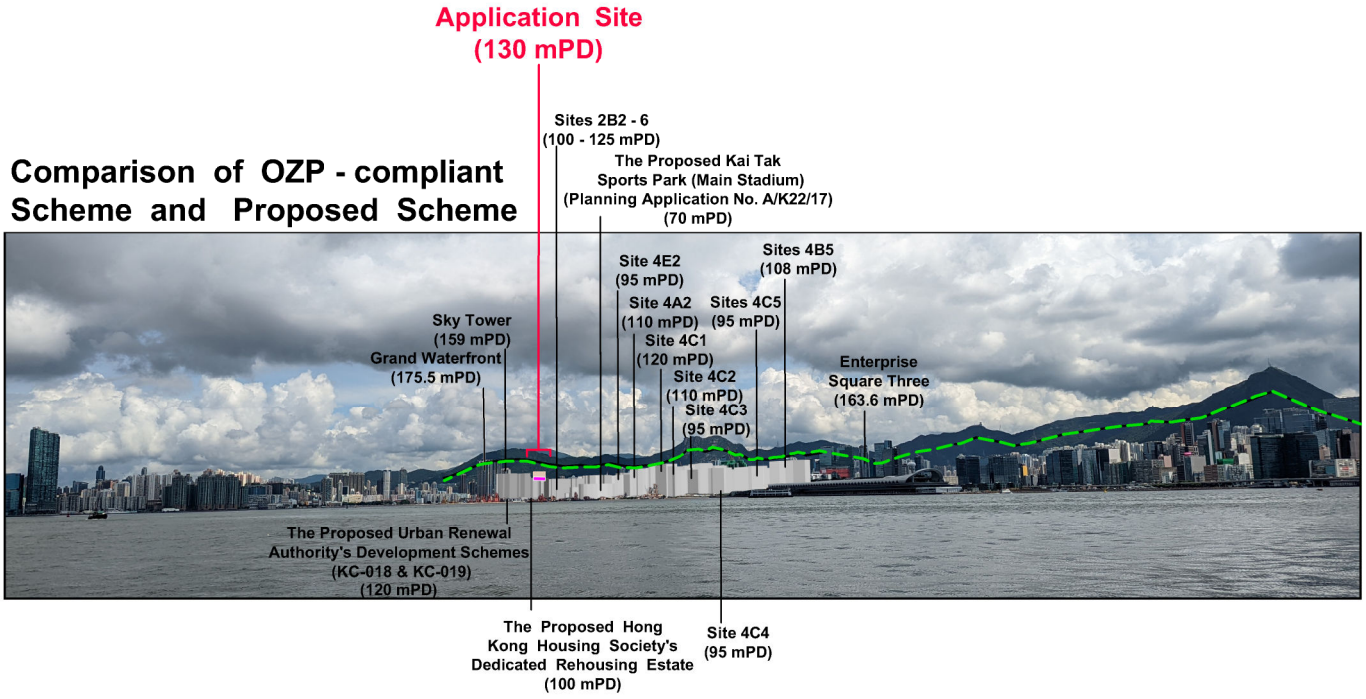
DRAWING NO. KC06/A/LO-27

DATE: 03/04/2024

Existing View

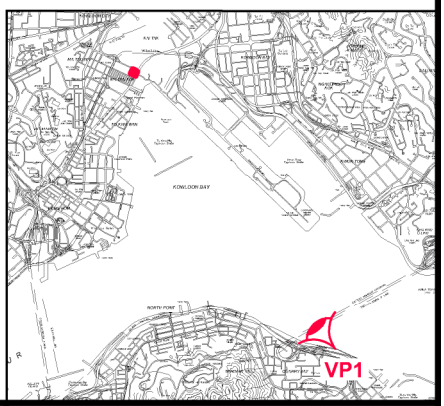


Comparison of OZP - compliant Scheme and Proposed Scheme



LEGEND:

- Building Height Restriction at 100mPD
- 20% Building Free Zone Below Ridgeline
- Differences between the OZP - compliant Scheme and Proposed Scheme



PHOTOMONTAGE AT VIEWING POINT 1 (VIEW FROM QUARRY BAY PARK)

HOUSING DEPARTMENT
PLANNING SECTIONS

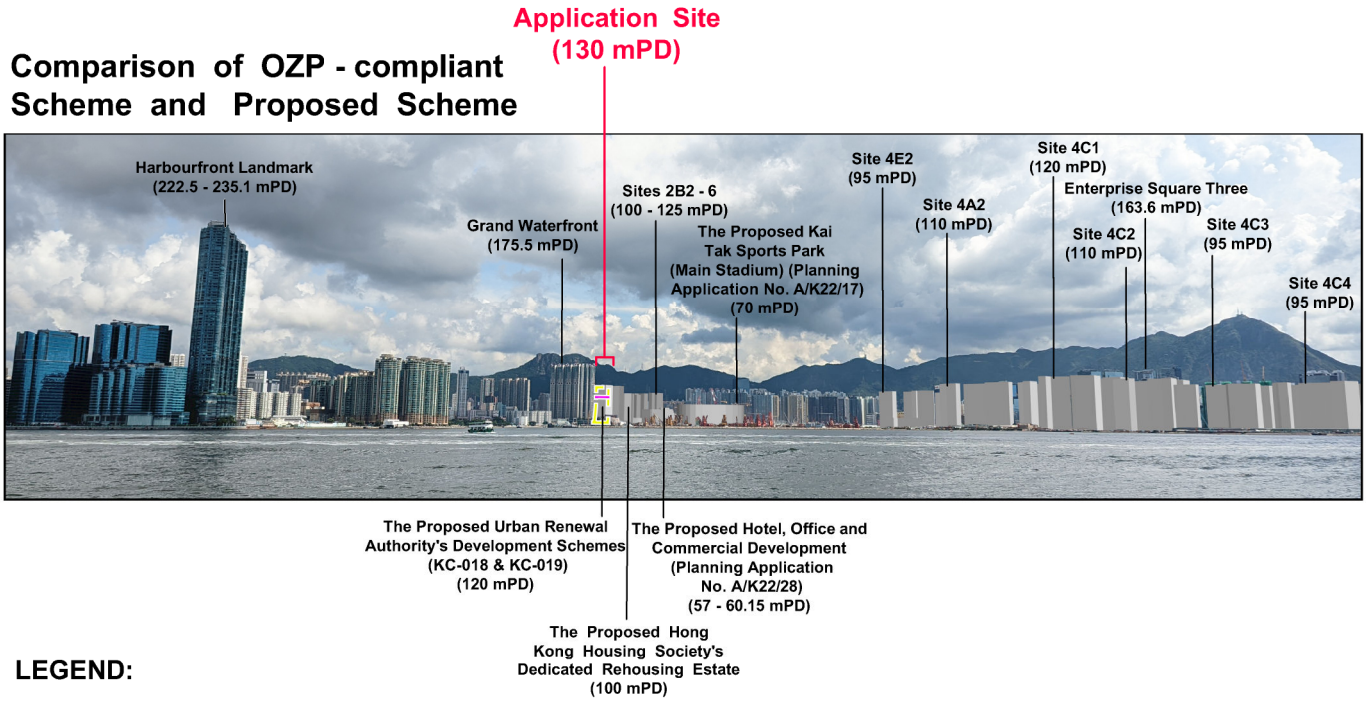
PLAN 6

DATE :
11. 4. 2024

24_0231KLN_VP1

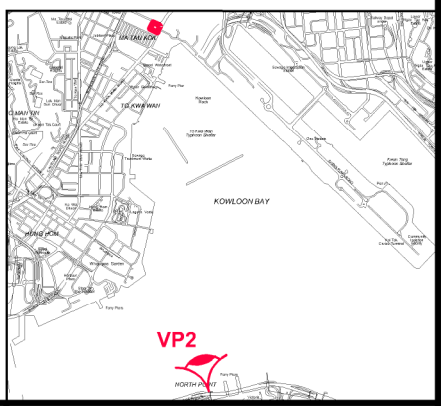
Existing View

Comparison of OZP - compliant Scheme and Proposed Scheme



LEGEND:

Building Height Restriction at 100mPD



PHOTOMONTAGE AT VIEWING POINT 2 (VIEW FROM NORTH POINT PUBLIC PIER)

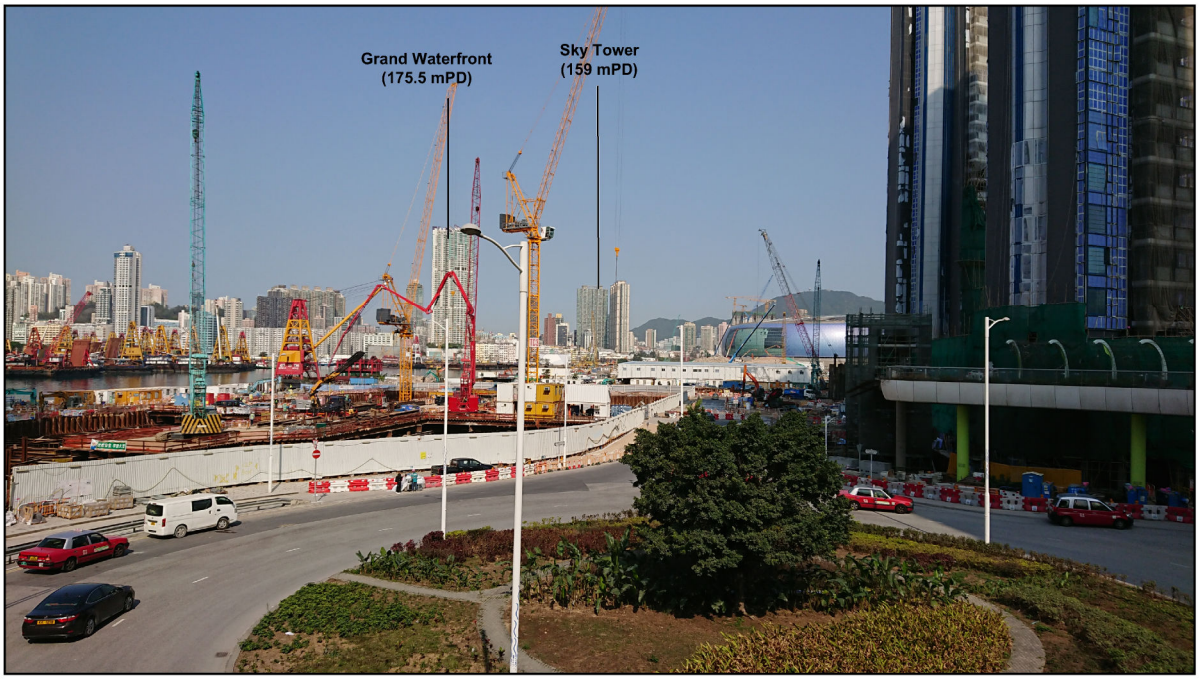
HOUSING DEPARTMENT
PLANNING SECTIONS

PLAN 7

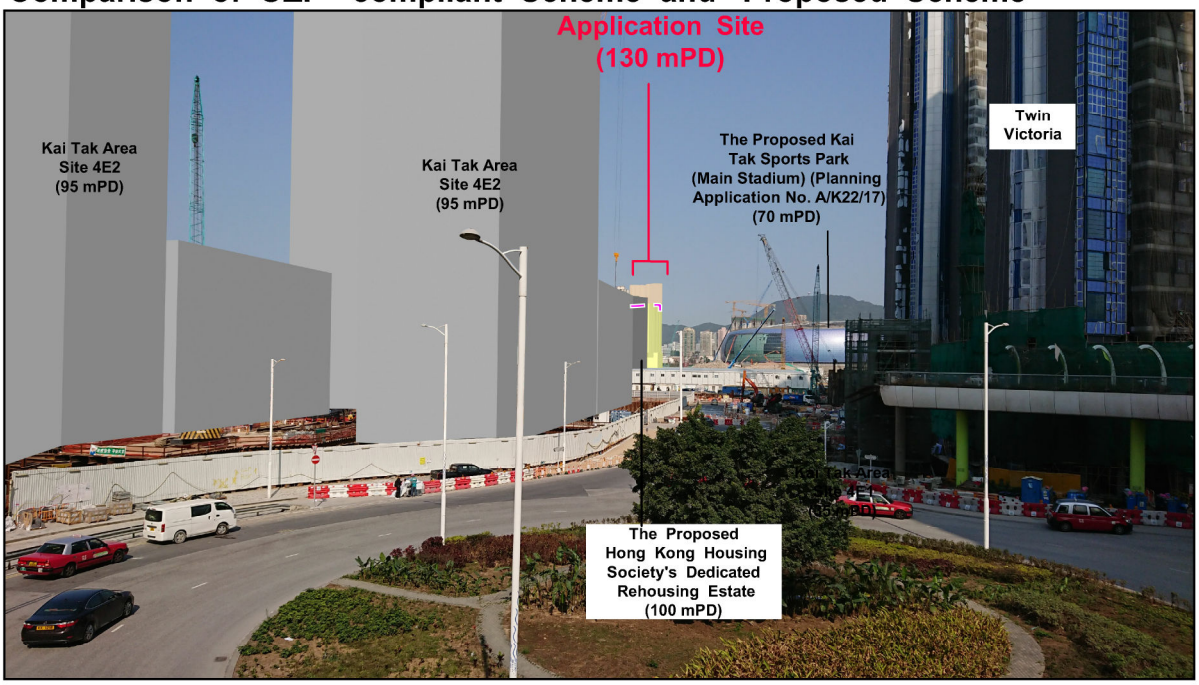
DATE :
11. 4. 2024

24_0231KLN_VP2

Existing View

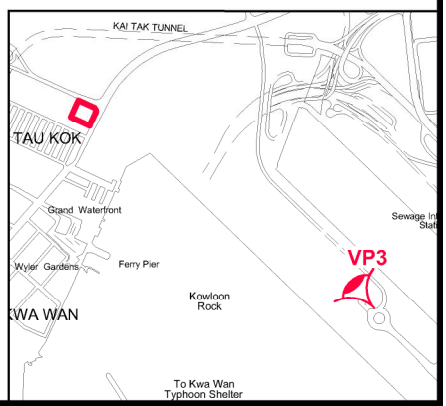


Comparison of OZP - compliant Scheme and Proposed Scheme



LEGEND:

- Building Height Restriction at 100mPD
- Differences between the OZP - compliant Scheme and Proposed Scheme



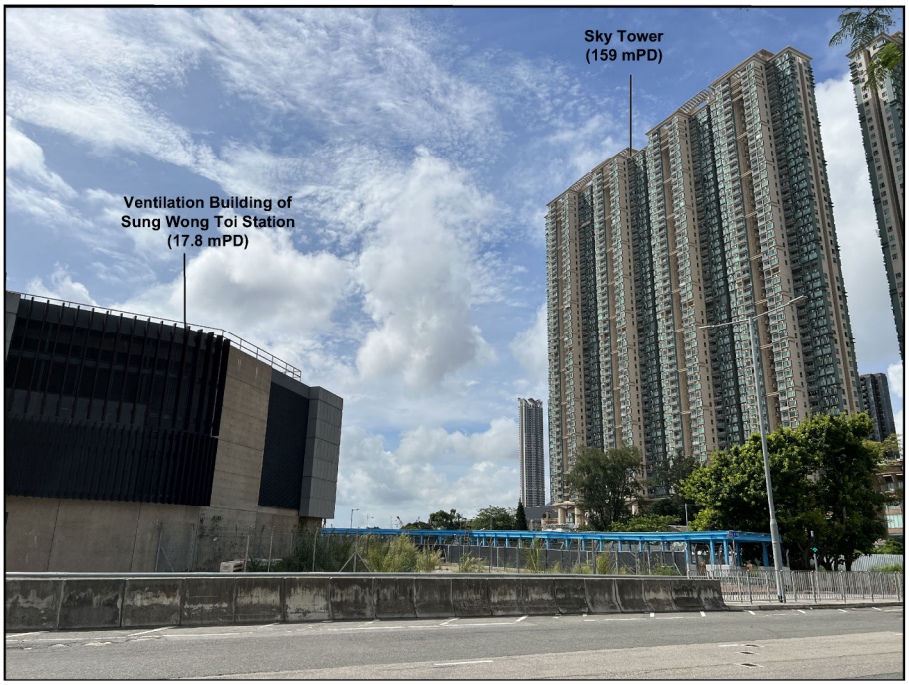
PHOTOMONTAGE AT VIEWING POINT 3 (VIEW FROM KAI TAK ELEVATED LANDSCAPED DECK)

HOUSING DEPARTMENT
PLANNING SECTIONS

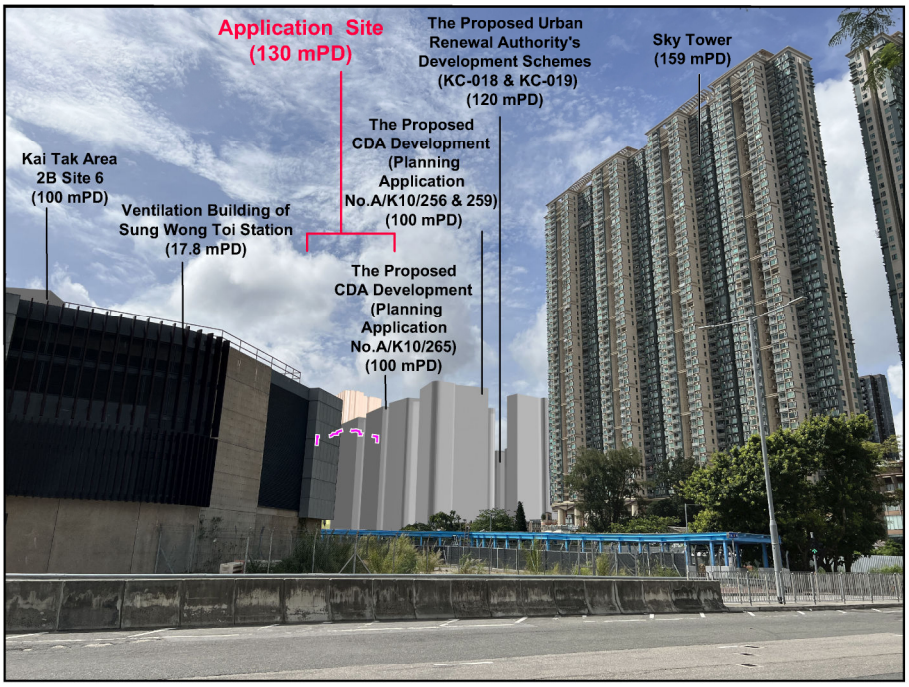
PLAN 8

DATE :
11. 4. 2024

Existing View



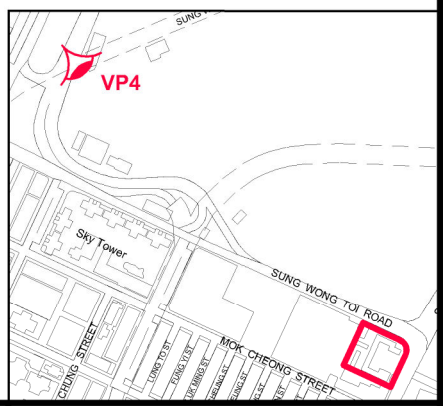
Comparison of OZP - compliant Scheme and Proposed Scheme



LEGEND:

Building Height Restriction at 100mPD

Differences between the OZP - compliant Scheme and Proposed Scheme



PHOTOMONTAGE AT VIEWING POINT 4 (VIEW FROM SUNG WONG TOI PLAYGROUND)

HOUSING DEPARTMENT
PLANNING SECTIONS

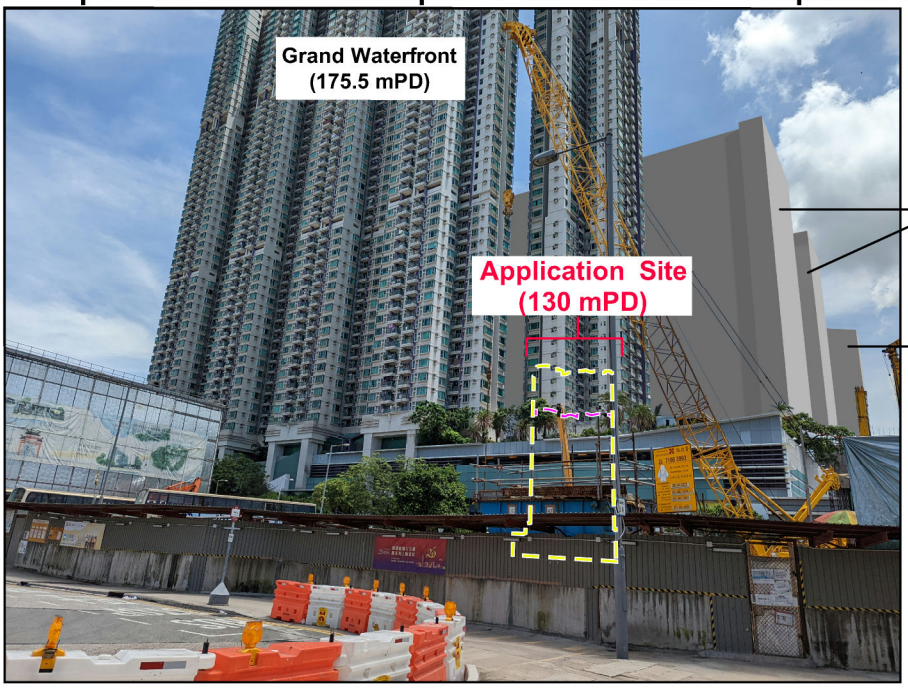
PLAN 9

DATE :
5. 3. 2024

24_0185KLN_VP4

Existing View

Comparison of OZP - compliant Scheme and Proposed Scheme

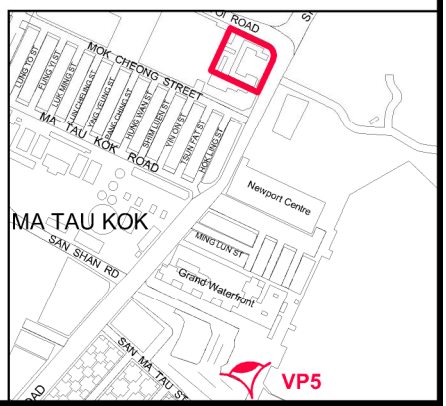


The Proposed Urban Renewal Authority's Development Schemes (KC-018 & KC-019) (120 mPD)

The Proposed Hong Kong Housing Society's Dedicated Rehousing Estate (100 mPD)

LEGEND:

Building Height Restriction at 100mPD



PHOTOMONTAGE AT VIEWING POINT 5 (VIEW FROM PLANNED OPEN SPACE AT SAN MA TAU STREET)

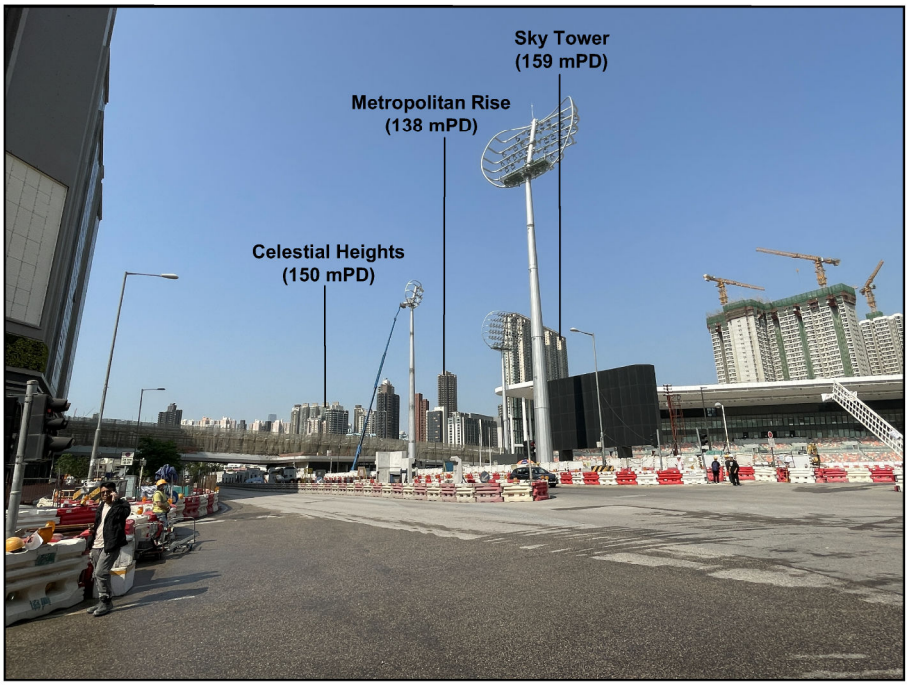
HOUSING DEPARTMENT
PLANNING SECTIONS

PLAN 10

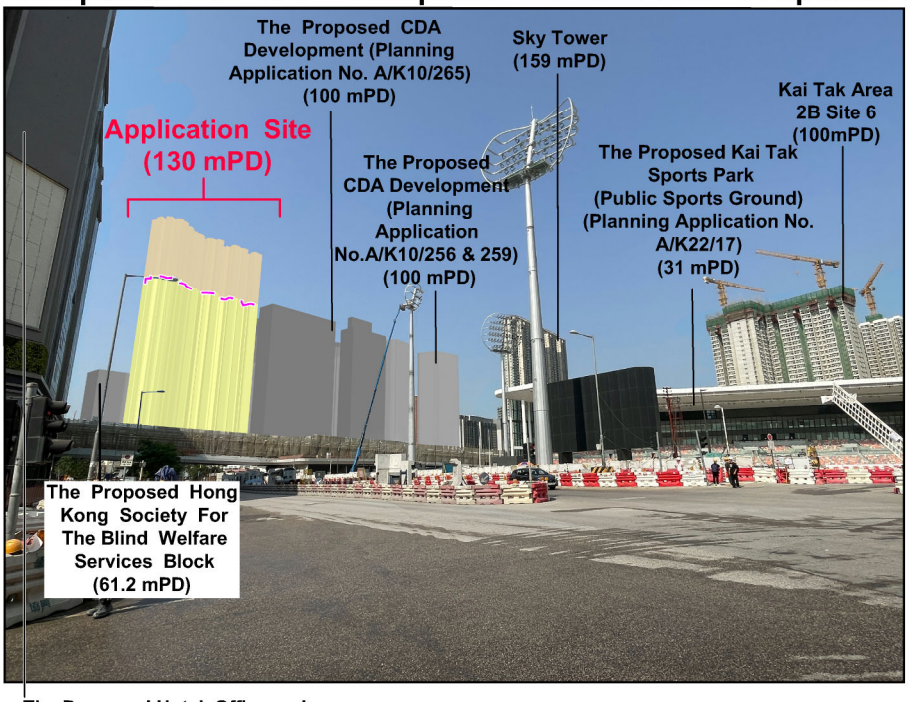
DATE :
5. 3. 2024

24_0185KLN_VP5

Existing View



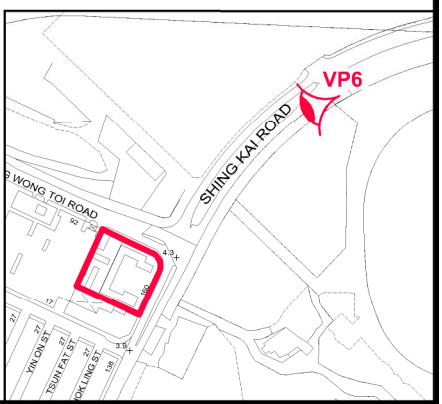
Comparison of OZP - compliant Scheme and Proposed Scheme



LEGEND:

Building Height Restriction at 100mPD

Differences between the OZP - compliant Scheme and Proposed Scheme



PHOTOMONTAGE AT VIEWING POINT 6 (VIEW FROM PLANNED OPEN SPACE ON SHING KAI ROAD)

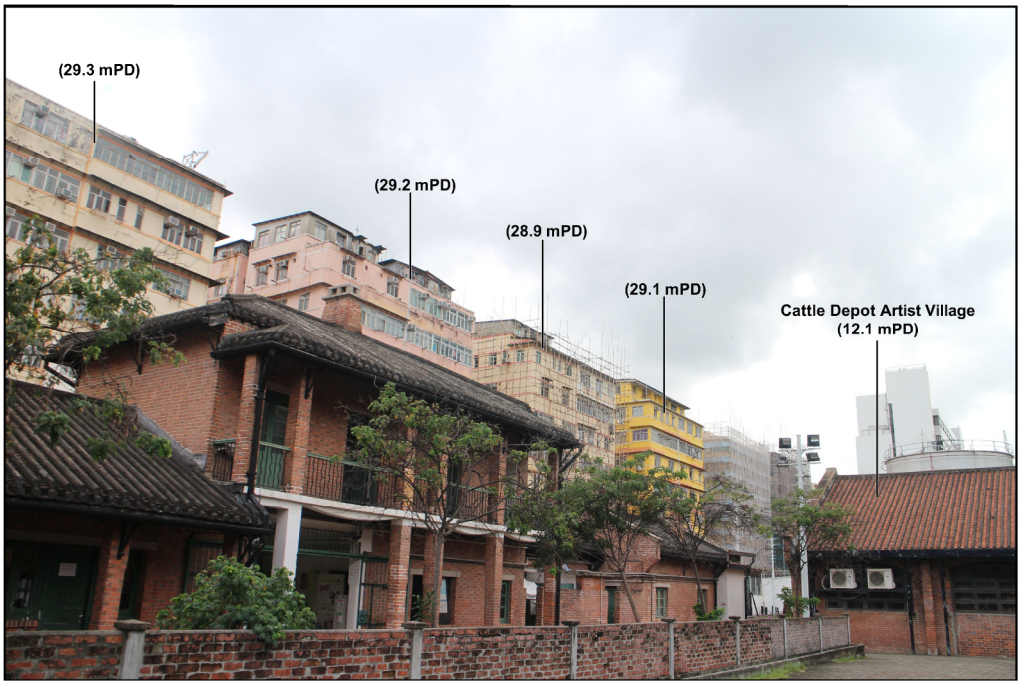
HOUSING DEPARTMENT
PLANNING SECTIONS

PLAN 11

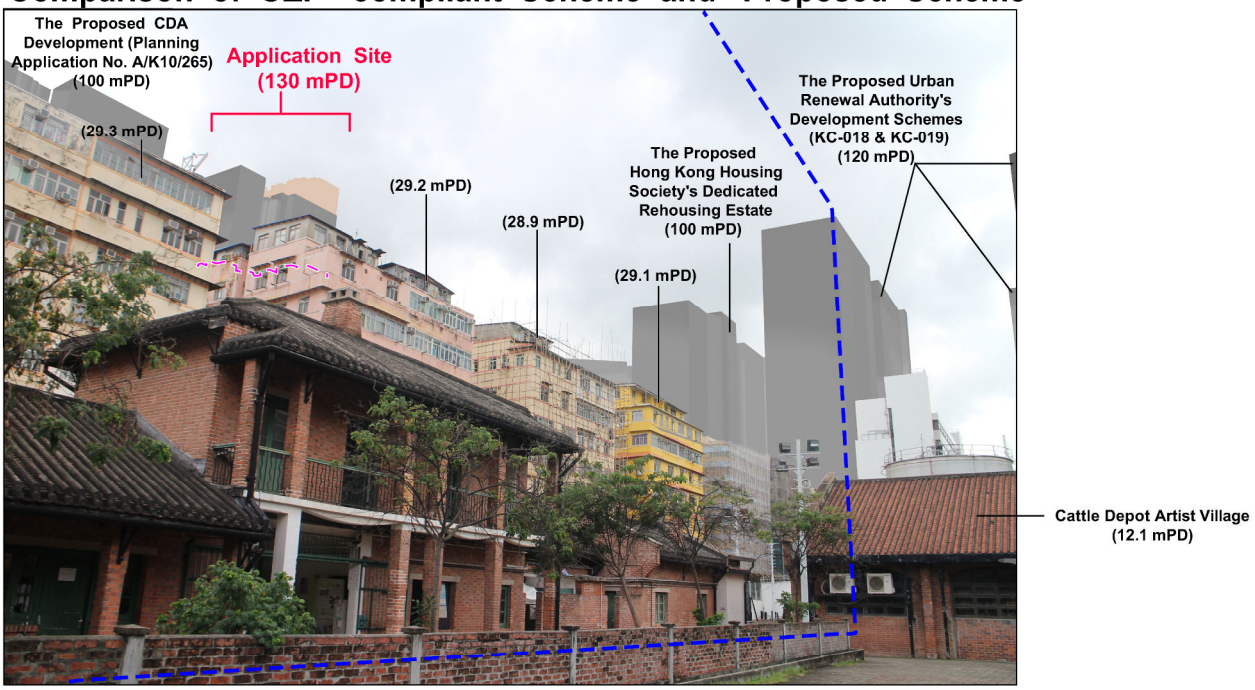
DATE :
11. 4. 2024

24_0231KLN_VP6

Existing View

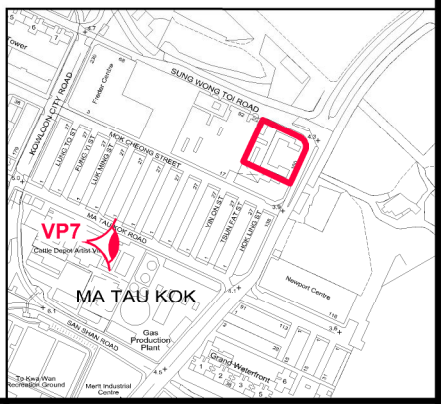


Comparison of OZP - compliant Scheme and Proposed Scheme



LEGEND:

- Building Height Restriction at 100mPD
- The Planned CDA Development of the "13 Streets"
- Differences between the OZP - compliant Scheme and Proposed Scheme



PHOTOMONTAGE AT VIEWING POINT 7 (VIEW FROM CATTLE DEPOT ARTIST VILLAGE)

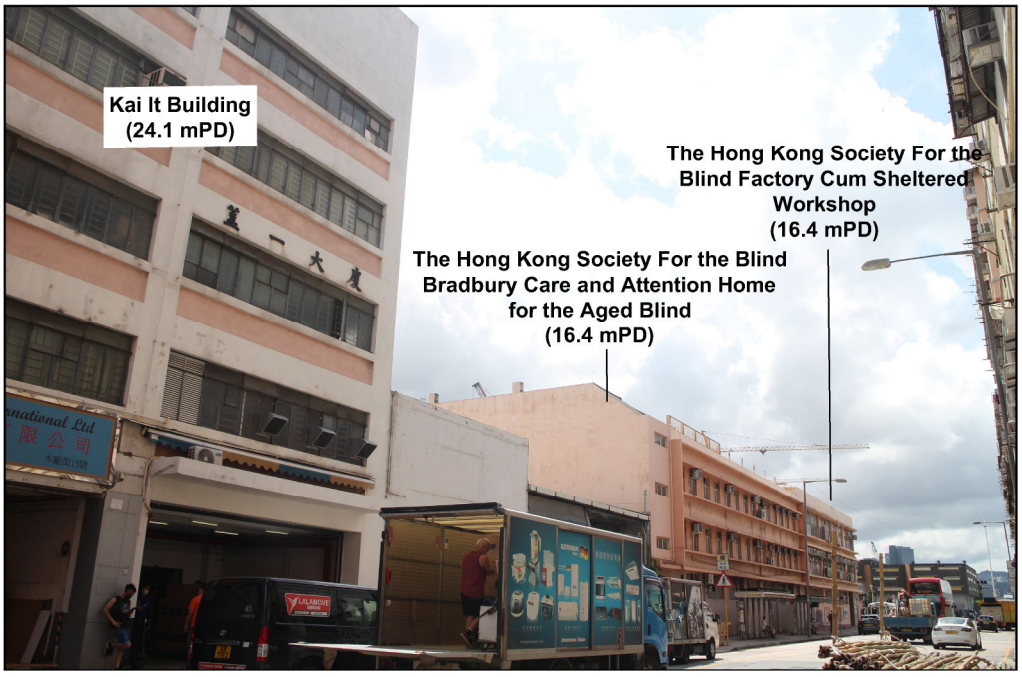
HOUSING DEPARTMENT
PLANNING SECTIONS

PLAN 12

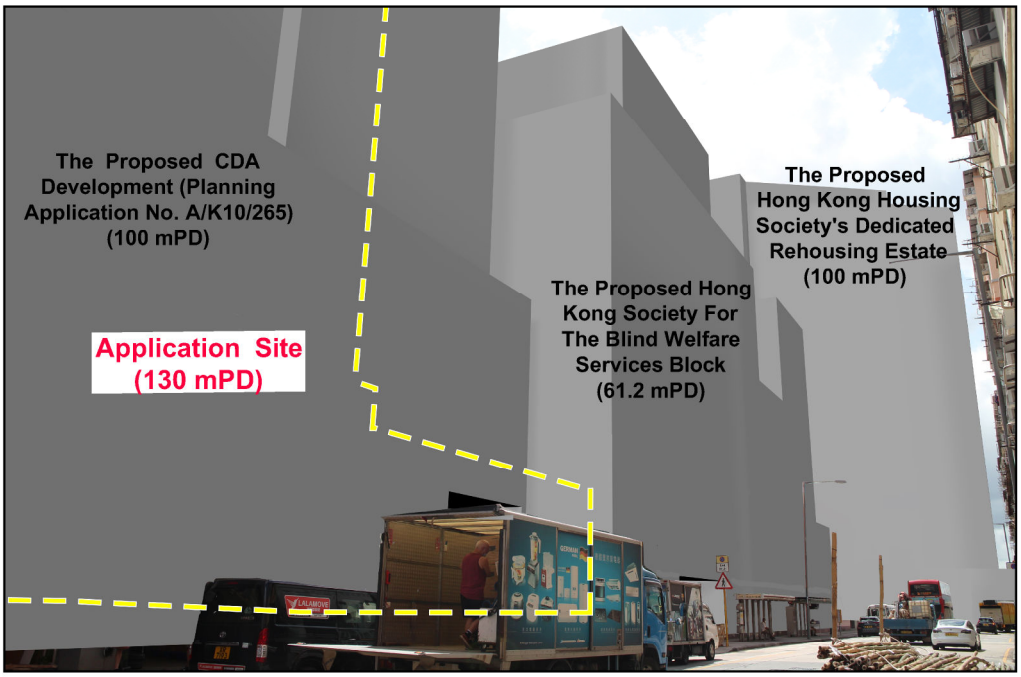
DATE :
11. 4. 2024

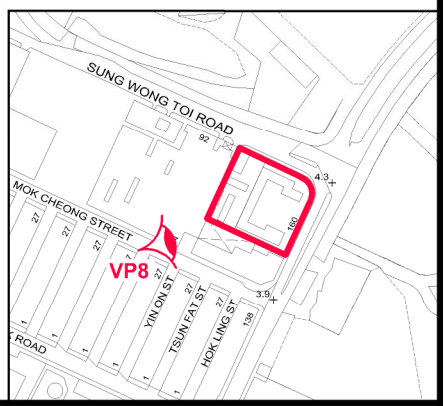
24_0231KLN_VP7

Existing View



Comparison of OZP - compliant Scheme and Proposed Scheme





PHOTOMONTAGE AT VIEWING POINT 8 (VIEW FROM MOK CHEONG STREET)

HOUSING DEPARTMENT
PLANNING SECTIONS

PLAN 13

DATE :
11. 4. 2024

24_0231KLN_VP8

ILLUSTRATION OF THE RETAILS AT G/F

ILLUSTRATION OF THE BOUNDARY TREATMENT

ILLUSTRATION OF THE RETAILS AT G/F AND THE BOUNDARY TREATMENT

HOUSING DEPARTMENT
PLANNING SECTIONS

PLAN 14

DATE :
5. 3. 2024

Agreement No. CB20180686 Term Traffic and Environmental Consultancy Services 2019 – 2021 for Kowloon Central and West and Islands Region

Instruction No. K02
Proposed Public Housing Development at To Kwa Wan Road Environmental Assessment Study (EAS)

Draft Report (Revision 2)

Hong Kong Housing Authority

April 2024

Notice

This document and its contents have been prepared and are intended solely as information for Hong Kong Housing Authority and use in relation to this project.

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Document history

Revision	Purpose description	Originated	Checked	Reviewed	Authorised	Date
0	EAS Preliminary Report – 1st Issue for review	RL/EK	AC	WW	JY	11/2022
1	Draft Report	RL	AC	WW	JY	07/2023
2	Draft Report	NM	KC	VC	JY	01/2024
3	Draft Report	NM	KC	VC	JY	04/2024

Client signoff

Client	Hong Kong Housing Authority
Project	Agreement No. CB20180686 Term Traffic and Environmental Consultancy Services 2019 – 2021 for Kowloon Central and West and Islands Region Instruction No. K02 Proposed Public Housing Development at To Kwa Wan Road Environmental Assessment Study (EAS)
Document title	Draft Report
Job number	5193425
Document ref.	OR045-00
Controlled copy no.	1 Hong Kong Housing Authority (E-copy)
Client signature / date	

Contents

Tables

Figures

Appendices

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Executive Summary

An Environmental Assessment Study (EAS) has been carried out to evaluate the environmental feasibility for the proposed Public Housing Development at To Kwa Wan Road, with respect to Chapter 9 of the Hong Kong Planning Standards and Guidelines (HKPSG).

The proposed development is a single public housing domestic block at 4/F – 40/F with carpark at G/F to 1/F, and non-domestic block (welfare facilities) at 2/F to 3/F. The proposed development site is located at To Kwa Wan Road and Sung Wong Toi Road in Kowloon City. Road traffic noise impact, fixed noise impact from vehicle workshops, the industrial chimney emission at the Ma Tau Kok Gas Works and odour emissions at the sewage pumping station are the key environmental issues to be addressed for the proposed development.

Road traffic noise assessment results for the public housing domestic block indicated that the base-case scenario would achieve a noise compliance rate of 78% at the AM peak scenario with a total of 172 out of 777 residential flats exposed to traffic noise levels exceeding $L_{10(1hour)}$ 70 dB(A) criterion. The maximum predicted peak hour L_{10} noise level is 74 dB(A).

Possible noise mitigation measures, such as the use of fixed glazing and acoustic windows, are recommended for the affected NSRs to mitigate the road traffic impact. With the implementation of the proposed mitigation measures, the overall compliance rate for the public housing blocks is 100% and the maximum predicted peak hourly $L_{10(1hour)}$ noise level is 70 dB(A).

Based on the results of the base-case scenario, no road traffic noise exceedance has been predicted at all noise sensitive uses in the welfare facilities at 2/F to 3/F.

Fixed plant noise impact assessment was conducted to evaluate the potential noise impact arising from fixed plant operation in the vicinity of the proposed development. The results showed that the predicted noise levels at the worst affected NSR in the proposed development would comply with the relevant noise criteria. Adverse fixed plant noise impacts on the proposed public housing development are not anticipated.

Industrial emissions, vehicular emissions and odour emissions on the proposed development have been assessed. No adverse impact on air quality is anticipated for the proposed development.

行政摘要

是次環境評估研究根據《香港規劃標準與準則》第九章的規定評估了擬議的土瓜灣道公營房屋興建項目的環境可行性。

是次擬議的興建項目包括一座樓高三十七層的公營住宅樓宇，地面層及一樓為停車場，基層底座二至三樓為社會福利設施。是次興建項目位於土瓜灣道及宋皇臺道交界。道路交通噪音、由附近車輛維修作業的固定噪音、馬頭角燃煤設施所產生的廢氣以及源自污水泵房的氣味為對是次擬議的興建項目的主要環境問題。

在基本方案下，道路交通噪音評估結果顯示，有 78%的單位將在最差交通情況下(上午高鋒時間)符合噪音標準，即 777 個單位中有 172 個住宅單位將受到交通噪音超過標準 70 分貝(A) 的影響。預測最高噪音聲級為 74 分貝(A)。

對於超過交通噪音標準的「噪音感應強的地方」，報告建議實施相應緩解措施，例如減音窗及固定玻璃，以減輕道路交通影響。在實施緩解措施後的情況下，預測最高的噪音聲級為 70 分貝(A)而且 100%的住宅單位將會符合噪音標準。

根據基本方案下的結果顯示，在二至三樓所有「噪音感應強的」福利設施均沒有道路交通噪音超標。

是次環境評估研究亦評估在興建發展項目附近潛在的固定噪音源所產生的影響。結果顯示，在擬議的興建項目中受影響最嚴重的「噪音感應強的地方」將符合相關的噪音標準。預計固定噪音源對擬議的興建項目不會引致不良的噪音影響。

是次環境評估研究亦審查了來自車輛排放、工業排放及氣味排放對是次擬議興建項目在空氣質素方面的影響。預計該興建發展項目不會受到任何不良空氣質素影響。

1. Introduction

1.1. Project Background

1.1.1. The Hong Kong Housing Authority (HKHA) has identified a potential site for a public housing development with provision of social welfare facilities and retail at To Kwa Wan Road (hereafter referred as “the proposed development”).

1.1.2. Atkins China Limited was commissioned by HKHA to undertake an Environmental Assessment Study (EAS) for the proposed development.

1.2. Scope

1.2.1. The scope of this EAS is outlined as follow:

- Assess the road traffic noise impacts upon the proposed re-development with reference to the Hong Kong Planning Standards and Guidelines (HKPSG);
- Assess the potential noise impacts of other fixed type noise sources upon the proposed development with reference to HKPSG;
- Assess the potential air quality impacts due to vehicular emissions from the surroundings road network upon the proposed re-development with reference to HKPSG;
- Assess the potential air quality impacts due to chimney emissions from the nearby industrial premises with reference to HKPSG; and
- Recommend appropriate environmental mitigation measures as required.

1.3. Site Location

1.3.1. The Site is located at To Kwa Wan Road in Kowloon City. It is bounded by Sung Wong Toi Road, To Kwa Wan Road and Mok Cheong Street. According to the Outline Zoning Plan S/K10/30 – Ma Tau Kok, the site is located in an area zoned as "Residential (Group A)"("R(A)"). The proposed development comprises of one building block, with a total area of approximately 0.28 hectares. Location of the proposed development is shown in **Figure 1.1**.

1.4. Development Layout Details

1.4.1. The proposed development layout under this EAS comprises one residential block. Social welfare facilities, recreational facilities and carparks will also be provided at podium levels. Details of the proposed facilities are summarised in **Table 1.1** below and the layout plan is attached in **Appendix 1.1**.

Table 1.1 Summary of the Proposed Facilities for the Development

Location		Name of the Proposed Facility	Type of Noise Sensitive Uses
Floor	Floor Level, mPD		
G/F	+4.20	Carpark and Plantrooms	Carpark / Plantrooms
1/F	+10.70	Carpark	Carpark
2/F	+14.90	Estate Management Office	Office
		HKHA's Office	Office
		Child Care Centre (CCC)	Activity Room / Dormitory / Office
3/F	+19.70	Neighbourhood Elderly Centre (NEC)	Activity Room / Office
		Integrated Family Services Centre (IFSC)	Activity Room / Office
4/F to 40/F	+26.70 to +130.00	Domestic	Residential

1.4.2. The key development parameters of the proposed development are summarised in **Table 1.2** below.

Table 1.2 Key Development Parameter for the Proposed Development

Parameter	Development Details
Domestic Floor	4/F to 40/F
No. of Domestic Storey	37
No. of Flats per Floor	21
Total No. of Flats	777
Tentative Population Intake Year	Year 2029
Typical Floor to Floor Height – Domestic	2.75 m
First Domestic Floor Level	26.70 mPD

2. Road Traffic Noise Impacts

2.1. Assessment Criteria

2.1.1. According to the HKPSG, the road traffic noise criterion of $L_{10\ (peak\ hour)}$ 70 dB(A) is applicable to the domestic premises in the proposed development.

2.1.2. The following guidelines are considered to assess and mitigate the noise impact from possible noise sources within the assessment area.

- Hong Kong Planning Standards and Guidelines (HKPSG)
- ProPECC PN3/23 Application of Sound Insulation in Residential Buildings to Reduce Noise Transmission Between Units
- ProPECC PN5/23 Application of Innovative Noise Mitigation Designs in Planning Private Residential Developments against Road Traffic Noise Impact

2.1.3. The domestic premises within the proposed development shall rely on openable window for ventilation. Locations of the noise assessment points at domestic floors are illustrated in **Figure 2.1**.

2.1.4. Apart from domestic premises, office spaces and social welfare facilities will be provided on 2/F and 3/F as detailed in **Table 1.1**. Other remaining rooms do not rely on openable window for ventilation, i.e. fixed glazing coupled with mechanical ventilation will be provided, or are not considered to be noise sensitive. The use of non-domestic premises will exhibit similar nature to the residential/ office use thus the noise criterion $L_{10\ (peak\ hour)}$ 70 dB(A) will be adopted as well. Noise assessment points in the proposed welfare facilities and office are identified and summarised in **Table 2.1** below. The locations of the noise assessment points at the social welfare facilities are illustrated in **Figure 2.2** and **Figure 2.3**.

Table 2.1 Summary of Traffic Noise Assessment Criteria

Floor	Type of Facility	Name of the Proposed Welfare Facility [1]/ Area	Noise Criterion $L_{10\ (1\text{-}hr)}$ in dB(A)	Noise Assessment Point ID
2/F	CCC	Daytime Dormitory	70 [2]	CCC-01
		Playroom / Music Room	70 [2]	CCC-02
		Play Cum Dining Area	70 [2]	CCC-03
3/F	NEC	Common Room	70 [2]	NEC-01 & NEC-02
		Activity Room	70 [2]	NEC-03 & NEC-04
		Interview Room	70 [2]	NEC-05
		Volunteer Room	70 [2]	NEC-06
		Office	70 [2]	NEC-07
	ISFC	Exhibition Area	70 [2]	ISFC-01
		Information & Resource Corner	70 [2]	ISFC-02
		Play Room	70 [2]	ISFC-03
		Small Group Room	70 [2]	ISFC-04

Floor	Type of Facility	Name of the Proposed Welfare Facility [1]/ Area	Noise Criterion $L_{10\ (1\text{-}hr)}$ in dB(A)	Noise Assessment Point ID
		Office	70 [2]	ISFC-05 & ISFC-06
4/F to 35/F	Domestic	Residential	70	T1-01A to T1-21C

Note:

[1] Noise standards in HKPSG Chapter 9 Table 4.1 apply to uses which rely on opened window for ventilation. As detailed internal layout is yet to be determined, it is assumed that all windows to be provided is openable for ventilation and will be included in detailed traffic noise assessment.

[2] For other facilities with noise sensitivity similar to that of domestic premises and offices which no training/ education/ medical consultation activities would be taken place in these areas, the noise planning standards of 70 dB(A) as stipulated in Table 4.1 of the HKPSG is selected.

2.2. Assessment Methodology

2.2.1. Road traffic noise level prediction has been carried out using the NoiseMap model, which is a computerized model developed on the basis of the UK Department of Transport's Calculation of Road Traffic Noise (CRTN) procedures, which is a method accepted by Environmental Protection Department (EPD) for use in Hong Kong.

2.2.2. Existing roads within 300m from the sites of the proposed development have been included in the assessment.

2.2.3. All openable windows for ventilation at all noise sensitive rooms at domestic floors of the proposed development are assigned with noise assessment points and included for the assessment. For other facilities on podium levels where detailed internal layout is yet to be determined, all possible locations of openable windows for ventilation of potential noise assessment points have been selected for the assessment. The noise assessment points, building structures with noise screening effects, topographical contours and road segments with traffic flow data have been input into the NoiseMap model in predicting the potential traffic noise impacts.

2.2.4. The assessment has been undertaken based on the projected peak hourly traffic flows in year 2044, which corresponds to the maximum projected traffic conditions within 15 years upon occupancy of the proposed development, i.e., year 2029. A Technical Note on the traffic forecast methodology for year 2044 is submitted to Transport Department for review and approval. The adopted traffic forecast data including traffic flow and percentage of heavy vehicles are provided in **Appendix 2.1**.

2.3. Design Consideration for the Base-case Scenario

2.3.1. The proposed layout scheme of the public housing blocks studied in this EAS has implemented the following design consideration in order to minimize the road traffic noise impacts as much as practicable and with an aim to achieve a high compliance rate.

Provision of Podium

2.3.2. For the base-case scenario, podiums have been adopted as building features for residential building blocks. Podiums at 3/F are to be provided at +19.59 mPD for the proposed development. The provision of such building feature is to reduce the noise impact to the lower floor levels.

Internal Layout Design

2.3.3. In general, standard modular flat design is adopted in public housing design including those with acoustic windows. Revision of internal layout to the affected floors would not be feasible.

Further Setback

2.3.4. The Project Site is abutting nearby roads, slopes and existing buildings, further setback is considered not feasible for the proposed development.

Fixed Glazing with Maintenance Window (Openable for Maintenance Purpose) for Public Housing Units

2.3.5. Fixed glazing with maintenance window has been adopted in some flats of the proposed development as most of the side windows of end dwellings at the façade facing Sung Wong Toi Road and some side windows of the end dwellings in the west facing façade These maintenance windows have been designed to be installed with fixed glazing with 6mm thick of window pane with reference to the Appendix 4.4 in Ch9 of HKPSG. The fixed glazing with maintenance window reduces the noise entering the flat when closed and adverse road traffic noise impact to the indoor environment of the concerned flats is therefore not anticipated.

2.3.6. These windows should be normally closed for noise reduction and need not be opened for ventilation. It can only be opened for cleaning and maintenance purposes by a specific type of key e.g. Allen key. Thus, they are not considered as noise sensitive facades for this assessment. The purpose of provision of fixed glazing with maintenance window would be incorporated in the tenant handbook and handover to the future tenants to ensure the future occupants aware of this. The location of fixed glazing with maintenance window is illustrated in **Appendix 2.2**.

2.4. Traffic Noise Impact Assessment

Predicted Road Traffic Noise Impacts on Public Housing Units (Base-case Scenario)

2.4.1. The noise assessment points have been assigned to each openable windows for ventilation at the proposed development are shown in **Figure 2.1**. The predicted peak hourly road traffic noise levels are summarized in **Table 2.2** and the predicted road traffic noise levels at the representative NSRs under base-case scenario are detailed in **Appendix 2.3**.

Table 2.2 Summary of Predicted Peak Hourly Road Traffic Noise for the Public Housing Units (Base-case Scenario)

Parameter	Overall	
Total No. of Flats	777	
Traffic scenario	AM Peak	PM Peak
Predicted Maximum $L_{10\ (peak\ hour)}$, dB(A)	74	73

No. of Flats with Noise Exceedance	172	110
Compliance Rate, %	78%	86%

Notes: Noise Criterion $L_{10\ (peak\ hour)}$ = 70 dB(A)

2.4.2. The predicted maximum road traffic noise level for the public housing units of the proposed development is 74 dB(A). The worst-case noise compliance rate for the proposed development is 78% at AM peak scenario.

Predicted Road Traffic Noise Impacts on Non-domestic Uses (Base-case Scenario)

2.4.3. The noise assessment points have been assigned to locations with openable windows for ventilation at the noise sensitive rooms on 2/F and 3/F. Locations of noise assessment points are indicated in **Figure 2.2** and **Figure 2.3**. The predicted maximum peak hourly road traffic noise levels at the proposed development for non-domestic uses are shown in **Table 2.3** and detailed in **Appendix 2.3**.

Table 2.3 Summary of Predicted Peak Hourly Road Traffic Noise Results for the Non-Domestic Block (Welfare Facilities) - Base-case Scenario

Noise Assessment Point	Floor	Proposed Use	Noise Criteria, dB(A)[2]	Range of Predicted Maximum Predicted $L_{10\ (peak\ hour)}$, dB(A)
CCC-01	2/F	Daytime Dormitory	70	51
CCC-02		Playroom / Music Room	70	69
CCC-03		Play Cum Dining Area	70	70
NEC-01	3/F	Common Room	70	50
NEC-02		Common Room	70	66
NEC-03		Activity Room	70	69
NEC-04		Activity Room	70	70
NEC-05		Interview Room	70	69
NEC-06		Volunteer Room	70	68
NEC-07		Office	70	60
ISFC-01		Exhibition Area	70	57
ISFC-02		Information & Resource Corner	70	57
ISFC-03		Play Room	70	57
ISFC-04		Small Group Room	70	58
ISFC-05		Office	70	54
ISFC-06		Office	70	56

Notes:

[1] According to Appendix 4.1 of Ch.9 of the HKPSG, noise criterion $L_{10\ (peak\ hour)}$ = 70 dB(A) is applicable to all domestic premises, hotels and hostels and offices.

[2] The facility is identified as community uses which is noise-tolerant uses in accordance with Appendix 4.1 of Ch.9 of the HKPSG. However, facilities or rooms with noise sensitivity similar to domestic premise and offices are regarded as noise sensitive uses which shall follow the noise planning standard of 70 dB(A).

2.4.4. Based on the results of base-case scenario, no road traffic noise exceedance has been predicted at the proposed development for non-domestic uses on 2/F and 3/F.

Mitigation Measures for Domestic Uses

Provision of Acoustic Windows

2.4.5. According to results of the traffic noise impact assessment under the base-case scenario, noise exceedances are anticipated at some noise sensitive uses that are directly overlooking Sung Wong Toi Road and To Kwa Wan Road. Acoustic windows have been proposed for the flats with noise exceedances to mitigate road traffic noise impact. Modular Flat Design (MFD) has been adopted for those flats proposed with acoustic windows.

2.4.6. With reference to HD's Technical Note on "Noise Attenuation for Modular Flat Design (MFD) with Acoustic Windows" as extracted in **Appendix 2.4**, sound attenuations ranging from 2.7 dB(A) and 3.9 dB(A) can be achieved for acoustic window system without or and with sound absorptive lining at bedroom, respectively. And 5.5 dB(A) to 5.8 dB(A) can be achieved for acoustic window system without sound absorptive lining at living room. Those flats with provision of the acoustic window and the corresponding sound attenuation performance are MFD *(i)* Type A-3 – 5.8 dB(A), *(ii)* Type B-5 – 5.5 dB(A), *(iii)* Type C-8 (Living Room) – 5.5 dB(A), *(iv)* Type D-6 (Living Room) – 5,6 dB(A), *(v)* Type D-6 (Bedroom 2, with absorptive lining) – 3.9 dB(A), and *(vi)* Type D-6 (Bedroom 2, without absorptive lining) – 2.7 dB(A).

2.4.7. It should be noted that the sound attenuation performance is subjected to actual design and configurations of the acoustic window as well as setting and orientation of the acoustic window. Sound attenuation performance and configurations of the acoustic window for typical public housing units are listed in **Appendix 2.4**.

2.4.8. To achieve the sound attenuation performance, the setting and orientation of the acoustic window shall follow the Final Report of Acoustic Design and Performance Evaluation of the Acoustic Window (ADPEAW).

2.4.9. Acoustic windows are recommended to be provided to the affected flats. The windows specified for use of acoustic windows and their locations are presented in **Figure 2.4**.

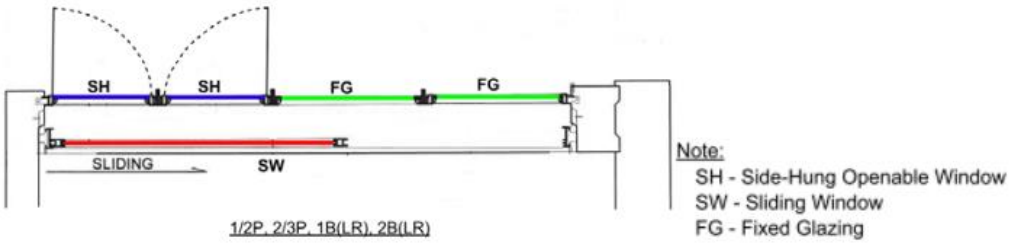
Acoustic Window Configuration

2.4.10. The sound attenuation of the acoustic window system is dependent on the window configuration. Summary of acoustic window configurations (Retrieved from HD's Technical Note on "Noise Attenuation for Modular Flat Design (MFD) with Acoustic Windows") of the proposed acoustic window system and the corresponding window type adopted in this proposed development is presented in Table 2.4.

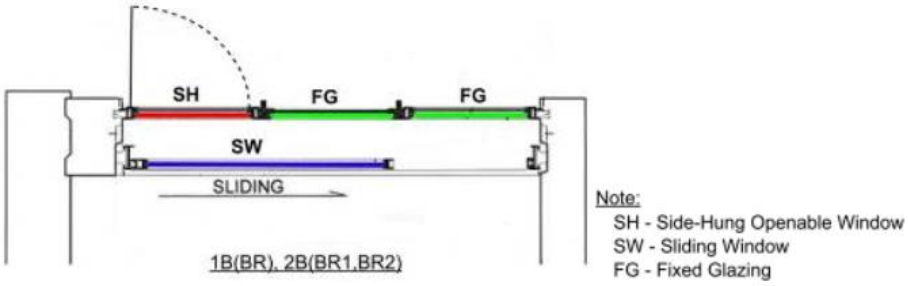
Table 2.4 Summary of Acoustic Window Configuration (Retrieved from HD's Technical Note on "Noise Attenuation for Modular Flat Design (MFD) with Acoustic Windows") and the Corresponding Window Type of the Residential Units in the Proposed Development

NAP	Floors	Flat Type	Room Type	Acoustic Windows Dimensions					W/WO Sound Absorption Material	Favourable/ Unfavourable Setting	Noise Reduction, dB(A)
				Gap Width, mm	Window Height, mm	Inner Window Width, mm	Outer Window Width, mm	Over-lapping Length, mm			
T1-03D	5/F-25/F	D-6	Living Room	175	1383	980	1040	100	Without	Favourable	5.5
T1-03E	5/F-25/F		Bedroom 1	175	1383	675	600	525	Without	Favourable	5.5
T1-04B	5/F-25/F	B-5	Living Room	175	1383	940	1010	200	Without	Favourable	5.5
T1-05A	6/F-24/F	C-8	Living Room	175	1383	1060	1050	330	Without	Favourable	5.6
T1-05B	5/F-25/F		Bedroom 1	175	1383	675	600	525	Without	Favourable	5.6
T1-06B	5/F-25/F	B-5	Living Room	175	1383	940	1010	200	Without	Favourable	5.5
T1-07A	6/F-14/F	A-3	Living Room	175	1383	840	870	340	Without	Favourable	5.8
T1-08B	5/F-20/F	A-3	Living Room	175	1383	840	870	340	Without	Favourable	5.8
T1-09A	5/F-22/F	B-5	Living Room	175	1383	940	1010	200	Without	Favourable	5.5
T1-10B	4/F-25/F	D-6	Bedroom 1	175	1383	675	600	525	Without	Favourable	5.5
T1-10C	4/F-26/F		Living Room	175	1383	980	1040	100	Without	Favourable	5.5
T1-10E	6/F-21/F		Bedroom 2	175	1383	550	550	500	Without	Favourable	2.7
T1-11B	5/F-17/F	D-6	Bedroom 2	175	1383	550	550	500	Without	Favourable	2.7
T1-11D	5/F-18/F		Living Room	175	1383	980	1040	100	Without	Favourable	5.5
T1-11E	5/F-17/F		Bedroom 1	175	1383	675	600	525	Without	Unfavourable	4.5
T1-12B	6/F-13/F	B-5	Living Room	175	1383	940	1010	200	Without	Favourable	5.5

2.4.11. Based on the acoustic window system design, the outer layer of the window system shall consist of fixed glazing and side-hung openable gasketed window, and the inner layer shall consist of one sliding window. The basic configurations of the acoustic window for Flat Type A, Type B, Type C and Type D for the proposed development is shown below:



Acoustic Window Configuration for Flat Type A, Type B and Living Room of Type C and Type D



Acoustic Window Configuration for Bedroom of Type C and Type D

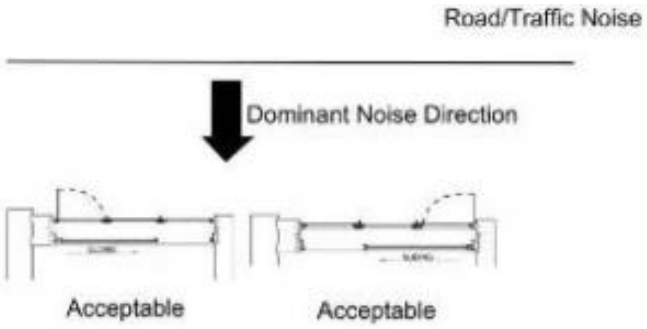
2.4.12. For fixed glazing equipped with side-hung openable window, the provision of special window opening device like Allen Key should be provided in order to keep the side-hung window normally closed. However, as advised by the ADPEAW, the future residents shall be advised of the caution that such window should be closed to achieve the intended sound attenuation and that opening of the windows for purpose of other operation, maintenance or additional ventilation would compromise the indoor noise level in the flat.

2.4.13. The design of the proposed acoustic window meets the relevant natural ventilation requirement under the Building (Planning) Regulations. The inner sliding glass panel need to be slid behind the opened outer window for creating an air gap for the supply of fresh air with noise mitigation effect. According to the Practice Note on Lighting and Ventilation Requirements – Performance- based Approach (APP-130) issued by Buildings Department, for optimum performance with the inner sliding glass panel in a closed position, the air gap should have a length of not less than 100mm and a width between 100mm and 175mm. The length and width of the air gap of the proposed acoustic window also meet these conditions.

Acoustic Window Settings

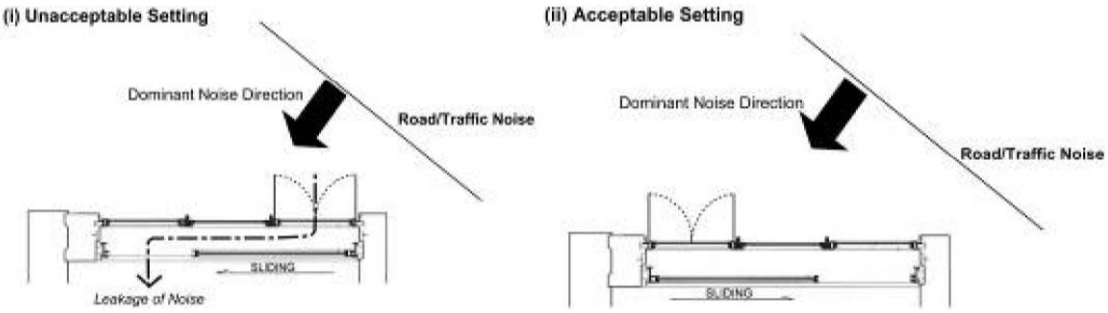
2.4.14. For achieving the sound attenuation assessed in the study, the acoustic window should be set at the intended orientation as described in the Final Report of ADPEAW. The setting and orientation are summarized and described below:

2.4.15. In case a flat is fronting a major noisy road running in parallel with the façade, the left or right settings of the openings of its acoustic window are only mutual images; both of which could achieve the intended sound attenuation.



Window in parallel with traffic noise source

2.4.16. In case the road is located at one side of the flat, the traffic noise would propagate to the façade more from the side of the road rather than right in front of it. The staggered openings of the acoustic window should be set to intercept direct propagation of noise through the openings and the gap between outer and inner panes. In general, the opening of the outer layer of window should be sited further away from the road, as illustrated below:



Window NOT in parallel with traffic noise source

Advice to Future Residents for the Use of Acoustic Window

2.4.17. The sound attenuation achieved by the acoustic window refers to the designated setting of window. Hence the future residents in the flats equipped with acoustic windows should be advised of such settings stated in **Sections 2.4.14** to **2.4.16** for achieving the intended attenuation. Deviation from the recommended setting might affect the noise level in the flat.

2.4.18. The noise reduction purpose of the acoustic window and its setting to achieve the noise reduction effect would be incorporated in the Decoration Handbook to inform the future occupants.

Predicted Road Traffic Noise Impacts on Public Housing Units (Mitigated Scenario)

2.4.19. The predicted peak hourly road traffic noise levels of the mitigated scenario with incorporation of fixed glazing with maintenance window and acoustic window are summarised in **Table 2.4** and the predicted road traffic noise levels at the representative NSRs under the mitigated scenario are detailed in **Appendix 2.5**.

Table 2.4 Summary of Predicted Peak Hourly Road Traffic Noise Results for the Public Housing Units (Mitigated Scenario)

Parameter	Overall
Total No. of Flats	777
Predicted Maximum $L_{10\ (peak\ hour)}$, dB(A)	70
No. of Dwellings with Noise Exceedance	0
Compliance Rate, %	100.0

Notes: Noise Criterion $L_{10\ (peak\ hour)}$ = 70 dB(A)

2.4.20. With incorporation of fixed glazing with maintenance window and acoustic window, the predicted maximum road traffic noise level of the domestic units of the proposed developments is 70 dB(A) and the noise compliance rate is 100.0%. No traffic noise exceedance has been predicted.

Predicted Road Traffic Noise Impacts on Non-domestic Uses (Mitigated Scenario)

2.4.21. With proper layout design and room arrangement, adverse road traffic noise impacts on the noise sensitive room for non-domestic uses of the proposed development at podium level is not anticipated.

2.5. Summary

2.5.1. The predicted maximum road traffic noise level under the base-case scenario for the public housing units of the proposed development is 74 dB(A) which exceeds the noise criterion by 4 dB(A). The noise compliance rate under the base-case scenario is 78%.

2.5.2. With the provisions of fixed glazing with maintenance window and acoustic window as mitigation measures for the public housing units, the compliance rate for the proposed development is 100%, and the predicted maximum peak hourly road traffic noise level is 70 dB(A).

2.5.3. Based on the results of base-case scenario, no traffic noise exceedance has been predicted at all noise sensitive room for non-domestic uses of the proposed development at 2/F to 3/F.

3. Fixed Plant Noise Impacts

3.1. Assessment Criteria

3.1.1. According to the HKPSG, noise assessments for fixed noise sources would normally be conducted in accordance with the Technical Memorandum for the Assessment of Noise from Places Other Than Domestic Premises, Public Places Or Construction Sites (IND-TM), published under the Noise Control Ordinance. IND-TM lays down statutory Acceptable Noise Levels (ANL). The HKPSG also stated that in order to plan for a better environment, all planned fixed noise sources should be located and designed that when assessed in accordance with IND-TM, the level of the intruding noise at the facade of the nearest sensitive use should be at least 5 dB(A) below the appropriate ANL shown in Table 2 of IND-TM or, in the case of the background being 5 dB(A) lower than the ANL, should not be higher than the background. As there are no planned noise sources at the proposed re-development, ANL is adopted in the fixed noise assessment. The ANLs provided in the IND-TM is detailed in **Table 3.1**.

Table 3.1 Acceptable Noise Level in IND-TM

Time Period	Acceptable Noise Level, $L_{eq\ 30\ min}$, dB(A)		
	ASR "A"	ASR "B"	ASR "C"
Day time (0700 – 1900 hours)	60	65	70
Evening (1900 – 2300 hours)			
Night-time (2300 – 0700 hours)	50	55	60

Notes: ASR = Area Sensitivity Rating

3.1.2. The Acceptable Noise Levels (ANLs) are dependent on the Area Sensitivity Rating (ASR) defined and the time period of the day. The ASR of the NSR is determined by the type of area containing it and the presence of any influencing factors (IF) such as industrial areas, major roads, etc.

3.1.3. The proposed development is located in To Kwa Wan, Kowloon City. The area is a well-developed area mainly comprises of low-rise residential developments with industrial development (including Towgas Ma Tau Kok Gas Works and industrial building on Mok Cheong Street), construction activities (mainly at Kai Tak Development Area) and limited commercial elements nearby. Therefore, the type of area is taken as "Urban area" based on IND-TM.

3.1.4. According to the Annual Traffic Census 2022, Sung Wong Toi Road and To Kwa Wan Road that runs along the northern and eastern boundary of the proposed development with annual average daily traffic flows (AADT) of 12,460 and 18,910, respectively. As the AADT for both roads are less than 30,000, they are not considered as an IF. Therefore, ASR of "B" is adopted in the assessment.

3.2. Identified Fixed Plant Noise Sources

3.2.1. Fixed noise sources within a study area of 300m from the proposed development site boundary have been identified. Fixed plant noise sources were identified based on the desktop study and the site visits conduced on 21 October 2022 and 19 January 2024. The identified fixed plant noise sources are summarised in **Table 3.2** and their locations are shown in **Figure 3.1**. Photograph records of site survey and identified fixed plant noise sources, and fixed plant noise source inventory detailed in **Appendix 3.1**.

Table 3.2 Identified Fixed Plant Noise Sources

Location	Source ID	Source Type	Approximate distance from Site Boundary, m	Remarks
Planned Noise Sources				
Planned Kai Tak Sports Park	NA	- Sport events at Main Stadium and Public Sports Ground, - Noise from building services system, and - Musical performance events	100 – 250m	Information extracted from the approved EIA report for Kai Tak Multi-purpose Sports Complex
Existing Noise Sources				
Vehicle Workshops/ Recycle Workshops at 13 Street/ Mok Cheong Street	HLS_7 to HLS27, TTS_4 to TTS_27, YOS_5 to YOS_28, SLS_27 to SLS_28, HWS_28, PCS_28, LCS_28, FYS_27 to FYS_28, KCR_28, MCS3_7 to MCS_9, MCS9_4, MCS11_1	Vehicle Workshops/ recycle workshops	50 – 250m	Daytime operation only
Rooftop equipment at nearby factory buildings New Port Center	MCS3_1 to MCS_6	Cooling Towers	180m	Daytime operation only
	MCS5_1	Cooling Tower	150m	Daytime operation only
	MCS11_2	Cooling Tower	60m	Daytime operation only
	MCS9_1 to MCS9_3	Chillers	80 – 85m	Out of order during site visit
	MCS13_1 to MCS13_2	Chillers	50m	Out of order during site visit
	NP_1 to NP_18	Chillers and Cooling Towers	100 – 180m	To be redeveloped by URA

Location	Source ID	Source Type	Approximate distance from Site Boundary, m	Remarks
To Kwa Wan Road Sewage Pumping Station	SPS	Façade louver with noise emission	40m	Assume 24hr operation
Harbour Plaza 8 Degrees	HP_1 to HP_2	Chillers	290m	Assume 24hr operation
Towngas Ma Tau Kok Gas Works	TG_1 to TG_16	Chillers	150 – 280m	Assume 24hr operation

Planned Fixed Plant Noise Sources

Planned Fixed Noise Sources at Kai Tak Multi-purpose Sports Complex Development

3.2.2. As the Kai Tak Multi-purpose Sports Complex is under construction, information from the approved Kai Tak Multi-purpose Sports Complex EIA Report (AEIAR-204/2017) is reference for assessment propose.

3.2.3. In the AEIAR-204/2017, types of noise sources within the Sports Complex include sport events at Main Stadium and Public Sports Ground, noise from building services system and musical performance events. It is also mentioned that events would not be conducted simultaneously in the Main Stadium and the Public Sports Ground.

3.2.4. The proposed development was identified as a noise assessment point in the AEIAR-204/2017 and relevant information is extracted in **Appendix 3.2**. AEIAR-204/2017 stated that the mitigated cumulative noise levels due to sports events in the Main Stadium and all the fixed plant, and the mitigated cumulative noise levels due to sports events in the Public Sports Ground and all the fixed plant would comply with the noise criteria at all NSRs. The predicted maximum fixed plant noise level was 60dB(A) for daytime and evening period, and no nighttime sport event will be held in the Main Stadium or the Public Sports Ground.

3.2.5. For musical events at the Main Stadium, it is mentioned that the potential noise impact arising from the musical events at the Main Stadium during daytime/evening period (i.e. 7 a.m. to 11 p.m.) would comply with the noise criteria as stipulated under the Noise Control Guidelines for Music, Singing and Instrument Performing Activities. Should the future operator plan to implement any musical events at the Main Stadium during night-time period (i.e. 11 p.m. to 7 a.m.), the operator is obliged to ensure that the noise impacts arising from the said night-time musical events will comply with the noise requirements under the NCO.

3.2.6. The assessment in this report will be based on above findings in the AEIAR-204/2017.

Existing Fixed Plant Noise Sources

Vehicle Workshops/ Recycle Workshops at 13 Street and Mok Cheong Street

3.2.7. Vehicle workshops/ recycle workshops at the 13 Streets (the area bounded by Kowloon City Road at the west, To Kwa Wan Road at the east, Mok Cheong Street at the north and Ma Tau Kok Road at the south) scattered to the south and southwest of the site with separation distance of around 50 – 250m (ID: HLS_7 to HLS_27, TTS_4 to TTS_27, YOS_5 to YOS_28, SLS_27 to SLS_28, HWS_28, PCS_28, LCS_28, FYS_27 to 28, KCR_28, MCS3_7 to MCS_9, MCS9_4, MCS11_1).

3.2.8. The vehicle workshops/ recycle workshops are located at ground level of the 13 Streets and along Mok Cheong Street. Major activities undertaken inside the workshops are mainly for vehicle repair services/ loading and unloading of recycle materials. Major noisy activities identified include operation of pneumatic screwdriver, hammering, metal loading/ unloading and metal grinding. The nature of these noise sources is sporadic in nature and only sustained for short time periods. It was only occasionally encountered during the site visit while most of the workshops were inactive during the site visit.

3.2.9. Typically, the noisy activities are conducted within the workshops which is a semi-enclosed space. For the workshops along Mok Cheong Street with opening towards the Subject Site (KCR_28, FYS_27 to FYS_28, LCS_28, PCS_28, HWS_28, SLS_27 to SLS_28, YOS_27 to YOS_28, TTS27, HLS_26 to HLS_27), the workshop openings are directly facing the Subject Site and it is considered that shielding due to building structure is minimal. For the workshops within the 13 Streets which the shop front openings are not facing the Subject Site (YOS_5 to YOS_26, TTS_4 to TTS_26, HLS_7 to HLS_25), it is considered building structure can partially shield the noisy activities within the workshops and a -5 dB correction is applied to account for the noise shielding. For the remaining workshops on Mok Cheong Street with opening towards the 13 Streets (MCS3_7 to MCS3_9, MCS9_4 and MCS11_1), there are no direct line of sight towards the Subject Site and excluded in the assessment.

3.2.10. Among these activities, it is considered that the noise level due to operation of pneumatic screwdriver is the loudest. For assessment purpose, a SWL of 98dB(A) is adopted with reference to the noise source data for similar pneumatic screw drives, tyre pumping and hammering activities in AEIAR 263/2020 as extracted in **Appendix 3.3**.

3.2.11. The workshops operate in daytime only. From site observation, the workshops are inactive for most of the time and only with sporadic activities. For a conservative assessment, it is assumed that noisy activities would only be conducted for maximum 50% during operation hours. A time correction of -3dB is therefore applied in the assessment.

<u>Rooftop Equipment in nearby Factory Buildings</u>

No. 11 Mok Cheong Street

3.2.12. No. 11 Mok Cheong Street is located to the west of the site with separation distance of approximately 60m. A cooling tower is identified at the rooftop of building (ID: MCS11_2) and it is in operation during site visit. Noise measurement was conducted for the cooling tower as shown in **Appendix 3.4**. The projected sound power level (SWL) is 92dB(A) which is calculated from sound pressure level measured on site. It is assumed that it is 100% in operation during daytime & evening and no operation during nighttime.

Freder Center

3.2.13. Freder Center locates at west of the site with separation distance of around 180m. There are 6 cooling towers identified within the area/ building (ID: MCS3_1 to MCS3_6).

3.2.14. The cooling towers are located at the side of the building with direct line of sight from the Subject Site. During the site visits, the cooling towers were not assessable. Based on site observation, the cooling towers MCS3_1 to MCS3_6 are of similar model as the cooling tower MCS11_2 at No. 11 Mok Cheong Street. It is considered that similar SWL will be emitted by these cooling towers, i.e. 92dB(A). It is also assumed that all cooling towers will be in operation during daytime and evening and there will be no operation during nighttime period which is outside normal working hours.

KK Industrial Building

3.2.15. KK Industrial Building is located to the west of the site with separation distance of approximately 150m. A cooling tower is identified at the rooftop (ID: MCS5_1).

3.2.16. The cooling towers were not assessable during the site visit. Based on observation, the cooling towers MCS5_1 is also of similar model as the cooling tower MCS11_2 at No. 11 Mok Cheong Street. It is considered that similar SWL will be emitted by these cooling towers, i.e. 92dB(A). It is also assumed that all cooling towers will be in operation during daytime and evening and there will be no operation during nighttime period which is outside normal working hours.

No. 9 and No. 13 Mok Cheong Street

3.2.17. Multiple rooftop chillers were identified at the roof of No .9 and No. 13 Mok Cheong Street (ID: MCS9_1 to MCS9_3, MCS13_1 to MCS13_2). During the site visits, these chillers were inactive and was obvious in poor condition such that the chillers were apparently no longer functional. These chillers are excluded from the assessment.

Newport Centre Phase 1 and Phase 2

3.2.18. New Port Centre Phase 1 and Phase 2 locates at the southeast of the site with separation distance of around 100 – 180m. There are various chillers and cooling towers identified within the building (ID: NP_1 to NP_18).

3.2.19. According to the latest announcement from the Urban Renewal Authority (URA), the concerned buildings are under the redevelopment project of Ming Lun Street/Ma Tau Kok Road Development Scheme and To Kwa Wan Road/Ma Tau Kok Road Development Scheme. Details of URA's announcement are extracted in **Appendix 3.5** and their estimated year of completion is 2033. The entire Newport Centre Phase 1 and 2 will be demolished in the future for the redevelopment. It is anticipated that fixed plants on the rooftop will be dismantled, and no adverse fixed plant noise impact would be generated after the redevelopment.

<u>Towngas Ma Tau Kok Gas Works</u>

3.2.20. Towngas Ma Tau Kok Gas Works, operated by The Hong Kong and China Gas Company, is located to the southwest of the site with separation distance of approximately 150m. Chillers and cooling towers were identified within the gas works site (ID: TG_1 to TG_16).

3.2.21. The chillers and cooling towers are located at rooftop/ground level. Among the identified fixed plant noise sources, only TG_1 to TG_6, TG_15 to TG_16 have direct line of sight towards the Subject Site while the other sources are blocked by the gas works site's office building. Cross section drawings between the noise sources and the receivers are drawn in **Appendix 3.6** to show the sightline blockage to the noise sources of concern.

3.2.22. Request for information was issued to The Hong Kong and China Gas Company regarding the noise source operation details within the gas works site and response is pending at the time of this report. For assessment purpose, the SWL of the chillers and cooling towers are based on manufacturer catalogues of similar models as extracted in **Appendix 3.7**. For worst case assessment, it is assumed that the fixed plant noise sources in the plant will be operated on a 24-hour basis.

To Kwa Wan Road Sewage Pumping Station

3.2.23. To Kwa Wan Road Sewage Pumping Station (SPS) locates at east of the site with separation distance of around 40m. There is a noise emitting façade louver identified along the façade of the pumping station (ID: SPS).

3.2.24. The façade louver is located at façade facing To Kwa Wan Road. The shutter gates for the SPS entrance are normally closed and closed such that the only noise source from the SPS is due to the identified façade louver.

3.2.25. From the information provided by Drainage Service Department (DSD), as extracted in **Appendix 3.8**, total 4 (four) sets of main pumps are installed at basement which three sets are on duty and one set is on standby mode in daily operation. These pumps are operated by auto mode subject to water level at wet well so that no operation schedule is expected to be provided.

3.2.26. An on-site measurement was conducted for the façade louver during site visit and a noise level of 68 dB was recorded at 3m from the louver as shown in **Appendix 3.8**. The equivalent SWL is 86dB(A). For conservative assessment, it is assumed the SPS operates 24 hours per day.

Harbour Plaza 8 Degree

3.2.27. Harbour Plaza 8 Degrees is located approximately 290m to the west of the Project site boundary. There are 2 chillers identified at the roof of the building (ID: HP_1 to HP_2). Given the large separation between the noise sources and the proposed development, no significant fixed plant noise sources due to the chillers are envisaged.

3.3. Impact Assessment

Assessment Methodology

Planned Fixed Plant Noise Sources

3.3.1. As mentioned in **Section 3.2.2. to 3.2.6.,** the proposed development Site was assessed under the AEIAR-204/2017. Predicted maximum fixed plant noise level was 60dB(A) for daytime and evening period, and there will be no nighttime sport event in both Main Stadium and Public Sports Ground.

3.3.2. The above finding will be adopted for NSRs with direct line of sight towards the Multi-purpose Kai Tak Sports Complex.

Existing Fixed Plant Noise Sources

3.3.3. The assessment of the fixed noise sources was undertaken in accordance with the following standard acoustic principle:

$$SPL = SWL - DC + FC + BC$$

Where SPL = Predicted façade noise level, dB(A)

SWL = Sound Power Level, dB(A)

DC = Distance attentuation correction, $20 \log_{10} D_i + 8$ in dB(A)

D_i = Distance in m between the source and the receiver

FC = Façade correction of 3 dB(A)

BC = Barrier correction

3.3.4. As the noise sources in this assessment are mostly origin from building services equipment (i.e. air-cooled chillers), the operation and noise levels of such equipment are typically fairly constant, i.e. intermittency nor impulsiveness of the noise levels are insignificant. Neither corrections for intermittency nor impulsiveness are adopted. Furthermore, based on findings in site observation, the concerned buidlign equipment noise soursce are in good conditions and tonal characteristics were not observed. Therefore, no tonal correction is adopted.

3.3.5. The total predicted façade noise level (SPL) contributed from adjacent identified fixed noise sources at representative NSR is then calculated by the following formula:

$$\text{Total SPL} = 10 \log_{10} \sum 10 \exp (\text{SPL}_i / 10)$$

Where Total SPL = Total Predicted façade noise level from all noise sources in the calculations, dB(A)

SPL_i = Predicted façade noise level at receiver by individual noise source, dB(A)

Selection of Representative Noise Sensitive Receivers

3.3.6. Five representative NSRs, namely T1-03A, T1-10E, T1-11B, T1-18B and T1-19A at the public housing units have been selected for the noise assessment. This representative assessment points are located closest to the identified fixed plant, it is considered as the worst-case scenario. The shortest horizontal separation distance between representative NSRs and the fixed noise sources have been used for the assessment.

Cumulative Fixed Plant Noise Impact Assessment

3.3.7. The cumulative noise impact assessment results for the identified fixed noise sources are summarized in **Table 3.3**. The detailed fixed plant noise assessment results are provided in **Appendix 3.10**.

Table 3.3 Summary of Fixed Plant Noise Impact Assessment Results

NSR ID	Area Sensitivity Rating	Noise Criteria, dB(A)	Predicted Façade Noise Levels, dB(A)		
			Planned Noise Sources	Existing Noise Sources	Overall
Day-time/ Evening Scenario					
T1-03A	B	65	-	63	63
T1-10E	B	65	60	55	61
T1-11B	B	65	-	60	60
T1-18B	B	65	-	64	64
T1-19A	B	65	-	64	64
Night-time Scenario					
T1-03A	B	55	-	51	51
T1-10E	B	55	-	45	45
T1-11B	B	55	-	51	51
T1-18B	B	55	-	52	52
T1-19A	B	55	-	51	51

3.3.8. Based on the results in **Table 3.3**, the predicted noise level at the selected NSRs due to the operation of the identified fixed plant will comply with the relevant daytime and evening time as well as night-time criteria.

3.4. Fixed Plant Noise Impacts from Proposed Development

3.4.1. To ensure the fixed plant noise generated by the proposed development would not cause excessive impact to neighbouring noise sensitive uses, potential noise sources from the proposed development (e.g., pump rooms, transformer rooms, lift machine rooms, emergency generator rooms, etc.) should be designed to meet the relevant noise criteria as stipulated in the HKPSG.

3.4.2. Provisions shall be made to control the noise sources by suitable at source noise control measures such as silencers and acoustic linings when necessary. As such, it is anticipated that the fixed plant noise impact on the surrounding NSRs due to the operation of the proposed development will not exceed the relevant noise criteria of the HKPSG and NCO.

3.5. Summary

3.5.1. Based on the fixed plant noise impact assessment results, the predicted cumulative noise levels at NSRs from the identified fixed plant noise sources will comply with the daytime and evening and night-time noise criteria. Adverse fixed plant noise impacts on the proposed development are not anticipated.

4. Air Quality Impacts

4.1. Assessment Criteria

The Hong Kong Planning Standards and Guidelines

4.1.1. The HKPSG recommends a buffer distance on usage of "open space" site for active and passive recreational from roads and industrial areas. Evaluation of potential air quality impacts on the proposed public housing development due to roads and industrial chimney emissions has made reference to the HKPSG guidelines. **Table 4.1** provides the HKPSG recommended buffer distances for recreational uses in open space.

Table 4.1 HKPSG Recommended Buffer Distance for Open Space

Source	Parameter	Buffer Distance	Permitted Uses
Road and Highways	*Type of Road*		
	Trunk Road and Primary Distributor	>20m	Active and passive recreation uses
		3 - 20m	Passive recreational uses
		<3m	Amenity areas
	District Distributor	>10m	Active and passive recreational uses
		<10m	Passive recreational uses
	Local Distributor	>5m	Active and passive recreational uses
		<5m	Passive recreational uses
	Under Flyovers		Passive recreational uses
Industrial Areas	*Difference in Height between Industrial Chimney Exit and the Site*		
	<20m	>200m	Active and passive recreational uses
		5 - 200m	Passive recreational uses
	20 - 30m (*)	>100m	Active and passive recreational uses
		5 - 100m	Passive recreational uses
	30m - 40m	>50m	Active and passive recreational uses
		5 - 50m	Passive recreational uses
	>40m	>10m	Active and passive recreational uses

Remarks (*):

(a) In situations where the height of chimneys is not known, use the set of guidelines marked with an asterisk for preliminary planning purpose and refine as and when more information is available.

(b) The buffer distance is the horizontal, shortest distance from the boundary of the industrial lot, the position of existing chimneys or the edge of road kerb, to the boundary of open space sites.

(c) The guidelines are generally applicable to major industrial areas but **NOT** individual large industrial establishments which are likely to be significant air pollution sources. Consult EPD when planning open space sites close to such establishments.

(d) Amenity areas are permitted in any situation.

4.2. Industrial Emissions

4.2.1. According to HKPSG chapter 9 Table 1.3, the recommended buffer distance between industrial chimneys and high-rise buildings should be at least 200m. Initial desktop study was first conducted to review the nature of all buildings within the study area based on latest street maps and statutory plans. Followed by the desktop review, chimneys within study area were then identified by site walks, with focus on the industrial buildings identified from the desktop study. Chimney surveys were undertaken on 22 October 2022 and 19 January 2024 to confirm the chimney details.

Chimney 1 to Chimney 7: The Hong Kong & China Gas Company Limited – Ma Tau Kok Gas Works

4.2.2. Towngas Ma Tau Kok Gas Works operated by the Hong Kong & China Gas Company Limited is located within the 500m study area of the proposed development. With referent to the approved EIA for Kai Tak Multi-purpose Sports Complex (Sport Complex EIA) (AEIAR- 204/2017), a total of 5 chimneys were identified at Towngas Ma Tau Kok Gas Works and relevant information is extracted in **Appendix 4.1**. During the site visit, 2 more chimneys were further identified at Towngas Ma Tau Kok Gas Works. A total of 7 chimneys were therefore identified at Towngas Ma Tau Kok Gas Works as shown in **Figure 4.1**. 6 out of the 7 chimneys are location within 200m from the Site Boundary as shown in **Figure 4.1**. Emissions from these 6 chimneys were observed during the site visits which indicates that they are actively being used. Photo showing the 6 chimneys are contained in **Figure 4.1**. Request for operation details of the chimneys was issued to the operator of Towngas Ma Tau Kok Gas Works and the operator's reply is still pending at the time of this report.

4.2.3. In the current layout design, there will be no window opening/ fresh air intake within 200m from the chimneys as shown in **Figure 4.1**, **Figure 4.2** and **Figure 4.3**. The proposed development complies with the HKPSG recommended buffer distances and therefore would meet the HKPSG standard with regards to vehicular emissions from open roads. No planned Air Sensitive Uses with openable windows and fresh air intake would be located within the recommended buffer zone. For the recreation used on 3/F, air sensitive uses at the podium area within the 200m buffer distance from the chimney will not be provided (i.e., transient in nature). Hence, it shall not be considered as air sensitive receivers according to Annex 12 of the EIA Technical Memorandum. Adverse emissions impacts are not expected. A summary of identified chimneys at Ma Tau Kok Gas Works is provided in **Table 4.2**.

Table 4.2 Summary of Identified Industrial Chimneys at Towngas Ma Tau Kok Gas Works

Chimney ID	Location	Within 200m from Site Boundary	Window Opening/ Fresh Air Intake within 200m From Boundary	HKPSG Compliance? (Y/N)
Chimney 1	Towngas Ma Tau Kok Gas Works	Y	N	Y
Chimney 2		Y	N	Y
Chimney 3		Y	N	Y
Chimney 4		Y	N	Y
Chimney 5		Y	N	Y
Chimney 6		Y	N	Y
Chimney 7		N	N	Y

4.3. Vehicular Emissions

Open Roads in Close Vicinity

4.3.1. Roads located around the proposed development include Sung Wong Toi Road and To Kwa Wan Road. With reference to the Annual Traffic Census (2022) published by the Transport Department, the corresponding section of Sung Wong Toi Road and To Kwa Wan Road in the vicinity of the Site are classified as a District Distributor.

4.3.2. The setback distance of the nearest air sensitive uses at the proposed development from the kerb of the nearby roads are summarised in **Table 4.3** and shown **in Figure 4.1** to **Figure 4.3**.

4.3.3. As the minimum separation distance between the nearest facade of the air sensitive uses (including domestic block and social welfare facilities) to the road kerbs of abutting open roads are found to be complied with the minimum setback distances as stipulated in Ch.9 the HKPSG for all air sensitive uses in the proposed re-development, there is no air sensitive uses within the buffer distance and adverse air quality impact arising from vehicular emissions is not anticipated.

Table 4.3 Separation Distances between Nearest Roads and Nearest Air Sensitive Uses of the Public Housing Blocks

Road	Road Type	Recommended Buffer Distance for Active and Passive Recreation Uses	HKPSG Compliance? (Y/N)
Sung Wong Toi Road	District Distributor (DD)	>10m	Y
To Kwa Wan Road	District Distributor (DD)	>10m	Y

Nearby Road Portals

4.3.4. An EIA was conducted for the Kai Tak Multi-purpose Sports Complex (Sport Complex EIA) (AEIAR- 204/2017) which is bounded by Central Kowloon Route to the south and dissected by Shing Kai Road in the middle. It is a multi-purpose complex comprising majorly a Main Stadium, a Public Sports Ground, an Indoor Sports Centre, and other ancillary or supporting facilities. In the EIA design as extracted in **Appendix 4.1**, Road D2 (current Shing Kai Road) was modelled as a series of portal since it is underneath a proposed landscape deck.

4.3.5. At the time of this report, the construction of the Kai Tak Multi-purpose Sports Complex is in progress and the construction of main structure is almost completed. During site visit, the as-built landscape deck at Kai Tak Sport Complex located to the northeast of the Subject Site is confirmed to be in the form of a viaduct above the open road D2, instead of an enclosed structure with a tunnel road underneath (attached **Appendix 4.2**). Therefore, the road emissions of D2 under the landscape deck are assumed to be open road emissions instead of tunnel portal emissions, and it is considered that the HKPSG buffer distance of 200m for industrial chimneys does not apply.

4.3.6. For the remaining portal identified for D2 landscape deck that is located outside 200m of the Subject Site, as shown in **Figure 4.1**. Therefore, adverse emissions impacts are not expected.

4.3.7. Portal emission sources from Kai Tak Tunnel Portal and Central Kowloon Route (CKR) were also identified in AEIAR-130/2009. The portal is located outside of 200m distance from the Subject Site. Therefore, adverse emissions impacts are not expected.

4.4. Odour Emissions

4.4.1. Annex 4 of the Technical Memorandum on Environmental Impact Assessment Process stipulates an odour nuisance limit of 5 odour units (OU) based on an averaging time of 5 seconds.

4.4.2. To Kwa Wan Road Sewage Pumping Station is located to the southeast of the Site with around 35m separation from the Site Boundary. Construction of the pumping station was completed around 2018 and the Sewage Pumping Station is assumed to be designed in accordance with EPD's "Environmental Guidance Note for Sewage Pumping Stations which is not a Designated Project", with adopting of suitable odour mitigation measures. A full enclosure design was adopted by the pumping station and adequate deodorization equipment are installed, as confirmed by DSD.

4.4.3. Furthermore, a site survey was conducted on 19 January 2024 to identify if there is any odour generated from the Sewage Pumping Station impacting upon the surrounding area. No odour was perceived and no odour generating activity was observed during the odour patrol along the odour patrol route as shown in **Appendix 4.3**. In view of the effective mitigation measures being incorporated in the Sewage Pumping Station design, odour impact at nearby air-sensitive use is insignificant. Thus, potential odour nuisance to the ASRs within the Site is considered to be minimal, and no adverse odour nuisance arising from the nearby sewage pumping station to the ASRs at the proposed development is anticipated.

5. Overall Conclusion

5.1. Noise

5.1.1. The road traffic noise compliance rate for the base-case scenario of the proposed development at To Kwa Wan Road is 78.0%. With incorporation of acoustic window and fixed glazing with maintenance window on the public housing blocks as mitigation measures, 100% compliance rate for the proposed development is achieved. The predicted maximum road traffic noise level is $L_{10(1\text{-}hr)}$ 70 dB(A).

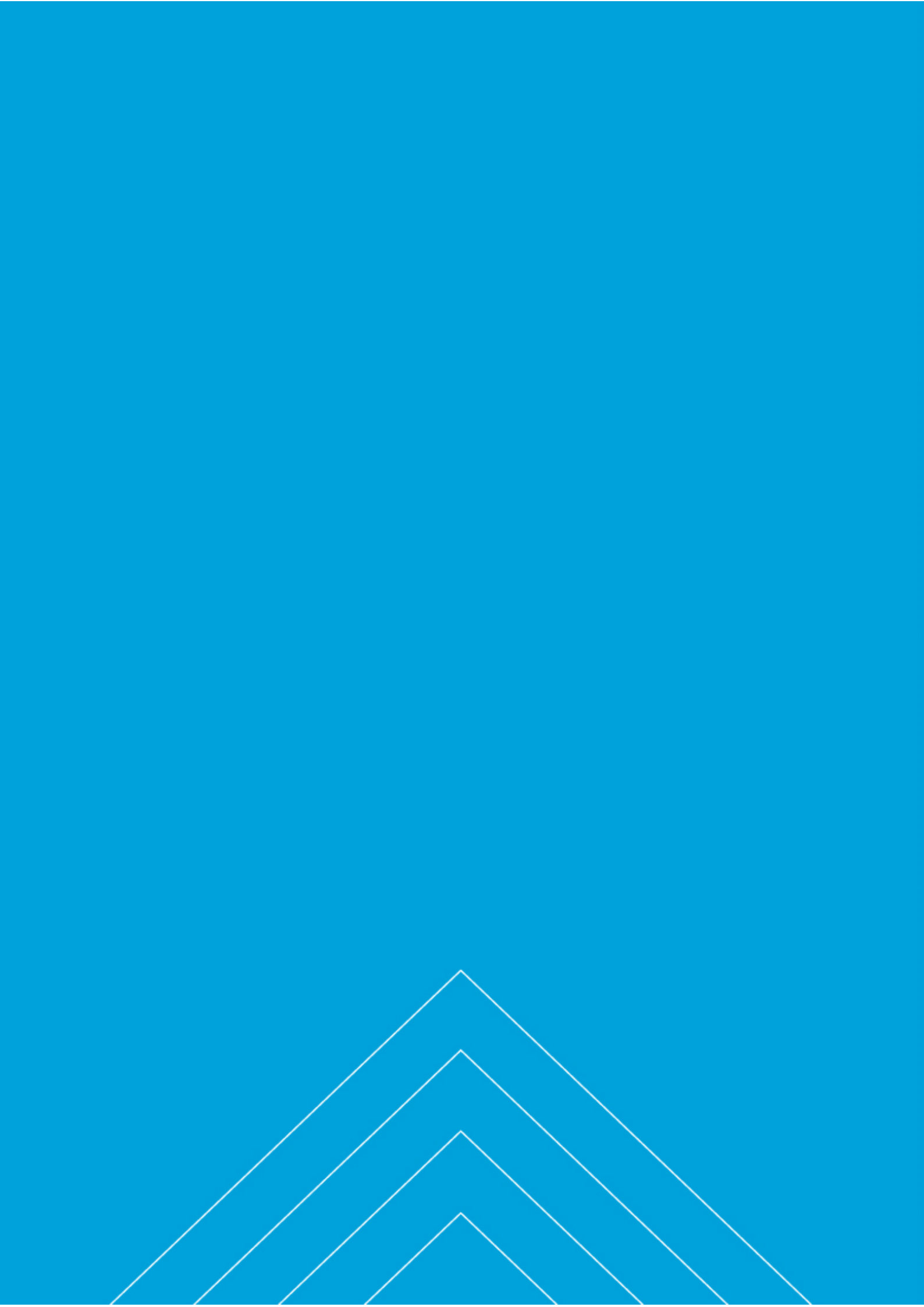
5.1.2. It is planned to provide social welfare facilities and offices together with the proposed public housing developments. Based on the assessment result, there is no predicted traffic noise exceedance at the proposed facilities. With careful design and room arrangement, all the non-domestic uses comply with the noise planning standards as stipulated in Ch.9 of the HKPSG. As such, adverse road traffic noise impacts on these welfare facilities are not expected to occur.

5.1.3. Based on the fixed plant noise impact assessment results, the predicted accumulative noise levels at the representative NSRs will comply with the daytime and evening and night-time noise criteria. As such, adverse fixed plant noise impacts on the proposed development are not anticipated.

5.2. Air Quality

5.2.1. Potential air quality impact due to vehicular emissions and chimney emissions have been reviewed. No adverse air quality impacts due to vehicular emissions and chimney emissions are anticipated as the recommended buffer distances stipulated in the HKPSG can be met for the proposed development.

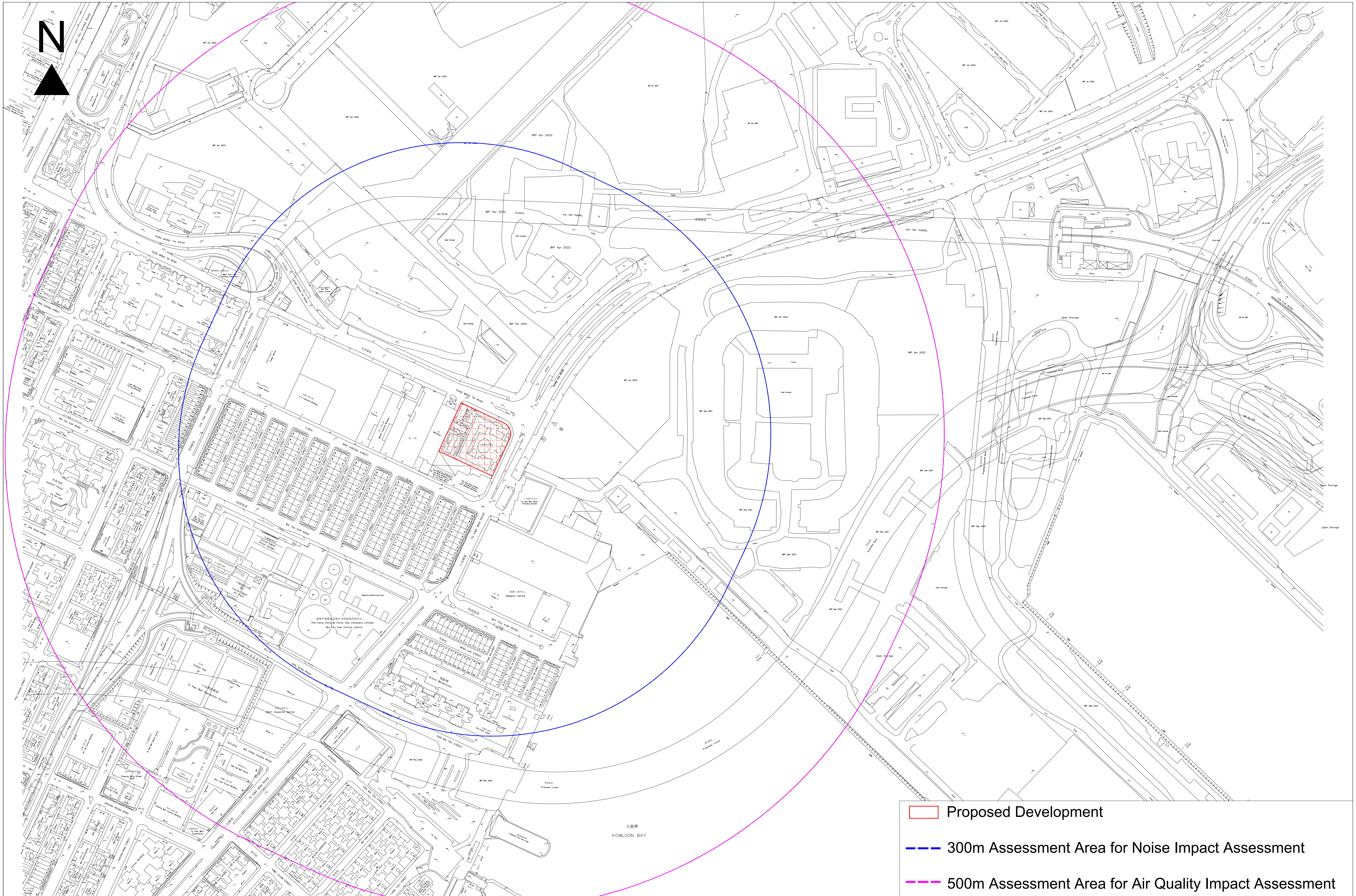
5.2.2. The sewage pumping station in operation in the vicinity is fully enclosed. A site survey was conducted, and no odour was perceived and no odour generating activity was observed during the patrol. No adverse odour nuisance to the potential ASRs within the Site is anticipated.



Figures

Figures 1.1

Location of the Proposed Development



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Title: Location of the Project Site

Scale at A3

Date: Dec 2023

Figure No.: Fig. 1.1

Figure 2.1

Location Plan of Representative Noise Sensitive Receivers at (Residential Floor)

N

Fixed Glazing Provided in Base-case Scenario (5/F - 25/F)

Fixed Glazing Provided in Base-case Scenario (5/F - 25/F)

Fixed Glazing Provided in Base-case Scenario (5/F - 25/F)

Fixed Glazing Provided in Base-case Scenario (5/F - 25/F)

Fixed Glazing Provided in Base-case Scenario (5/F - 22/F)

Fixed Glazing Provided in Base-case Scenario (4/F - 25/F)

Fixed Glazing Provided in Base-case Scenario (6/F - 15/F)

Fixed Glazing Provided in Base-case Scenario (4/F - 26/F)

Fixed Glazing Provided in Base-case Scenario (5/F - 20/F)

Fixed Glazing Provided in Base-case Scenario (5/F - 32/F)

T1-03A T1-03B T1-03C T1-03D T1-03E T1-03F T1-04A T1-04B T1-05A T1-05B T1-05C T1-06A T1-06B T1-07A T1-07B T1-08A T1-08B T1-09A T1-09B T1-10A T1-10B T1-10C T1-10D T1-10E T1-10F T1-11A T1-11B T1-11C T1-11D T1-11E T1-11F T1-12A T1-12B T1-13A T1-13B T1-14A T1-14B T1-14C T1-15A T1-15B T1-15C T1-16A T1-16B T1-16C T1-17A T1-17B T1-17C T1-17D T1-18A T1-18B T1-19A T1-19B T1-20A T1-20B T1-20C T1-21A T1-21B T1-21C T1-01A T1-01B T1-02A T1-02B T1-02C T1-02D

WING A WING B WING C

TYPE D-6(b1) 03 TYPE B-5 04 TYPE C-8(b1) 05 TYPE B-5(1) 06 TYPE A-3(1) 07 TYPE A-3(1) 08 TYPE B-5 09 TYPE D-6(b2) 10 TYPE D-6(b2) 11 TYPE B-5 12 TYPE A-1(a1) 13 TYPE C-2(a) 14 TYPE C-2(a) 15 TYPE C-2(a) 16 TYPE D-2(a1) 17 TYPE A-1(a1) 18 TYPE A-1(a1) 19 TYPE C-2(a) 20 TYPE C-2(a) 21 TYPE D-2(b1) 02 TYPE B-2 01

WMC 1 WMC 2 WMC 3 WMC 4 W1 W2 W3 HR EMR 1 EMR 2 EMR 3 ST-1 ST-2 ST-3 TR 1 TR 2 PD RS&MRR L1 L2 L3 L4 L5 L6

Fixed Glazing Provided in Base-case Scenario (5/F - 31/F)

Fixed Glazing Provided in Base-case Scenario (5/F - 21/F)

Fixed Glazing Provided in Base-case Scenario (5/F - 17/F)

Fixed Glazing Provided in Base-case Scenario (6/F - 13/F)

LEGEND

- Site Boundary of the Proposed Development
- NSR_ID Noise Sensitive Receivers
- Fixed Glazing with Maintenance Window

0 5 10

Domestic Floor

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Title: Location Plan of the Noise Sensitive Receivers at Domestic Floors

Date: Apr 2024

Figure No.: Figure 2.1

Figure 2.2

Location Plan of Representative Noise Sensitive Receivers (Welfare Facilities at 2/F)

N

Fixed Glazing (with / without maintenance window) provided in base case scenario

Fixed Glazing (with / without maintenance window) provided in base case scenario

Fixed Glazing (with / without maintenance window) provided in base case scenario

WONG TOI ROAD

CCC-03

CCC-02

CCC-01

CHILD CARE CENTRE

COVERED LANDSCAPED AREA

HA'S OFFICE

0 10 20

LEGEND

- Site Boundary of the Proposed Development
- NSR_ID Noise Sensitive Receivers
- Fixed Glazing

Welfare Facilities (2/F)

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Title: Location Plan of the Noise Sensitive Receivers at Welfare Facilities (2/F)

Date: Apr 2024

Figure No.: Figure 2.2

Figure 2.3

Location Plan of Representative Noise Sensitive Receivers (Welfare Facilities at 3/F)

N

Fixed Glazing (with / without maintenance window) provided in base case scenario

NEC-04
NEC-05
NEC-06
NEC-03
NEC-07
NEC-02
NEC-01
ISFC-06
ISFC-05
ISFC-01
ISFC-02
ISFC-03
ISFC-04

NEIGHBOURHOOD ELDERLY CENTRE
INTEGRATED FAMILY SERVICES CENTRE
COMMUNAL PLAY AREA
PODIUM GARDEN

Architectural Grille Wall to be installed as shown in Appendix 1.1

0 10 20

LEGEND

- Site Boundary of the Proposed Development
- NSR_ID Noise Sensitive Receivers
- Fixed Glazing

Fixed Glazing (with / without maintenance window) provided in base case scenario

Welfare Facilities 3/F

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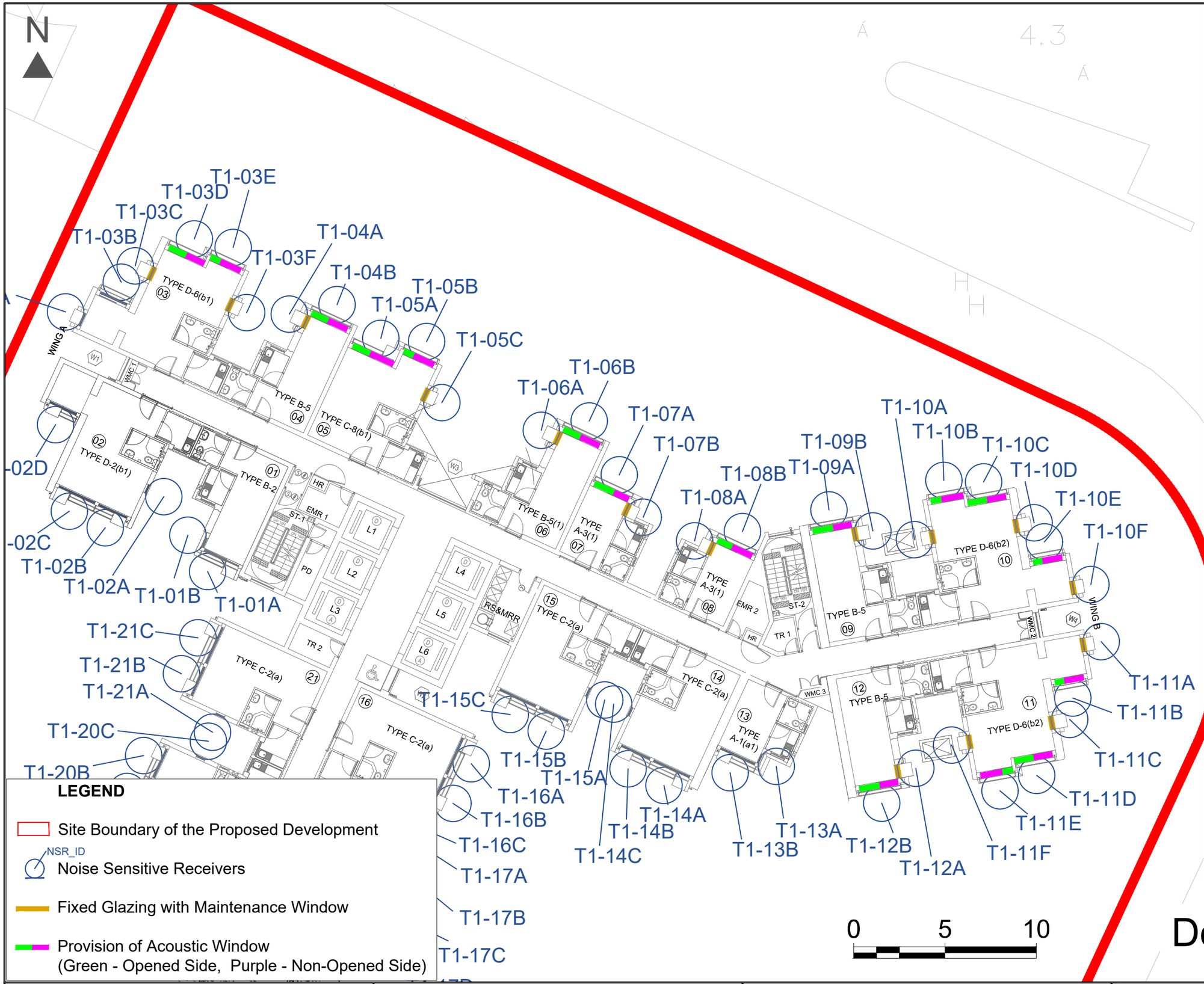
Title: Location Plan of the Noise Sensitive Receivers at Welfare Facilities (3/F)

Date: Apr 2024

Figure No.: Figure 2.3

Figure 2.4

Location Plan of Proposed Noise Mitigation Measures (Residential Floor)



LEGEND

- Site Boundary of the Proposed Development
- NSR_ID — Noise Sensitive Receivers
- Fixed Glazing with Maintenance Window
- Provision of Acoustic Window (Green - Opened Side, Purple - Non-Opened Side)

Unit	NAP	Floors	Type of Winodw
3	T1-03C	5/F-25/F	F.G.
	T1-03D	5/F-25/F	A.W.
	T1-03E	5/F-25/F	A.W.
	T1-03F	5/F-25/F	F.G.
4	T1-04A	5/F-25/F	F.G.
	T1-04B	5/F-25/F	A.W.
5	T1-05A	6/F-24/F	A.W.
	T1-05B	5/F-25/F	A.W.
	T1-05C	5/F-25/F	F.G.
6	T1-06A	5/F-25/F	F.G.
	T1-06B	5/F-25/F	A.W.
7	T1-07A	6/F-14/F	A.W.
	T1-07B	6/F-15/F	F.G.
8	T1-08A	5/F-20/F	F.G.
	T1-08B	5/F-20/F	A.W.
9	T1-09A	5/F-22/F	A.W.
	T1-09B	5/F-22/F	F.G.
10	T1-10A	4/F-25/F	F.G.
	T1-10B	4/F-25/F	A.W.
	T1-10C	4/F-26/F	A.W.
	T1-10D	4/F-26/F	F.G.
	T1-10E	6/F-21/F	A.W.
	T1-10F	5/F-32/F	F.G.
11	T1-11A	5/F-31/F	F.G.
	T1-11B	5/F-17/F	A.W.
	T1-11C	5/F-21/F	F.G.
	T1-11D	5/F-18/F	A.W.
	T1-11E	5/F-17/F	A.W.
	T1-11F	5/F-17/F	F.G.
12	T1-12A	6/F-13/F	F.G.
	T1-12B	6/F-13/F	A.W.

Domestic Floor

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Hong Kong Housing Authority

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AGREEMENT NO. : CB20180686 - TERM TRAFFIC AND ENVIRONMENTAL CONSULTANCY SERVICES 2019-2021 FOR KOWLOON CENTRAL AND WEST AND ISLANDS REGION NO. K02 : PROPOSED PUBLIC HOUSING DEVELOPMENT AT TO KWA WAN ROAD, ENVIRONMENTAL ASSESSMENT STUDY (EAS)

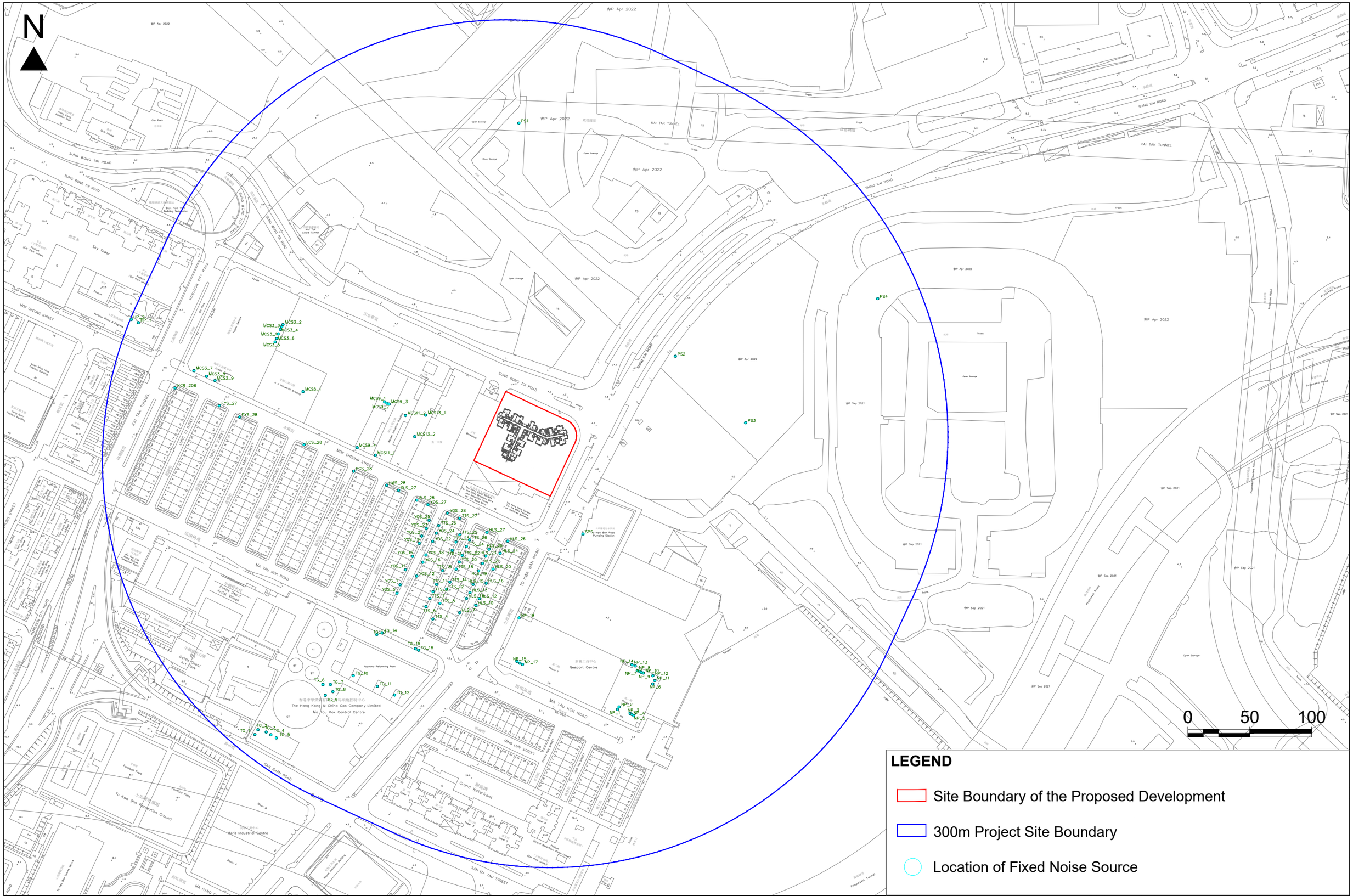
Title: Location Plan of the Proposed Noise Mitigation Measures at Domestic Floors

Date: Apr 2024

Figure No.: Figure 2.4

Figure 3.1

Locations of Identified Fixed Plant Noise Sources



LEGEND

- Site Boundary of the Proposed Development
- 300m Project Site Boundary
- Location of Fixed Noise Source

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Hong Kong Housing Authority

AtkinsRéalis

AGREEMENT NO. : CB20180686 - TERM TRAFFIC AND ENVIRONMENTAL CONSULTANCY SERVICES 2019-2021 FOR KOWLOON CENTRAL AND WEST AND ISLANDS REGION NO. K02 : PROPOSED PUBLIC HOUSING DEVELOPMENT AT TO KWA WAN ROAD, ENVIRONMENTAL ASSESSMENT STUDY (EAS)

Title

Location of Fixed Noise Source Within 300m of the Project Site Boundary

Date: Apr 2024

Figure No.: Figure 3.1

Figure 3.2

Location of Representation Noise Sensitive Receivers for Fixed Plant Noise Impact Assessment

N

T1-03A

T1-10E

T1-11B

T1-19A

T1-18B

工場
Workshop

100

4.2

4.3

4.0

0 10 20

LEGEND

Site Boundary of the Proposed Development

NSR_ID
Representative Noise Sensitive Receivers

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Hong Kong Housing Authority

AtkinsRéalis

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

Date
Apr 2024

Figure No.
Figure 3.2

Figure 4.1

Air Quality Setback from nearby Industrial Chimneys and Portal Emission Sources (Residential)

N

D2 Landscape Deck- Portal

D2 Landscape Deck- Portal in AEIAR- 130/2009 (No longer considered as portal source)

Sung Wong Toi Road

10m setback from Sung Wong Toi Road

200m setback for industrial chimneys

Non-opened side of the acoustic window with allen key lock is installed at the sensitive receiver

10m setback from To Kwa Wan Road

Kai Tak Tunnel Portal

To Kwa Wan Road

200m distance from Subject Site

Chimneys identified on site

2054 2055 2056 2057

6 5 4 3 2 1

Chimney no. identified in this project

Chimneys at The Hong Kong & China Gas Company Limited Ma Tau Kok Control Centre

Chimneys identified in the EIA of Kai Tak Sports Complex

2049

7

0 50 100

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Hong Kong Housing Authority

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Title

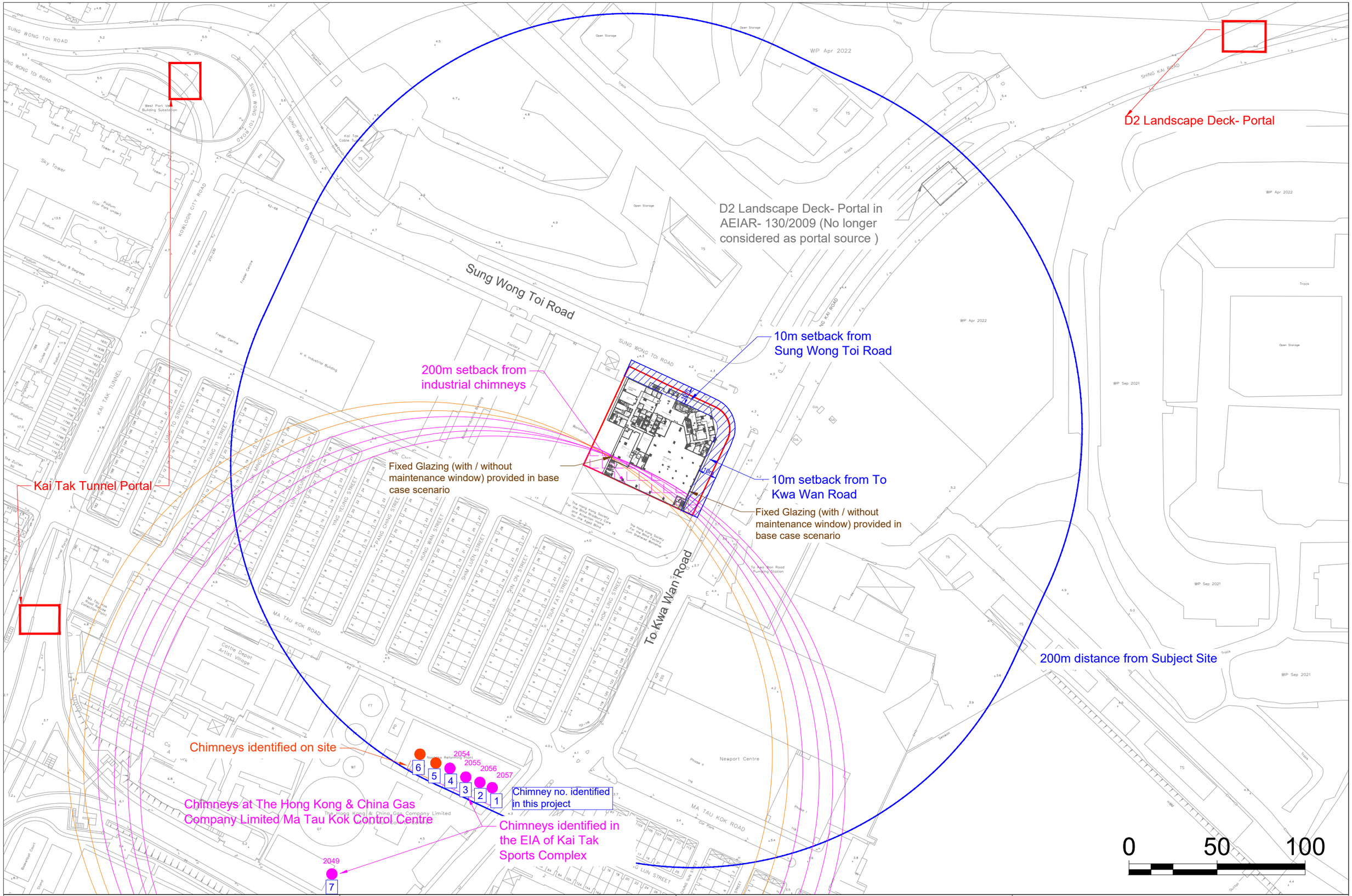
Air Quality Setback from nearby Industrial Chimneys and Portal Emission Sources (Domestic Floors)

Date Apr 2024

Figure No. Figure 4.1

Figure 4.2

Air Quality Setback from nearby Industrial Chimneys and Portal Emission Sources (Social Welfare at 2/F)



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Hong Kong Housing Authority

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AGREEMENT NO. : CB20180686 - TERM TRAFFIC AND ENVIRONMENTAL CONSULTANCY SERVICES 2019-2021 FOR KOWLOON CENTRAL AND WEST AND ISLANDS REGION NO. K02 : PROPOSED PUBLIC HOUSING DEVELOPMENT AT TO KWA WAN ROAD, ENVIRONMENTAL ASSESSMENT STUDY (EAS)

Title

Air Quality Setback from nearby Industrial Chimneys and Portal Emission Sources (Social Welfare at 2/F)

Date: Apr 2024

Figure No.: Figure 4.2

Figure 4.3

Air Quality Setback from nearby Industrial Chimneys and Portal Emission Sources (Social Welfare at 3/F)

N

D2 Landscape Deck- Portal

D2 Landscape Deck- Portal in AEIAR- 130/2009 (No longer considered as portal source)

10m setback from Sung Wong Toi Road

200m setback from industrial chimneys

10m setback from To Kwa Wan Road

Kai Tak Tunnel Portal

Fixed Glazing (with / without maintenance window) provided in base case scenario

Non-air sensitive uses in the podium area within the 200m buffer distance from the chimneys, such as planting area/walkpath.

200m distance from Subject Site

Chimneys identified on site

2054
2055
2056
2057
2049

6
5
4
3
2
1
7

Chimney no. identified in this project

Chimneys at The Hong Kong & China Gas Company Limited Ma Tau Kok Control Centre

Chimneys identified in the EIA of Kai Tak Sports Complex

0 50 100

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Hong Kong Housing Authority

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Title

Air Quality Setback from nearby Industrial Chimneys and Portal Emission Sources (Social Welfare at 3/F)

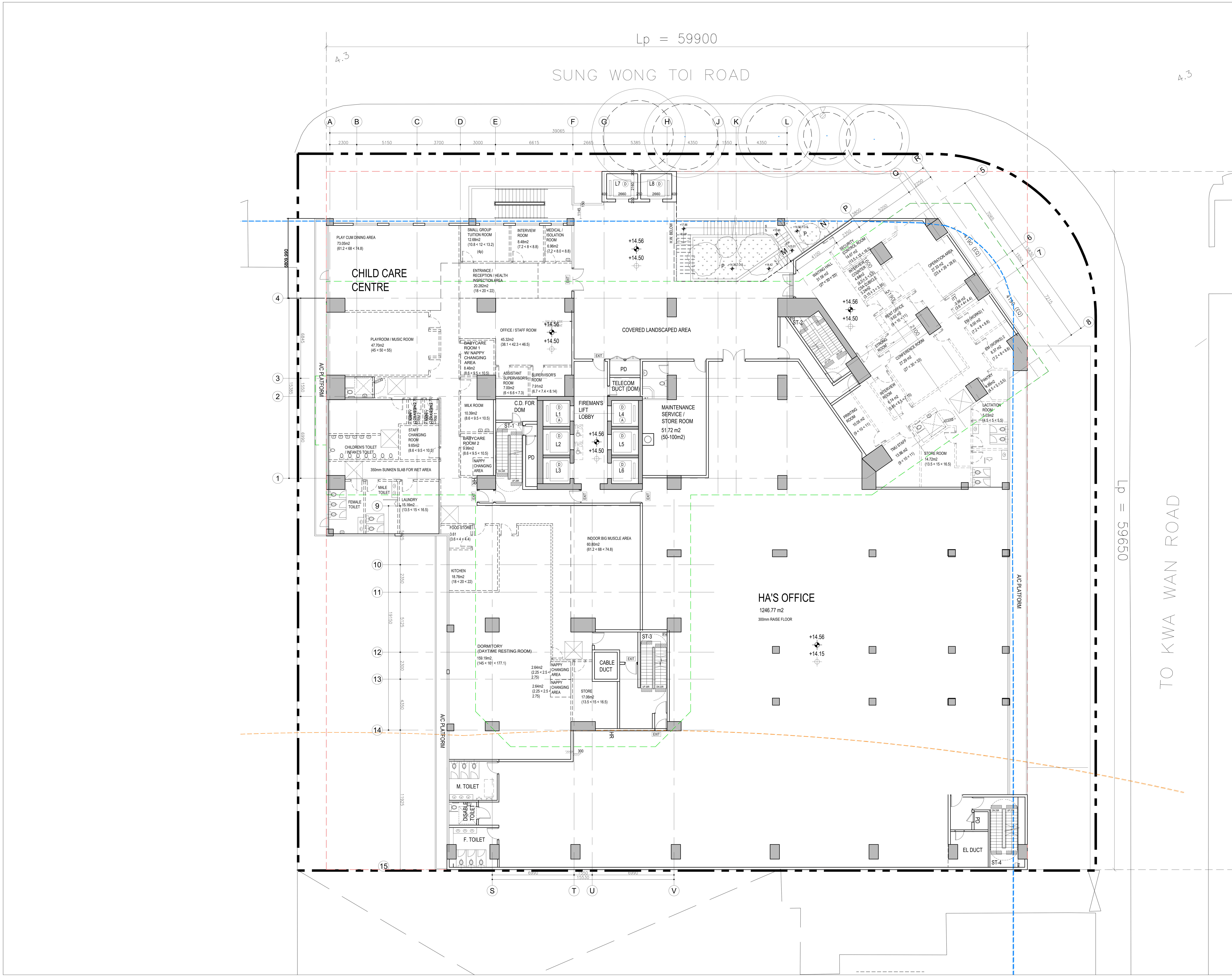
Date: Apr 2024

Figure No.: Figure 4.3

Appendices

Appendix 1.1

Development Layout Plans



NOTES:

REVISIONS

NO	DESCRIPTION AND DATE	DWN	CKD	AUTH

	NAME AND DESIGNATION	INITIAL	DATE
AUTHORISED FOR ISSUE BY HD	WONG SHAN, ELAINE (CA/5)		

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ENDORSED	NORA LEUNG SENIOR DESIGN PROFESSIONAL		
CHECKED	JANE SIM DESIGN PROFESSIONAL		
DRAWN	NATALIE CHEUNG PROJECT ARCHITECT		

PROJECT

PROPOSED PUBLIC HOUSING DEVELOPMENT AT TO KWA WAN ROAD, KOWLOON CITY

DRAWING TITLE

SECOND FLOOR PLAN

SCALE 1:150 (A1) 1:300 (A3)

DRAWING NO.

KC06/-/DDRP2/BLK/A/LO-03

SOURCE

ICU NO.

AutoCAD 2000 A1 841 x 594

HOUSING DEPARTMENT

NOTES:

Lp = 59900

SUNG WONG TOI ROAD

TO KWA WAN ROAD

Lp = 59650

GREEN ROOF

1200H ARCHITECTURAL RAILING

1200H METAL RAILING

BUILDING LINE ABOVE

ACTIVITY ROOM 1
89.36m2
(81 < 90 < 99)

INTERVIEW ROOM
#####m2
(5.85 < 6.5 < 7.15)

INTERVIEW ROOM
6.509m2
(5.85 < 6.5 < 7.15)

VOLUNTEER ROOM
15.280m2
(13.5 < 15 < 16.5)

COUNTER COMPLY BFA DIV.15

RECEPTION AREA
5.307m2
(4.5 < 5 < 5.5)

+19.26
+19.20

OFFICE
55.960m2
(46.3 < 51.4 < 56.5)

ACTIVITY ROOM 2
58.936m2 (15p)
(54 < 60 < 66)

NEIGHBOURHOOD ELDERLY CENTRE

ACC TOILET

FEMALE TOILET

MALE TOILET

PANTRY
10.534m2
(9 < 10 < 11)

STORE
14.687m2
(13.5 < 15 < 16.5)

CARER SUPPORT & RESOURCE ROOM
21(171m2
(18 < 20 < 22)

C.D. FOR DOM

EMR 1

ST-1

PD

TELECOM DUCT (DOM)

OFFICE FOR CLEANSING CONTRACTOR
13.7m2
(10-20m2)

W.M.C.

AMR EQUIPMENT ROOM

TRS

A/C PLATFORM

COMMON ROOM
43.945m2
(36 < 40 < 44)

CLUB ROOM
14.168m2
(13.5 < 15 < 16.5)

OFFICE FOR CENTRE SUPERVISOR
8.752m2
(8.7 < 9.7 < 10.8)

OFFICE FOR UNIT COORDINATOR OF FSU AND FRU
7.854m2
(6.8 < 7.6 < 8.3)

OFFICE FOR SUPERVISORY STAFF
8.756m2
(7.8 < 8.7 < 9.8)

SUB-OFFICE FOR 4-6 GENERAL STAFF

INTERVIEW ROOM 1
6.75m2
(5.85 < 6.5 < 7.15)

INTERVIEW ROOM 2
6.86m2
(5.85 < 6.5 < 7.15)

INTERVIEW ROOM 3
7.13m2
(5.85 < 6.5 < 7.15)

CONFERENCE ROOM
16.40m2
(13.5 < 15 < 16.5)

INTEGRATED FAMILY SERVICES CENTRE

OPEN PLAN OFFICE
137.467m2
(112.9 < 125.4< 137.9)

DROP-IN AREA CUM AN EXHIBITION AREA
51.15m2
(45 < 50 < 55)

ARCHITECTURAL GRILLE WALL

RECEPTION
8.58m2
(9 < 10 < 11)

INFORMATION & RESOURCE CORNER
26.83m2
(23.3 < 25.9 < 28.4)

CYBER CORNER
14.49m2
(12.9 < 14.4 < 15.8)

PLAY ROOM
13.79m2
(13.5 < 15 < 16.5)

SMALL GROUP ROOM 1
16.07m2
(13.5 < 15 < 16.5)

ACTIVITIES CUM AUDIO-VISUAL ROOM
75.73m2
(67.5 < 75 < 82.5)

SERVER ROOM
2.604m2
(2.5 < 3.1 < 3.5)

STORE ROOM
11.08m2
(9 < 10 < 11)

CABLE DUCT

ST-3

FILE AND GENERAL STORAGE
37.50m2
(31.1 < 34.5 < 37.9)

PANTRY
6.39m2
(5.4 < 6 < 6.6)

STUDY ROOM
19.40m2
(18 < 20 < 22)

SMALL GROUP ROOM 3
15.69m2
(13.5 < 15 < 16.5)

SMALL GROUP ROOM 2
15.69m2
(13.5 < 15 < 16.5)

FEMALE STAFF TOILET

MALE STAFF LAVATORY

MALE LAVATORY

FEMALE LAVATORY

SPECIAL FAMILY CARE ROOM
39.44m2
(32.4 < 36 < 39.6)

COMMON ROOM
10.16m2
9 < 10 < 11)

COMMUNAL PLAY AREA

PODIUM GARDEN

+19.61
+18.16

+19.26
+18.95

+19.26
+18.95

+19.26
+19.20

+18.75

ST-2

ST-4

EL DUCT

(A/C FOR 2/F H.A.'S OFFICE)

HR

HSH

AC PLATFORM

REVISIONS		INITIAL AND DESIGNATION		
NO	DESCRIPTION AND DATE	DWN	CKD	AUTH

	NAME AND DESIGNATION	INITIAL	DATE
AUTHORISED FOR ISSUE BY HD	WONG SHAN, ELAINE (CA/5)		

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CHECKED	JANE SIM DESIGN PROFESSIONAL		
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PROJECT

PROPOSED PUBLIC HOUSING DEVELOPMENT AT TO KWA WAN ROAD, KOWLOON CITY

DRAWING TITLE

THIRD FLOOR PLAN

SCALE 1:150 (A1) 1:300 (A3)

DRAWING NO.

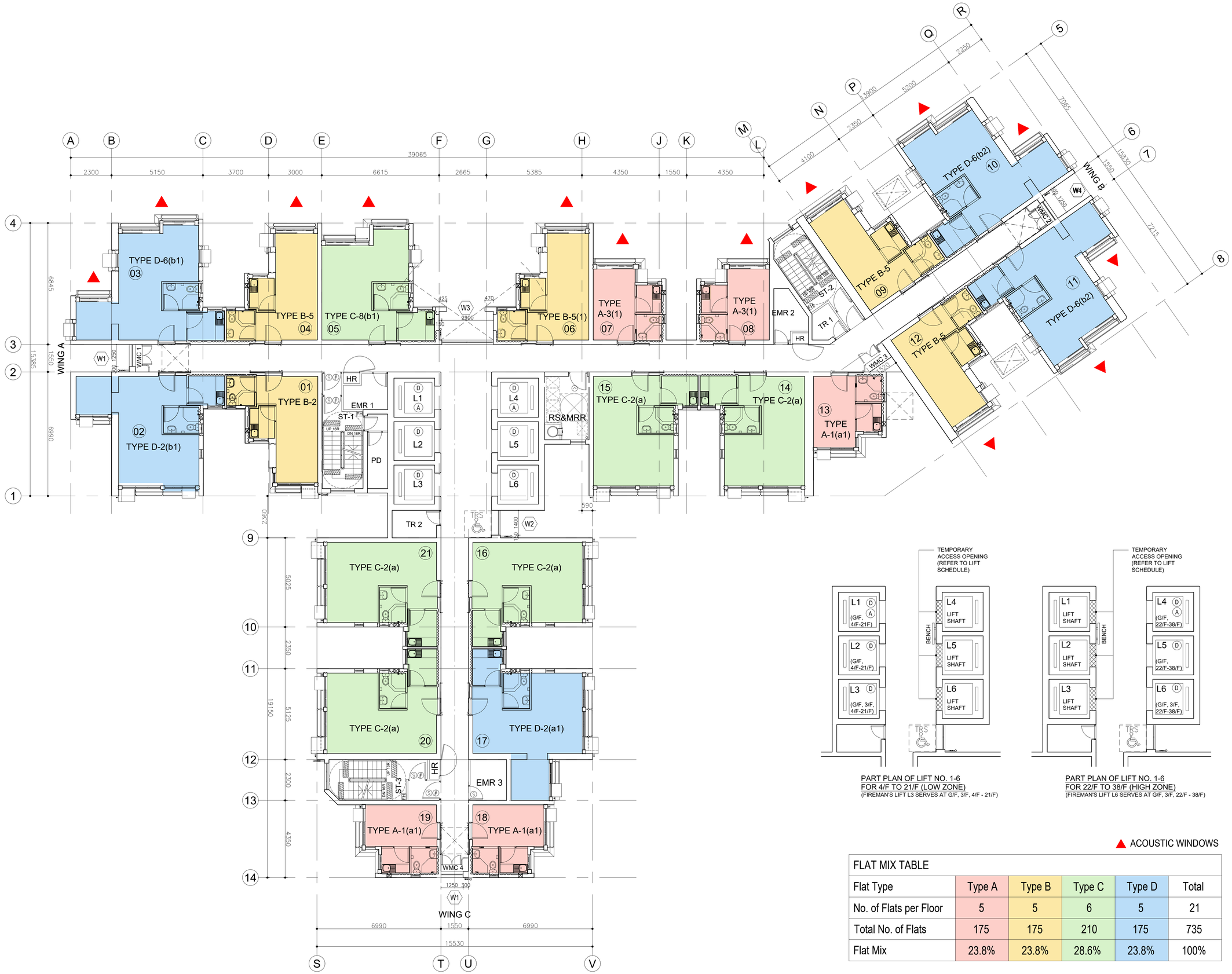
KC06/-/DDRP2/BLK/A/LO-04

SOURCE

ICU NO.

AutoCAD 2000 A1 841 x 594

HOUSING DEPARTMENT



PART PLAN OF LIFT NO. 1-6
FOR 4/F TO 21/F (LOW ZONE)
(FIREMAN'S LIFT L3 SERVES AT G/F, 3/F, 4/F - 21/F)

PART PLAN OF LIFT NO. 1-6
FOR 22/F TO 38/F (HIGH ZONE)
(FIREMAN'S LIFT L6 SERVES AT G/F, 3/F, 22/F - 38/F)

▲ ACOUSTIC WINDOWS

FLAT MIX TABLE					
Flat Type	Type A	Type B	Type C	Type D	Total
No. of Flats per Floor	5	5	6	5	21
Total No. of Flats	175	175	210	175	735
Flat Mix	23.8%	23.8%	28.6%	23.8%	100%

NOTES:

REVISIONS

NO	DESCRIPTION AND DATE	INITIAL AND DESIGNATION DWN	CKD	AUTH

	NAME AND DESIGNATION	INITIAL	DATE
AUTHORISED FOR ISSUE BY HD	WONG SHAN, ELAINE (CA/5)		

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ENDORSED	NORA LEUNG SENIOR DESIGN PROFESSIONAL		
CHECKED	JANE SIM DESIGN PROFESSIONAL		
DRAWN	NATALIE CHEUNG PROJECT ARCHITECT		

PROJECT

PROPOSED PUBLIC HOUSING DEVELOPMENT AT TO KWA WAN ROAD, KOWLOON CITY

DRAWING TITLE

TYPICAL FLOOR PLAN (5/F - 38/F)

SCALE 1:100 (A1) 1:200 (A3)

DRAWING NO.

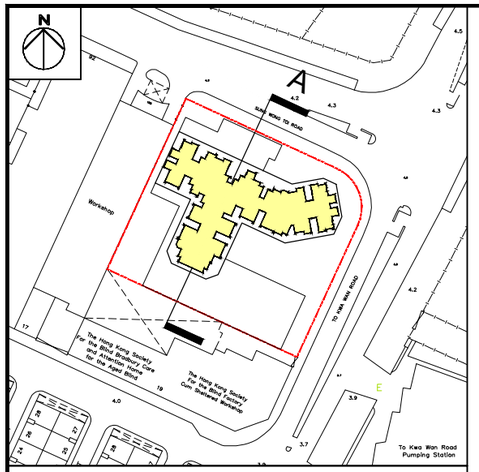
KC06/-/DDRP2/BLK/A/LO-06

SOURCE

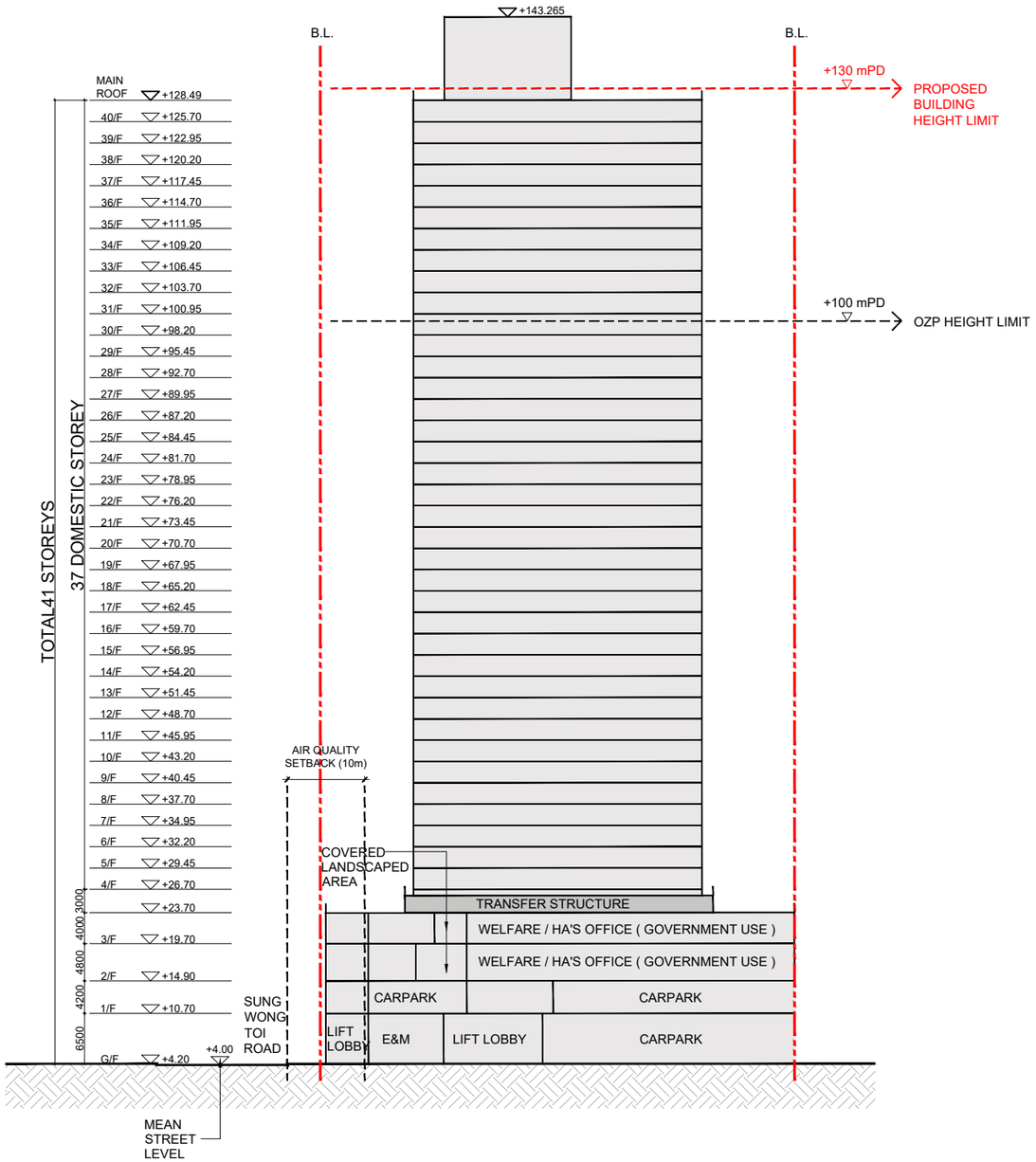
ICU NO.

AutoCAD 2000 A1 841 x 594

HOUSING DEPARTMENT



KEY PLAN SCALE 1:2000 (A3)



LEGEND:-

SITE BOUNDARY

PROJECT TITLE

PROPOSED PUBLIC HOUSING DEVELOPMENT AT TO KWA WAN ROAD, KOWLOON CITY

DRAWING TITLE

SITE SECTION (PROPOSED SCHEME)

SCALE 1:750(A3)

房 屋 署
HOUSING DEPARTMENT

DRAWING NO. KC06/A/LO-27

DATE: 21/03/2024

Appendix 2.1

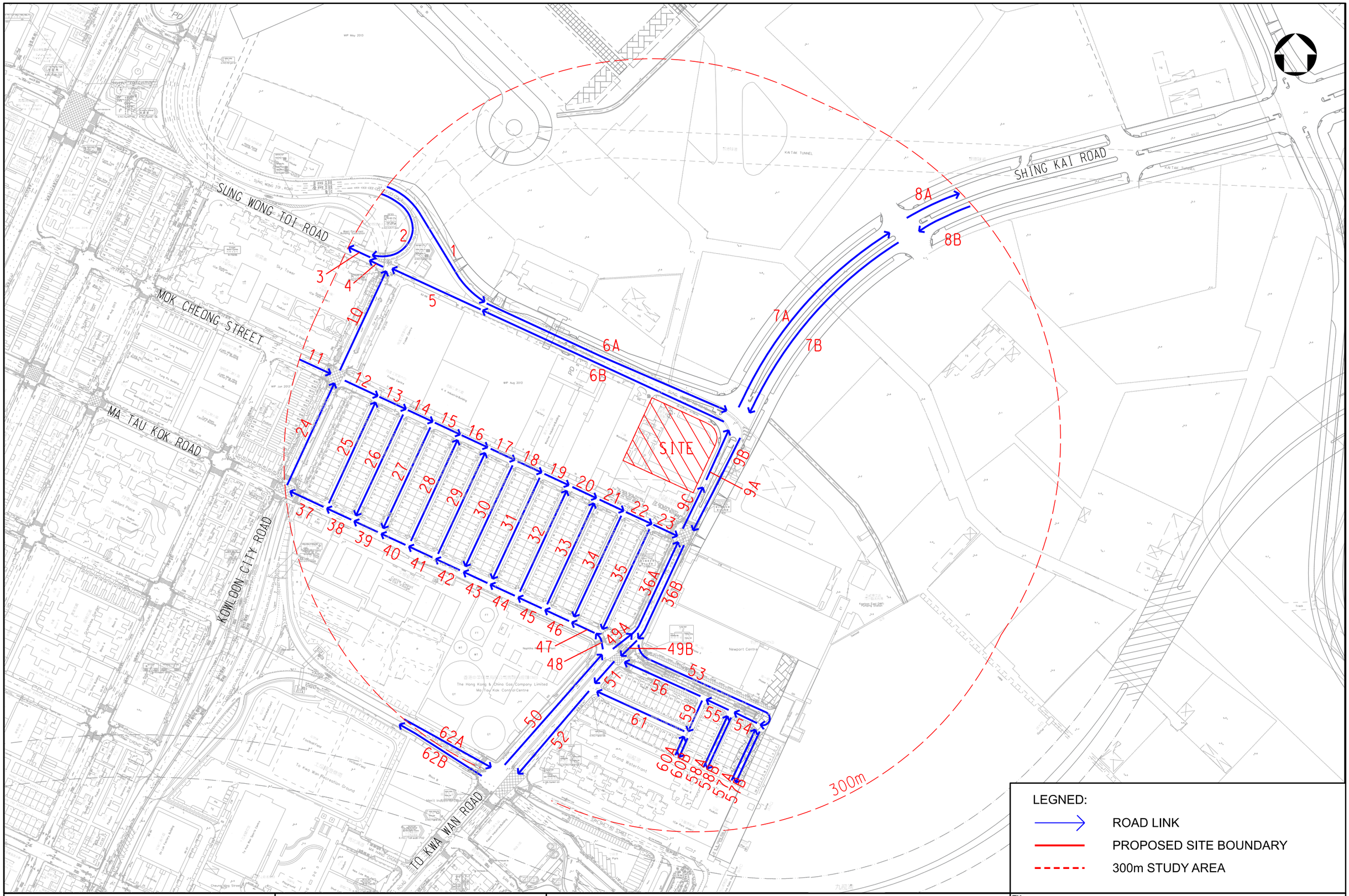
Traffic Forecast Data (Year 2044)

Year 2044 Traffic Data for Environmental Assessment Study - Peak Hours for NIA

Index *	Road Name	Direction	Speed Limit (km/h)	2044 Design Traffic Flows					
				AM			PM		
				Vehicle Breakdown		Total Flows (veh/hr) **	Vehicle Breakdown		Total Flows (veh/hr) **
				LV	HV		LV	HV	
1	Sung Wong Toi Road	NB	50	83%	17%	**1,030**	88%	12%	**1,240**
2	Sung Wong Toi Road	SB	50	91%	9%	**570**	94%	6%	**480**
3	Sung Wong Toi Road	WB	50	87%	13%	**2,270**	90%	10%	**1,920**
4	Sung Wong Toi Road	WB	50	86%	14%	**1,710**	89%	11%	**1,450**
5	Sung Wong Toi Road	WB	50	88%	12%	**970**	92%	8%	**780**
6A	Sung Wong Toi Road	EB	50	83%	17%	**1,030**	88%	12%	**1,240**
6B	Sung Wong Toi Road	WB	50	88%	12%	**970**	92%	8%	**780**
7A	Shing Kai Road	NB	50	83%	17%	**960**	88%	12%	**1,100**
7B	Shing Kai Road	SB	50	87%	13%	**1,150**	89%	11%	**860**
8A	Shing Kai Road	NB	50	83%	17%	**930**	87%	13%	**1,010**
8B	Shing Kai Road	SB	50	86%	14%	**1,100**	88%	12%	**770**
9A	To Kwa Wan Road	NB	50	80%	20%	**690**	87%	13%	**680**
9B	To Kwa Wan Road	SB	50	81%	19%	**930**	83%	17%	**890**
9C	To Kwa Wan Road	NB	50	79%	21%	**680**	88%	12%	**680**
10	Kowloon City Road	NB	50	84%	16%	**750**	85%	15%	**700**
11	Mok Cheong Street	EB	50	53%	47%	**290**	48%	52%	**190**
12	Mok Cheong Street	EB	50	61%	39%	**380**	63%	37%	**340**
13	Mok Cheong Street	EB	50	61%	39%	**390**	64%	36%	**350**
14	Mok Cheong Street	EB	50	60%	40%	**370**	62%	38%	**330**
15	Mok Cheong Street	EB	50	56%	44%	**350**	63%	37%	**310**
16	Mok Cheong Street	EB	50	56%	44%	**360**	62%	38%	**320**
17	Mok Cheong Street	EB	50	56%	44%	**360**	62%	38%	**340**
18	Mok Cheong Street	EB	50	56%	44%	**360**	61%	39%	**320**
19	Mok Cheong Street	EB	50	52%	48%	**350**	61%	39%	**300**
20	Mok Cheong Street	EB	50	53%	47%	**360**	60%	40%	**320**
21	Mok Cheong Street	EB	50	54%	46%	**400**	63%	37%	**360**
22	Mok Cheong Street	EB	50	55%	45%	**400**	62%	38%	**350**
23	Mok Cheong Street	EB	50	53%	47%	**390**	62%	38%	**350**
24	Kowloon City Road	NB	50	84%	16%	**840**	84%	16%	**850**
25	Lung To Street	NB	50	67%	33%	**10**	75%	25%	**20**
26	Fung Yi Street	SB	50	87%	13%	**30**	68%	32%	**30**
27	Luk Ming Street	SB	50	75%	25%	**30**	85%	15%	**20**
28	Lun Cheung Street	NB	50	62%	38%	**10**	59%	41%	**20**
29	Ying Yeung Street	NB	50	50%	50%	**10**	61%	39%	**20**
30	Pang Ching Street	SB	50	80%	20%	**10**	87%	13%	**20**
31	Hung Wan Street	SB	50	92%	8%	**20**	84%	16%	**20**
32	Shim Luen Street	NB	50	73%	27%	**20**	50%	50%	**20**
33	Yin On Street	NB	50	71%	29%	**60**	76%	24%	**50**
34	Tsun Fat Street	SB	50	75%	25%	**10**	83%	17%	**10**
35	Hok Ling Street	SB	50	86%	14%	**10**	71%	29%	**10**
36A	To Kwa Wan Road	NB	50	79%	21%	**520**	87%	13%	**530**
36B	To Kwa Wan Road	SB	50	73%	27%	**1,140**	76%	24%	**1,060**
37	Ma Tau Kok Road	WB	50	54%	46%	**340**	52%	48%	**300**
38	Ma Tau Kok Road	WB	50	54%	46%	**350**	53%	47%	**310**
39	Ma Tau Kok Road	WB	50	51%	49%	**330**	51%	49%	**290**
40	Ma Tau Kok Road	WB	50	51%	49%	**300**	49%	51%	**290**
41	Ma Tau Kok Road	WB	50	51%	49%	**310**	50%	50%	**300**
42	Ma Tau Kok Road	WB	50	51%	49%	**320**	50%	50%	**320**
43	Ma Tau Kok Road	WB	50	51%	49%	**310**	48%	52%	**310**
44	Ma Tau Kok Road	WB	50	49%	51%	**290**	46%	54%	**280**
45	Ma Tau Kok Road	WB	50	50%	50%	**310**	46%	54%	**300**
46	Ma Tau Kok Road	WB	50	53%	47%	**360**	51%	49%	**360**
47	Ma Tau Kok Road	WB	50	53%	47%	**350**	51%	49%	**350**
48	Ma Tau Kok Road	WB	50	52%	48%	**340**	50%	50%	**350**
49A	To Kwa Wan Road	NB	50	79%	21%	**520**	87%	13%	**520**
49B	To Kwa Wan Road	SB	50	72%	28%	**1,010**	77%	23%	**940**
50	To Kwa Wan Road	NB	50	67%	33%	**740**	72%	28%	**790**
51	To Kwa Wan Road	SB	50	72%	28%	**1,030**	77%	23%	**940**
52	To Kwa Wan Road	SB	50	72%	28%	**1,040**	77%	23%	**960**
53	Ma Tau Kok Road	EB	50	76%	24%	**130**	73%	27%	**120**
54	Ma Tau Kok Road	WB	50	76%	24%	**150**	79%	21%	**100**
55	Ma Tau Kok Road	WB	50	76%	24%	**150**	79%	21%	**100**
56	Ma Tau Kok Road	WB	50	78%	22%	**130**	83%	17%	**80**
57A	Hing Yan Street	NB	50	67%	33%	**10**	67%	33%	**10**
57B	Hing Yan Street	SB	50	67%	33%	**10**	67%	33%	**10**
58A	Hing Yin Street	NB	50	67%	33%	**10**	67%	33%	**10**
58B	Hing Yin Street	SB	50	67%	33%	**10**	67%	33%	**10**
59	Chung Sun Street	SB	50	58%	42%	**20**	58%	42%	**20**
60A	Chung Sun Street	NB	50	67%	33%	**10**	67%	33%	**10**
60B	Chung Sun Street	SB	50	67%	33%	**10**	67%	33%	**10**
61	Ming Lun Street	WB	50	60%	40%	**20**	58%	42%	**20**
62A	San Shan Road	EB	50	84%	16%	**820**	75%	25%	**870**
62B	San Shan Road	WB	50	82%	18%	**590**	90%	10%	**450**

** Refer to attached Index Plan*

*** Numbers are rounded up to nearest 10.*



LEGNED:

- ROAD LINK
- PROPOSED SITE BOUNDARY
- 300m STUDY AREA

香港房屋委員會
Hong Kong Housing Authority

SNC·LAVALIN

ATKINS
Member of the SNC-Lavalin Group

AGREEMENT NO. : CB 20180686 - TERM TRAFFIC AND ENVIRONMENTAL CONSULTANCY SERVICES 2019 - 2021 FOR KOWLOON CENTRAL AND WEST AND ISLANDS REGION INSTRUCTION NO. K02 PROPOSED HOUSING DEVELOPMENT AT TO KWA WAN ROAD - ENVIRONMENTAL ASSESSMENT STUDY (EAS)

Title

INDEX PLAN FOR TRAFFIC FORECAST DATA

Scale at A3	Date	Figure No.
1 : 3000	FEB 2020	2.1

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MODEL NAME: Default

Appendix 2.2

Location Plan of the Representative Noise Sensitive Receivers at Domestic Floors with Road Traffic Noise Exceedance

N

NSR	Max SPL with Exceedance	Floor range with Exeedance
T1-03D	73	5/F - 25/F
T1-03E	73	5/F - 25/F
T1-04B	73	5/F - 25/F
T1-05A	73	6/F - 24/F
T1-05B	73	5/F - 25/F
T1-06B	73	5/F - 25/F
T1-07A	71	6/F - 14/F
T1-08B	72	5/F - 20/F
T1-09A	73	5/F - 22/F
T1-10B	74	4/F - 25/F
T1-10C	74	4/F - 26/F
T1-10E	73	6/F - 21/F
T1-11B	73	5/F - 17/F
T1-11D	73	5/F - 18/F
T1-11E	72	5/F - 17/F
T1-12B	71	6/F - 13/F

LEGEND

- Site Boundary of the Proposed Development
- NSR_ID — Noise Sensitive Receivers with Exceedance
- Fixed Glazing Provided in Basecase Scenario

T1-03D, T1-03E, T1-04B, T1-05A, T1-05B, T1-06B, T1-07A, T1-08B, T1-09A, T1-10B, T1-10C, T1-10E, T1-11B, T1-11D, T1-11E, T1-12B

WING A, WING B, TYPE D-6(b1), TYPE B-5, TYPE C-8(b1), TYPE D-2(b1), TYPE B-2, TYPE B-5(1), TYPE A-3(1), TYPE D-6(b2), TYPE C-2(a), TYPE A-1(a1), TYPE D-2(a1), EMR 1, EMR 2, EMR 3, HR, ST-1, ST-2, PD, TR 1, TR 2, RS&MRR, WMC 1, WMC 2, WMC 3, L1, L2, L3, L4, L5, L6, W1, W2, W3, W4

Domestic Floor

香港房屋委員會
Hong Kong Housing Authority

AtkinsRéalis

AGREEMENT NO. : CB20180686 - TERM TRAFFIC AND ENVIRONMENTAL CONSULTANCY SERVICES 2019-2021 FOR KOWLOON CENTRAL AND WEST AND ISLANDS REGION NO. K02 : PROPOSED PUBLIC HOUSING DEVELOPMENT AT TO KWA WAN ROAD, ENVIRONMENTAL ASSESSMENT STUDY (EAS)

Title
Location of Fixed Glazing with Maintenance Window at the Representative Noise Sensitive Receivers at Domestic Floors with Road Traffic Noise Exceedance

Date: Apr 2024

Figure No.: Appendix 2.2

Appendix 2.3

Predicted Road Traffic Noise Levels for the Proposed Development (Base-case Scenario)

Result Summary (Detail) - Base Case - Welfare Facilities - 2/F to 3/F - AM

	SW														
	CCC			ISFC						NEC					
GBP Floor	CCC-01	CCC-02	CCC-03	ISFC-01	ISFC-02	ISFC-03	ISFC-04	ISFC-05	ISFC-06	NEC-01	NEC-02	NEC-03	NEC-04	NEC-05	NEC-06	NEC-07
2/F	51	69	70	/	/	/	/	/	/	/	/	/	/	/	/	/
3/F	/	/	/	57	57	57	58	54	56	50	66	69	70	69	68	60
Predicted Max Road Traffic Noise Level, dB(A)	**51**	**69**	**70**	**57**	**57**	**57**	**58**	**54**	**56**	**50**	**66**	**69**	**70**	**69**	**68**	**60**

*** The assessment point is located at 1m in front of the most exposed part of an openable window for ventilation at a habitable room (NSRs) and 1.2m above the floor level of individual floors.**

No. of Exceedance	
Total no. of units	3
Total no. of units with exceedance	N.A
Predicted Max Road Traffic Noise Level, dB(A)	70
Compliance %	100%

Result Summary (Detail) - Base Case - Welfare Facilities - 2/F to 3/F - PM

	SW														
	CCC			ISFC						NEC					
GBP Floor	CCC-01	CCC-02	CCC-03	ISFC-01	ISFC-02	ISFC-03	ISFC-04	ISFC-05	ISFC-06	NEC-01	NEC-02	NEC-03	NEC-04	NEC-05	NEC-06	NEC-07
2/F	50	68	70	/	/	/	/	/	/	/	/	/	/	/	/	/
3/F	/	/	/	56	56	56	57	54	55	49	66	68	70	68	67	59
Predicted Max Road Traffic Noise Level, dB(A)	**50**	**68**	**70**	**56**	**56**	**56**	**57**	**54**	**55**	**49**	**66**	**68**	**70**	**68**	**67**	**59**

*** The assessment point is located at 1m in front of the most exposed part of an openable window for ventilation at a habitable room (NSRs) and 1.2m above the floor level of individual floors.**

No. of Exceedance	
Total no. of units	3
Total no. of units with exceedance	N.A
Predicted Max Road Traffic Noise Level, dB(A)	70
Compliance %	100%

Result Summary (Detail) - Base Case - Domestic Floors - T1 - 4/F to 40/F - AM

	1		2				3						4		5			6		7		8		9		10					
GBP Floor	T1-01A	T1-01B	T1-02A	T1-02B	T1-02C	T1-02D	T1-03A	T1-03B	T1-03C	T1-03D	T1-03E	T1-03F	T1-04A	T1-04B	T1-05A	T1-05B	T1-05C	T1-06A	T1-06B	T1-07A	T1-07B	T1-08A	T1-08B	T1-09A	T1-09B	T1-10A	T1-10B	T1-10C	T1-10D	T1-10E	T1-10F
4/F	50	50	48	51	57	61	69	65	65	68	68	62	63	68	66	69	63	65	70	64	62	62	65	70	65	/	73	71	/	64	69
5/F	51	51	50	52	58	62	69	69	/	71	71	/	/	71	70	71	/	/	72	70	68	/	71	73	/	/	74	74	/	70	/
6/F	52	52	51	53	58	63	69	69	/	73	73	/	/	72	72	72	/	/	73	71	/	/	72	73	/	/	74	74	/	73	/
7/F	53	53	51	54	58	63	70	70	/	73	73	/	/	73	73	73	/	/	73	71	/	/	72	73	/	/	74	74	/	73	/
8/F	54	54	52	55	58	63	70	70	/	73	73	/	/	73	73	73	/	/	73	71	/	/	72	73	/	/	74	74	/	73	/
9/F	55	55	52	55	59	63	70	70	/	73	73	/	/	73	73	73	/	/	73	71	/	/	72	73	/	/	74	74	/	73	/
10/F	56	56	53	56	59	63	70	70	/	73	73	/	/	73	73	73	/	/	73	71	/	/	72	73	/	/	73	73	/	73	/
11/F	56	56	53	57	59	63	70	70	/	73	73	/	/	73	73	73	/	/	73	71	/	/	72	72	/	/	73	73	/	72	/
12/F	57	57	54	57	60	63	70	69	/	72	73	/	/	72	72	73	/	/	72	71	/	/	72	72	/	/	73	73	/	72	/
13/F	57	57	54	58	60	63	70	69	/	72	72	/	/	72	72	72	/	/	72	71	/	/	72	72	/	/	73	73	/	72	/
14/F	57	58	55	58	60	63	69	69	/	72	72	/	/	72	72	72	/	/	72	71	/	/	71	72	/	/	72	72	/	72	/
15/F	58	58	55	59	60	63	69	69	/	72	72	/	/	72	72	72	/	/	72	70	/	/	71	72	/	/	72	72	/	72	/
16/F	58	58	55	59	61	63	69	69	/	72	72	/	/	72	72	72	/	/	72	70	70	/	71	72	/	/	72	72	/	71	/
17/F	58	59	56	59	61	63	69	69	/	72	72	/	/	72	72	72	/	/	72	70	70	/	71	71	/	/	72	72	/	71	/
18/F	58	59	56	59	61	63	69	68	/	71	72	/	/	72	71	72	/	/	72	70	70	/	71	71	/	/	72	72	/	71	/
19/F	58	59	56	59	61	63	69	68	/	71	71	/	/	71	71	71	/	/	71	70	70	/	71	71	/	/	72	72	/	71	/
20/F	58	59	57	60	61	63	69	68	/	71	71	/	/	71	71	71	/	/	71	70	70	/	71	71	/	/	71	71	/	71	/
21/F	59	59	57	60	61	63	69	68	/	71	71	/	/	71	71	71	/	/	71	70	70	70	70	71	/	/	71	71	/	71	/
22/F	59	59	57	60	61	63	68	68	/	71	71	/	/	71	71	71	/	/	71	69	70	69	70	71	/	/	71	71	/	70	/
23/F	59	60	57	60	61	63	68	68	/	71	71	/	/	71	71	71	/	/	71	69	69	69	70	70	69	/	71	71	/	70	/
24/F	59	60	57	60	61	63	68	68	/	71	71	/	/	71	71	71	/	/	71	69	69	69	70	70	69	/	71	71	/	70	/
25/F	59	60	58	60	61	63	68	67	/	71	71	/	/	71	70	71	/	/	71	69	69	69	70	70	69	/	71	71	/	70	/
26/F	59	60	58	60	62	63	68	67	67	70	70	68	68	70	70	70	69	69	70	69	69	69	70	70	69	66	70	71	/	70	/
27/F	59	60	58	61	62	63	68	67	67	70	70	68	68	70	70	70	69	69	70	69	69	69	70	70	68	66	70	70	70	70	/
28/F	59	60	58	61	62	63	68	67	67	70	70	68	68	70	70	70	68	69	70	69	69	69	69	70	68	66	70	70	70	70	/
29/F	59	60	58	61	62	63	68	67	67	70	70	67	68	70	70	70	68	69	70	69	69	69	69	70	68	65	70	70	70	69	/
30/F	59	60	58	61	62	63	68	67	67	70	70	67	68	70	70	70	68	69	70	68	69	69	69	70	68	65	70	70	70	69	/
31/F	59	60	58	61	62	63	67	67	67	70	70	67	68	70	70	70	68	69	70	68	68	68	69	69	68	65	70	70	70	69	/
32/F	59	60	58	61	62	63	67	67	67	70	70	67	68	70	70	70	68	68	70	68	68	68	69	69	68	65	70	70	70	69	/
33/F	59	60	58	61	62	63	67	67	67	70	70	67	68	70	70	70	68	68	70	68	68	68	69	69	68	65	70	70	69	69	70
34/F	60	60	59	61	62	63	67	66	67	70	70	67	67	70	69	70	68	68	70	68	68	68	69	69	68	65	70	70	69	69	70
35/F	60	60	59	61	62	63	67	66	67	69	70	67	67	69	69	69	68	68	69	68	68	68	69	69	68	65	69	69	69	69	70
36/F	60	60	59	62	63	63	67	66	66	69	69	67	67	69	69	69	68	68	69	68	68	68	69	69	67	65	69	69	69	69	70
37/F	60	61	59	62	63	63	67	66	66	69	69	67	67	69	69	69	67	68	69	68	68	68	69	69	67	65	69	69	69	69	70
38/F	60	61	59	62	63	63	67	66	66	69	69	67	67	69	69	69	67	68	69	68	68	68	68	69	67	64	69	69	69	68	70
39/F	60	61	59	62	63	63	67	66	66	69	69	66	67	69	69	69	67	68	69	68	68	68	68	69	67	64	69	69	69	68	70
40/F	60	61	59	62	63	63	67	66	66	69	69	66	67	69	69	69	67	68	69	67	68	67	68	68	67	64	69	69	69	68	70
Predicted Max Road Traffic Noise Level, dB(A)	**60**	**61**	**59**	**62**	**63**	**63**	**70**	**70**	**67**	**73 #**	**73 #**	**68**	**68**	**73 #**	**73 #**	**73 #**	**69**	**69**	**73 #**	**71 #**	**70**	**70**	**72 #**	**73 #**	**69**	**66**	**74 #**	**74 #**	**70**	**73 #**	**70**

Legend	
Exceeded Hong Kong Planning Standard Guidelines' Standard of 70 dB(A)	
Fixed Glazing to be Provided in the Base-case Scenario	/

*** The assessment point is located at 1m in front of the most exposed part of an openable window for ventilation at a habitable room (NSRs) and 1.2m above the floor level of individual floors of the residential towers of the proposed development.**

No. of Exceedance	
Total no. of units	777
Total no. of units with exceedance	172
Predicted Max Road Traffic Noise Level, dB(A)	74
Compliance %	78%

Result Summary (Detail) - Base Case - Domestic Floors - T1 - 4/F to 40/F - AM

	T1																														
	11						12		13		14			15			16			17				18		19		20			21		
GBP Floor	T1-11A	T1-11B	T1-11C	T1-11D	T1-11E	T1-11F	T1-12A	T1-12B	T1-13A	T1-13B	T1-14A	T1-14B	T1-14C	T1-15A	T1-15B	T1-15C	T1-16A	T1-16B	T1-16C	T1-17A	T1-17B	T1-17C	T1-17D	T1-18A	T1-18B	T1-19A	T1-19B	T1-20A	T1-20B	T1-20C	T1-21A	T1-21B	T1-21C
4/F	69	65	67	68	69	63	64	66	60	60	60	59	53	56	57	56	56	56	48	48	57	57	56	57	57	58	58	59	59	58	57	59	55
5/F	/	72	/	72	72	/	69	70	64	63	62	61	55	59	59	58	59	59	50	49	60	60	60	60	60	59	60	61	61	59	58	60	59
6/F	/	73	/	73	72	/	/	71	66	65	64	63	56	60	61	60	60	61	51	51	61	62	61	62	62	60	61	61	61	60	58	61	60
7/F	/	73	/	73	72	/	/	71	68	67	65	64	56	61	62	61	61	62	52	52	62	63	62	63	63	61	62	62	62	60	58	61	60
8/F	/	73	/	72	72	/	/	71	68	68	67	65	56	62	63	62	62	63	54	54	63	64	63	63	63	62	62	63	62	61	58	62	60
9/F	/	72	/	72	72	/	/	71	69	68	68	67	56	62	64	63	63	64	55	55	64	65	64	64	64	63	63	63	63	61	58	62	61
10/F	/	72	/	72	72	/	/	71	69	69	68	67	56	62	65	64	64	65	57	57	65	65	65	65	65	63	64	64	63	61	59	62	61
11/F	/	72	/	72	72	/	/	71	69	69	68	67	56	62	66	65	65	66	59	59	66	66	66	66	66	64	64	64	64	61	59	63	61
12/F	/	72	/	72	71	/	/	71	69	69	69	68	57	62	66	66	66	66	61	61	67	67	67	67	66	64	64	64	64	61	59	63	61
13/F	/	71	/	71	71	/	/	71	69	69	69	68	57	62	67	66	66	67	62	62	67	67	67	67	67	64	65	64	64	61	59	63	61
14/F	/	71	/	71	71	/	70	70	69	69	69	68	57	62	67	66	67	67	62	62	67	68	67	67	67	65	65	64	64	61	59	63	61
15/F	/	71	/	71	71	/	69	70	69	69	69	68	57	62	67	66	67	67	63	63	68	68	68	68	68	65	65	65	64	61	59	63	61
16/F	/	71	/	71	71	/	69	70	68	69	69	68	57	62	67	67	67	68	63	63	68	68	68	68	68	65	65	65	64	61	59	63	61
17/F	/	71	/	71	71	/	69	70	68	69	69	68	58	63	67	67	67	68	63	63	68	68	68	68	68	65	65	65	64	61	59	63	61
18/F	/	70	/	71	70	67	69	70	68	69	68	68	58	63	67	67	68	68	64	64	68	68	68	68	68	65	65	65	64	61	59	63	61
19/F	/	70	/	70	70	67	69	70	68	69	68	68	58	63	67	67	68	68	64	64	68	68	68	68	68	65	65	65	64	60	59	63	61
20/F	/	70	/	70	70	67	69	70	68	68	68	68	59	63	67	67	68	68	64	64	68	68	68	68	68	65	65	65	64	60	59	63	61
21/F	/	70	/	70	70	66	69	70	68	68	68	68	59	63	67	67	68	68	64	64	68	68	68	68	68	65	65	65	64	60	58	63	61
22/F	/	70	70	70	70	66	68	69	68	68	68	68	59	63	67	67	68	68	64	64	68	68	68	69	68	65	65	65	64	60	58	63	61
23/F	/	70	70	70	70	66	68	69	68	68	68	68	60	63	67	67	68	68	64	64	68	68	68	69	68	65	66	65	64	60	58	63	61
24/F	/	70	70	70	70	66	68	69	68	68	68	68	60	63	67	67	68	68	64	64	68	68	68	69	68	65	66	65	64	60	58	63	61
25/F	/	69	70	70	70	66	68	69	68	68	68	68	60	63	67	67	68	68	64	63	68	68	68	69	68	65	66	65	64	60	58	62	61
26/F	/	69	70	70	69	66	68	69	68	68	68	68	61	63	67	67	67	68	64	63	68	68	68	69	68	65	66	65	64	60	58	62	61
27/F	/	69	70	70	69	66	68	69	68	68	68	68	61	63	67	67	67	68	63	63	68	68	68	69	68	65	66	65	64	60	58	62	61
28/F	/	69	70	69	69	66	68	69	67	68	68	67	61	63	67	67	67	68	63	63	68	68	68	68	68	65	66	65	64	60	58	62	61
29/F	/	69	69	69	69	66	68	69	67	68	68	67	61	63	67	67	67	68	63	63	68	68	68	68	68	66	66	65	64	60	58	62	61
30/F	/	69	69	69	69	66	68	69	67	68	68	67	61	63	67	67	67	68	63	63	68	68	68	68	68	66	66	65	64	60	58	62	61
31/F	/	69	69	69	69	66	68	69	67	68	68	67	61	63	67	67	67	68	63	63	68	68	68	68	68	66	66	65	64	59	58	62	61
32/F	70	68	69	69	69	66	68	69	67	68	68	67	61	63	67	67	67	68	63	63	68	68	68	68	68	66	66	65	64	59	58	62	61
33/F	70	68	69	69	69	66	67	68	67	68	68	67	61	63	67	67	67	68	63	63	68	68	68	68	68	66	66	65	64	59	58	62	61
34/F	70	68	69	69	69	65	67	68	67	67	68	67	61	63	67	67	67	67	63	63	68	68	68	68	68	66	66	65	64	59	58	62	61
35/F	70	68	69	69	69	65	67	68	67	67	67	67	61	63	67	67	67	67	63	63	68	68	68	68	68	66	66	65	64	59	58	62	61
36/F	70	68	69	69	69	65	67	68	67	67	67	67	61	63	67	67	67	67	63	63	68	68	68	68	68	66	66	65	64	59	58	62	61
37/F	70	68	69	69	69	65	67	68	67	67	67	67	62	63	67	66	67	67	63	62	68	68	68	68	68	66	66	65	64	59	58	62	61
38/F	70	68	69	69	68	65	67	68	67	67	67	67	62	63	67	66	67	67	62	62	68	68	68	68	68	66	66	65	64	59	58	62	61
39/F	70	68	68	68	68	65	67	68	67	67	67	67	62	63	67	66	67	67	62	62	68	68	68	68	68	66	66	65	64	59	58	62	61
40/F	70	68	68	68	68	65	67	68	67	67	67	67	62	63	66	66	67	67	62	62	68	68	68	68	68	66	66	65	64	59	58	62	61
Predicted Max Road Traffic Noise Level, dB(A)	**70**	**73 #**	**70**	**73 #**	**72 #**	**67**	**70**	**71 #**	**69**	**69**	**69**	**68**	**62**	**63**	**67**	**67**	**68**	**68**	**64**	**64**	**68**	**68**	**68**	**69**	**68**	**66**	**66**	**65**	**64**	**61**	**59**	**63**	**61**

Legend	
Exceeded Hong Kong Planning Standard Guidelines' Standard of 70 dB(A)	
Fixed Glazing to be Provided in the Base-case Scenario	/

*** The assessment point is located at 1m in front of the most exposed part of an openable window for ventilation at a habitable room (NSRs) and 1.2m above the floor level of individual floors of the residential towers of the proposed development.**

No. of Exceedance	
Total no. of units	777
Total no. of units with exceedance	172
Predicted Max Road Traffic Noise Level, dB(A)	74
Compliance %	78%

Result Summary (Detail) - Base Case - Domestic Floors - T1 - 4/F to 40/F - PM

	1		2				3						4		5			6		7		8		9		10					
GBP Floor	T1-01A	T1-01B	T1-02A	T1-02B	T1-02C	T1-02D	T1-03A	T1-03B	T1-03C	T1-03D	T1-03E	T1-03F	T1-04A	T1-04B	T1-05A	T1-05B	T1-05C	T1-06A	T1-06B	T1-07A	T1-07B	T1-08A	T1-08B	T1-09A	T1-09B	T1-10A	T1-10B	T1-10C	T1-10D	T1-10E	T1-10F
4/F	49	49	47	50	56	61	68	64	64	67	68	61	62	67	66	68	62	64	69	63	61	61	64	70	64	/	73	70	/	63	69
5/F	50	51	49	51	57	61	69	68	/	71	71	/	/	70	69	71	/	/	71	69	67	/	70	72	/	/	73	73	/	69	/
6/F	52	52	50	52	57	62	69	69	/	72	72	/	/	72	71	72	/	/	72	70	/	/	71	72	/	/	73	73	/	72	/
7/F	53	53	50	53	57	62	69	69	/	72	72	/	/	72	72	72	/	/	72	71	/	/	72	72	/	/	73	73	/	72	/
8/F	53	53	51	54	57	62	69	69	/	72	72	/	/	72	72	72	/	/	72	71	/	/	72	72	/	/	73	73	/	72	/
9/F	54	54	51	55	58	62	69	69	/	72	72	/	/	72	72	72	/	/	72	70	/	/	71	72	/	/	73	73	/	72	/
10/F	55	55	52	55	58	62	69	69	/	72	72	/	/	72	72	72	/	/	72	70	/	/	71	72	/	/	72	73	/	72	/
11/F	55	55	52	56	58	62	69	69	/	72	72	/	/	72	72	72	/	/	72	70	/	/	71	72	/	/	72	72	/	72	/
12/F	56	56	53	57	59	62	69	69	/	72	72	/	/	72	72	72	/	/	72	70	/	/	71	71	/	/	72	72	/	71	/
13/F	56	56	53	57	59	62	69	68	/	71	72	/	/	72	71	72	/	/	71	70	/	/	71	71	/	/	72	72	/	71	/
14/F	57	57	54	57	59	62	69	68	/	71	71	/	/	71	71	71	/	/	71	70	/	/	71	71	/	/	72	72	/	71	/
15/F	57	57	54	58	59	62	69	68	/	71	71	/	/	71	71	71	/	/	71	70	/	/	71	71	/	/	71	71	/	71	/
16/F	57	57	54	58	60	62	68	68	/	71	71	/	/	71	71	71	/	/	71	70	70	/	70	71	/	/	71	71	/	71	/
17/F	57	58	55	58	60	62	68	68	/	71	71	/	/	71	71	71	/	/	71	69	69	/	70	71	/	/	71	71	/	70	/
18/F	57	58	55	58	60	62	68	68	/	71	71	/	/	71	71	71	/	/	71	69	69	/	70	70	/	/	71	71	/	70	/
19/F	58	58	56	59	60	62	68	67	/	71	71	/	/	71	70	71	/	/	71	69	69	/	70	70	/	/	71	71	/	70	/
20/F	58	58	56	59	60	62	68	67	/	70	70	/	/	70	70	70	/	/	70	69	69	/	70	70	/	/	71	71	/	70	/
21/F	58	58	56	59	60	62	68	67	/	70	70	/	/	70	70	70	/	/	70	69	69	69	70	70	/	/	70	70	/	70	/
22/F	58	59	56	59	60	62	68	67	/	70	70	/	/	70	70	70	/	/	70	69	69	69	69	70	/	/	70	70	/	70	/
23/F	58	59	57	59	60	62	68	67	/	70	70	/	/	70	70	70	/	/	70	68	69	69	69	70	68	/	70	70	/	69	/
24/F	58	59	57	59	60	62	67	67	/	70	70	/	/	70	70	70	/	/	70	68	68	68	69	69	68	/	70	70	/	69	/
25/F	58	59	57	60	61	62	67	67	/	70	70	/	/	70	70	70	/	/	70	68	68	68	69	69	68	/	70	70	/	69	/
26/F	58	59	57	60	61	62	67	67	67	70	70	67	68	70	70	70	68	68	70	68	68	68	69	69	68	65	70	70	/	69	/
27/F	58	59	57	60	61	62	67	66	67	69	70	67	67	70	69	70	68	68	69	68	68	68	69	69	68	65	70	70	69	69	/
28/F	58	59	57	60	61	62	67	66	66	69	69	67	67	69	69	69	67	68	69	68	68	68	69	69	68	65	69	69	69	69	/
29/F	58	59	57	60	61	62	67	66	66	69	69	67	67	69	69	69	67	68	69	68	68	68	69	69	67	65	69	69	69	69	/
30/F	58	59	58	60	61	62	67	66	66	69	69	66	67	69	69	69	67	68	69	68	68	68	68	69	67	65	69	69	69	68	/
31/F	59	59	58	60	61	62	67	66	66	69	69	66	67	69	69	69	67	68	69	68	68	68	68	69	67	64	69	69	69	68	/
32/F	59	59	58	60	61	62	67	66	66	69	69	66	67	69	69	69	67	68	69	67	67	67	68	68	67	64	69	69	69	68	/
33/F	59	60	58	60	61	62	67	66	66	69	69	66	67	69	69	69	67	68	69	67	67	67	68	68	67	64	69	69	69	68	70
34/F	59	60	58	61	61	62	66	66	66	69	69	66	67	69	69	69	67	67	69	67	67	67	68	68	67	64	69	69	68	68	69
35/F	59	60	58	61	62	62	66	66	66	69	69	66	67	69	69	69	67	67	69	67	67	67	68	68	67	64	69	69	68	68	69
36/F	59	60	58	61	62	62	66	66	66	69	69	66	66	69	68	69	67	67	68	67	67	67	68	68	67	64	68	69	68	68	69
37/F	59	60	58	61	62	62	66	65	66	68	68	66	66	68	68	68	67	67	68	67	67	67	68	68	67	64	68	68	68	68	69
38/F	59	60	58	61	62	62	66	65	66	68	68	66	66	68	68	68	66	67	68	67	67	67	68	68	66	64	68	68	68	68	69
39/F	59	60	58	61	62	62	66	65	65	68	68	66	66	68	68	68	66	67	68	67	67	67	68	68	66	64	68	68	68	68	69
40/F	59	60	58	61	62	62	66	65	65	68	68	66	66	68	68	68	66	67	68	67	67	67	67	68	66	64	68	68	68	67	69
Predicted Max Road Traffic Noise Level, dB(A)	**59**	**60**	**58**	**61**	**62**	**62**	**69**	**69**	**67**	**72 #**	**72 #**	**67**	**68**	**72 #**	**72 #**	**72 #**	**68**	**68**	**72 #**	**71 #**	**70**	**69**	**72 #**	**72 #**	**68**	**65**	**73 #**	**73 #**	**69**	**72 #**	**70**

Legend	
Exceeded Hong Kong Planning Standard Guidelines' Standard of 70 dB(A)	
Fixed Glazing to be Provided in the Base-case Scenario	/

*** The assessment point is located at 1m in front of the most exposed part of an openable window for ventilation at a habitable room (NSRs) and 1.2m above the floor level of individual floors of the residential towers of the proposed development.**

No. of Exceedance	
Total no. of units	777
Total no. of units with exceedance	110
Predicted Max Road Traffic Noise Level, dB(A)	73
Compliance %	86%

Result Summary (Detail) - Base Case - Domestic Floors - T1 - 4/F to 40/F - PM

	T1																														
	11						12		13		14			15			16			17				18		19		20			21		
GBP Floor	T1-11A	T1-11B	T1-11C	T1-11D	T1-11E	T1-11F	T1-12A	T1-12B	T1-13A	T1-13B	T1-14A	T1-14B	T1-14C	T1-15A	T1-15B	T1-15C	T1-16A	T1-16B	T1-16C	T1-17A	T1-17B	T1-17C	T1-17D	T1-18A	T1-18B	T1-19A	T1-19B	T1-20A	T1-20B	T1-20C	T1-21A	T1-21B	T1-21C
4/F	68	65	66	67	68	62	63	65	59	60	60	59	52	55	56	55	55	55	48	47	56	56	56	56	57	57	58	59	59	57	56	58	54
5/F	/	71	/	71	71	/	68	69	63	62	61	61	55	58	59	58	58	58	49	49	59	59	59	59	60	59	59	60	60	59	57	60	59
6/F	/	72	/	72	71	/	/	70	66	64	63	62	55	59	60	59	59	60	50	50	61	61	61	61	61	60	60	61	61	59	57	60	59
7/F	/	72	/	72	71	/	/	70	67	66	65	63	55	60	61	60	61	61	52	51	62	62	62	62	62	61	61	61	61	60	57	61	59
8/F	/	72	/	72	71	/	/	70	68	67	66	65	55	61	62	61	62	62	53	53	63	63	63	63	63	61	62	62	62	60	57	61	60
9/F	/	71	/	71	71	/	/	70	68	68	67	66	55	61	63	63	63	63	55	54	64	64	63	64	63	62	62	62	62	60	58	61	60
10/F	/	71	/	71	71	/	/	70	68	68	67	66	56	61	64	63	64	64	57	57	65	65	64	64	64	63	63	63	63	60	58	62	60
11/F	/	71	/	71	71	/	/	70	68	68	68	67	56	61	65	64	65	65	58	58	65	66	65	65	65	63	63	63	63	60	58	62	60
12/F	/	71	/	71	71	/	/	70	68	68	68	67	56	61	66	65	65	66	60	60	66	66	66	66	66	63	64	63	63	60	58	62	60
13/F	/	70	/	71	70	/	/	70	68	68	68	67	56	61	66	65	66	66	61	61	66	67	66	66	66	64	64	64	63	60	58	62	60
14/F	/	70	/	70	70	/	69	70	68	68	68	67	56	61	66	66	66	66	62	62	67	67	67	67	67	64	64	64	63	60	58	62	60
15/F	/	70	/	70	70	/	69	69	68	68	68	67	57	62	66	66	66	67	62	62	67	67	67	67	67	64	64	64	63	60	58	62	60
16/F	/	70	/	70	70	/	68	69	68	68	68	67	57	62	66	66	66	67	62	62	67	67	67	67	67	64	64	64	63	60	58	62	60
17/F	/	70	/	70	70	/	68	69	67	68	68	67	57	62	66	66	67	67	63	63	67	67	67	67	67	64	64	64	63	60	58	62	61
18/F	/	69	/	70	70	66	68	69	67	68	68	67	57	62	66	66	67	67	63	63	67	68	67	67	67	64	64	64	63	60	58	62	61
19/F	/	69	/	70	69	66	68	69	67	68	68	67	58	62	66	66	67	67	63	63	67	68	67	68	67	64	64	64	63	60	58	62	61
20/F	/	69	/	69	69	66	68	69	67	68	68	67	58	62	66	66	67	67	63	63	67	68	67	68	68	64	65	64	63	60	58	62	61
21/F	/	69	/	69	69	66	68	69	67	67	67	67	58	62	66	66	67	67	63	63	67	68	67	68	68	64	65	64	63	59	58	62	60
22/F	/	69	70	69	69	65	68	69	67	67	67	67	59	62	66	66	67	67	63	63	67	68	67	68	68	64	65	64	63	59	57	62	60
23/F	/	69	69	69	69	65	68	68	67	67	67	67	59	62	66	66	67	67	63	63	67	68	67	68	68	64	65	64	63	59	57	62	60
24/F	/	69	69	69	69	65	67	68	67	67	67	67	59	62	66	66	67	67	63	63	67	67	67	68	68	64	65	64	63	59	57	62	60
25/F	/	68	69	69	69	65	67	68	67	67	67	67	60	62	66	66	67	67	63	63	67	67	67	68	68	65	65	64	63	59	57	62	60
26/F	/	68	69	69	69	65	67	68	67	67	67	67	60	62	66	66	67	67	63	63	67	67	67	68	67	65	65	64	63	59	57	62	60
27/F	/	68	69	69	68	65	67	68	67	67	67	67	60	62	66	66	67	67	63	62	67	67	67	68	67	65	65	64	63	59	57	62	60
28/F	/	68	69	68	68	65	67	68	67	67	67	67	60	62	66	66	67	67	62	62	67	67	67	68	67	65	65	64	63	59	57	62	60
29/F	/	68	69	68	68	65	67	68	67	67	67	67	60	62	66	66	67	67	62	62	67	67	67	68	67	65	65	64	63	59	57	62	60
30/F	/	68	68	68	68	65	67	68	66	67	67	67	60	62	66	66	66	67	62	62	67	67	67	68	67	65	65	64	63	59	57	62	60
31/F	/	68	68	68	68	65	67	68	66	67	67	66	60	63	66	66	66	67	62	62	67	67	67	68	67	65	65	64	63	59	57	62	60
32/F	70	68	68	68	68	65	67	68	66	67	67	66	60	62	66	66	66	67	62	62	67	67	67	68	67	65	65	64	63	59	57	62	60
33/F	69	67	68	68	68	65	67	68	66	67	67	66	60	63	66	66	66	67	62	62	67	67	67	68	67	65	65	64	63	58	57	62	60
34/F	69	67	68	68	68	65	66	68	66	67	67	66	61	63	66	66	66	67	62	62	67	67	67	68	67	65	65	64	63	58	57	62	61
35/F	69	67	68	68	68	65	66	67	66	67	67	66	61	63	66	66	66	66	62	62	67	67	67	67	67	65	65	64	63	58	57	62	61
36/F	69	67	68	68	68	64	66	67	66	66	67	66	61	63	66	66	66	66	62	62	67	67	67	67	67	65	65	64	63	58	57	62	61
37/F	69	67	68	68	68	64	66	67	66	66	66	66	61	63	66	66	66	66	62	62	67	67	67	67	67	65	65	64	63	58	57	62	60
38/F	69	67	68	68	68	64	66	67	66	66	66	66	61	63	66	66	66	66	62	61	67	67	67	67	67	65	65	64	63	58	57	62	61
39/F	69	67	68	68	67	64	66	67	66	66	66	66	61	62	66	65	66	66	61	61	67	67	67	67	67	65	65	64	63	58	57	62	61
40/F	69	67	67	67	67	64	66	67	66	66	66	66	61	62	66	65	66	66	61	61	67	67	67	67	67	65	65	64	63	58	57	62	61
Predicted Max Road Traffic Noise Level, dB(A)	**70**	**72 #**	**70**	**72 #**	**71 #**	**66**	**69**	**70**	**68**	**68**	**68**	**67**	**61**	**63**	**66**	**66**	**67**	**67**	**63**	**63**	**67**	**68**	**67**	**68**	**68**	**65**	**65**	**64**	**63**	**60**	**58**	**62**	**61**

Legend	
Exceeded Hong Kong Planning Standard Guidelines' Standard of 70 dB(A)	
Fixed Glazing to be Provided in the Base-case Scenario	/

*** The assessment point is located at 1m in front of the most exposed part of an openable window for ventilation at a habitable room (NSRs) and 1.2m above the floor level of individual floors of the residential towers of the proposed development.**

No. of Exceedance	
Total no. of units	777
Total no. of units with exceedance	110
Predicted Max Road Traffic Noise Level, dB(A)	73
Compliance %	86%

Appendix 2.4

Configurations and Noise Attenuation Performance of the Proposed Acoustic Window

(Retrieved from HD's Technical Note on Summary of Noise Attenuation Performance for MFD with Acoustic Window)

Living Room	-1.0	-0.2	Nil	-1.2
Bedroom 1	Nil	-0.3	Nil	-0.3
Type C-8 (1B)				
Living Room	Nil	-0.3	Nil	-0.3
Bedroom 1	Nil	-1.0	Nil	-1.0
Type D-6 (2B) **& Type D-7** (2B)				
Bedroom 2	Nil	0.7	Nil	-0.8*

Remark: (*) floor size correction of -1.5 dB(A) is applied.

According to the ADPEAW report, the noise attenuation effect of the acoustic window located in the living room and the bedroom of **Type C** (1B) & **Type D** (2B) flat is assessed together as a combined measure. Thus, combined noise attenuation of acoustic windows in the living room and bedroom of **Type C-6** (1B) **& Type D-6** (2B), **Type C-7** (1B) **& Type D-7** (2B) and **Type C-8** (1B) are taken the lowest value of overall noise attenuation correction as stated in Table 7 above for the conservative purpose.

Conclusion

The noise attenuation of the MFD with acoustic window for the public housing development, with suitable correction applied are summarized in **Table 7**.

Table 7 – Summary of Noise Attenuation Performance for MFD with Acoustic Window

	Acoustic Window Configurations				**Noise Attenuation dB(A)**	
Flat Type	**Inner Window Opening (mm)**	**Outer Window Opening (mm)**	**Window Overlapping Length (mm)**	**Gap Width between Window Panel (mm)**	**With Sound Absorptive Lining**	**Without Sound Absorptive Lining**
Type A-3 (1/2P)	1383mm (H) x 840mm (W)	1383mm (H) x 870mm (W)	340mm	175mm	7.0	5.8
Type B-5 (2/3P)	1383mm (H) x 940mm	1383mm (H) x 1010mm (W)	200mm	175mm	6.6	5.5

Type A-3: NAP T1-7A & T1-8B
Type B-5: NAP T1-4B, T1-6B, T1-9A & T1-12B

Type D-6 (Living Room): T1-3D, T1-3E, T1-10B, T1-10C, T1-11D & T1-11E

	(W)					
Type C-6 (1B) **& Type D-6** (2B)						
Living Room	1383mm (H) x 980mm (W)	1383mm (H) x 1040mm (W)	100mm	175mm	7.0	5.5
Bedroom 1	1383mm (H) x 675mm (W)	1383mm (H) x 600mm (W)	525mm	175mm		
Type C-7 (1B) **& Type D-7** (2B)						
Living Room	1383mm (H) x 1040mm (W)	1383mm (H) x 1060mm (W)	140mm	175mm	6.9	5.4
Bedroom 1	1383mm (H) x 575mm (W)	1383mm (H) x 550mm (W)	525mm	175mm		
Type C-8 (1B)						
Living Room	1383mm (H) x 1060mm (W)	1383mm (H) x 1050mm (W)	330mm	175mm	7.1	5.6
Bedroom 1	1383mm (H) x 675mm (W)	1383mm (H) x 600mm (W)	525mm	175mm		
Type D-6 (2B) **& Type D-7** (2B)						
Bedroom 2	1383mm (H) x 550mm (W)	1383mm (H) x 550mm (W)	500mm	175mm	3.9	2.7

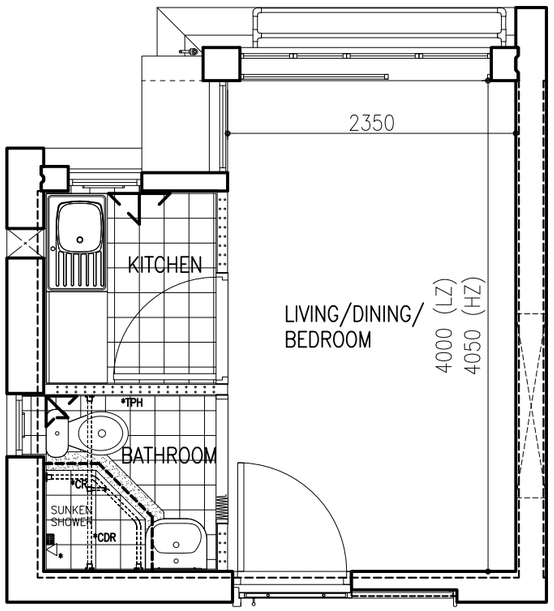
Type C-8 (Living Room): NAP T1-5A & T1-5B
Type D-6 (Bedroom): T1-10E & T1-11B

The above values are estimated noise attenuation for interim use. HD will arrange to conduct further study such as on-site measurements, etc. for the acoustic windows in the MFD to refine the noise attenuation value as soon as possible. For the acoustic window configuration deviated from those considered in this technical note/ more refined estimation of the noise attenuation value is required during the interim period, further discussion with Environmental Protection Department (EPD) is required on project basis.

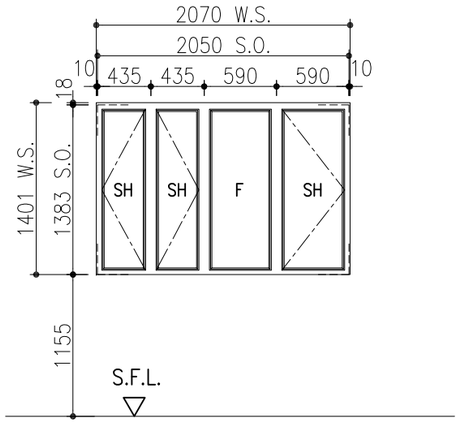
Annex A

MFD with Acoustic Window

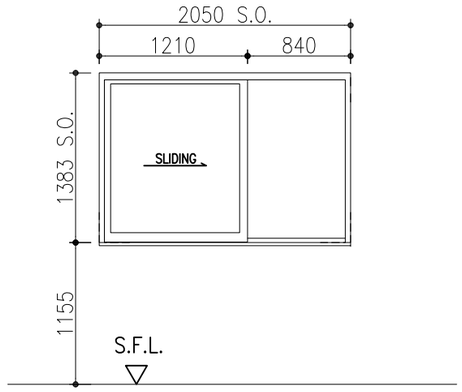
PRELIMINARY



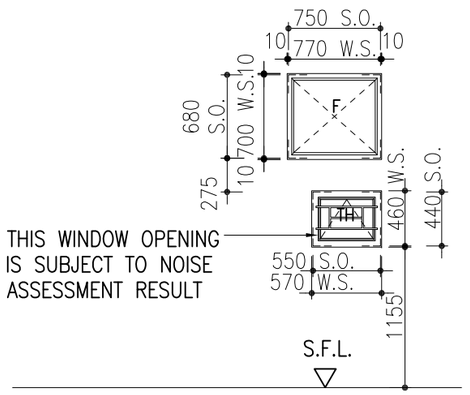
TYPE A–3 FLAT (WITH ACOUSTIC WINDOW)
SCALE 1:50(A3)



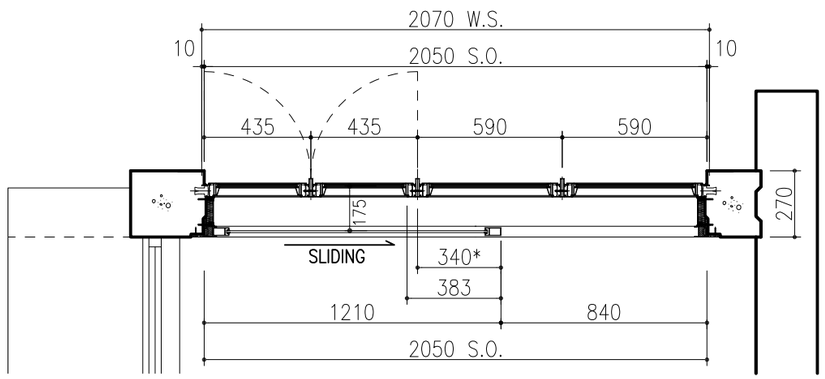
ELEVATION (OUTER LAYER)
SCALE 1:50(A3)



ELEVATION (INNER LAYER)
SCALE 1:50(A3)



SIDE ELEVATION–LIVING ROOM
SCALE 1:50(A3)



PART PLAN FOR ACOUSTIC WINDOW
SCALE 1:25(A3)

IFA(LZ): 9.40m^2

IFA(HZ): 9.62m^2

NOTE: ELEVATIONS VIEWED FROM INSIDE

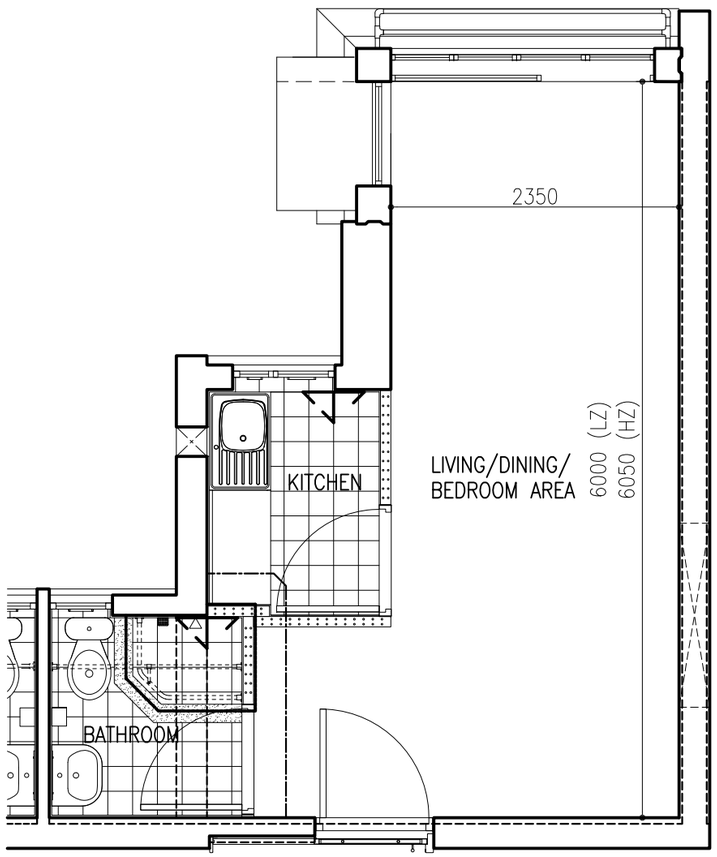
F – FIXED WINDOW
TH – TOP HUNG WINDOW
SH – SIDE HUNG WINDOW
S.O. – STRUCTURAL OPENING
W.S. – WINDOW DIMENSION

MODULAR FLAT WITH ACOUSTIC WINDOW

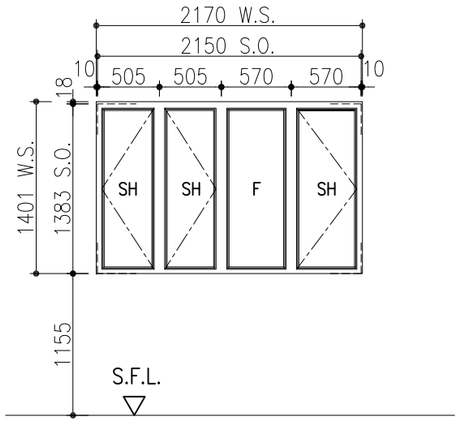
TYPE A - 3 FLAT

2018-04-23 (FOR EPD)

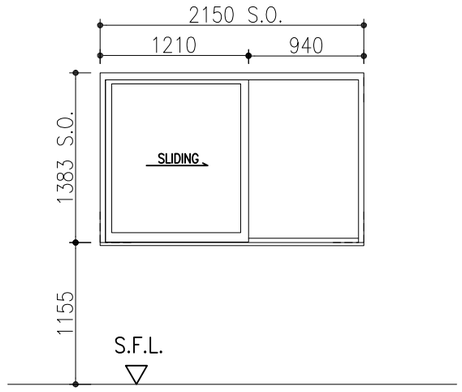
PRELIMINARY



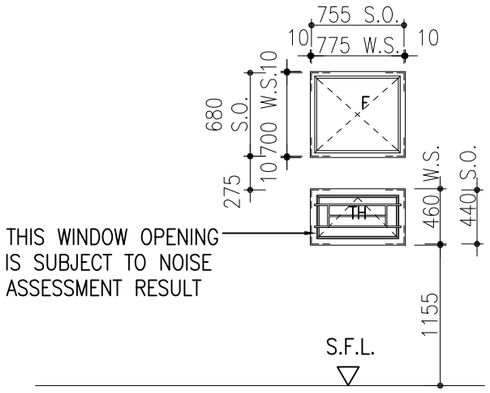
TYPE B–5 FLAT (WITH ACOUSTIC WINDOW) SCALE 1:50(A3)



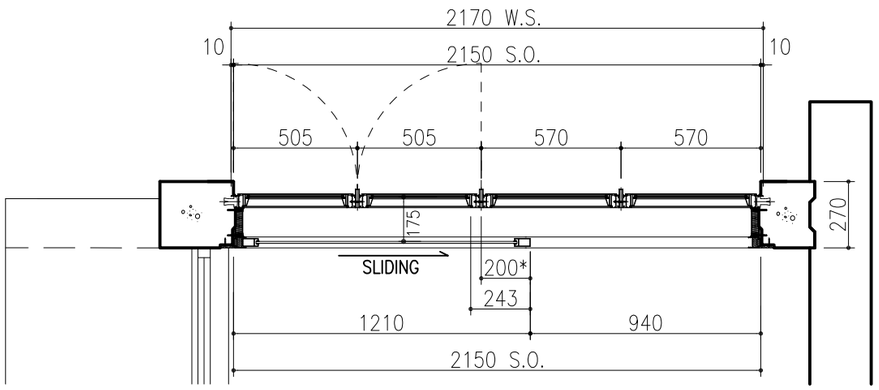
ELEVATION (OUTER LAYER)
SCALE 1:50(A3)



ELEVATION (INNER LAYER)
SCALE 1:50(A3)



SIDE ELEVATION–LIVING ROOM
SCALE 1:50(A3)



PART PLAN FOR ACOUSTIC WINDOW
SCALE 1:25(A3)

IFA(LZ): 15.84m^2

IFA(HZ): 16.17m^2

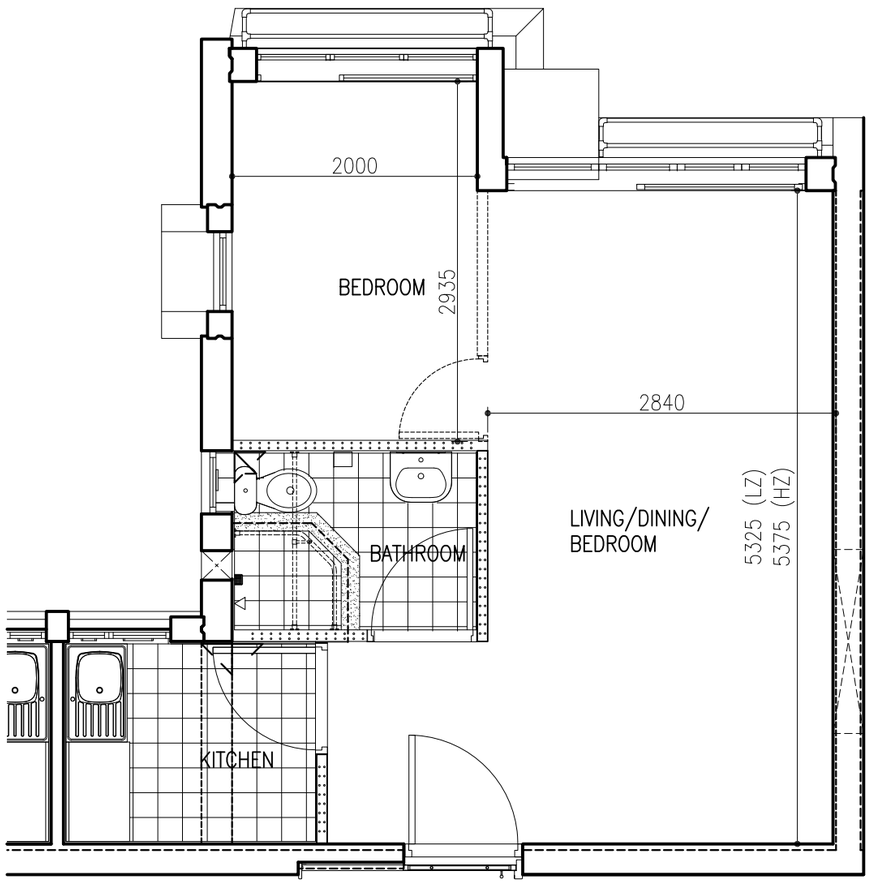
NOTE: ELEVATIONS VIEWED FROM INSIDE

F – FIXED WINDOW
TH – TOP HUNG WINDOW
SH – SIDE HUNG WINDOW
S.O. – STRUCTURAL OPENING
W.S. – WINDOW DIMENSION

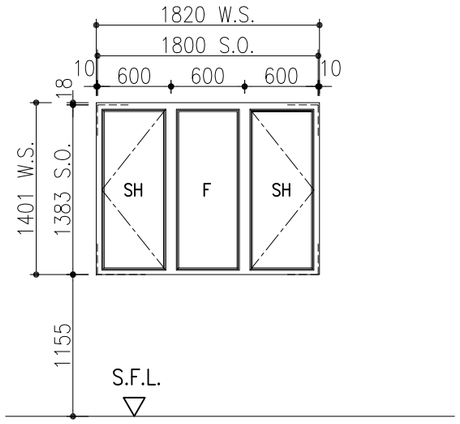
MODULAR FLAT WITH ACOUSTIC WINDOW TYPE B - 5 FLAT

2018-04-23 (FOR EPD)

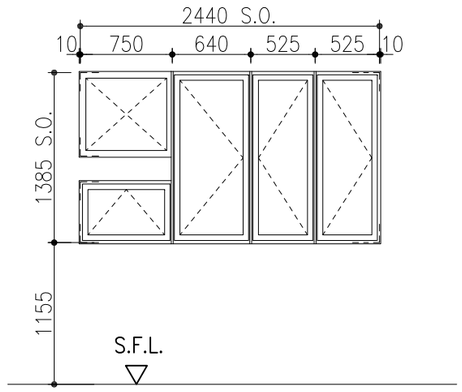
PRELIMINARY



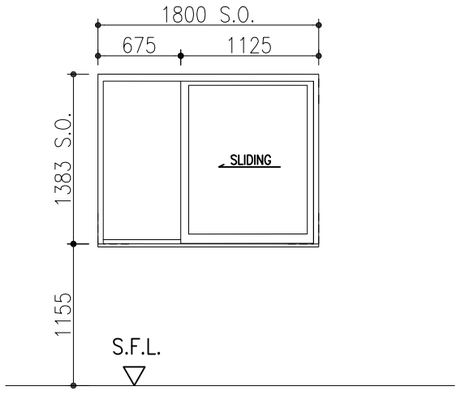
TYPE C–8 FLAT (WITH ACOUSTIC WINDOW) SCALE 1:50(A3)



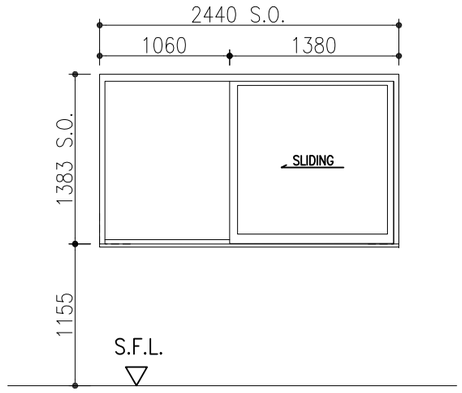
ELEVATION–BEDROOM (OUTER LAYER)
SCALE 1:50(A3)



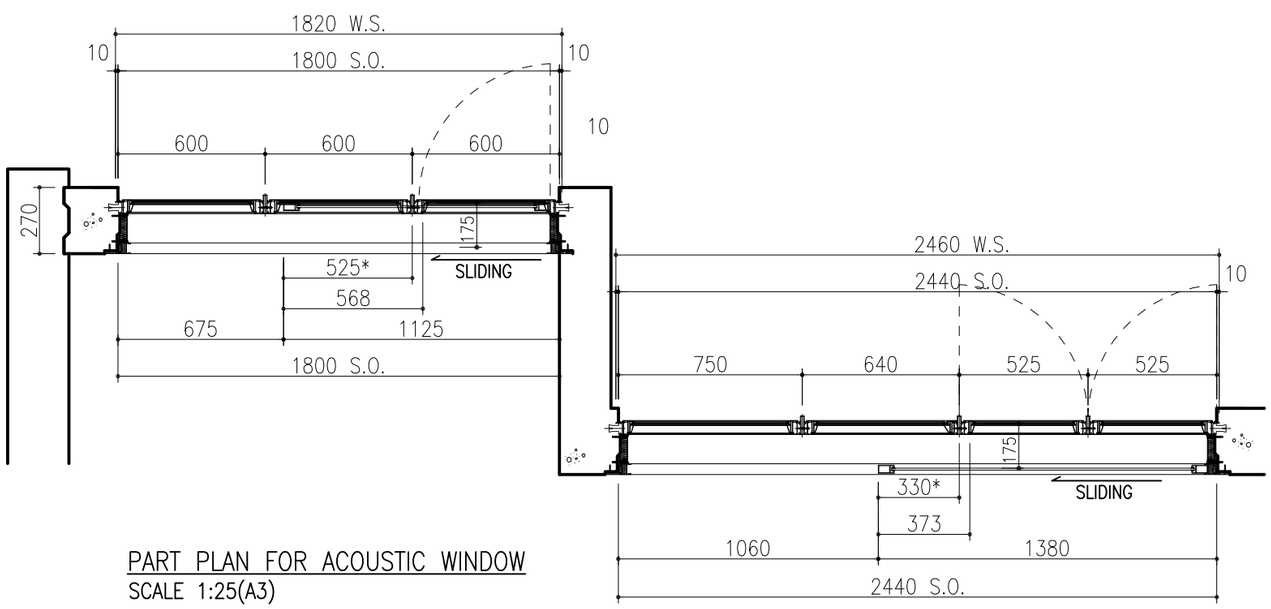
ELEVATION–LIVING ROOM (OUTER LAYER)
SCALE 1:50(A3)



ELEVATION–BEDROOM (INNER LAYER)
SCALE 1:50(A3)



ELEVATION–LIVING ROOM (INNER LAYER)
SCALE 1:50(A3)



PART PLAN FOR ACOUSTIC WINDOW
SCALE 1:25(A3)

IFA(LZ)
–LIVING: 17.14m^2
–BR1: 5.89m^2

IFA(HZ)
–LIVING: 17.48m^2
–BR1: 5.89m^2

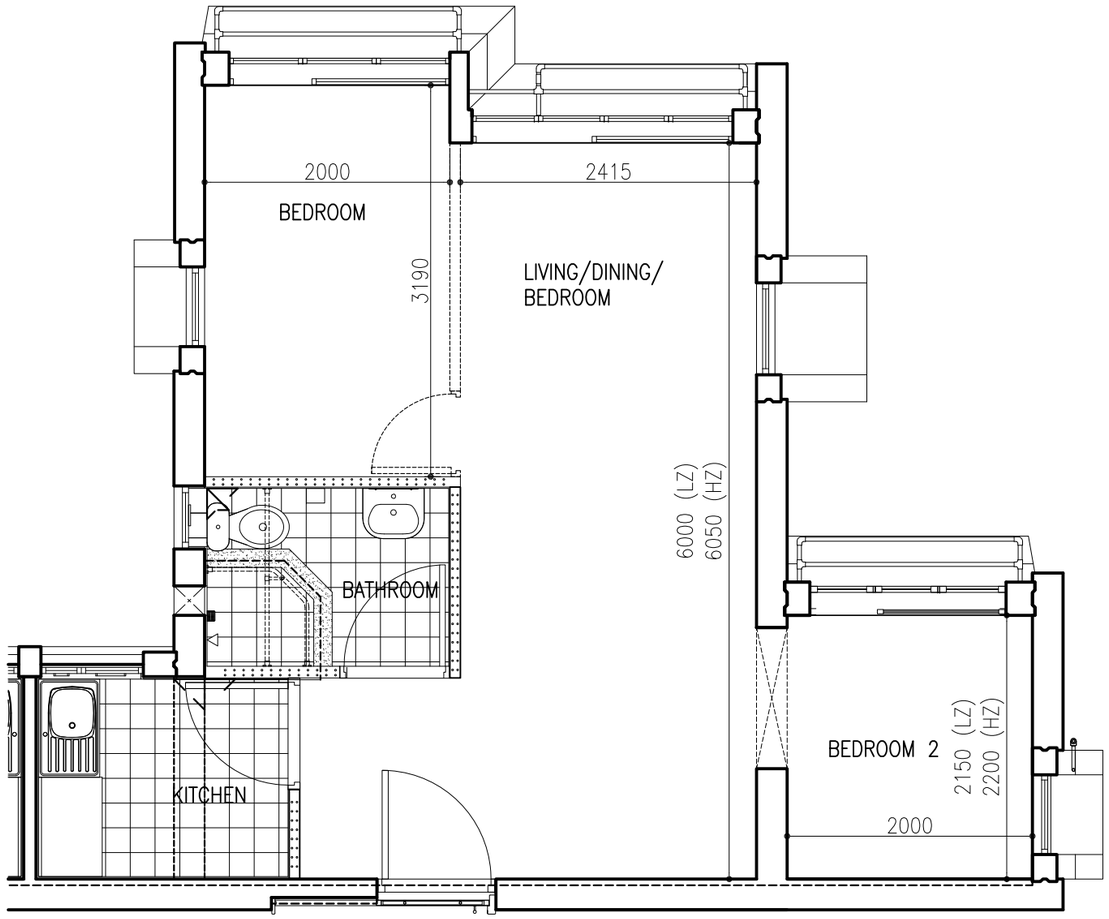
NOTE: ELEVATIONS VIEWED FROM INSIDE

F – FIXED WINDOW
SH – SIDE HUNG WINDOW
S.O. – STRUCTURAL OPENING
W.S. – WINDOW DIMENSION

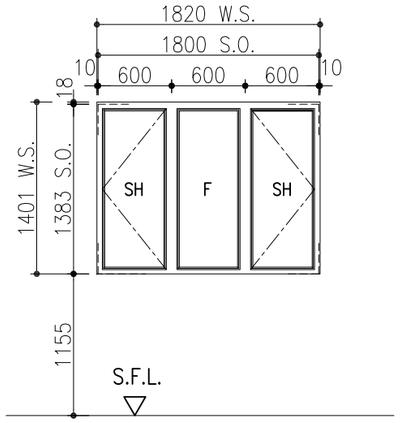
MODULAR FLAT WITH ACOUSTIC WINDOW
TYPE C - 8 FLAT

2018-04-23 (FOR EPD)

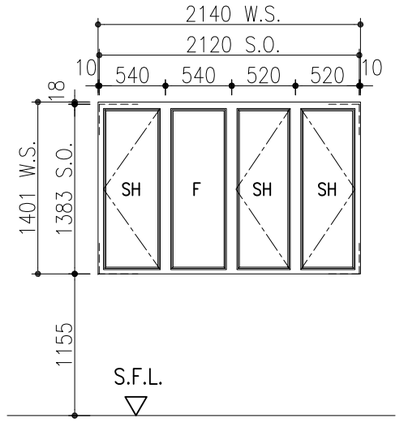
PRELIMINARY



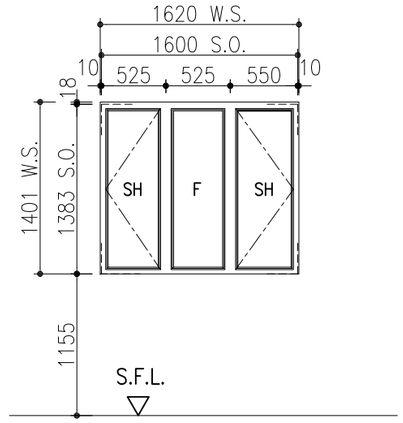
TYPE D–6 FLAT (WITH ACOUSTIC WINDOW) SCALE 1:50(A3)



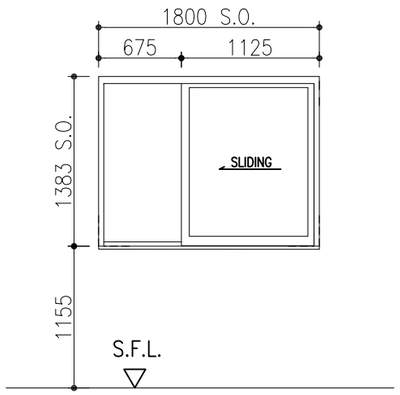
ELEVATION–BEDROOM (OUTER LAYER) SCALE 1:50(A3)



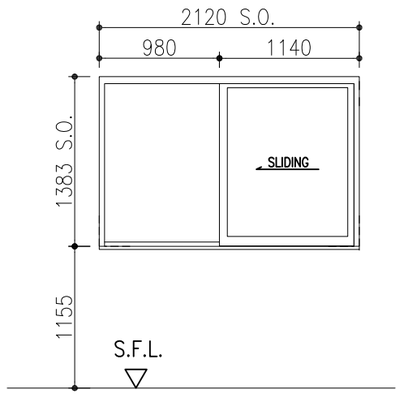
ELEVATION–LIVING ROOM (OUTER LAYER) SCALE 1:50(A3)



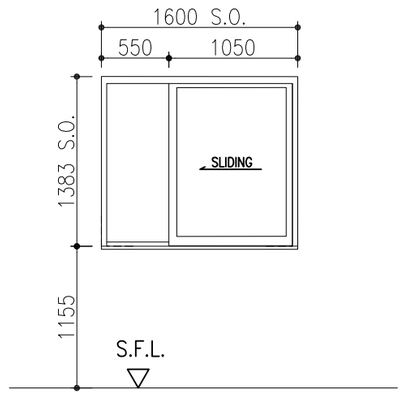
ELEVATION–BEDROOM 2 (OUTER LAYER) SCALE 1:50(A3)



ELEVATION–BEDROOM (INNER LAYER) SCALE 1:50(A3)

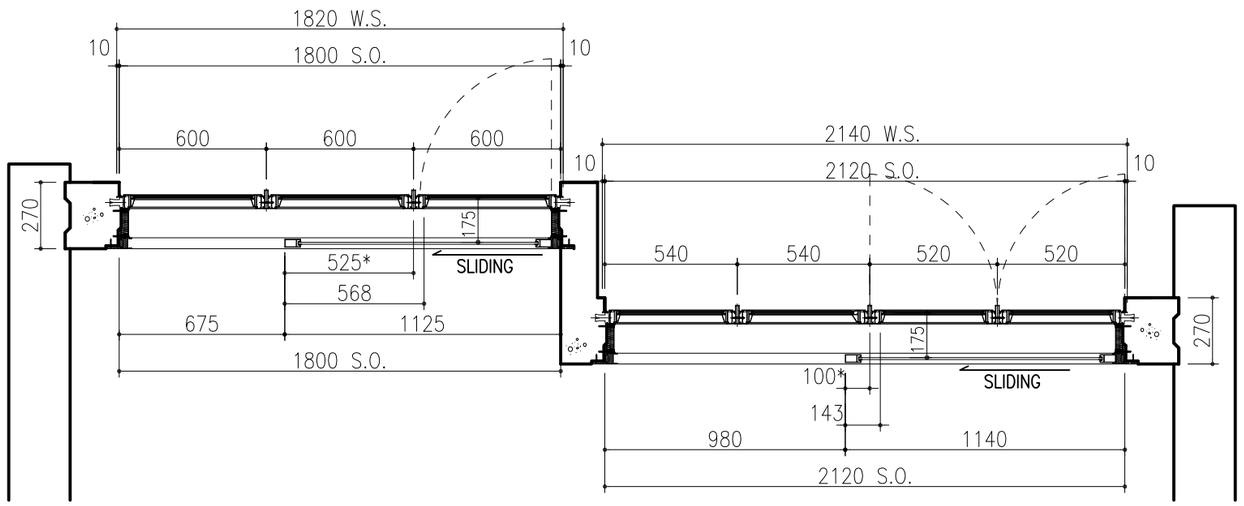


ELEVATION–LIVING ROOM (INNER LAYER) SCALE 1:50(A3)

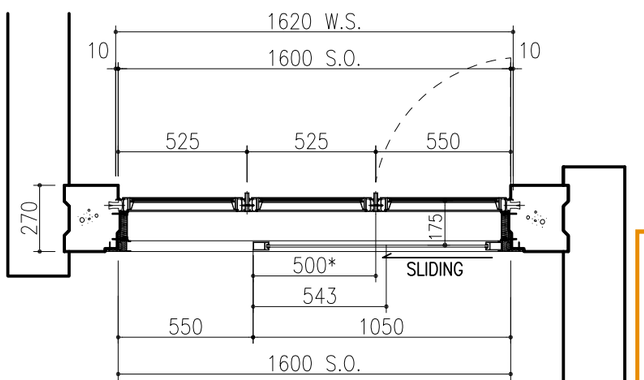


ELEVATION–BEDROOM 2 (INNER LAYER) SCALE 1:50(A3)

IFA(LZ)		IFA(HZ)	
–LIVING:	16.64m²	–LIVING:	16.83m²
–BR1:	6.38m²	–BR1:	6.38m²
–BR2:	4.49m²	–BR2:	4.59m²



PART PLAN FOR ACOUSTIC WINDOW
SCALE 1:25(A3)



PART PLAN FOR ACOUSTIC WINDOW – BEDROOM 2
SCALE 1:25(A3)

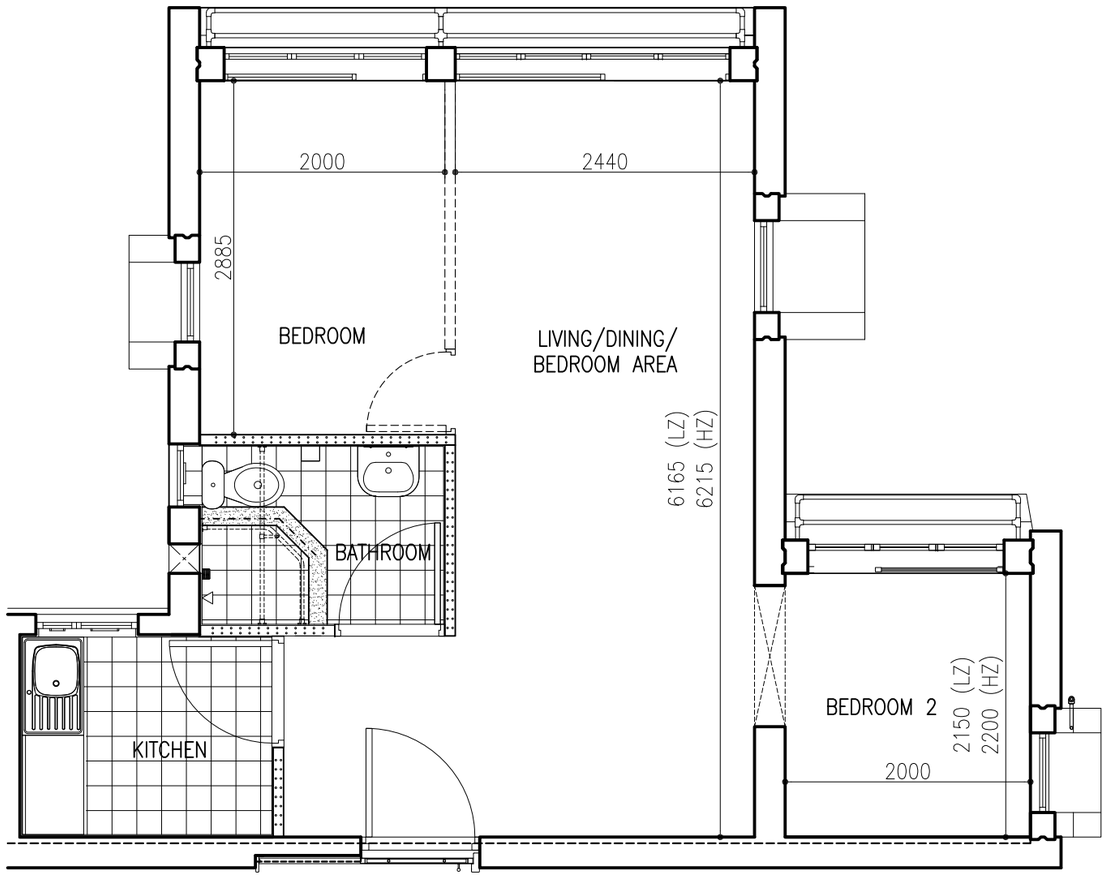
NOTE: ELEVATIONS VIEWED FROM INSIDE

F – FIXED WINDOW
SH – SIDE HUNG WINDOW
S.O. – STRUCTURAL OPENING
W.S. – WINDOW DIMENSION

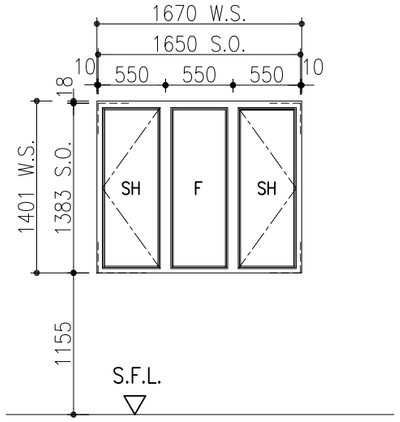
MODULAR FLAT WITH ACOUSTIC WINDOW TYPE D - 6 FLAT

2018-04-23 (FOR EPD)

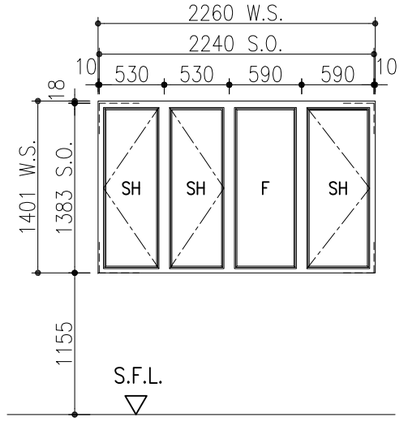
PRELIMINARY



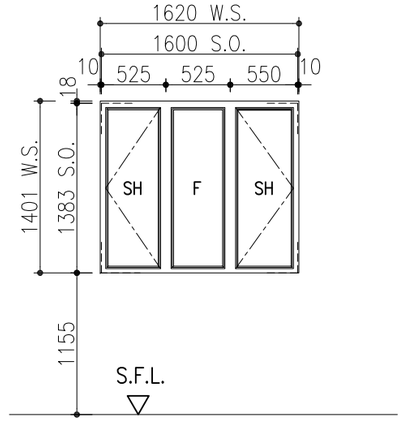
TYPE D–7 FLAT (WITH ACOUSTIC WINDOW) SCALE 1:50(A3)



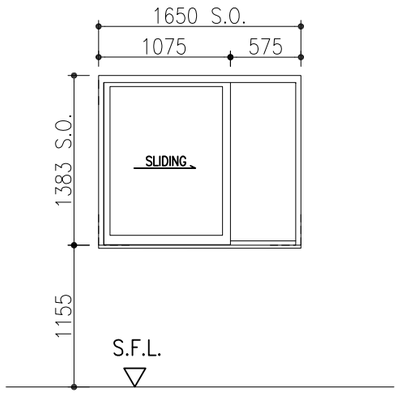
ELEVATION–BEDROOM
(OUTER LAYER) SCALE 1:50(A3)



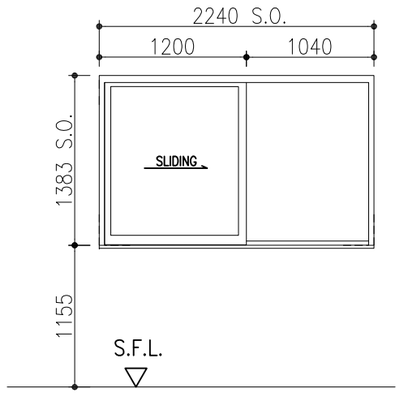
ELEVATION–LIVING ROOM
(OUTER LAYER) SCALE 1:50(A3)



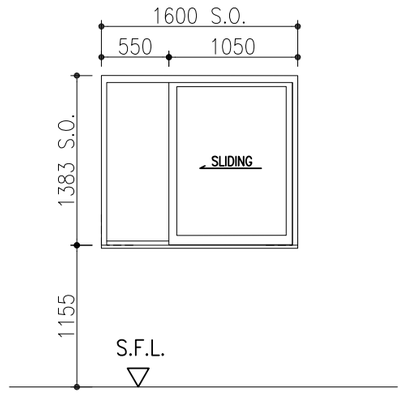
ELEVATION–BEDROOM 2
(OUTER LAYER) SCALE 1:50(A3)



ELEVATION–BEDROOM
(INNER LAYER) SCALE 1:50(A3)



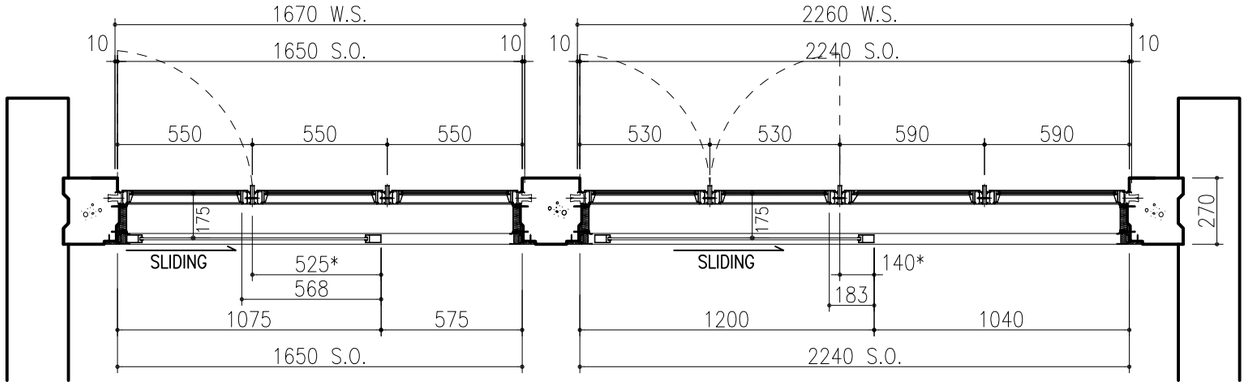
ELEVATION–LIVING ROOM
(INNER LAYER) SCALE 1:50(A3)



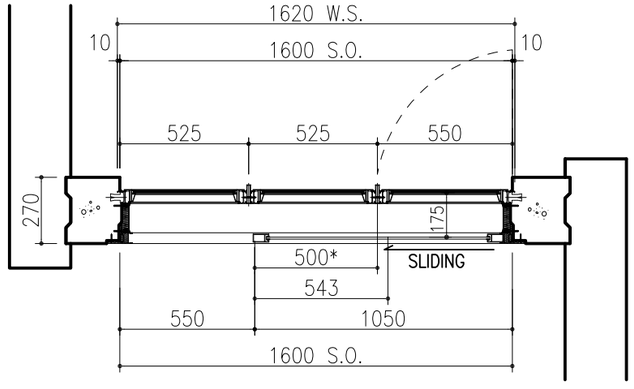
ELEVATION–BEDROOM 2
(INNER LAYER) SCALE 1:50(A3)

IFA(LZ)
–LIVING: 17.19m^2
–BR1: 5.77m^2
–BR2: 4.49m^2

IFA(HZ)
–LIVING: 17.38m^2
–BR1: 5.77m^2
–BR2: 4.59m^2



PART PLAN FOR ACOUSTIC WINDOW
SCALE 1:25(A3)



PART PLAN FOR ACOUSTIC WINDOW – BEDROOM 2
SCALE 1:25(A3)

NOTE: ELEVATIONS VIEWED FROM INSIDE

F – FIXED WINDOW
SH – SIDE HUNG WINDOW
S.O. – STRUCTURAL OPENING
W.S. – WINDOW DIMENSION

MODULAR FLAT WITH ACOUSTIC WINDOW TYPE D - 7 FLAT

2018-04-23 (FOR EPD)

Appendix 2.5

Predicted Road Traffic Noise Levels for the Proposed Development (Mitigated Scenario)

Result Summary (Detail) - Mitigated Case - Domestic Floors - T1 - 4/F to 40/F - AM

	1		2				3						4		5			6		7		8		9		10					
GBP Floor	T1-01A	T1-01B	T1-02A	T1-02B	T1-02C	T1-02D	T1-03A	T1-03B	T1-03C	T1-03D	T1-03E	T1-03F	T1-04A	T1-04B	T1-05A	T1-05B	T1-05C	T1-06A	T1-06B	T1-07A	T1-07B	T1-08A	T1-08B	T1-09A	T1-09B	T1-10A	T1-10B	T1-10C	T1-10D	T1-10E	T1-10F
4/F	50	50	48	51	57	61	69	65	65	68	68	62	63	68	66	69	63	65	70	64	62	62	65	70	65	F.G.	68 AW(BT)	66 AW(BT)	F.G.	64	69
5/F	51	51	50	52	58	62	69	69	F.G.	66 AW(BT)	66 AW(BT)	F.G.	F.G.	65 AW(BT)	70	66 AW(BT)	F.G.	F.G.	67 AW(BT)	70	68	F.G.	65 AW(BT)	67 AW(BT)	F.G.	F.G.	69 AW(BT)	69 AW(BT)	F.G.	70	F.G.
6/F	52	52	51	53	58	63	69	69	F.G.	67 AW(BT)	67 AW(BT)	F.G.	F.G.	67 AW(BT)	66 AW(BT)	67 AW(BT)	F.G.	F.G.	67 AW(BT)	65 AW(BT)	F.G.	F.G.	66 AW(BT)	68 AW(BT)	F.G.	F.G.	69 AW(BT)	69 AW(BT)	F.G.	70 AW(BT)	F.G.
7/F	53	53	51	54	58	63	70	70	F.G.	68 AW(BT)	68 AW(BT)	F.G.	F.G.	67 AW(BT)	67 AW(BT)	67 AW(BT)	F.G.	F.G.	67 AW(BT)	66 AW(BT)	F.G.	F.G.	66 AW(BT)	68 AW(BT)	F.G.	F.G.	68 AW(BT)	69 AW(BT)	F.G.	70 AW(BT)	F.G.
8/F	54	54	52	55	58	63	70	70	F.G.	68 AW(BT)	68 AW(BT)	F.G.	F.G.	68 AW(BT)	67 AW(BT)	67 AW(BT)	F.G.	F.G.	68 AW(BT)	66 AW(BT)	F.G.	F.G.	67 AW(BT)	67 AW(BT)	F.G.	F.G.	68 AW(BT)	68 AW(BT)	F.G.	70 AW(BT)	F.G.
9/F	55	55	52	55	59	63	70	70	F.G.	67 AW(BT)	68 AW(BT)	F.G.	F.G.	67 AW(BT)	67 AW(BT)	67 AW(BT)	F.G.	F.G.	67 AW(BT)	65 AW(BT)	F.G.	F.G.	66 AW(BT)	67 AW(BT)	F.G.	F.G.	68 AW(BT)	68 AW(BT)	F.G.	70 AW(BT)	F.G.
10/F	56	56	53	56	59	63	70	70	F.G.	67 AW(BT)	67 AW(BT)	F.G.	F.G.	67 AW(BT)	67 AW(BT)	67 AW(BT)	F.G.	F.G.	67 AW(BT)	65 AW(BT)	F.G.	F.G.	66 AW(BT)	67 AW(BT)	F.G.	F.G.	68 AW(BT)	68 AW(BT)	F.G.	70 AW(BT)	F.G.
11/F	56	56	53	57	59	63	70	70	F.G.	67 AW(BT)	67 AW(BT)	F.G.	F.G.	67 AW(BT)	67 AW(BT)	67 AW(BT)	F.G.	F.G.	67 AW(BT)	65 AW(BT)	F.G.	F.G.	66 AW(BT)	67 AW(BT)	F.G.	F.G.	68 AW(BT)	68 AW(BT)	F.G.	70 AW(BT)	F.G.
12/F	57	57	54	57	60	63	70	69	F.G.	67 AW(BT)	67 AW(BT)	F.G.	F.G.	67 AW(BT)	67 AW(BT)	67 AW(BT)	F.G.	F.G.	67 AW(BT)	65 AW(BT)	F.G.	F.G.	66 AW(BT)	67 AW(BT)	F.G.	F.G.	67 AW(BT)	67 AW(BT)	F.G.	70 AW(BT)	F.G.
13/F	57	57	54	58	60	63	70	69	F.G.	67 AW(BT)	67 AW(BT)	F.G.	F.G.	67 AW(BT)	67 AW(BT)	67 AW(BT)	F.G.	F.G.	67 AW(BT)	65 AW(BT)	F.G.	F.G.	66 AW(BT)	67 AW(BT)	F.G.	F.G.	67 AW(BT)	67 AW(BT)	F.G.	69 AW(BT)	F.G.
14/F	57	58	55	58	60	63	69	69	F.G.	67 AW(BT)	67 AW(BT)	F.G.	F.G.	67 AW(BT)	66 AW(BT)	67 AW(BT)	F.G.	F.G.	67 AW(BT)	65 AW(BT)	F.G.	F.G.	66 AW(BT)	66 AW(BT)	F.G.	F.G.	67 AW(BT)	67 AW(BT)	F.G.	69 AW(BT)	F.G.
15/F	58	58	55	59	60	63	69	69	F.G.	66 AW(BT)	66 AW(BT)	F.G.	F.G.	66 AW(BT)	66 AW(BT)	66 AW(BT)	F.G.	F.G.	66 AW(BT)	70	F.G.	F.G.	66 AW(BT)	66 AW(BT)	F.G.	F.G.	67 AW(BT)	67 AW(BT)	F.G.	69 AW(BT)	F.G.
16/F	58	58	55	59	61	63	69	69	F.G.	66 AW(BT)	66 AW(BT)	F.G.	F.G.	66 AW(BT)	66 AW(BT)	66 AW(BT)	F.G.	F.G.	66 AW(BT)	70	70	F.G.	65 AW(BT)	66 AW(BT)	F.G.	F.G.	67 AW(BT)	67 AW(BT)	F.G.	69 AW(BT)	F.G.
17/F	58	59	56	59	61	63	69	69	F.G.	66 AW(BT)	66 AW(BT)	F.G.	F.G.	66 AW(BT)	66 AW(BT)	66 AW(BT)	F.G.	F.G.	66 AW(BT)	70	70	F.G.	65 AW(BT)	66 AW(BT)	F.G.	F.G.	66 AW(BT)	66 AW(BT)	F.G.	69 AW(BT)	F.G.
18/F	58	59	56	59	61	63	69	68	F.G.	66 AW(BT)	66 AW(BT)	F.G.	F.G.	66 AW(BT)	66 AW(BT)	66 AW(BT)	F.G.	F.G.	66 AW(BT)	70	70	F.G.	65 AW(BT)	66 AW(BT)	F.G.	F.G.	66 AW(BT)	66 AW(BT)	F.G.	68 AW(BT)	F.G.
19/F	58	59	56	59	61	63	69	68	F.G.	66 AW(BT)	66 AW(BT)	F.G.	F.G.	66 AW(BT)	66 AW(BT)	66 AW(BT)	F.G.	F.G.	66 AW(BT)	70	70	F.G.	65 AW(BT)	66 AW(BT)	F.G.	F.G.	66 AW(BT)	66 AW(BT)	F.G.	68 AW(BT)	F.G.
20/F	58	59	57	60	61	63	69	68	F.G.	66 AW(BT)	66 AW(BT)	F.G.	F.G.	66 AW(BT)	66 AW(BT)	66 AW(BT)	F.G.	F.G.	66 AW(BT)	70	70	F.G.	65 AW(BT)	65 AW(BT)	F.G.	F.G.	66 AW(BT)	66 AW(BT)	F.G.	68 AW(BT)	F.G.
21/F	59	59	57	60	61	63	69	68	F.G.	66 AW(BT)	66 AW(BT)	F.G.	F.G.	66 AW(BT)	65 AW(BT)	66 AW(BT)	F.G.	F.G.	66 AW(BT)	70	70	70	70	65 AW(BT)	F.G.	F.G.	66 AW(BT)	66 AW(BT)	F.G.	68 AW(BT)	F.G.
22/F	59	59	57	60	61	63	68	68	F.G.	65 AW(BT)	65 AW(BT)	F.G.	F.G.	65 AW(BT)	65 AW(BT)	65 AW(BT)	F.G.	F.G.	65 AW(BT)	69	70	69	70	65 AW(BT)	F.G.	F.G.	66 AW(BT)	66 AW(BT)	F.G.	70	F.G.
23/F	59	60	57	60	61	63	68	68	F.G.	65 AW(BT)	65 AW(BT)	F.G.	F.G.	65 AW(BT)	65 AW(BT)	65 AW(BT)	F.G.	F.G.	65 AW(BT)	69	69	69	70	70	69	F.G.	65 AW(BT)	65 AW(BT)	F.G.	70	F.G.
24/F	59	60	57	60	61	63	68	68	F.G.	65 AW(BT)	65 AW(BT)	F.G.	F.G.	65 AW(BT)	65 AW(BT)	65 AW(BT)	F.G.	F.G.	65 AW(BT)	69	69	69	70	70	69	F.G.	65 AW(BT)	65 AW(BT)	F.G.	70	F.G.
25/F	59	60	58	60	61	63	68	67	F.G.	65 AW(BT)	65 AW(BT)	F.G.	F.G.	65 AW(BT)	65 AW(BT)	65 AW(BT)	F.G.	F.G.	65 AW(BT)	69	69	69	70	70	69	F.G.	65 AW(BT)	65 AW(BT)	F.G.	70	F.G.
26/F	59	60	58	60	62	63	68	67	67	70	70	68	68	70	70	70	69	69	70	69	69	69	70	70	69	66	70	65 AW(BT)	F.G.	70	F.G.
27/F	59	60	58	61	62	63	68	67	67	70	70	68	68	70	70	70	69	69	70	69	69	69	70	70	68	66	70	70	70	70	F.G.
28/F	59	60	58	61	62	63	68	67	67	70	70	68	68	70	70	70	68	69	70	69	69	69	69	70	68	66	70	70	70	70	F.G.
29/F	59	60	58	61	62	63	68	67	67	70	70	67	68	70	70	70	68	69	70	69	69	69	69	70	68	65	70	70	70	69	F.G.
30/F	59	60	58	61	62	63	68	67	67	70	70	67	68	70	70	70	68	69	70	68	69	69	69	70	68	65	70	70	70	69	F.G.
31/F	59	60	58	61	62	63	67	67	67	70	70	67	68	70	70	70	68	69	70	68	68	68	69	69	68	65	70	70	70	69	F.G.
32/F	59	60	58	61	62	63	67	67	67	70	70	67	68	70	70	70	68	68	70	68	68	68	69	69	68	65	70	70	70	69	F.G.
33/F	59	60	58	61	62	63	67	67	67	70	70	67	68	70	70	70	68	68	70	68	68	68	69	69	68	65	70	70	69	69	70
34/F	60	60	59	61	62	63	67	66	67	70	70	67	67	70	69	70	68	68	70	68	68	68	69	69	68	65	70	70	69	69	70
35/F	60	60	59	61	62	63	67	66	67	69	70	67	67	69	69	69	68	68	69	68	68	68	69	69	68	65	69	69	69	69	70
36/F	60	60	59	62	63	63	67	66	66	69	69	67	67	69	69	69	68	68	69	68	68	68	69	69	67	65	69	69	69	69	70
37/F	60	61	59	62	63	63	67	66	66	69	69	67	67	69	69	69	67	68	69	68	68	68	69	69	67	65	69	69	69	69	70
38/F	60	61	59	62	63	63	67	66	66	69	69	67	67	69	69	69	67	68	69	68	68	68	68	69	67	64	69	69	69	68	70
39/F	60	61	59	62	63	63	67	66	66	69	69	66	67	69	69	69	67	68	69	68	68	68	68	69	67	64	69	69	69	68	70
40/F	60	61	59	62	63	63	67	66	66	69	69	66	67	69	69	69	67	68	69	67	68	67	68	68	67	64	69	69	69	68	70
Predicted Max Road Traffic Noise Level, dB(A)	**60**	**61**	**59**	**62**	**63**	**63**	**70**	**70**	**67 F.G.**	**70 AW(BT)**	**70 AW(BT)**	**68 F.G.**	**68 F.G.**	**70 AW(BT)**	**70 AW(BT)**	**70 AW(BT)**	**69 F.G.**	**69 F.G.**	**70 AW(BT)**	**70 AW(BT)**	**70 F.G.**	**70 F.G.**	**70 AW(BT)**	**70 AW(BT)**	**69 F.G.**	**66 F.G.**	**70 AW(BT)**	**70 AW(BT)**	**70 F.G.**	**70 AW(BT)**	**70 F.G.**

Legend	
Fixed Glazing with Maintenance Window	F.G.
Acoustic Window	**AW(BT)**

*** The assessment point is located at 1m in front of the most exposed part of an openable window for ventilation at a habitable room (NSRs) and 1.2m above the floor level of individual floors of the residential towers of the proposed development.**

No. of Exceedance	
Total no. of units	777
Total no. of units with exceedance	N.A
Predicted Max Road Traffic Noise Level, dB(A)	70
Compliance %	100%

Result Summary (Detail) - Mitigated Case - Domestic Floors - T1 - 4/F to 40/F - AM

	T1																														
	11						12		13		14			15			16			17				18		19		20			21		
GBP Floor	T1-11A	T1-11B	T1-11C	T1-11D	T1-11E	T1-11F	T1-12A	T1-12B	T1-13A	T1-13B	T1-14A	T1-14B	T1-14C	T1-15A	T1-15B	T1-15C	T1-16A	T1-16B	T1-16C	T1-17A	T1-17B	T1-17C	T1-17D	T1-18A	T1-18B	T1-19A	T1-19B	T1-20A	T1-20B	T1-20C	T1-21A	T1-21B	T1-21C
4/F	69	65	67	68	69	63	64	66	60	60	60	59	53	56	57	56	56	56	48	48	57	57	56	57	57	58	58	59	59	58	57	59	55
5/F	F.G.	69 AW(BT)	F.G.	66 AW(BT)	67 AW(BT)	F.G.	69	70	64	63	62	61	55	59	59	58	59	59	50	49	60	60	60	60	60	59	60	61	61	59	58	60	59
6/F	F.G.	70 AW(BT)	F.G.	67 AW(BT)	68 AW(BT)	F.G.	F.G.	65 AW(BT)	66	65	64	63	56	60	61	60	60	61	51	51	61	62	61	62	62	60	61	61	61	60	58	61	60
7/F	F.G.	70 AW(BT)	F.G.	67 AW(BT)	68 AW(BT)	F.G.	F.G.	66 AW(BT)	68	67	65	64	56	61	62	61	61	62	52	52	62	63	62	63	63	61	62	62	62	60	58	61	60
8/F	F.G.	70 AW(BT)	F.G.	67 AW(BT)	68 AW(BT)	F.G.	F.G.	66 AW(BT)	68	68	67	65	56	62	63	62	62	63	54	54	63	64	63	63	63	62	62	63	62	61	58	62	60
9/F	F.G.	70 AW(BT)	F.G.	67 AW(BT)	68 AW(BT)	F.G.	F.G.	66 AW(BT)	69	68	68	67	56	62	64	63	63	64	55	55	64	65	64	64	64	63	63	63	63	61	58	62	61
10/F	F.G.	69 AW(BT)	F.G.	67 AW(BT)	67 AW(BT)	F.G.	F.G.	66 AW(BT)	69	69	68	67	56	62	65	64	64	65	57	57	65	65	65	65	65	63	64	64	63	61	59	62	61
11/F	F.G.	69 AW(BT)	F.G.	66 AW(BT)	67 AW(BT)	F.G.	F.G.	65 AW(BT)	69	69	68	67	56	62	66	65	65	66	59	59	66	66	66	66	66	64	64	64	64	61	59	63	61
12/F	F.G.	69 AW(BT)	F.G.	66 AW(BT)	67 AW(BT)	F.G.	F.G.	65 AW(BT)	69	69	69	68	57	62	66	66	66	66	61	61	67	67	67	67	66	64	64	64	64	61	59	63	61
13/F	F.G.	69 AW(BT)	F.G.	66 AW(BT)	67 AW(BT)	F.G.	F.G.	65 AW(BT)	69	69	69	68	57	62	67	66	66	67	62	62	67	67	67	67	67	64	65	64	64	61	59	63	61
14/F	F.G.	68 AW(BT)	F.G.	66 AW(BT)	67 AW(BT)	F.G.	70	70	69	69	69	68	57	62	67	66	67	67	62	62	67	68	67	67	67	65	65	64	64	61	59	63	61
15/F	F.G.	68 AW(BT)	F.G.	66 AW(BT)	66 AW(BT)	F.G.	69	70	69	69	69	68	57	62	67	66	67	67	63	63	68	68	68	68	68	65	65	65	64	61	59	63	61
16/F	F.G.	68 AW(BT)	F.G.	65 AW(BT)	66 AW(BT)	F.G.	69	70	68	69	69	68	57	62	67	67	67	68	63	63	68	68	68	68	68	65	65	65	64	61	59	63	61
17/F	F.G.	68 AW(BT)	F.G.	65 AW(BT)	66 AW(BT)	F.G.	69	70	68	69	69	68	58	63	67	67	67	68	63	63	68	68	68	68	68	65	65	65	64	61	59	63	61
18/F	F.G.	70	F.G.	65 AW(BT)	70	67	69	70	68	69	68	68	58	63	67	67	68	68	64	64	68	68	68	68	68	65	65	65	64	61	59	63	61
19/F	F.G.	70	F.G.	70	70	67	69	70	68	69	68	68	58	63	67	67	68	68	64	64	68	68	68	68	68	65	65	65	64	60	59	63	61
20/F	F.G.	70	F.G.	70	70	67	69	70	68	68	68	68	59	63	67	67	68	68	64	64	68	68	68	68	68	65	65	65	64	60	59	63	61
21/F	F.G.	70	F.G.	70	70	66	69	70	68	68	68	68	59	63	67	67	68	68	64	64	68	68	68	68	68	65	65	65	64	60	58	63	61
22/F	F.G.	70	70	70	70	66	68	69	68	68	68	68	59	63	67	67	68	68	64	64	68	68	68	69	68	65	65	65	64	60	58	63	61
23/F	F.G.	70	70	70	70	66	68	69	68	68	68	68	60	63	67	67	68	68	64	64	68	68	68	69	68	65	66	65	64	60	58	63	61
24/F	F.G.	70	70	70	70	66	68	69	68	68	68	68	60	63	67	67	68	68	64	64	68	68	68	69	68	65	66	65	64	60	58	63	61
25/F	F.G.	69	70	70	70	66	68	69	68	68	68	68	60	63	67	67	68	68	64	63	68	68	68	69	68	65	66	65	64	60	58	62	61
26/F	F.G.	69	70	70	69	66	68	69	68	68	68	68	61	63	67	67	67	68	64	63	68	68	68	69	68	65	66	65	64	60	58	62	61
27/F	F.G.	69	70	70	69	66	68	69	68	68	68	68	61	63	67	67	67	68	63	63	68	68	68	69	68	65	66	65	64	60	58	62	61
28/F	F.G.	69	70	69	69	66	68	69	67	68	68	67	61	63	67	67	67	68	63	63	68	68	68	68	68	65	66	65	64	60	58	62	61
29/F	F.G.	69	69	69	69	66	68	69	67	68	68	67	61	63	67	67	67	68	63	63	68	68	68	68	68	66	66	65	64	60	58	62	61
30/F	F.G.	69	69	69	69	66	68	69	67	68	68	67	61	63	67	67	67	68	63	63	68	68	68	68	68	66	66	65	64	60	58	62	61
31/F	F.G.	69	69	69	69	66	68	69	67	68	68	67	61	63	67	67	67	68	63	63	68	68	68	68	68	66	66	65	64	59	58	62	61
32/F	70	68	69	69	69	66	68	69	67	68	68	67	61	63	67	67	67	68	63	63	68	68	68	68	68	66	66	65	64	59	58	62	61
33/F	70	68	69	69	69	66	67	68	67	68	68	67	61	63	67	67	67	68	63	63	68	68	68	68	68	66	66	65	64	59	58	62	61
34/F	70	68	69	69	69	65	67	68	67	67	68	67	61	63	67	67	67	67	63	63	68	68	68	68	68	66	66	65	64	59	58	62	61
35/F	70	68	69	69	69	65	67	68	67	67	67	67	61	63	67	67	67	67	63	63	68	68	68	68	68	66	66	65	64	59	58	62	61
36/F	70	68	69	69	69	65	67	68	67	67	67	67	61	63	67	67	67	67	63	63	68	68	68	68	68	66	66	65	64	59	58	62	61
37/F	70	68	69	69	69	65	67	68	67	67	67	67	62	63	67	66	67	67	63	62	68	68	68	68	68	66	66	65	64	59	58	62	61
38/F	70	68	69	69	68	65	67	68	67	67	67	67	62	63	67	66	67	67	62	62	68	68	68	68	68	66	66	65	64	59	58	62	61
39/F	70	68	68	68	68	65	67	68	67	67	67	67	62	63	67	66	67	67	62	62	68	68	68	68	68	66	66	65	64	59	58	62	61
40/F	70	68	68	68	68	65	67	68	67	67	67	67	62	63	66	66	67	67	62	62	68	68	68	68	68	66	66	65	64	59	58	62	61
Predicted Max Road Traffic Noise Level, dB(A)	**70 F.G.**	**70 AW(BT)**	**70 F.G.**	**70 AW(BT)**	**70 AW(BT)**	**67 F.G.**	**70 F.G.**	**70 AW(BT)**	**69**	**69**	**69**	**68**	**62**	**63**	**67**	**67**	**68**	**68**	**64**	**64**	**68**	**68**	**68**	**69**	**68**	**66**	**66**	**65**	**64**	**61**	**59**	**63**	**61**

Legend	
Fixed Glazing with Maintenance Window	F.G.
Acoustic Window	AW(BT)

*** The assessment point is located at 1m in front of the most exposed part of an openable window for ventilation at a habitable room (NSRs) and 1.2m above the floor level of individual floors of the residential towers of the proposed development.**

No. of Exceedance	
Total no. of units	777
Total no. of units with exceedance	N.A
Predicted Max Road Traffic Noise Level, dB(A)	70
Compliance %	100%

Result Summary (Detail) - Mitigated Case - Domestic Floors - T1 - 4/F to 40/F - PM

	1		2				3						4		5			6		7		8		9		10					
GBP Floor	T1-01A	T1-01B	T1-02A	T1-02B	T1-02C	T1-02D	T1-03A	T1-03B	T1-03C	T1-03D	T1-03E	T1-03F	T1-04A	T1-04B	T1-05A	T1-05B	T1-05C	T1-06A	T1-06B	T1-07A	T1-07B	T1-08A	T1-08B	T1-09A	T1-09B	T1-10A	T1-10B	T1-10C	T1-10D	T1-10E	T1-10F
4/F	49	49	47	50	56	61	68	64	64	67	68	61	62	67	66	68	62	64	69	63	61	61	64	70	64	F.G.	67 AW(BT)	65 AW(BT)	F.G.	63	69
5/F	50	51	49	51	57	61	69	68	F.G.	65 AW(BT)	65 AW(BT)	F.G.	F.G.	65 AW(BT)	69	65 AW(BT)	F.G.	F.G.	66 AW(BT)	69	67	F.G.	64 AW(BT)	67 AW(BT)	F.G.	F.G.	68 AW(BT)	68 AW(BT)	F.G.	69	F.G.
6/F	52	52	50	52	57	62	69	69	F.G.	66 AW(BT)	67 AW(BT)	F.G.	F.G.	66 AW(BT)	66 AW(BT)	66 AW(BT)	F.G.	F.G.	67 AW(BT)	65 AW(BT)	F.G.	F.G.	65 AW(BT)	67 AW(BT)	F.G.	F.G.	68 AW(BT)	68 AW(BT)	F.G.	69 AW(BT)	F.G.
7/F	53	53	50	53	57	62	69	69	F.G.	67 AW(BT)	67 AW(BT)	F.G.	F.G.	67 AW(BT)	66 AW(BT)	67 AW(BT)	F.G.	F.G.	67 AW(BT)	65 AW(BT)	F.G.	F.G.	66 AW(BT)	67 AW(BT)	F.G.	F.G.	68 AW(BT)	68 AW(BT)	F.G.	70 AW(BT)	F.G.
8/F	53	53	51	54	57	62	69	69	F.G.	67 AW(BT)	67 AW(BT)	F.G.	F.G.	67 AW(BT)	66 AW(BT)	67 AW(BT)	F.G.	F.G.	67 AW(BT)	65 AW(BT)	F.G.	F.G.	66 AW(BT)	67 AW(BT)	F.G.	F.G.	67 AW(BT)	68 AW(BT)	F.G.	69 AW(BT)	F.G.
9/F	54	54	51	55	58	62	69	69	F.G.	67 AW(BT)	67 AW(BT)	F.G.	F.G.	67 AW(BT)	66 AW(BT)	67 AW(BT)	F.G.	F.G.	67 AW(BT)	65 AW(BT)	F.G.	F.G.	66 AW(BT)	66 AW(BT)	F.G.	F.G.	67 AW(BT)	67 AW(BT)	F.G.	69 AW(BT)	F.G.
10/F	55	55	52	55	58	62	69	69	F.G.	67 AW(BT)	67 AW(BT)	F.G.	F.G.	67 AW(BT)	66 AW(BT)	66 AW(BT)	F.G.	F.G.	66 AW(BT)	65 AW(BT)	F.G.	F.G.	66 AW(BT)	66 AW(BT)	F.G.	F.G.	67 AW(BT)	67 AW(BT)	F.G.	69 AW(BT)	F.G.
11/F	55	55	52	56	58	62	69	69	F.G.	66 AW(BT)	66 AW(BT)	F.G.	F.G.	66 AW(BT)	66 AW(BT)	66 AW(BT)	F.G.	F.G.	66 AW(BT)	64 AW(BT)	F.G.	F.G.	65 AW(BT)	66 AW(BT)	F.G.	F.G.	67 AW(BT)	67 AW(BT)	F.G.	69 AW(BT)	F.G.
12/F	56	56	53	57	59	62	69	69	F.G.	66 AW(BT)	66 AW(BT)	F.G.	F.G.	66 AW(BT)	66 AW(BT)	66 AW(BT)	F.G.	F.G.	66 AW(BT)	64 AW(BT)	F.G.	F.G.	65 AW(BT)	66 AW(BT)	F.G.	F.G.	66 AW(BT)	67 AW(BT)	F.G.	69 AW(BT)	F.G.
13/F	56	56	53	57	59	62	69	68	F.G.	66 AW(BT)	66 AW(BT)	F.G.	F.G.	66 AW(BT)	66 AW(BT)	66 AW(BT)	F.G.	F.G.	66 AW(BT)	64 AW(BT)	F.G.	F.G.	65 AW(BT)	66 AW(BT)	F.G.	F.G.	66 AW(BT)	66 AW(BT)	F.G.	68 AW(BT)	F.G.
14/F	57	57	54	57	59	62	69	68	F.G.	66 AW(BT)	66 AW(BT)	F.G.	F.G.	66 AW(BT)	66 AW(BT)	66 AW(BT)	F.G.	F.G.	66 AW(BT)	64 AW(BT)	F.G.	F.G.	65 AW(BT)	66 AW(BT)	F.G.	F.G.	66 AW(BT)	66 AW(BT)	F.G.	68 AW(BT)	F.G.
15/F	57	57	54	58	59	62	69	68	F.G.	66 AW(BT)	66 AW(BT)	F.G.	F.G.	66 AW(BT)	65 AW(BT)	66 AW(BT)	F.G.	F.G.	66 AW(BT)	70	F.G.	F.G.	65 AW(BT)	65 AW(BT)	F.G.	F.G.	66 AW(BT)	66 AW(BT)	F.G.	68 AW(BT)	F.G.
16/F	57	57	54	58	60	62	68	68	F.G.	65 AW(BT)	66 AW(BT)	F.G.	F.G.	65 AW(BT)	65 AW(BT)	65 AW(BT)	F.G.	F.G.	65 AW(BT)	70	70	F.G.	65 AW(BT)	65 AW(BT)	F.G.	F.G.	66 AW(BT)	66 AW(BT)	F.G.	68 AW(BT)	F.G.
17/F	57	58	55	58	60	62	68	68	F.G.	65 AW(BT)	65 AW(BT)	F.G.	F.G.	65 AW(BT)	65 AW(BT)	65 AW(BT)	F.G.	F.G.	65 AW(BT)	69	69	F.G.	64 AW(BT)	65 AW(BT)	F.G.	F.G.	65 AW(BT)	66 AW(BT)	F.G.	68 AW(BT)	F.G.
18/F	57	58	55	58	60	62	68	68	F.G.	65 AW(BT)	65 AW(BT)	F.G.	F.G.	65 AW(BT)	65 AW(BT)	65 AW(BT)	F.G.	F.G.	65 AW(BT)	69	69	F.G.	64 AW(BT)	65 AW(BT)	F.G.	F.G.	65 AW(BT)	65 AW(BT)	F.G.	67 AW(BT)	F.G.
19/F	58	58	56	59	60	62	68	67	F.G.	65 AW(BT)	65 AW(BT)	F.G.	F.G.	65 AW(BT)	65 AW(BT)	65 AW(BT)	F.G.	F.G.	65 AW(BT)	69	69	F.G.	64 AW(BT)	65 AW(BT)	F.G.	F.G.	65 AW(BT)	65 AW(BT)	F.G.	67 AW(BT)	F.G.
20/F	58	58	56	59	60	62	68	67	F.G.	65 AW(BT)	65 AW(BT)	F.G.	F.G.	65 AW(BT)	65 AW(BT)	65 AW(BT)	F.G.	F.G.	65 AW(BT)	69	69	F.G.	64 AW(BT)	65 AW(BT)	F.G.	F.G.	65 AW(BT)	65 AW(BT)	F.G.	67 AW(BT)	F.G.
21/F	58	58	56	59	60	62	68	67	F.G.	65 AW(BT)	65 AW(BT)	F.G.	F.G.	65 AW(BT)	65 AW(BT)	65 AW(BT)	F.G.	F.G.	65 AW(BT)	69	69	69	70	64 AW(BT)	F.G.	F.G.	65 AW(BT)	65 AW(BT)	F.G.	67 AW(BT)	F.G.
22/F	58	59	56	59	60	62	68	67	F.G.	65 AW(BT)	65 AW(BT)	F.G.	F.G.	65 AW(BT)	64 AW(BT)	65 AW(BT)	F.G.	F.G.	65 AW(BT)	69	69	69	69	64 AW(BT)	F.G.	F.G.	65 AW(BT)	65 AW(BT)	F.G.	70	F.G.
23/F	58	59	57	59	60	62	68	67	F.G.	64 AW(BT)	65 AW(BT)	F.G.	F.G.	64 AW(BT)	64 AW(BT)	64 AW(BT)	F.G.	F.G.	64 AW(BT)	68	69	69	69	70	68	F.G.	65 AW(BT)	65 AW(BT)	F.G.	69	F.G.
24/F	58	59	57	59	60	62	67	67	F.G.	64 AW(BT)	64 AW(BT)	F.G.	F.G.	64 AW(BT)	64 AW(BT)	64 AW(BT)	F.G.	F.G.	64 AW(BT)	68	68	68	69	69	68	F.G.	64 AW(BT)	64 AW(BT)	F.G.	69	F.G.
25/F	58	59	57	60	61	62	67	67	F.G.	64 AW(BT)	64 AW(BT)	F.G.	F.G.	64 AW(BT)	64 AW(BT)	64 AW(BT)	F.G.	F.G.	64 AW(BT)	68	68	68	69	69	68	F.G.	64 AW(BT)	64 AW(BT)	F.G.	69	F.G.
26/F	58	59	57	60	61	62	67	67	67	70	70	67	68	70	70	70	68	68	70	68	68	68	69	69	68	65	70	64 AW(BT)	F.G.	69	F.G.
27/F	58	59	57	60	61	62	67	66	67	69	70	67	67	70	69	70	68	68	69	68	68	68	69	69	68	65	70	70	69	69	F.G.
28/F	58	59	57	60	61	62	67	66	66	69	69	67	67	69	69	69	67	68	69	68	68	68	69	69	68	65	69	69	69	69	F.G.
29/F	58	59	57	60	61	62	67	66	66	69	69	67	67	69	69	69	67	68	69	68	68	68	69	69	67	65	69	69	69	69	F.G.
30/F	58	59	58	60	61	62	67	66	66	69	69	66	67	69	69	69	67	68	69	68	68	68	68	69	67	65	69	69	69	68	F.G.
31/F	59	59	58	60	61	62	67	66	66	69	69	66	67	69	69	69	67	68	69	68	68	68	68	69	67	64	69	69	69	68	F.G.
32/F	59	59	58	60	61	62	67	66	66	69	69	66	67	69	69	69	67	68	69	67	67	67	68	68	67	64	69	69	69	68	F.G.
33/F	59	60	58	60	61	62	67	66	66	69	69	66	67	69	69	69	67	68	69	67	67	67	68	68	67	64	69	69	69	68	70
34/F	59	60	58	61	61	62	66	66	66	69	69	66	67	69	69	69	67	67	69	67	67	67	68	68	67	64	69	69	68	68	69
35/F	59	60	58	61	62	62	66	66	66	69	69	66	67	69	69	69	67	67	69	67	67	67	68	68	67	64	69	69	68	68	69
36/F	59	60	58	61	62	62	66	66	66	69	69	66	66	69	68	69	67	67	68	67	67	67	68	68	67	64	68	69	68	68	69
37/F	59	60	58	61	62	62	66	65	66	68	68	66	66	68	68	68	67	67	68	67	67	67	68	68	67	64	68	68	68	68	69
38/F	59	60	58	61	62	62	66	65	66	68	68	66	66	68	68	68	66	67	68	67	67	67	68	68	66	64	68	68	68	68	69
39/F	59	60	58	61	62	62	66	65	65	68	68	66	66	68	68	68	66	67	68	67	67	67	68	68	66	64	68	68	68	68	69
40/F	59	60	58	61	62	62	66	65	65	68	68	66	66	68	68	68	66	67	68	67	67	67	67	68	66	64	68	68	68	67	69
Predicted Max Road Traffic Noise Level, dB(A)	**59**	**60**	**58**	**61**	**62**	**62**	**69**	**69**	**67 F.G.**	**70 AW(BT)**	**70 AW(BT)**	**67 F.G.**	**68 F.G.**	**70 AW(BT)**	**70 AW(BT)**	**70 AW(BT)**	**68 F.G.**	**68 F.G.**	**70 AW(BT)**	**70 AW(BT)**	**70 F.G.**	**69 F.G.**	**70 AW(BT)**	**70 AW(BT)**	**68 F.G.**	**65 F.G.**	**70 AW(BT)**	**70 AW(BT)**	**69 F.G.**	**70 AW(BT)**	**70 F.G.**

Legend	
Fixed Glazing with Maintenance Window	F.G.
Acoustic Window	**AW(BT)**

*** The assessment point is located at 1m in front of the most exposed part of an openable window for ventilation at a habitable room (NSRs) and 1.2m above the floor level of individual floors of the residential towers of the proposed development.**

No. of Exceedance	
Total no. of units	777
Total no. of units with exceedance	N.A
Predicted Max Road Traffic Noise Level, dB(A)	70
Compliance %	100%

Result Summary (Detail) - Mitigated Case - Domestic Floors - T1 - 4/F to 40/F - PM

	T1																														
	11						12		13		14			15			16			17				18		19		20			21		
GBP Floor	T1-11A	T1-11B	T1-11C	T1-11D	T1-11E	T1-11F	T1-12A	T1-12B	T1-13A	T1-13B	T1-14A	T1-14B	T1-14C	T1-15A	T1-15B	T1-15C	T1-16A	T1-16B	T1-16C	T1-17A	T1-17B	T1-17C	T1-17D	T1-18A	T1-18B	T1-19A	T1-19B	T1-20A	T1-20B	T1-20C	T1-21A	T1-21B	T1-21C
4/F	68	65	66	67	68	62	63	65	59	60	60	59	52	55	56	55	55	55	48	47	56	56	56	56	57	57	58	59	59	57	56	58	54
5/F	F.G.	68 AW(BT)	F.G.	65 AW(BT)	66 AW(BT)	F.G.	68	69	63	62	61	61	55	58	59	58	58	58	49	49	59	59	59	59	60	59	59	60	60	59	57	60	59
6/F	F.G.	69 AW(BT)	F.G.	66 AW(BT)	67 AW(BT)	F.G.	F.G.	65 AW(BT)	66	64	63	62	55	59	60	59	59	60	50	50	61	61	61	61	61	60	60	61	61	59	57	60	59
7/F	F.G.	69 AW(BT)	F.G.	66 AW(BT)	67 AW(BT)	F.G.	F.G.	65 AW(BT)	67	66	65	63	55	60	61	60	61	61	52	51	62	62	62	62	62	61	61	61	61	60	57	61	59
8/F	F.G.	69 AW(BT)	F.G.	66 AW(BT)	67 AW(BT)	F.G.	F.G.	65 AW(BT)	68	67	66	65	55	61	62	61	62	62	53	53	63	63	63	63	63	61	62	62	62	60	57	61	60
9/F	F.G.	69 AW(BT)	F.G.	66 AW(BT)	67 AW(BT)	F.G.	F.G.	65 AW(BT)	68	68	67	66	55	61	63	63	63	63	55	54	64	64	63	64	63	62	62	62	62	60	58	61	60
10/F	F.G.	68 AW(BT)	F.G.	66 AW(BT)	66 AW(BT)	F.G.	F.G.	65 AW(BT)	68	68	67	66	56	61	64	63	64	64	57	57	65	65	64	64	64	63	63	63	63	60	58	62	60
11/F	F.G.	68 AW(BT)	F.G.	65 AW(BT)	66 AW(BT)	F.G.	F.G.	65 AW(BT)	68	68	68	67	56	61	65	64	65	65	58	58	65	66	65	65	65	63	63	63	63	60	58	62	60
12/F	F.G.	68 AW(BT)	F.G.	65 AW(BT)	66 AW(BT)	F.G.	F.G.	64 AW(BT)	68	68	68	67	56	61	66	65	65	66	60	60	66	66	66	66	66	63	64	63	63	60	58	62	60
13/F	F.G.	68 AW(BT)	F.G.	65 AW(BT)	66 AW(BT)	F.G.	F.G.	64 AW(BT)	68	68	68	67	56	61	66	65	66	66	61	61	66	67	66	66	66	64	64	64	63	60	58	62	60
14/F	F.G.	68 AW(BT)	F.G.	65 AW(BT)	66 AW(BT)	F.G.	69	70	68	68	68	67	56	61	66	66	66	66	62	62	67	67	67	67	67	64	64	64	63	60	58	62	60
15/F	F.G.	67 AW(BT)	F.G.	65 AW(BT)	66 AW(BT)	F.G.	69	69	68	68	68	67	57	62	66	66	66	67	62	62	67	67	67	67	67	64	64	64	63	60	58	62	60
16/F	F.G.	67 AW(BT)	F.G.	65 AW(BT)	65 AW(BT)	F.G.	68	69	68	68	68	67	57	62	66	66	66	67	62	62	67	67	67	67	67	64	64	64	63	60	58	62	60
17/F	F.G.	67 AW(BT)	F.G.	64 AW(BT)	65 AW(BT)	F.G.	68	69	67	68	68	67	57	62	66	66	67	67	63	63	67	67	67	67	67	64	64	64	63	60	58	62	61
18/F	F.G.	69	F.G.	64 AW(BT)	70	66	68	69	67	68	68	67	57	62	66	66	67	67	63	63	67	68	67	67	67	64	64	64	63	60	58	62	61
19/F	F.G.	69	F.G.	70	69	66	68	69	67	68	68	67	58	62	66	66	67	67	63	63	67	68	67	68	67	64	64	64	63	60	58	62	61
20/F	F.G.	69	F.G.	69	69	66	68	69	67	68	68	67	58	62	66	66	67	67	63	63	67	68	67	68	68	64	65	64	63	60	58	62	61
21/F	F.G.	69	F.G.	69	69	66	68	69	67	67	67	67	58	62	66	66	67	67	63	63	67	68	67	68	68	64	65	64	63	59	58	62	60
22/F	F.G.	69	70	69	69	65	68	69	67	67	67	67	59	62	66	66	67	67	63	63	67	68	67	68	68	64	65	64	63	59	57	62	60
23/F	F.G.	69	69	69	69	65	68	68	67	67	67	67	59	62	66	66	67	67	63	63	67	68	67	68	68	64	65	64	63	59	57	62	60
24/F	F.G.	69	69	69	69	65	67	68	67	67	67	67	59	62	66	66	67	67	63	63	67	67	67	68	68	64	65	64	63	59	57	62	60
25/F	F.G.	68	69	69	69	65	67	68	67	67	67	67	60	62	66	66	67	67	63	63	67	67	67	68	68	65	65	64	63	59	57	62	60
26/F	F.G.	68	69	69	69	65	67	68	67	67	67	67	60	62	66	66	67	67	63	63	67	67	67	68	67	65	65	64	63	59	57	62	60
27/F	F.G.	68	69	69	68	65	67	68	67	67	67	67	60	62	66	66	67	67	63	62	67	67	67	68	67	65	65	64	63	59	57	62	60
28/F	F.G.	68	69	68	68	65	67	68	67	67	67	67	60	62	66	66	67	67	62	62	67	67	67	68	67	65	65	64	63	59	57	62	60
29/F	F.G.	68	69	68	68	65	67	68	67	67	67	67	60	62	66	66	67	67	62	62	67	67	67	68	67	65	65	64	63	59	57	62	60
30/F	F.G.	68	68	68	68	65	67	68	66	67	67	67	60	62	66	66	66	67	62	62	67	67	67	68	67	65	65	64	63	59	57	62	60
31/F	F.G.	68	68	68	68	65	67	68	66	67	67	66	60	63	66	66	66	67	62	62	67	67	67	68	67	65	65	64	63	59	57	62	60
32/F	70	68	68	68	68	65	67	68	66	67	67	66	60	62	66	66	66	67	62	62	67	67	67	68	67	65	65	64	63	59	57	62	60
33/F	69	67	68	68	68	65	67	68	66	67	67	66	60	63	66	66	66	67	62	62	67	67	67	68	67	65	65	64	63	58	57	62	60
34/F	69	67	68	68	68	65	66	68	66	67	67	66	61	63	66	66	66	67	62	62	67	67	67	68	67	65	65	64	63	58	57	62	61
35/F	69	67	68	68	68	65	66	67	66	67	67	66	61	63	66	66	66	66	62	62	67	67	67	67	67	65	65	64	63	58	57	62	61
36/F	69	67	68	68	68	64	66	67	66	66	67	66	61	63	66	66	66	66	62	62	67	67	67	67	67	65	65	64	63	58	57	62	61
37/F	69	67	68	68	68	64	66	67	66	66	66	66	61	63	66	66	66	66	62	62	67	67	67	67	67	65	65	64	63	58	57	62	60
38/F	69	67	68	68	68	64	66	67	66	66	66	66	61	63	66	66	66	66	62	61	67	67	67	67	67	65	65	64	63	58	57	62	61
39/F	69	67	68	68	67	64	66	67	66	66	66	66	61	62	66	65	66	66	61	61	67	67	67	67	67	65	65	64	63	58	57	62	61
40/F	69	67	67	67	67	64	66	67	66	66	66	66	61	62	66	65	66	66	61	61	67	67	67	67	67	65	65	64	63	58	57	62	61
Predicted Max Road Traffic Noise Level, dB(A)	**70 F.G.**	**69 AW(BT)**	**70 F.G.**	**70 AW(BT)**	**70 AW(BT)**	**66 F.G.**	**69 F.G.**	**70 AW(BT)**	**68**	**68**	**68**	**67**	**61**	**63**	**66**	**66**	**67**	**67**	**63**	**63**	**67**	**68**	**67**	**68**	**68**	**65**	**65**	**64**	**63**	**60**	**58**	**62**	**61**

Legend	
Fixed Glazing with Maintenance Window	F.G.
Acoustic Window	AW(BT)

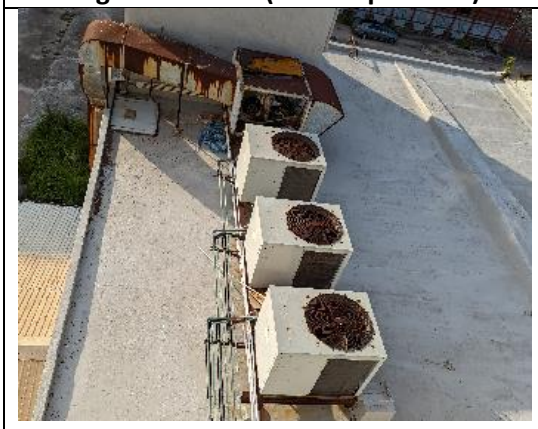
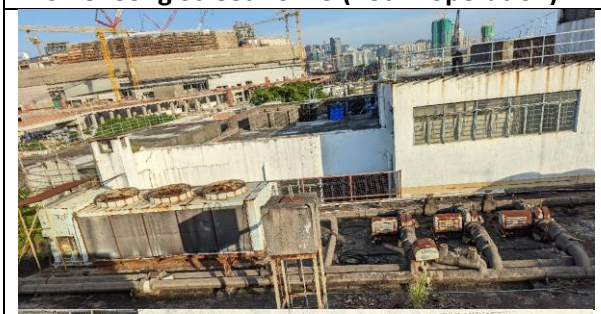
*** The assessment point is located at 1m in front of the most exposed part of an openable window for ventilation at a habitable room (NSRs) and 1.2m above the floor level of individual floors of the residential towers of the proposed development.**

No. of Exceedance	
Total no. of units	777
Total no. of units with exceedance	N.A
Predicted Max Road Traffic Noise Level, dB(A)	70
Compliance %	100%

Appendix 3.1

Site Survey and Photograph Records of Identified Fixed Plant Noise Sources and Fixed Plant Noise Source Inventory

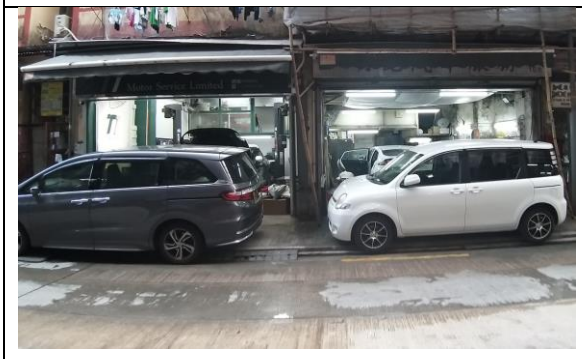
Site Survey and Photograph Records of Identified Fixed Plant Noise Sources

MCS3_1 to MCS3_6: Cooling Tower at Freder Center	MCS5_1: Cooling Tower at KK Industrial Building
	
MCS9_1 to MCS9_3: Air-cooled Chillers at Mok Cheong Street no. 9 (not in operation)	**MCS11_2: Cooling Tower at Mok Cheong Street no. 11**
	
MCS13_1 to MCS13_2 Air-cooled Chillers at Mok Cheong Street no. 13 (not in operation)	**SPS: Noise Emitting Facade Louver at To Kwa Wan Road Pumping Station**
 	

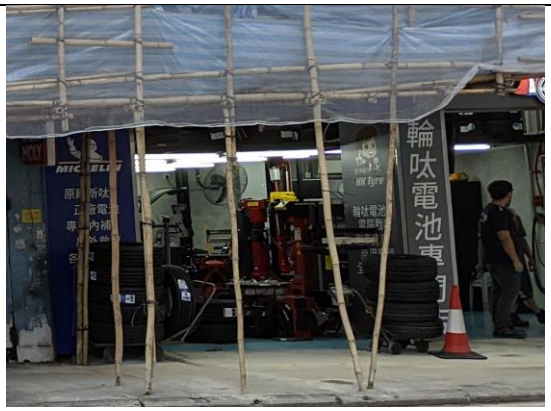
HLS_7: Vehicle Workshop at Hok Ling Street	HLS_10: Vehicle Workshop at Hok Ling Street
	
HLS_11: Vehicle Workshop at Hok Ling Street	**HLS_13: Vehicle Workshop at Hok Ling Street**
	
HLS_15 Vehicle Workshop at Hok Ling Street	**HLS_16 Vehicle Workshop at Hok Ling Street**
	
HLS_19: Vehicle Workshop at Hok Ling Street	**HLS_20 & HLS_22: Vehicle Workshop at Hok Ling Street**
	

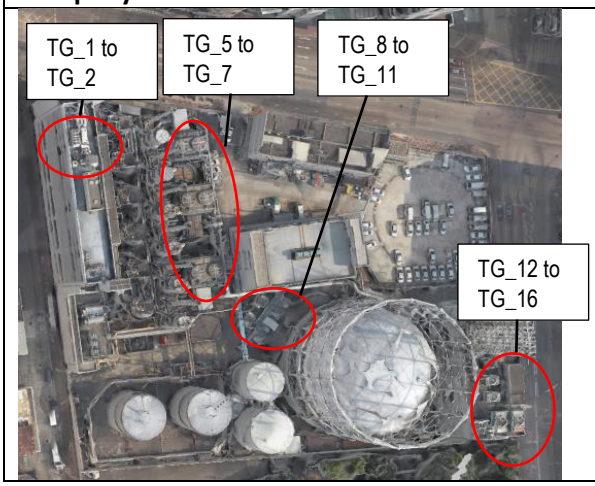
HLS_21 Vehicle Workshop at Hok Ling Street	HLS_23 & HLS_25: Vehicle Workshop at Hok Ling Street
	
HLS_24 & HLS_26: Vehicle Workshop at Hok Ling Street	**HLS_27: Vehicle Workshop at Hok Ling Street**
	
TTS_4: Vehicle Workshop at Tsun Fat Street	**TTS_5 & TTS_7: Vehicle Workshop at Tsun Fat Street**
	
TTS_10 & TTS_8: Vehicle Workshop at Tsun Fat Street	**TTS_12 & TTS_14: Vehicle Workshop at Tsun Fat Street**
	

TTS_13: Vehicle Workshop at Tsun Fat Street	TTS_15: Vehicle Workshop at Tsun Fat Street
	
TTS_18: Vehicle Workshop at Tsun Fat Street	**TTS_19: Vehicle Workshop at Tsun Fat Street**
	
TTS_20: Vehicle Workshop at Tsun Fat Street	**TTS_22: Vehicle Workshop at Tsun Fat Street**
	
TTS_21 & TTS_23 & TTS_25: Vehicle Workshop at Tsun Fat Street	**TTS_26 & TTS_24: Vehicle Workshop at Tsun Fat Street**
	

YOS_5: Vehicle Workshop at Yin On street	YOS_7: Vehicle Workshop at Yin On street
	
YOS_9: Vehicle Workshop at Yin On street	**YOS_13: Vehicle Workshop at Yin On street**
	
YOS_12 & YOS_14: Vehicle Workshop at Yin On street	**YOS_15: Vehicle Workshop at Yin On street**
	
YOS_16 & YOS_18: Vehicle Workshop at Yin On street	**YOS_19: Vehicle Workshop at Yin On street**
	

YOS_21: Vehicle Workshop at Yin On street	YOS_22 & YOS_24: Vehicle Workshop at Yin On street
	
YOS_23: Vehicle Workshop at Yin On street	**YOS_25: Vehicle Workshop at Yin On street**
	
YOS_26 & YOS_28: Vehicle Workshop at Yin On street	**YOS_27: Vehicle Workshop at Yin On street**
	

SLS_27: Recycling Workshop at Shim Luen Street	SLS_28: Vehicle Workshop at Shim Luen Street
	
HWS_28: Vehicle Workshop at Hung Wan Street	**LCS28_Recycling Workshop at Ying Yeung Street**
	
FYS27: Vehicle Workshop at Fung Yi Street	**FYS28: Vehicle Workshop at Fung Yi Street**
	

KCR_208: Vehicle Workshop at Kowloon City Road	NP_1 to NP_18: Cooling Tower/Air Cooled Chillers at Newport Centre Phase 1 & 2 (To be redeveloped by URA)
	
TG_1 to TG_16: Cooling Tower/Air Cooled Chillers at The Hong Kong & China Gas Company Limited Ma Tau Kok Control Centre	**HP_1 & HP_2: Cooling Tower at Harbour Plaza 8 Degrees**
	

Fixed Plant Noise Source Inventory

Source ID	Noise Source	X	Y	SWL, dB(A) Z (for refe		At Source Noise Shielding	Operation %(D)	Operation %(N)	Tonality, dB	Intermitency, dB	Impulsiveness, dB
FYS_27	Vehicle Workshop	837774.2	820357.7	6	98	-	50%	0%	0	0	0
FYS_28	Vehicle Workshop	837790.6	820348.4	16.3	98	-	50%	0%	0	0	0
HLS_7	Vehicle Workshop	837968.4	820190.5	16.3	98	Partially Enclosed	50%	0%	0	0	0
HLS_10	Vehicle Workshop	837981.5	820196.4	16.3	98	Partially Enclosed	50%	0%	0	0	0
HLS_11	Vehicle Workshop	837974	820202	6	98	Partially Enclosed	50%	0%	0	0	0
HLS_12	Vehicle Workshop	837984.3	820201.9	38.3	98	Partially Enclosed	50%	0%	0	0	0
HLS_13	Vehicle Workshop	837976.7	820206.8	38.3	98	Partially Enclosed	50%	0%	0	0	0
HLS_15	Vehicle Workshop	837979.2	820213.3	6	98	Partially Enclosed	50%	0%	0	0	0
HLS_16	Vehicle Workshop	837989.8	820214.3	6	98	Partially Enclosed	50%	0%	0	0	0
HLS_19	Vehicle Workshop	837983.7	820224.3	6	98	Partially Enclosed	50%	0%	0	0	0
HLS_20	Vehicle Workshop	837995.3	820225.7	6	98	Partially Enclosed	50%	0%	0	0	0
HLS_21	Vehicle Workshop	837986.8	820230.3	6	98	Partially Enclosed	50%	0%	0	0	0
HLS_23	Vehicle Workshop	837989.5	820236.2	6	98	Partially Enclosed	50%	0%	0	0	0
HLS_24	Vehicle Workshop	838001.1	820238.6	6	98	Partially Enclosed	50%	0%	0	0	0
HLS_25	Vehicle Workshop	837992.2	820241.8	6	98	Partially Enclosed	50%	0%	0	0	0
HLS_26	Vehicle Workshop	838007.2	820248.2	6	98	-	50%	0%	0	0	0
HLS_27	Vehicle Workshop	837990.5	820255.4	6	98	-	50%	0%	0	0	0
HP_1	Outdoor equipment - Chiller	837709	820425	64.2	96	-	100%	100%	0	0	0
HP_2	Outdoor equipment - Chiller	837703	820427	64.2	96	-	100%	100%	0	0	0
HWS_28	Vehicle Workshop	837909.4	820293.3	6	98	-	50%	0%	0	0	0
KCR_28	Vehicle Workshop	837738.5	820372	6	98	-	50%	0%	0	0	0
LCS_28	General Workshop	837842.8	820326.2	6	98	-	50%	0%	0	0	0
MCS11_2	Outdoor equipment - Cooling Tower	837924.6	820349.7	8	92	-	100%	0%	0	0	0
MCS3_1	Outdoor equipment - Cooling Tower	837821.7	820415.6	8	92	-	100%	0%	0	0	0
MCS3_2	Outdoor equipment - Cooling Tower	837825.6	820423.1	8	92	-	100%	0%	0	0	0
MCS3_3	Outdoor equipment - Cooling Tower	837824.6	820421.3	8	92	-	100%	0%	0	0	0
MCS3_4	Outdoor equipment - Cooling Tower	837823.6	820419.2	8	92	-	100%	0%	0	0	0
MCS3_5	Outdoor equipment - Cooling Tower	837819.4	820409.1	8	92	-	100%	0%	0	0	0
MCS3_6	Outdoor equipment - Cooling Tower	837820.5	820411.9	8	92	-	100%	0%	0	0	0
MCS5_1	Outdoor equipment - Cooling Tower	837841.9	820369	8	92	-	100%	100%	0	0	0
PCS_28	Vehicle Workshop	837882.8	820304.8	6	98	-	50%	0%	0	0	0
SLS_27	General Workshop	837919	820289.3	22.6	98	-	50%	0%	0	0	0
SLS_28	Vehicle Workshop	837933.7	820281.4	22.9	98	-	50%	0%	0	0	0
SPS	Facade louver	838068	820254.1	22.9	86	-	100%	100%	0	0	0
TG_1	Outdoor equipment - Cooling Tower	837802.9	820092.1	22.9	96	-	100%	100%	0	0	0
TG_2	Outdoor equipment - Cooling Tower	837805.5	820096	22.9	96	-	100%	100%	0	0	0
TG_3	Outdoor equipment - Cooling Tower	837812.1	820094.1	22.9	96	-	100%	100%	0	0	0
TG_4	Outdoor equipment - Cooling Tower	837815.8	820091.9	22.9	96	-	100%	100%	0	0	0
TG_5	Outdoor equipment - Cooling Tower	837820.3	820089.4	32.1	96	-	100%	100%	0	0	0
TG_15	Outdoor equipment - Chiller	837932.6	820161.5	23.2	94	-	100%	100%	0	0	0
TG_16	Outdoor equipment - Chiller	837935.2	820160.2	23.2	94	-	100%	100%	0	0	0
TTS_4	Vehicle Workshop	837946.8	820185.4	6	98	Partially Enclosed	50%	0%	0	0	0
TTS_5	Vehicle Workshop	837941.2	820195.4	6	98	Partially Enclosed	50%	0%	0	0	0
TTS_7	Vehicle Workshop	837944.2	820202	6	98	Partially Enclosed	50%	0%	0	0	0
TTS_8	Vehicle Workshop	837952.4	820198	6	98	Partially Enclosed	50%	0%	0	0	0
TTS_9	Vehicle Workshop	837947	820207.5	6	98	Partially Enclosed	50%	0%	0	0	0
TTS_11	Vehicle Workshop	837949.8	820213.3	6	98	Partially Enclosed	50%	0%	0	0	0

Source ID	Noise Source	X	Y	SWL, dB(A) Z (for refe		At Source Noise Shielding	Operation %(D)	Operation %(N)	Tonality, dB	Intermitency, dB	Impulsiveness, dB
TTS_12	Vehicle Workshop	837957.9	820209.5	6	98	Partially Enclosed	50%	0%	0	0	0
TTS_14	Vehicle Workshop	837960.4	820215.1	6	98	Partially Enclosed	50%	0%	0	0	0
TTS_15	Vehicle Workshop	837954.6	820224.5	6	98	Partially Enclosed	50%	0%	0	0	0
TTS_18	Vehicle Workshop	837965.6	820225.6	6	98	Partially Enclosed	50%	0%	0	0	0
TTS_20	Vehicle Workshop	837968	820231.5	6	98	Partially Enclosed	50%	0%	0	0	0
TTS_21	Vehicle Workshop	837962.4	820240.8	6	98	Partially Enclosed	50%	0%	0	0	0
TTS_22	Vehicle Workshop	837970.5	820236.7	6	98	Partially Enclosed	50%	0%	0	0	0
TTS_23	Vehicle Workshop	837965.5	820247.7	6	98	Partially Enclosed	50%	0%	0	0	0
TTS_24	Vehicle Workshop	837973.8	820243.9	6	98	Partially Enclosed	50%	0%	0	0	0
TTS_25	Vehicle Workshop	837968.6	820253.5	6	98	Partially Enclosed	50%	0%	0	0	0
TTS_26	Vehicle Workshop	837976.4	820249.3	6	98	Partially Enclosed	50%	0%	0	0	0
TTS_27	Vehicle Workshop	837968.4	820266.7	6	98	-	50%	0%	0	0	0
YOS_5	Vehicle Workshop	837917.7	820206.3	6	98	Partially Enclosed	50%	0%	0	0	0
YOS_7	Vehicle Workshop	837920.3	820213.2	6	98	Partially Enclosed	50%	0%	0	0	0
YOS_11	Vehicle Workshop	837924.6	820225.2	6	98	Partially Enclosed	50%	0%	0	0	0
YOS_12	Vehicle Workshop	837933.7	820220.1	6	98	Partially Enclosed	50%	0%	0	0	0
YOS_15	Vehicle Workshop	837930.4	820236	6	98	Partially Enclosed	50%	0%	0	0	0
YOS_16	Vehicle Workshop	837938.5	820231.2	6	98	Partially Enclosed	50%	0%	0	0	0
YOS_18	Vehicle Workshop	837941.2	820237.1	6	98	Partially Enclosed	50%	0%	0	0	0
YOS_19	Vehicle Workshop	837935.7	820246.5	6	98	Partially Enclosed	50%	0%	0	0	0
YOS_21	Vehicle Workshop	837937.8	820252.4	6	98	Partially Enclosed	50%	0%	0	0	0
YOS_22	Vehicle Workshop	837946.6	820248	6	98	Partially Enclosed	50%	0%	0	0	0
YOS_23	Vehicle Workshop	837941.5	820258.4	6	98	Partially Enclosed	50%	0%	0	0	0
YOS_24	Vehicle Workshop	837949.5	820254.7	6	98	Partially Enclosed	50%	0%	0	0	0
YOS_25	Vehicle Workshop	837943.8	820265	6	98	Partially Enclosed	50%	0%	0	0	0
YOS_26	Vehicle Workshop	837951.4	820260.9	6	98	Partially Enclosed	50%	0%	0	0	0
YOS_27	Vehicle Workshop	837942.8	820277.7	6	98	-	50%	0%	0	0	0
YOS_28	Vehicle Workshop	837958.6	820271	6	98	-	50%	0%	0	0	0

Appendix 3.2

Extracted information from the Approved EIA for Development at San Hing Road and Hong Po Road, Tuen Mun (AEIAR-263/2020)

Table 5-25 Noise Levels at the Representative NSRs for Fixed Plants

NSR	Location	Mitigated SPL, dB(A), Leq (30 min)	Noise Criteria (Day/Night), dB(A), Leq (30 min)
PN2B	Sung Wong Toi Road R(A) site	47	60/50
PN5	KTD Site 2B5	43	60/50
PN7	KTD Site 2B1	43	60/50
PN8	KTD Site 1K3	45	60/50
PN9	KTD Site 1L3	43	60/50

Cumulative noise impact

5.9.18 As mentioned in **Section 5.9.16**, noise level from the fixed plant could be effectively reduced by adoption of the above noise mitigation measures. The mitigated cumulative noise impact for the noise from a sports event in the Main Stadium and the fixed plant, and the noise from a sports event in the Public Sports Ground and the fixed plant are shown in **Table 5-26** and **Table 5-27** respectively. Assessment results indicated that the cumulative noise impact on all the identified NSRs would comply with the noise criteria. No further mitigation measures are required.

Table 5-26 Mitigated Cumulative Noise Levels from Sports Events at Main Stadium (Retractable Roof Fully Opened) and the Fixed Plant

NSR	Location	Predicted Noise Level / Assessment Criteria, dB(A), Leq (30 min)	
		Daytime / Evening	Night-time (11:00 p.m. – 7:00 a.m.)
N1	Ma Tau Kok 13 Streets	47/60	No Night Time Sport Event in Main Stadium
N2	Sky Tower	51/65	
PN1	KTD Site 5A4	48/60	
PN2	Sung Wong Toi Road R(A) Site	56/60	
PN3	Sung Wong Toi Road CDA Site	51/65	
PN4	Sung Wong Toi Road CDA Site	49/65	
PN5	KTD Site 2B4	49/60	
PN6	KTD Site 2B3	51/60	
PN7	KTD Site 2B1	50/60	
PN8	KTD Site 1K3	54/60	
PN9	KTD Site 1L3	44/60	

Table 5-27 Mitigated Cumulative Noise Levels from Sports Events at Public Sports Ground and the Fixed Plant

NSR	Location	Predicted Noise Level / Assessment Criteria, dB(A), Leq (30 min)	
		Daytime / Evening	**Night-time (11:00 p.m. – 7:00 a.m.)**
N1	Ma Tau Kok 13 Streets	52/60	No Night Time Sport Event in Public Sports Ground
N2	Sky Tower	56/65	
PN1	KTD Site 5A4	54/60	
PN2	Sung Wong Toi Road R(A) Site	60/60	
PN3	Sung Wong Toi Road CDA Site	58/65	
PN4	Sung Wong Toi Road CDA Site	56/65	
PN5	KTD Site 2B4	59/60	
PN6	KTD Site 2B3	60/60	
PN7	KTD Site 2B1	57/60	
PN8	KTD Site 1K3	59/60	
PN9	KTD Site 1L3	52/60	

Noise from Music, Singing and Instrument Performing Activities

5.9.19 With the implementation of the recommended mitigation measures (**Sections 5.6.1 – 5.6.4** refer), the potential noise impact arising from the musical events at the Main Stadium during daytime/evening period (i.e. 7 a.m. to 11 p.m.) would comply with the noise criteria stipulated under the Noise Control Guidelines for Music, Singing and Instrument Performing Activities. Should the future operator plan to implement any musical events at the Main Stadium during night-time period (i.e. 11 p.m. to 7 a.m.), the operator is obliged to ensure that the noise impacts arising from the said night-time musical events will comply with the noise requirements under the NCO.

Human Noise during Crowd Dispersion

5.9.20 In addition to normal dispersal routes above the podium, routes have been proposed on the ground level for directing the crowd towards the future Kai Tak Station and To Kwa Wan Station for crowd dispersion at night-time. Under such circumstances, the crowd would be directed to disperse under the podium at ground level. There would be covers above some sections of the night-time crowd dispersal routes. Such covers would partially screen the crowd dispersal routes from the planned residential sites although the covers are not to be provided as noise mitigation measures for the Project. For the crowd moving toward the Kai Tak Station, spectators would be directed to leave the site through or along the Indoor Sports Centre Building (ISCB) to reduce the exposed sections of the crowd dispersal routes. For the dispersal routes toward To Kwa Wan Station, the exit from the Project site is designed near the Sung Wong Toi Park. The proposed night-time crowd dispersal routes are presented in **Figure 5-6**.

Noise Sensitive Receivers (NSRs)

Project Site Boundary

Site of boundary of Station Square

PN7
PN6
PN5
PN8
PN9
PN4
PN3
PN2B
PN2A
PN1
N2
N1

Measurement Location 1

Measurement Location 2

Non Building Area / EVA

Indicative Green Roof plantation subject to load bearing capacity of the building

Indoor Sports Centre

Public Sports Ground

Office Block

Landscape deck over CKR

300m Study Area

Proposed Public Housing Development at To Kwa Wan Road

ARCHITECTURAL SERVICES DEPARTMENT

The joint venture of
CINOTECH
Cinotech Consultants Ltd. and
Maurice Lee & Associates Ltd. .

Sub-Consultant
MVA SYSTRA GROUP

Drafting by	TC	12/15
Designed by	TC	12/15
Checked by	KS	01/16
Approved by	HF	01/16

SCALE: 1:5000 @ A3 SIZE

50 0 50 100 150 200m

PROJECT: Kai Tak Multi-purpose Sports Complex
TITLE: Location of Selected Representative NSRs for Operational Noise Impact Assessment

DRAWING NO: Figure 5-2

REV: 1

Filename: F:\Projects\IA14016 – EIA and TIA for Multi-purpose Sports Complex (MPSC) at Kai Tak\Drawing\CAD\Crowd Dispersal Noise\Crowd Dispersal NSRs.dwg

Appendix 3.3

Extracted information from the Approved EIA for Kai Tak Multi-purpose Sports Complex (AEIAR-204/2017)

Extract from approved EIA-263/2020
Appendix 5.5

Fixed Noise Source Inventory

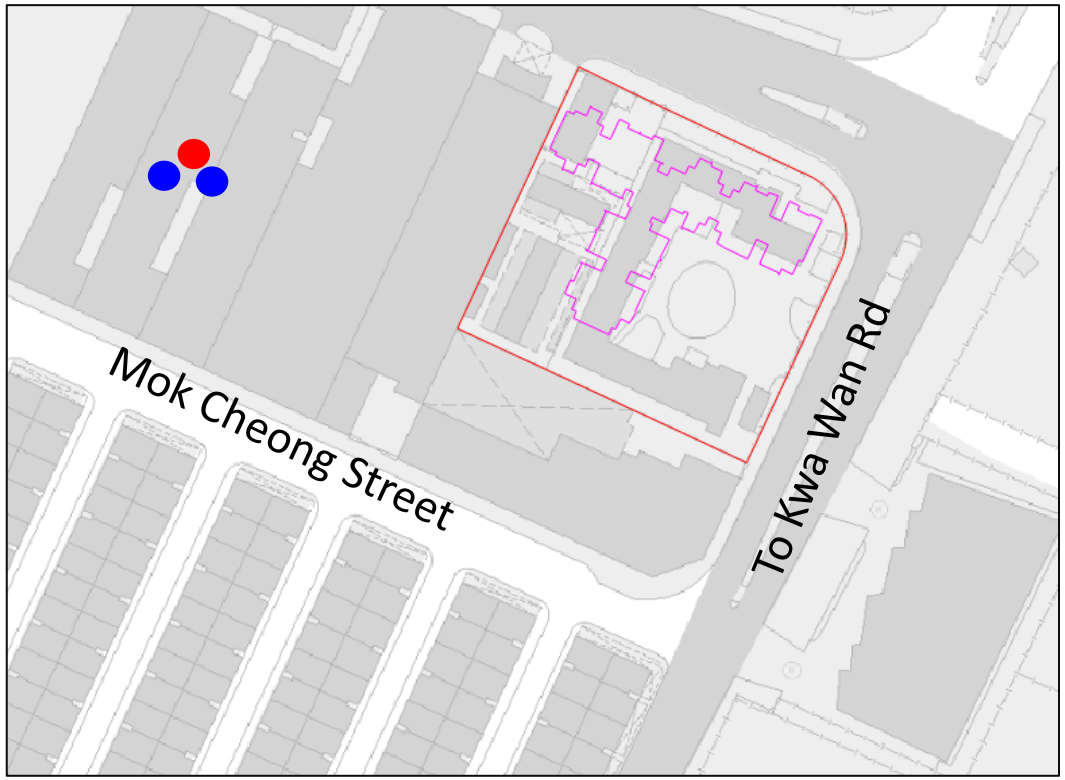
Noise Source ID	Noise Sources	Source Description	Avg. Measured SPL, dB(A)	Measurement Distance from Source (d), m	SWL, dB(A) (SPL + 20 log (d)+8)	SWL adopted in Noise from Fixed Source Calculation, dB(A), Day time	SWL adopted in Noise from Fixed Source Calculation, dB(A), Night time	Remarks
FS1	力信	Car Repairing Workshop	-	-	-	98	0	Refer to FS18
FS2	加昌貿易海運	Car Repairing Workshop	-	-	-	98	0	
FS4	Car Repairing workshop	Car Repairing Workshop	-	-	-	98	0	
FS5	天輝	Car washing workshop	77	3	94	94	0	By on-site measurement
FS6	東聯汽車維修	Car Repairing Workshop	-	-	-	98	0	Refer to FS18
FS7	恒力	Car Repairing Workshop	-	-	-	98	0	
FS8	Unnamed car parking	Car Repairing Workshop	-	-	-	98	0	
FS9	Enclosed Workshop	Car Repairing Workshop	-	-	-	98	0	
FS10	Self-served car washing workshop	Car washing workshop	-	-	-	94	0	Refer to FS5
FS11	榮泰	Car Repairing Workshop	-	-	-	98	0	Refer to FS18
FS12	Calco Industrial Products Ltd.	Car Repairing Workshop	-	-	-	98	0	
FS13	Car Repairing workshop	Car Repairing Workshop	-	-	-	98	0	
FS14	Unknown workshop	Unknown workshop	58	5	80	80	0	By on-site measurement
FS15	CHEP	Covered storage with forklift	65	8	91	91	0	Reference is made to an approved planning application A/TM-LTYY/273
FS16	緯力貨倉 (Wai Yik)	Storage with forklift	63	13	93	93	0	By on-site measurement
FS17	龍顏(Lung Ngai)	Tyre pumping	-	-	89	92	0	SWL of tyre pumping made reference to an approved planning application A/YL-KTN/501; SWL of Hammering made reference to Tin Lung (FS18); Car Cleansing was measured on-site.
		Hammering	-	-	87		0	
		Car Cleasing	59	5	81		0	
FS18	天隆(Tin Lung)	Pneumatic screwdriver	-	-	97	98	0	SWL of pneumatic screwdriver and tyre pumping made reference to an approved planning application A/YL-KTN/501. Hammering was measured on-site.
		Tyre pumping	-	-	89		0	
		Hammering	63	6	87		0	
FS19	隆德 (Lung Tak)	Car repairing workshop	-	-	-	98	0	Refer to FS18
FS20	Chuen Fat Marble Tools	Marble grinding	73	3	90	90	0	By on-site measurement
PFS-01	PTI-01	Proposed Public Transport Interchange	-	-	-	84	77	By Back-calculation of Maximum Allowable SWL for the Proposed PTI (Appendix 5.17)
PFS-02	PTI-01		-	-	-	83	76	
PFS-03	PTI-02		-	-	-	84	77	
PFS-04	PTI-02		-	-	-	86	79	
PFS-05	Proposed Sewage Pumping Station	Spumps, Screens and Extraction Fans	-	-	-	89	89	Reference is made to the Project Profile of Proposed Sewage Pumping Station at Attachment 1

SWL source for vehicle workshop

Appendix 3.4

Noise Measurement Results for Rooftop Cooling Tower at No. 11 Mok Cheong Street

Site Measurement Results for Rooftop Cooling Tower Muk Cheong Street No. 11



Legend:

- Noise Source
- Measurement Point
- Site Boundary

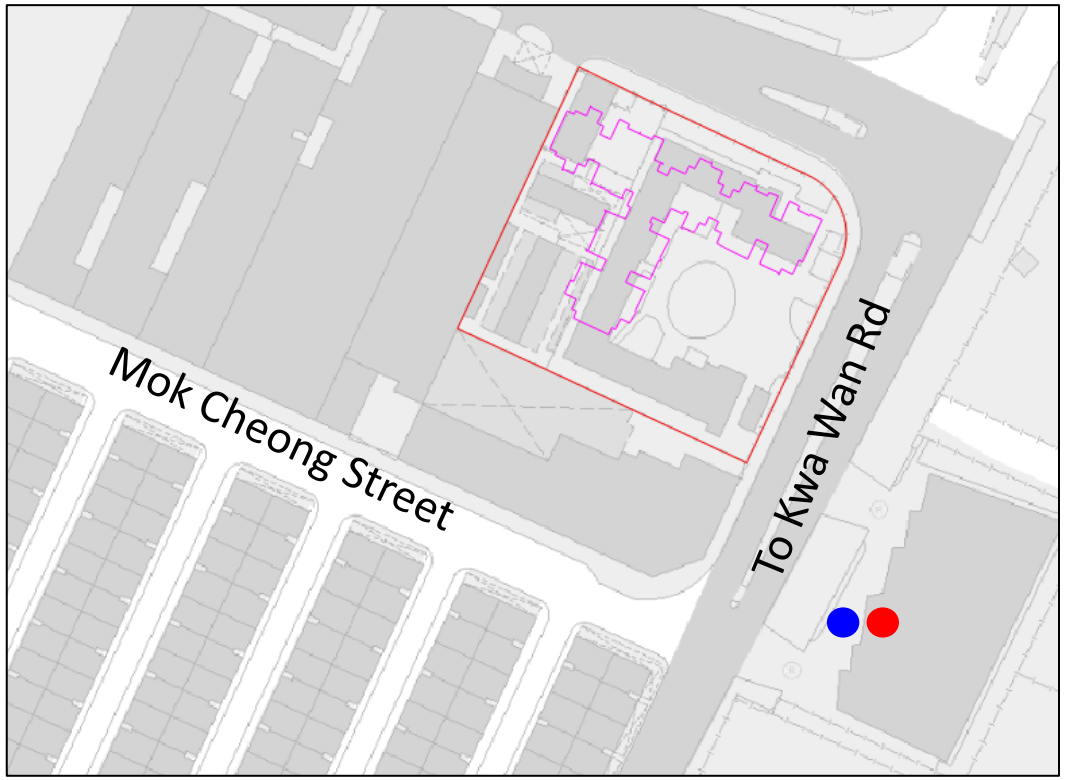
Measurement Date:
21 October 2022

Measurement Start Time:
16:40

Average L_{eq} measured at 1m: 74 dB(A)
Dimension of Cooling Tower: 1.8m(D) x 2.1m (H)
(Surface of measurement box of 62 sqm according to ISO3746)
SWL of Cooling Tower = 74 + 10*log(62)= 92dB(A)

Remark: Noise measurements were conducted with minimal interference from the nearby noise sources, e.g. road traffic noise.

Site Measurement Results for To Kwa Wan Road Sewage Pumping Station



Legend:

- Louver with noise emission
- Measurement Point
- Site Boundary

Measurement Date:
21 October 2022

Measurement Start Time:
17:30

L_{eq} measured at 3m: 68 dB(A)

Remark: Noise measurements were conducted with minimal interference from the nearby noise sources, e.g. road traffic noise.

Appendix 3.5

URA's Announcement on Ming Lun Street/Ma Tau Kok Road Development Scheme and To Kwa Wan Road/Ma Tau Kok Road Development Scheme

市區重建局
URBAN RENEWAL AUTHORITY

Press Releases

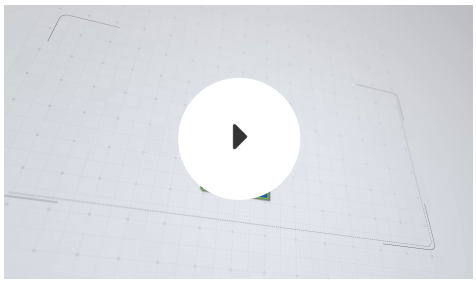
7 OCT 2022

URA Commences Two Redevelopment Projects in To Kwa Wan to Create a Vibrant Harbourfront through Effective Planning

The Urban Renewal Authority (URA) today (7 October 2022) commences the statutory planning procedures for two redevelopment projects in To Kwa Wan. By adopting a "planning-led, district-based" urban renewal approach to regenerate the built environment of the old district, a holistic plan will be formulated to restructure and re-plan the land uses of the area to improve the living environment of the residents. In the meantime, the redevelopment will also improve the connectivity of To Kwa Wan with the Kai Tak Development Area and create a vibrant harbourfront, bringing greater planning benefits to the community.

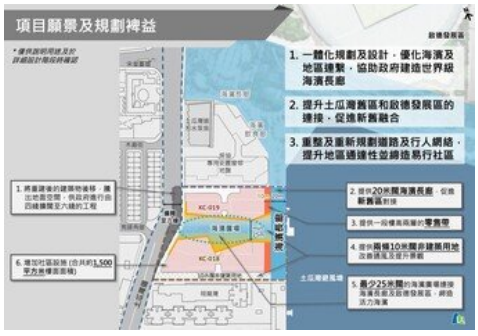
There are a large number of aged buildings in the older area of Kowloon City where residents and stakeholders have expressed their requests for a better road network, living environment and community facilities through urban renewal. The URA has taken these aspirations into consideration, and has conducted a comprehensive and holistic planning study to examine the land-use planning and renewal opportunities for the area, so as to pave way for regenerating the built environment and improving the standard of housing.

The two projects commenced in To Kwa Wan today are Ming Lun Street/Ma Tau Kok Road Development Scheme (KC-018) and To Kwa Wan Road/Ma Tau Kok Road Development Scheme (KC-019). KC-018, also known as "5 Streets", covers buildings of about 110 street numbers. These eight-storey buildings are



Media Briefing on Commencement of Ming Lun Street/Ma Tau Kok Road Development Scheme and To Kwa Wan Road/Ma Tau Kok Road Development Scheme.

General Manager (Planning and Design) of the URA, Mr Lawrence Mak (right), and General Manager (Acquisition and Clearance) of the URA, Mr Kelvin Chung (left), announce the commencement of two redevelopment projects in To Kwa Wan.



currently occupied by about 1,400 families and 100 ground-floor shops. They are generally in the age of about 60, without elevators, and in dilapidated conditions. KC-019 covers the redevelopment of two industrial buildings. According to the relevant statutory plan, the area has been zoned for comprehensive redevelopment for residential and commercial uses with the provision of a waterfront promenade and other supporting facilities.

At the media briefing today, URA General Manager (Planning and Design), Mr Lawrence Mak, said, “The two projects will be implemented under the ‘planning-led, district-based’ approach in accordance with the objectives set out in the 2011 Urban Renewal Strategy. By incorporating ‘5 Streets’, the two industrial buildings and the adjoining underused streets in the holistic planning, opportunities to improve the local streetscape and overall living conditions can be optimised, realising an area-wide regeneration of the built environment in the old district.”

As the project sites are strategically located at the harbourfront area, the URA has incorporated the Government’s visions of enhancing the city’s harbourfront environment in its comprehensive study.

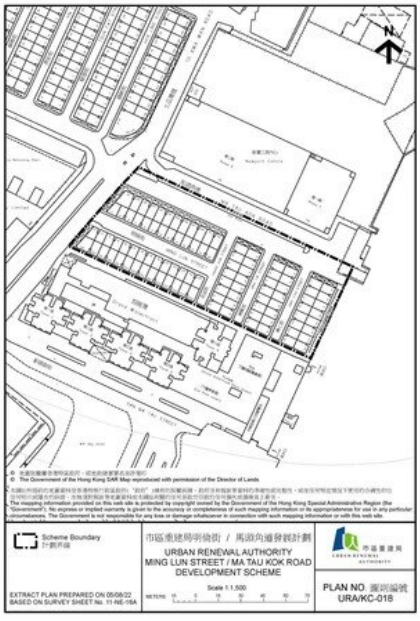
Mr Mak continued, “Through the re-planning of land use under a holistic master plan, a portion of the new buildings after redevelopment will be set back from the waterfront to create space for a waterfront promenade of about 20 metres wide. It will connect with the facilities in the Kai Tak Development Area including a dining cove, a waterfront promenade and the Kai Tak Sports Park, achieving the design objective of shaping a world-class harbourfront.”

In addition, through a properly-planned building layout and design, an at-grade waterfront plaza between the residential blocks and the commercial podium will be provided. The plaza, which is at least 25 metres wide, will enhance walkability between To Kwa Wan Road and the waterfront promenade, and at the same time, provide space to accommodate on-street dining and shops, creating a pleasant atmosphere for public enjoyment.

Besides, the buildings facing To Kwa Wan Road will be set back upon completion of the projects to provide sufficient space to align with the Government’s intention to widen To Kwa Wan Road from four lanes to six, enhancing the accessibility with the Kai Tak Development Area.

Planning vision and planning gain of the two redevelopment projects in To Kwa Wan.

Existing view of Ming Lun Street/Ma Tau Kok Road Development Scheme and To Kwa Wan Road/Ma Tau Kok Road Development Scheme.



Site plan of Ming Lun Street/Ma Tau Kok Road Development Scheme

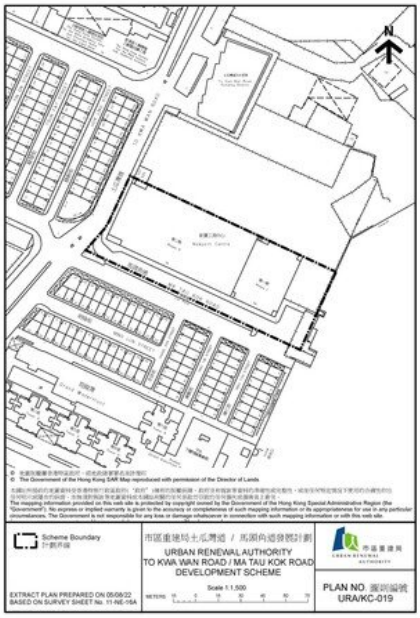
In accordance with the Urban Renewal Authority Ordinance, a URA notice announcing the commencement of KC-018 and KC-019 can be found in today's publication of the Gazette. As the implementation involves the amendment of the Outline Zoning Plan of the district, the URA will submit two draft Development Scheme Plans to the Town Planning Board (TPB) on or before 10 October 2022. All related information will be made available by TPB for public inspection. Full details are available on the notice in the Gazette.

General Manager (Acquisition and Clearance) of the URA, Mr Kelvin Chung, said that the URA would start the acquisition of property interests and make compensation/rehousing offers to eligible tenants in accordance with the policy prevailing at the time when the approval to implement KC-018 and KC-019 is granted by the Chief Executive in Council.

KC-019 is URA's third industrial building redevelopment project. Back in 2012 and 2013, the URA commenced two industrial building redevelopment pilot scheme projects in the Central and Western district and Cheung Sha Wan respectively. Having considered various factors, the URA eventually withdrew these pilot projects during the implementation periods. A major factor for the withdrawal was that a few owners and some property developers who held a certain proportion of the properties, preferred to retain them for self-use or to redevelop on their own rather than selling them to the URA.

Taking into consideration the difficulties encountered in implementing the pilot projects, the URA is reviewing the policies for the acquisition of property interest of industrial units. Meanwhile, the URA is also exploring the feasibility of introducing an alternative by allowing owner(s) who, as of the date of the commencement of KC-019, own not less than a prescribed number of properties in the project area and satisfy other criteria specified by the URA, to participate in the development, instead of receiving pecuniary compensation by selling their properties to the URA. The terms and conditions and relevant details will be provided to owners at an appropriate time.

The new initiative being explored aims to facilitate the acquisition arrangements for KC-019 so as to expedite the redevelopment of the industrial buildings under a holistic master layout plan with KC-018 for more planning benefits. As such, the measures involved, would not be applicable to other URA projects.



Site plan of To Kwa Wan Road/Ma Tau Kok Road Development Scheme

URA staff has been deployed earlier today to the site area to conduct a freezing survey to ascertain the actual number of affected residents or users, and the occupancy status of the property.

As social distancing measures are still in force, the URA will take enhanced infection control measures throughout the period of freezing survey. These measures include enabling URA interviewers to store their vaccination records as well as the negative test results of the Rapid Antigen Test taken on the date of the survey in the URA's "Health Code 4.0" application on his/her mobile phone. Such information will be shown to the occupants for verification before entering the property for the freezing survey.

Following the commencement of the two projects, the URA will conduct online video briefing sessions for affected residents on topics covering the planning procedure and the URA's prevailing acquisition and compensation arrangements.

The URA will also assign case officers to contact the affected households and business tenants to explain the acquisition policies, timeline and arrangement of the implementation, as well as the latest progress of the projects. An urban renewal social service team staffed by professional social workers of Hong Kong Lutheran Social Service has been appointed by the Urban Renewal Fund to provide relevant assistance and guidance to owners and residents in need. The contact number of the social service team is 3596 6850. Affected residents can also visit the URA Headquarters in person, call the URA's Hotline at 2588 2333 for enquiries, or visit the URA website at www.ura.org.hk for information about the projects.

Appendix: Details and Proposed Development Parameters for the Redevelopment Schemes

Project	**KC-018**
Project Location	Nos. 91-113 Ma Tau Kok Road (odd numbers), Nos. 1-28A Ming Lun Street, Nos. 1-15 Chung Sun Street (odd numbers), Nos. 1-16 Hing Yin Street, Nos. 1-17 Hing Yan Street, and Nos. 19-31

	Hing Yan Street (odd numbers), involving about 100 street numbers
Project Area	About 11,430 square metres
Number of Affected Property Interests*	About 820
Number of Affected Households/Users	About 1,410 households
Number of Affected Ground Floor shops	About 100
Proposed Development Contents **	
Total Gross Floor Area	About 79,720 square metres
Domestic Floor Area	About 68,220 square metres
Number of residential flats (small-to-medium sized flats)	About 1,280
Non-domestic Gross Floor Area	About 10,500 square metres
Government, Institution and Community Facilities	About 1,000 square metres
Affiliated Underground Parking (for private cars)	About 430
Estimated Completion Year	2033

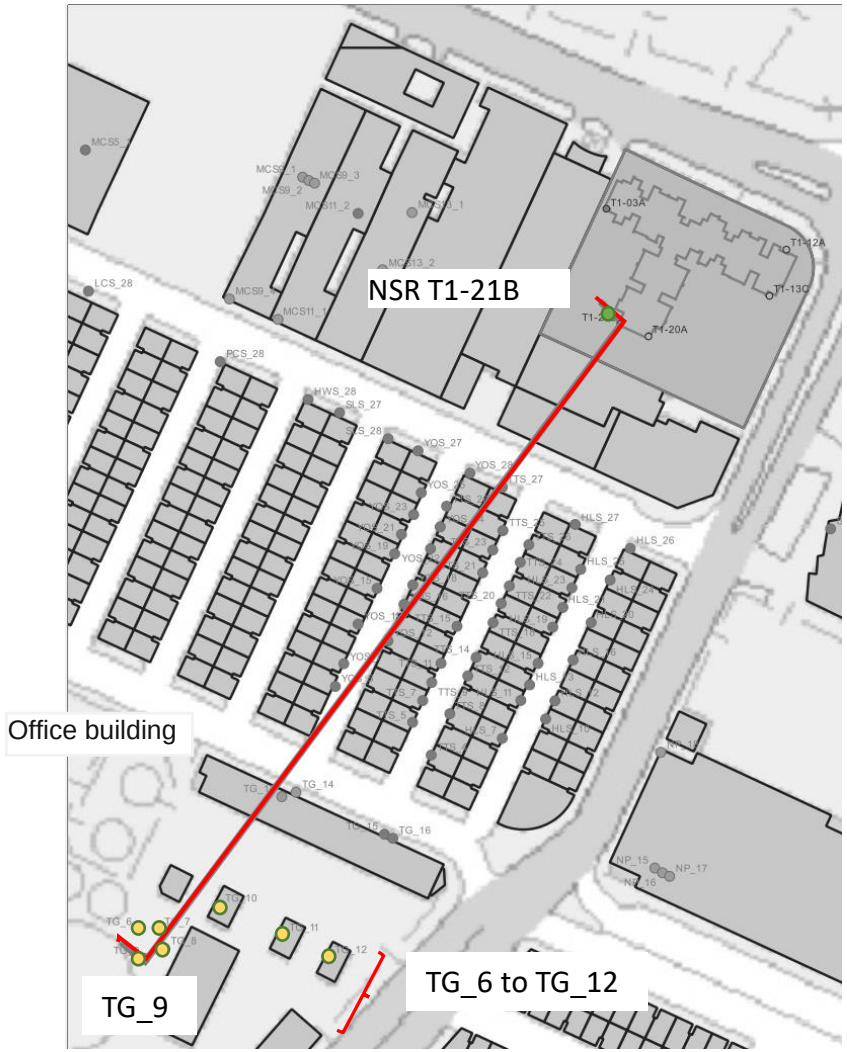
*Subject to the results of the freezing survey

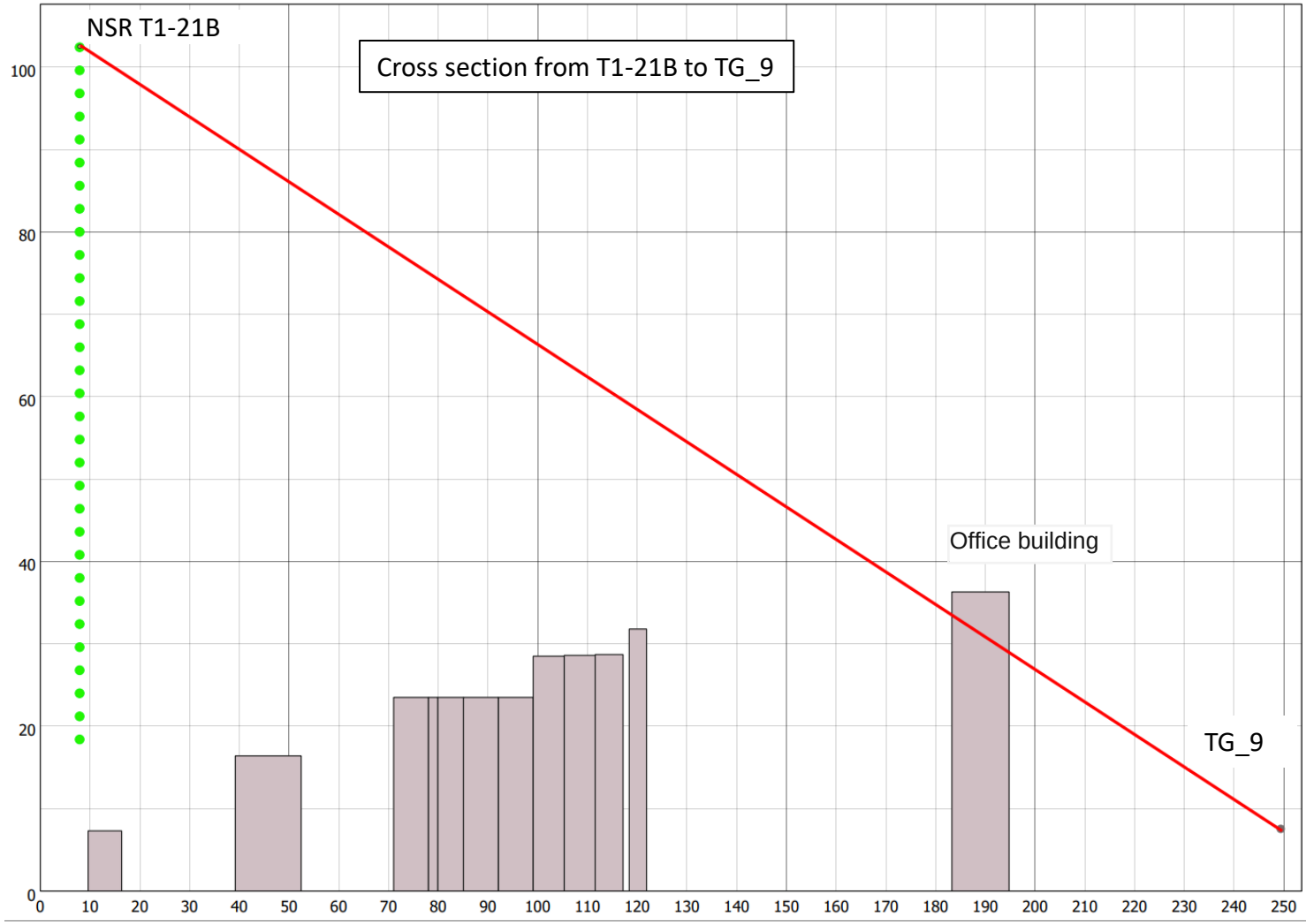
**Subject to future detailed design

Appendix 3.6

Sightline Analysis for Noise Sources at Towngas Ma Tau Kok Gas Works

Line of sight from worstcase noise source and NSR Location (NSR T1-21B to TG_9)





No line of sight at worst case noise source and NSR locations, therefore, there is no line of sight from all NSRs to noise sources TG_6 to TG_12

Appendix 3.7

Reference Catalogue for Chiller and Cooling Tower at Towngas Ma Tau Kok Gas Works

Manufacturer catalogues of Chiller

30RBM/30RBP

Nominal cooling capacity 164-528 kW

greenspeed AQUASNAP

High full and part-load efficiency

Compact and simple to install

Low sound level

Very low refrigerant charge

Superior reliability

The AquaSnap liquid chillers are the best value solution for commercial and industrial applications where installers, consultants and building owners require reduced installed costs, optimal performances and maximum quality.

The new generation AquaSnap features two new versions:

- The AquaSnap (30RBM) version features a compact all-in-one package optimised for full-load applications where reduced investment cost (low Capex) is required. For cold or hot climates, the AquaSnap can be equipped with specific options to operate from -20 °C up to 52 °C.
- The AquaSnap Greenspeed® (30RBP) version features a compact all-in-one package optimised for part-load applications where high ESEER/IPLV are required. The AquaSnap Greenspeed® equipped with variable speed condenser fans and variable speed pump provides premium part load efficiency to reduce utility costs over the lifespan of the chiller. Additionally, the low sounds levels achieved at part load conditions can be very beneficial for sensitive acoustic applications. Besides operating efficiently and quietly, AquaSnap Greenspeed® operates from -20 °C up to 48 °C as standard.

The AquaSnap liquid chillers are designed to meet current and future Ecodesign and F-Gas European regulation requirements in terms of energy efficiency and reduced CO_2 emissions. They use the best technologies available today:

- Reduced refrigerant charge of non-ozone depleting refrigerant R-410A
- Scroll compressors
- Greenspeed® variable-speed driven fans (30RBP models)
- Novation® micro-channel heat exchangers with new aluminum alloy

- Brazed plate heat exchangers with reduced water pressure drops
- Auto-adaptive microprocessor control with Greenspeed® intelligence
- Touch Pilot control with web connectivity possibilities and colour touch screen user display
- Extra energy savings through multiple options: Direct-expansion free cooling system on one or two circuits, hydronic free-cooling system, partial or total heat recovery.

Both AquaSnap versions can be equipped with an integrated hydronic module, limiting the installation to straight-forward operations like connection of the power supply and the chilled water supply and return piping (plug & play), within the dimensions of the standard unit.

Recommended by Carrier, the AquaSnap can be equipped with one or two Greenspeed® variable-speed pumps to save significant pumping energy cost (more than two-thirds), ensure tighter water flow control, and improved overall system reliability.

For operation in the most stringent environments that cumulates high temperature, dusts and sand, the AquaSnap (30RBM) can be equipped with optional IP54 electrical box and cabinet fan to operate up to 52 °C outside air temperature.

Physical data

EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com

30RBM		160	180	200	220	260	300	330	360	400	430	470	520
Cooling													
Air conditioning application as per EN14511-3:2013† - standard unit													
Nominal cooling capacity	kW	168	181	198	216	261	300	331	365	397	430	464	523
ESEER	kW/kW	4.00	4.07	4.01	4.00	4.00	4.07	4.08	4.10	4.05	4.07	4.04	4.03
EER	kW/kW	3.04	3.12	2.98	2.97	2.90	2.97	2.92	2.95	2.90	2.94	2.90	2.90
Eurovent class cooling		B	A	B	B	B	B	B	B	B	B	B	B
Air conditioning application†† - standard unit													
Nominal cooling capacity	kW	168	182	199	216	262	301	331	366	398	431	465	524
ESEER	kW/kW	4.12	4.20	4.16	4.17	4.16	4.20	4.19	4.24	4.17	4.19	4.17	4.17
EER	kW/kW	3.07	3.16	3.02	3.01	2.93	3.00	2.94	2.98	2.93	2.97	2.93	2.93
IPLV	kW/kW	4.57	4.57	4.54	4.51	4.50	4.61	4.61	4.69	4.58	4.62	4.55	4.58
Sound levels													
Standard unit													
Sound power level***	dB(A)	91	92	92	92	92	93	93	93	93	94	94	94
Sound pressure level at 10 m****	dB(A)	59	60	60	60	60	60	60	61	61	62	62	62
Standard unit + option 15*													
Sound power level***	dB(A)	89	90	90	90	90	91	91	92	92	93	93	93
Sound pressure level at 10 m****	dB(A)	57	58	58	58	58	59	59	60	60	61	61	61
Standard unit + option 15LS*													
Sound power level***	dB(A)	85	85	85	86	86	86	86	87	87	88	88	88
Sound pressure level at 10 m****	dB(A)	53	53	53	54	54	54	54	55	55	55	55	56
Dimensions - standard unit													
Length	mm	2410					3604				4797		
Width	mm	2253					2253				2253		
Height	mm	2297					2297				2297		
Operating Weight **													
Standard unit	kg	1216	1257	1257	1387	1408	1865	1901	2069	2125	2545	2563	2761
Standard unit + option 15*	kg	1299	1339	1340	1495	1516	1991	2027	2212	2269	2707	2726	2941
Standard unit + option 15 + option 116S*	kg	1438	1479	1479	1634	1670	2151	2231	2416	2472	2950	2967	3221

SWL of 94 dB(A) is adopted as the worst case scenario

† Eurovent-certified performances in accordance with standard EN14511-3:2013.
Cooling mode conditions: Evaporator water entering/leaving temperature 12 °C/7 °C, outside air temperature 35 °C. Evaporator fouling factor 0.00 m². k/W

†† Gross performances, not in accordance with EN14511-3:2013. These performances do not take into account the correction for the proportional heating capacity and power input generated by the water pump to overcome the internal pressure drop in the heat exchanger. Evaporator water entering/leaving temperature 12 °C/7 °C, outside air temperature 35 °C. evaporator fouling factor 0.00 m². k/W

* Options: 15 = Low noise level, 15LS = Very low noise level, 116S = High Pressure dual-pump hydronic module

** Weights are guidelines only. Refer to the unit nameplate.

*** In dB ref=10^{-12} W, (A) weighting. Declared dualnumber noise emission values in accordance with ISO 4871 (with an associated uncertainty of +/-3 dB(A)). Measured in accordance with ISO 9614-1 and certified by Eurovent.

**** In dB ref 20 µPa, (A) weighting. Declared dualnumber noise emission values in accordance with ISO 4871 (with an associated uncertainty of +/-3 dB(A)). For information, calculated from the sound power level Lw(A).

Eurovent certified data

Physical data

30RBM		160	180	200	220	260	300	330	360	400	430	470	520
Compressors		Hermetic scroll 48.3 tr/s											
Circuit A		1	1	1	2	2	2	2	3	3	3	3	4
Circuit B		2	2	2	2	2	3	3	3	3	4	4	4
No. of control stages		3	3	3	4	4	5	5	6	6	7	7	8
Refrigerant - Standard unit**		R410A											
Circuit A	kg	8.40	10.90	10.90	12.60	13.10	14.70	15.40	20.30	21.10	23.50	23.50	26.75
	teqCO_2	17.5	22.8	22.8	26.3	27.4	30.7	32.2	42.4	44.1	49.1	49.1	55.9
Circuit B	kg	12.25	12.60	12.60	12.70	13.10	20.20	20.20	20.40	22.20	26.70	26.80	26.95
	teqCO_2	25.6	26.3	26.3	26.5	27.4	42.2	42.2	42.6	46.4	55.7	56.0	56.3
Capacity control		Pro-Dialog+ Control											
Minimum capacity	%	33	33	33	25	25	20	20	17	17	14	14	13
Condensers		All-aluminium micro-channel heat exchanger (MCHE)											
Fans - Standard unit		Axial Flying Bird 4 with rotating shroud											
Quantity		3	4	4	4	4	5	5	6	6	7	7	8
Maximum total air flow	l/s	13542	18056	18056	18056	18056	22569	22569	27083	27083	31597	31597	36111
Maximum rotation speed	tr/s	16	16	16	16	16	16	16	16	16	16	16	16
Evaporator		Twin-circuit plate heat exchanger											
Water content	l	15	15	15	15	19	27	35	33	42	44	47	53
Max. water-side operating pressure without hydronic module	kPa	3200	3200	3200	3200	3200	3200	3200	3200	3200	3200	3200	3200
Hydronic Module (option)		Pump, Victaulic screen filter, safety valve, water valve and air purge, pressure sensors, expansion tank (option)											
Pump		Centrifugal, monocell, 48.3 r/s, low or high pressure (as required), single or dual pump (as required)											
Expansion tank volume	l	50	50	50	50	50	80	80	80	80	80	80	80
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											
Diameter	inch	3	3	3	3	3	4	4	4	4	4	4	4
Outside tube diameter	mm	88.9	88.9	88.9	88.9	88.9	114.3	114.3	114.3	114.3	114.3	114.3	114.3
Chassis paint colour		Colour code RAL 7035											

† Eurovent-certified performances in accordance with standard EN14511-3:2013.
Cooling mode conditions: Evaporator water entering/leaving temperature 12 °C/7 °C, outside air temperature 35 °C. Evaporator fouling factor 0.00 m^2. k/W

†† Gross performances, not in accordance with EN14511-3:2013. These performances do not take into account the correction for the proportional heating capacity and power input generated by the water pump to overcome the internal pressure drop in the heat exchanger. Evaporator water entering/leaving temperature 12 °C/7 °C, outside air temperature 35 °C. evaporator fouling factor 0.00 m^2. k/W

* Options: 15 = Low noise level, 15LS = Very low noise level, 116S = High Pressure dual-pump hydronic module

** Weights are guidelines only. Refer to the unit nameplate.

*** In dB ref=10^{-12} W, (A) weighting. Declared dualnumber noise emission values in accordance with ISO 4871 (with an associated uncertainty of +/-3 dB(A)). Measured in accordance with ISO 9614-1 and certified by Eurovent.

**** In dB ref 20 µPa, (A) weighting. Declared dualnumber noise emission values in accordance with ISO 4871 (with an associated uncertainty of +/-3 dB(A)). For information, calculated from the sound power level Lw(A).

Eurovent certified data

Physical data

Cooling

30RBP		160	180	200	220	260	300	330	360	400	430	470	520
Air conditioning application as per EN14511-3:2013† - standard unit													
Nominal cooling capacity	kW	168	180	197	216	261	300	331	365	397	430	464	523
ESEER	kW/kW	4.18	4.21	4.14	4.18	4.15	4.37	4.28	4.37	4.26	4.36	4.44	4.30
EER	kW/kW	3.04	3.12	2.98	2.97	2.90	2.97	2.92	2.95	2.90	2.94	2.90	2.90
Eurovent class cooling		B	A	B	B	B	B	B	B	B	B	B	B
Air conditioning application††- standard unit													
Nominal cooling capacity	kW	168	181	198	216	262	301	331	366	398	431	465	524
ESEER	kW/kW	4.31	4.36	4.29	4.37	4.32	4.53	4.41	4.53	4.39	4.50	4.60	4.48
EER	kW/kW	3.07	3.16	3.03	3.01	2.93	3.00	2.94	2.98	2.93	2.97	2.93	2.93
IPLV	kW/kW	4.76	4.85	4.73	4.85	4.75	5.00	4.83	5.00	4.81	4.92	5.00	4.84
Sound levels													
Standard unit													
Sound power level***	dB(A)	91	92	92	92	92	93	93	93	93	94	94	94
Sound pressure level at 10 m****	dB(A)	59	60	60	60	60	60	60	61	61	62	62	62
Standard unit + option 15*													
Sound power level***	dB(A)	89	90	90	90	90	91	91	92	92	93	93	93
Sound pressure level at 10 m****	dB(A)	57	58	58	58	58	59	59	60	60	61	61	61
Standard unit + option 15LS*													
Sound power level***	dB(A)	85	85	85	86	86	86	86	87	87	88	88	88
Sound pressure level at 10 m****	dB(A)	53	53	53	54	54	54	54	55	55	55	55	56
Dimensions - standard unit													
Length	mm	2410					3604				4797		
Width	mm	2253					2253				2253		
Height	mm	2297					2297				2297		
Operating Weight **													
Standard unit	kg	1252	1293	1293	1423	1445	1901	1937	2105	2162	2603	2621	2827
Standard unit + option 15*	kg	1334	1376	1376	1531	1553	2027	2063	2249	2306	2765	2783	3007
Standard unit + option 15 + option 116S*	kg	1473	1515	1516	1670	1707	2187	2267	2452	2509	3007	3024	3287
Compressors		Hermetic scroll 48.3 tr/s											
Circuit A		1	1	1	2	2	2	2	3	3	3	3	4
Circuit B		2	2	2	2	2	3	3	3	3	4	4	4
No. of control stages		3	3	3	4	4	5	5	6	6	7	7	8
Refrigerant - Standard unit**		R410A											
Circuit A	kg	8.40	10.90	10.90	12.60	13.10	14.70	15.40	20.30	21.10	23.50	23.50	26.75
	teqCO_2	17.5	22.8	22.8	26.3	27.4	30.7	32.2	42.4	44.1	49.1	49.1	55.9
Circuit B	kg	12.25	12.60	12.60	12.70	13.10	20.20	20.20	20.40	22.20	26.70	26.80	26.95
	teqCO_2	25.6	26.3	26.3	26.5	27.4	42.2	42.2	42.6	46.4	55.7	56.0	56.3
Capacity control		Pro-Dialog+ Control											
Minimum capacity	%	33	33	33	25	25	20	20	17	17	14	14	13
Condensers		All-aluminium micro-channel heat exchanger (MCHE)											

† Eurovent-certified performances in accordance with standard EN14511-3:2013.
Cooling mode conditions: Evaporator water entering/leaving temperature 12 °C/7 °C, outside air temperature 35 °C. Evaporator fouling factor 0.00 m^2. k/W

†† Gross performances, not in accordance with EN14511-3:2013. These performances do not take into account the correction for the proportional heating capacity and power input generated by the water pump to overcome the internal pressure drop in the heat exchanger. Evaporator water entering/leaving temperature 12 °C/7 °C, outside air temperature 35 °C. evaporator fouling factor 0.00 m^2. k/W

* Options: 15 = Low noise level, 15LS = Very low noise level, 116S = High Pressure dual-pump hydronic module

** Weights are guidelines only. Refer to the unit nameplate.

*** In dB ref=10^{-12} W, (A) weighting. Declared dualnumber noise emission values in accordance with ISO 4871 (with an associated uncertainty of +/-3 dB(A)). Measured in accordance with ISO 9614-1 and certified by Eurovent.

**** In dB ref 20 µPa, (A) weighting. Declared dualnumber noise emission values in accordance with ISO 4871 (with an associated uncertainty of +/-3 dB(A)). For information, calculated from the sound power level Lw(A).

Eurovent certified data

Physical data

30RBP		160	180	200	220	260	300	330	360	400	430	470	520
Fans - Standard unit		Axial Flying Bird 4 with rotating shroud											
Quantity		3	4	4	4	4	5	5	6	6	7	7	8
Maximum total air flow	l/s	13542	18056	18056	18056	18056	22569	22569	27083	27083	31597	31597	36111
Maximum rotation speed	tr/s	16	16	16	16	16	16	16	16	16	16	16	16
Evaporator		Twin-circuit plate heat exchanger											
Water content	l	15	15	15	15	19	27	35	33	42	44	47	53
Max. water-side operating pressure without hydronic module	kPa	3200	3200	3200	3200	3200	3200	3200	3200	3200	3200	3200	3200
Hydronic Module (option)		Pump, Victaulic screen filter, safety valve, water valve and air purge, pressure sensors, expansion tank (option)											
Pump		Centrifugal, monocell, 48.3 r/s, low or high pressure (as required), single or dual pump (as required)											
Expansion tank volume	l	50	50	50	50	50	80	80	80	80	80	80	80
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											
Diameter	inch	3	3	3	3	3	4	4	4	4	4	4	4
Outside tube diameter	mm	88.9	88.9	88.9	88.9	88.9	114.3	114.3	114.3	114.3	114.3	114.3	114.3
Chassis paint colour		Colour code RAL 7035											

† Eurovent-certified performances in accordance with standard EN14511-3:2013.
Cooling mode conditions: Evaporator water entering/leaving temperature 12 °C/7 °C, outside air temperature 35 °C. Evaporator fouling factor 0.00 m^2. k/W

†† Gross performances, not in accordance with EN14511-3:2013. These performances do not take into account the correction for the proportional heating capacity and power input generated by the water pump to overcome the internal pressure drop in the heat exchanger. Evaporator water entering/leaving temperature 12 °C/7 °C, outside air temperature 35 °C. evaporator fouling factor 0.00 m^2. k/W

* Options: 15 = Low noise level, 15LS = Very low noise level, 116S = High Pressure dual-pump hydronic module

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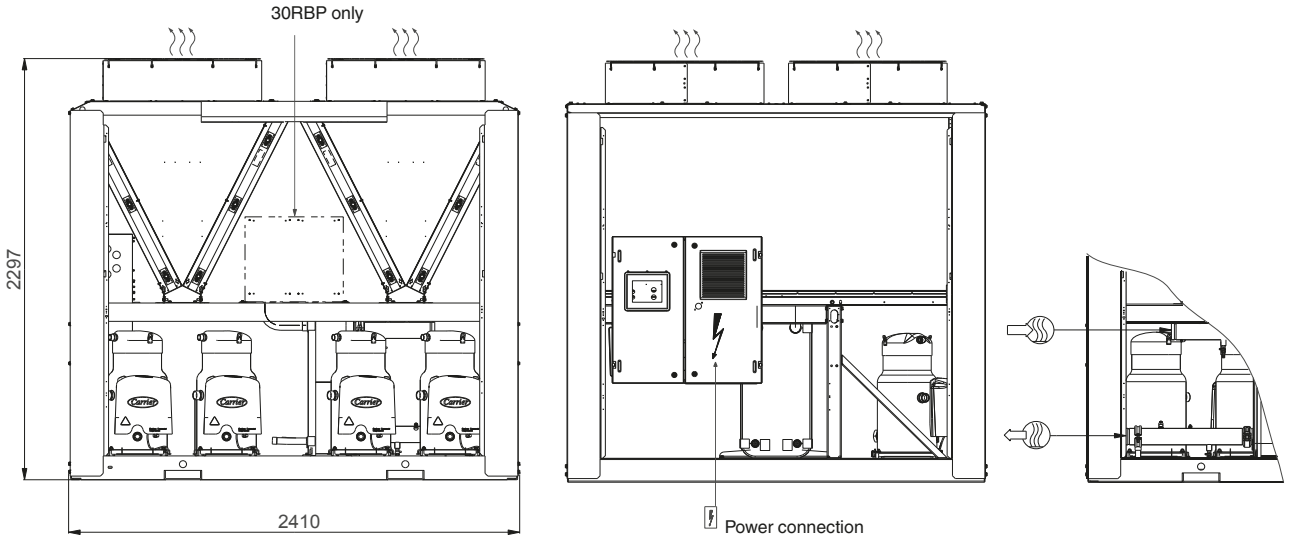
**** In dB ref 20 µPa, (A) weighting. Declared dualnumber noise emission values in accordance with ISO 4871 (with an associated uncertainty of +/-3 dB(A)). For information, calculated from the sound power level Lw(A).

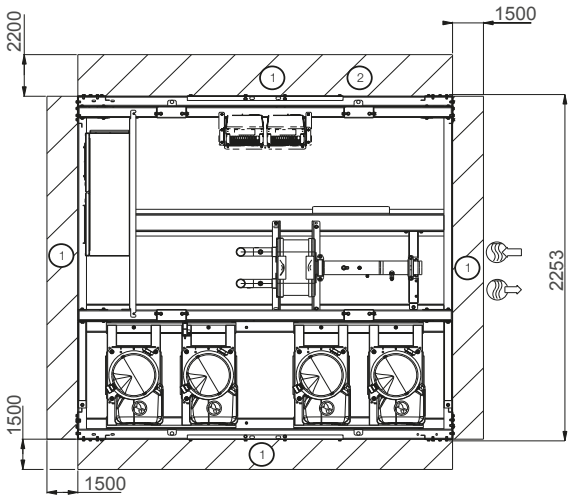
Eurovent certified data

Dimensions/clearances

30RBM/30RBP 160-260 (with and without hydronic module)

Unit without hydronic module





Legend:

All dimensions are in mm.

1 Clearances required for maintenance and air flow

2 Clearances required for removal of coil

Water inlet

Water outlet

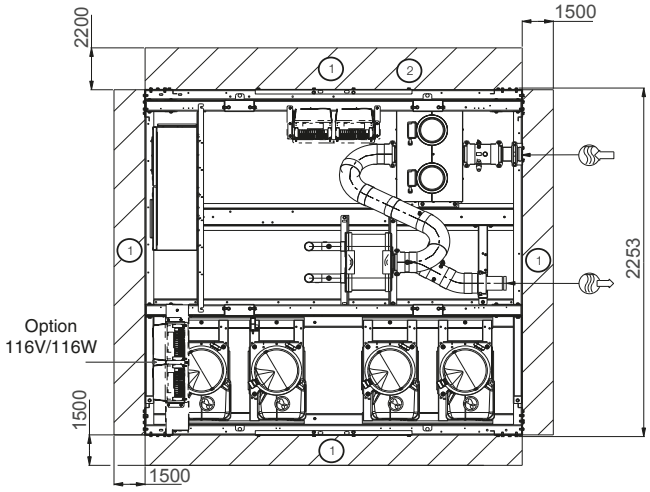
Air outlet, do not obstruct

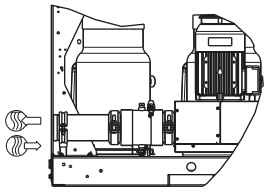
Control box

Note: Drawings are not contractually binding. Before designing an installation, consult the certified dimensional drawings, available on request.

For the positioning of the fixing points, weight distribution points and centre of gravity coordinates please refer to the dimensional drawings.

Unit with hydronic module





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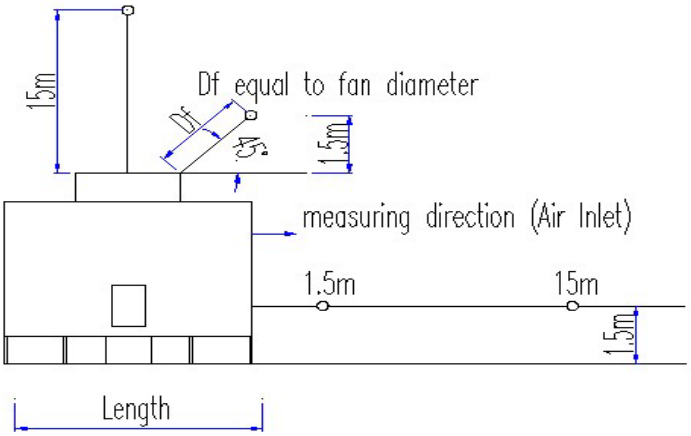
www.ryowo.com ryinfo@ryowo.com

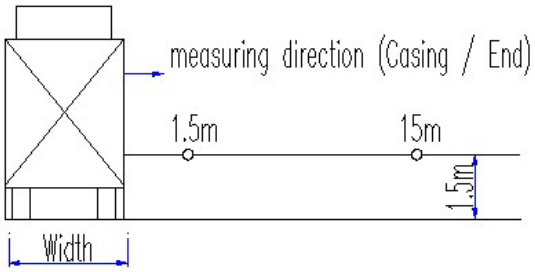
APRIL 2008

MEMBER

SOUND DATA SHEET FOR COOLING TOWER

Product Line: **FWS Series / CTI STD-201 Certified**
Model: **FWS-700-37**
Number of Fans: **ONE**
Fan Motor Power: **37 kW**
Number of Motors: **ONE**





Octave Band	Sound Pressure Level (SPL), dBA										Sound Power Level (PWL)
	Air Inlet		End		Air Inlet		End		Over Head		
Hz	1.5m	15m	1.5m	15m	1.5m	15m	1.5m	15m	1.5m	15m	dBA
63	54	41	49	40	54	41	49	40	54	44	73
125	66	51	58	45	66	51	58	45	65	56	83
250	74	58	65	53	74	58	65	53	71	60	89
500	71	62	63	55	71	62	63	55	73	62	92
1K	69	59	62	54	69	59	62	54	74	61	90
2K	66	53	55	45	66	53	55	45	68	56	84
4K	60	47	48	41	60	47	48	41	65	54	80
8K	56	43	55	35	56	43	55	35	60	47	74
dBA	77	65	69	59	77	65	69	59	79	67	96

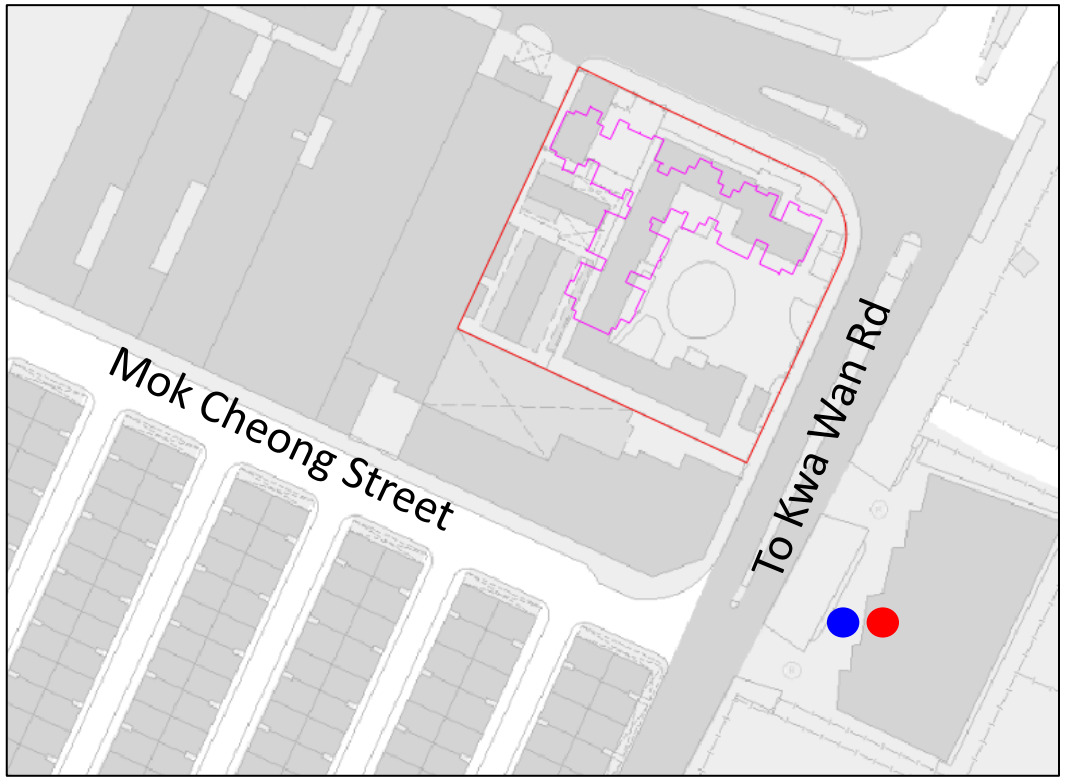
Notes:
1/ The effects of multiple cell units and sound attenuating accessories are excluded in the sound data.
2/ Data developed in accordance with Cooling Technology Institute (CTI) ATC-128 for small towers.

The SWL of 96 dB(A) is adopted as the SWL of the cooling towers of Towngas Ma Tau Kok Gas Works

Appendix 3.8

Site Measurement Results for To Kwa Wan Sewage Pumping Station

Site Measurement Results for To Kwa Wan Road Sewage Pumping Station



Legend:

- Louver with noise emission
- Measurement Point
- Site Boundary

Measurement Date:
21 October 2022

Measurement Start Time:
17:34

L_{eq} measured at 3m: 68 dB(A)

Remark: Noise measurements were conducted with minimal interference from the nearby noise sources, e.g. road traffic noise.

Appendix 3.9

Correspondence with Fixed Noise Sources Owners

[redacted]

From: [redacted]@dsd.gov.hk
Sent: 06 October 2022 14:31
To: [redacted]
Cc: [redacted]; [redacted]@dsd.gov.hk; [redacted]@dsd.gov.hk
Subject: Re: [Internet]Request for Information -Fixed Plant Operation Details of To Kwa Wan Road Pumping Station

Dear [redacted]

Please be advised that the previously provided information is still valid.

Best Regards,
[redacted]
[redacted], DSD
Office: [redacted]
Mobile: [redacted]

From: "[redacted]" <[redacted]@atkinsglobal.com>
To: "[redacted]@dsd.gov.hk" <[redacted]@dsd.gov.hk>
Cc: "[redacted]" <[redacted]@atkinsglobal.com>, "[redacted]@dsd.gov.hk" <[redacted]@dsd.gov.hk>, "[redacted]@dsd.gov.hk" <[redacted]@dsd.gov.hk>
Date: 06/10/2022 11:54
Subject: [Internet]Request for Information -Fixed Plant Operation Details of To Kwa Wan Road Pumping Station
Serial No.:

HKHA Environmental Assessment Study for a Proposed Development at To Kwa Wan Road Request for Information: Fixed Plant Operation Details of To Kwa Wan Road Pumping Station

Dear [redacted]

Since we are updating the Environmental Assessment for the site at To Kwa Wan Road , we would like to confirm the validity of below fixed plant information for To Kwa Wan Pumping Station which was obtained in Year

2020. Location plan (Appendix 1) showing our proposed development site and To Kwa Wan Road Pumping Station is attached for your easy reference.

Grateful if you could advise us whether the details as shown below and the information in the attached email are still valid.

Information is provided as follows:
1. The number and location of pump set(s) within the station; Total 4 nos. of main pump (3 duty + 1 standby) installed at basement dry well.
2. The model and specification (e.g. rmp and horsepower) if possible; and,
3. Operation schedule of the pump set(s), i.e. daily and weekly operation hours. The pumps are operated by auto mode subject to water level at wet well without operation schedule.

Please also find attached appointment letter issued by Hong Kong Housing Authority (Appendix 2) for your reference.

Should you have any questions regarding the above, please do not hesitate to me on [redacted] [redacted]@atkinsglobal.com or Mr [redacted] [redacted]@atkinsglobal.com on [redacted] It would be highly appreciated if you can provide the required information by 13 October 2022 if possible. Thank you for your kind assistance.

Best Regards,
[redacted]
Atkins China Ltd.
Tel: [redacted]

13/F Wharf T&T Centre, Harbour City, Tsim Sha Tsui, Kowloon, Hong Kong

From: [redacted]@dsd.gov.hk [redacted]@dsd.gov.hk>
Sent: 03 September 2020 09:50
To: [redacted] <[redacted]g@atkinsglobal.com>
Cc: [redacted]@dsd.gov.hk; [redacted]@dsd.gov.hk
Subject: RE: Request for Information - Pumping Operation Details of To Kwa Wan Road Pumping Station

Dear [redacted]

Information is provided as follows:
1. The number and location of pump set(s) within the station; Total 4 nos. of main pump (3 duty + 1 standby) installed at basement dry well.
2. The model and specification (e.g. rmp and horsepower) if possible; and,
3. Operation schedule of the pump set(s), i.e. daily and weekly operation hours. The pumps are operated by auto mode subject to water level at wet well without operation schedule.

Best Regards,
[redacted]
[redacted] DSD
Office: [redacted]
Mobile: [redacted]

Zero "O" 意外
ACCIDENT
地盤零意外 關愛建未來
Zero Accident, we Build, we Care

From: [redacted] <[redacted]g@atkinsglobal.com>
To: [redacted]@dsd.gov.hk" <[redacted]@dsd.gov.hk>
Cc: [redacted]@dsd.gov.hk" <[redacted]@dsd.gov.hk>, '[redacted] <[redacted]@atkinsglobal.com>, '[redacted] [redacted]@atkinsglobal.com>, "Tse, Pandora" <[redacted]@atkinsglobal.com>
Date: 31/08/2020 12:35
Subject: RE: Request for Information - Pumping Operation Details of To Kwa Wan Road Pumping Station
Serial No.:

Dear Mr. [redacted]

HKHA Technical Study for a Proposed Development in To Kwa Wan
Request for Information: Pumping Operation Details of To Kwa Wan Road Pumping Station

Atkins China Limited has been appointed by the Hong Kong Housing Authority (HKHA) to undertake a technical study for a proposed development at To Kwa Wan. The letter of Appointment of Consultant for the captioned Assignment issued by HKHA is attached for your information.

Based on our desktop studies and site observations, pumping operation has been identified at the To Kwa Wan Road Pumping Station. Location plan is attached for your easy reference. We would like to obtain the following information regarding the operation for our technical study that aims to assess the noise impact on the future users of the proposed development:

1. The number and location of pump set(s) within the station;
2. The model and specification (e.g. rmp and horsepower) if possible; and,
3. Operation schedule of the pump set(s), i.e. daily and weekly operation hours.

Should you have any questions regarding the above, please do not hesitate to contact Mr. [redacted] of the Assistant Consultant ([redacted]@atkinsglobal.com) or Mr. [redacted] of the Consultant [redacted]@atkinsglobal.com). We look forward to your prompt reply. Thank you for your kind assistance.

Best Regards,

[redacted]
Assistant Environmental Consultant, Design Engineering Services
Hong Kong, Asia Pacific
Engineering, Design and Project Management

+852 [redacted]

13/F Wharf T&T Centre, Harbour City, Tsim Sha Tsui, Kowloon, Hong Kong

Company

From: [redacted]@dsd.gov.hk [redacted]@dsd.gov.hk>
Sent: Thursday, August 27, 2020 10:09 AM
To: [redacted] <[redacted]@atkinsglobal.com>
Subject: Re: Request for Information - Pumping Operation Details of To Kwa Wan Road Pumping Station

Dear Mr.[redacted]

Please contact Mr.[redacted] (E-mail : [redacted]@dsd.gov.hk) for your request.

Regards,
[redacted]
[redacted]
[redacted] Mobile: [redacted]

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Zero Accident, we Build, we Care

8th IWA-ASPIRE Conference and Exhibition
Smart Solutions for Water Resilience
31 OCTOBER - 3 NOVEMBER 2019
HONG KONG

From: "[redacted] <[redacted]@atkinsglobal.com>
To: [redacted]@dsd.gov.hk" <[redacted]@dsd.gov.hk>
Cc: "[redacted] <[redacted]@atkinsglobal.com>, [redacted]g" <[redacted]@atkinsglobal.com>, "[redacted]
[redacted]@atkinsglobal.com>

Date: 17/07/2020 11:09
Subject: Request for Information - Pumping Operation Details of To Kwa Wan Road Pumping Station
Serial No.:

Dear Sirs/Madams,

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Best Regards,

[redacted]
Assistant Environmental Consultant, Design Engineering Services
Hong Kong, Asia Pacific
Engineering, Design and Project Management

+852 [redacted]

13/F Wharf T&T Centre, Harbour City, Tsim Sha Tsui, Kowloon, Hong Kong

----- Message from "[redacted]@dsd.gov.hk" <[redacted]@dsd.gov.hk> on Thu, 3 Sep 2020 01:49:33 +0000 -----

To: "[redacted]" <[redacted]@atkinsglobal.com>
cc: "[redacted]@dsd.gov.hk" <[redacted]@dsd.gov.hk>, "[redacted]@dsd.gov.hk" <[redacted]@dsd.gov.hk>
Subject: RE: Request for Information - Pumping Operation Details of To Kwa Wan Road Pumping Station

Dear [redacted]

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3. Operation schedule of the pump set(s), i.e. daily and weekly operation hours. The pumps are operated by auto mode subject to water level at wet well without operation schedule.

Best Regards,
[redacted]
[redacted] DSD
Office: [redacted]
Mobile: [redacted]

Zero "O" 意外
ACCIDENT
地盤零意外 關懷建未來
Zero Accident, we Build, we Care

From: [redacted] <[redacted]@atkinsglobal.com>
To: [redacted]n@dsd.gov.hk" <[redacted]@dsd.gov.hk>
Cc: [redacted] @dsd.gov.hk" <[redacted]@dsd.gov.hk>, "[redacted] <[redacted]@atkinsglobal.com>, [redacted] <[redacted]g@atkinsglobal.com>, [redacted] <[redacted]@atkinsglobal.com>
Date: 31/08/2020 12:35
Subject: RE: Request for Information - Pumping Operation Details of To Kwa Wan Road Pumping Station
Serial No.:

Dear Mr. [redacted]

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Best Regards,

[redacted]
Assistant Environmental Consultant, Design Engineering Services
Hong Kong, Asia Pacific
Engineering, Design and Project Management

+852 [redacted]

13/F Wharf T&T Centre, Harbour City, Tsim Sha Tsui, Kowloon, Hong Kong

Company

From: [redacted]@dsd.gov.hk <[redacted]@dsd.gov.hk>
Sent: Thursday, August 27, 2020 10:09 AM
To: [redacted] <[redacted]@atkinsglobal.com>
Subject: Re: Request for Information - Pumping Operation Details of To Kwa Wan Road Pumping Station

Dear Mr.[redacted]

Please contact Mr.[redacted] (E-mail : [redacted]@dsd.gov.hk) for your request.

Regards,
[redacted]
[redacted]
Tel.: [redacted] Mobile: [redacted]

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From: "[redacted]" <[redacted]@atkinsglobal.com>
To: [redacted]@dsd.gov.hk" <[redacted]@dsd.gov.hk>
Cc: "[redacted]" <[redacted]@atkinsglobal.com>, [redacted] [redacted]@atkinsglobal.com>, "[redacted]" [redacted]@atkinsglobal.com>
Date: 17/07/2020 11:09
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Should you have any questions regarding the above, please do not hesitate to contact Mr [redacted] of the Assistant Consultant ([redacted] [redacted]@atkinsglobal.com) or Mr. [redacted] of the Consultant ([redacted] [redacted]@atkinsglobal.com). We look forward to your prompt reply. Thank you for your kind assistance.

Best Regards,

[redacted]
Assistant Environmental Consultant, Design Engineering Services
Hong Kong, Asia Pacific
Engineering, Design and Project Management

+852 [redacted]

13/F Wharf T&T Centre, Harbour City, Tsim Sha Tsui, Kowloon, Hong Kong

Company

Appendix 3.10

Detailed Calculation of Fixed Plant Noise Assessment

Summary for Fixed Plant Noise Calculation

		Predicted Fixed Plant Noise Level				
NSR ID	Scenario	Planned Noise Sources, dB(A)	Existing Noise Sources, dB(A)	Overall, dB(A)	Criteria, dB(A)	Compliance
T1-03A	Daytime and Evening	-	63	63	65	Y
T1-10E		60	55	61	65	Y
T1-11B		-	60	60	65	Y
T1-18B		-	64	64	65	Y
T1-19A		-	64	64	65	Y
T1-03A	Nighttime	-	51	51	55	Y
T1-10E		-	45	45	55	Y
T1-11B		-	51	51	55	Y
T1-18B		-	52	52	55	Y
T1-19A		-	51	51	55	Y

Detail Fixed Plant Noise Calculation - T1-03A

Period	**Daytime and evening**
NSR ID	**T1-03A**
NSR Name	**Tower 1 (Domestic)**
Coor - x	837999.4
Coor - y	820351.3
Criteria	65
Fixed noise level at receiver	63
Compliance	**Y**

Source ID	Source Name	Source coor-x	Source coor-y	Source coor-Z	SWL, dB(A)	Operation Time %	At source noise shielding	Blockage of direct line of sight	Horizontal Distance,m	Correction of operation time	Distance Attenuation, dB(A)	Screening Correction, dB(A)	Tonality Correction, dB(A)	Intermittency, dB(A)	Impulsiveness, dB(A)	Façade Correction, dB(A)	Predicted Noise Level, $L_{eq(30min)}$ dB(A)
FYS_27	Vehicle Workshop	837774	820358	6	98	50%	-	-	225	-3	-55.1	0	0	0	0	3	43
FYS_28	Vehicle Workshop	837791	820348	16	98	50%	-	-	209	-3	-54.4	0	0	0	0	3	44
HLS_7	Vehicle Workshop	837968	820191	16	98	50%	Partially Enclosed	Y	164	-3	-52.3	-10	0	0	0	3	36
HLS_10	Vehicle Workshop	837982	820196	16	98	50%	Partially Enclosed	Y	156	-3	-51.9	-10	0	0	0	3	36
HLS_11	Vehicle Workshop	837974	820202	6	98	50%	Partially Enclosed	Y	151	-3	-51.6	-10	0	0	0	3	36
HLS_12	Vehicle Workshop	837984	820202	38	98	50%	Partially Enclosed	Y	150	-3	-51.5	-10	0	0	0	3	36
HLS_13	Vehicle Workshop	837977	820207	38	98	50%	Partially Enclosed	Y	146	-3	-51.3	-10	0	0	0	3	37
HLS_15	Vehicle Workshop	837979	820213	6	98	50%	Partially Enclosed	Y	139	-3	-50.9	-10	0	0	0	3	37
HLS_16	Vehicle Workshop	837990	820214	6	98	50%	Partially Enclosed	Y	137	-3	-50.8	-10	0	0	0	3	37
HLS_19	Vehicle Workshop	837984	820224	6	98	50%	Partially Enclosed	Y	128	-3	-50.1	-10	0	0	0	3	38
HLS_20	Vehicle Workshop	837995	820226	6	98	50%	Partially Enclosed	Y	126	-3	-50.0	-10	0	0	0	3	38
HLS_21	Vehicle Workshop	837987	820230	6	98	50%	Partially Enclosed	Y	122	-3	-49.7	-10	0	0	0	3	38
HLS_23	Vehicle Workshop	837989	820236	6	98	50%	Partially Enclosed	Y	116	-3	-49.3	-10	0	0	0	3	39
HLS_24	Vehicle Workshop	838001	820239	6	98	50%	Partially Enclosed	-	113	-3	-49.0	-5	0	0	0	3	44
HLS_25	Vehicle Workshop	837992	820242	6	98	50%	Partially Enclosed	Y	110	-3	-48.8	-10	0	0	0	3	39
HLS_26	Vehicle Workshop	838007	820248	6	98	50%	-	-	103	-3	-48.3	0	0	0	0	3	50
HLS_27	Vehicle Workshop	837990	820255	6	98	50%	-	-	96	-3	-47.7	0	0	0	0	3	50
HP_1	Outdoor equipment - Chiller	837709	820425	64	96	100%	-	Y	300	0	-57.5	-10	0	0	0	3	31
HP_2	Outdoor equipment - Chiller	837703	820427	64	96	100%	-	Y	306	0	-57.7	-10	0	0	0	3	31
HWS_28	Vehicle Workshop	837909	820293	6	98	50%	-	-	107	-3	-48.6	0	0	0	0	3	49
KCR_28	Vehicle Workshop	837739	820372	6	98	50%	-	-	262	-3	-56.4	0	0	0	0	3	42
LCS_28	General Workshop	837843	820326	6	98	50%	-	-	159	-3	-52.0	0	0	0	0	3	46
MCS11_2	Outdoor equipment - Cooling Tower	837925	820350	8	92	100%	-	-	75	0	-45.5	0	0	0	0	3	50
MCS3_1	Outdoor equipment - Cooling Tower	837822	820416	8	92	100%	-	-	189	0	-53.5	0	0	0	0	3	41
MCS3_2	Outdoor equipment - Cooling Tower	837826	820423	8	92	100%	-	-	188	0	-53.5	0	0	0	0	3	42
MCS3_3	Outdoor equipment - Cooling Tower	837825	820421	8	92	100%	-	-	188	0	-53.5	0	0	0	0	3	42
MCS3_4	Outdoor equipment - Cooling Tower	837824	820419	8	92	100%	-	-	188	0	-53.5	0	0	0	0	3	41
MCS3_5	Outdoor equipment - Cooling Tower	837819	820409	8	92	100%	-	-	189	0	-53.5	0	0	0	0	3	41
MCS3_6	Outdoor equipment - Cooling Tower	837821	820412	8	92	100%	-	-	189	0	-53.5	0	0	0	0	3	41
MCS5_1	Outdoor equipment - Cooling Tower	837842	820369	8	92	100%	-	-	159	0	-52.0	0	0	0	0	3	43
PCS_28	Vehicle Workshop	837883	820305	6	98	50%	-	-	126	-3	-50.0	0	0	0	0	3	48
PS1_	Planned Noise Sources	838016	820586	6	99	0%	-	Y	235	NA	-55.4	-10	0	0	0	3	0
PS2_	Planned Noise Sources	838143	820398	6	104.6	0%	-	Y	151	NA	-51.6	-10	0	0	0	3	0
PS3_	Planned Noise Sources	838199	820344	6	104.6	0%	-	Y	200	NA	-54.0	-10	0	0	0	3	0
PS4_	Planned Noise Sources	838306	820444	6	109.8	0%	-	Y	320	NA	-58.1	-10	0	0	0	3	0
SLS_27	General Workshop	837919	820289	23	98	50%	-	-	102	-3	-48.1	0	0	0	0	3	50
SLS_28	Vehicle Workshop	837934	820281	23	98	50%	-	-	96	-3	-47.6	0	0	0	0	3	50
SPS	Facade louver	838068	820254	23	86	100%	-	Y	119	0	-49.5	-10	0	0	0	3	29
TG_1	Outdoor equipment - Cooling Tower	837803	820092	23	96	100%	-	-	325	0	-58.2	0	0	0	0	3	41
TG_2	Outdoor equipment - Cooling Tower	837805	820096	23	96	100%	-	-	321	0	-58.1	0	0	0	0	3	41
TG_3	Outdoor equipment - Cooling Tower	837812	820094	23	96	100%	-	-	318	0	-58.1	0	0	0	0	3	41
TG_4	Outdoor equipment - Cooling Tower	837816	820092	23	96	100%	-	-	318	0	-58.0	0	0	0	0	3	41
TG_5	Outdoor equipment - Cooling Tower	837820	820089	32	96	100%	-	-	317	0	-58.0	0	0	0	0	3	41
TG_6	Outdoor equipment - Chiller	837858	820133	6	96	0%	-	Y	261	NA	-56.3	-10	0	0	0	3	0
TG_7	Outdoor equipment - Chiller	837864	820133	6	96	0%	-	Y	257	NA	-56.2	-10	0	0	0	3	0
TG_8	Outdoor equipment - Chiller	837866	820127	6	96	0%	-	Y	261	NA	-56.3	-10	0	0	0	3	0
TG_9	Outdoor equipment - Chiller	837860	820124	8	96	0%	-	Y	267	NA	-56.5	-10	0	0	0	3	0
TG_10	Outdoor equipment - Chiller	837882	820140	23	96	0%	-	Y	242	NA	-55.7	-10	0	0	0	3	0
TG_11	Outdoor equipment - Chiller	837902	820131	38	96	0%	-	Y	241	NA	-55.6	-10	0	0	0	3	0
TG_12	Outdoor equipment - Chiller	837916	820124	38	96	0%	-	Y	242	NA	-55.7	-10	0	0	0	3	0
TG_13	Outdoor equipment - Compressor	837901	820173	23	102	0%	-	-	204	NA	-54.2	0	0	0	0	3	0
TG_14	Outdoor equipment - Compressor	837906	820174	23	102	0%	-	-	200	NA	-54.0	0	0	0	0	3	0
TG_15	Outdoor equipment - Chiller	837933	820161	23	94	100%	-	-	201	0	-54.1	0	0	0	0	3	43
TG_16	Outdoor equipment - Chiller	837935	820160	23	94	100%	-	-	202	0	-54.1	0	0	0	0	3	43
TTS_4	Vehicle Workshop	837947	820185	6	98	50%	Partially Enclosed	Y	174	-3	-52.8	-10	0	0	0	3	35
TTS_5	Vehicle Workshop	837941	820195	6	98	50%	Partially Enclosed	Y	166	-3	-52.4	-10	0	0	0	3	36
TTS_7	Vehicle Workshop	837944	820202	6	98	50%	Partially Enclosed	Y	159	-3	-52.0	-10	0	0	0	3	36
TTS_8	Vehicle Workshop	837952	820198	6	98	50%	Partially Enclosed	Y	160	-3	-52.1	-10	0	0	0	3	36
TTS_9	Vehicle Workshop	837947	820207	6	98	50%	Partially Enclosed	Y	153	-3	-51.7	-10	0	0	0	3	36
TTS_11	Vehicle Workshop	837950	820213	6	98	50%	Partially Enclosed	Y	147	-3	-51.3	-10	0	0	0	3	37
TTS_12	Vehicle Workshop	837958	820209	6	98	50%	Partially Enclosed	-	148	-3	-51.4	-5	0	0	0	3	42
TTS_14	Vehicle Workshop	837960	820215	6	98	50%	Partially Enclosed	-	142	-3	-51.0	-5	0	0	0	3	42

TTS_15	Vehicle Workshop	837955	820225	6	98	50%	Partially Enclosed	Y	134	-3	-50.6	-10	0	0	0	3	37
TTS_18	Vehicle Workshop	837966	820226	6	98	50%	Partially Enclosed	-	130	-3	-50.3	-5	0	0	0	3	43
TTS_20	Vehicle Workshop	837968	820231	6	98	50%	Partially Enclosed	-	124	-3	-49.9	-5	0	0	0	3	43
TTS_21	Vehicle Workshop	837962	820241	6	98	50%	Partially Enclosed	Y	117	-3	-49.3	-10	0	0	0	3	39
TTS_22	Vehicle Workshop	837970	820237	6	98	50%	Partially Enclosed	-	118	-3	-49.4	-5	0	0	0	3	44
TTS_23	Vehicle Workshop	837965	820248	6	98	50%	Partially Enclosed	Y	109	-3	-48.8	-10	0	0	0	3	39
TTS_24	Vehicle Workshop	837974	820244	6	98	50%	Partially Enclosed	-	110	-3	-48.9	-5	0	0	0	3	44
TTS_25	Vehicle Workshop	837969	820254	6	98	50%	Partially Enclosed	Y	103	-3	-48.2	-10	0	0	0	3	40
TTS_26	Vehicle Workshop	837976	820249	6	98	50%	Partially Enclosed	-	105	-3	-48.4	-5	0	0	0	3	45
TTS_27	Vehicle Workshop	837968	820267	6	98	50%	-	-	90	-3	-47.1	0	0	0	0	3	51
YOS_5	Vehicle Workshop	837918	820206	6	98	50%	Partially Enclosed	-	166	-3	-52.4	-5	0	0	0	3	41
YOS_7	Vehicle Workshop	837920	820213	6	98	50%	Partially Enclosed	-	159	-3	-52.0	-5	0	0	0	3	41
YOS_11	Vehicle Workshop	837925	820225	6	98	50%	Partially Enclosed	-	147	-3	-51.3	-5	0	0	0	3	42
YOS_12	Vehicle Workshop	837934	820220	6	98	50%	Partially Enclosed	Y	147	-3	-51.3	-10	0	0	0	3	37
YOS_15	Vehicle Workshop	837930	820236	6	98	50%	Partially Enclosed	-	134	-3	-50.6	-5	0	0	0	3	42
YOS_16	Vehicle Workshop	837939	820231	6	98	50%	Partially Enclosed	Y	135	-3	-50.6	-10	0	0	0	3	37
YOS_18	Vehicle Workshop	837941	820237	6	98	50%	Partially Enclosed	Y	128	-3	-50.2	-10	0	0	0	3	38
YOS_19	Vehicle Workshop	837936	820247	6	98	50%	Partially Enclosed	-	123	-3	-49.8	-5	0	0	0	3	43
YOS_21	Vehicle Workshop	837938	820252	6	98	50%	Partially Enclosed	-	117	-3	-49.3	-5	0	0	0	3	44
YOS_22	Vehicle Workshop	837947	820248	6	98	50%	Partially Enclosed	Y	116	-3	-49.3	-10	0	0	0	3	39
YOS_23	Vehicle Workshop	837941	820258	6	98	50%	Partially Enclosed	-	109	-3	-48.8	-5	0	0	0	3	44
YOS_24	Vehicle Workshop	837950	820255	6	98	50%	Partially Enclosed	Y	109	-3	-48.7	-10	0	0	0	3	39
YOS_25	Vehicle Workshop	837944	820265	6	98	50%	Partially Enclosed	-	103	-3	-48.2	-5	0	0	0	3	45
YOS_26	Vehicle Workshop	837951	820261	6	98	50%	Partially Enclosed	Y	102	-3	-48.2	-10	0	0	0	3	40
YOS_27	Vehicle Workshop	837943	820278	6	98	50%	-	-	93	-3	-47.4	0	0	0	0	3	51
YOS_28	Vehicle Workshop	837959	820271	6	98	50%	-	-	90	-3	-47.1	0	0	0	0	3	51
																Total	**63**

Detail Fixed Plant Noise Calculation - T1-03A

Period	**Nighttime**
NSR ID	**T1-03A**
NSR Name	**Tower 1 (Domestic)**
Coor - x	837999.4
Coor - y	820351.3
Criteria	55
Fixed noise level at receiver	51
Compliance	**Y**

Source ID	Source Name	Source coor-x	Source coor-y	Source coor-Z	SWL, dB(A)	Operation Time %	At source noise shielding	Blockage of direct line of sight	Horizontal Distance,m	Correction of operation time	Distance Attenuation, dB(A)	Screening Correction, dB(A)	Tonality Correction, dB(A)	Intermittency, dB(A)	Impulsiveness, dB(A)	Façade Correction, dB(A)	Predicted Noise Level, $L_{eq(30min)}$ dB(A)
HP_1	Outdoor equipment - Chiller	837709	820425	64	96	100%	-	Y	300	0	-57.5	-10	0	0	0	3	31
HP_2	Outdoor equipment - Chiller	837703	820427	64	96	100%	-	Y	306	0	-57.7	-10	0	0	0	3	31
MCS5_1	Outdoor equipment - Cooling Tower	837842	820369	8	92	100%	-	-	159	0	-52.0	0	0	0	0	3	43
SPS	Facade louver	838068	820254	23	86	100%	-	Y	119	0	-49.5	-10	0	0	0	3	29
TG_1	Outdoor equipment - Cooling Tower	837803	820092	23	96	100%	-	-	325	0	-58.2	0	0	0	0	3	41
TG_2	Outdoor equipment - Cooling Tower	837805	820096	23	96	100%	-	-	321	0	-58.1	0	0	0	0	3	41
TG_3	Outdoor equipment - Cooling Tower	837812	820094	23	96	100%	-	-	318	0	-58.1	0	0	0	0	3	41
TG_4	Outdoor equipment - Cooling Tower	837816	820092	23	96	100%	-	-	318	0	-58.0	0	0	0	0	3	41
TG_5	Outdoor equipment - Cooling Tower	837820	820089	32	96	100%	-	-	317	0	-58.0	0	0	0	0	3	41
TG_15	Outdoor equipment - Chiller	837933	820161	23	94	100%	-	-	201	0	-54.1	0	0	0	0	3	43
TG_16	Outdoor equipment - Chiller	837935	820160	23	94	100%	-	-	202	0	-54.1	0	0	0	0	3	43
																Total	**51**

Detail Fixed Plant Noise Calculation - T1-10E

Period	**Daytime and evening**
NSR ID	**T1-10E**
NSR Name	**Tower 1 (Domestic)**
Coor - x	838053.2
Coor - y	820338.7
Criteria	65
Fixed noise level at receiver	55
Compliance	**Y**

Source ID	Source Name	Source coor-x	Source coor-y	Source coor-Z	SWL, dB(A)	Operation Time %	At source noise shielding	Blockage of direct line of sight	Horizontal Distance,m	Correction of operation time	Distance Attenuation, dB(A)	Screening Correction, dB(A)	Tonality Correction, dB(A)	Intermittency, dB(A)	Impulsiveness, dB(A)	Façade Correction, dB(A)	Predicted Noise Level, $L_{eq(30min)}$ dB(A)
FYS_27	Vehicle Workshop	837774	820358	6	98	50%	-	Y	280	-3	-56.9	-10	0	0	0	3	31
FYS_28	Vehicle Workshop	837791	820348	16	98	50%	-	Y	263	-3	-56.4	-10	0	0	0	3	32
HLS_7	Vehicle Workshop	837968	820191	16	98	50%	Partially Enclosed	Y	171	-3	-52.6	-10	0	0	0	3	35
HLS_10	Vehicle Workshop	837982	820196	16	98	50%	Partially Enclosed	Y	159	-3	-52.0	-10	0	0	0	3	36
HLS_11	Vehicle Workshop	837974	820202	6	98	50%	Partially Enclosed	Y	158	-3	-52.0	-10	0	0	0	3	36
HLS_12	Vehicle Workshop	837984	820202	38	98	50%	Partially Enclosed	Y	153	-3	-51.7	-10	0	0	0	3	36
HLS_13	Vehicle Workshop	837977	820207	38	98	50%	Partially Enclosed	Y	153	-3	-51.7	-10	0	0	0	3	36
HLS_15	Vehicle Workshop	837979	820213	6	98	50%	Partially Enclosed	Y	146	-3	-51.3	-10	0	0	0	3	37
HLS_16	Vehicle Workshop	837990	820214	6	98	50%	Partially Enclosed	Y	140	-3	-50.9	-10	0	0	0	3	37
HLS_19	Vehicle Workshop	837984	820224	6	98	50%	Partially Enclosed	Y	134	-3	-50.5	-10	0	0	0	3	37
HLS_20	Vehicle Workshop	837995	820226	6	98	50%	Partially Enclosed	Y	127	-3	-50.1	-10	0	0	0	3	38
HLS_21	Vehicle Workshop	837987	820230	6	98	50%	Partially Enclosed	Y	127	-3	-50.1	-10	0	0	0	3	38
HLS_23	Vehicle Workshop	837989	820236	6	98	50%	Partially Enclosed	Y	121	-3	-49.6	-10	0	0	0	3	38
HLS_24	Vehicle Workshop	838001	820239	6	98	50%	Partially Enclosed	Y	113	-3	-49.1	-10	0	0	0	3	39
HLS_25	Vehicle Workshop	837992	820242	6	98	50%	Partially Enclosed	Y	115	-3	-49.2	-10	0	0	0	3	39
HLS_26	Vehicle Workshop	838007	820248	6	98	50%	-	Y	102	-3	-48.1	-10	0	0	0	3	40
HLS_27	Vehicle Workshop	837990	820255	6	98	50%	-	Y	104	-3	-48.4	-10	0	0	0	3	40
HP_1	Outdoor equipment - Chiller	837709	820425	64	96	100%	-	-	355	0	-59.0	0	0	0	0	3	40
HP_2	Outdoor equipment - Chiller	837703	820427	64	96	100%	-	-	361	0	-59.2	0	0	0	0	3	40
HWS_28	Vehicle Workshop	837909	820293	6	98	50%	-	Y	151	-3	-51.6	-10	0	0	0	3	36
KCR_28	Vehicle Workshop	837739	820372	6	98	50%	-	Y	316	-3	-58.0	-10	0	0	0	3	30
LCS_28	General Workshop	837843	820326	6	98	50%	-	Y	211	-3	-54.5	-10	0	0	0	3	34
MCS11_2	Outdoor equipment - Cooling Tower	837925	820350	8	92	100%	-	Y	129	0	-50.2	-10	0	0	0	3	35
MCS3_1	Outdoor equipment - Cooling Tower	837822	820416	8	92	100%	-	Y	244	0	-55.7	-10	0	0	0	3	29
MCS3_2	Outdoor equipment - Cooling Tower	837826	820423	8	92	100%	-	Y	243	0	-55.7	-10	0	0	0	3	29
MCS3_3	Outdoor equipment - Cooling Tower	837825	820421	8	92	100%	-	Y	243	0	-55.7	-10	0	0	0	3	29
MCS3_4	Outdoor equipment - Cooling Tower	837824	820419	8	92	100%	-	Y	243	0	-55.7	-10	0	0	0	3	29
MCS3_5	Outdoor equipment - Cooling Tower	837819	820409	8	92	100%	-	Y	244	0	-55.8	-10	0	0	0	3	29
MCS3_6	Outdoor equipment - Cooling Tower	837821	820412	8	92	100%	-	Y	244	0	-55.7	-10	0	0	0	3	29
MCS5_1	Outdoor equipment - Cooling Tower	837842	820369	8	92	100%	-	Y	214	0	-54.6	-10	0	0	0	3	30
PCS_28	Vehicle Workshop	837883	820305	6	98	50%	-	Y	174	-3	-52.8	-10	0	0	0	3	35
SLS_27	General Workshop	837919	820289	23	98	50%	-	Y	143	-3	-51.1	-10	0	0	0	3	37
SLS_28	Vehicle Workshop	837934	820281	23	98	50%	-	Y	132	-3	-50.4	-10	0	0	0	3	38
SPS	Facade louver	838068	820254	23	86	100%	-	Y	86	0	-46.7	-10	0	0	0	3	32
TG_1	Outdoor equipment - Cooling Tower	837803	820092	23	96	100%	-	Y	351	0	-58.9	-10	0	0	0	3	30
TG_2	Outdoor equipment - Cooling Tower	837805	820096	23	96	100%	-	Y	347	0	-58.8	-10	0	0	0	3	30
TG_3	Outdoor equipment - Cooling Tower	837812	820094	23	96	100%	-	Y	343	0	-58.7	-10	0	0	0	3	30
TG_4	Outdoor equipment - Cooling Tower	837816	820092	23	96	100%	-	Y	342	0	-58.7	-10	0	0	0	3	30
TG_5	Outdoor equipment - Cooling Tower	837820	820089	32	96	100%	-	Y	341	0	-58.7	-10	0	0	0	3	30
TG_15	Outdoor equipment - Chiller	837933	820161	23	94	100%	-	Y	214	0	-54.6	-10	0	0	0	3	32
TG_16	Outdoor equipment - Chiller	837935	820160	23	94	100%	-	Y	214	0	-54.6	-10	0	0	0	3	32
TTS_4	Vehicle Workshop	837947	820185	6	98	50%	Partially Enclosed	Y	187	-3	-53.4	-10	0	0	0	3	35
TTS_5	Vehicle Workshop	837941	820195	6	98	50%	Partially Enclosed	Y	182	-3	-53.2	-10	0	0	0	3	35
TTS_7	Vehicle Workshop	837944	820202	6	98	50%	Partially Enclosed	Y	175	-3	-52.9	-10	0	0	0	3	35
TTS_8	Vehicle Workshop	837952	820198	6	98	50%	Partially Enclosed	Y	173	-3	-52.8	-10	0	0	0	3	35
TTS_9	Vehicle Workshop	837947	820207	6	98	50%	Partially Enclosed	Y	169	-3	-52.5	-10	0	0	0	3	35
TTS_11	Vehicle Workshop	837950	820213	6	98	50%	Partially Enclosed	Y	163	-3	-52.2	-10	0	0	0	3	36
TTS_12	Vehicle Workshop	837958	820209	6	98	50%	Partially Enclosed	Y	161	-3	-52.1	-10	0	0	0	3	36
TTS_14	Vehicle Workshop	837960	820215	6	98	50%	Partially Enclosed	Y	155	-3	-51.8	-10	0	0	0	3	36
TTS_15	Vehicle Workshop	837955	820225	6	98	50%	Partially Enclosed	Y	151	-3	-51.6	-10	0	0	0	3	36
TTS_18	Vehicle Workshop	837966	820226	6	98	50%	Partially Enclosed	Y	143	-3	-51.1	-10	0	0	0	3	37
TTS_20	Vehicle Workshop	837968	820231	6	98	50%	Partially Enclosed	Y	137	-3	-50.7	-10	0	0	0	3	37
TTS_21	Vehicle Workshop	837962	820241	6	98	50%	Partially Enclosed	Y	134	-3	-50.5	-10	0	0	0	3	37
TTS_22	Vehicle Workshop	837970	820237	6	98	50%	Partially Enclosed	Y	131	-3	-50.4	-10	0	0	0	3	38
TTS_23	Vehicle Workshop	837965	820248	6	98	50%	Partially Enclosed	Y	126	-3	-50.0	-10	0	0	0	3	38
TTS_24	Vehicle Workshop	837974	820244	6	98	50%	Partially Enclosed	Y	124	-3	-49.8	-10	0	0	0	3	38
TTS_25	Vehicle Workshop	837969	820254	6	98	50%	Partially Enclosed	Y	120	-3	-49.6	-10	0	0	0	3	38
TTS_26	Vehicle Workshop	837976	820249	6	98	50%	Partially Enclosed	Y	118	-3	-49.4	-10	0	0	0	3	39
TTS_27	Vehicle Workshop	837968	820267	6	98	50%	-	Y	111	-3	-48.9	-10	0	0	0	3	39
YOS_5	Vehicle Workshop	837918	820206	6	98	50%	Partially Enclosed	Y	189	-3	-53.6	-10	0	0	0	3	34
YOS_7	Vehicle Workshop	837920	820213	6	98	50%	Partially Enclosed	Y	183	-3	-53.2	-10	0	0	0	3	35
YOS_11	Vehicle Workshop	837925	820225	6	98	50%	Partially Enclosed	Y	172	-3	-52.7	-10	0	0	0	3	35

YOS_12	Vehicle Workshop	837934	820220	6	98	50%	Partially Enclosed	Y	168	-3	-52.5	-10	0	0	0	3	35
YOS_15	Vehicle Workshop	837930	820236	6	98	50%	Partially Enclosed	Y	160	-3	-52.1	-10	0	0	0	3	36
YOS_16	Vehicle Workshop	837939	820231	6	98	50%	Partially Enclosed	Y	157	-3	-51.9	-10	0	0	0	3	36
YOS_18	Vehicle Workshop	837941	820237	6	98	50%	Partially Enclosed	Y	151	-3	-51.6	-10	0	0	0	3	36
YOS_19	Vehicle Workshop	837936	820247	6	98	50%	Partially Enclosed	Y	149	-3	-51.5	-10	0	0	0	3	37
YOS_21	Vehicle Workshop	837938	820252	6	98	50%	Partially Enclosed	Y	144	-3	-51.2	-10	0	0	0	3	37
YOS_22	Vehicle Workshop	837947	820248	6	98	50%	Partially Enclosed	Y	140	-3	-50.9	-10	0	0	0	3	37
YOS_23	Vehicle Workshop	837941	820258	6	98	50%	Partially Enclosed	Y	138	-3	-50.8	-10	0	0	0	3	37
YOS_24	Vehicle Workshop	837950	820255	6	98	50%	Partially Enclosed	Y	133	-3	-50.5	-10	0	0	0	3	37
YOS_25	Vehicle Workshop	837944	820265	6	98	50%	Partially Enclosed	Y	132	-3	-50.4	-10	0	0	0	3	38
YOS_26	Vehicle Workshop	837951	820261	6	98	50%	Partially Enclosed	Y	128	-3	-50.1	-10	0	0	0	3	38
YOS_27	Vehicle Workshop	837943	820278	6	98	50%	-	Y	126	-3	-50.0	-10	0	0	0	3	38
YOS_28	Vehicle Workshop	837959	820271	6	98	50%	-	Y	116	-3	-49.3	-10	0	0	0	3	39
																Total	**55**

Detail Fixed Plant Noise Calculation - T1-10E

Period	**Nighttime**
NSR ID	**T1-10E**
NSR Name	**Tower 1 (Domestic)**
Coor - x	838053.2
Coor - y	820338.7
Criteria	55
Fixed noise level at receiver	45
Compliance	**Y**

Source ID	Source Name	Source coor-x	Source coor-y	Source coor-Z	SWL, dB(A)	Operation Time %	At source noise shielding	Blockage of direct line of sight	Horizontal Distance,m	Correction of operation time	Distance Attenuation, dB(A)	Screening Correction, dB(A)	Tonality Correction, dB(A)	Intermittency, dB(A)	Impulsiveness, dB(A)	Façade Correction, dB(A)	Predicted Noise Level, $L_{eq(30min)}$ dB(A)
HP_1	Outdoor equipment - Chiller	837709	820425	64	96	100%	-	-	355	0	-59.0	0	0	0	0	3	40
HP_2	Outdoor equipment - Chiller	837703	820427	64	96	100%	-	-	361	0	-59.2	0	0	0	0	3	40
MCS5_1	Outdoor equipment - Cooling Tower	837842	820369	8	92	100%	-	Y	214	0	-54.6	-10	0	0	0	3	30
SPS	Facade louver	838068	820254	23	86	100%	-	Y	86	0	-46.7	-10	0	0	0	3	32
TG_1	Outdoor equipment - Cooling Tower	837803	820092	23	96	100%	-	Y	351	0	-58.9	-10	0	0	0	3	30
TG_2	Outdoor equipment - Cooling Tower	837805	820096	23	96	100%	-	Y	347	0	-58.8	-10	0	0	0	3	30
TG_3	Outdoor equipment - Cooling Tower	837812	820094	23	96	100%	-	Y	343	0	-58.7	-10	0	0	0	3	30
TG_4	Outdoor equipment - Cooling Tower	837816	820092	23	96	100%	-	Y	342	0	-58.7	-10	0	0	0	3	30
TG_5	Outdoor equipment - Cooling Tower	837820	820089	32	96	100%	-	Y	341	0	-58.7	-10	0	0	0	3	30
TG_15	Outdoor equipment - Chiller	837933	820161	23	94	100%	-	Y	214	0	-54.6	-10	0	0	0	3	32
TG_16	Outdoor equipment - Chiller	837935	820160	23	94	100%	-	Y	214	0	-54.6	-10	0	0	0	3	32
																Total	**45**

Detail Fixed Plant Noise Calculation - T1-11B

Period	**Daytime and evening**
NSR ID	**T1-11B**
NSR Name	**Tower 1 (Domestic)**
Coor - x	838054.8
Coor - y	820330.1
Criteria	65
Fixed noise level at receiver	60
Compliance	**Y**

Source ID	Source Name	Source coor-x	Source coor-y	Source coor-Z	SWL, dB(A)	Operation Time %	At source noise shielding	Blockage of direct line of sight	Horizontal Distance,m	Correction of operation time	Distance Attenuation, dB(A)	Screening Correction, dB(A)	Tonality Correction, dB(A)	Intermittency, dB(A)	Impulsiveness, dB(A)	Façade Correction, dB(A)	Predicted Noise Level, $L_{eq(30min)}$ dB(A)
FYS_27	Vehicle Workshop	837774	820358	6	98	50%	-	Y	282	-3	-57.0	-10	0	0	0	3	31
FYS_28	Vehicle Workshop	837791	820348	16	98	50%	-	Y	265	-3	-56.5	-10	0	0	0	3	32
HLS_7	Vehicle Workshop	837968	820191	16	98	50%	Partially Enclosed	-	164	-3	-52.3	-5	0	0	0	3	41
HLS_10	Vehicle Workshop	837982	820196	16	98	50%	Partially Enclosed	Y	152	-3	-51.7	-10	0	0	0	3	36
HLS_11	Vehicle Workshop	837974	820202	6	98	50%	Partially Enclosed	-	151	-3	-51.6	-5	0	0	0	3	41.4
HLS_12	Vehicle Workshop	837984	820202	38	98	50%	Partially Enclosed	Y	146	-3	-51.3	-10	0	0	0	3	36.7
HLS_13	Vehicle Workshop	837977	820207	38	98	50%	Partially Enclosed	-	146	-3	-51.3	-5	0	0	0	3	41.7
HLS_15	Vehicle Workshop	837979	820213	6	98	50%	Partially Enclosed	-	139	-3	-50.9	-5	0	0	0	3	42.1
HLS_16	Vehicle Workshop	837990	820214	6	98	50%	Partially Enclosed	Y	133	-3	-50.5	-10	0	0	0	3	37.5
HLS_19	Vehicle Workshop	837984	820224	6	98	50%	Partially Enclosed	-	128	-3	-50.1	-5	0	0	0	3	42.9
HLS_20	Vehicle Workshop	837995	820226	6	98	50%	Partially Enclosed	Y	120	-3	-49.6	-10	0	0	0	3	38
HLS_21	Vehicle Workshop	837987	820230	6	98	50%	Partially Enclosed	-	121	-3	-49.6	-5	0	0	0	3	43
HLS_23	Vehicle Workshop	837989	820236	6	98	50%	Partially Enclosed	-	114	-3	-49.2	-5	0	0	0	3	44
HLS_24	Vehicle Workshop	838001	820239	6	98	50%	Partially Enclosed	Y	106	-3	-48.5	-10	0	0	0	3	39
HLS_25	Vehicle Workshop	837992	820242	6	98	50%	Partially Enclosed	-	108	-3	-48.7	-5	0	0	0	3	44
HLS_26	Vehicle Workshop	838007	820248	6	98	50%	-	-	95	-3	-47.5	0	0	0	0	3	50
HLS_27	Vehicle Workshop	837990	820255	6	98	50%	-	-	99	-3	-47.9	0	0	0	0	3	50
HP_1	Outdoor equipment - Chiller	837709	820425	64	96	100%	-	-	359	0	-59.1	0	0	0	0	3	40
HP_2	Outdoor equipment - Chiller	837703	820427	64	96	100%	-	-	365	0	-59.2	0	0	0	0	3	40
HWS_28	Vehicle Workshop	837909	820293	6	98	50%	-	Y	150	-3	-51.5	-10	0	0	0	3	36
KCR_28	Vehicle Workshop	837739	820372	6	98	50%	-	Y	319	-3	-58.1	-10	0	0	0	3	30
LCS_28	General Workshop	837843	820326	6	98	50%	-	Y	212	-3	-54.5	-10	0	0	0	3	33
MCS11_2	Outdoor equipment - Cooling Tower	837925	820350	8	92	100%	-	Y	132	0	-50.4	-10	0	0	0	3	35
MCS3_1	Outdoor equipment - Cooling Tower	837822	820416	8	92	100%	-	Y	248	0	-55.9	-10	0	0	0	3	29
MCS3_2	Outdoor equipment - Cooling Tower	837826	820423	8	92	100%	-	Y	247	0	-55.9	-10	0	0	0	3	29
MCS3_3	Outdoor equipment - Cooling Tower	837825	820421	8	92	100%	-	Y	248	0	-55.9	-10	0	0	0	3	29
MCS3_4	Outdoor equipment - Cooling Tower	837824	820419	8	92	100%	-	Y	248	0	-55.9	-10	0	0	0	3	29
MCS3_5	Outdoor equipment - Cooling Tower	837819	820409	8	92	100%	-	Y	248	0	-55.9	-10	0	0	0	3	29
MCS3_6	Outdoor equipment - Cooling Tower	837821	820412	8	92	100%	-	Y	248	0	-55.9	-10	0	0	0	3	29
MCS5_1	Outdoor equipment - Cooling Tower	837842	820369	8	92	100%	-	Y	216	0	-54.7	-10	0	0	0	3	30
PCS_28	Vehicle Workshop	837883	820305	6	98	50%	-	Y	174	-3	-52.8	-10	0	0	0	3	35
SLS_27	General Workshop	837919	820289	23	98	50%	-	Y	142	-3	-51.0	-10	0	0	0	3	37
SLS_28	Vehicle Workshop	837934	820281	23	98	50%	-	-	130	-3	-50.3	0	0	0	0	3	48
SPS	Facade louver	838068	820254	23	86	100%	-	-	77	0	-45.7	0	0	0	0	3	43
TG_1	Outdoor equipment - Cooling Tower	837803	820092	23	96	100%	-	Y	347	0	-58.8	-10	0	0	0	3	30
TG_2	Outdoor equipment - Cooling Tower	837805	820096	23	96	100%	-	-	342	0	-58.7	0	0	0	0	3	40
TG_3	Outdoor equipment - Cooling Tower	837812	820094	23	96	100%	-	-	339	0	-58.6	0	0	0	0	3	40
TG_4	Outdoor equipment - Cooling Tower	837816	820092	23	96	100%	-	-	337	0	-58.6	0	0	0	0	3	40
TG_5	Outdoor equipment - Cooling Tower	837820	820089	32	96	100%	-	-	336	0	-58.5	0	0	0	0	3	40
TG_15	Outdoor equipment - Chiller	837933	820161	23	94	100%	-	-	208	0	-54.4	0	0	0	0	3	43
TG_16	Outdoor equipment - Chiller	837935	820160	23	94	100%	-	-	208	0	-54.4	0	0	0	0	3	43
TTS_4	Vehicle Workshop	837947	820185	6	98	50%	Partially Enclosed	Y	181	-3	-53.1	-10	0	0	0	3	35
TTS_5	Vehicle Workshop	837941	820195	6	98	50%	Partially Enclosed	Y	176	-3	-52.9	-10	0	0	0	3	35
TTS_7	Vehicle Workshop	837944	820202	6	98	50%	Partially Enclosed	Y	169	-3	-52.6	-10	0	0	0	3	35
TTS_8	Vehicle Workshop	837952	820198	6	98	50%	Partially Enclosed	Y	167	-3	-52.5	-10	0	0	0	3	36
TTS_9	Vehicle Workshop	837947	820207	6	98	50%	Partially Enclosed	Y	163	-3	-52.3	-10	0	0	0	3	36
TTS_11	Vehicle Workshop	837950	820213	6	98	50%	Partially Enclosed	Y	157	-3	-51.9	-10	0	0	0	3	36
TTS_12	Vehicle Workshop	837958	820209	6	98	50%	Partially Enclosed	Y	155	-3	-51.8	-10	0	0	0	3	36
TTS_14	Vehicle Workshop	837960	820215	6	98	50%	Partially Enclosed	Y	149	-3	-51.4	-10	0	0	0	3	37
TTS_15	Vehicle Workshop	837955	820225	6	98	50%	Partially Enclosed	Y	146	-3	-51.3	-10	0	0	0	3	37
TTS_18	Vehicle Workshop	837966	820226	6	98	50%	Partially Enclosed	Y	137	-3	-50.8	-10	0	0	0	3	37
TTS_20	Vehicle Workshop	837968	820231	6	98	50%	Partially Enclosed	Y	131	-3	-50.4	-10	0	0	0	3	38
TTS_21	Vehicle Workshop	837962	820241	6	98	50%	Partially Enclosed	-	129	-3	-50.2	-5	0	0	0	3	43
TTS_22	Vehicle Workshop	837970	820237	6	98	50%	Partially Enclosed	Y	126	-3	-50.0	-10	0	0	0	3	38
TTS_23	Vehicle Workshop	837965	820248	6	98	50%	Partially Enclosed	-	122	-3	-49.7	-5	0	0	0	3	43
TTS_24	Vehicle Workshop	837974	820244	6	98	50%	Partially Enclosed	Y	118	-3	-49.5	-10	0	0	0	3	39
TTS_25	Vehicle Workshop	837969	820254	6	98	50%	Partially Enclosed	-	115	-3	-49.2	-5	0	0	0	3	44
TTS_26	Vehicle Workshop	837976	820249	6	98	50%	Partially Enclosed	Y	113	-3	-49.0	-10	0	0	0	3	39
TTS_27	Vehicle Workshop	837968	820267	6	98	50%	-	-	107	-3	-48.6	0	0	0	0	3	49
YOS_5	Vehicle Workshop	837918	820206	6	98	50%	Partially Enclosed	Y	185	-3	-53.3	-10	0	0	0	3	35
YOS_7	Vehicle Workshop	837920	820213	6	98	50%	Partially Enclosed	Y	178	-3	-53.0	-10	0	0	0	3	35
YOS_11	Vehicle Workshop	837925	820225	6	98	50%	Partially Enclosed	Y	167	-3	-52.5	-10	0	0	0	3	36

YOS_12	Vehicle Workshop	837934	820220	6	98	50%	Partially Enclosed	Y	164	-3	-52.3	-10	0	0	0	3	36
YOS_15	Vehicle Workshop	837930	820236	6	98	50%	Partially Enclosed	Y	156	-3	-51.9	-10	0	0	0	3	36
YOS_16	Vehicle Workshop	837939	820231	6	98	50%	Partially Enclosed	Y	153	-3	-51.7	-10	0	0	0	3	36
YOS_18	Vehicle Workshop	837941	820237	6	98	50%	Partially Enclosed	Y	147	-3	-51.3	-10	0	0	0	3	37
YOS_19	Vehicle Workshop	837936	820247	6	98	50%	Partially Enclosed	Y	145	-3	-51.3	-10	0	0	0	3	37
YOS_21	Vehicle Workshop	837938	820252	6	98	50%	Partially Enclosed	Y	140	-3	-51.0	-10	0	0	0	3	37
YOS_22	Vehicle Workshop	837947	820248	6	98	50%	Partially Enclosed	Y	136	-3	-50.7	-10	0	0	0	3	37
YOS_23	Vehicle Workshop	837941	820258	6	98	50%	Partially Enclosed	Y	134	-3	-50.5	-10	0	0	0	3	37
YOS_24	Vehicle Workshop	837950	820255	6	98	50%	Partially Enclosed	Y	130	-3	-50.2	-10	0	0	0	3	38
YOS_25	Vehicle Workshop	837944	820265	6	98	50%	Partially Enclosed	Y	129	-3	-50.2	-10	0	0	0	3	38
YOS_26	Vehicle Workshop	837951	820261	6	98	50%	Partially Enclosed	Y	124	-3	-49.9	-10	0	0	0	3	38
YOS_27	Vehicle Workshop	837943	820278	6	98	50%	-	-	124	-3	-49.8	0	0	0	0	3	48
YOS_28	Vehicle Workshop	837959	820271	6	98	50%	-	-	113	-3	-49.1	0	0	0	0	3	49
																Total	**60**

Detail Fixed Plant Noise Calculation - T1-11B

Period	**Nighttime**
NSR ID	**T1-11B**
NSR Name	**Tower 1 (Domestic)**
Coor - x	838054.8
Coor - y	820330.1
Criteria	55
Fixed noise level at receiver	51
Compliance	**Y**

Source ID	Source Name	Source coor-x	Source coor-y	Source coor-Z	SWL, dB(A)	Operation Time %	At source noise shielding	Blockage of direct line of sight	Horizontal Distance,m	Correction of operation time	Distance Attenuation, dB(A)	Screening Correction, dB(A)	Tonality Correction, dB(A)	Intermittency, dB(A)	Impulsiveness, dB(A)	Façade Correction, dB(A)	Predicted Noise Level, $L_{eq(30min)}$ dB(A)
HP_1	Outdoor equipment - Chiller	837709	820425	64	96	100%	-	-	359	0	-59.1	0	0	0	0	3	40
HP_2	Outdoor equipment - Chiller	837703	820427	64	96	100%	-	-	365	0	-59.2	0	0	0	0	3	40
MCS5_1	Outdoor equipment - Cooling Tower	837842	820369	8	92	100%	-	Y	216	0	-54.7	-10	0	0	0	3	30
SPS	Facade louver	838068	820254	23	86	100%	-	-	77	0	-45.7	0	0	0	0	3	43
TG_1	Outdoor equipment - Cooling Tower	837803	820092	23	96	100%	-	Y	347	0	-58.8	-10	0	0	0	3	30
TG_2	Outdoor equipment - Cooling Tower	837805	820096	23	96	100%	-	-	342	0	-58.7	0	0	0	0	3	40
TG_3	Outdoor equipment - Cooling Tower	837812	820094	23	96	100%	-	-	339	0	-58.6	0	0	0	0	3	40
TG_4	Outdoor equipment - Cooling Tower	837816	820092	23	96	100%	-	-	337	0	-58.6	0	0	0	0	3	40
TG_5	Outdoor equipment - Cooling Tower	837820	820089	32	96	100%	-	-	336	0	-58.5	0	0	0	0	3	40
TG_15	Outdoor equipment - Chiller	837933	820161	23	94	100%	-	-	208	0	-54.4	0	0	0	0	3	43
TG_16	Outdoor equipment - Chiller	837935	820160	23	94	100%	-	-	208	0	-54.4	0	0	0	0	3	43
																Total	**51**

Detail Fixed Plant Noise Calculation - T1-18B

Period	**Daytime and evening**
NSR ID	**T1-18B**
NSR Name	**Tower 1 (Domestic)**
Coor - x	838011.4
Coor - y	820312.7
Criteria	65
Fixed noise level at receiver	64
Compliance	**Y**

Source ID	Source Name	Source coor-x	Source coor-y	Source coor-Z	SWL, dB(A)	Operation Time %	At source noise shielding	Blockage of direct line of sight	Horizontal Distance,m	Correction of operation time	Distance Attenuation, dB(A)	Screening Correction, dB(A)	Tonality Correction, dB(A)	Intermittency, dB(A)	Impulsiveness, dB(A)	Façade Correction, dB(A)	Predicted Noise Level, $L_{eq(30min)}$ dB(A)
FYS_27	Vehicle Workshop	837774	820358	6	98	50%	-	-	241	-3	-55.7	0	0	0	0	3	42
FYS_28	Vehicle Workshop	837791	820348	16	98	50%	-	Y	224	-3	-55.0	-10	0	0	0	3	33
HLS_7	Vehicle Workshop	837968	820191	16	98	50%	Partially Enclosed	Y	130	-3	-50.2	-10	0	0	0	3	37.7
HLS_10	Vehicle Workshop	837982	820196	16	98	50%	Partially Enclosed	Y	120	-3	-49.6	-10	0	0	0	3	38.4
HLS_11	Vehicle Workshop	837974	820202	6	98	50%	Partially Enclosed	Y	117	-3	-49.4	-10	0	0	0	3	38.6
HLS_12	Vehicle Workshop	837984	820202	38	98	50%	Partially Enclosed	-	114	-3	-49.1	-5	0	0	0	3	43.8
HLS_13	Vehicle Workshop	837977	820207	38	98	50%	Partially Enclosed	Y	111	-3	-48.9	-10	0	0	0	3	39
HLS_15	Vehicle Workshop	837979	820213	6	98	50%	Partially Enclosed	Y	105	-3	-48.4	-10	0	0	0	3	40
HLS_16	Vehicle Workshop	837990	820214	6	98	50%	Partially Enclosed	-	101	-3	-48.1	-5	0	0	0	3	44.9
HLS_19	Vehicle Workshop	837984	820224	6	98	50%	Partially Enclosed	Y	93	-3	-47.3	-10	0	0	0	3	40.6
HLS_20	Vehicle Workshop	837995	820226	6	98	50%	Partially Enclosed	-	89	-3	-46.9	-5	0	0	0	3	46
HLS_21	Vehicle Workshop	837987	820230	6	98	50%	Partially Enclosed	Y	86	-3	-46.7	-10	0	0	0	3	41
HLS_23	Vehicle Workshop	837989	820236	6	98	50%	Partially Enclosed	Y	80	-3	-46.0	-10	0	0	0	3	42
HLS_24	Vehicle Workshop	838001	820239	6	98	50%	Partially Enclosed	-	75	-3	-45.5	-5	0	0	0	3	48
HLS_25	Vehicle Workshop	837992	820242	6	98	50%	Partially Enclosed	Y	73	-3	-45.3	-10	0	0	0	3	43
HLS_26	Vehicle Workshop	838007	820248	6	98	50%	-	-	65	-3	-44.2	0	0	0	0	3	54
HLS_27	Vehicle Workshop	837990	820255	6	98	50%	-	-	61	-3	-43.7	0	0	0	0	3	54
HP_1	Outdoor equipment - Chiller	837709	820425	64	96	100%	-	-	323	0	-58.2	0	0	0	0	3	41
HP_2	Outdoor equipment - Chiller	837703	820427	64	96	100%	-	-	329	0	-58.3	0	0	0	0	3	41
HWS_28	Vehicle Workshop	837909	820293	6	98	50%	-	Y	104	-3	-48.3	-10	0	0	0	3	40
KCR_28	Vehicle Workshop	837739	820372	6	98	50%	-	-	279	-3	-56.9	0	0	0	0	3	41
LCS_28	General Workshop	837843	820326	6	98	50%	-	Y	169	-3	-52.6	-10	0	0	0	3	35
MCS11_2	Outdoor equipment - Cooling Tower	837925	820350	8	92	100%	-	Y	94	0	-47.5	-10	0	0	0	3	38
MCS3_1	Outdoor equipment - Cooling Tower	837822	820416	8	92	100%	-	Y	216	0	-54.7	-10	0	0	0	3	30
MCS3_2	Outdoor equipment - Cooling Tower	837826	820423	8	92	100%	-	Y	216	0	-54.7	-10	0	0	0	3	30
MCS3_3	Outdoor equipment - Cooling Tower	837825	820421	8	92	100%	-	Y	216	0	-54.7	-10	0	0	0	3	30
MCS3_4	Outdoor equipment - Cooling Tower	837824	820419	8	92	100%	-	Y	216	0	-54.7	-10	0	0	0	3	30
MCS3_5	Outdoor equipment - Cooling Tower	837819	820409	8	92	100%	-	Y	215	0	-54.6	-10	0	0	0	3	30
MCS3_6	Outdoor equipment - Cooling Tower	837821	820412	8	92	100%	-	Y	215	0	-54.7	-10	0	0	0	3	30
MCS5_1	Outdoor equipment - Cooling Tower	837842	820369	8	92	100%	-	Y	179	0	-53.0	-10	0	0	0	3	32
PCS_28	Vehicle Workshop	837883	820305	6	98	50%	-	Y	129	-3	-50.2	-10	0	0	0	3	38
SLS_27	General Workshop	837919	820289	23	98	50%	-	-	95	-3	-47.6	0	0	0	0	3	50
SLS_28	Vehicle Workshop	837934	820281	23	98	50%	-	Y	84	-3	-46.5	-10	0	0	0	3	42
SPS	Facade louver	838068	820254	23	86	100%	-	-	81	0	-46.2	0	0	0	0	3	43
TG_1	Outdoor equipment - Cooling Tower	837803	820092	23	96	100%	-	-	304	0	-57.6	0	0	0	0	3	41
TG_2	Outdoor equipment - Cooling Tower	837805	820096	23	96	100%	-	-	299	0	-57.5	0	0	0	0	3	41
TG_3	Outdoor equipment - Cooling Tower	837812	820094	23	96	100%	-	-	296	0	-57.4	0	0	0	0	3	42
TG_4	Outdoor equipment - Cooling Tower	837816	820092	23	96	100%	-	-	295	0	-57.4	0	0	0	0	3	42
TG_5	Outdoor equipment - Cooling Tower	837820	820089	32	96	100%	-	-	294	0	-57.4	0	0	0	0	3	42
TG_15	Outdoor equipment - Chiller	837933	820161	23	94	100%	-	-	171	0	-52.6	0	0	0	0	3	44
TG_16	Outdoor equipment - Chiller	837935	820160	23	94	100%	-	-	170	0	-52.6	0	0	0	0	3	44
TTS_4	Vehicle Workshop	837947	820185	6	98	50%	Partially Enclosed	Y	143	-3	-51.1	-10	0	0	0	3	37
TTS_5	Vehicle Workshop	837941	820195	6	98	50%	Partially Enclosed	-	137	-3	-50.7	-5	0	0	0	3	42
TTS_7	Vehicle Workshop	837944	820202	6	98	50%	Partially Enclosed	-	130	-3	-50.2	-5	0	0	0	3	43
TTS_8	Vehicle Workshop	837952	820198	6	98	50%	Partially Enclosed	Y	129	-3	-50.2	-10	0	0	0	3	38
TTS_9	Vehicle Workshop	837947	820207	6	98	50%	Partially Enclosed	-	123	-3	-49.8	-5	0	0	0	3	43
TTS_11	Vehicle Workshop	837950	820213	6	98	50%	Partially Enclosed	-	117	-3	-49.4	-5	0	0	0	3	44
TTS_12	Vehicle Workshop	837958	820209	6	98	50%	Partially Enclosed	Y	116	-3	-49.3	-10	0	0	0	3	39
TTS_14	Vehicle Workshop	837960	820215	6	98	50%	Partially Enclosed	Y	110	-3	-48.8	-10	0	0	0	3	39
TTS_15	Vehicle Workshop	837955	820225	6	98	50%	Partially Enclosed	-	105	-3	-48.4	-5	0	0	0	3	45
TTS_18	Vehicle Workshop	837966	820226	6	98	50%	Partially Enclosed	Y	98	-3	-47.9	-10	0	0	0	3	40
TTS_20	Vehicle Workshop	837968	820231	6	98	50%	Partially Enclosed	Y	92	-3	-47.3	-10	0	0	0	3	41
TTS_21	Vehicle Workshop	837962	820241	6	98	50%	Partially Enclosed	-	87	-3	-46.8	-5	0	0	0	3	46
TTS_22	Vehicle Workshop	837970	820237	6	98	50%	Partially Enclosed	Y	86	-3	-46.7	-10	0	0	0	3	41
TTS_23	Vehicle Workshop	837965	820248	6	98	50%	Partially Enclosed	-	80	-3	-46.0	-5	0	0	0	3	47
TTS_24	Vehicle Workshop	837974	820244	6	98	50%	Partially Enclosed	Y	78	-3	-45.9	-10	0	0	0	3	42
TTS_25	Vehicle Workshop	837969	820254	6	98	50%	Partially Enclosed	-	73	-3	-45.3	-5	0	0	0	3	48
TTS_26	Vehicle Workshop	837976	820249	6	98	50%	Partially Enclosed	Y	72	-3	-45.2	-10	0	0	0	3	43
TTS_27	Vehicle Workshop	837968	820267	6	98	50%	-	-	63	-3	-44.0	0	0	0	0	3	54
YOS_5	Vehicle Workshop	837918	820206	6	98	50%	Partially Enclosed	Y	142	-3	-51.0	-10	0	0	0	3	37
YOS_7	Vehicle Workshop	837920	820213	6	98	50%	Partially Enclosed	Y	135	-3	-50.6	-10	0	0	0	3	37
YOS_11	Vehicle Workshop	837925	820225	6	98	50%	Partially Enclosed	Y	123	-3	-49.8	-10	0	0	0	3	38

YOS_12	Vehicle Workshop	837934	820220	6	98	50%	Partially Enclosed	Y	121	-3	-49.7	-10	0	0	0	3	38
YOS_15	Vehicle Workshop	837930	820236	6	98	50%	Partially Enclosed	Y	112	-3	-49.0	-10	0	0	0	3	39
YOS_16	Vehicle Workshop	837939	820231	6	98	50%	Partially Enclosed	Y	109	-3	-48.8	-10	0	0	0	3	39
YOS_18	Vehicle Workshop	837941	820237	6	98	50%	Partially Enclosed	Y	103	-3	-48.3	-10	0	0	0	3	40
YOS_19	Vehicle Workshop	837936	820247	6	98	50%	Partially Enclosed	Y	101	-3	-48.0	-10	0	0	0	3	40
YOS_21	Vehicle Workshop	837938	820252	6	98	50%	Partially Enclosed	Y	95	-3	-47.6	-10	0	0	0	3	40
YOS_22	Vehicle Workshop	837947	820248	6	98	50%	Partially Enclosed	Y	92	-3	-47.2	-10	0	0	0	3	41
YOS_23	Vehicle Workshop	837941	820258	6	98	50%	Partially Enclosed	Y	89	-3	-46.9	-10	0	0	0	3	41
YOS_24	Vehicle Workshop	837950	820255	6	98	50%	Partially Enclosed	Y	85	-3	-46.6	-10	0	0	0	3	41
YOS_25	Vehicle Workshop	837944	820265	6	98	50%	Partially Enclosed	Y	83	-3	-46.4	-10	0	0	0	3	42
YOS_26	Vehicle Workshop	837951	820261	6	98	50%	Partially Enclosed	Y	79	-3	-46.0	-10	0	0	0	3	42
YOS_27	Vehicle Workshop	837943	820278	6	98	50%	-	-	77	-3	-45.7	0	0	0	0	3	52
YOS_28	Vehicle Workshop	837959	820271	6	98	50%	-	-	67	-3	-44.6	0	0	0	0	3	53
																Total	**64**

Detail Fixed Plant Noise Calculation - T1-18B

Period	**Nighttime**
NSR ID	**T1-18B**
NSR Name	**Tower 1 (Domestic)**
Coor - x	838011.4
Coor - y	820312.7
Criteria	55
Fixed noise level at receiver	52
Compliance	**Y**

Source ID	Source Name	Source coor-x	Source coor-y	Source coor-Z	SWL, dB(A)	Operation Time %	At source noise shielding	Blockage of direct line of sight	Horizontal Distance,m	Correction of operation time	Distance Attenuation, dB(A)	Screening Correction, dB(A)	Tonality Correction, dB(A)	Intermittency, dB(A)	Impulsiveness, dB(A)	Façade Correction, dB(A)	Predicted Noise Level, $L_{eq(30min)}$ dB(A)
HP_1	Outdoor equipment - Chiller	837709	820425	64	96	100%	-	-	323	0	-58.2	0	0	0	0	3	41
HP_2	Outdoor equipment - Chiller	837703	820427	64	96	100%	-	-	329	0	-58.3	0	0	0	0	3	41
MCS5_1	Outdoor equipment - Cooling Tower	837842	820369	8	92	100%	-	Y	179	0	-53.0	-10	0	0	0	3	32
SPS	Facade louver	838068	820254	23	86	100%	-	-	81	0	-46.2	0	0	0	0	3	43
TG_1	Outdoor equipment - Cooling Tower	837803	820092	23	96	100%	-	-	304	0	-57.6	0	0	0	0	3	41
TG_2	Outdoor equipment - Cooling Tower	837805	820096	23	96	100%	-	-	299	0	-57.5	0	0	0	0	3	41
TG_3	Outdoor equipment - Cooling Tower	837812	820094	23	96	100%	-	-	296	0	-57.4	0	0	0	0	3	42
TG_4	Outdoor equipment - Cooling Tower	837816	820092	23	96	100%	-	-	295	0	-57.4	0	0	0	0	3	42
TG_5	Outdoor equipment - Cooling Tower	837820	820089	32	96	100%	-	-	294	0	-57.4	0	0	0	0	3	42
TG_15	Outdoor equipment - Chiller	837933	820161	23	94	100%	-	-	171	0	-52.6	0	0	0	0	3	44
TG_16	Outdoor equipment - Chiller	837935	820160	23	94	100%	-	-	170	0	-52.6	0	0	0	0	3	44
																Total	**52**

Detail Fixed Plant Noise Calculation - T1-19A

Period	**Daytime and evening**
NSR ID	**T1-19A**
NSR Name	**Tower 1 (Domestic)**
Coor - x	838002.8
Coor - y	820316.7
Criteria	65
Fixed noise level at receiver	64
Compliance	**Y**

Source ID	Source Name	Source coor-x	Source coor-y	Source coor-Z	SWL, dB(A)	Operation Time %	At source noise shielding	Blockage of direct line of sight	Horizontal Distance,m	Correction of operation time	Distance Attenuation, dB(A)	Screening Correction, dB(A)	Tonality Correction, dB(A)	Intermittency, dB(A)	Impulsiveness, dB(A)	Façade Correction, dB(A)	Predicted Noise Level, $L_{eq(30min)}$ dB(A)
FYS_27	Vehicle Workshop	837774	820358	6	98	50%	-	-	232	-3	-55.3	0	0	0	0	3	43
FYS_28	Vehicle Workshop	837791	820348	16	98	50%	-	-	215	-3	-54.6	0	0	0	0	3	43
HLS_7	Vehicle Workshop	837968	820191	16	98	50%	Partially Enclosed	Y	131	-3	-50.3	-10	0	0	0	3	38
HLS_10	Vehicle Workshop	837982	820196	16	98	50%	Partially Enclosed	Y	122	-3	-49.7	-10	0	0	0	3	38
HLS_11	Vehicle Workshop	837974	820202	6	98	50%	Partially Enclosed	Y	118	-3	-49.5	-10	0	0	0	3	38.5
HLS_12	Vehicle Workshop	837984	820202	38	98	50%	Partially Enclosed	Y	116	-3	-49.3	-10	0	0	0	3	38.7
HLS_13	Vehicle Workshop	837977	820207	38	98	50%	Partially Enclosed	Y	113	-3	-49.1	-10	0	0	0	3	38.9
HLS_15	Vehicle Workshop	837979	820213	6	98	50%	Partially Enclosed	Y	106	-3	-48.5	-10	0	0	0	3	39.5
HLS_16	Vehicle Workshop	837990	820214	6	98	50%	Partially Enclosed	Y	103	-3	-48.3	-10	0	0	0	3	39.7
HLS_19	Vehicle Workshop	837984	820224	6	98	50%	Partially Enclosed	Y	94	-3	-47.5	-10	0	0	0	3	40.5
HLS_20	Vehicle Workshop	837995	820226	6	98	50%	Partially Enclosed	-	91	-3	-47.2	-5	0	0	0	3	46
HLS_21	Vehicle Workshop	837987	820230	6	98	50%	Partially Enclosed	Y	88	-3	-46.9	-10	0	0	0	3	41
HLS_23	Vehicle Workshop	837989	820236	6	98	50%	Partially Enclosed	Y	82	-3	-46.2	-10	0	0	0	3	42
HLS_24	Vehicle Workshop	838001	820239	6	98	50%	Partially Enclosed	-	78	-3	-45.9	-5	0	0	0	3	47
HLS_25	Vehicle Workshop	837992	820242	6	98	50%	Partially Enclosed	Y	76	-3	-45.6	-10	0	0	0	3	42
HLS_26	Vehicle Workshop	838007	820248	6	98	50%	-	-	69	-3	-44.7	0	0	0	0	3	53
HLS_27	Vehicle Workshop	837990	820255	6	98	50%	-	-	62	-3	-43.9	0	0	0	0	3	54
HP_1	Outdoor equipment - Chiller	837709	820425	64	96	100%	-	Y	313	0	-57.9	-10	0	0	0	3	31
HP_2	Outdoor equipment - Chiller	837703	820427	64	96	100%	-	Y	319	0	-58.1	-10	0	0	0	3	31
HWS_28	Vehicle Workshop	837909	820293	6	98	50%	-	-	96	-3	-47.7	0	0	0	0	3	50
KCR_28	Vehicle Workshop	837739	820372	6	98	50%	-	-	270	-3	-56.6	0	0	0	0	3	41
LCS_28	General Workshop	837843	820326	6	98	50%	-	-	160	-3	-52.1	0	0	0	0	3	46
MCS11_2	Outdoor equipment - Cooling Tower	837925	820350	8	92	100%	-	-	85	0	-46.6	0	0	0	0	3	48
MCS3_1	Outdoor equipment - Cooling Tower	837822	820416	8	92	100%	-	-	206	0	-54.3	0	0	0	0	3	41
MCS3_2	Outdoor equipment - Cooling Tower	837826	820423	8	92	100%	-	-	207	0	-54.3	0	0	0	0	3	41
MCS3_3	Outdoor equipment - Cooling Tower	837825	820421	8	92	100%	-	-	207	0	-54.3	0	0	0	0	3	41
MCS3_4	Outdoor equipment - Cooling Tower	837824	820419	8	92	100%	-	-	206	0	-54.3	0	0	0	0	3	41
MCS3_5	Outdoor equipment - Cooling Tower	837819	820409	8	92	100%	-	-	205	0	-54.3	0	0	0	0	3	41
MCS3_6	Outdoor equipment - Cooling Tower	837821	820412	8	92	100%	-	-	206	0	-54.3	0	0	0	0	3	41
MCS5_1	Outdoor equipment - Cooling Tower	837842	820369	8	92	100%	-	-	169	0	-52.6	0	0	0	0	3	42
PCS_28	Vehicle Workshop	837883	820305	6	98	50%	-	-	121	-3	-49.6	0	0	0	0	3	48
SLS_27	General Workshop	837919	820289	23	98	50%	-	-	88	-3	-46.9	0	0	0	0	3	51
SLS_28	Vehicle Workshop	837934	820281	23	98	50%	-	-	78	-3	-45.8	0	0	0	0	3	52
SPS	Facade louver	838068	820254	23	86	100%	-	Y	90	0	-47.1	-10	0	0	0	3	32
TG_1	Outdoor equipment - Cooling Tower	837803	820092	23	96	100%	-	Y	301	0	-57.6	-10	0	0	0	3	31
TG_2	Outdoor equipment - Cooling Tower	837805	820096	23	96	100%	-	-	296	0	-57.4	0	0	0	0	3	42
TG_3	Outdoor equipment - Cooling Tower	837812	820094	23	96	100%	-	-	293	0	-57.3	0	0	0	0	3	42
TG_4	Outdoor equipment - Cooling Tower	837816	820092	23	96	100%	-	-	292	0	-57.3	0	0	0	0	3	42
TG_5	Outdoor equipment - Cooling Tower	837820	820089	32	96	100%	-	-	292	0	-57.3	0	0	0	0	3	42
TG_15	Outdoor equipment - Chiller	837933	820161	23	94	100%	-	-	170	0	-52.6	0	0	0	0	3	44
TG_16	Outdoor equipment - Chiller	837935	820160	23	94	100%	-	-	170	0	-52.6	0	0	0	0	3	44
TTS_4	Vehicle Workshop	837947	820185	6	98	50%	Partially Enclosed	Y	143	-3	-51.1	-10	0	0	0	3	37
TTS_5	Vehicle Workshop	837941	820195	6	98	50%	Partially Enclosed	-	136	-3	-50.7	-5	0	0	0	3	42
TTS_7	Vehicle Workshop	837944	820202	6	98	50%	Partially Enclosed	-	129	-3	-50.2	-5	0	0	0	3	43
TTS_8	Vehicle Workshop	837952	820198	6	98	50%	Partially Enclosed	Y	129	-3	-50.2	-10	0	0	0	3	38
TTS_9	Vehicle Workshop	837947	820207	6	98	50%	Partially Enclosed	-	123	-3	-49.8	-5	0	0	0	3	43
TTS_11	Vehicle Workshop	837950	820213	6	98	50%	Partially Enclosed	-	116	-3	-49.3	-5	0	0	0	3	44
TTS_12	Vehicle Workshop	837958	820209	6	98	50%	Partially Enclosed	Y	116	-3	-49.3	-10	0	0	0	3	39
TTS_14	Vehicle Workshop	837960	820215	6	98	50%	Partially Enclosed	Y	110	-3	-48.8	-10	0	0	0	3	39
TTS_15	Vehicle Workshop	837955	820225	6	98	50%	Partially Enclosed	-	104	-3	-48.3	-5	0	0	0	3	45
TTS_18	Vehicle Workshop	837966	820226	6	98	50%	Partially Enclosed	Y	98	-3	-47.9	-10	0	0	0	3	40
TTS_20	Vehicle Workshop	837968	820231	6	98	50%	Partially Enclosed	Y	92	-3	-47.3	-10	0	0	0	3	41
TTS_21	Vehicle Workshop	837962	820241	6	98	50%	Partially Enclosed	-	86	-3	-46.7	-5	0	0	0	3	46
TTS_22	Vehicle Workshop	837970	820237	6	98	50%	Partially Enclosed	Y	86	-3	-46.7	-10	0	0	0	3	41
TTS_23	Vehicle Workshop	837965	820248	6	98	50%	Partially Enclosed	-	78	-3	-45.9	-5	0	0	0	3	47
TTS_24	Vehicle Workshop	837974	820244	6	98	50%	Partially Enclosed	Y	78	-3	-45.9	-10	0	0	0	3	42
TTS_25	Vehicle Workshop	837969	820254	6	98	50%	Partially Enclosed	-	72	-3	-45.1	-5	0	0	0	3	48
TTS_26	Vehicle Workshop	837976	820249	6	98	50%	Partially Enclosed	Y	72	-3	-45.2	-10	0	0	0	3	43
TTS_27	Vehicle Workshop	837968	820267	6	98	50%	-	-	61	-3	-43.7	0	0	0	0	3	54
YOS_5	Vehicle Workshop	837918	820206	6	98	50%	Partially Enclosed	Y	139	-3	-50.9	-10	0	0	0	3	37
YOS_7	Vehicle Workshop	837920	820213	6	98	50%	Partially Enclosed	Y	132	-3	-50.4	-10	0	0	0	3	38
YOS_11	Vehicle Workshop	837925	820225	6	98	50%	Partially Enclosed	Y	120	-3	-49.6	-10	0	0	0	3	38

YOS_12	Vehicle Workshop	837934	820220	6	98	50%	Partially Enclosed	Y	119	-3	-49.5	-10	0	0	0	3	38
YOS_15	Vehicle Workshop	837930	820236	6	98	50%	Partially Enclosed	Y	108	-3	-48.7	-10	0	0	0	3	39
YOS_16	Vehicle Workshop	837939	820231	6	98	50%	Partially Enclosed	Y	107	-3	-48.6	-10	0	0	0	3	39
YOS_18	Vehicle Workshop	837941	820237	6	98	50%	Partially Enclosed	Y	101	-3	-48.1	-10	0	0	0	3	40
YOS_19	Vehicle Workshop	837936	820247	6	98	50%	Partially Enclosed	Y	97	-3	-47.7	-10	0	0	0	3	40
YOS_21	Vehicle Workshop	837938	820252	6	98	50%	Partially Enclosed	-	91	-3	-47.2	-5	0	0	0	3	46
YOS_22	Vehicle Workshop	837947	820248	6	98	50%	Partially Enclosed	Y	89	-3	-47.0	-10	0	0	0	3	41
YOS_23	Vehicle Workshop	837941	820258	6	98	50%	Partially Enclosed	-	85	-3	-46.5	-5	0	0	0	3	46
YOS_24	Vehicle Workshop	837950	820255	6	98	50%	Partially Enclosed	Y	82	-3	-46.3	-10	0	0	0	3	42
YOS_25	Vehicle Workshop	837944	820265	6	98	50%	Partially Enclosed	Y	78	-3	-45.9	-10	0	0	0	3	42
YOS_26	Vehicle Workshop	837951	820261	6	98	50%	Partially Enclosed	Y	76	-3	-45.6	-10	0	0	0	3	42
YOS_27	Vehicle Workshop	837943	820278	6	98	50%	-	-	72	-3	-45.1	0	0	0	0	3	53
YOS_28	Vehicle Workshop	837959	820271	6	98	50%	-	-	64	-3	-44.1	0	0	0	0	3	54
																Total	**64**

Detail Fixed Plant Noise Calculation - T1-19A

Period	**Nighttime**
NSR ID	**T1-19A**
NSR Name	**Tower 1 (Domestic)**
Coor - x	838002.8
Coor - y	820316.7
Criteria	55
Fixed noise level at receiver	51
Compliance	**Y**

Source ID	Source Name	Source coor-x	Source coor-y	Source coor-Z	SWL, dB(A)	Operation Time %	At source noise shielding	Blockage of direct line of sight	Horizontal Distance,m	Correction of operation time	Distance Attenuation, dB(A)	Screening Correction, dB(A)	Tonality Correction, dB(A)	Intermittency, dB(A)	Impulsiveness, dB(A)	Façade Correction, dB(A)	Predicted Noise Level, $L_{eq(30min)}$ dB(A)
HP_1	Outdoor equipment - Chiller	837709	820425	64	96	100%	-	Y	313	0	-57.9	-10	0	0	0	3	31
HP_2	Outdoor equipment - Chiller	837703	820427	64	96	100%	-	Y	319	0	-58.1	-10	0	0	0	3	31
MCS5_1	Outdoor equipment - Cooling Tower	837842	820369	8	92	100%	-	-	169	0	-52.6	0	0	0	0	3	42
SPS	Facade louver	838068	820254	23	86	100%	-	Y	90	0	-47.1	-10	0	0	0	3	32
TG_1	Outdoor equipment - Cooling Tower	837803	820092	23	96	100%	-	Y	301	0	-57.6	-10	0	0	0	3	31
TG_2	Outdoor equipment - Cooling Tower	837805	820096	23	96	100%	-	-	296	0	-57.4	0	0	0	0	3	42
TG_3	Outdoor equipment - Cooling Tower	837812	820094	23	96	100%	-	-	293	0	-57.3	0	0	0	0	3	42
TG_4	Outdoor equipment - Cooling Tower	837816	820092	23	96	100%	-	-	292	0	-57.3	0	0	0	0	3	42
TG_5	Outdoor equipment - Cooling Tower	837820	820089	32	96	100%	-	-	292	0	-57.3	0	0	0	0	3	42
TG_15	Outdoor equipment - Chiller	837933	820161	23	94	100%	-	-	170	0	-52.6	0	0	0	0	3	44
TG_16	Outdoor equipment - Chiller	837935	820160	23	94	100%	-	-	170	0	-52.6	0	0	0	0	3	44
																Total	**51**

Appendix 4.1

Extracted Information of Emission Sources identified at Kai Tak Muti-purpose Sports Complex EIA Report

1037
1038
1039
1040
1035
1036
1041
1042
1043
1049
1054
1055
1056
1057

D2 Landscape Deck- Portal

Kai Tak Tunnel - East Vent. Bld.

Kai Tak Tunnel - East Portal

CKR - East Vent. Bld.

Slip Road S3 Tunnel - Portal

CKR Landscape Deck - Portal

CKR - Portal

Kai Tak Tunnel - West Portal

Non Building Area / EVA

Public Sports Ground

Office Block

KTAT
CKREVB
ELD
WLD
CKREP
P
Q
S
U
Y
R

To Kwa Wan Typhoon Shelter

Berthing Location at Kai Tak Cruise Terminal

0 50 100 200 300 400 500
Metres

0 100 200 400 600 800 1000
Metres

LEGEND:

- Industrial Chimneys
- Portals/Ventilation Buildings

ARCHITECTURAL SERVICES DEPARTMENT

The joint venture of
Cinotech Consultants Ltd. and
Maurice Lee & Associates Ltd. .

Sub-Consultant
MVA SYSTRA GROUP

Drafting by	KT	06/15
Designed by	KT	06/15
Checked by	KS	06/15
Approved by	KS	06/15

SCALE: AS SHOWN

PROJECT: Kai Tak Multi-purpose Sports Complex
TITLE: Locations of Portals, Ventilation Buildings, Industrial Chimneys and Typhoon Shelter

DRAWING NO: Figure 3-4

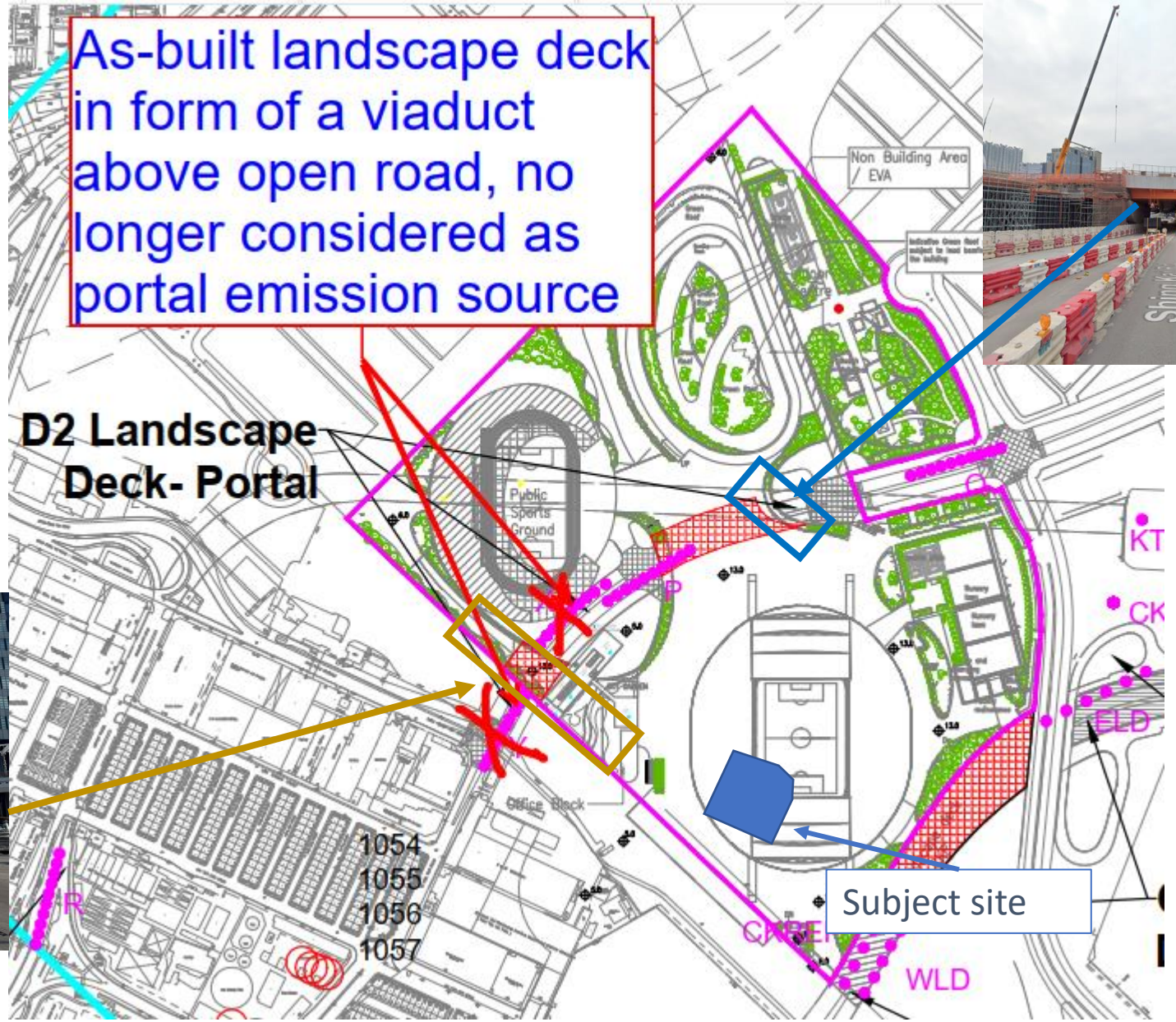
REV: 0

Filename: F:\Projects\JA14016 - EIA and TIA for Multi-purpose Sports Complex (MPSC) at Kai Tak\Drawing\CAD\Operational Air 150901\for fig 3-4.dwg

Appendix 4.2

Site Survey Photo for the as-built Landscape Deck closer to the Subject Site

Site Survey Photo for the As-built Landscape Deck closer to the Subject Site



Appendix 4.3

Site Odour Survey

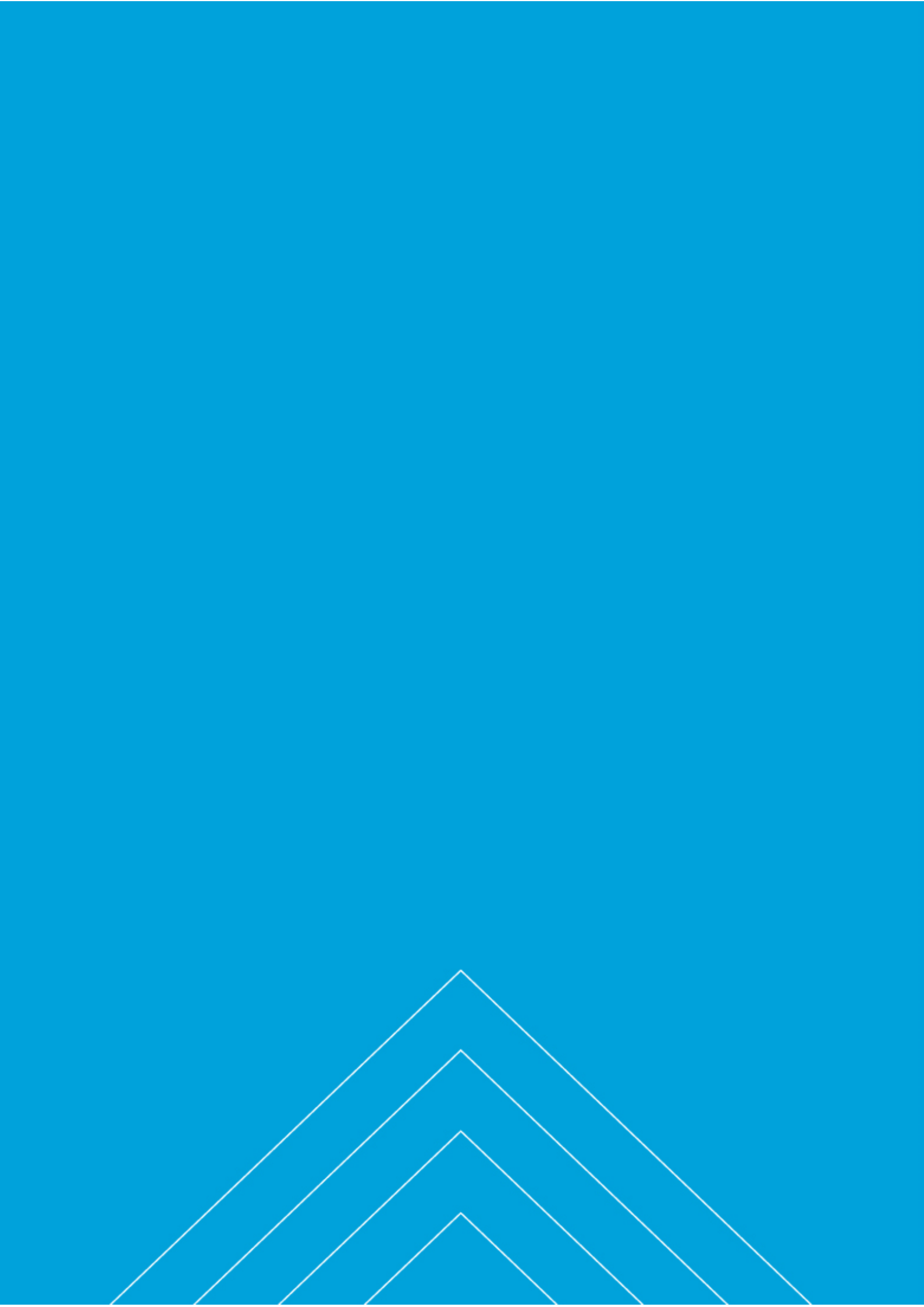
Odour Patrol along Site Boundary on 21 Oct 2022

No odour was perceived and no odour generating activity was observed during the odour patrol

Subject Site

To Kwa Wan Road Pumping Station

Route of odour patrol



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香港房屋委員會
Hong Kong Housing Authority

本署檔號 Our Ref. HD(P)8/3/KN94
來函檔號 Your Ref.

電話 Tel No. 2761 5306
圖文傳真 Fax No. 2761 5870

5 July 2024

By Hand and Email

Secretary, Town Planning Board
15/F, North Point Government Offices
333 Java Road, North Point,
Hong Kong

Dear Sir/Madam,

Section 16 Planning Application for Proposed Minor Relaxation of Building Height Restriction for the Proposed Public Housing Development at To Kwa Wan Road, Ma Tau Kok (Application No. A/K10/275)

Reference is made to the captioned Section 16 application received by the Town Planning Board on 22.5.2024 and the comments received from Planning Department dated 7.6.2024, 13.6.2024, 14.6.2024, 18.6.2024 and 20.6.2024, 25.6.2024 and 3.7.2024. We submit herewith the table summarizing the responses to comments, replacement pages and other supplementary information to substantiate the application.

Should you have any queries, please contact me at [redacted].

Yours faithfully,

(Belinda LAU)
for Director of Housing

Encl.

Section 16 Planning Application for Proposed Minor Relaxation of Building Height Restriction for the Proposed Public Housing Development at To Kwa Wan Road
Response to Departmental Comments

	Date	Departmental Comments	HD's response
1	7.6.2024 (via Email)	Planning Department – UD&L (Contact Person: [redacted])	
		Having reviewed the submitted Supporting Planning Statement, please note our following comments from landscape planning perspective:	
		(a) Tree survey and landscape technical assessment are missing in the submission. In accordance with the TPB's Guidance Note "Application for Permission under Section 16", please provide the survey plan on landscape resources with a broad assessment on landscape impact caused by the proposed development; and	In accordance with the requirements of DEVB TC(W) No. 4/2020 and DLAP-201, and consultation with Tree Preservation Committee (TPC) of the Housing Department, Kowloon City District Council and Tree Management Office of DEVB since August 2022, TPC's formal approval to remove all existing trees on site was obtained in January 2024. The Application Site has been cleared in February 2024 prior to the submission of Section 16 planning application for minor relaxation of building height restriction to the Town Planning Board in May 2024. Foundation works and piling works are currently underway on site (**Annex 1**). As there is no existing tree at the Application Site, no adverse landscape impact is anticipated for the proposed minor relaxation.
		(b) Noting that the Site is related to previous zoning amendment and according to para. 4.8 of MPC Paper No. 2/15 – Proposed Amendments To The Approved Ma Tau Kok Outline Zoning Plan No. S/K10/20, "…five existing trees are found on site. The trees will be preserved as far as practicable." Please provide	

	Date	Departmental Comments	HD's response
		the tree survey and review if the proposed development layout can be adjusted to preserve the existing trees.	
		(c) Landscape Master Plan (Plan 4) – Please review if seating benches can be provided on the 4/F flat roof.	Noted. The suggestions would be explored at the detailed design stage as far as practicable.
		(d) Optimization of native species should be considered for the landscape proposal. Please consider to include planting with native species to enhance bio-diversity.	Noted. The native species will be considered for the landscape proposal as far as practical. All proposed plant species would be selected based on the DEVB's principle of "Right Plant, Right Place", i.e., to select suitable plants for planting in appropriate places, with due consideration of various factors prior to planting (such as the planting objective, site and spatial constraints, surrounding landscape character, microclimate, etc.) to ensure sustainable plant growth.
2	13.6.2024 (via Email)	Hong Kong Police Force (Contact Person: [redacted])	
		We have concerns about the design of the part of carpark and loading/unloading area since there will be a new vehicular entrance for both domestic and visitors space near the key junction of Sung Wong Toi Road and To Kwa Wan Road. We are concerning about any vehicular queue/slow vehicle movement extending to the public street from the	A Traffic Impact Assessment (TIA) was conducted for the proposed development and agreed with TD in May 2023. TD has no comments on the run-in/out location of the application site. As per the TIA, all junctions assessed will be operated within capacity during the construction and operation stage, and no adverse traffic impact is anticipated. All private car parking spaces are for residents and

	Date	Departmental Comments	HD's response
		entrance, especially when there will be frequent large scale events in Kai Tak Sports Park (on Sung Wong Toi Road opposite the applied location). The usage of non-resident drivers will be undesirable for traffic management during the events.	their visitors use only.
		For the proposed number of parking facilities, the applicant should provide the details of the car park facilities including:- 1. the necessity of the 5 visitor parking spaces, 2. whether hourly/daily parking will be restricted for the 64 domestic spaces, 3. the management policy of the loading/unloading of domestic vehicles (e.g. whether drop bar will be installed, staff will be arranged to cut-off the queue outside,	The 5 nos. of visitor parking space in the proposed development are provided in accordance with the HKPSG as agreed with TD. The proposed 64 nos. of private car parking space and 2 nos. of L/UL spaces are for residents' use only, and there is no public vehicular park or public loading/unloading (L/UL) facilities proposed in the development.
		4. detailed drawings of the visitor, domestic parking and loading/unloading spaces including the location of drop bar gates,	Please refer to **Annex 2** for the detailed drawings of parking facilities and loading/unloading spaces.
		5. the proposal of design of traffic aids and street furniture on Sung Wong Toi Road for smooth and save vehicle movement.	In accordance with the TIA, as all junctions assessed would be operated within capacity during the construction and operation stage, therefore, no traffic improvement measures were proposed.
		All loading/unloading construction activities should be refined within the construction site.	Noted.

	Date	Departmental Comments	HD's response
3	14.6.2024 (via Email)	Transport Department (Contact Person: [redacted]) Comparing with the previous approved planning brief, it is noted that the number of units provided has been increased from 714 to 756. Please provide the breakdown of flat sizes and the distribution to justify the proposed parking provisions are adequate with reference to the HKPSG.	Among the 756 flats in the current proposal, 180 nos. of them are 1p/2p. The proposed 64 nos. of private car parking space (domestic) are provided at the high-end parking ratio of 1 parking space per 9 flats (excluding 1p/2p flats) as agreed with TD.
4	18.6.2024 (via Email)	Environmental Protection Department (Contact Person: [redacted]) **Technical Comments on Appendix 2 – Environmental Assessment Study** 1. Section 2.1.4 Please clarify the type of mechanical ventilation. 2. Section 2.2.4 The written proof of TD's endorsement on the traffic forecast data in Year 2044 should be included. 3. Section 2.1 (a) Re. to the previous comment, please review the proposed welfare	Types of mechanical ventilation included air conditioning system with fresh air units, fresh air supply fans and exhaust fans. As agreed with EPD, the written proof of TD's endorsement on the traffic forecast data in Year 2044 will be provided separately to EPD. The Child Care Centre (CCC), Neighbourhood Elderly Centre (NEC) and Integrated Family Services Centre

	Date	Departmental Comments	HD's response
		facilities/areas are noise sensitive use, such as play cum dining area, operation area, EM (works), volunteer room and play room etc.	(IFSC) operate during normal office hours on weekdays, which occupants could stay at the welfare facilities for 8 hours a day. Hence, the rooms such as Play cum dining area, interview room, volunteer room, activity room, common room and small group room are serving as similar purpose to office. The playroom/music room in CCC, exhibition area and information & resource corner in IFSC may provide training activities which is considered as room for education purpose. The operation area and EM (works) at the Estate Management Office are serving as the purpose of office.
		(b) Please clarify if the medical/isolation room of the child care centre has the same nature as diagnostic rooms and wards in the HKPSG.	The medical/isolation room of CCC is used for accommodation of baby cots and providing space for isolation. The road traffic noise standard is revised as 70 dB(A) as it is used for temporary accommodation without diagnostic activity.
		4. Section 2.4.5 & Appendix 2.4 Please review the sound attenuation performance in S.2.4.5 as inconsistencies have been found in Appendix 2.4, such as Type C-8 (Living Room) – 5.5 dB(A) and Type D-6 (Living Room) – 5.6 dB(A).	The sound attenuation performance in **S.2.4.5** of Type C-8 (Living Room) and Type D-6 (Living Room) are revised as 5.6 dB(A) and 5.5 dB(A), respectively.

	Date	Departmental Comments	HD's response
		5. <u>Section 2.4.21</u> Please clarify if the rooms on 2/F of welfare facilities are not rely on natural ventilation, as fixed glazing would be used at all openings.	Mechanical ventilation will be provided.
		6. <u>Section 3.2</u> For the fixed noise impact assessment, you may refer to the latest Noise Mitigation Plan for the assessment of Planned Kai Tak Sports Park. Also, noise from music, singing and instrument performing activities should be included in the assessment.	Please note the noise assessment results from the Noise Mitigation Plan for the assessment of Planned Kai Tak Sports Park is adopted. The calculation of the fixed noise assessment was revised accordingly. Noise from music, singing and instrument performing activities was evaluated. The supplementary information for fix noise assessment would be shared to EPD separately as agreed by EPD.
		<u>Textual Comments on Appendix 2 – Environmental Assessment Study</u> 7. <u>Appendix 3.2</u> Please review the title of Appendix 3.2 on the cover page (pdf p.91).	The content page listing the Appendices and the title of Appendices 3.2 and 3.3 on the cover page are revised. As agreed with EPD, the revised pages will be provided to EPD separately.
5	18.6.2024 (via Email)	Planning Department (Contact Person: [redacted]) (i) As observed from the approved planning brief and Page 8 of the Application Form, the average flat size has been reduced from 43.1m2 to 40.7m2 respectively; please confirm if the current	As compared to the planning brief approved in Feb 2023, the flat mix proposed in the current scheme has been adjusted with increasing number of smaller flats and less larger flats.

	Date	Departmental Comments	HD's response
		proposal has an increased percentage of smaller flat type(s);	
		(ii) As mentioned in Page 8 of the Application Form, the proposed non-domestic GFA of about 6,150m2 includes "Shop and Services" and "Government, institution or community" facilities including Housing Authority (HA)'s office and social welfare facilities. Please clarify if other facilities/areas, such as parking facilities and circulation area have also been included in the calculation of the total non-domestic GFA, which information is currently not mentioned in the Application Form. On the other hand, it is noted that there are landscape areas in various floors, please confirm if any landscape areas are covered and indicate these covered landscape area clearly on the submitted floor plans and/Landscape Master Plan. In parallel, please also clarify if these covered landscape areas have also been included in the calculation of the 1,876m2 of private open space and of the non-domestic GFA; and	The proposed non-domestic GFA of about 6,150 sq.m included HA's office ("Government Use"), retails facilities, social welfare facilities, landscape area and circulation area etc. Referring to the landscape master plan (plan 4 of the planning statement), the total open spaces for residents' enjoyment are about 2,164 sq.m, which is 288 sq.m above the requirement of 1,876 sq.m. This include 1,070 sq.m of uncovered landscape area on G/F and 2/F and podium garden on 3/F, and 1,094 sq.m of covered landscape area on G/F and 2/F and communal play area on 3/F. The covered landscape area is designed in response to climate change and public aspirations for more sheltering and vibrancy.
		(iii) Based on Page 15 of the	Please find the breakdown of site

<table>
<tr><th></th><th>Date</th><th>Departmental Comments</th><th>HD's response</th></tr>
<tr><td></td><td></td><td>Application Form and Table 2, Para. 3.3 of the SPS, the site coverage (SC) for the proposed scheme is 37.5%. Please clarify if it refers to the SC for the entire site; otherwise, please clarify the proposed SC for domestic and non-domestic part respectively for the proposed scheme.</td><td>coverage as follows:
<table><tr><th>Site Coverage</th><th>%</th></tr><tr><td>Podium below 15m</td><td>About 81%</td></tr><tr><td>Podium above 15m</td><td>About 57%</td></tr><tr><td>Domestic block typical floor</td><td>About 23%</td></tr></table>
The building footprint of the domestic block typical floor is governed by different requirements including prescribe window, extent of facade served by emergency vehicular access (EVA), sustainable building guidelines, open space requirements and design considerations such as avoidance of overlooking and views from flats. Taking into account the various site constraints, the proposed scheme is an optimized combination fulfilling these requirements.</td></tr>
<tr><td>6</td><td>20.6.2024 (via Email)</td><td>Planning Department – UD&L
([redacted])

Supporting Planning Statement and Application Form
(i) The Applicant may wish to supplement on whether (i) Modular Integrated Construction will be adopted; and (ii) the proposed development would comply with the requirements under the Sustainable Building Design Guidelines in the Supporting Planning Statement (SPS).</td><td>MiC would only be adopted for kitchen and toilets, and the proposed development would comply with the requirements under the Sustainable Building Design Guidelines.</td></tr>
</table>

	Date	Departmental Comments	HD's response
		(ii) The Applicant may wish to supplement discussions on the intended stepped Building Height (BH) concept of increasing progressively from the waterfront to the inland and foothill areas of the Ma Tau Kok area as mentioned in paragraph 7.2 of the Explanatory Statement (ES) of the Outline Zoning Plan (OZP) in the SPS.	Noted. Para. 4.5 of the Supporting Planning Statement revised (**Annex 3**).
		(iii) Please provide dimensions of the proposed tower setbacks from the northern and eastern site boundaries and annotate on all the relevant figures/plans. (iv) Please advise whether there would be building setback from the southwestern site boundary abutting the GIC site as shown on Plans 3b-1, 3b-3 to 3b-6.	Please refer to **Annex 4** for the dimensions of building setback.
		Specific Comments <u>Paragraph 3.1 and Plans 3a-4 and 3b-7</u> 1. Discrepancies on the mean site formation level are spotted in paragraph 3.1 (i.e. +4.29mPD) and Plans 3a-4 and 3b-7 (i.e. +4.00mPD). Please clarify/rectify.	Please be clarified that the mean street level is +4.0mPD.
		<u>Section 3 and Application Form</u> 2. For the sake of completeness,	Please refer to Plan 3b-2 to 6 for the

	Date	Departmental Comments	HD's response
		please supplement proposed floor uses in Section 3 of the SPS.	proposed floor uses of the proposed scheme.
		3. It is noted from section plan and floor plan that retail facilities will be provided on G/F and carpark will be located on G/F and 1/F. Please update Part 6(v)(c) on p.8 of the Application Form. Please ensure consistency.	Noted. Page 8 of the Application Form revised (**Annex 5**).
		4. It is noted from section plan that residential units will be located on 4/F to 40/F. Please update Part 6(v)(c) on p.8 of the Application Form. Please ensure consistency.	
		<u>Section 4</u>	
		5. Please provide discussions on the urban design merits provided in the proposed development in Section 4 of the SPS, such as building setbacks from site boundaries and landscape and façade treatments, and indicate the dimensions on all relevant layout/section plans.	Please refer to Para. 4.5 of the SPS regarding urban design merits of the proposed development.
		<u>Para. 4.5</u>	
		6. Please revise the 4th line to read as "…the overall visual impacts ranged from negligible to moderately adverse."	Noted and revised (**Annex 3**).

	Date	Departmental Comments	HD's response
		Plan 3 7. Please provide Plan 3 which is omitted from the current submission for vetting.	Please be clarified that Plan 3 includes Plan 3a-1 to 4 which is the OZP-compliant scheme and Plan 3b-1 to 7 which is the Proposed Scheme. "(Plan 3)" as mentioned in Para. 3.2 has been deleted (**Annex 3**).
		Plan 3b-1 8. Please replace the plan with Plan 4 of the VA.	Noted.
		Plan 3b-7 9. Please indicate landscape areas on 2/F to 4/F.	Noted.
		Visual Appraisal (VA) Paragraph 2.2 10. …while the BH of proposed hotel and office locating at the northern west of Main Stadium are ~~60.2mPD~~ 60.15mPD and 57mPD respectively under the approved application No. A/K22/28	Noted and revised (**Annex 6**).
		Specific Comments Paragraph 6.17 and Plan 11 11. Regarding VP6, it seems that the description of "with part of the building screened off by trees and the proposed hotel and permitted office and commercial development of the approved planning application No. A/K22/28" as mentioned in paragraph 6.17 is not tally with	Noted and revised (**Annex 6**).

	Date	Departmental Comments	HD's response
		the photomontage as shown on Plan 11. Please clarify/rectify. <u>Paragraph 6.23</u> 12. Please revise the 1st line to read as "…dominated by Kai It Building and the low-rise GIC buildings and the open sky view. <u>Plan 3</u> 13. Please annotate "Metropolitan Rise (138mPD)" and "Celestial Heights (150mPD)" as mentioned in paragraph 6.17 for ease of reference. <u>Plans 9 and 12</u> 14. Please demarcate the building bulk of the proposed development in yellow dotted line on the photomontage for ease of reference. <u>Plan 11</u> 15. Please consider if the proposed development would appear to be taller on the photomontage at VP6. <u>Plan 13</u> 16. Please annotate To Kwa Wan Road Sewage Pumping Station as mentioned in paragraph 6.23 on the plan for ease of reference.	Please note that VP8 is dominated by Kai It Building, the HKSB welfare services block and the open sky view. Noted. Please find updated Plan 9 and 12 in **Annex 6**. Please note that the proposed building height of 130mPD has already been reflected in Plan 11. Noted.

	Date	Departmental Comments	HD's response
		Plan 14 17. Please annotate all urban design merits, e.g. setback(s) on the plan. **Other comments** According to the Joint Practice Note No. 5 (JPN No. 5), rooftop ancillary structures which exceed 10% of the BH or 15m (whichever is the less) should be counted towards the height of the building. It is noted from Plan 3b-7 of the SPS that the BH of the rooftop ancillary structure is 14.775m (or 13.265m for 130mPD), which exceeds 10% of the BH of the proposed development (i.e. 12.429m (or 12.58m for 130mPD)). The Applicant may wish to clarify if the proposed ancillary rooftop structure would comply with the requirements under JPN No. 5 in counting the number of storeys and BH.	Please refer to Plan 2 and Para. 4.5 of the SPS regarding the urban design merits of the proposed development. Noted. Please refer to the revised Plan 3b-1 and Plan 3b-7 of the Supporting Planning Statement (**Annex 3**). Please note that the top roof level is at 140.919mPD and the proposed ancillary rooftop structure would comply with the requirements under JPN No.5.
7	3.7.2024 (via Email)	Architectural Services Department ([redacted]) Based on the information provided, it is noted that the development proposal mainly consists of a residential block with proposed building height (BH) of 130mPD which is a 30% increase and is subject to PlanD's view. Considering the existing BH restriction of 100mPD of the surrounding context and the proximity of the Stadium, it	Please refer to the revised para. 6.17 of the VA (**Annex 6**). Whilst existing view towards the inland areas of To Kwa Wan and the open sky is expected to be partially blocked by the proposed development and the proposed CDA development under planning application no. A/K10/256&259 and A/K10/265, the effect of loss of open sky view due to the

	Date	Departmental Comments	HD's response
		appears that the proposed BH of the development may have some adverse visual impact in relation to the Stadium (at 55mPD), as shown in the photomontage Plan 11 (VP6) in the VIA, subject to PlanD's view.	30m increase in BH as compared to the OZP-compliant scheme is considered similar. Therefore, it was concluded in the VA that the magnitude of change is moderate and the resultant overall visual impact would be moderately adverse.

Public Comments			
1	20.6.2024	啟德分區會員會委員 郭予宏工程師 1. 有關非住用途的總樓面面積6,150 平方米，必須包括應有的社會及社區發展設施及刺激區內經濟活動的設施。 2. 爲了更有效地運用土地資源、規劃及設計中的上述設施亦都應該和區內其他有關設施一併考慮達至更好的協同效果。	擬議發展計劃的非住用總樓面面積包含了社福設施、零售設施和香港房屋委員會辦公室等用途。 房委會在規劃擬議公營房屋項目時，考慮了包括用地限制、設置所需設施的可行性及適切性等因素，並諮詢相關部門及持份者的意見，在項目內訂定合適的社會福利設施，以回應社會對公屋及社區設施的需求。
2	21.6.2024	Strong Objections. The area around the Kai Tak Stadium is being walled in piece by piece. The site in front of this was rezoned from Waterfront Related Uses to slot in a totally incompatible DRE development. Now this proposal to create an even higher wall effect by an anything but minor increase of 30% in height. That the guest attending major sports events at Kai Tak Stadium would be overlooked by three 100mPD towers was bad enough, now what remained of the sky is to be filled in. Moreover, the increase in the number of units does not justify the 30% increase in height and 34.3% increase	As demonstrated in the VA, the proposed development is compatible with the surrounding urban context and does not pose any significant visual impact. A stepped building height profile, from 100mPD for the proposed HKHS's Dedicated Housing Estate and 120mPD for the two URA's development schemes along the waterfront to 159mPD for the Sky Tower in the inland area is maintained. In response to the Government's directive to address space shortfall in the welfare sector, about 5% of the total domestic GFA is reserved for social welfare facilities in the proposed

		in PR as it adds a mere 12.5% additional units. Members should question the mismatch. Every day we have government officials banging on about Mega Events and attracting visitors to HK. But at the same time the administration is doing its best to diminish the attraction of the locations for these events in its blind pursuit of providing more residential units at any cost. And of course all this would not be necessary if the URA was not allowed to kick people out of their homes to provide urban sites for private residential development. In view of the declining residential market and little chance of any recovery in the foreseeable future, it is now time that a portion of the sites taken over by URA be developed to accommodate families being displaced. Hopefully some of the newly appointed members will look at these issues with a more holistic mindset that recognizes the folly of approving plans that address exigencies but do not resolve the core issues that need to be addressed in order to ensure that going forward HK is a more liveable and attractive city.	development. As compared to the OZP-compliant scheme under a building height restriction of 100mPD which has no welfare facilities provision, the proposed scheme has about 2,114 sq.m of social welfare facilities at the podium. Please refer to Section 4 of the Supporting Planning Statement for the justifications of the proposed minor relaxation of BHR.

The following Departments/Bureaux have no comments on the subject planning application.

	Date	Department/Bureau	Contact Person
1	5.6.2024 (via Memo)	Building Department	Mr. CHAN Sze-chun (Building Surveyor/Kowloon 13) Tel: 2626 1532

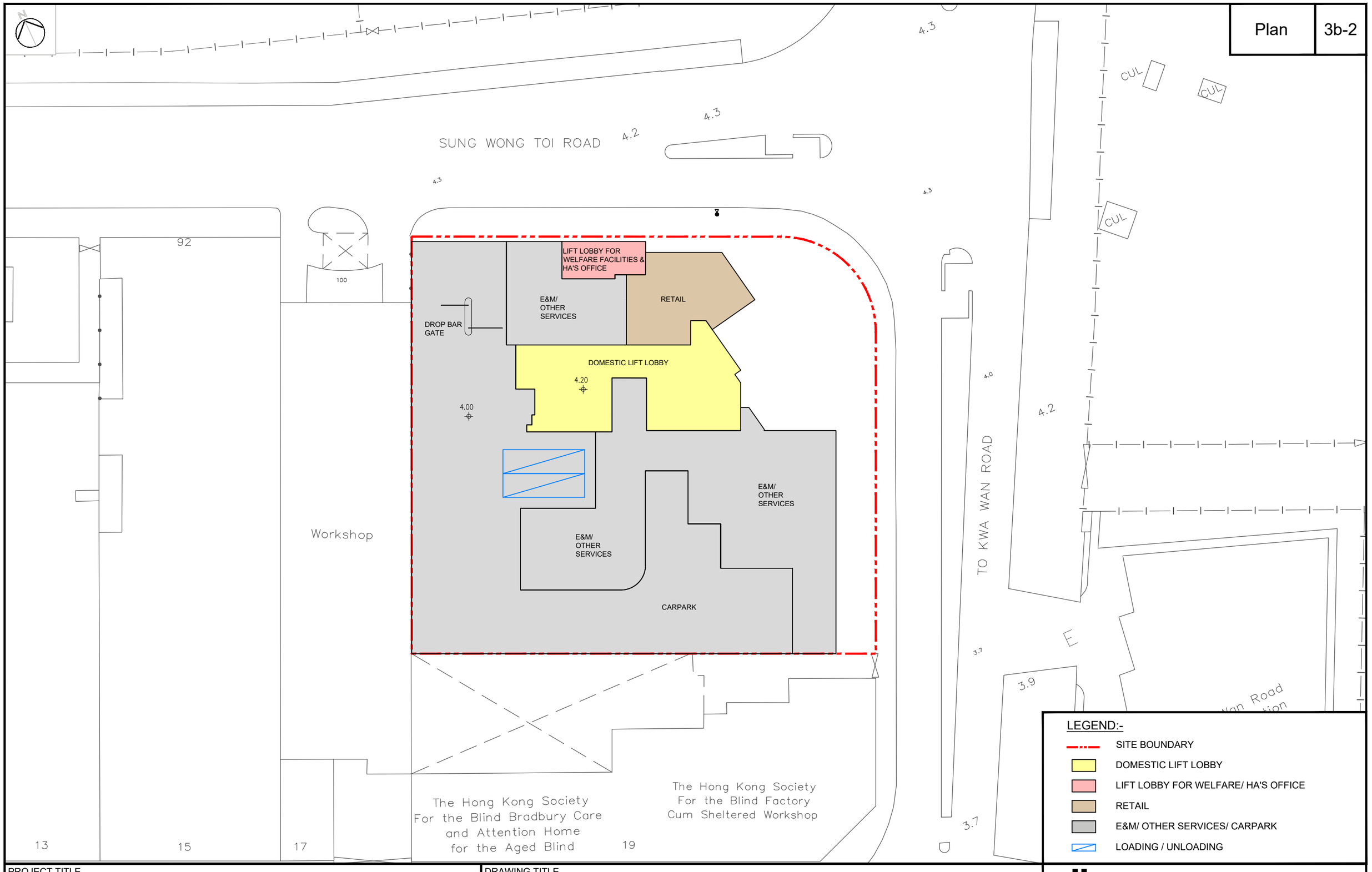
Annexes

1. Annex 1 – Current Site Photo
2. Annex 2 – Detailed Drawings of Parking and Loading/Unloading Facilities
3. Annex 3 – Amendment Pages/Plans for Supporting Planning Statement
4. Annex 4 – Dimension of building setback
5. Annex 5 – Amendment Page for the Application Form
6. Annex 6 – Amendment Page for Visual Appraisal

CURRENT SITE PHOTO FOR PROPOSED PUBLIC HOUSING DEVELOPMENT AT TO KWA WAN ROAD

HOUSING DEPARTMENT
PLANNING SECTIONS

DATE :
3. 7. 2024



LEGEND:-

- SITE BOUNDARY
- DOMESTIC LIFT LOBBY
- LIFT LOBBY FOR WELFARE/ HA'S OFFICE
- RETAIL
- E&M/ OTHER SERVICES/ CARPARK
- LOADING / UNLOADING

PROJECT TITLE

PROPOSED PUBLIC HOUSING DEVELOPMENT AT TO KWA WAN ROAD, KOWLOON CITY

DRAWING TITLE

GROUND FLOOR PLAN (PROPOSED SCHEME)

SCALE 1:500(A3)

房 屋 署
HOUSING DEPARTMENT

DRAWING NO. KC06/A/LO-22/A

DATE: 24/06/2024

Annex 2

SUNG WONG TOI ROAD

ACCESSIBLE PARKING

LIFT LOBBY FOR WELFARE FACILITIES & HA'S OFFICE

CARPARK

10.70

E&M/ OTHER SERVICES

DOMESTIC LIFT LOBBY

E&M/ OTHER SERVICES

92

100

Workshop

The Hong Kong Society For the Blind Bradbury Care and Attention Home for the Aged Blind

The Hong Kong Society For the Blind Factory Cum Sheltered Workshop

13

15

17

19

TO KWA WAN ROAD

CUL

4.3

4.2

4.0

3.9

3.7

LEGEND:-

- SITE BOUNDARY
- DOMESTIC LIFT LOBBY
- LIFT LOBBY FOR WELFARE/ HA'S OFFICE
- E&M/ OTHER SERVICES/ CARPARK
- DOMESTIC PARKING
- VISITOR PARKING

PROJECT TITLE

PROPOSED PUBLIC HOUSING DEVELOPMENT AT TO KWA WAN ROAD, KOWLOON CITY

DRAWING TITLE

FIRST FLOOR PLAN (PROPOSED SCHEME)

SCALE 1:500(A3)

房 屋 署
HOUSING DEPARTMENT

DRAWING NO. KC06/A/LO-23/A

DATE: 24/06/2024

3. DEVELOPMENT PROPOSAL

The Proposed Scheme for the Public Housing Development at To Kwa Wan Road

3.1 Taking into account the site constraints as mentioned in Para. 2.4 and the aim to optimise development potential, the Proposed Scheme proposes a BH restriction of 130mPD. The mean site formation level is +4.29mPD. The differences in key parameters of the Proposed Scheme as compared against the OZP-compliant Scheme are summarised in **Table 1** below.

Table 1 – Comparison between the OZP-compliant Scheme and the Proposed Scheme

Development Parameters	**OZP-compliant Scheme^ [A] (Plan 3a)**	**Proposed Scheme [B] (Plan 3b)**	**Difference [B] - [A]**
Gross Site Area / Net Site Area (ha)	About 0.41	About 0.41	-
Achievable Total PR *Domestic* *Non-domestic*	About 6.70 *About 6.59* *About 0.11*	About 9.0 *About 7.5* *About 1.5*	+ 2.3 (+34.3%)
Maximum Building Height (main roof level)	Not exceeding +100mPD	Not exceeding +130mPD	+30m (+30%)
Flat Production	672	756	+84 (+12.5%)
Design Population	About 1,706	About 1,876	+170 (+9.96%)
Number of Social Welfare Facility	Nil	3	+3

^ OZP-compliant Scheme is derived from the BH restriction under the Approved Ma Tau Kok Outline Zoning Plan No. S/K10/30.

3.2 The proposed public housing development consists of one public housing block (37 domestic storeys) on podium (4 storeys with podium garden). Garden and recreational facilities, welfare facilities, HA's office ('Government use') and car parking spaces would be provided as non-domestic facilities in the podium. Not less than 1,876m^2 local open space in accordance with the HKPSG requirement of 1m^2 per person will be provided. Please refer to **Plan 3a-1 to 4** for the OZP-compliant Scheme, **Plan 3b-1 to 7** for the Proposed Scheme and **Plan 4** for the Conceptual Landscape Master Plan.

Sector

4.3 The 2020 PA invited the Hong Kong Housing Authority to explore setting aside a GFA equivalent to about 5% of attainable domestic GFA in public housing projects for the provision of social welfare facilities to address the space shortfall of the welfare sector. In response to the PA's initiative, social welfare facilities with about 5% of the total attainable domestic GFA as agreed with Social Welfare Department will be provided, subject to change as per SWD's request at detailed design stage and confirmation on funding.

Compatible with Surrounding Development Context

4.4 The Application Site, which is zoned "R(A)", is intended primarily for high density development. It is located in the high-rise cluster of existing/ planned residential developments along the Sung Wong Toi Road (including Sky Tower (159mPD), CDA Developments (100mPD) (Planning Applications No. A/K10/256, 259 and 265) and To Kwa Wan Road (including HKHS's DRE (100mPD), URA's Development Schemes KC-018 & KC-019 (120mPD) and Grand Waterfront (175.5mPD) in the vicinity. Therefore, the proposed BH at the Application Site (i.e. 130mPD) will be compatible with its surroundings in terms of building heights, massing and land use.

No Adverse Visual, Air Ventilation and Technical Implications

No Adverse Impact on Visual Aspect

4.5 The proposed development will stand in harmony with the existing and planned visual townscape. A Visual Appraisal (**Appendix 1**) for the minor relaxation of maximum BH Restriction from 100mPD to 130mPD at the Application Site has been conducted and concluded that the overall visual impacts ranged from negligible to moderately adverse. A stepped building height profile, from 100mPD for the proposed Hong Kong Housing Society's Dedicated Housing Estate and 120mPD for the two Urban Renewal Authority's Development Schemes along the waterfront to the 159mPD for Sky Tower in the inland area, is maintained in accordance with the intended building height profile as mentioned in the Explanatory Statement of the Approved Ma Tau Kok Outline Zoning Plan No. S/K10/30. A paper (TFKT/C06/2023) on Proposed Minor Relaxation of Building Height Restriction for the Public Housing Development at To Kwa Wan Road, Ma Tau Kok was submitted to the Task Force on Kai Tak Harbourfront Development (KTTF) in June 2023 to seek Members' views on the proposal. The KTTF had no objection to the proposed minor relaxation of BH restriction of the proposed development. Furthermore, to ameliorate the visual impact, the design measures like façade treatment and color will be adopted and studied to enhance the aesthetic quality of the building outlook at the later stage. Associated green measures would be applied where appropriate. With

Plan 3b-1

SUNG WONG TOI ROAD

BLOCK 1

10.70
23.59
14.90
4.20
25.90
128.49
140.919
19.70
23.59

92
100
Workshop
13
15
17
19

The Hong Kong Society For the Blind Bradbury Care and Attention Home for the Aged Blind

The Hong Kong Society For the Blind Factory Cum Sheltered Workshop

TO KWA WAN ROAD

CUL
CUL
CUL

Kwa Wan Road

LEGEND:-

- SITE BOUNDARY
- DOMESTIC BLOCK
- MAIN ENTRANCE
- ENTRANCE FOR WELFARE AND HA'S OFFICE
- VEHICULAR ENTRANCE

PROJECT TITLE

PROPOSED PUBLIC HOUSING DEVELOPMENT AT TO KWA WAN ROAD, KOWLOON CITY

DRAWING TITLE

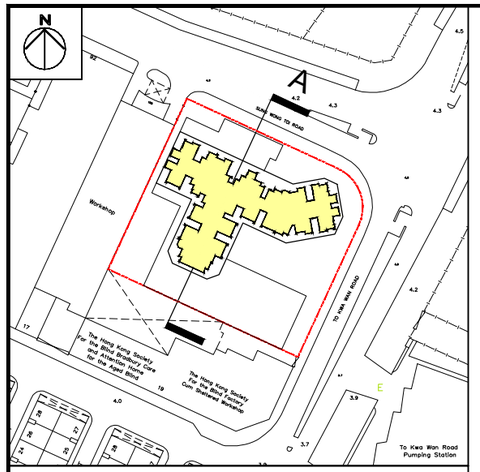
INDICATIVE MASTER LAYOUT PLAN (PROPOSED SCHEME)

SCALE 1:500(A3)

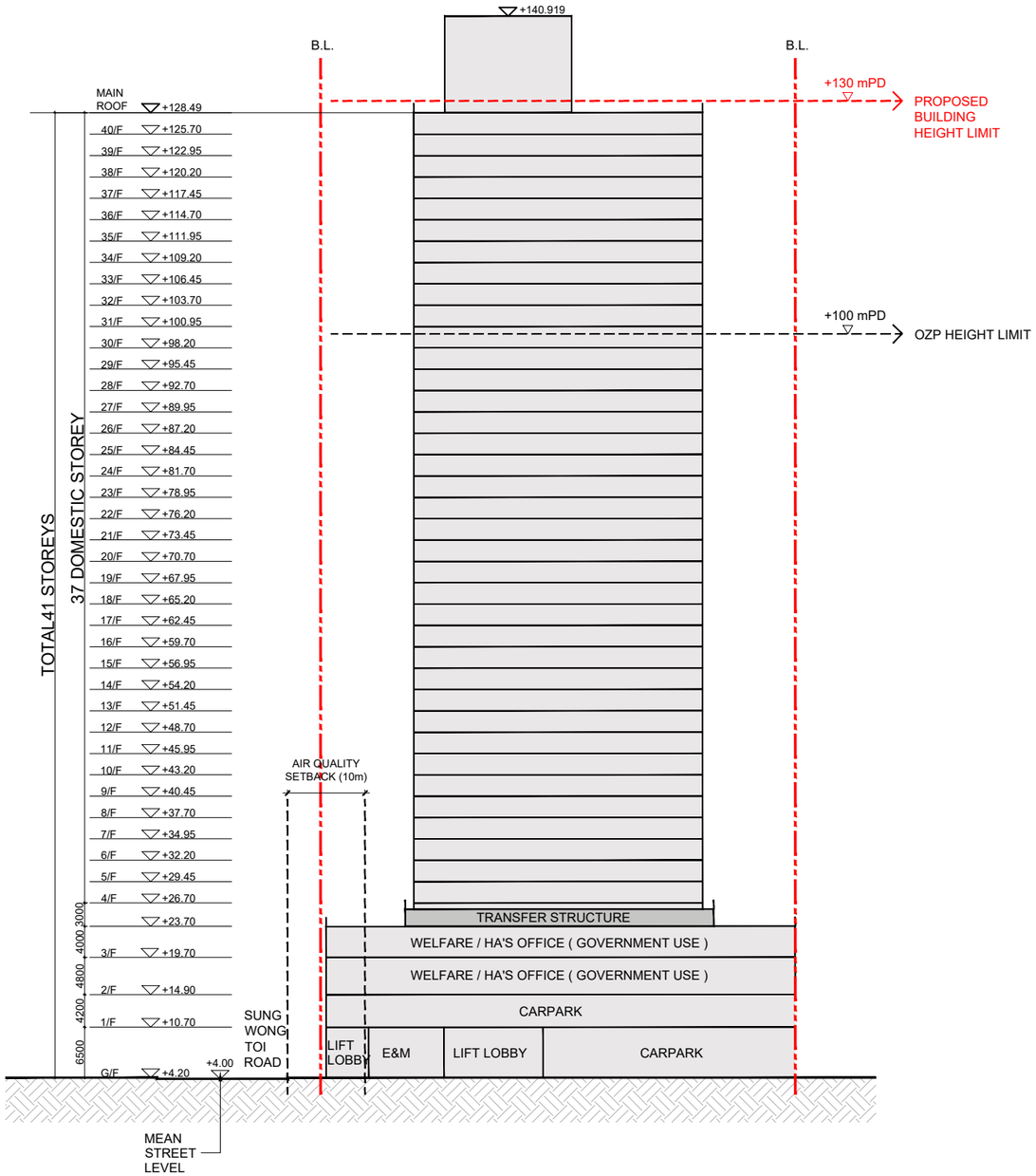
房 屋 署
HOUSING DEPARTMENT

DRAWING NO. KC06/A/LO-21/A

DATE: 24/06/2024



KEY PLAN SCALE 1:2000 (A3)



LEGEND:-

SITE BOUNDARY

PROJECT TITLE

PROPOSED PUBLIC HOUSING DEVELOPMENT AT TO KWA WAN ROAD, KOWLOON CITY

DRAWING TITLE

SITE SECTION (PROPOSED SCHEME)

SCALE 1:750(A3)

房 屋 署
HOUSING DEPARTMENT

DRAWING NO. KC06/A/LO-27/A

DATE: 24/06/2024

Plan 2

SUNG WONG TOI ROAD

TO KWA WAN ROAD

92

Workshop

10m

5.8m (about)

6.6m (about)

10m

12m (about)

100 mPD

The Hong Kong Society For the Blind Bradbury Care and Attention Home for the Aged Blind

The Hong Kong Society For the Blind Factory Cum Sheltered Workshop

13 15 17 19

CUL

R

LEGEND:-

- SITE BOUNDARY
- BUILDING HEIGHT RESTRICTION UNDER OZP (NOT MORE THAN 100mPD)
- TRAFFIC NOISE
- AIR QUALITY SETBACK (10M)
- AIR BUFFER ZONE (200m SEPARATION DISTANCE FROM EXISTING CHIMNEYS)

PROJECT TITLE

PROPOSED PUBLIC HOUSING DEVELOPMENT AT TO KWA WAN ROAD, KOWLOON CITY

DRAWING TITLE

SITE CONSTRAINTS PLAN

SCALE 1:500(A3)

房 屋 署
HOUSING DEPARTMENT

DRAWING NO. KC06/A/LO-01

DATE: 03/04/2024

24_0494KLN_KC06_A_LO-01 (Constraint Plan) 20240403

Annex 4

☑ Domestic part 住用部分

GFA 總樓面面積 ..... 30,750 ..... sq. m 平方米 ☑About 約

number of Units 單位數目 ..... About 756 .....

average unit size 單位平均面積 ..... 40.7 .....sq. m 平方米 ☑About 約

estimated number of residents 估計住客數目 ..... About 1,876 .....

☑ Non-domestic part 非住用部分 Total non-domestic GFA: About 6,150 sq.m 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 ..... 230 ..... 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)

HA's Office ('Government Use') and social welfare facilities (subject to change as per SWD's request at detailed design stage.)

☐ 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 ..... 1,876 ..... 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]
1	G/F - 3/F	Lobby and ancillary facilities, HA's Office ('Government Use'), welfare facilities, carpark, landscape area and retail
	4/F - 40/F	Residential units

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

Podium garden, recreational facilities and circulation area

under approved application No. A/K22/17 while the BH of proposed hotel and office locating at the northern west of Main Stadium are 60.15mPD and 57mPD respectively under the approved application No. A/K22/28.

- To the northwest of the Subject Site is a series of planned developments in the Comprehensive Development Area ("CDA") zones including Application Nos. A/K10/256 and A/K10/259 submitted by the respective owners for proposed comprehensive residential development with 'Shop and Services' and 'Eating Place' in the "CDA(2)" zone, as well as Application No. A/K10/265 for proposed comprehensive residential and commercial (shop and services) development in the "CDA(3)" zone. All these applications were approved with a maximum BH of 100mPD. Across Sung Wong Toi Road is a planned public open space (i.e. Sung Wong Toi Park).

- To the southeast of the Subject Site, across To Kwa Wan Road is a Government, Institution or Community (GIC) facility of To Kwa Wan Road sewage pumping station at 13.4mPD, proposed Hong Kong Housing Society (HKHS)'s dedicated rehousing estate (DRE) at 100mPD and the Urban Renewal Authority Ming Lun Street / Ma Tau Kok Road Development Scheme (KC-018) and To Kwa Wan Road / Ma Tau Kok Road Development Scheme (KC-019) at 120mPD.

- To the southwest, located next to the Subject Site is a proposed GIC redevelopment by the Hong Kong Society for the Blind (HKSB) for a welfare services block accommodating the existing HKSB's facilities with additional welfare facilities. The proposed welfare block will be redeveloped with a BH of 61.2mPD. Across Mok Cheong Street is another planned CDA development of the "13 Streets" with a BH restriction of 100mPD.

3. The Development Proposal

3.1 The Proposed Development consists of one public housing block (37 domestic storeys) on podium (4 storeys with podium garden). Garden and recreational facilities, welfare facilities, HA's office ('Government use') and carparking spaces would be provided as non-domestic facilities in the podium.

3.2 The key development parameters of the Proposed Development are summarised in **Table 1** below:

the resultant overall visual impact would be **negligible**.

VP6: Planned Open Space on Shing Kai Road (Plan 11)

Visual Composition, Obstruction and Permeability

6.17 The visual composition of this VP is dominated by planned open space in the foreground and high-rise residential developments such as Sky Tower at 159mPD, Metropolitan Rise at 138mPD and Celestial Heights at 150mPD in the background. Existing view towards the in-land areas of To Kwa Wan and the open sky is expected to be partially blocked by the Proposed Development and the proposed CDA development under Planning Application No. A/K10/256&259 and A/K10/265. Nevertheless, the effect of loss of open sky view due to the 30m increase in building height as compared to that of the OZP-compliant Scheme is considered similar given the slight magnitude of change.

Effect on Visual Resources and Public Viewers

6.18 Visual Resources at this VP include the wide open sky. Existing quality of view at this VP is not high. It is expected that a significant amount of open sky would be blocked by the increase portion of 30m of the Proposed Development, the planned developments at 100mPD at the CDA sites, Sky Tower at 159mPD and the Main Stadium of the Kai Tak Sports Ground. The visual change would be easily noticed by VSRs due to the close proximity of this VP from the Subject Site. It can be concluded that the extent of visual changes on public views induced by the Proposed Development is **moderate**.

6.19 In view of the medium to high visual sensitivity of VSRs at this VP, the resultant overall visual impact would be **moderately adverse**.

VP7: Cattle Depot Artist Village (Plan 12)

Visual Composition, Obstruction and Permeability

6.20 The visual composition of this VP is dominated by the historical buildings of the artist village and the buildings of the "13 Streets" in the background. Small portion of a naphtha reforming plant at the Towngas Production Plant can also be identified behind the artist village from this VP. While the increase portion of 30m of the Proposed Development would be completely screened by the planned CDA development of the "13 Streets" with a maximum BH restriction of 100mPD adjacent to the artist village. No visual obstruction would be induced by the Proposed Development at this VP as a result.

Effect on Visual Resources and Public Viewers

6.21 Visual resources at this VP include the wide open sky. It is expected that a significant amount of open sky would be blocked by the planned CDA development of "13 Streets". As the Proposed Development would be entirely screened by the planned CDA development of "13 Streets", existing visual resources remain unaffected by the Proposed Development and no visual changes due to the Proposed Development would be observed at this VP. It can be concluded that the extent of visual changes on public views induced by the Proposed Development is **negligible**.

6.22 The increase portion of 30m of the Proposed Development is not visible at this VP and the resultant overall visual impact would be **negligible**.

VP8: Mok Cheong Street (Plan 13)

Visual Composition, Obstruction and Permeability

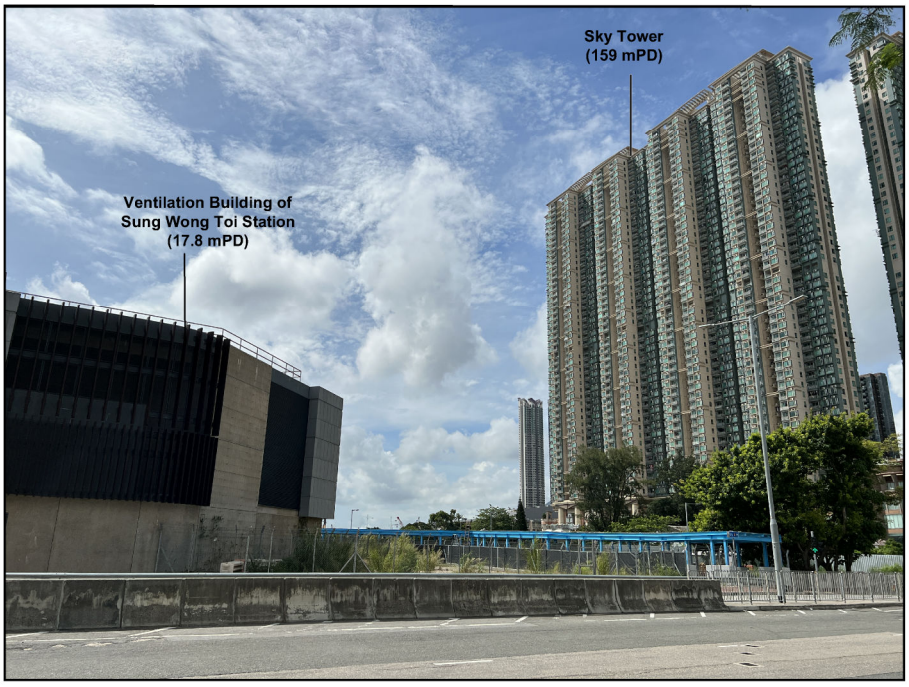
6.23 The visual composition of this VP is dominated by Kai It Building, the low-rise GIC buildings and the open sky view. To Kwa Wan Road SPS is partially visible at the end of the street. Substantial changes to the visual composition of this VP are anticipated by the proposed HKSB welfare services block at 61.2mPD, the proposed CDA development at 100mPD (Planning Application No. A/K10/265) and a proposed HKHS's DRE at 100mPD. It is expected that the Proposed Development would be completely screened by the proposed CDA development at 100mPD (Planning Application No. A/K10/265). No visual obstruction would be induced by the Proposed Development at this VP as a result.

Effect on Visual Resources and Public Viewers

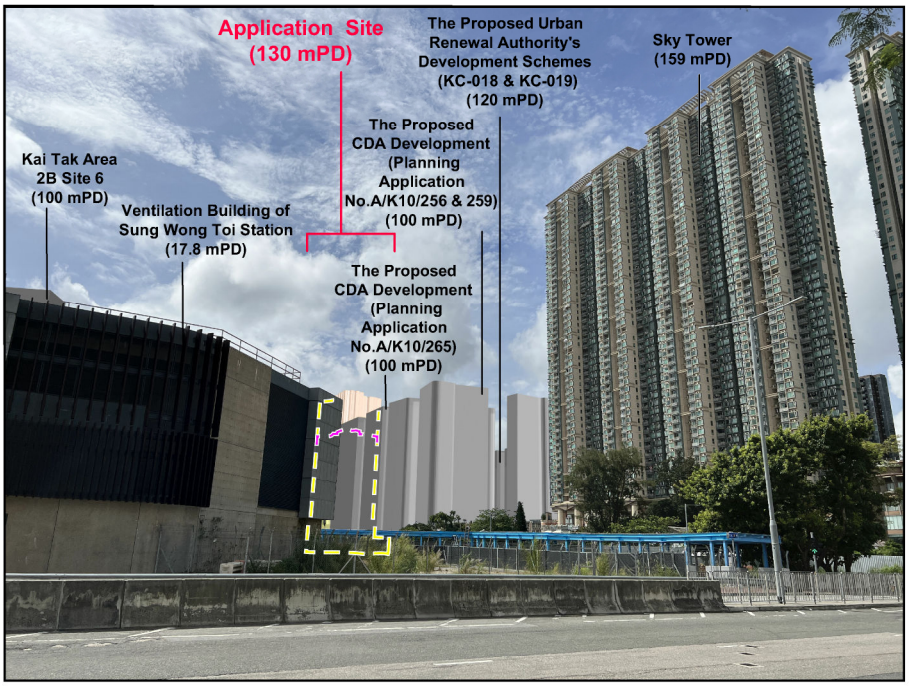
6.24 Visual Resources at this VP include the open sky, and in the future a planned open space and plantings at the proposed DRE. As the Proposed Development would be entirely screened by the proposed CDA development at 100mPD (Planning Application No. A/K10/265), existing visual resources remain unaffected by the Proposed Development and no visual changes due to the Proposed Development would be observed at this VP. It can be concluded that the extent of visual changes on public views induced by the Proposed Development is **negligible**.

6.25 The increase portion of 30m of the Proposed Development is not visible at this VP and

Existing View



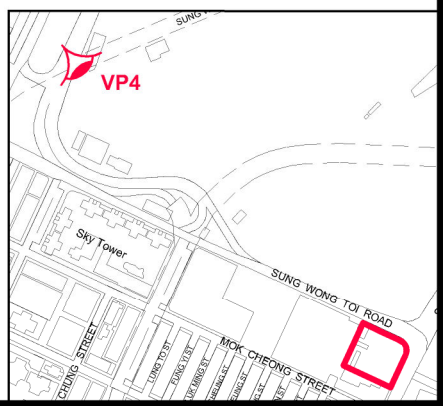
Comparison of OZP - compliant Scheme and Proposed Scheme



LEGEND:

Building Height Restriction at 100mPD

Differences between the OZP - compliant Scheme and Proposed Scheme



PHOTOMONTAGE AT VIEWING POINT 4 (VIEW FROM SUNG WONG TOI PLAYGROUND)

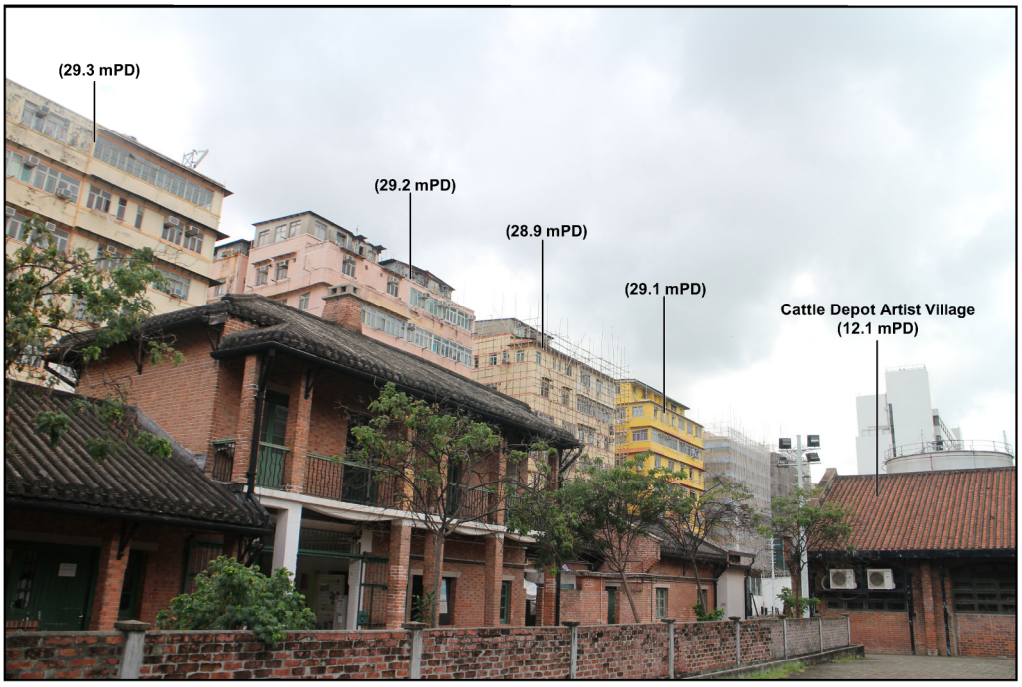
HOUSING DEPARTMENT
PLANNING SECTIONS

PLAN 9

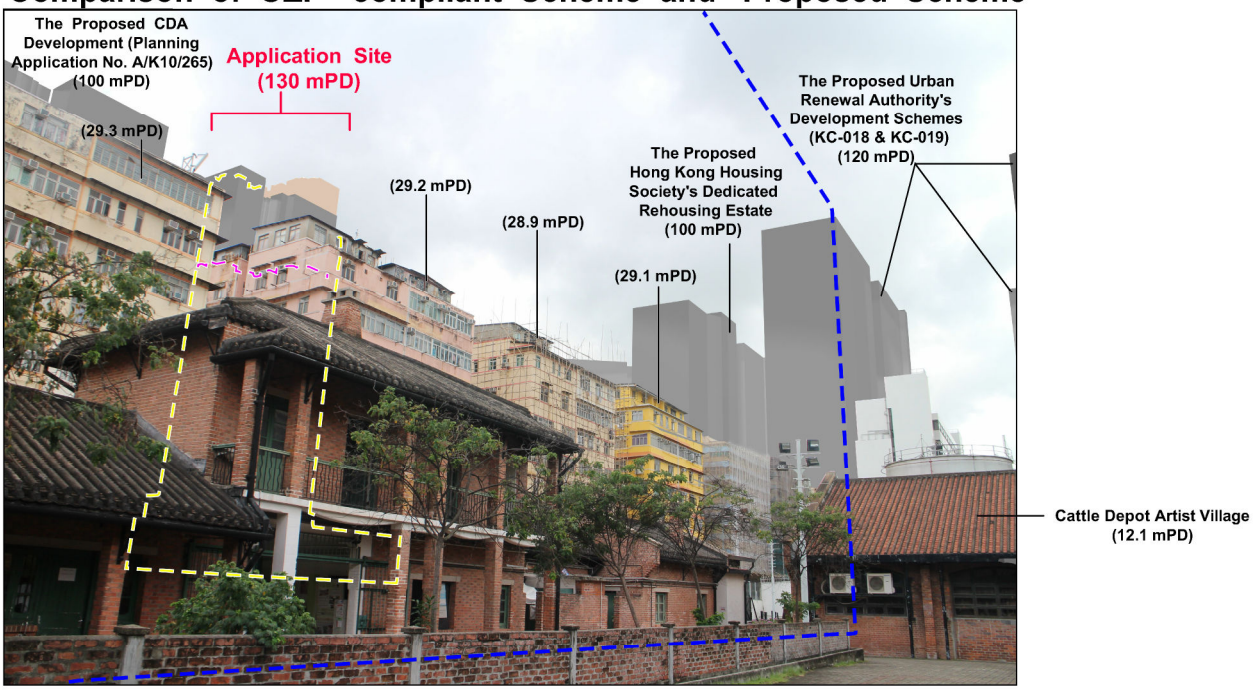
DATE :
3. 7. 2024

24_0494KLN_VP4

Existing View

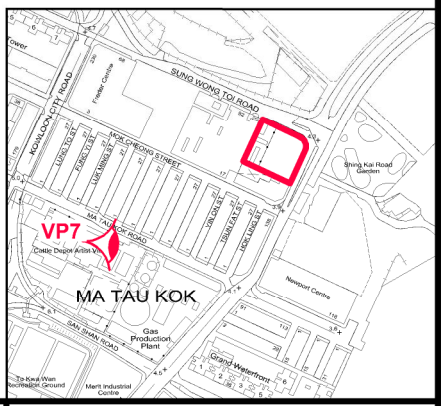


Comparison of OZP - compliant Scheme and Proposed Scheme



LEGEND:

- Building Height Restriction at 100mPD
- The Planned CDA Development of the "13 Streets"
- Differences between the OZP - compliant Scheme and Proposed Scheme



PHOTOMONTAGE AT VIEWING POINT 7 (VIEW FROM CATTLE DEPOT ARTIST VILLAGE)

HOUSING DEPARTMENT
PLANNING SECTIONS

PLAN 12

DATE : 3. 7. 2024

24_0494KLN_VP7

☐Urgent ☐Return receipt ☐Expand Group ☐Restricted ☐Prevent Copy

From:	[redacted]
Sent:	2024-06-20 星期四 18:09:48
To:	tpbpd/PLAND <tpbpd@pland.gov.hk>
Cc:	Mandy WM YIM/HAD <mandy_wm_yim@had.gov.hk>
Subject:	有關規劃申請編號 A/K10/275 - 邀請公眾提供意見事宜
Attachment:	20240620, 有關規劃申請編號 AK10275 - Ir. Kwok 意見回覆.pdf

致: 城市規劃委員會主席, 各位委員, 秘書 :

你們好, 就有關編號 A/K10/275 的規劃許可申請, 啟德委員會委員 郭予宏工程師現欲提供意見, 請參見附件之意見回條, 謝謝。

專此 並祝

安好

Dorothy Ho

Secretary to Ir. Eric Kwok, MH

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/K10/275

意見詳情 (如有需要，請另頁說明)
Details of the Comment (use separate sheet if necessary)
城規會主席，各位委員：
大家好，就有關編號A/K10/275 的規劃許可申請，本人有以下兩點意見：
1) 有關非住用途的總樓面面積6,150平方米，必須包括應有的社會及社區發展設施及刺激區內經濟活動的設施。
2) 為了更有效地運用土地資源、規劃及設計中的上述設施亦都應該和區內其他有關設施一併考慮達至更好的協同效果。

「提意見人」姓名/名稱 Name of person/company making this comment 啟德分區委員會 委員 郭予宏工程師 榮譽勳章

簽署 Signature _____ 日期 Date 20/6/2024

副本抄送：啟德分區委員會秘書 嚴蕙敏女士

☐Urgent ☐Return receipt ☐Expand Group ☐Restricted ☐Prevent Copy 2

From: [redacted]
Sent: 2024-06-21 星期五 21:32:31
To: tpbpd/PLAND <tpbpd@pland.gov.hk>
Subject: A/K10/275 Sung Wong Toi Road PH

A/K10/275

Junction of Sung Wong Toi Road and To Kwa Wan Road, To Kwa Wan

Site area: About 4,100sq.m

Zoning: "Res (Group A)"

Applied development: Proposed **MAJOR** Relaxation of **FROM 100mPD to 130mPD** for Permitted Public Housing Development. **Note that the increase in PR from 6.7 to 9.0 is not stated**

1 Block – 756 units / OS 1,876sq.m / HA Office / Retail / 81 Vehicle Parking

Dear TPB Members,

Strong Objections. The area around the Kai Tak Stadium is being walled in piece by piece. The site in front of this was rezoned from Waterfront Related Uses to slot in a totally incompatible DRE development. Now this proposal to create an even higher wall effect by an anything but minor increase of 30% in height. That the guests attending major sports events at Kai Tak Stadium would be overlooked by three 100mPD towers was bad enough, now what remained of the sky is to be filled in.

Moreover, the increase in the number of units does not justify the 30% increase in height and 34.3% increase in PR as it adds a mere 12.5% additional units. Members should question the mismatch.

Every day we have government officials banging on about Mega Events and attracting visitors to HK. But at the same time the administration is doing its best to diminish the attraction of the locations for these events in its blind pursuit of providing more residential units at any cost.

And of course all this would not be necessary if the URA was not allowed to kick people out of their homes to provide urban sites for private residential development. In view of the declining residential market and little chance of any recovery in the foreseeable future, it is now time that a portion of the sites taken over by URA be developed to accommodate the families being displaced.

Hopefully some of the newly appointed members will look at these issues with a more holistic mindset that recognizes the folly of approving plans that address exigencies but do not resolve the core issues that need to be addressed in order to ensure that going forward HK is a more liveable and attractive city.

☐Urgent ☐Return receipt ☐Expand Group ☐Restricted ☐Prevent Copy

Mary Mulvihill

Detailed Comments of Government Departments

1. Comments of the Chief Architect/Advisory and Statutory Compliance Division, Architectural Services Department (CA/ASC, ArchSD):

   Considering the existing building height (BH) restriction of 100mPD of the surrounding context and the proximity of the Stadium, it appears that the proposed BH of the development may have some adverse visual impact in relation to the Stadium (at 55mPD), as shown in photomontage of VP6 in the Visual Impact Assessment.

2. Comments of the Director of Environmental Protection (DEP):

   (i) Based on the Supporting Planning Statement submitted by the applicant, insurmountable environmental impact is not anticipated due to the proposed minor relaxation of building height restriction (BHR). The Hong Kong Housing Authority (HKHA) has conducted an Environmental Assessment Study (EAS) report for the proposed housing development with BHR of 130mPD. The summary of findings of the EAS report is as follows:

      a) on air quality, the minimum separation distance between the proposed residential blocks and the nearest road kerbs of Sung Wong Toi Road (District Distributor > 10m) and To Kwa Wan Road (District Distributor > 10m) have satisfied relevant vehicular emission buffer distances as stipulated in Hong Kong Planning Standards and Guidelines (HKPSG). Also, there is no planned air sensitive uses with openable windows and fresh air intake would be located within the 200m buffer distance from chimney emission. The To Kwa Wan Road Sewerage Pumping Station which has adopted a full enclosure design and is 35m separated from the Site. A site survey was conducted and no odour was perceived during the patrol. Hence, adverse vehicular/chimney emissions and odour nuisance are not anticipated for the proposed development; and

      b) on noise, with noise mitigation measures in terms of acoustic window and fixed glazing with maintenance window adopted, 100% road traffic noise compliance rate for the proposed development is achieved. Also, based on the fixed noise plant noise impact assessment results, the predicted accumulative noise levels at the representative noise sensitive receivers (NSRs) will comply with the fixed noise source standard for planning purpose. However he still has technical comments on the EAS report, which could be responded by HKHA under the established mechanism between HKHA and Environmental Protection Department.

Recommended Advisory Clauses

(a) to note the comments of the Commissioner of Police that

(i) all loading/unloading construction activities should be refined within the construction site;

(ii) if road works or road closure during construction stage (e.g. hoarding erection on public footpath) is subsequently required, the applicant could furnish Hong Kong Police Force (Attn.: OC RMO KW) a set of temporary traffic arrangement (TTA) plans in order to facilitate his further assessment;

(iii) should the 5 visitor parking spaces in the proposed development be provided in accordance with the Hong Kong Planning Standards and Guidelines (HKPSG), a reservation policy is required for future management of the 5 visitor parking spaces of the carpark to ensure that no random drivers shall queue up outside for a parking space, which would cause traffic impact to the public road network; and

(iv) for the 'drop bar gates' (**Drawing A-3**), the location should be deep inside the site to provide more buffer zone and minimize the impact to public road during peak hours when residents are returning home.

(b) to note the comments of the Director of Fire Services (D of FS) that

(i) water supplies for firefighting and fire service installations should be provided to the satisfaction of D of FS under the regulatory regimes; and

(ii) detailed fire services requirements will be formulated upon receipt of a formal submission of Short Term Tenancy (STT)/Short Term Waiver (STW), general building plans or referral of application via relevant licensing authority. Furthermore, the Emergency Vehicular Access (EVA) provision in the captioned work shall comply with the requirements as stipulated in Section 6, Part D of the Code of Practice for Fire Safety in Buildings 2011, which is administered by the Building Authority;

(c) to note the comments of the Chief Engineer/Mainland South, Drainage Services Department that the applicant shall consider the impact on the existing sewage system brought by the development and consult Environmental Protection Department, the planning authority of sewerage infrastructure; and

(d) to note the comments of the Chief Town Planner/Urban Design and Landscape, Planning Department (CTP/UD&L, PlanD) that the applicant is reminded that approval of the s.16 application by the Town Planning Board does not imply approval of the site coverage of greenery requirements under Development Bureau Technical Circular (Works) No. 3/2012. The site coverage of greenery calculation should be submitted separately to relevant authority/government department(s) for approval. Similarly, for any proposed tree preservation/removal scheme, the applicant shall be reminded to approach relevant authority/government department(s) direct to obtain the necessary approval.