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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; and
位於鄉郊地區土地上及/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
位於鄉郊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.info.gov.hk/tpb/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.info.gov.hk/tpb/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 請在適當的方格內加上「✓」號

For Official Use Only 請勿填寫此欄	Application No. 申請編號	A17SW/77
	Date Received 收到日期	- 7 JUN 2022

- 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。
- 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.info.gov.hk/tpb/>. 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.info.gov.hk/tpb/>), 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 樓及新界沙田上禾輦路 1 號沙田政府合署 14 樓)索取。
- This form can be downloaded from the Board's website, and obtained from the Secretariat of the Board and the Planning Enquiry Counters of the Planning Department. The form should be typed or completed in block letters. The processing of the application may be refused if the required information or the required copies are incomplete.
此表格可從委員會的網頁下載, 亦可向委員會秘書處及規劃署的規劃資料查詢處索取。申請人須以打印方式或以正楷填寫表格。如果申請人所提交的資料或文件副本不齊全, 委員會可拒絕處理有關申請。

1. Name of Applicant 申請人姓名/名稱

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

Harbour Plaza Resort City Limited

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

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

KTA Planning Limited

3. Application Site 申請地點

(a) Full address / location / demarcation district and lot number (if applicable) 詳細地址/地點/丈量約份及地段號碼(如適用)	Nos. 12 and 18 Tin Yan Road, Tin Shui Wai, N.T. (Tin Shui Wai Town Lot No. 4)
(b) Site area and/or gross floor area involved 涉及的地盤面積及/或總樓面面積	<input checked="" type="checkbox"/> Site area 地盤面積 27,900 sq.m 平方米 <input checked="" type="checkbox"/> About 約 <input checked="" type="checkbox"/> Gross floor area 總樓面面積 108,063 sq.m 平方米 <input checked="" type="checkbox"/> About 約
(c) Area of Government land included (if any) 所包括的政府土地面積(倘有)	N/A sq.m 平方米 <input type="checkbox"/> 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 Tin Shui Wai Outline Zoning Plan No. S/TSW/16
(e) Land use zone(s) involved 涉及的土地用途地帶	"Commercial"
(f) Current use(s) 現時用途	Occupied by the hotel development (Harbour Plaza Resort City Towers 1 and 2) on top of a shopping mall (Fortune Kingswood Phases 1 and 2) (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 ...28/04/2022... (DD/MM/YYYY), this application involves a total of2..... "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 notified1..... "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)
1	Tin Shui Wai Town Lot No. 4 (Commercial Development in Area 20 and Area 23)	29/04/2022

(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，或有關係的鄉事委員會[&]

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	108,063 sq.m 平方米		
(b) Proposed use(s)/development 擬議用途/發展	Proposed Wholesale Conversion of Existing Hotel for 'Flat' and Permitted Commercial Development (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	Area 20: 26 nos. Area 23: 27 nos.	Number of units involved 涉及單位數目	1,102 nos.
(d) Proposed floor area 擬議樓面面積	Domestic part 住用部分 55,668 sq.m 平方米		<input checked="" type="checkbox"/> About 約
	Non-domestic part 非住用部分 52,395 sq.m 平方米		<input checked="" type="checkbox"/> About 約
	Total 總計 108,063 sq.m 平方米		<input checked="" type="checkbox"/> 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
		Please refer to separate sheet attached.	

*converted from hotel use

Floor	Current Use (s)	Proposed Use (s)	
		Area 23	Area 20
B1/F - B2/F	Carpark (hotel & commercial) and loading/unloading facilities	Carpark (residential & commercial) and loading/unloading facilities	Carpark (residential & commercial) and loading/unloading facilities
G/F	• Shopping mall	• Shopping Mall* (retained)	• Shopping Mall* (retained)
	• Hotel use	• Permitted Commercial Uses* • Residential Entrance Lobby & E/M facilities	• Permitted Commercial Uses* • Residential Entrance Lobby & E/M facilities
1/F	• Shopping mall	• Shopping Mall* (retained)	• Shopping Mall* (retained)
	• Hotel use	• Permitted Commercial Uses* • E/M facilities (Residential)	• Permitted Commercial Uses*
2/F	• Shopping mall	• Shopping Mall* (retained)	• Shopping Mall* (retained)
	• Hotel use	• Clubhouse and E/M facilities (Residential)	• E/M facilities (Residential)
3/F	Landscaped open space, swimming pool (Area 23 only) and hotel use	• Landscaped open space, • Swimming Pool, E/M, Lift Lobby (Residential)	• Landscaped open space, • Clubhouse & E/M facilities (Residential)
R1 – R 20/F	Hotel rooms	• Residential Units	• Residential Units
R21/F	Hotel rooms (Area 23 only)	• Residential Units	• N/A
R/F	E&M facilities	• E&M facilities (Residential)	• E&M facilities (Residential)

* The proposed commercial uses at G/F and 1/F (converted from the hotel), together with the existing shopping mall retained at the commercial podium (i.e. Fortune Kingswood Phase 1 and 2), are always permitted uses under Column 1 of the Commercial zone and are not the subject of this application

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

(a) Operation involved 涉及工程	<input type="checkbox"/> Diversion of stream 河道改道 <input type="checkbox"/> Filling of pond 填塘 Area of filling 填塘面積 sq.m 平方米 <input type="checkbox"/> About 約 Depth of filling 填塘深度 m 米 <input type="checkbox"/> About 約 <input type="checkbox"/> Filling of land 填土 Area of filling 填土面積 sq.m 平方米 <input type="checkbox"/> About 約 Depth of filling 填土厚度 m 米 <input type="checkbox"/> About 約 <input type="checkbox"/> Excavation of land 挖土 Area of excavation 挖土面積 sq.m 平方米 <input type="checkbox"/> About 約 Depth of excavation 挖土深度 m 米 <input type="checkbox"/> About 約 <p>(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))</p>
(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	<input type="checkbox"/> Public utility installation 公用事業設施裝置 <input type="checkbox"/> Utility installation for private project 私人發展計劃的公用設施裝置 Please specify the type and number of utility to be provided as well as the dimensions of each building/structure, where appropriate 請註明有關裝置的性質及數量, 包括每座建築物/構築物(倘有)的長度、高度和闊度		
	Name/type of installation 裝置名稱/種類	Number of provision 數量	Dimension of each installation /building/structure (m) (LxWxH) 每個裝置/建築物/構築物的尺寸 (米) (長 x 闊 x 高)
(Please illustrate on plan the layout of the installation 請用圖則顯示裝置的布局)			

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

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

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

(v) For Type (v) application 供第(v)類申請

(a) Proposed use(s)/development
擬議用途/發展

(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 sq.m 平方米 ☐ About 約
- Proposed plot ratio 擬議地積比率 ☐ About 約
- Proposed site coverage 擬議上蓋面積 % ☐ About 約
- Proposed no. of blocks 擬議座數
- Proposed no. of storeys of each block 每座建築物的擬議層數 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 mPD 米(主水平基準上) ☐ About 約
..... m 米 ☐ About 約

☐ Domestic part 住用部分

GFA 總樓面面積 sq. m 平方米 ☐ About 約
 number of Units 單位數目
 average unit size 單位平均面積sq. m 平方米 ☐ About 約
 estimated number of residents 估計住客數目

☐ Non-domestic part 非住用部分

☐ eating place 食肆 sq. m 平方米 ☐ About 約
☐ hotel 酒店 sq. m 平方米 ☐ About 約

(please specify the number of rooms

請註明房間數目)

☐ office 辦公室 sq. m 平方米 ☐ About 約

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

☐ Government, institution or community facilities (please specify the use(s) and concerned land
 政府、機構或社區設施 area(s)/GFA(s) 請註明用途及有關的地面面積／總
 樓面面積)

.....

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

.....

☐ Open space 休憩用地

(please specify land area(s) 請註明地面面積)

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

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

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

[Block number] [座數]	[Floor(s)] [層數]	[Proposed use(s)] [擬議用途]
.....
.....
.....
.....
.....

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

.....

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

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

<p>Any vehicular access to the site/subject building? 是否有車路通往地盤/有關建築物?</p>	<p>Yes 是</p> <p>No 否</p>	<p><input checked="" type="checkbox"/> 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))</p> <p>.....</p> <p><input type="checkbox"/> 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)</p> <p><input type="checkbox"/></p>																
<p>Any provision of parking space for the proposed use(s)? 是否有為擬議用途提供停車位?</p>	<p>Yes 是</p> <p>No 否</p>	<p><input checked="" type="checkbox"/> (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</p> <table border="0"> <tr> <td></td> <td style="text-align: right;">Residential Commercial*</td> </tr> <tr> <td>Private Car Parking Spaces 私家車車位</td> <td style="text-align: right;">287 616</td> </tr> <tr> <td>Motorcycle Parking Spaces 電單車車位</td> <td style="text-align: right;">10 22</td> </tr> <tr> <td>Light Goods Vehicle Parking Spaces 輕型貨車泊車位</td> <td style="text-align: right;">_____</td> </tr> <tr> <td>Medium Goods Vehicle Parking Spaces 中型貨車泊車位</td> <td style="text-align: right;">_____</td> </tr> <tr> <td>Heavy Goods Vehicle Parking Spaces 重型貨車泊車位</td> <td style="text-align: right;">_____</td> </tr> <tr> <td>Others (Please Specify) 其他 (請列明)</td> <td style="text-align: right;">_____</td> </tr> <tr> <td>For visitor: _____</td> <td style="text-align: right;">10 _____</td> </tr> </table> <p><input type="checkbox"/> *existing commercial parking spaces to be retained and do not form part of this Planning Application</p>		Residential Commercial*	Private Car Parking Spaces 私家車車位	287 616	Motorcycle Parking Spaces 電單車車位	10 22	Light Goods Vehicle Parking Spaces 輕型貨車泊車位	_____	Medium Goods Vehicle Parking Spaces 中型貨車泊車位	_____	Heavy Goods Vehicle Parking Spaces 重型貨車泊車位	_____	Others (Please Specify) 其他 (請列明)	_____	For visitor: _____	10 _____
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Others (Please Specify) 其他 (請列明)	_____																	
For visitor: _____	10 _____																	
<p>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?</p>	<p>Yes 是</p> <p>No 否</p>	<p><input checked="" type="checkbox"/> (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</p> <table border="0"> <tr> <td></td> <td style="text-align: right;">Residential Commercial*</td> </tr> <tr> <td>Taxi Spaces 的士車位</td> <td style="text-align: right;">_____</td> </tr> <tr> <td>Coach Spaces 旅遊巴車位</td> <td style="text-align: right;">_____</td> </tr> <tr> <td>Light Goods Vehicle Spaces 輕型貨車車位</td> <td style="text-align: right;">_____</td> </tr> <tr> <td>Medium Goods Vehicle Spaces 中型貨車車位</td> <td style="text-align: right;">_____</td> </tr> <tr> <td>Heavy Goods Vehicle Spaces 重型貨車車位</td> <td style="text-align: right;">2 49</td> </tr> <tr> <td>Others (Please Specify) 其他 (請列明)</td> <td style="text-align: right;">_____</td> </tr> </table> <p><input type="checkbox"/> *existing commercial loading/unloading bays to be retained and do not form part of this Planning Application</p>		Residential Commercial*	Taxi Spaces 的士車位	_____	Coach Spaces 旅遊巴車位	_____	Light Goods Vehicle Spaces 輕型貨車車位	_____	Medium Goods Vehicle Spaces 中型貨車車位	_____	Heavy Goods Vehicle Spaces 重型貨車車位	2 49	Others (Please Specify) 其他 (請列明)	_____		
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Others (Please Specify) 其他 (請列明)	_____																	

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。

<p>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?</p>	<p>Yes 是 No 否</p>	<p><input checked="" type="checkbox"/> Please provide details 請提供詳情 Please refer to Appendices 1 and 2 of the attached Supporting Planning Statement.</p>																													
<p>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。)</p>	<p>Yes 是 No 否</p>	<p><input type="checkbox"/> (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)</p> <p><input type="checkbox"/> Diversion of stream 河道改道</p> <p><input type="checkbox"/> Filling of pond 填塘 Area of filling 填塘面積 sq.m 平方米 <input type="checkbox"/> About 約 Depth of filling 填塘深度 m 米 <input type="checkbox"/> About 約</p> <p><input type="checkbox"/> Filling of land 填土 Area of filling 填土面積 sq.m 平方米 <input type="checkbox"/> About 約 Depth of filling 填土厚度 m 米 <input type="checkbox"/> About 約</p> <p><input type="checkbox"/> Excavation of land 挖土 Area of excavation 挖土面積 sq.m 平方米 <input type="checkbox"/> About 約 Depth of excavation 挖土深度 m 米 <input type="checkbox"/> About 約</p>																													
<p>Would the development proposal cause any adverse impacts? 擬議發展計劃會否造成不良影響?</p>	<table border="0"> <tr> <td>On environment 對環境</td> <td>Yes 會 <input type="checkbox"/></td> <td>No 不會 <input checked="" type="checkbox"/></td> </tr> <tr> <td>On traffic 對交通</td> <td>Yes 會 <input type="checkbox"/></td> <td>No 不會 <input checked="" type="checkbox"/></td> </tr> <tr> <td>On water supply 對供水</td> <td>Yes 會 <input type="checkbox"/></td> <td>No 不會 <input checked="" type="checkbox"/></td> </tr> <tr> <td>On drainage 對排水</td> <td>Yes 會 <input type="checkbox"/></td> <td>No 不會 <input checked="" type="checkbox"/></td> </tr> <tr> <td>On slopes 對斜坡</td> <td>Yes 會 <input type="checkbox"/></td> <td>No 不會 <input checked="" type="checkbox"/></td> </tr> <tr> <td>Affected by slopes 受斜坡影響</td> <td>Yes 會 <input type="checkbox"/></td> <td>No 不會 <input checked="" type="checkbox"/></td> </tr> <tr> <td>Landscape Impact 構成景觀影響</td> <td>Yes 會 <input type="checkbox"/></td> <td>No 不會 <input checked="" type="checkbox"/></td> </tr> <tr> <td>Tree Felling 砍伐樹木</td> <td>Yes 會 <input type="checkbox"/></td> <td>No 不會 <input checked="" type="checkbox"/></td> </tr> <tr> <td>Visual Impact 構成視覺影響</td> <td>Yes 會 <input type="checkbox"/></td> <td>No 不會 <input checked="" type="checkbox"/></td> </tr> <tr> <td>Others (Please Specify) 其他 (請列明)</td> <td>Yes 會 <input type="checkbox"/></td> <td>No 不會 <input type="checkbox"/></td> </tr> </table> <p>.....</p> <p>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)</p> <p>..N/A.....</p>	On environment 對環境	Yes 會 <input type="checkbox"/>	No 不會 <input checked="" type="checkbox"/>	On traffic 對交通	Yes 會 <input type="checkbox"/>	No 不會 <input checked="" type="checkbox"/>	On water supply 對供水	Yes 會 <input type="checkbox"/>	No 不會 <input checked="" type="checkbox"/>	On drainage 對排水	Yes 會 <input type="checkbox"/>	No 不會 <input checked="" type="checkbox"/>	On slopes 對斜坡	Yes 會 <input type="checkbox"/>	No 不會 <input checked="" type="checkbox"/>	Affected by slopes 受斜坡影響	Yes 會 <input type="checkbox"/>	No 不會 <input checked="" type="checkbox"/>	Landscape Impact 構成景觀影響	Yes 會 <input type="checkbox"/>	No 不會 <input checked="" type="checkbox"/>	Tree Felling 砍伐樹木	Yes 會 <input type="checkbox"/>	No 不會 <input checked="" type="checkbox"/>	Visual Impact 構成視覺影響	Yes 會 <input type="checkbox"/>	No 不會 <input checked="" type="checkbox"/>	Others (Please Specify) 其他 (請列明)	Yes 會 <input type="checkbox"/>	No 不會 <input type="checkbox"/>
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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。

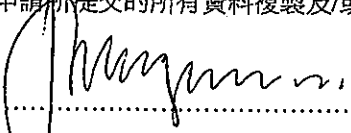
Please refer to the attached Supporting Planning Statement.

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


.....
PAULINE LAM
.....
Name in Block Letters
姓名（請以正楷填寫）

☐ Applicant 申請人 / ☒ Authorised Agent 獲授權代理人

..... Deputy Managing Director
Position (if applicable)
職位（如適用）

Professional Qualification(s)
專業資格

☒ Member 會員 / ☐ Fellow of 資深會員

☒ HKIP 香港規劃師學會 /

☐ HKIA 香港建築師學會 /

☐ HKIS 香港測量師學會 /

☐ HKIE 香港工程師學會 /

☐ HKILA 香港園境師學會 /

☐ HKIUD 香港城市設計學會

☐ RPP 註冊專業規劃師

Others 其他

on behalf of
代表

..... KTA Planning Limited

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

Date 日期

29/04/2022

..... (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^②

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

② 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	Nos. 12 and 18 Tin Yan Road, Tin Shui Wai, N.T. (Tin Shui Wai Town Lot No. 4)		
Site area 地盤面積	27,900 sq. m 平方米 <input checked="" type="checkbox"/> About 約 (includes Government land of 包括政府土地 N/A sq. m 平方米 <input checked="" type="checkbox"/> About 約)		
Plan 圖則	Approved Tin Shui Wai Outline Zoning Plan No. S/TSW/16		
Zoning 地帶	"Commercial"		
Applied use/ development 申請用途/發展	Proposed Wholesale Conversion of Existing Hotel for 'Flat' and Permitted Commercial Development		
(i) Gross floor area and/or plot ratio 總樓面面積及/或地積比率		sq.m 平方米	Plot Ratio 地積比率
	Domestic 住用	55,668 <input checked="" type="checkbox"/> About 約 <input type="checkbox"/> Not more than 不多於	1.995 <input checked="" type="checkbox"/> About 約 <input type="checkbox"/> Not more than 不多於
	Non-domestic 非住用	52,395 <input checked="" type="checkbox"/> About 約 <input type="checkbox"/> Not more than 不多於	1.878 <input checked="" type="checkbox"/> About 約 <input type="checkbox"/> Not more than 不多於
(ii) No. of block 幢數	Domestic 住用		
	Non-domestic 非住用		
	Composite 綜合用途	2 nos.	

(iii) Building height/No. of storeys 建築物高度／層數	Domestic 住用	m 米 <input type="checkbox"/> (Not more than 不多於)	
		mPD 米(主水平基準上) <input type="checkbox"/> (Not more than 不多於)	
		Storeys(s) 層 <input type="checkbox"/> (Not more than 不多於) (<input type="checkbox"/> Include 包括/ <input type="checkbox"/> Exclude 不包括 <input type="checkbox"/> Carport 停車間 <input type="checkbox"/> Basement 地庫 <input type="checkbox"/> Refuge Floor 防火層 <input type="checkbox"/> Podium 平台)	
	Non-domestic 非住用	m 米 <input type="checkbox"/> (Not more than 不多於)	
		mPD 米(主水平基準上) <input type="checkbox"/> (Not more than 不多於)	
		Storeys(s) 層 <input type="checkbox"/> (Not more than 不多於) (<input type="checkbox"/> Include 包括/ <input type="checkbox"/> Exclude 不包括 <input type="checkbox"/> Carport 停車間 <input type="checkbox"/> Basement 地庫 <input type="checkbox"/> Refuge Floor 防火層 <input type="checkbox"/> Podium 平台)	
	Composite 綜合用途	Area 20: about 93.45m Area 23: about 91.75m	m 米 <input type="checkbox"/> (Not more than 不多於)
		Area 20: about 99.9mPD Area 23: about 98.2mPD	mPD 米(主水平基準上) <input type="checkbox"/> (Not more than 不多於)
		Area 20 20 nos. (on top of 4 storeys of podium and 2 storeys of basement) Area 23 21 nos. (on top of 4 storeys of podium and 2 storeys of basement)	Storeys(s) 層 <input type="checkbox"/> (Not more than 不多於) (<input type="checkbox"/> Include 包括/ <input type="checkbox"/> Exclude 不包括 <input type="checkbox"/> Carport 停車間 <input type="checkbox"/> Basement 地庫 <input type="checkbox"/> Refuge Floor 防火層 <input type="checkbox"/> Podium 平台)
(iv) Site coverage 上蓋面積	Not more than 50 % <input type="checkbox"/> About 約		
(v) No. of units 單位數目	1,102		
(vi) Open space 休憩用地	Private 私人	3,013	sq.m 平方米 <input checked="" type="checkbox"/> Not less than 不少於
	Public 公眾		sq.m 平方米 <input type="checkbox"/> 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 Motorcycle Parking Spaces 電單車車位 Light Goods Vehicle Parking Spaces 輕型貨車泊車位 Medium Goods Vehicle Parking Spaces 中型貨車泊車位 Heavy Goods Vehicle Parking Spaces 重型貨車泊車位 Others (Please Specify) 其他 (請列明) For visitors _____	Residential Commercial	
	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 Coach Spaces 旅遊巴車位 Light Goods Vehicle Spaces 輕型貨車車位 Medium Goods Vehicle Spaces 中型貨車車位 Heavy Goods Vehicle Spaces 重型貨車車位 Others (Please Specify) 其他 (請列明) *existing commercial parking spaces and loading /unloading bays to be retained and do not form part of this Planning Application	287 10 10	616 22 49

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	<input type="checkbox"/>	<input type="checkbox"/>
Block plan(s) 樓宇位置圖	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Floor plan(s) 樓宇平面圖	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Sectional plan(s) 截視圖	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Elevation(s) 立視圖	<input type="checkbox"/>	<input type="checkbox"/>
Photomontage(s) showing the proposed development 顯示擬議發展的合成照片	<input type="checkbox"/>	<input type="checkbox"/>
Master landscape plan(s)/Landscape plan(s) 園境設計總圖/園境設計圖	<input type="checkbox"/>	<input type="checkbox"/>
Others (please specify) 其他 (請註明)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Open Space and Greenery Diagrams		
Reports 報告書		
Planning Statement/Justifications 規劃綱領/理據	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Environmental assessment (noise, air and/or water pollutions) 環境評估 (噪音、空氣及/或水的污染)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Traffic impact assessment (on vehicles) 就車輛的交通影響評估	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Traffic impact assessment (on pedestrians) 就行人的交通影響評估	<input type="checkbox"/>	<input type="checkbox"/>
Visual impact assessment 視覺影響評估	<input type="checkbox"/>	<input type="checkbox"/>
Landscape impact assessment 景觀影響評估	<input type="checkbox"/>	<input type="checkbox"/>
Tree Survey 樹木調查	<input type="checkbox"/>	<input type="checkbox"/>
Geotechnical impact assessment 土力影響評估	<input type="checkbox"/>	<input type="checkbox"/>
Drainage impact assessment 排水影響評估	<input type="checkbox"/>	<input type="checkbox"/>
Sewerage impact assessment 排污影響評估	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Risk Assessment 風險評估	<input type="checkbox"/>	<input type="checkbox"/>
Others (please specify) 其他 (請註明)	<input type="checkbox"/>	<input type="checkbox"/>

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。

**16 PLANNING APPLICATION
APPROVED TIN SHUI WAI OUTLINE ZONING PLAN NO. S/TSW/16**

**Proposed Wholesale Conversion of Existing Hotel for
'Flat' and Permitted Commercial Development
at "Commercial" Zone, Tin Shui Wai Town Lot No. 4, Tin Shui Wai**

**FINAL CONSOLIDATED
SUPPORTING PLANNING STATEMENT**

October 2022

Applicant:

Harbour Plaza Resort City Limited

Consultancy Team:

KTA Planning Ltd.

CTA Consultancy Ltd.

Greg Wong & Associates Ltd.

Westwood Hong & Associates Ltd.



PLANNING LIMITED
規 劃 顧 問 有 限 公 司

Executive Summary

The Applicant, Harbour Plaza Resort City Limited, is seeking approval from the Town Planning Board ("TPB") under section 16 of the Town Planning Ordinance for the proposed 'Flat' by way of wholesale conversion of the existing hotel buildings at Tin Shui Wai Town Lot No. 4 ("TSWTL No. 4), Tin Shui Wai ("the Site"). The Site is zoned "Commercial" ("C") on the Approved Tin Shui Wai Outline Zoning Plan ("Approved OZP") No. S/TSW/16.

The proposal involves the wholesale conversion of existing hotel (Harbour Plaza Resort City (Towers 1 and 2)) into 1,102 nos. of residential units at the upper floors ("the Proposed Development"). The G/F and 1/F of the hotel will be converted to commercial uses (including 'Shop and Services' and 'Eating Place'). The proposed commercial uses (converted from the hotel), together with the existing shopping mall retained at the commercial podium (i.e. Fortune Kingswood Phase 1 and 2), are always permitted uses under Column 1 of the Commercial zone and are not the subject of this Planning Application.

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

- The development proposal is totally in-line with the Government's policy to increase housing land supply by contributing to the immediate provision of residential units in a short time frame and encouraging home ownership of families.
- As the existing shopping mall at the Commercial Podium at the Site would remain intact, the Site would continue to play an important role functioning as the conveniently accessible District Shopping Centre to serve the residents of Tin Shui Wai New Town.
- The Proposed Development, together with other private residential developments in the New Town, will further improve the housing and population mix.
- There would be sufficient hotel room supply in Tin Shui Wai New Town and Hung Shui Kiu/Ha Tsuen New Development Area to meet the demand during the anticipated recovery of the tourism industry.
- The Site is highly suitable for the Proposed Development in terms of land use compatibility and good accessibility.
- The development proposal will not cause increase in building height nor development bulk. No adverse visual impact will be anticipated.
- The Proposed Development by way of wholesale conversion is more sustainable in terms of substantially reducing the amount of construction waste, pollutants, and energy consumption as compared to a complete redevelopment.
- Results of the various technical assessments conducted revealed that the Proposed Development will not pose negative impact onto the surrounding environment.

In light of the above, the Planning Application should be supported by the TPB from planning

and technical points of view.

行政摘要

(內文如有差異，應以英文版本為準)

申請人嘉湖海逸酒店有限公司擬根據《城市規劃條例》第 16 條向城市規劃委員會(下稱「城規會」)申請將天水圍市地段第 4 號的申請地點的嘉湖海逸酒店(第 1 及 2 座)改建成分層樓宇用途。申請地點位於天水圍分區計劃大綱核准圖編號 S/TSW/16 上的「商業」用途地帶內。

擬議發展涉及將現時的嘉湖海逸酒店(第 1 及 2 座)改建成約 1,102 個住宅單位及將酒店地下及一樓改作商業用途(包括「商店及服務行業」及「食肆」)，而現有平台的商業用途(置富嘉湖第一及二期)將予以保留。

申請人提出是次規劃申請是基於以下理據：

- 擬議發展計劃能在短期內供應住宅單位，並與政府增加房屋土地供應及鼓勵置業的政策相符。
- 由於現有商業平台將予以保留，申請地點將繼續發揮其通達性強的地區購物中心的重要作用，繼續為天水圍的居民提供服務。
- 擬議發展加上其他區內的私人住宅項目能進一步改善區內公私營房屋及人口比例。
- 天水圍及洪水橋/厦村新發展區地區有充足酒店房間供應付預期旅遊業復甦期間的需求。
- 申請地點在土地兼容性及通達性上很適合作擬議住宅發展。
- 擬議發展計劃不會增加建築物的高度或體積，因此不會帶來不良視覺影響。
- 與重建相比，建議的改建方案將大幅減少產生建築廢物、污染物和能源消耗，更具可持續性。
- 多個技術評估均證明擬議發展不會對附近環境造成負面影響。

根據以上各點，申請人希望是次規劃申請能在規劃及技術層面上獲城規會支持。

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S16 PLANNING APPLICATION
Approved Tin Shui Wai OZP No. S/TSW/16

**Proposed Wholesale Conversion of Existing Hotel
for 'Flat' and Permitted Commercial Development
at "Commercial" Zone
Tin Shui Wai Town Lot No. 4,
Tin Shui Wai, N.T.**

Supporting Planning Statement

1 INTRODUCTION

1.1 Purpose

1.1.1 This Planning Application is prepared and submitted on behalf of Harbour Plaza Resort City Limited ("the Applicant") to seek approval from the Town Planning Board ("TPB") under section 16 of the Town Planning Ordinance for the proposed 'Flat' at Tin Shui Wai Town Lot No. 4 ("TSWTL No. 4), Tin Shui Wai ("the Site") by way of wholesale conversion of the two existing hotel buildings ("the Proposed Development"). The Site is zoned "Commercial" ("C") on the Approved Tin Shui Wai Outline Zoning Plan ("Approved OZP") No. S/TSW/16. The proposal involves the wholesale conversion of existing hotel (Harbour Plaza Resort City (Towers 1 and 2)) into 1,102 nos. of residential units at the upper floors ("the Proposed Development"). The G/F and 1/F of the hotel will be converted to commercial uses (including 'Shop and Services' and 'Eating Place'). The proposed commercial uses (converted from the hotel), together with the existing shopping mall retained at the commercial podium (i.e. Fortune Kingswood Phase 1 and 2), are always permitted uses under Column 1 of the Commercial zone and are not the subject of this Planning Application. This Supporting Planning Statement is to provide the TPB with necessary information to facilitate consideration of this Planning Application.

1.2 Report Structure

1.2.1 Following this Introductory Section, the site and planning context will be briefly set out in **Section 2**. The development scheme is included in **Section 3**. The planning merits and justifications in support of the Planning Application can be found in **Section 4**. **Section 5** concludes and summarizes this Supporting Planning Statement.

2 SITE AND PLANNING CONTEXT

2.1 Site Location and Existing Condition

2.1.1 The Application Site comprises two separate land parcels (i.e. Tin Shui Wai Areas 20 and 23) and is known as Tin Shui Wai Town Lot No. 4 ("TSWTL No. 4") in Tin Shui Wai with an area of about 27,900 sq.m. It is bounded by Tin Wing Station LRT Terminus to its north, Tin Yan Road to its east, Tin Shui Wai Park to its south and west and a bus terminus to its northwest (**Figure 2.1** refers). The Site is currently occupied by a 6-storey (including G/F, 3/F podium roof and 2 levels of basement) shopping centre, Fortune Kingswood (Phases 1 and 2) and a hotel namely Harbour Plaza Resort City (Towers 1 and 2) (**Figure 2.2** refers).

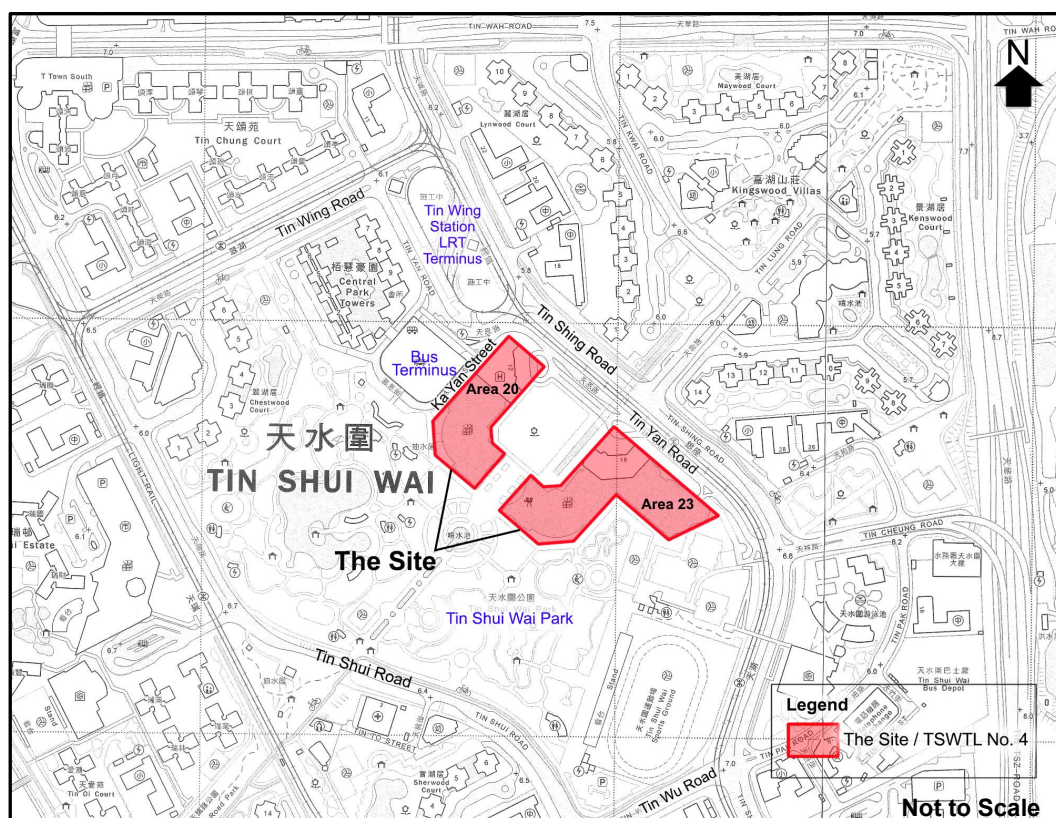


Figure 2.1 Site Location Plan

2.2 Statutory Planning Context

2.2.1 The Site falls within area zoned "Commercial" ("C") on the Approved Tin Shui Wai Outline Zoning Plan ("Approved OZP") No. S/TSW/16 (**Figure 2.3** refers). According to the Statutory Notes of the Approved OZP, the "C" zone is intended *"primarily for commercial developments, which may include shop, services, place of entertainment and eating place, functioning mainly as local shopping centres serving the immediate neighbourhood"*. Provision for 'Flat' is included under column 2 of the Statutory Notes which requires permission from the TPB.

2.2.2 Under the "Remarks" section of the Statutory Notes, it is stated that *"On land designated "Commercial" at Tin Shui Wai Town Lot No.4, no new development, or addition, alteration and/or modification to or redevelopment of an existing*



building shall result in a total development and/or redevelopment in excess of a maximum gross floor area of 135,000m²; and the distribution of the non-domestic gross floor area amongst the sites under this zone and the "Residential (Group B)" sites at TSWTLs No. 1,2,3,5,6 and 7 would be controlled by the submission of Master Layout Plan". The Proposed Development involves the wholesale conversion of existing hotel into flats on upper floors and permitted commercial uses on lowest 2 floors. Accordingly, there would not be any changes to GFA of the existing buildings incurred by the proposed wholesale conversion.

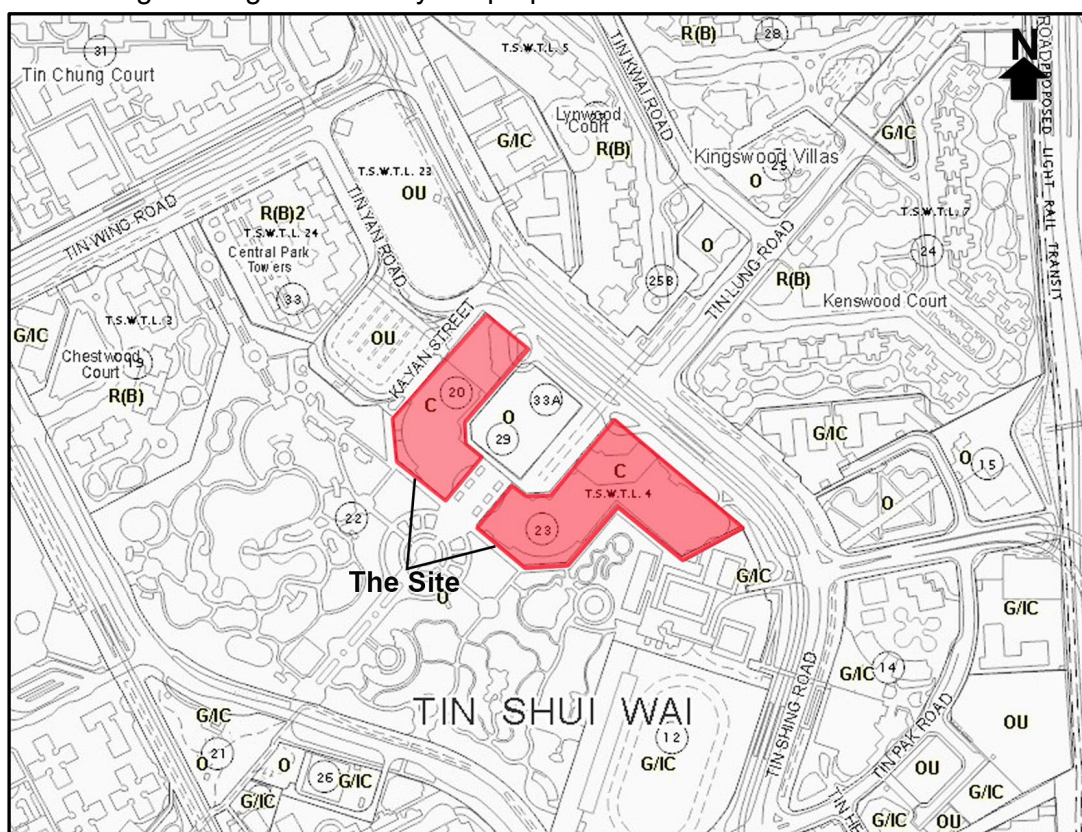


Figure 2.3 Zoning Context Plan (Extracted from Approved Tin Shui Wai OZP No. S/TSW/16)

Previous Planning Application

- 2.2.3 The Site was the subject of a previous Planning Application (No. A/TSW/72) approved by the TPB on 18 December 2020 for 'Flat' and permitted Commercial Development. The development proposal involved the demolition and redevelopment of the existing hotel for residential use with the commercial podium remained intact.

2.3 Surrounding Land Use Context

- 2.3.1 The Site is located in a predominately residential neighbourhood. To its northeast and east across Tin Shing Road are three large "Residential (Group B)" ("R(B)") zones where Lynwood Court, Kenswood Court and Maywood Court of Kingswood Villas are located. To its north is an area zoned "Government, Institution or Community" ("G/IC") where Queen Elizabeth School Old Students' Association Secondary School, Shap Pat Heung Rural Committee Kung Yik

She Secondary School and Shap Pat Heung Rural Committee Kung Yik She Primary School are situated. To its northwest are Tin Wing LRT Station and topside development located in an area zoned "OU (LRT Terminus)" and a bus terminus in the "OU (Bus Terminus)" zone. To the southeast across Tin Shing Road is an area zoned "G/IC" where two schools namely Tin Shui Wai Catholic Primary School and The HKMA K.S. Lo College are situated. Sandwiched between Area 20 and 23 of the Site is an "Open Space" ("O") zone in which Ginza Plaza is situated. Tin Shui Wai Park in area zoned "O" is located to the west and south of the Site.

2.4 Accessibility

2.4.1 Tin Shui Wai New Town is well connected to Yuen Long via Long Tin Road as well as Ping Shan area and the surrounding areas of Ha Tsuen via Ping Ha Road. West Rail Tin Shui Wai Station (about 20 minutes walking distance from the Site) provides good connection to Tuen Mun, Yuen Long and urban areas. The existing Light Rail system connects the adjoining areas including Tuen Mun, Hung Shui Kiu/Ha Tsuen New Development Area, Yuen Long and the various parts within Tin Shui Wai New Town. There are also numerous franchised bus services and mini-bus routes providing out-of-district transports. The New Town has a comprehensive network of cycle track providing convenient connection for the local communities.

2.5 Government's Policies on Increasing Housing Land Supply

2.5.1 The Government has put strong emphasis on increasing supply of housing land in recent years to resolve the housing and land shortage problems in Hong Kong. Some of the major policies to increase housing land supply are as follows:

Long Term Housing Strategy

2.5.2 The Long Term Housing Strategy ("LTHS") was first released by the Transport and Housing Bureau on 16 December 2014 to address the structural issues pertaining to Hong Kong's housing problem, and is being updated annually to make timely adjustments accordingly. According to the latest Annual Progress Report released in December 2021, the total housing supply target for the ten-year period from 2022-23 to 2031-32 is 430,000 units, including public and private housing supply target of 301,000 units and 129,000 units respectively. The public/private split for the supply of new housing units would maintain at 70:30.

Policy Address 2021

2.5.3 As announced in the Policy Address 2021, the Government will continue to adopt multi-pronged strategy to increase housing land supply. In the short term, the Government will conduct a further review of "Green Belt" zone, unlocking Tso/Tong lands in the New Territories, extending the standardization of land premium assessment to the land in the New Territories, etc.

2.5.4 In medium to long term, the Government will take forward a number of New

Development Area development projects in the New Territories and the Tung Chung East reclamation works. Other measures including resumption of land in the New Territories for development by applying the Lands Resumption Ordinance and Land Sharing Pilot Scheme to consolidate and develop land in the New Territories. To ensure a sustainable land supply beyond the next 10 years, the Government is actively pressing ahead with relevant studies on the reclamation works of the Kau Yi Chau Artificial Islands and the various development areas in the New Territories North. For near-shore reclamation, the Government will conduct studies on the Lung Kwu Tan reclamation and re-planning of Tuen Mun West area. The Northern Metropolis Development Strategy announced by the Government would be the major source of housing supply in the period of 10 to 15 years after 2031-32.

2.6 Government's Policies on Promoting Home Ownership

2.6.1 Home ownership has always been the direction of the Government's housing policies. The Government believes that home ownership is good for both the community and the individual as it helps to foster social stability and a sense of belonging. It also helps families to provide for their own future financial security. Over the years, the Government has introduced housing policies to promote wider home ownership such as the introduction of Home Ownership Scheme ("HOS") and Private Sector Participation Scheme ("PSPS") in 1978, Home Purchase Loan Scheme ("HPLS") in 1988, the sale of rental flats to tenants in 1991 and Sandwich Class Housing ("SCH") Scheme in 1993. In the Policy Address announced by the Chief Executive in 2017, one of the four elements of the housing policy of the Government is **to focus on home-ownership and strive to build a housing ladder to rekindle the hope of families in different income brackets to become home-owners**. The Government has introduced a number of policies to increase home-ownership in recent years including "Starter Home" Scheme targeting for high-income families who are not eligible for HOS but yet cannot afford private housing; revising the pricing by delinking the selling prices of flats under HOS from the market prices of private residential properties, and adopting the affordability of applicants as the basis while ensuring that at least 75% (up from 50%) of the number of HOS flats for sale are affordable; "HOS Secondary Market Scheme" involving sales of subsidized sales flats with premium unpaid to Green Form applicants; "White Form Secondary Market Scheme" involving sales of subsidized sales flats with premium unpaid to White Form buyers which allows tenants of private premises more opportunities to become home-owners and at the same time facilitates the turnover of HOS flats; and the most recent policy to raise the cap on the value of a property eligible for a mortgage loan of maximum cover of 90% loan-to-value ratio from the existing \$4 million to \$8 million for first time home buyer.

3 THE PROPOSED DEVELOPMENT SCHEME

3.1 The Development Scheme

- 3.1.1 Schematic drawings for the Proposed Development are presented at **Appendix 1** of this Supporting Planning Statement. The development proposal involves the wholesale conversion of the upper floors of the existing hotel into residential flats. The existing hotel back-of-house and E&M facilities at B1/F and B2/F will be converted to accommodate loading/unloading ("L/UL") spaces and car parking spaces for the Proposed Development. Clubhouse facilities are provided on 2/F (for Area 23) and 3/F (for Area 20) while landscaped open space is provided on 3/F (for both Areas 20 and 23).
- 3.1.2 The existing shopping mall, Fortune Kingswood Phases 1 and 2 located at the commercial podium ("Shopping Mall") will remain intact. Detailed arrangement of the commercial floor spaces within the proposed wholesale conversion development (including any openings onto the shopping mall) will be formulated at detailed design stage. It is anticipated that the Proposed Development will be completed in 2028. A set of comparison plans showing the floor uses between the existing hotel development and the Proposed Development together with a comparison table are included at **Appendix 2**.
- 3.1.3 The key parameters of the Proposed Development after the proposed wholesale conversion are presented in **Table 3.1** below.

Table 3.1 Key Development Parameters

Overall Development	
Site Area (about)	27,900 m ²
Maximum Plot Ratio (about)	3.873
<ul style="list-style-type: none"> ▪ Domestic ▪ Non-domestic 	1.995 1.878
Total Gross Floor Area (about)	108,063 m²
<ul style="list-style-type: none"> ▪ Domestic (converted from existing hotel) ▪ Non-domestic – Shopping Mall (Existing) – Commercial uses (converted from existing hotel) 	55,668 m ² 52,395 m ² 46,532 m ² * 5,863 m ²
Site Coverage	
<ul style="list-style-type: none"> ▪ Domestic (above 15m) ▪ Non-domestic (below 15m) 	Not more than 50% Not more than 100%
Building Height (at main roof level) (about)	
<ul style="list-style-type: none"> ▪ Area 20 ▪ Area 23 	99.9mPD 98.2mPD
Actual Building Height (at main roof level) (about)	
<ul style="list-style-type: none"> ▪ Area 20 ▪ Area 23 	93.45 m 91.75 m
No. of Storeys	

Overall Development	
<ul style="list-style-type: none"> Area 20 Area 23 	20 (on top of 4 levels of podium and 2 levels of basements) 21 (on top of 4 levels of podium and 2 levels of basements)
No. of Blocks	2
No. of Units	1,102
Average Unit Size (about)	50.5 m ²
Estimated Population (about)	3,013
Open Space Provision	Not less than 3,013 m ²

*based on approved General Building Plan amendment submission dated 14 October 2008

3.1.4 The comparison of key development parameters between the Existing and Proposed Developments is provided in **Table 3.2** below:

Table 3.2 Comparison of Key Development Parameters of Existing and Proposed Developments Upon Conversion

	Existing Development	Proposed Development
Plot Ratio	3.873	3.873
<ul style="list-style-type: none"> Domestic Non-domestic 	N/A 3.873	1.995 1.878
Total GFA	108,063m ²	108,063m ²
<ul style="list-style-type: none"> Domestic Non-domestic <ul style="list-style-type: none"> Hotel Shopping Mall (Existing) Commercial uses (converted from existing hotel) 	N/A 61,531m ² 46,532m ² N/A	55,668m ² N/A 46,532m ² 5,863m ²
Site Coverage		
<ul style="list-style-type: none"> above 15m below 15m 	Not more than 50% Not more than 100%	Not more than 50% Not more than 100%
Building Height (at main roof)		
<ul style="list-style-type: none"> Area 20 Area 23 	99.9mPD 98.2mPD	99.9mPD 98.2mPD

3.2 Access Arrangement and Internal Transport Facilities Provision

3.2.1 A Traffic Impact Assessment ("TIA") has been carried out to assess the impact of the Proposed Development onto the surrounding road network and is annexed at **Appendix 3** of this Supporting Planning Statement. Vehicular access to the Proposed Development will be provided via the **existing** ingress/egress point off Tin Yan Road. For the residential portion, it is proposed to have a total of 287 nos. of carparking spaces, 10 nos. of carparking spaces for visitors, 2 nos. of loading/unloading bays ("L/UL") for goods vehicles and **12 nos.** of motorcycle parking spaces within the development. Private car, motorcycle parking spaces

and L/UL bays are located at B1/F and B2/F. Details on the internal transport facilities provision for the Proposed Development is provided in the TIA.

3.3 Open Space Provision

- 3.3.1 According to the Hong Kong Planning Standards and Guidelines ("HKPSG"), each person should have at least 1m² of open space. The Proposed Development will have an estimated residential population of about 3,013. The open space provision would therefore be not less than 3,013 m². The open space will be provided on 3/F podium deck of the Proposed Development solely for enjoyment of the future residential population (**Appendix 4** refers).

4 PLANNING MERITS AND JUSTIFICATIONS

4.1 The Proposed Development is In Line with the Government's Policies on Increasing Housing Land Supply and Home Ownership

4.1.1 Increasing housing supply is always the top priority of the Government. It is also Government's long-term strategy to tackle the imbalance supply and demand of housing. In addressing the problem of housing shortage and to meet the acute demand for affordable housing in Hong Kong, the Government has adopted a multi-pronged approach to increase land supply in the short, medium and long term. As compared with the short and medium term measures promulgated by the Government, the Proposed Development would contribute to the immediate provision of **about 1,102 nos. of flats** to meet the housing land supply in a much shorter time frame. A precedent case in Ma On Shan (Planning Application No. Y/MOS/6) involving conversion of existing hotel for 'Flat' use approved by the TPB on 26 February 2021 has demonstrated the practicability and viability of this development option for increasing housing supply. Land resources in Hong Kong are extremely scarce and the proposal would also represent a more optimum and efficient use of land resources. The development proposal is totally in-line with the Government's policy to increase housing land supply.

4.1.2 The development proposal would also be in-line with Government's policies on encouraging home-ownership as about 1,102 nos. of residential flats will be made available for sale to meet the aspirations of persons / families to become home-owners.

4.2 The Function of District Shopping Centre of the Site is maintained

4.2.1 According to the Explanatory Statement of the Approved OZP, the Site (i.e. TSWTL No. 4) was planned as the town centre providing retail and other commercial facilities to serve Tin Shui Wai New Town. In the master development plan prepared by the Government for the development of Tin Shui Wai in 1983, commercial provision within Tin Shui Wai was planned to satisfy the local and district level needs as Yuen Long was expected to remain the principal commercial and retail centre in the Northwest New Territories. Hence, the amount of commercial / retail floor area in Tin Shui Wai New Town was capped at a limit. Major shopping facilities would be concentrated in a District Centre (i.e. the Site). The District Centre would be conveniently accessible by public transport, by foot or by cycling.

4.2.2 The current proposal involves the wholesale conversion of the existing hotel, Harbour Plaza Resort City (Towers 1 and 2) for residential and commercial uses housing a population of about 3,013. The existing shopping mall at the commercial podium would be retained and hence there is no reduction in non-domestic GFA of 46,532 sq.m for the shopping mall which would continue to play an important role functioning as the conveniently accessible District Shopping Centre to serve the residents of Tin Shui Wai New Town.

4.3 The Proposed Development Will Help to Achieve a Proper Housing / Population Mix

4.3.1 The housing distribution of Tin Shui Wai New Town was initially planned to provide 49.8 percent private housing and 50.2 percent for public housing (including HOS development) for a population of 135,000 to achieve a balanced population profile. However, due to changes in housing policies with high demand for public housing (i.e. a target of 310,000 new flats in the public sector and 195,000 new flats in the private sector as announced in the 1994 Policy Address), Tin Shui Wai New Town was identified as an area for fast pace housing development. In between the period of 1999 to 2005, a total of 48,073 nos. of public rental flats were built in the New Town. The transfer of subsidized sale flats to rental flats between 1998 and 2001 and the termination of flat production under the HOS and Private Sector Participation Scheme in 2003 further contribute to the imbalanced public and private housing mix with domination of public housing, in particular, public rental housing in Tin Shui Wai New Town, especially for Tin Shui Wai North.

4.3.2 Tin Shui Wai was once dubbed the "City of Sadness" due to the predomination of lower income group families residing in the public housing estates. Imbalanced population mix is one of the main contributing factors to various social problems as evidenced in Tin Shui Wai New Town. The Proposed Development, together with Government's other private residential development initiatives in the past few years, will further improve the housing and population mix. As shown in **Table 4.1** below, with the addition of population in various residential developments (recently completed/under implementation), the public to private housing ratio would improve from about 79:21¹ to 72:28 in Tin Shui Wai New Town.

Table 4.1 Number of Households to be Added in the Tin Shui Wai New Town

Development	Household Added (Nos.)
HOS Development	
Ping Yan Court at Kiu Cheong Road	2,409
Private Development	
Tin Shui Wai Planning Area 112	2,031
Tin Shui Wai Planning Area 115	1,850
Tin Shui Wai Planning Area 33 (Tin Wing LRT Station)	1,938
The Site	1102

4.4 Adequate Supply of Hotel Rooms in the Area

4.4.1 Hotel supply is largely market-driven, and hotel planning and development is generally driven by various factors including forecasts on visitor arrival growth, economic prospect, hotel business environment and profitability, etc. Apart from

¹ Calculated based on 74,663 nos. of domestic households in public rental housing and subsidized homeownership housing and 19,289 nos. of domestic households in private permanent housing in Tin Shui Wai New Town according to the 2016 Population By-census results.

the existing hotel at the Site, there is another hotel in Tin Shui Wai New Town, namely Hotel Cozi. Wetland providing 336 nos. of rooms. In a wider context, there are various planned commercial sites (with hotel development) in the adjacent Hung Shui Kiu/Ha Tsuen New Development Area including areas near the planned Hung Shui Kiu Station and areas near the existing West Rail Tin Shui Wai Station. Despite the proposed conversion of the existing hotel at the Site, there would still be sufficient supply of hotel rooms offering a wide range of accommodations for overnight visitors in the area to meet the demand during the anticipated recovery of the tourism industry in Hong Kong.

4.5 The Site is Highly Suitable for the Proposed Development

Good Accessibility

- 4.5.1 As the District Centre of Tin Shui Wai New Town, the Site can be conveniently accessible by public transport, by foot or by cycling. The Light Rail Transit provides convenient access to West Rail Tin Shui Wai Station (which connects to Tuen Mun, Yuen Long and the urban area), other neighbourhoods in the New Town as well as the adjoining areas including Yuen Long, Tuen Mun, Hung Shui Kiu/Ha Tsuen New Development Area. The Site enjoys good accessibility from different parts of the territory as it is well served by various public transport modes. There are numerous franchised bus services and mini-bus routes providing out-of-district transports.

Land Use Compatibility

- 4.5.2 The area where the Proposed Development is located in the Tin Shui Wai New Town which is largely characterized by high density residential development (with both public and private housings). The Proposed Development is highly suitable in the current land use context. Besides, the Proposed Development will not incur any changes to the development scale which is compatible with the intensity of the surrounding developments.
- 4.5.3 Various Planning Applications for residential use within area zoned "C" (including Planning Application No. A/TSW/72 for the Development at the Subject Site) previously approved by the TPB have demonstrated that 'Flat' is a suitable and compatible use at commercial sites with the support of various technical assessments. Previously approved Planning Applications involving 'Flat' use in "C" zones are briefly set out in **Table 4.2** below.

Table 4.2 Approved Planning Applications involving 'Flat' Use in "Commercial" Zones

Approval Date	Address of the Site	Zoning	Details of Application
28 Jan 2011	G/F, Upper Part of G/F, 1/F to 6/F and 29/F, Nos. 119-120 Connaught Road West, Hong Kong	"C"	Proposed Flat (Planning Application No. A/H3/398)

Approval Date	Address of the Site	Zoning	Details of Application
3 Feb 2012	Nos. 54-60 Portland Street, Yau Ma Tei, Kowloon	"C"	Proposed Flat, Shop and Services (Retail Shop) (Planning Application No. A/K2/196)
30 Mar 2012	7 Kai Hing Road, Kowloon Bay, Kowloon (NKIL No. 5813)	"C(2)"	Proposed Flat and Minor Relaxation of Plot Ratio Restriction (Planning Application No. A/K22/13)
27 Mar 2015	Lots 531 RP, 532 S.D.RP and 532 RP in DD130 and Adjoining Government Land, Lam Tei, Tuen Mun	"C"	Proposed Flat Development and Minor Relaxation of Plot Ratio and Building Height Restriction (Planning Application No. A/TM-LTTY/290)
22 May 2015	Nos. 68, 68A, 70, 70A, 72, 72A, 72B and 72C Kimberley Road, Tsim Sha Tsui	"C"	Proposed Flat and Permitted Shop and Services/Eating Place Uses (Planning Application No. A/K1/244)
18 Dec 2020	Tin Shui Wai Town Lot No. 4, Tin Shui Wai	"C"	Proposed Flat and Permitted Commercial Development with Minor Relaxation of GFA Restriction (Planning Application No. A/TSW/72)
26 Feb 2021	348 Nathan Road, Jordan, Kowloon	"C"	Proposed Development with Shop and Services/Eating Place, Office and Flat Uses (Planning Application No. A/K2/218)
18 Feb 2022	1-5 Kai Hing Road, Kowloon Bay, Kowloon (NKIL Nos. 5805, 5806 and 5982)	"C(2)"	Proposed Residential Development (including a Pier (Landing Steps), Eating Place and Shop and Services (Planning Application No. A/K22/31)
18 Feb 2022	15-15A, 17, 19 and 23 Saigon Street, Yau Ma Tei	"C"	Proposed Composite Development with Flat and Shop and Services/Eating Place Uses (Planning Application No. A/K2/220)

4.6 No Increase in Development Bulk

- 4.6.1 The Proposed Development at the Site will only involve conversion of the existing hotel buildings into residential uses at upper floors and commercial uses at the lowest 2 floors) and the existing shopping mall at the commercial podium will

remain intact. There will be no increase in building height nor development bulk of the existing development. Moreover, the visual corridor between the two towers towards Tin Shui Wai Park will be maintained. Hence, no visual impact will be anticipated upon the conversion works.

4.7 More Sustainable Development Option

4.7.1 The Proposed Development involving wholesale conversion of existing hotel into residential development instead of bulldozing the existing building is more sustainable in terms of substantially reducing the amount of construction waste, pollutants, and energy consumption as compared to a demolition and redevelopment. The shortened works period will also reduce the environmental nuisance to the surrounding neighbourhood.

4.8 No Adverse Traffic Impact

4.8.1 A Traffic Impact Assessment has been conducted to assess the potential traffic impact due to the Proposed Development. Current operational performance of the junctions has been assessed with the observed traffic flow. The results revealed that all junctions are at present operating within its capacities. Junction operational assessment has been applied for year 2031 in both reference and design scenarios and the results indicated all junctions will operate within their capacities in 2031. The Proposed Development is reckoned feasible from traffic engineering point of view (**Appendix 3** refers).

4.9 No Adverse Environmental Noise Impact

4.9.1 Noise assessments have been conducted to predict the noise impact associated with the Proposed Development. The prediction of road traffic noise was carried out based on the traffic forecast for year 2043. For the Base Scenario (without any noise mitigation measures), the predicted maximum road traffic noise level of the residential flats will be 75dB(A) which exceeds the 70dB(A) noise criterion. With the provision of acoustic window (baffle type), the assessment results indicate that the predicted road traffic noise level at all the residential flats would comply with the 70dB(A) noise criterion. For rail noise assessment, site measurements have been conducted for the Light Rail Transit. The predicted rail noise results for the representative noise sensitive receivers of the Proposed Development will comply with the stipulated noise criteria (**Appendix 5** refers).

4.10 No Adverse Environmental Air Quality Impact

4.10.1 An Air Quality Impact Assessment has been conducted to assess the potential air quality impact caused by the air pollution source in the vicinity of the Site. The Proposed Development satisfies the buffer distance requirements for vehicular and chimney emissions stipulated under the Hong Kong Planning Standards and Guidelines. Therefore, no adverse air quality impact associated with the Proposed Development during operation phase is anticipated. Dust control requirements in the Air Pollution Control (Construction Dust) Regulation will be followed. Relevant mitigation measures for dust emissions will also be implemented. No adverse air quality impact associated with the Proposed Development during construction

phase is anticipated (**Appendix 6** refers).

4.11 No Adverse Sewerage Impact

- 4.11.1 A Sewerage Impact Assessment has been prepared to assess the sewerage impact associated with the Proposed Development (**Appendix 7** refers). The sewerage from existing Kingswood Phase I and proposed commercial in Area 20 will be discharged into FMH1009421. The sewerage from existing Kingswood Phase II and proposed commercial in Area 23 will be discharged into FMH1009437. The Proposed Development of Area 20 and Area 23 will be diverted together and discharged into FMH1009431. The SIA results demonstrated that the Proposed Development will pose no adverse impact to the sewerage in the locality and to the downstream sewerage system.

4.12 No adverse Landscape Impact

- 4.12.1 The Proposed Development has incorporated a multi-level landscape framework at G/F and 3/F. Existing trees and planting area will be retained while new greenery in form of grass paving will be added at 3/F to achieve a minimum greenery area of 30% (**Appendix 4** refers). The landscape quality of the Proposed Development will be enhanced as compared to existing hotel development.

5 CONCLUSION AND SUMMARY

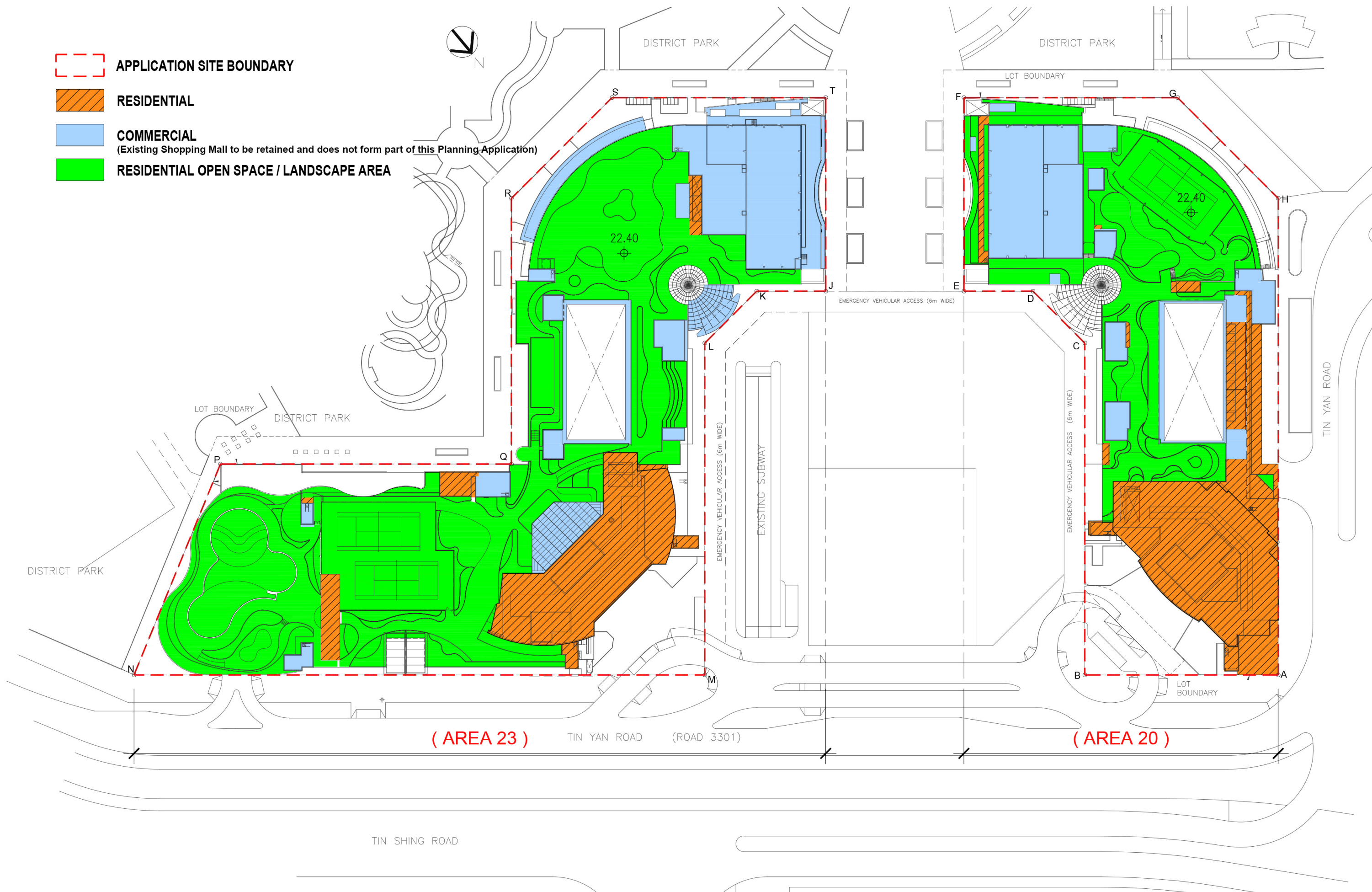
5.1 The Applicant is seeking permission from the TPB for the Proposed 'Flat' at Tin Shui Wai Town Lot No. 4, Tin Shui Wai. The Site is zone "C" on the Approved Tin Shui Wai Outline Zoning Plan ("Approved OZP") No. S/TSW/16.

5.2 The Planning Department and Members of the TPB are respectfully requested to give favourable consideration to support the Proposed Development based on the followings:

- The development proposal involves the immediate provision of about 1,102 nos. of residential flats at the Site.
- The development proposal is totally in-line with the Government's policy to increase housing land supply by contributing to the immediate provision of residential units in a short time frame and encouraging home ownership of families.
- The existing shopping mall at the Commercial Podium at the Site would remain intact. The Site would continue to play an important role functioning as the conveniently accessible District Shopping Centre to serve the residents of Tin Shui Wai New Town.
- The Proposed Development, together with other private residential development initiatives in the New Town, will further improve the housing mix.
- There would be sufficient hotel room supply in Tin Shui Wai New Town and Hung Shui Kiu/Ha Tsuen New Development Area to meet the demand during the anticipated recovery of the tourism industry.
- The Site is highly suitable for the Proposed Development in terms of land use compatibility and good accessibility.
- The development proposal will not cause increase in building height nor development bulk of the subject building. No adverse visual impact will be anticipated.
- The Proposed Development by way of wholesale conversion is more sustainable in terms of substantially reducing the amount of construction waste, pollutants, and energy consumption as compared to a complete redevelopment.
- Results of the various technical assessments conducted revealed that the Proposed Development will not pose negative impact onto the surrounding environment.

Appendix 1

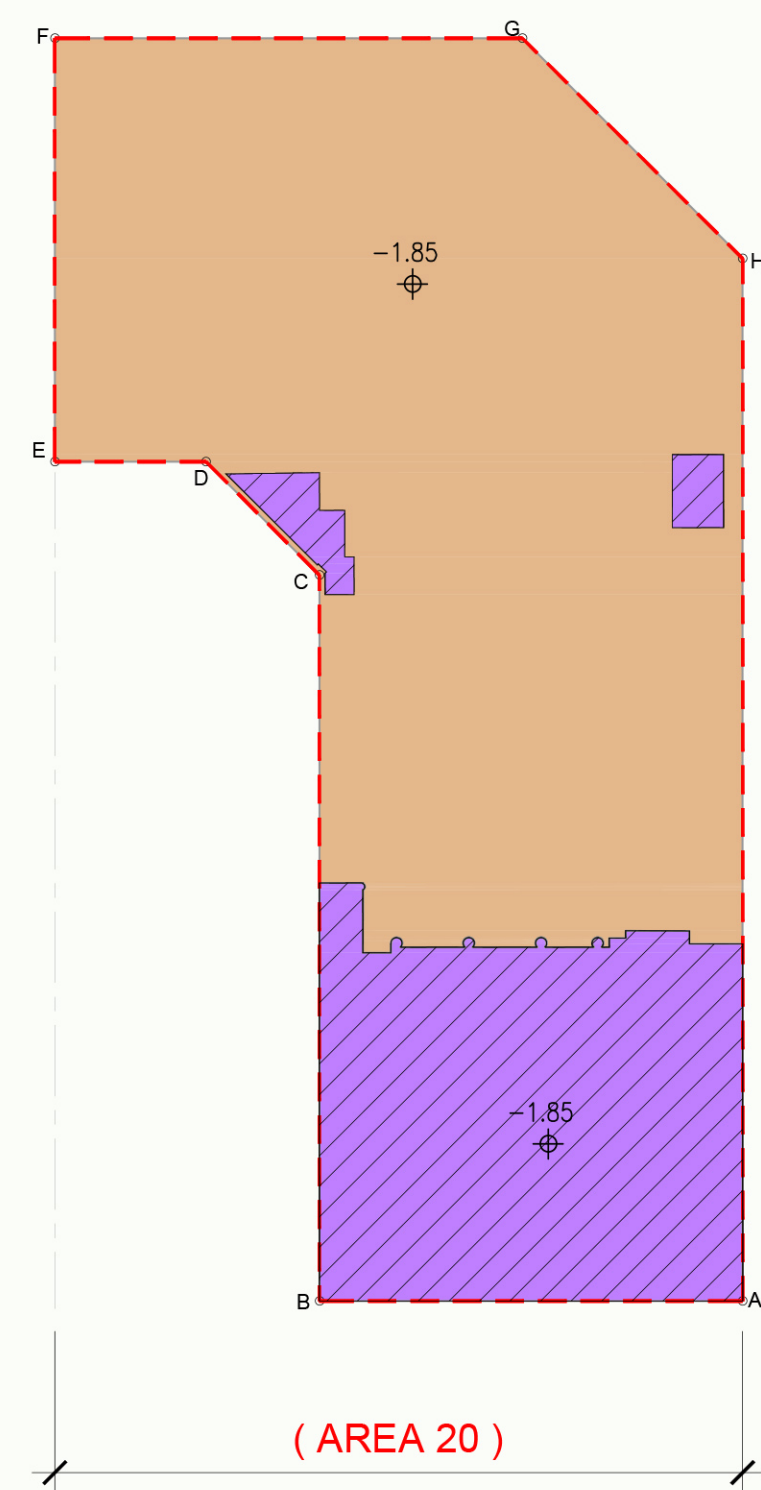
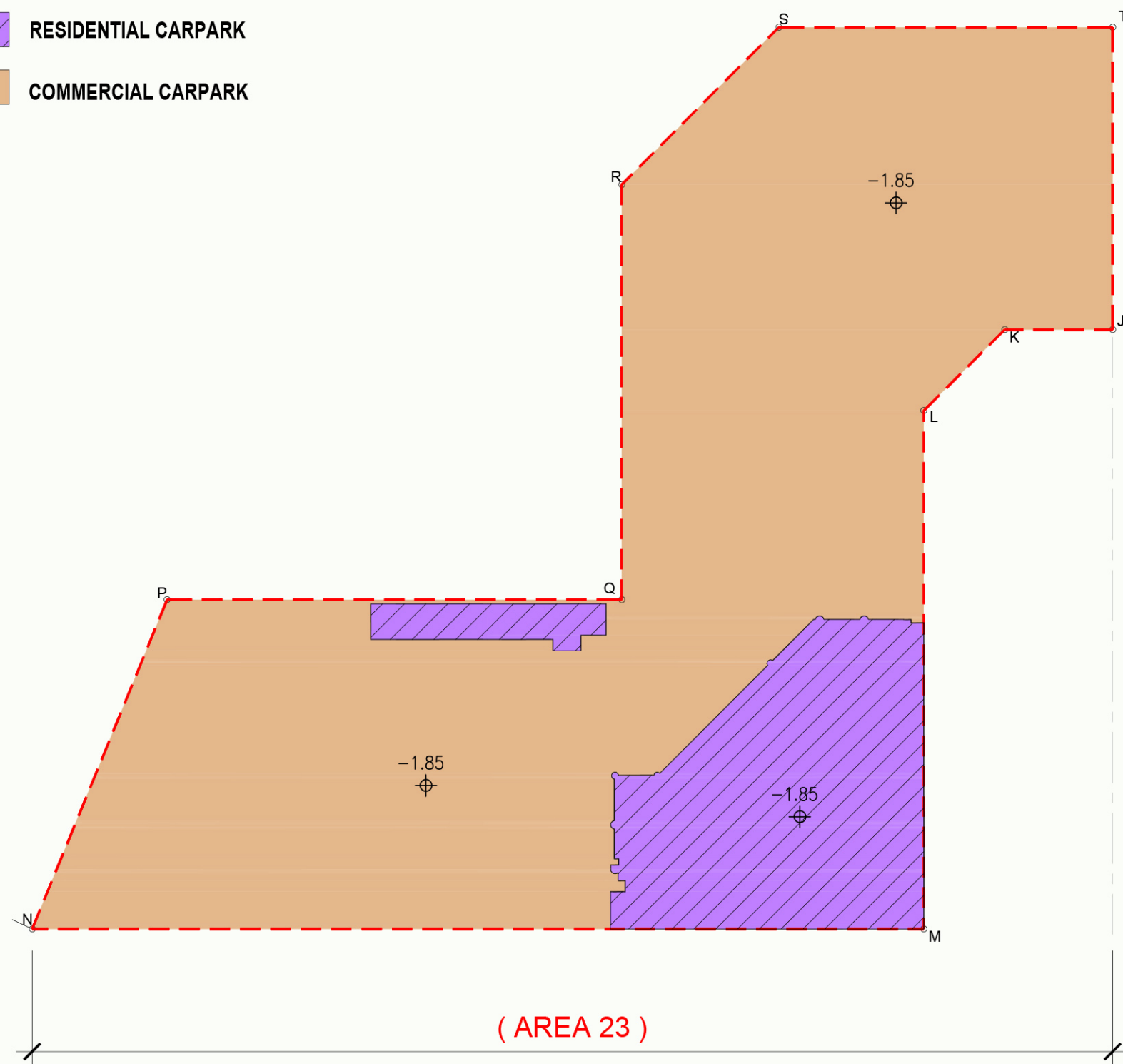
Architectural Drawings



 APPLICATION SITE BOUNDARY

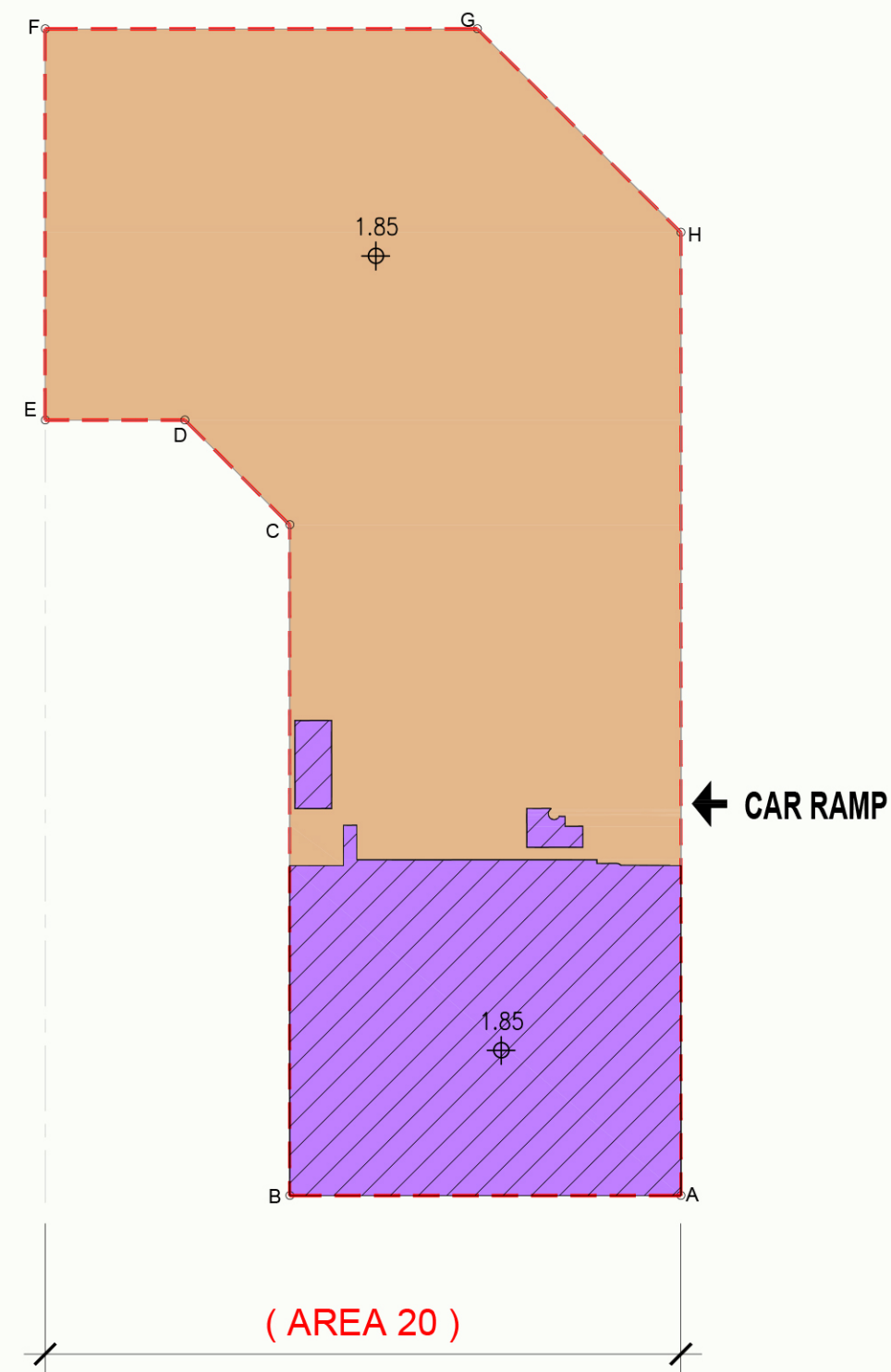
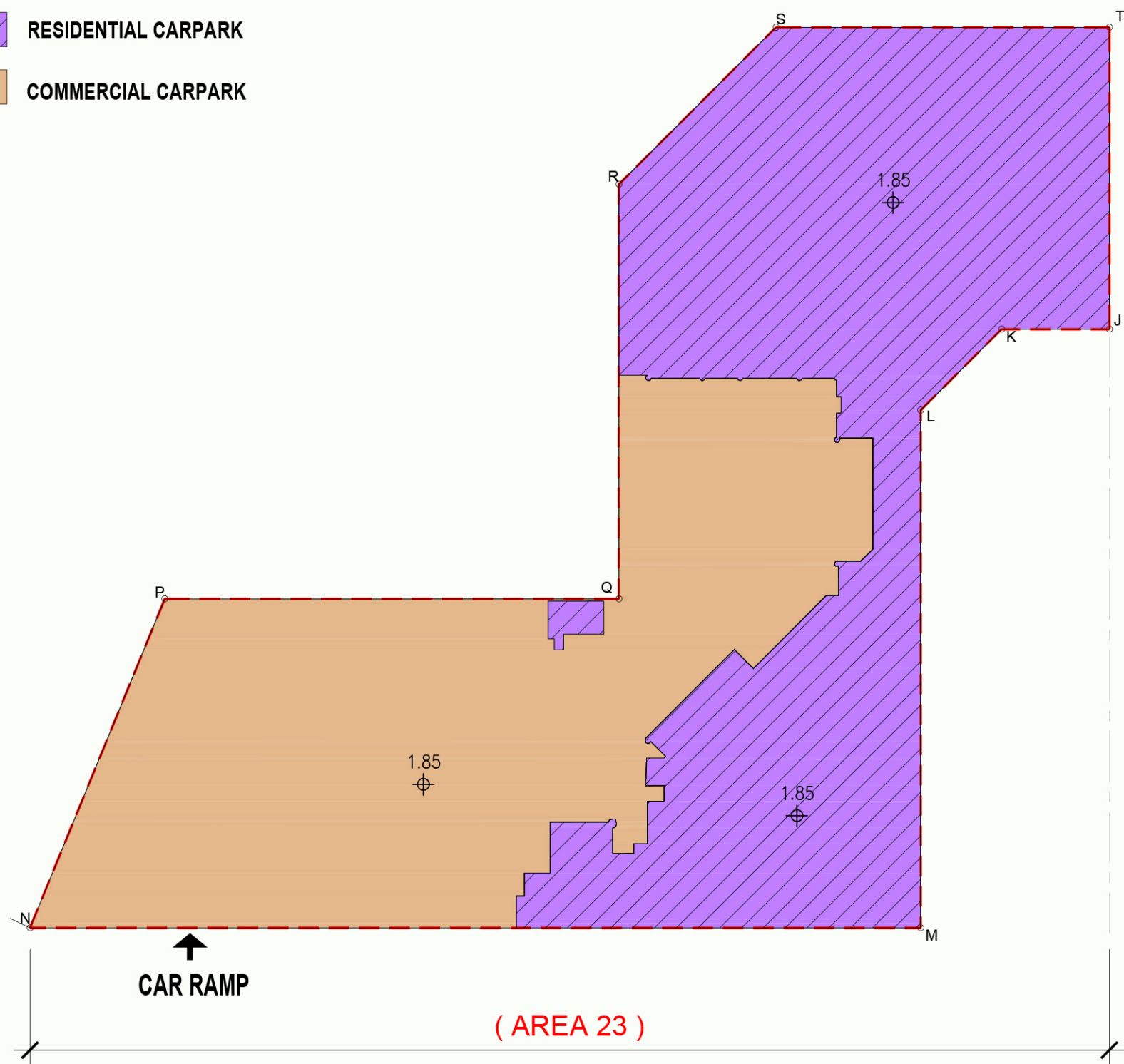
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 COMMERCIAL CARPARK



PROPOSED SCHEME


- APPLICATION SITE BOUNDARY
- RESIDENTIAL CARPARK
- COMMERCIAL CARPARK




PROPOSED SCHEME

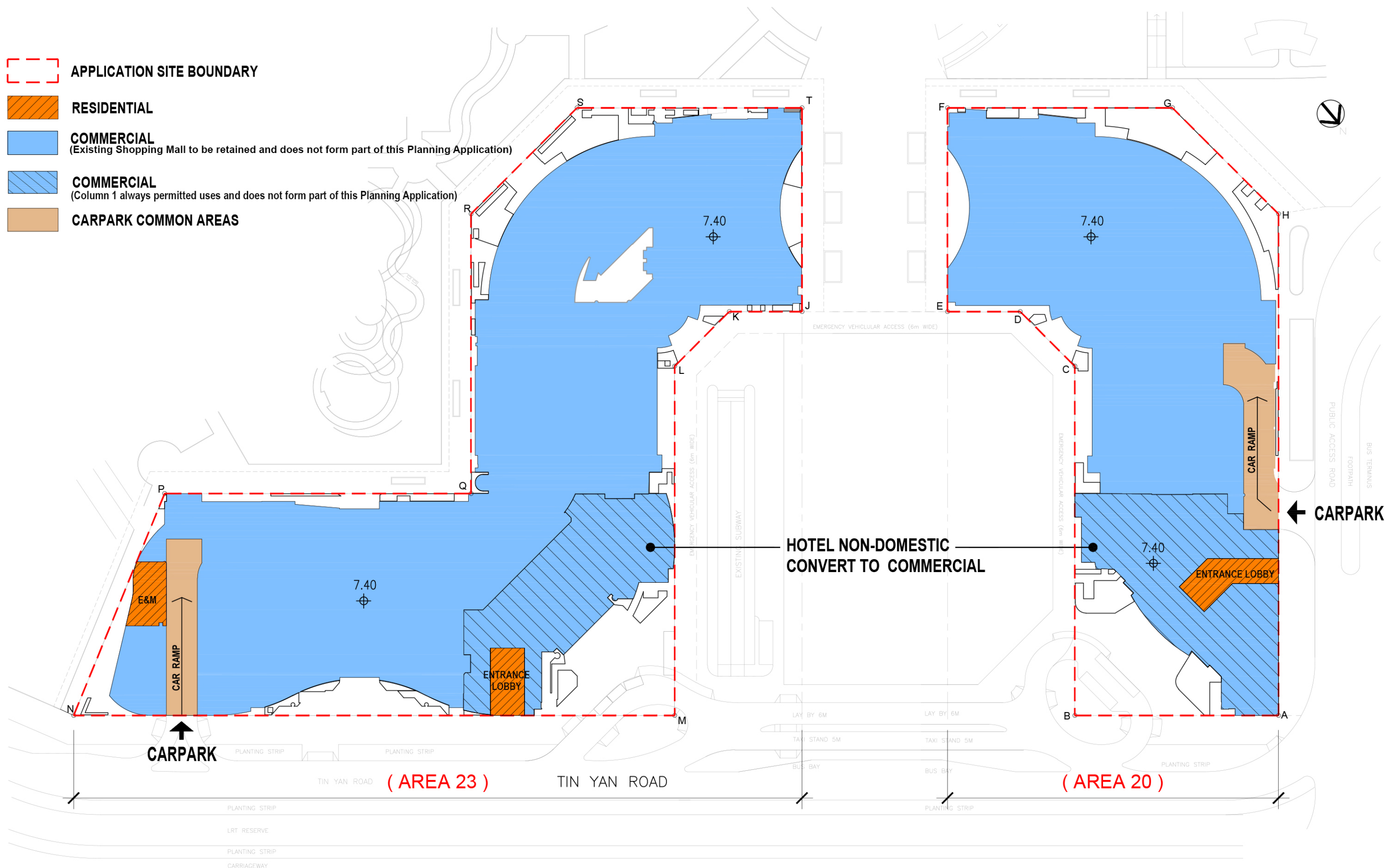
 APPLICATION SITE BOUNDARY

 RESIDENTIAL

 COMMERCIAL
(Existing Shopping Mall to be retained and does not form part of this Planning Application)

 COMMERCIAL
(Column 1 always permitted uses and does not form part of this Planning Application)


 CARPARK COMMON AREAS




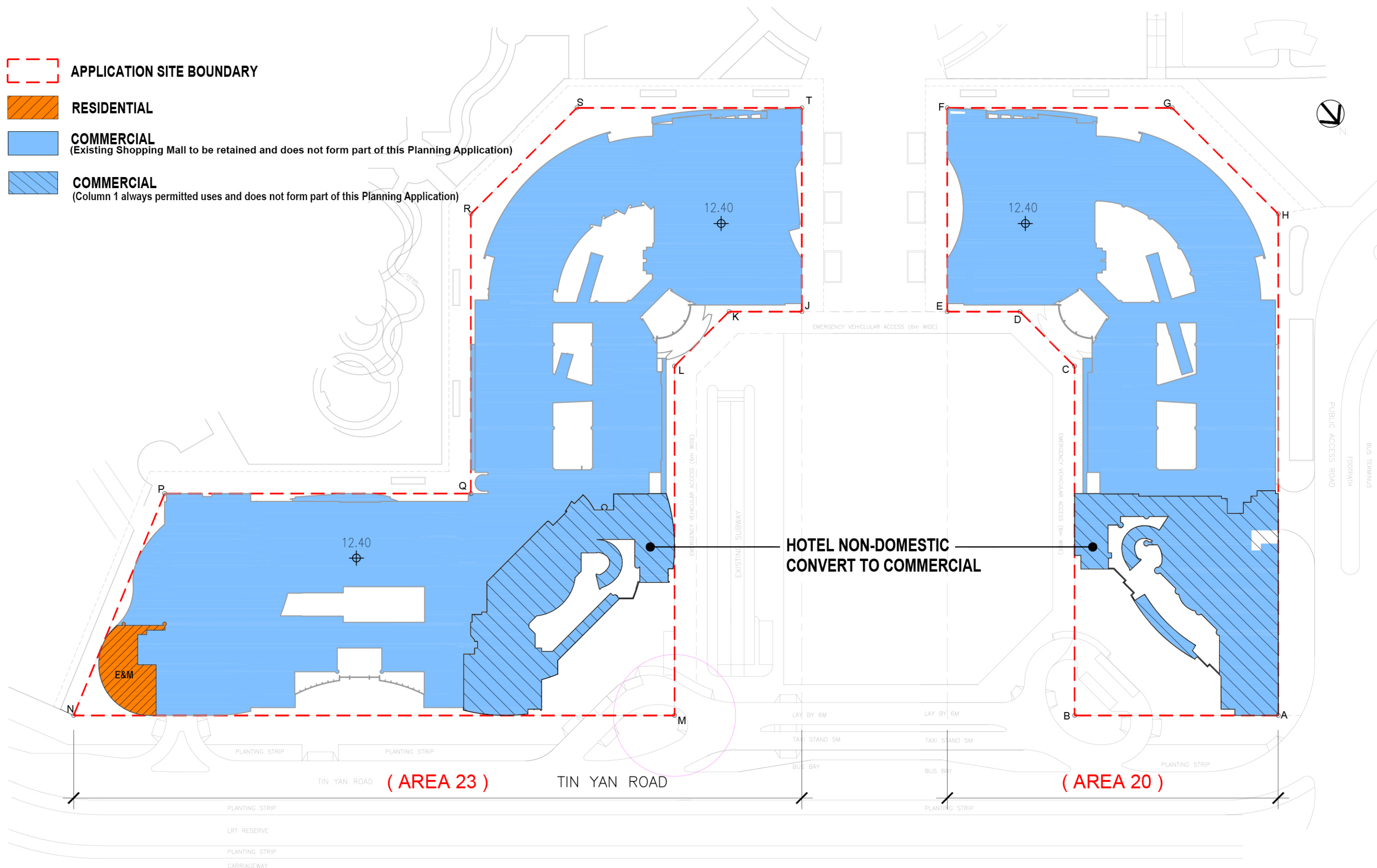
PROPOSED SCHEME

 APPLICATION SITE BOUNDARY

 RESIDENTIAL

 COMMERCIAL
(Existing Shopping Mall to be retained and does not form part of this Planning Application)


 COMMERCIAL
(Column 1 always permitted uses and does not form part of this Planning Application)

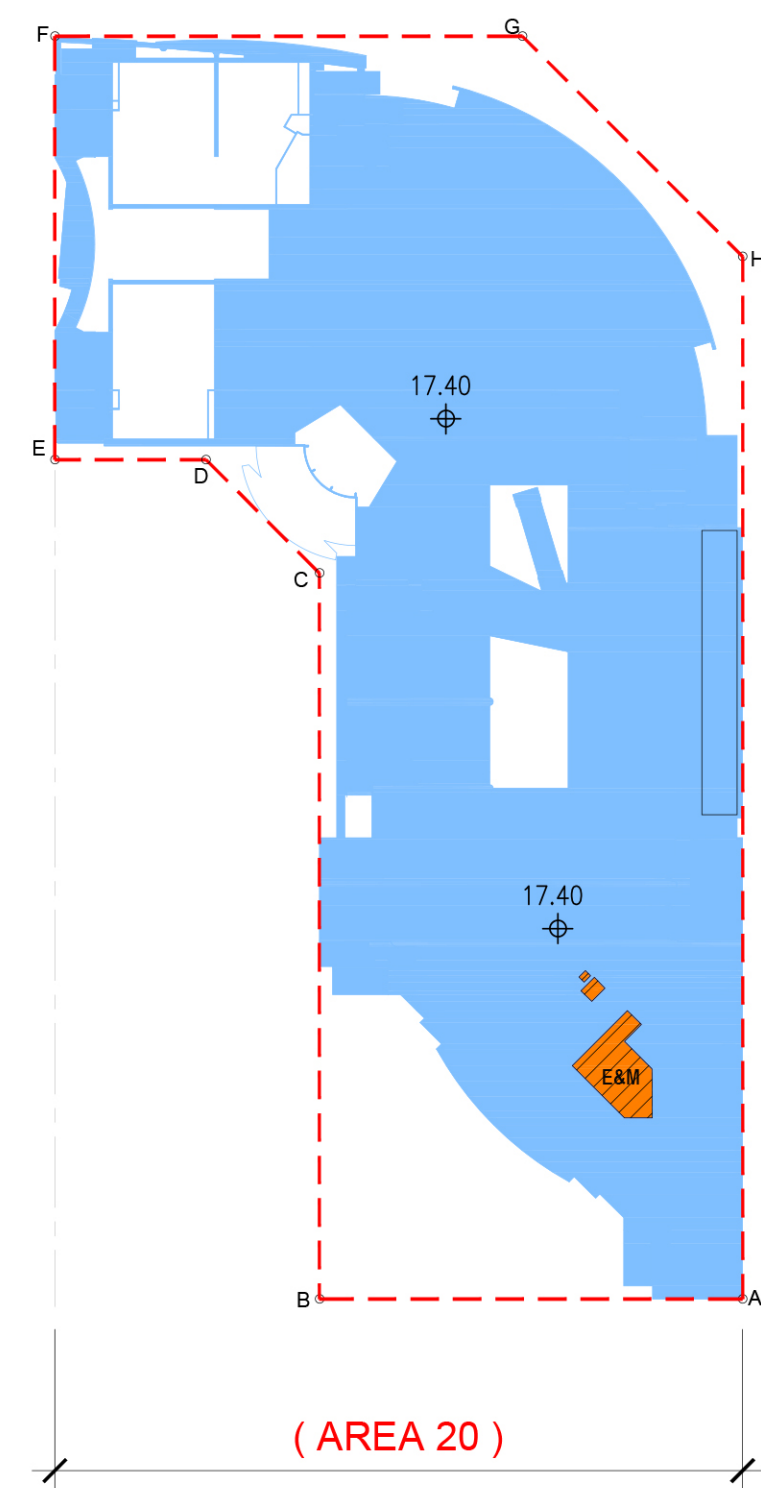
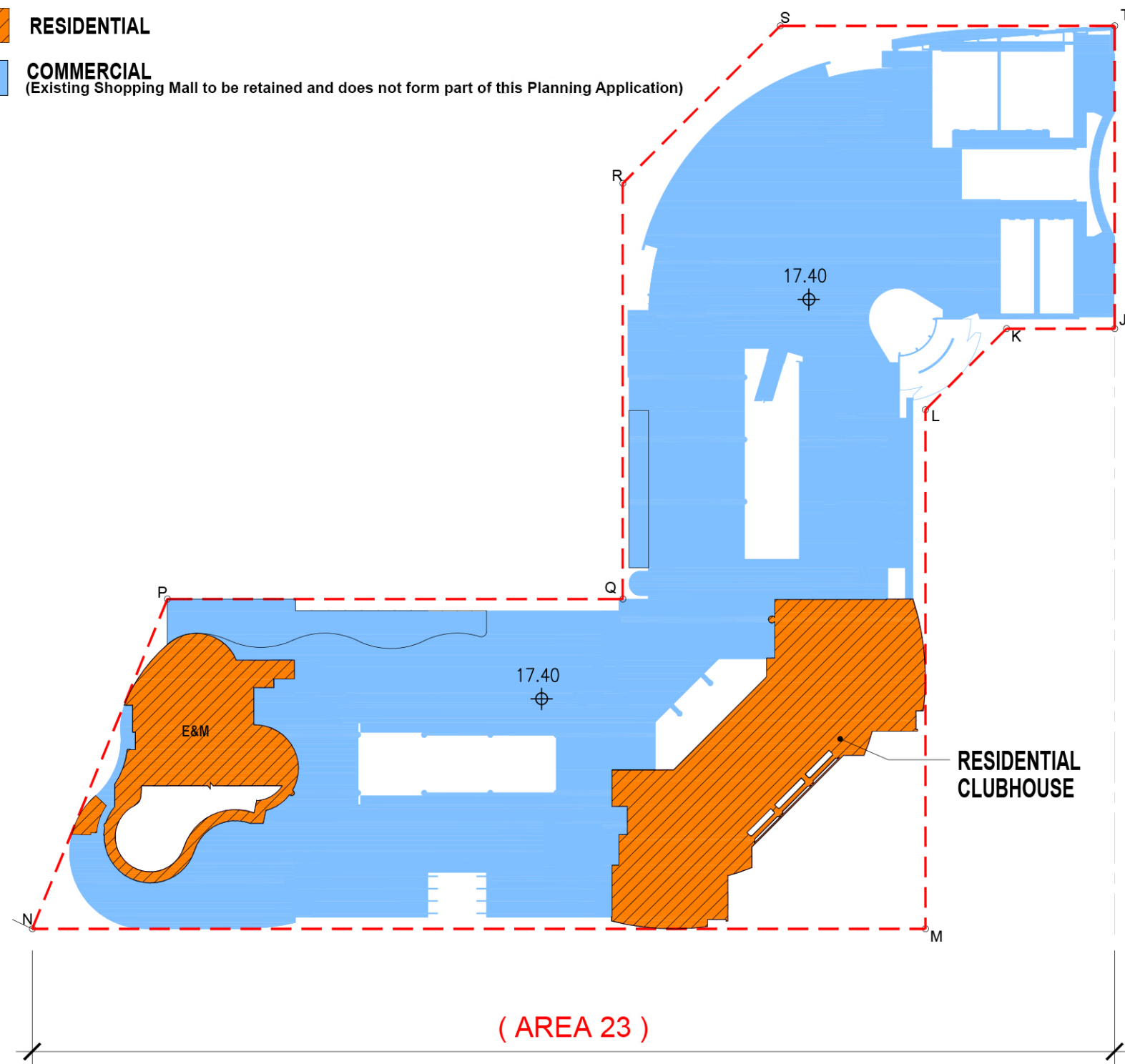


PROPOSED SCHEME

 APPLICATION SITE BOUNDARY

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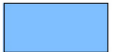
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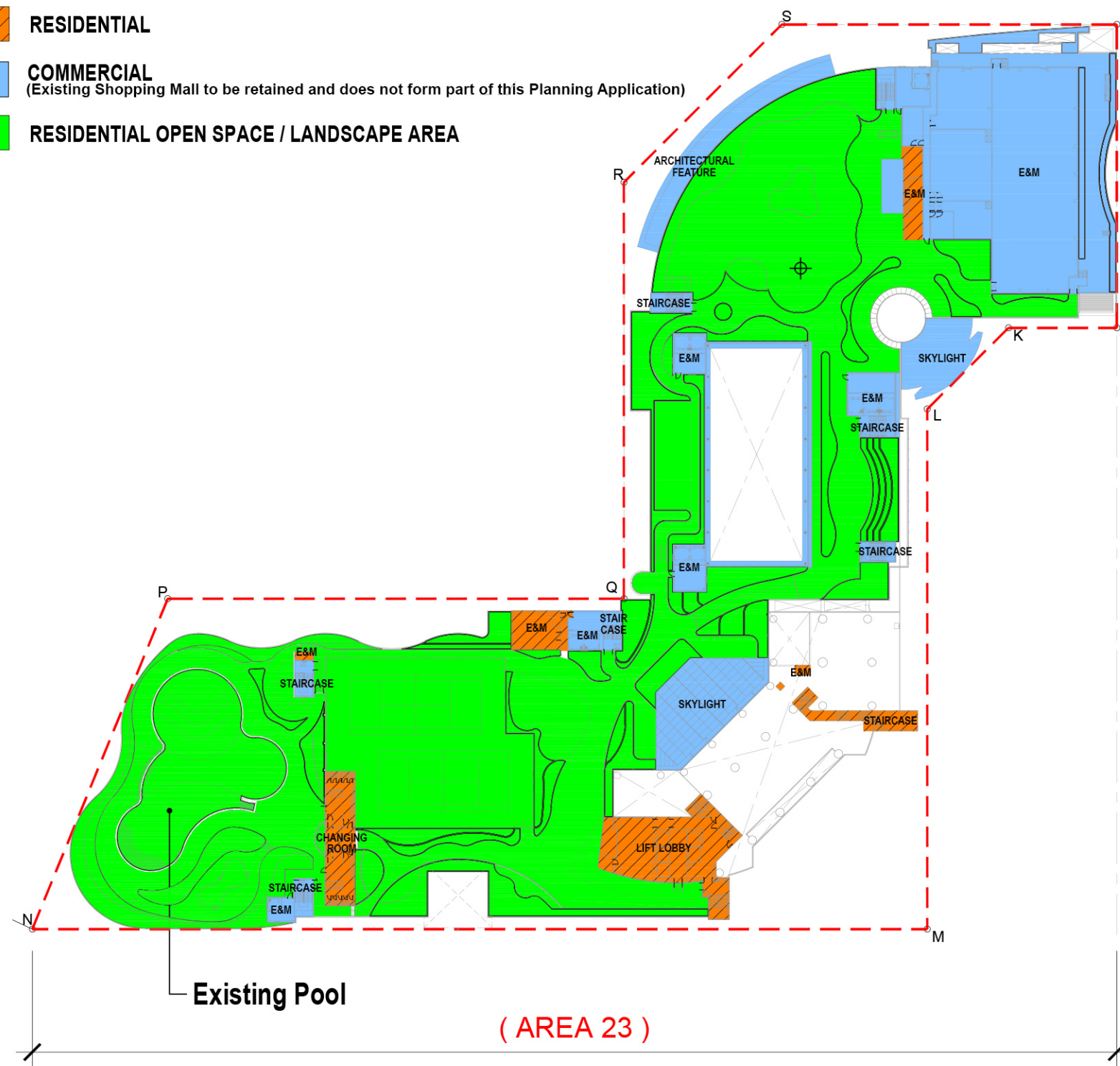
PROPOSED SCHEME

 APPLICATION SITE BOUNDARY

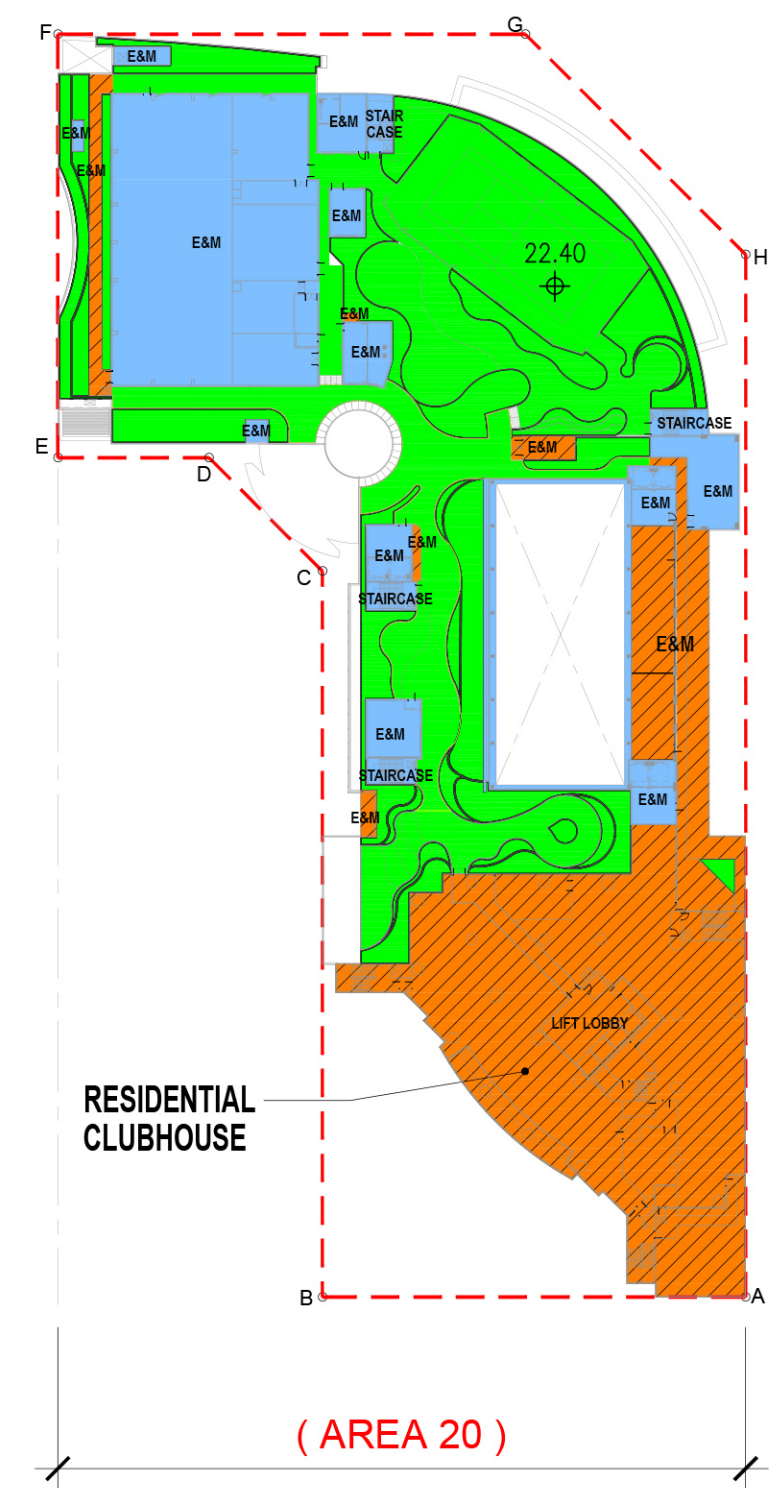
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 COMMERCIAL
(Existing Shopping Mall to be retained and does not form part of this Planning Application)

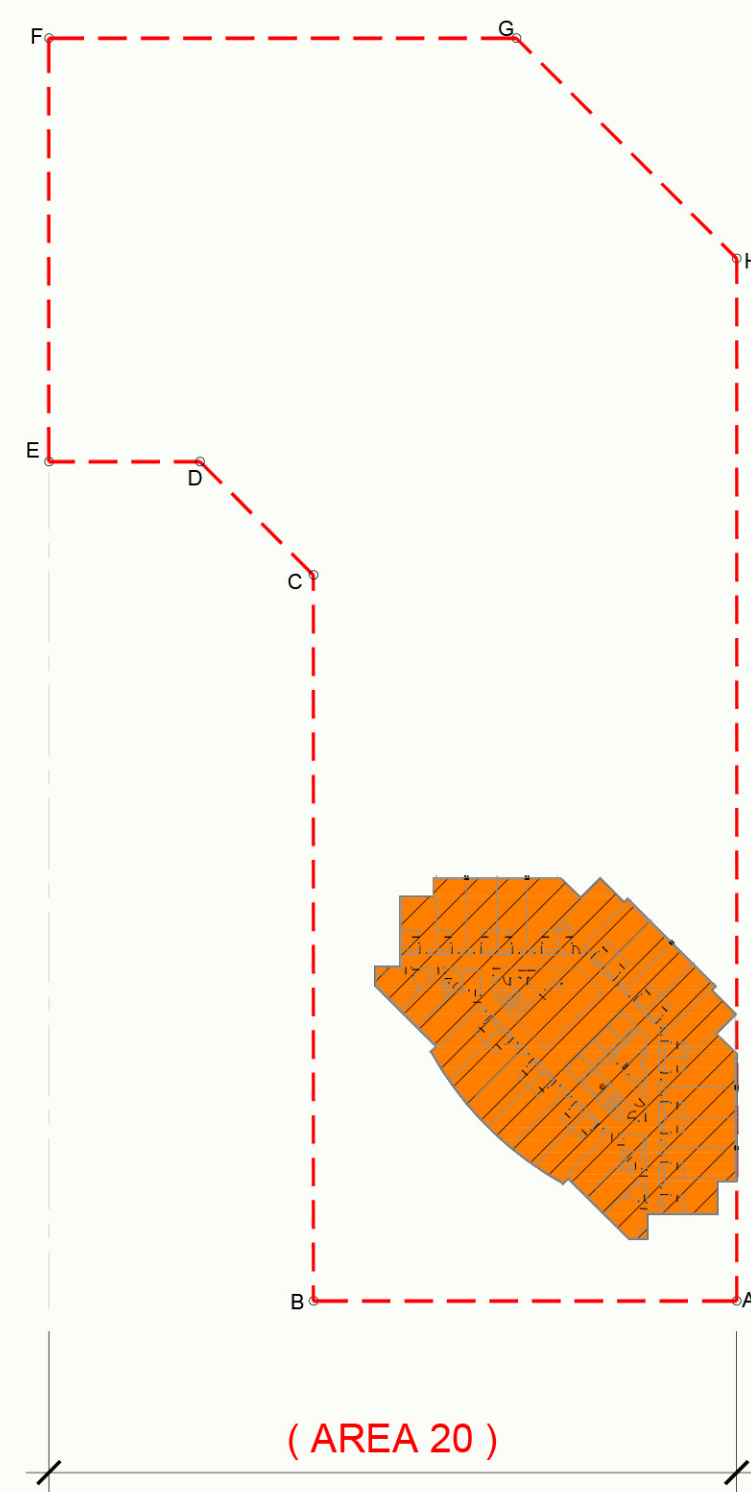
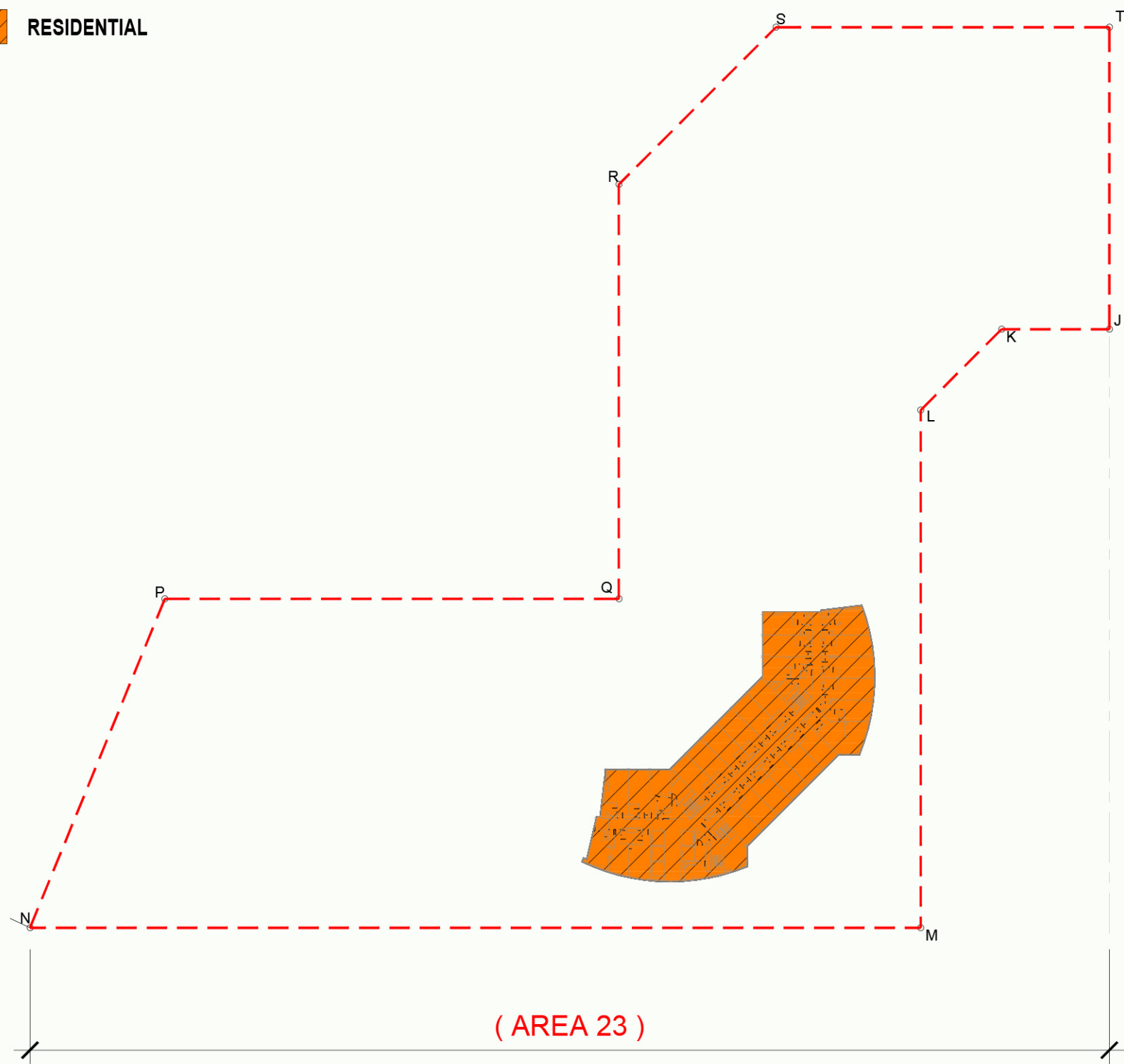
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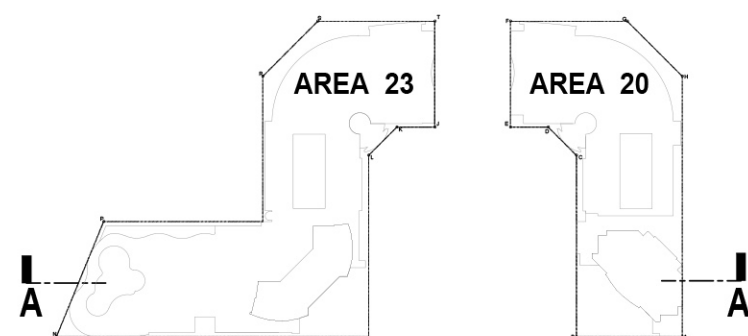
PROPOSED SCHEME



 APPLICATION SITE BOUNDARY
 RESIDENTIAL

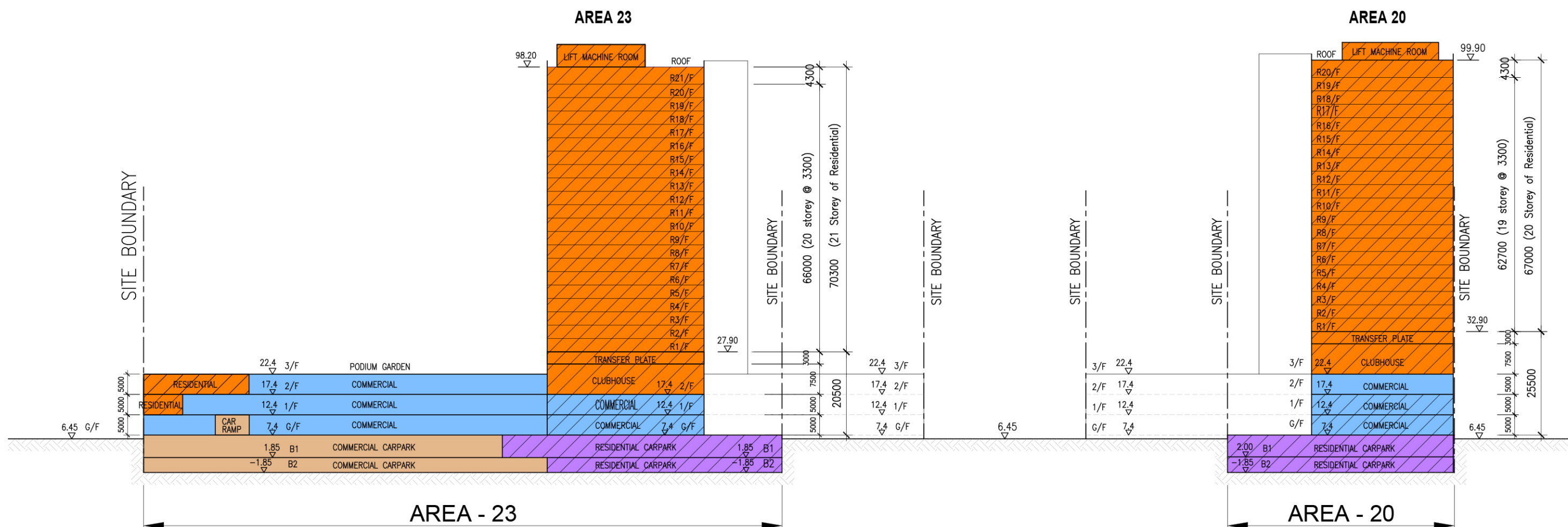


PROPOSED SCHEME



KEY PLAN (N.T.S.)

- APPLICATION SITE BOUNDARY
- RESIDENTIAL CARPARK
- COMMERCIAL
(Existing Shopping Mall to be retained and does not form part of this Planning Application)
- COMMERCIAL
(Column 1 always permitted uses and does not form part of this Planning Application)
- COMMERCIAL CARPARK
- RESIDENTIAL

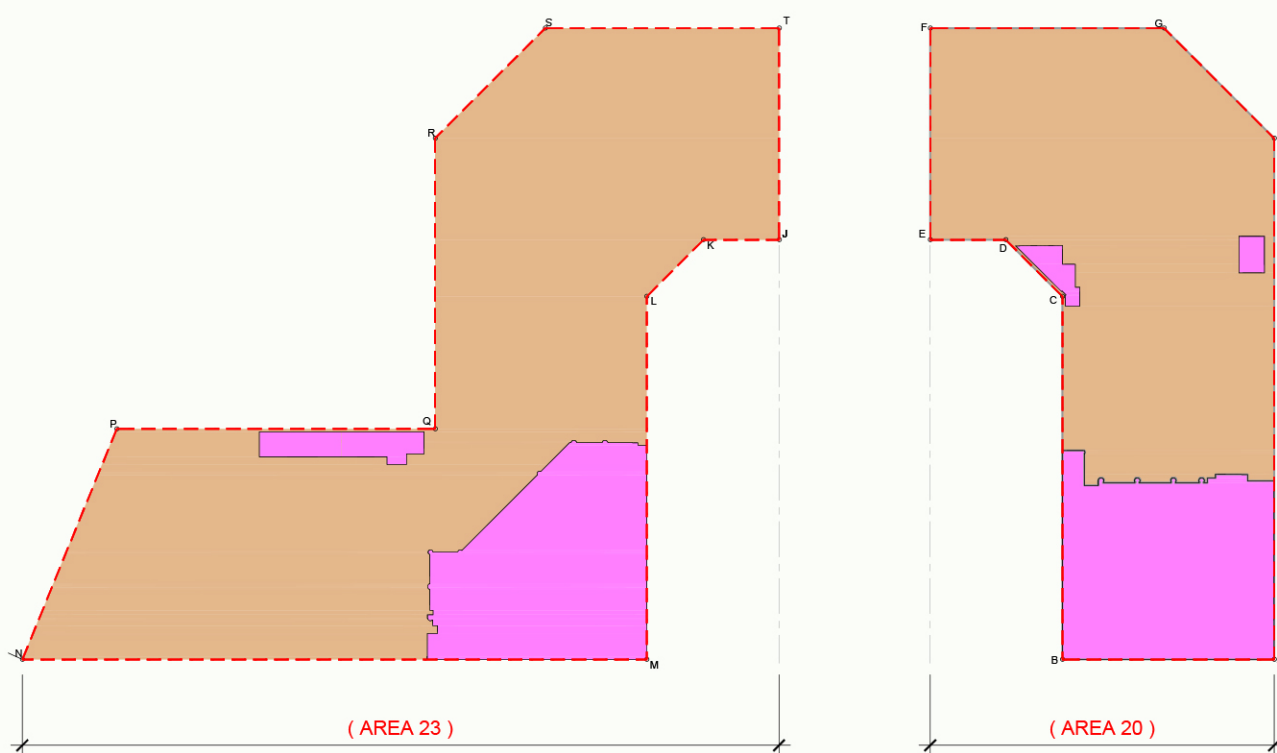


PROPOSED SCHEME

Appendix 2

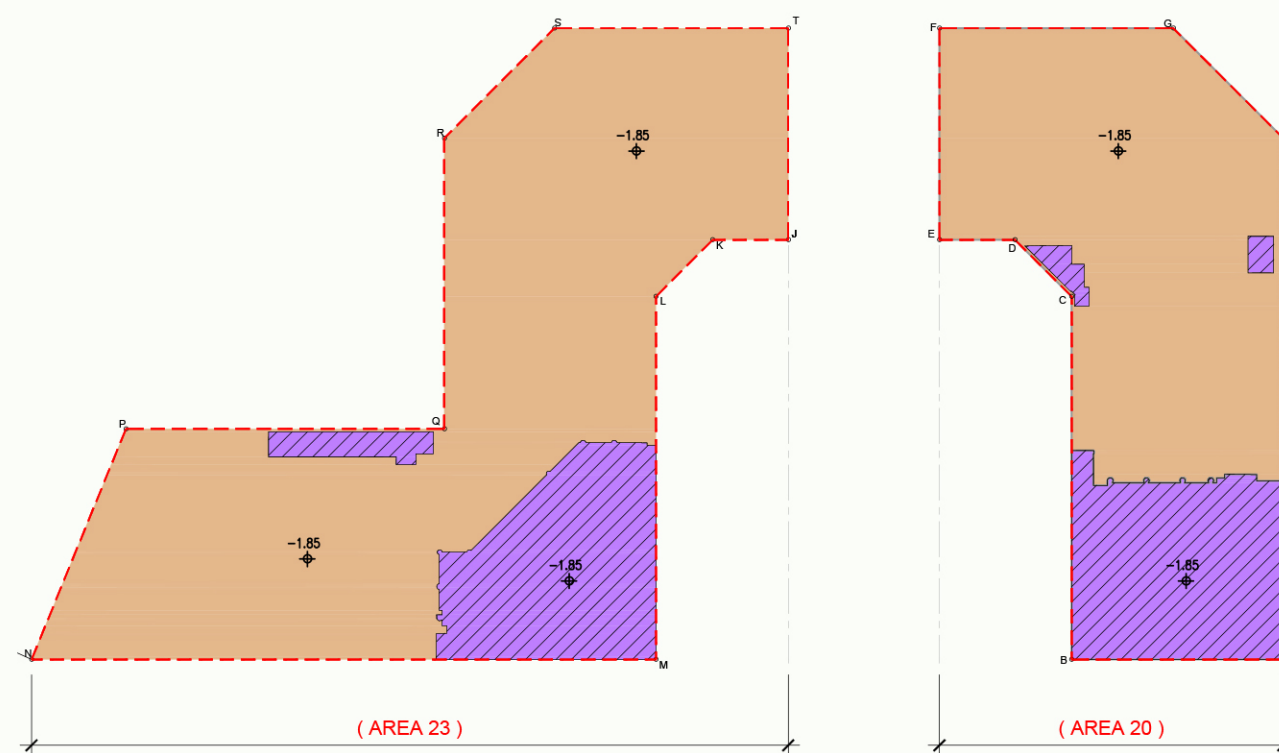
Comparison Plans and Table

- APPLICATION SITE BOUNDARY
- HOTEL
- COMMERCIAL CARPARK

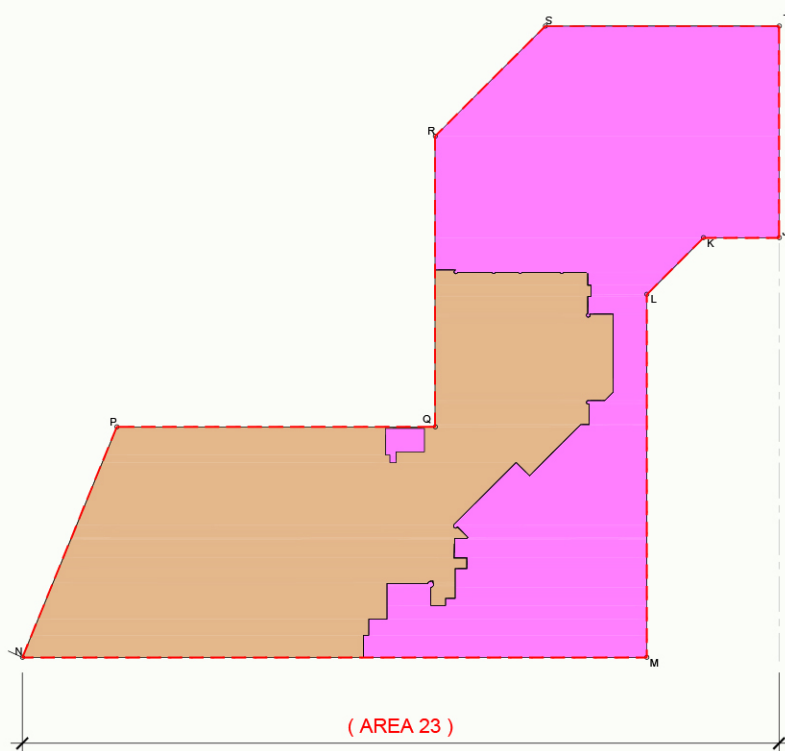


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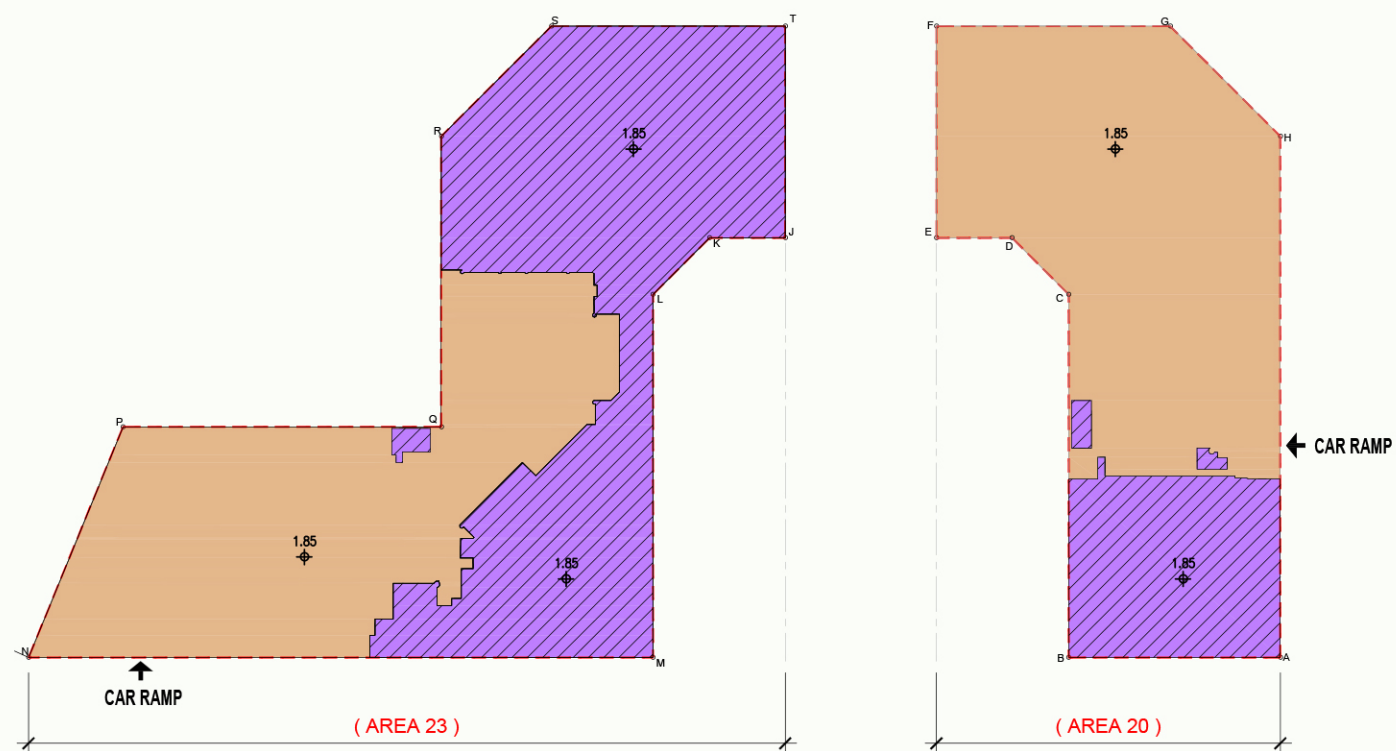
- APPLICATION SITE BOUNDARY
- RESIDENTIAL CARPARK
- COMMERCIAL CARPARK



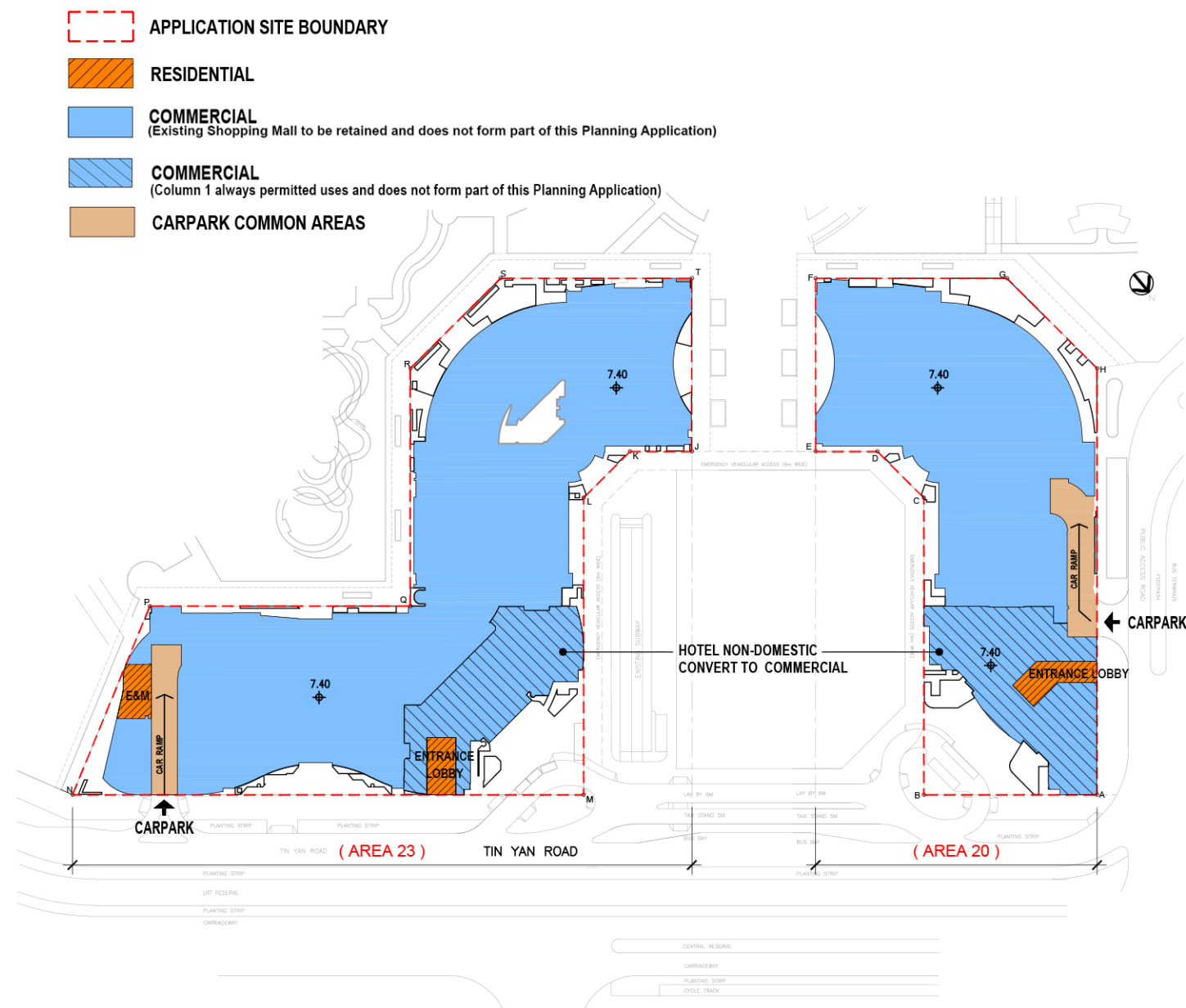
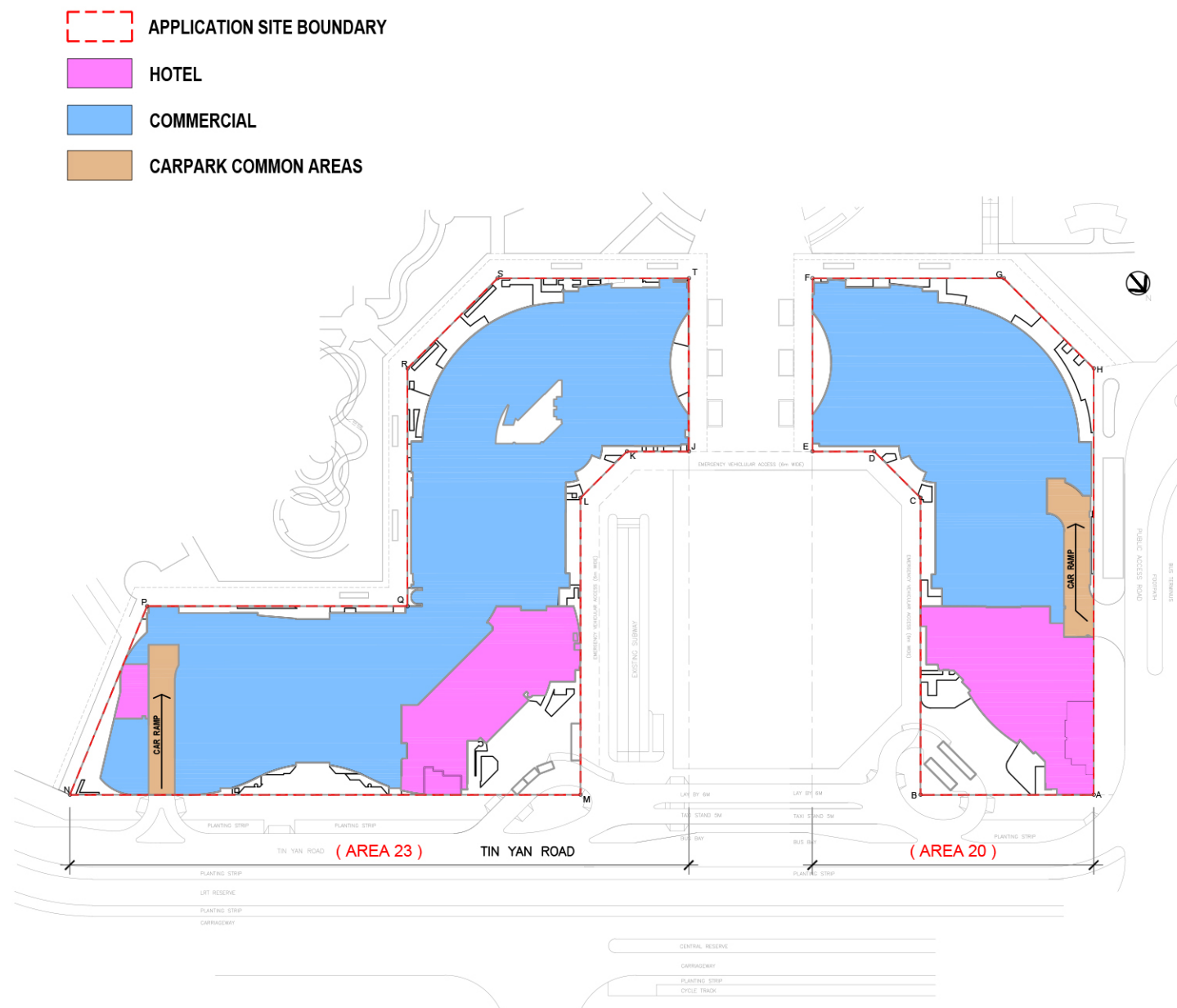
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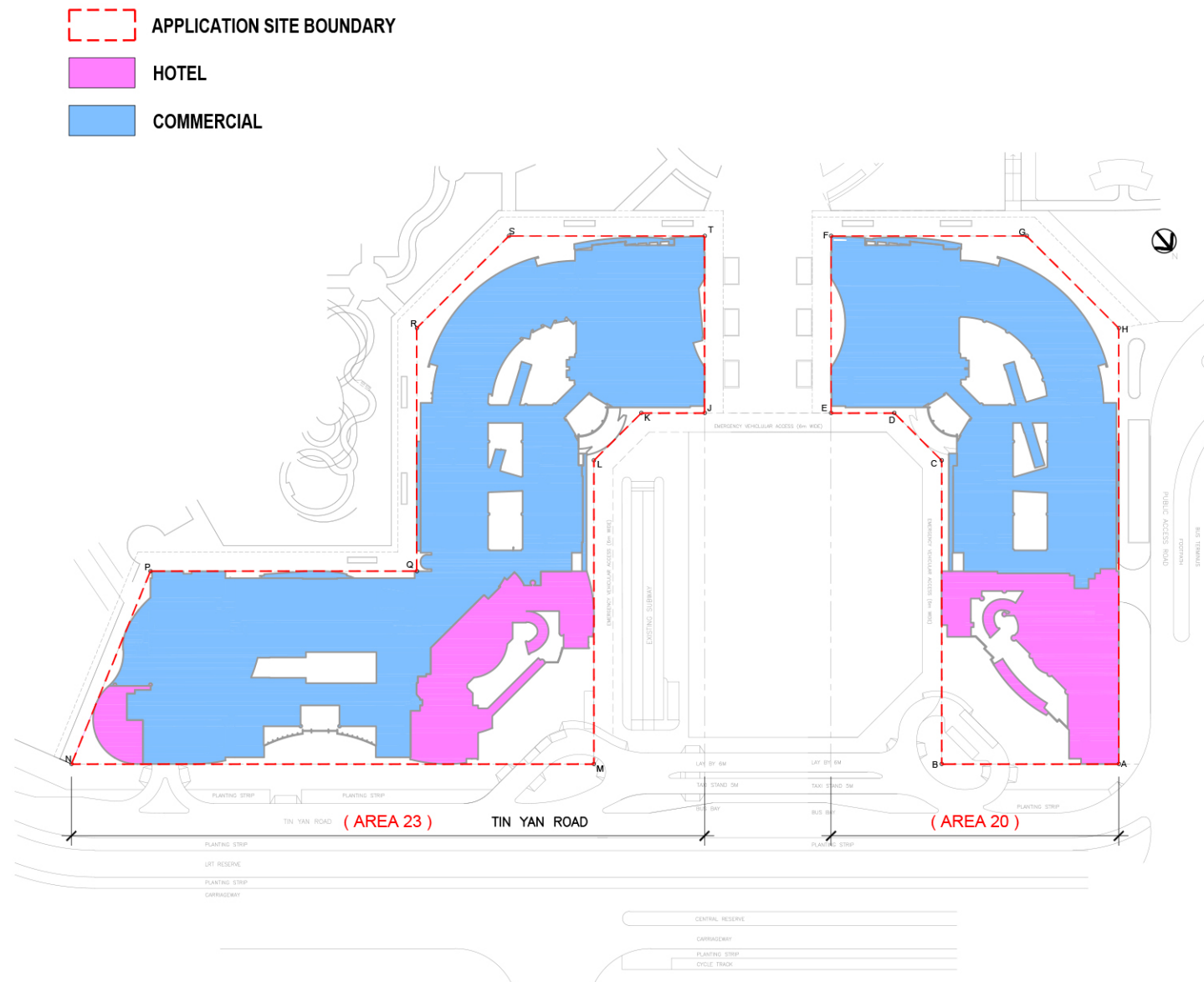


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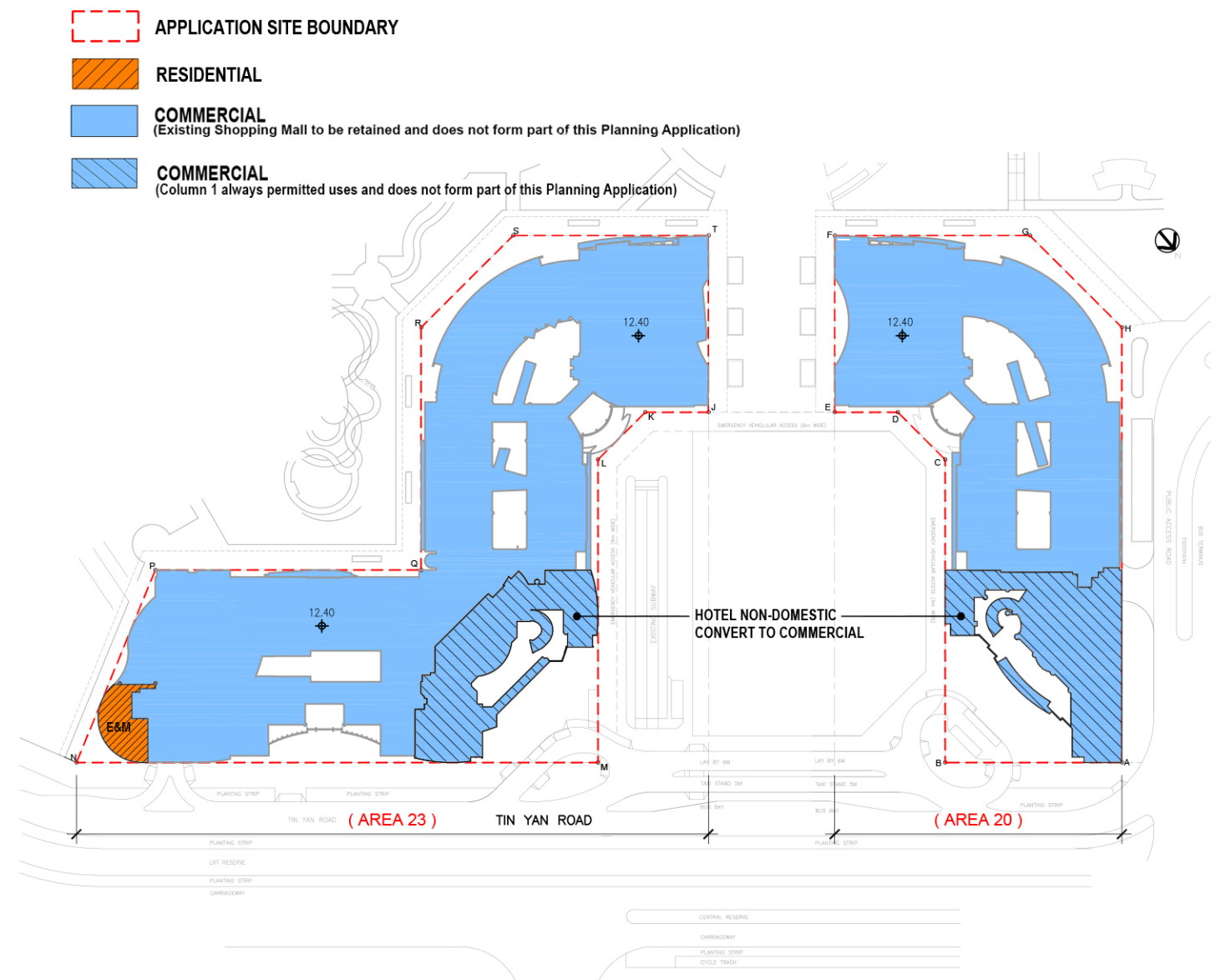


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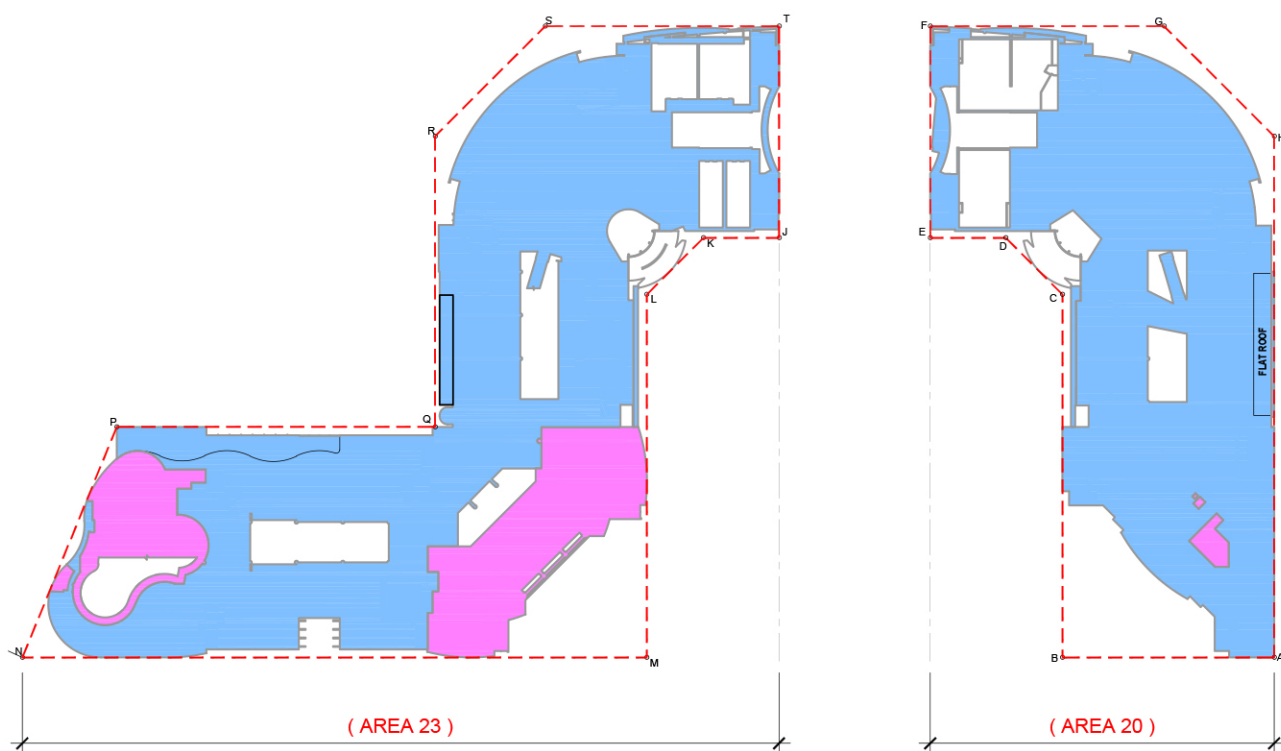


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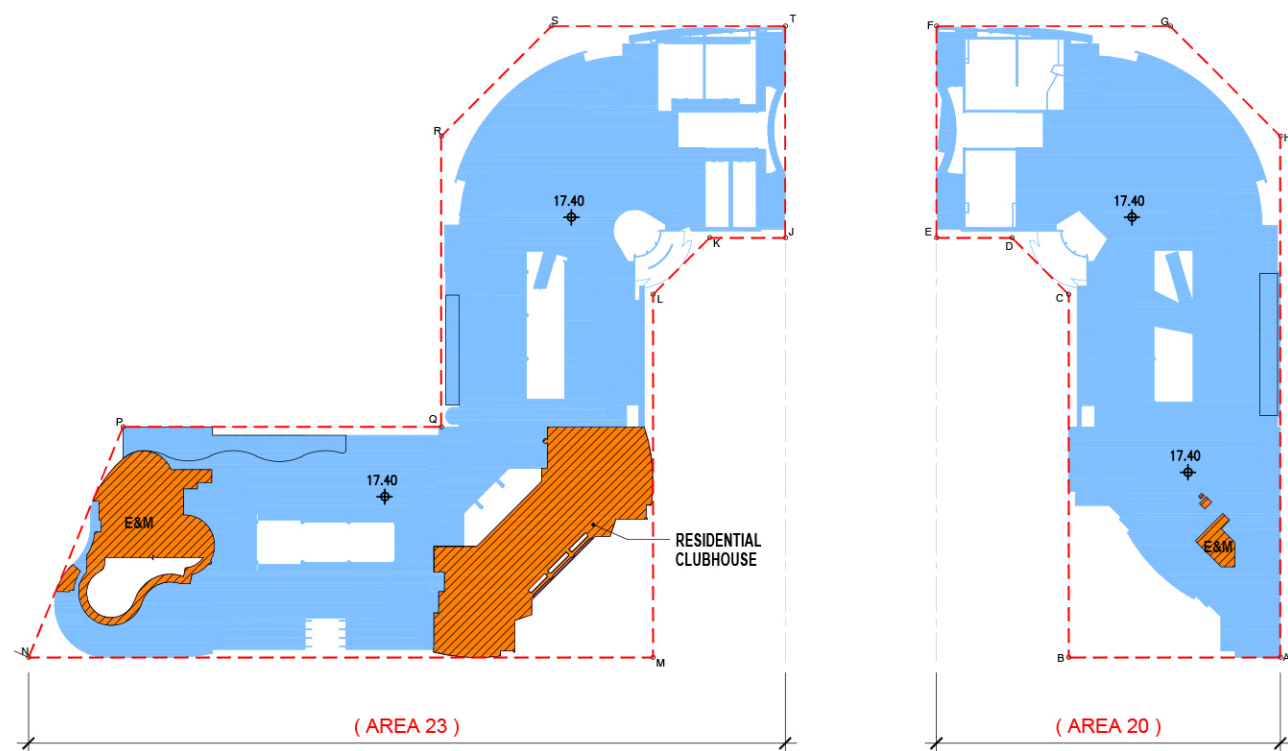
PROPOSED SCHEME

- APPLICATION SITE BOUNDARY
- HOTEL
- COMMERCIAL



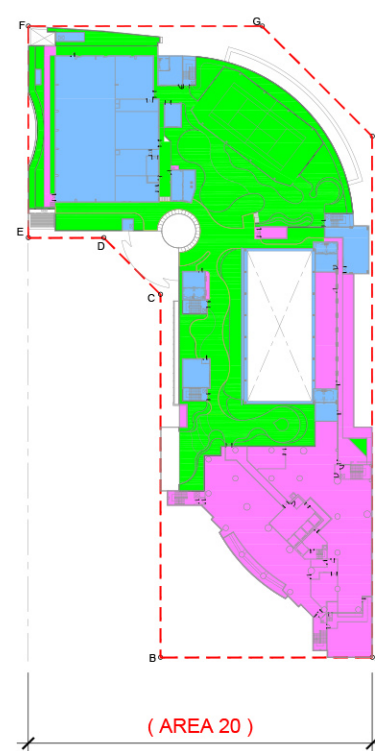
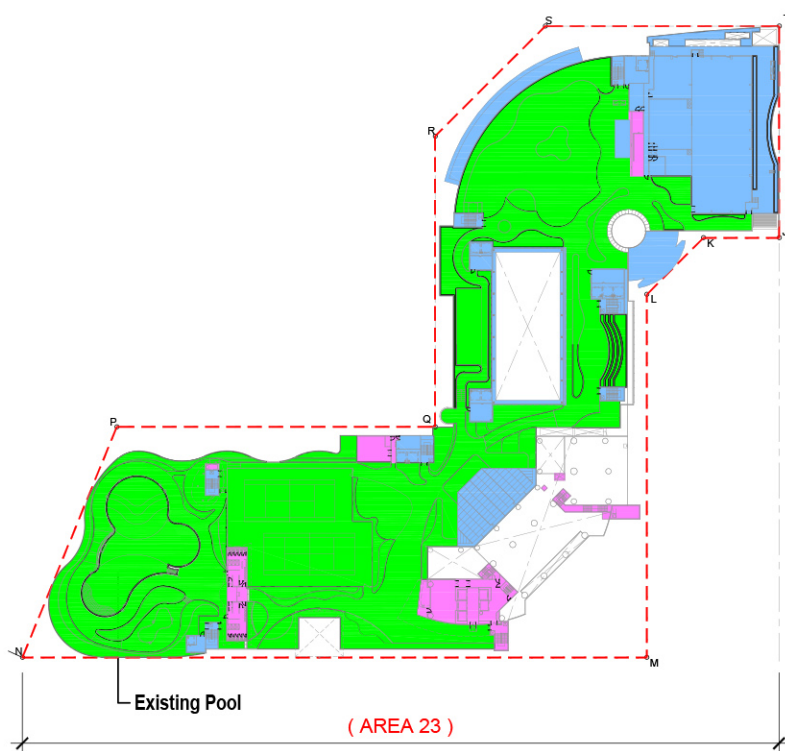
EXISTING LAYOUT

- APPLICATION SITE BOUNDARY
- RESIDENTIAL
- COMMERCIAL
(Existing Shopping Mall to be retained and does not form part of this Planning Application)



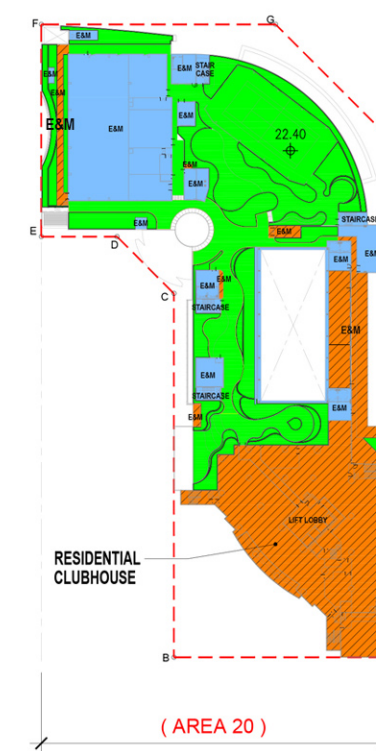
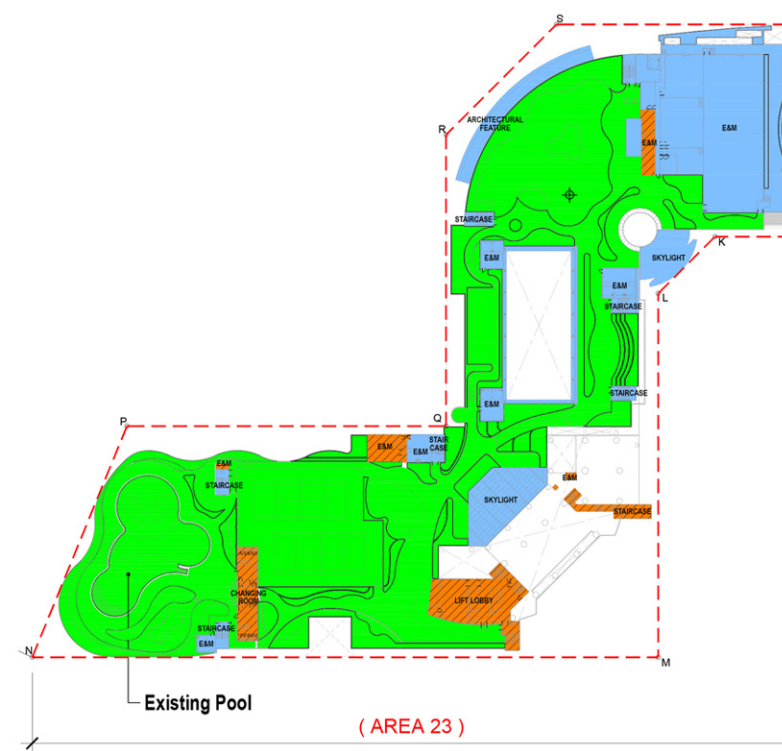
PROPOSED SCHEME

- APPLICATION SITE BOUNDARY
- HOTEL
- COMMERCIAL
- HOTEL OPEN SPACE / LANDSCAPE AREA



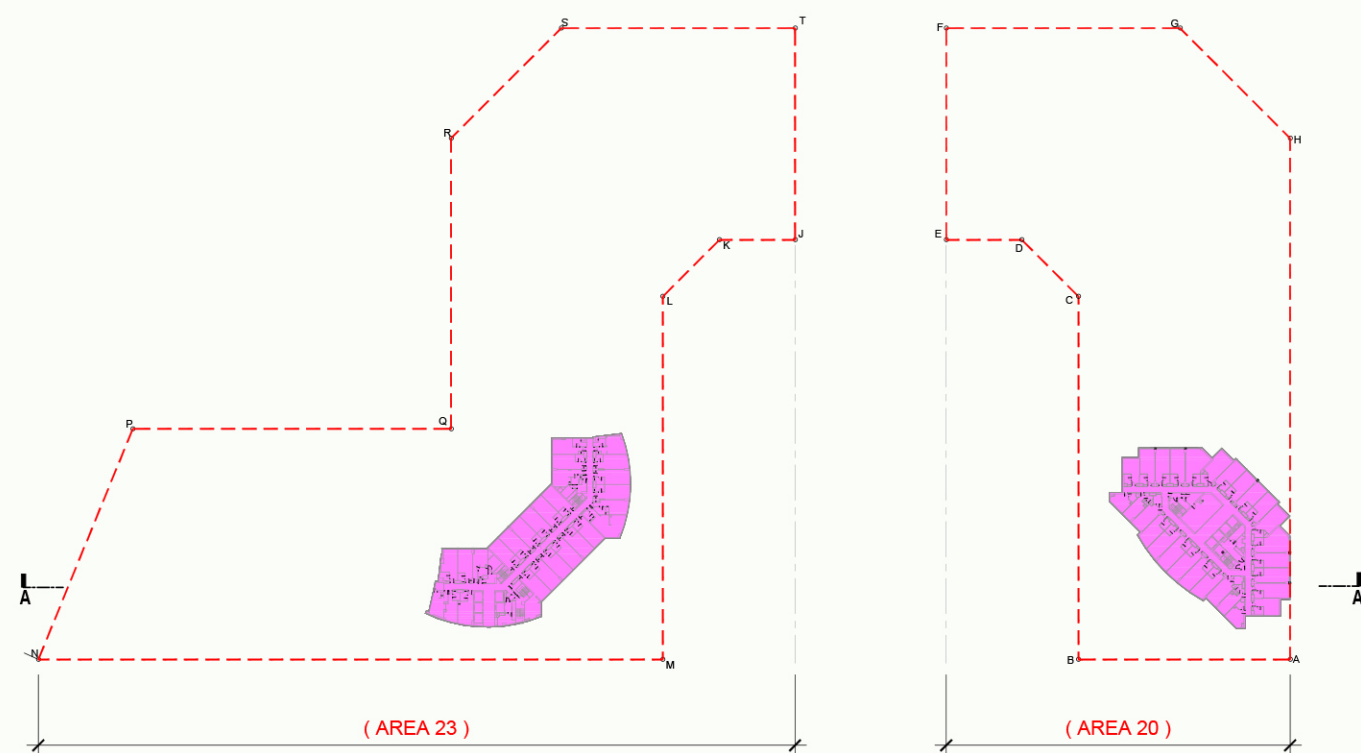
EXISTING LAYOUT

- APPLICATION SITE BOUNDARY
- RESIDENTIAL
- COMMERCIAL
(Existing Shopping Mall to be retained and does not form part of this Planning Application)
- RESIDENTIAL OPEN SPACE / LANDSCAPE AREA



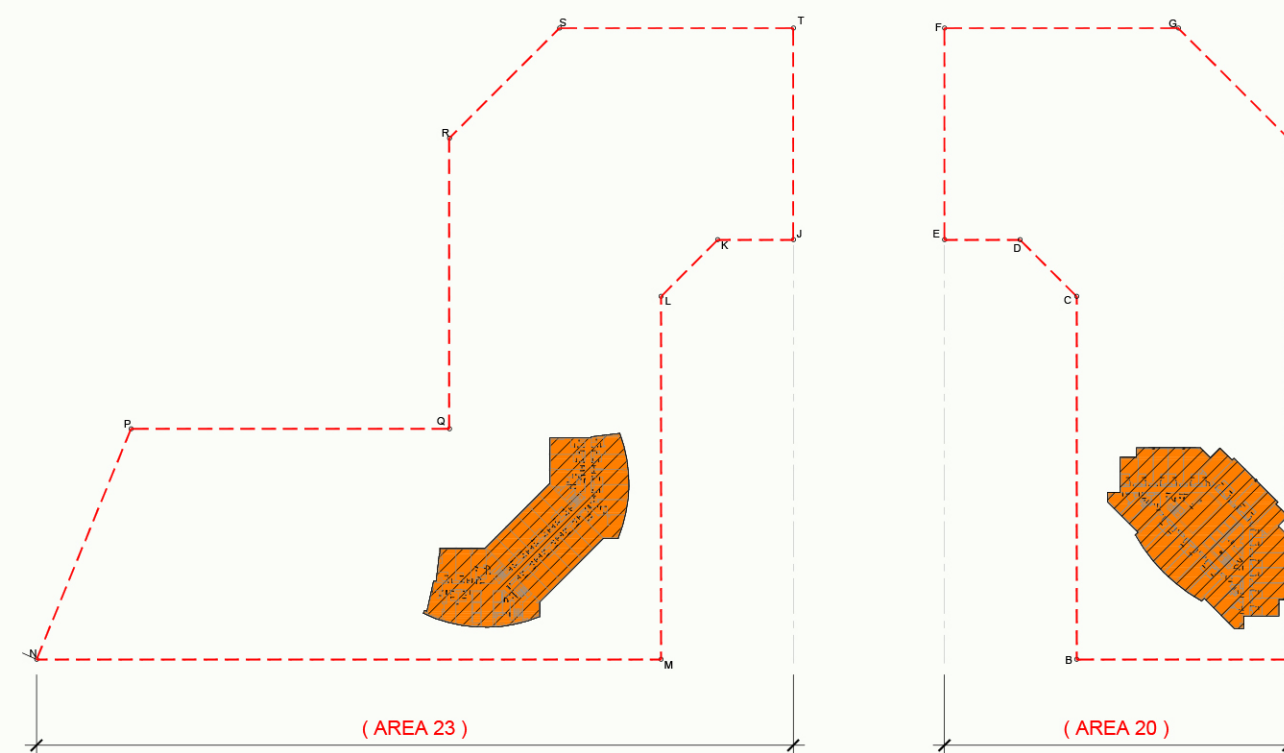
PROPOSED SCHEME

APPLICATION SITE BOUNDARY
HOTEL

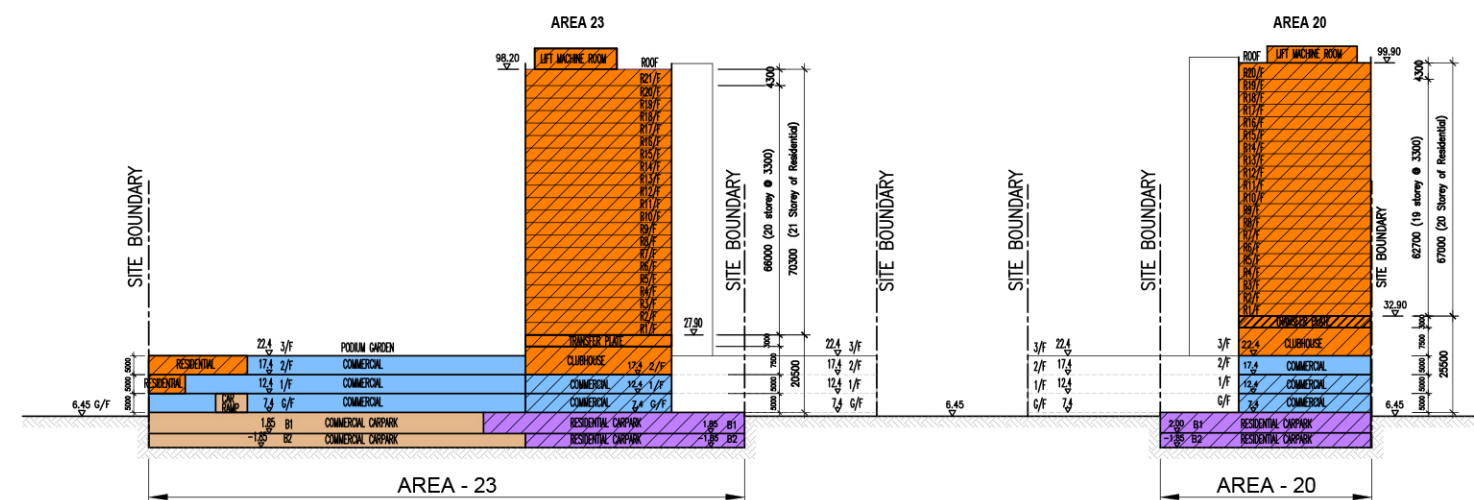
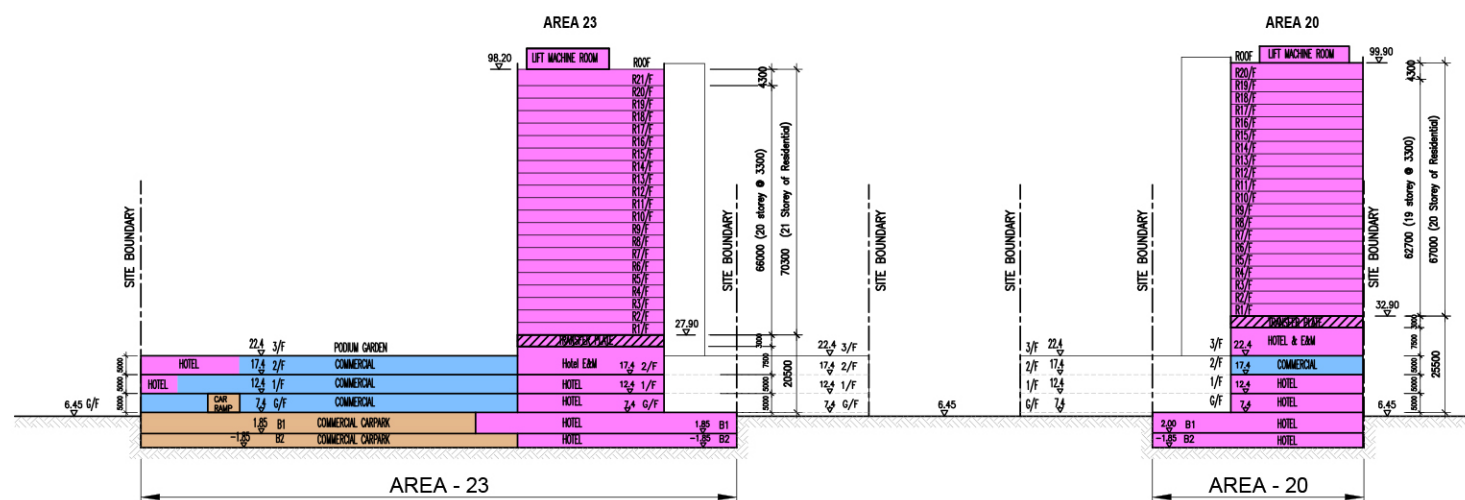
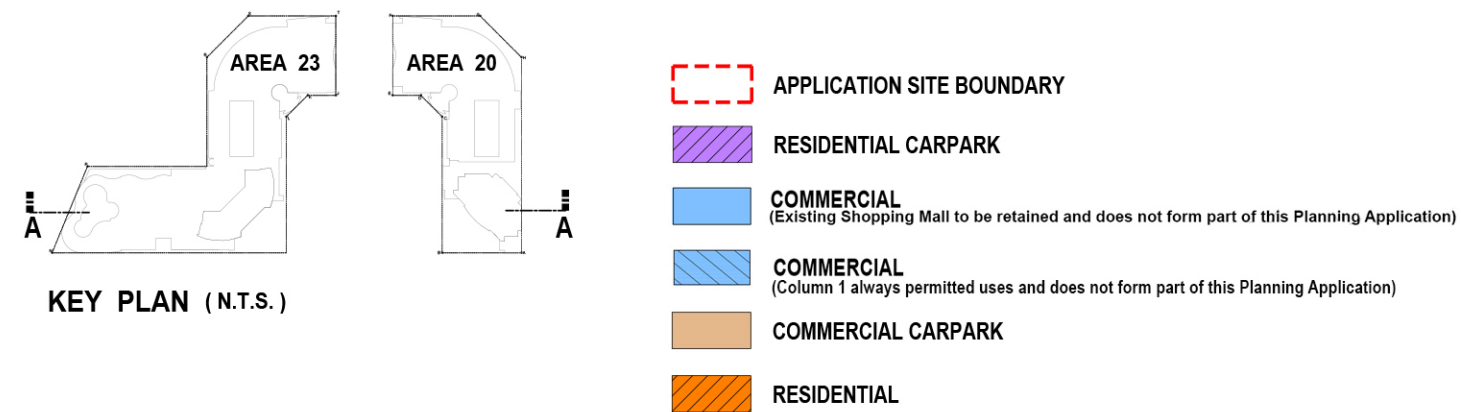
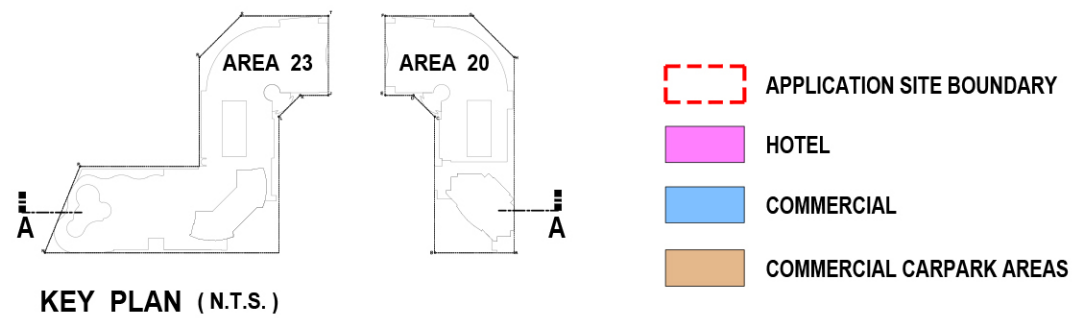


EXISTING LAYOUT

APPLICATION SITE BOUNDARY
RESIDENTIAL



PROPOSED SCHEME



Comparison of Uses Specified under the Occupation Permits and Proposed Development after the wholesale conversion of the Hotel

	Existing Development (under Occupation Permits)		Proposed Development after wholesale conversion of hotel	
	Area 20	Area 23	Area 20	Area 23
B2/F	<u>Shopping Mall</u> Carparks and ancillary accommodation for non-domestic use	<u>Shopping Mall</u> Carparks and ancillary accommodation for non-domestic use	<u>Shopping Mall</u> Carparks and ancillary accommodation for non-domestic use	<u>Shopping Mall</u> Carparks and ancillary accommodation for non-domestic use
	<u>Hotel</u> Carparks, staff canteen, changing rooms, hotel offices, back-of-house facilities and ancillary accommodation for non-domestic use	<u>Hotel</u> Carparks, staff canteen, changing rooms, hotel offices, back-of-house facilities and ancillary accommodation for non-domestic use	<u>Residential</u> Carparks	<u>Residential</u> Carparks
B1/F	<u>Shopping Mall</u> Carparks, lorry carparks, loading/unloading platform, and ancillary accommodation for non-domestic use	<u>Shopping Mall</u> Carparks, lorry carparks, loading/unloading platform, shopping arcade and ancillary accommodation for non-domestic use	<u>Shopping Mall</u> Carparks, lorry carparks and loading/unloading platform and ancillary accommodation for non-domestic use	<u>Shopping Mall</u> Carparks, lorry carparks and loading/unloading platform, and ancillary accommodation for non-domestic use
	<u>Hotel</u> Carparks, lorry carparks, loading/unloading platform, health club, hotel offices, back-of-house facilities and ancillary accommodation for non-domestic use	<u>Hotel</u> Carparks, lorry carparks, loading/unloading platform, fitness room, hotel restaurant, games rooms, hotel offices, back-of-house facilities and ancillary accommodation for non-domestic use	<u>Residential</u> Carparks, lorry carparks and loading/unloading platform	<u>Residential</u> Carparks, lorry carparks and loading/unloading platform
G/F	<u>Shopping Mall</u> Shopping arcade for non – domestic use	<u>Shopping Mall</u> Shopping arcade for non-domestic use, cinema lobby	<u>Shopping Mall</u> Existing shopping arcade for non –domestic use	<u>Shopping Mall</u> Existing shopping arcade for non-domestic use and cinema

	Existing Development (under Occupation Permits)		Proposed Development after wholesale conversion of hotel	
	Area 20	Area 23	Area 20	Area 23
		and restaurants		lobby
	<u>Hotel</u> Hotel entrance lobby, lounge and front office	<u>Hotel</u> Hotel entrance lobby, lounge and front office	<u>Residential & Commercial</u> Residential entrance lobby and commercial uses converted from hotel uses	<u>Residential & Commercial</u> Residential entrance lobby and commercial uses converted from hotel uses
1/F	<u>Shopping Mall</u> 4 mini cinemas, shopping arcade, fast food shop and ancillary accommodation for non-domestic use	<u>Shopping Mall</u> 4 mini cinemas, shopping arcade, restaurant and ancillary accommodation for non-domestic use	<u>Shopping Mall</u> Existing shopping arcade, fast food shop and ancillary accommodation for non-domestic use	<u>Shopping Mall</u> Existing shopping arcade and ancillary accommodation for non-domestic use
	<u>Hotel</u> Coffee shop and ancillary accommodation for non-domestic use	<u>Hotel</u> Coffee shop and ancillary accommodation for non-domestic use	<u>Residential & Commercial</u> Commercial uses converted from hotel uses	<u>Residential & Commercial</u> Commercial uses converted from hotel uses
2/F	<u>Shopping Mall</u> Projection rooms for mini-cinemas and ancillary accommodation for non-domestic use	<u>Shopping Mall</u> Projection rooms for mini-cinemas, shopping arcade, restaurants and ancillary accommodation for non-domestic use	<u>Shopping Mall</u> Existing shopping arcade and ancillary accommodation for non-domestic use	<u>Shopping Mall</u> Existing shopping arcade, restaurants and ancillary accommodation for non-domestic use
	<u>Hotel</u> Shops and ancillary accommodation for non-domestic use	<u>Hotel</u> Ancillary accommodation for non-domestic use	<u>Residential</u> Plant rooms	<u>Residential</u> Clubhouse and plant rooms
3/F	<u>Hotel</u> Open tennis court, open children's play area, plant rooms and ancillary accommodation for non-	<u>Hotel</u> 2 open tennis court, open swimming pool, children's pool, poolside bar, pantry, open children's play area, artificial	<u>Residential</u> Clubhouse, open tennis court, open children's play area, plant rooms and ancillary accommodation for	<u>Residential</u> 2 open tennis court, open swimming pool, children's pool, open children's play area, artificial turf, plant

	Existing Development (under Occupation Permits)		Proposed Development after wholesale conversion of hotel	
	Area 20	Area 23	Area 20	Area 23
	domestic use	turf, plant rooms and ancillary accommodation for non-domestic use	non-domestic and domestic uses	rooms and ancillary accommodation for non-domestic use and domestic uses
5/F to 27/F (inclusive)*	Hotel guest rooms and ancillary accommodation for domestic use	Hotel guest rooms and ancillary accommodation for domestic use	Residential and ancillary accommodation for domestic use	Residential and ancillary accommodation for domestic use
28/F	/	Hotel guest rooms and ancillary accommodation for domestic use	/	Residential and ancillary accommodation for domestic use
R/F	/	/	Plant rooms	Plant rooms

*(N.B. 4th, 13th, 14th & 24th Floor numberings omitted)

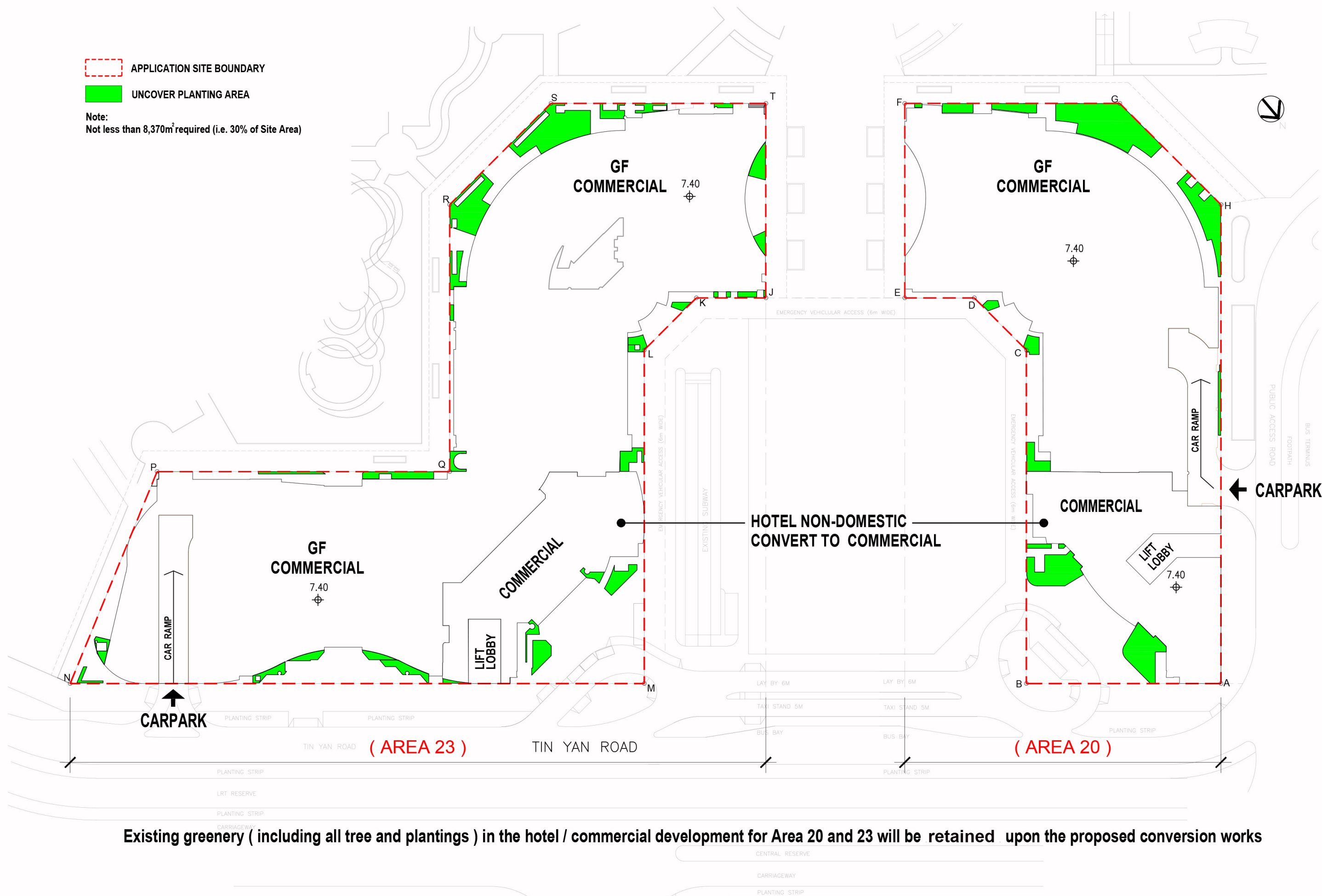
Appendix 3

Open Space and Greenery Diagram

 APPLICATION SITE BOUNDARY

 UNCOVER PLANTING AREA

Note:
Not less than 8,370m² required (i.e. 30% of Site Area)



Existing greenery (including all tree and plantings) in the hotel / commercial development for Area 20 and 23 will be retained upon the proposed conversion works

APPLICATION SITE BOUNDARY

UNCOVER PLANTING AREA

GRASS PAVING AREA

Note:
Not less than 8,370m² required (i.e. 30% of Site Area)

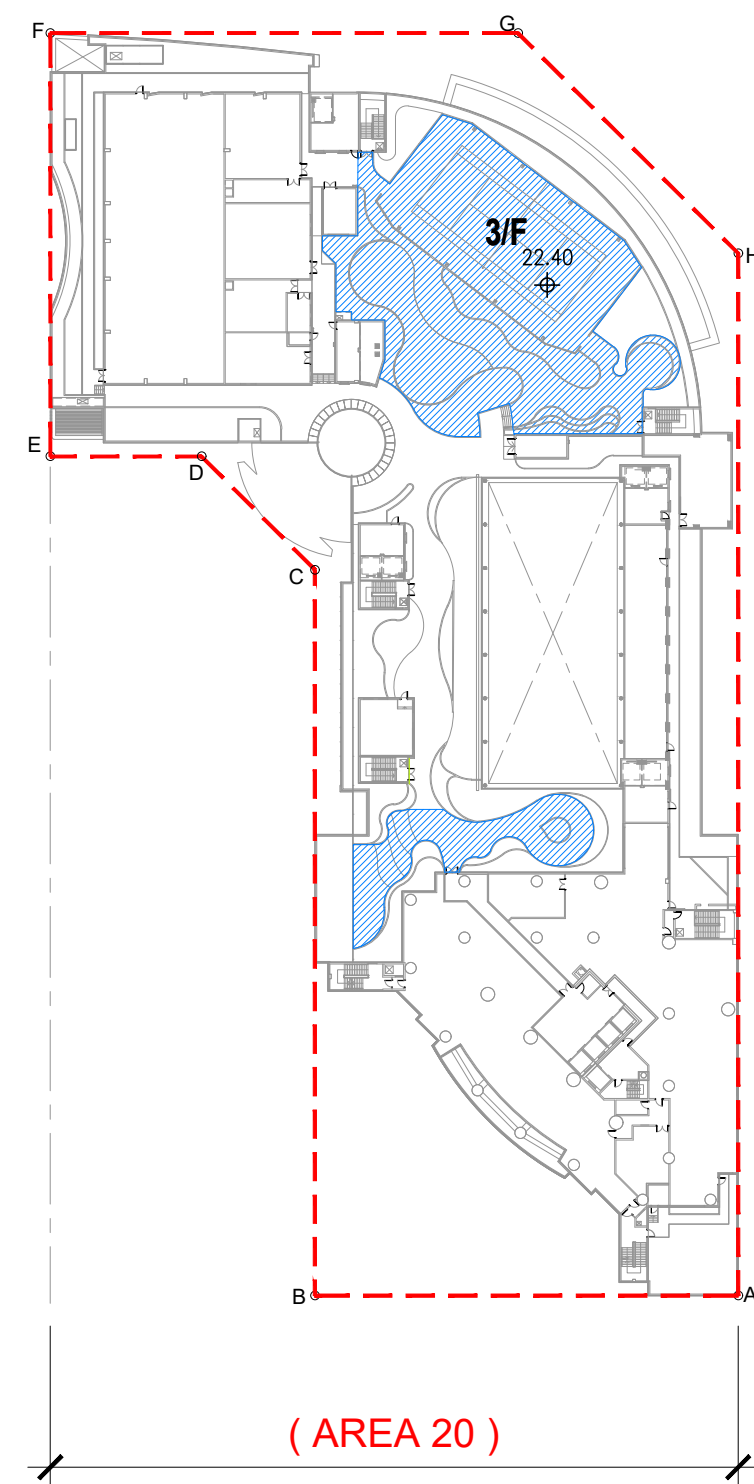
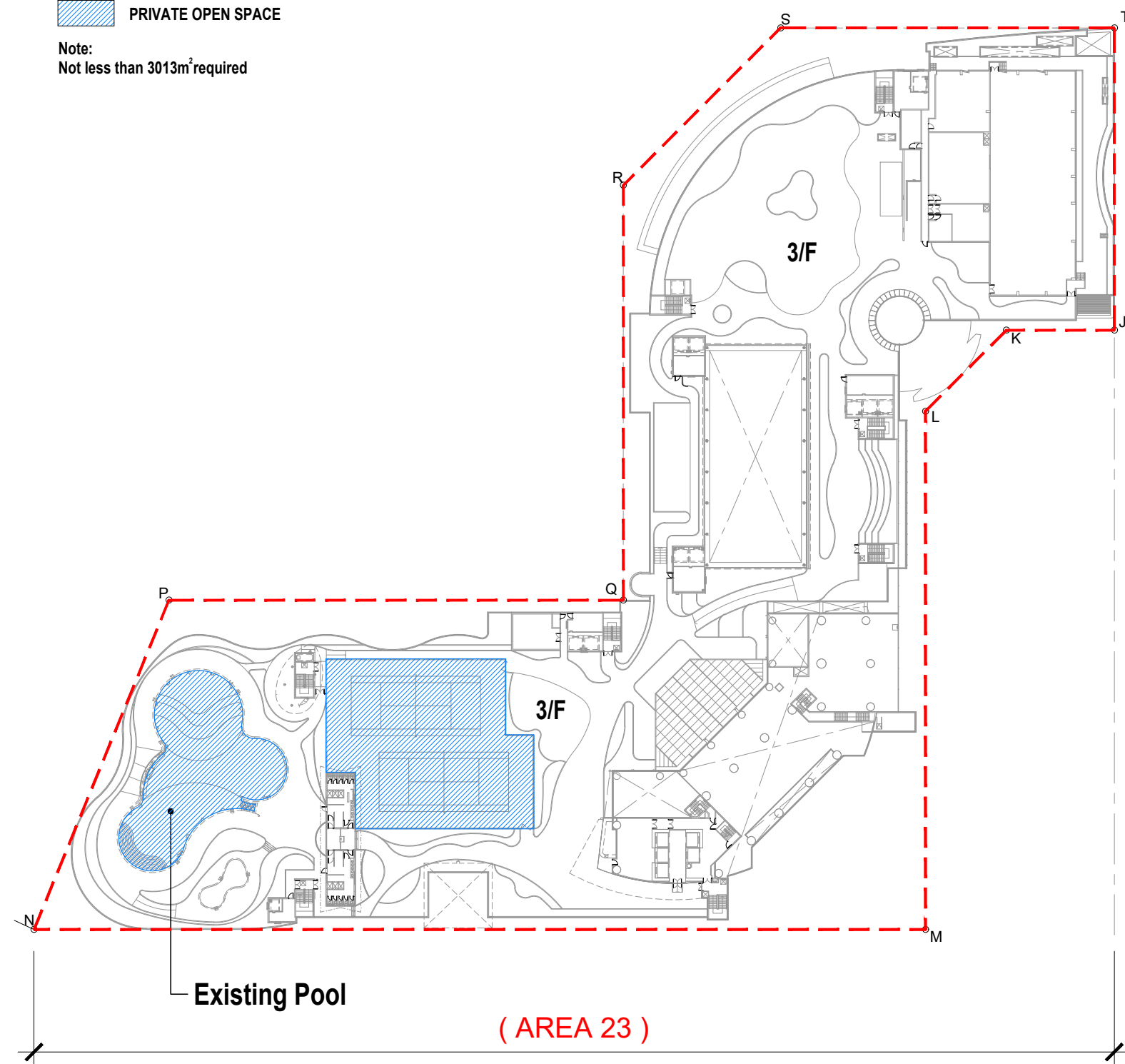


Existing greenery (including all tree and plantings) in the hotel / commercial development for Area 20 and 23 will be retained upon the proposed conversion works

APPLICATION SITE BOUNDARY

PRIVATE OPEN SPACE

Note:
Not less than 3013m² required



Appendix 4

Traffic Impact Assessment

S16 Planning Application
Proposed Residential Development at
Tin Shui Wai Town Lot No. 4

Revised Traffic Impact Assessment Report

September 2022



CTA Consultants Limited

志達顧問有限公司



1. INTRODUCTION

1.1 Background

1.1.1 CTA Consultants Limited (“CTA”) is commissioned by the Applicant to prepare a Traffic Impact Assessment Report in supporting the S16 Planning Application for the proposed residential development at Tin Shui Wai Town Lot No. 4, New Territories, as shown in **Figure 1.1**.

1.2 Study Objectives

1.2.1 The main objectives of this study are listed below:

- To assess the existing traffic condition in the vicinity of the proposed development;
- To forecast traffic flows on the adjacent road network in the design year 2031;
- To estimate the likely traffic generated by the proposed development;
- To appraise the traffic impact induced by the proposed development on the adjacent road network;
- To recommend traffic improvement measures to alleviate any foreseeable traffic problem to the surrounding road network, if any.

2. THE PROPOSED DEVELOPMENT

2.1 Site Location

2.1.1 The proposed development is located at Tin Shui Wai Lot No. 4, New Territories as shown in **Figure 1.1**.

2.2 Development Proposal

2.2.1 The existing development on the site comprises a shopping mall of 46,532m² GFA and two hotel buildings of 61,531 m² GFA. The subject of this planning application is the proposed conversion of the upper floors of the two existing hotel buildings for residential uses. G/F and 1/F of the hotels that currently integrated with the shopping mall will be for commercial uses. The existing shopping mall and the basement will be retained. The hotel back of house located at the basement will be converted for residential parking.

2.2.2 Development parameters of the proposed development are listed in **Table 2.1**.

Table 2.1 Development Parameters of the Proposed Development after Conversion

Site Location		Tin Shui Wai Lot No. 4, New Territories
Residential	Proposed Use	Residential Use
	Site Area	27,900 m ²
	Nos. of Block & storeys	2 Blocks with 20-21 storeys
	Total Domestic GFA (m ²)	55,668 m²
Commercial	Total Commercial GFA (m ²)	52,395 m²

2.2.3 It is anticipated that the proposed development will be commissioned in year 2028. Therefore, design year 2031 (i.e. 3 years after the planned commencement year of the proposed development) is adopted for the Traffic Impact Assessment.

3. EXISTING TRAFFIC CONDITIONS

3.1 Existing Road Network

3.1.1 The proposed development is located in Tin Shui Wai Lot No.4, New Territories as shown in **Figure 1.1**. It is accessed by a road connecting Tin Yan Road and a pick-up/drop-off area.

3.1.2 Tin Yan Road is a three-lane one way road in the east of Subject Site, and connects to Tin Shing Road in the north and Tin Cheung Road in the south.

3.2 Critical Junctions in Surrounding Area

3.2.1 In order to study the existing traffic condition of the area as requested by the Transport Department, a comprehensive traffic survey has been conducted.

3.2.2 Based on the in-coming and out-going vehicular routes to/from the proposed development, 22 key junctions are identified for this Traffic Impact Assessment (TIA) as listed in **Table 3.1**. The location of the junctions is shown in **Figure 3.1**, while the details of each are illustrated in **Figures** from **3.2** to **3.23**, respectively.

Table 3.1 Identified Key Junctions

Ref.	Junction	Type	Figure No.
1	Tin Wah Road/ Tin Ying Road	Signal	3.2
2	Tin Wah Road/ Tin Shui Road	Roundabout	3.3
3	Tin Shui Road/ Tin Tan Street	Signal	3.4
4	Tin Shui Road/ Tin Wing Road	Signal	3.5
5	Tin Shui Road/ Access Road to Chestwood Court	Signal	3.6
6	Tin Shui Road/ Access Road to Tin Shui Bus Terminal	Signal	3.7
7	Tin Yiu Road/ Tin Wu Road	Signal	3.8
8	Tin Yiu Road/ Tin Ho Road	Signal	3.9
9	Tin Yiu Road/ Tin Fuk Road/ Ping Ha Road	Signal	3.10
10	Tin Wah Road/ Tin Shing Road	Signal	3.11
11	Tin Wing Road/ Tin Shing Road	Signal	3.12
12	Tin Wing Road/ Tin Yan Road	Signal	3.13
13	Tin Shing Road/ Tin Yan Road	Signal	3.14
14	Tin Shing Road/ Tin Lung Road	Signal	3.15
15	Tin Shing Road/ Tin Cheung Road	Signal	3.16
16	Tin Shing Road/ Tin Pak Road/ Tin Wu Road	Signal	3.17
17	Tin Shui Road/ Tin Wu Road	Signal	3.18
18	Tin Shing Road/ Tin Fuk Road	Signal	3.19
19	Tin Fuk Road/ Long Tin Road	Signal	3.20
20	Tin Wah Road/ Tin Kwai Road	Signal	3.21
21	Tin Kwai Road/ Tin Lung Road	Signal	3.22
22	Tin Wah Road/ Tin Tsz Road/ Wetland Park Road	Signal	3.23

3.2.3 Due to the epidemic situation, the traffic survey in 2022 may not be representative. Yet, in the following report, traffic flows obtained from the in-house survey conducted in March 2019 for the previous planning application A/TSW/72 was adopted. The previous survey was conducted during the morning and evening peak periods on a typical weekday. Analysis of the observed traffic data indicates that the AM and PM peak hour flows occurred from 7:30am to 8:30am and from 6:00pm to 7:00pm respectively. The 2019 observed traffic flows are presented in **Figure 3.24**.

Baseline Traffic Flow

- 3.2.4 The growth factor of **+0.72%** (please refer section 4.2.6) for **3 years** is applied to the surveyed traffic flow, and demonstrated as “Baseline Flows”. It shows in **Figure 3.25** for the use in the later section of this report.
- 3.2.5 The existing performance base on the “Baseline Flows” of the identified critical junction was assessed. The results are summarised in **Table 3.2** and the junction calculation sheets are attached in **Appendix A**.
- 3.2.6 The assessment results in **Table 3.2** indicate that all critical junctions are at present operating within their capacities during the peak hours.

Table 3.2 Existing Operational Performance of Key Junctions in 2022

Ref.	Junction	Method of Control	Year 2022 RC/RFC ⁽¹⁾	
			AM Peak	PM Peak
1	Tin Wah Road/ Tin Ying Road	Signal	28%	43%
2	Tin Wah Road/ Tin Shui Road	Roundabout	0.59	0.59
3	Tin Shui Road/ Tin Tan Street	Signal	27%	107%
4	Tin Shui Road/ Tin Wing Road	Signal	73%	71%
5	Tin Shui Road/ Access Road to Chestwood Court	Signal	177%	129%
6	Tin Shui Road/ Access Road to Tin Shui Bus Terminal	Signal	46%	50%
7	Tin Yiu Road/ Tin Wu Road	Signal	143%	122%
8	Tin Yiu Road/ Tin Ho Road	Signal	61%	99%
9	Tin Yiu Road/ Tin Fuk Road/ Ping Ha Road	Signal	50%	61%
10	Tin Wah Road/ Tin Shing Road	Signal	105%	169%
11	Tin Wing Road/ Tin Shing Road	Signal	273%	311%
12	Tin Wing Road/ Tin Yan Road	Signal	167%	223%
13	Tin Shing Road/ Tin Yan Road	Signal	264%	303%
14	Tin Shing Road/ Tin Lung Road	Signal	47%	72%
15	Tin Shing Road/ Tin Cheung Road	Signal	101%	141%
16	Tin Shing Road/ Tin Pak Road/ Tin Wu Road	Signal	31%	90%
17	Tin Shui Road/ Tin Wu Road	Signal	100%	172%
18	Tin Shing Road/ Tin Fuk Road	Signal	68%	64%
19	Tin Fuk Road/ Long Tin Road	Signal	43%	101%
20	Tin Wah Road/ Tin Kwai Road	Signal	64%	113%
21	Tin Kwai Road/ Tin Lung Road	Signal	100%	178%
22	Tin Wah Road/ Tin Tsz Road/ Wetland Park Road	Signal	47%	103%

Notes: (1) RC = Reserve Capacity
RFC = Ratio of Flow to Capacity for Priority Junction

3.2.7 The assessment results in **Table 3.2** indicate that all key junctions are operating with ample capacities during the peak hours in 2022.

3.3 Internal Transport Facilities Provisions

3.3.1 According to the requirements as stipulated under the latest Hong Kong Planning Standards and Guidelines (HKPSG), the proposed Site shall provide the following internal transport facilities as summarized in **Table 3.3**.

Table 3.3. Proposed Internal Transportation Provision under the HKPSG Requirements

Proposed Development			Parking Requirement						L/UL Requirement		
			Private Car Parking Space (5m(L) x 2.5m(W) x 2.4m(H))					Visitors Car parking	Motor Cycle (2.4m x 1m)	Loading / Unloading Bay for Goods Vehicles (LGV: 7m(L) x 3.5 m(W) x 3.6m(H)) (HGV: 11m(L) x 3.5 m(W) x 4.7m(H))	
Private Housing	GFA	No. of Flat	GPS: 1 space per 4-7 flats			(Flat No. / GPS) x R1 x R2 x R3		Provision	More than 75 units per block should be provided at 5 visitor space per block in addition to the requirement	1 motor cycle parking space per 100-150 flats	Provision of min. 1 L/UL bay for goods vehicles for every 800 flats or part thereof, subject to a min. of 1 bay for each housing block
	FS ≤ 40	92	0.5	1	R3	Low end	= (92/7) x 0.5 x 1 x 1.1 = 7.2	8 to 13			
						High end	= (92/4) x 0.5 x 1 x 1.1 = 12.7				
	40 <FS ≤ 70	987	1.2	1	1.1	Low end	= (987/7) x 1.2 x 1 x 1.1 = 186.1	187 to 326	= 2 blocks x 5 = 10	Low end : = 1,102 / 150 = 7.3 High end : = 1,102 / 100 = 11.0	= 2 blocks x 1 = 2
						High end	= (987/4) x 1.2 x 1 x 1.1 = 325.7				
	70 < FS ≤ 100	13	2.4	1	1.1	Low end	= (13/7) x 2.4 x 1 x 1.1 = 4.9	5 to 9			
						High end	= (13/4) x 2.4 x 1 x 1.1 = 8.6				
	100 < FS ≤ 130	10	4.1	1	1.1	Low end	= (10/7) x 4.1 x 1 x 1.1 = 6.4	7 to 12			
						High end	= (10/4) x 4.1 x 1 x 1.1 = 11.3				
	Sub-total	1,102				207 to 360			10	8 to 12	2
Commercial (Retail)	About 52,395 m²		1 car space per 150-300m²		Low end	= 52,395 / 300 = 174.7	175	/	5 to 10% of Total provision for private Cars	1 loading/unloading bay for goods vehicles for every 800 to 1200 m², or part thereof GFA	
					High end	= 52,395 / 150 = 349.3	350		Low end : = 175 x 5% = 8.8	Low end : = 52395 / 1200 = 43.7	
									High end : = 350 x 10% = 35	High end : = 52395 / 800 = 65.5	
	Sub-total		175 to 350			9 to 35			44 to 66		
Proposed Transport Provision		Residential					Commercial				
		Car Park		Visitor Parking	Motor Cycle	L/UL	Car Park (existing retail parking)	Motor Cycle	L/UL (existing retail L/UL)		
		287		10	12	2	616	22	49		

3.4 Public Transport Services in the Vicinity of the Proposed Development

3.4.1 Numerous road-based public transport services are provided in vicinity of the proposed development. Details of the current services of franchised buses and GMB routes within 500 meters catchment area are listed in **Table 3.4**, and the location of the nearby public transport stations is shown in **Figure 3.26**.

Table 3.3 Public Transport Services in the Vicinity of the Proposed Development

Service	Route	Origin - Destination	Headway (min)
Franchised Buses	69C ^{1,3}	Tin Yan Estate – Kung Tong Ferry	13 dep only
	69M	Tin Shui Wai Centre – Kwai Fong Station	5 - 20
	69P ^{1,3}	Tin Yiu – Kwai Fong Station	12 - 20
	69X	Tin Shui Estate – Jordan (To Wah Road)	14 - 20
	265B	Tin Heng Estate – Mong Kok (Park Avenue)	5 - 20
	265S ^{1,3}	Tin Shui Wai Town Centre – Tai Po Industrial Estate	2 dep only
	269A ^{1,3}	Tin Sau Road – Kwai Chung (Kwai Fong Estate)	6 dep only
	269B	Tin Shui Wai Town Centre – Hung Hom Ferry	20
	269C	Tin Shui Wai Town Centre – Kung Tong Ferry	5 - 15
	269D	Tin Fu – Lek Yuen	5 - 20
	269M	Tin Yan Estate – Cho Yiu	14 - 20
	269P ^{1,3}	Kwai Chung (Kwai Fong Estate) – Tin Heng Estate	6 dep only
	269S ^{1,3}	Tin Shui Wai Town Centre – Kung Tong Ferry	2 dep only
	276	Tin Tsz – Sheung Shui	15 - 20
	276A	Tin Heng Estate – Tai Ping	5 - 9
	276B	Tin Fu – Choi Yuen	15 - 20
	967	Tin Shui Wai North (Tin Yan Estate) – Admiralty Station (West)	15 - 20
	967X ^{1,3}	Tin Shui Wai (Tin Yan Estate) – Causeway Bay (Moreton Terrace)	3 dep only
	969	Tin Shui Wai Town Center – Causeway Bay (Moreton Terrace)	8 - 15
	969A ^{1,3}	Tin Shui Wai Town Centre – Admiralty (Lippo Centre)	6 dep only
	969B ^{1,3}	Tin Shui Wai Town Centre – Wan Chai	7 dep only
	969C ^{1,3}	Tin Shui Wai (Tin Chung Court) – Taikoo (Kornhill Plaza)	1 dep only
	969P ¹	Tin Shui Wai Town Centre – Causeway Bay (Moreton Terrace)	10 - 16
	969X ^{1,3}	Tin Shui Wai Town Centre – Causeway Bay	4 dep only
	A37	Hung Shui Kiu (Hung Yuen Road) – Airport (Ground)	30

Service	Route	Origin - Destination	Headway (min)
		Transportation Centre)	
	B1	Tin Tsz – Lok Ma Chau Station	7 - 12
	B2P	Tin Tsz Estate – Shenzhen Bay Port	5 - 10
	K73	Tin Heng – Yuen Long West	7 - 10
	K74	Tin Shui – Au Tau (Circular)	12 - 20
	K75P	Tin Shui – Hung Shui Kiu	10 - 15
	N30 ²	Yuen Long (East) – Tung Chung	1 dep only
	N30S ²	Yuen Long Station – Tung Chung Station	1 dep only
	N269 ²	Mei Foo – Tin Tsz Estate	14 - 20
	N 969 ²	Tin Shui Wai Town Centre – Causeway Bay (Moreton Terrace)	30
	264R	Tin Yiu – Tai Po Market	30
	E37	Tin Shui Wai Town Centre - airport	15-20
	E37c	Tin Shui Wai Town Centre - airport	2 dep only
	NA37	Tin Shui Wai Town Centre -Cathay Pacific City	4 dep only
GMB	79S ²	Lok Ma Chau Control Point – A Tin Shui Wai (Grandeur Terrace)	10 - 15
	610S ²	Tin Shui Wai (Tin Shui Estate) – Tsim Sha Tsui (Haiphong Road)	12 - 15
	618	Tin Shui Wai (Tin Yan Estate) – Shenzhen Bay Port	12 - 20
LRT	705	Tin Shui Wai (Circular)	5 - 6
	706	Tin Shui Wai (Circular)	5 - 7
	751	Yau Oi –Tin Yat	4 - 9
	751P	Tin Shui Wai – Tin Yat	7 - 15

Note:

(1) *Peak hour service only*

(2) *Night service only*

(3) *Weekday service only*

3.4.2 It reveals that the proposed development is currently well-served by the comprehensive public transport services in the vicinity.

4. FUTURE TRAFFIC CONDITION & TRAFFIC IMPACT ASSESSMENT

4.1 Design Year

4.1.1 It is anticipated that the proposed development would be completed in 2028 tentatively. In order to assess the possible traffic impacts to the local road network due to the proposed development, year 2031 (i.e. 3 years after construction work completion) has been adopted as the design year for this TIA.

4.2 Traffic Forecast

4.2.1 The traffic growth can be estimated by applying growth factor, based on the following information sources:

- I. Historical traffic growth in Annual Traffic Census (ATC) published by the Transport Department (TD).
- II. Territorial planning assumptions prepared by the Planning Department.

Historical Trend

4.2.2 Transport Department has traffic count stations in the vicinity of the proposed development. The traffic counts reported in the Annual Traffic Census over a period of six years, i.e. 2012 to 2018 are summarized in **Table 4.1**.

Table 4.1 Historical Traffic Data from Annual Traffic Census (ATC)

ATC Stn	Road Name	Annual Average Daily Traffic (AADT)							Avg. Annual Growth Rate
		2012	2013	2014	2015	2016	2017	2018	
5880	Tin Yiu Rd (From Ping Ha Rd to Tin Ho Rd)	15,780	15,910*	15,740*	15,610*	16,930	16,960	17,380	1.62%
5886	Tin Wah Rd (From Tin Shui Rd to Tin Shing Rd)	10,010	10,090*	9,980*	9,900*	10,190	10,420	10,680	1.09%
5890	Tin Wu Rd (From Tin Yiu Rd to Tin Shing Rd)	9,090	9,160*	9,060*	8,990*	9,740	8,160	8,360	-1.39%
Total		34,880	35,160	34,780	34,500	36,860	35,540	36,420	+0.72%

Note: *AADT estimated by Growth factor

**Due to the social movement in 2019 and COVID in 2020, the traffic flow will not be reliable and hence the growth rate will only take into account from 2016 to 2018

***As the traffic flow listed in the designated ATC stations are predicted, yet the flow will not be reliable and will not take it into the account.

Planning Data

- 4.2.3 Reference has also been made to the latest 2019-Based Territorial Population Employment Data Matrices (TPEDM) planning data published by the Planning Department for projection of population and employment within the study district from years 2019 to 2031. The average annual growth rates in terms of population and employment from 2019 to 2031 are tabulated in **Table 4.2**.

Table 4.2 2019-Based Planning Data from 2019 to 2031

Tin Shui Wai District				
Data	Year			Average Annual Growth Rate
	2019	2026	2031	
Population	279,950	283,250	276,050	<u>-0.14%</u>
Employment	35,050	33,100	31,950	<u>-0.92%</u>
Total	315,000	316,350	308,000	<u>-0.22%</u>

Adopted Growth Rate

- 4.2.4 A.A.D.T. of ATC indicates that the traffic flow of the local road network has an average annual growth rate of **+0.72%** from year 2012 to year 2018.
- 4.2.5 Whilst, the planning data indicates that the population and employment data of the study area are expected to grow with an average annual growth rate of -0.14% and -0.92% respectively from 2019 to 2031.
- 4.2.6 Therefore, the annual growth rate **+0.72%** p.a. has been adopted for projecting traffic forecasts from year 2022 to year 2031

4.3 Traffic Generations of Planned Adjacent New Developments

- 4.3.1 To fully reflect the growth traffic, trip generation of the future vicinity developments have been taken into consideration. The planned development is detailed in **Table 4.3**, shows the detailed location in **Figure 4.1**.

Table 4.3 Planned Adjacent Developments in the Vicinity

Planning Application No.	Development Site	Site area	Applied use	Use	Total floor area	Development Parameter
A/TSW/64	Tin Shui Wai Planning Area 33 (Tin Shui Wai Town Lot 23)	18,232 m ²	Residential development	Domestic	91,051	1,938 Flats

4.3.2 The estimation on trip generations and attractions of the adjacent planned developments is shown in **Table 4.4**.

Table 4.4 Estimated Trip Generations and Attractions of Adjacent Developments

Application No.	Applied use/ Development	Planned/ Assumed Parameters	Trip rate and traffic generation/ attraction	Units	Weekday AM Peak		Weekday PM Peak	
					Gen.	Att.	Gen.	Att.
A/TSW/64	Residential development	91,051 m ²	Trip Rate	(pcu/hr/flat)	0.0718	0.0425	0.0286	0.037
			Traffic Gen/Att	(pcu/hr)	139	82	55	72

4.3.3 The above-mentioned traffic flows were added to the traffic flows to obtain the reference traffic flows as described in **Section 4.4**.

4.4 Reference Traffic Flow in Year 2031

4.4.1 The reference traffic flow is estimated by applying the adopted growth rate to the observed traffic flow in the current year, and the 2031 reference traffic flows for Junction 1 to 22 can be computed with the following calculation:

$$\begin{array}{lcl}
 \text{2031 Reference Traffic Flows} & = & \text{2019 (Observed Traffic Flows)} \times \text{Adopted Growth Factor i.e. +0.72\% p.a. for 12 years} + \text{Traffic Flows of Planned Adjacent Developments} \\
 \text{(without proposed development)} & &
 \end{array}$$

4.4.2 The 2031 reference traffic flows at surrounding critical junctions are shown in **Figure 4.2**.

4.5 Traffic Generation of the Existing Hotel

4.5.1 The traffic generated from the existing Hotel is estimated and shown in **Table 4.5**

Table 4.5 Traffic Generation from the Existing Hotel

Hotel Use		Weekday AM Peak		Weekday PM Peak	
		Gen.	Att.	Gen.	Att.
	1,102 hotel rooms	0.1329 (pcu/hr/flat)	0.1457 (pcu/hr/flat)	0.1290 (pcu/hr/flat)	0.1546 (pcu/hr/flat)
	Trips per hour (pcu/hr)	146	161	142	170

4.6 Traffic Generations of the Proposed Development

- 4.6.1 In order to estimate the traffic generation and attraction of the proposed development, reference has been made to the trip generation rates as stipulated in Volume 1 Chapter 3 Appendix D Table 1 of the latest T.P.D.M. published by Transport Department. The adopted trip rates are summarized in below **Table 4.6**.
- 4.6.2 Based on the adopted trip rate listed above and the development parameters in Table 2.1, the trip generated and attracted by the proposed development are estimated and summarized in the Table 4.6

Table 4.6 Adopted Trip Rate and Trips of Proposed Development

Residential Use										
			Trips Rates				Trips			
Use	Average Flat Size (sq. m.)	No. of Flats	Weekday AM Peak (pcu/hr/flat)		Weekday PM Peak (pcu/hr/flat)		Weekday AM Peak (pcu/hr)		Weekday PM Peak (pcu/hr)	
			Gen.	Att.	Gen.	Att.	Gen.	Att.	Gen.	Att.
Private Housing: High-Density	FS ≤ 40	92	0.0432	0.0326	0.0237	0.0301	4	3	2	3
Private Housing: High-Density	40 <FS ≤ 70	987	0.0888	0.0515	0.0356	0.048	88	51	35	47
Private Housing: Medium-Density	70 < FS ≤ 100	13	0.1887	0.0942	0.0862	0.1214	2	1	1	2
Private Housing: Medium-Density	100 < FS ≤ 130	10	0.2246	0.1157	0.1068	0.1468	2	1	1	1
	<i>Total</i>	<i>1,102</i>	<i>Sub-Total</i>				<i>96</i>	<i>56</i>	<i>39</i>	<i>53</i>
Commercial Use										
Additional Commercial GFA	5,863 (sq. m.)		0.2296	0.2434	0.3100	0.3563	13	19	23	27
<i>Sub-Total</i>							<i>13</i>	<i>19</i>	<i>23</i>	<i>27</i>
Total							109	75	63	80

4.6.3 The net changes in Traffic Generations due to the proposed changes in uses is shown in **Table 4.7**

Table 4.7 Net Changes in Traffic Generation

No. of Room	Weekday AM Peak		Weekday PM Peak	
	Gen. (pcu/hr)	Att. (pcu/hr)	Gen. (pcu/hr)	Att. (pcu/hr)
Proposed Use	109	75	63	80
Existing Use	146	161	142	170
Net Changes	-37	-86	-79	-90
For the sake of impact assessment, these changes are adopted	0	0	0	0

4.7 Traffic Forecast for Design Year 2031

- 4.7.1 The net traffic trips of the proposed development are then superimposed onto the year 2031 reference traffic flow (without the proposed development) to derive the year 2031 design traffic flow (with the proposed development).

$$\begin{array}{l} \text{2031 Design} \\ \text{Traffic Flows} \\ \text{(with proposed} \\ \text{development)} \end{array} = \begin{array}{l} \text{2031 Reference} \\ \text{Traffic Flows} \\ \text{(without proposed} \\ \text{development)} \end{array} + \begin{array}{l} \text{Net Changes in} \\ \text{Traffic} \\ \text{Generation due} \\ \text{to the Proposed} \\ \text{Development} \end{array}$$

- 4.7.2 From the **Table 4.7**, it demonstrates the net changes in traffic generation in both AM and PM peaks are assumed to be zero. Yet, the traffic flow for design year 2031 will be same as reference year 2031.
- 4.7.3 The 2031 design traffic flows at surrounding critical junctions are shown in **Figure 4.3**.

4.8 Operational Assessment

- 4.8.1 To assess traffic impacts due to the proposed development, operational assessment of the critical junctions identified in **Chapter 3** are carried out for both the reference (without the proposed development) and the design scenario (with the proposed development) in year 2031. The results are summarized in **Table 4.8**.

Table 4.8 Operational Performance of Key Junctions in Year 2031

Ref.	Junction	Method of Control	Year 2031 RC/RFC ⁽¹⁾	
			Reference and Design Scenarios	
			AM Peak	PM Peak
1	Tin Wah Road/ Tin Ying Road	Signal	20%	35%
2	Tin Wah Road/ Tin Shui Road	Roundabout	0.64	0.63
3	Tin Shui Road/ Tin Tan Street	Signal	20%	93%
4	Tin Shui Road/ Tin Wing Road	Signal	63%	61%
5	Tin Shui Road/ Access Road to Chestwood Court	Signal	157%	115%
6	Tin Shui Road/ Access Road to Tin Shui Bus Terminal	Signal	37%	40%
7	Tin Yiu Road/ Tin Wu Road	Signal	128%	107%
8	Tin Yiu Road/ Tin Ho Road	Signal	51%	88%
9	Tin Yiu Road/ Tin Fuk Road/ Ping Ha Road	Signal	40%	51%
10	Tin Wah Road/ Tin Shing Road	Signal	91%	151%
11	Tin Wing Road/ Tin Shing Road	Signal	182%	250%
12	Tin Wing Road/ Tin Yan Road	Signal	114%	179%
13	Tin Shing Road/ Tin Yan Road	Signal	186%	248%
14	Tin Shing Road/ Tin Lung Road	Signal	23%	49%
15	Tin Shing Road/ Tin Cheung Road	Signal	84%	97%
16	Tin Shing Road/ Tin Pak Road/ Tin Wu Road	Signal	22%	77%
17	Tin Shui Road/ Tin Wu Road	Signal	88%	155%
18	Tin Shing Road/ Tin Fuk Road	Signal	59%	54%
19	Tin Fuk Road/ Long Tin Road	Signal	34%	89%
20	Tin Wah Road/ Tin Kwai Road	Signal	53%	99%
21	Tin Kwai Road/ Tin Lung Road	Signal	89%	161%
22	Tin Wah Road/ Tin Tsz Road/ Wetland Park Road	Signal	38%	91%

Notes: (1) RC = Reserve Capacity for Signalized Junction
RFC = Ratio of Flow to Capacity for Priority Junction

4.8.2 Based on the assessment results given in **Table 4.8**, all key junctions would operate with ample capacities in both reference and design scenarios in year 2031

5. SUMMARY AND CONCLUSION

5.1 Summary

- 5.1.1 CTA Consultants Limited (CTA) is commissioned as the traffic consultant to prepare the Traffic Impact Assessment (TIA) and provide technical justifications in supporting the Planning Application for Tin Shui Wai Town Lot No. 4 from traffic engineering point of view.
- 5.1.2 Due to the epidemic situation, traffic survey in 2022 may not be representative. The traffic flows adopted in this report were based on traffic survey conducted in March 2019 for the previous planning application A/TSW/72 growth factor of 0.72% was then applied for the reference and design year.
- 5.1.3 Assessment of operational performance of the critical junctions indicates that all critical junctions will operate within their capacities in both reference and design year 2031.
- 5.1.4 As the traffic trips of both committed planning and proposed development do not produce significant impact on the surrounding road network. Therefore, the application is supported from the traffic points of view.

5.2 Conclusion

- 5.2.1 Traffic Impact Assessment (TIA) study indicates that no adverse traffic impact will be induced by the proposed development.
- 5.2.2 Therefore, the proposed residential development at Tin Shui Wai Town Lot No. 4 is reckoned feasible from traffic engineering point of view.

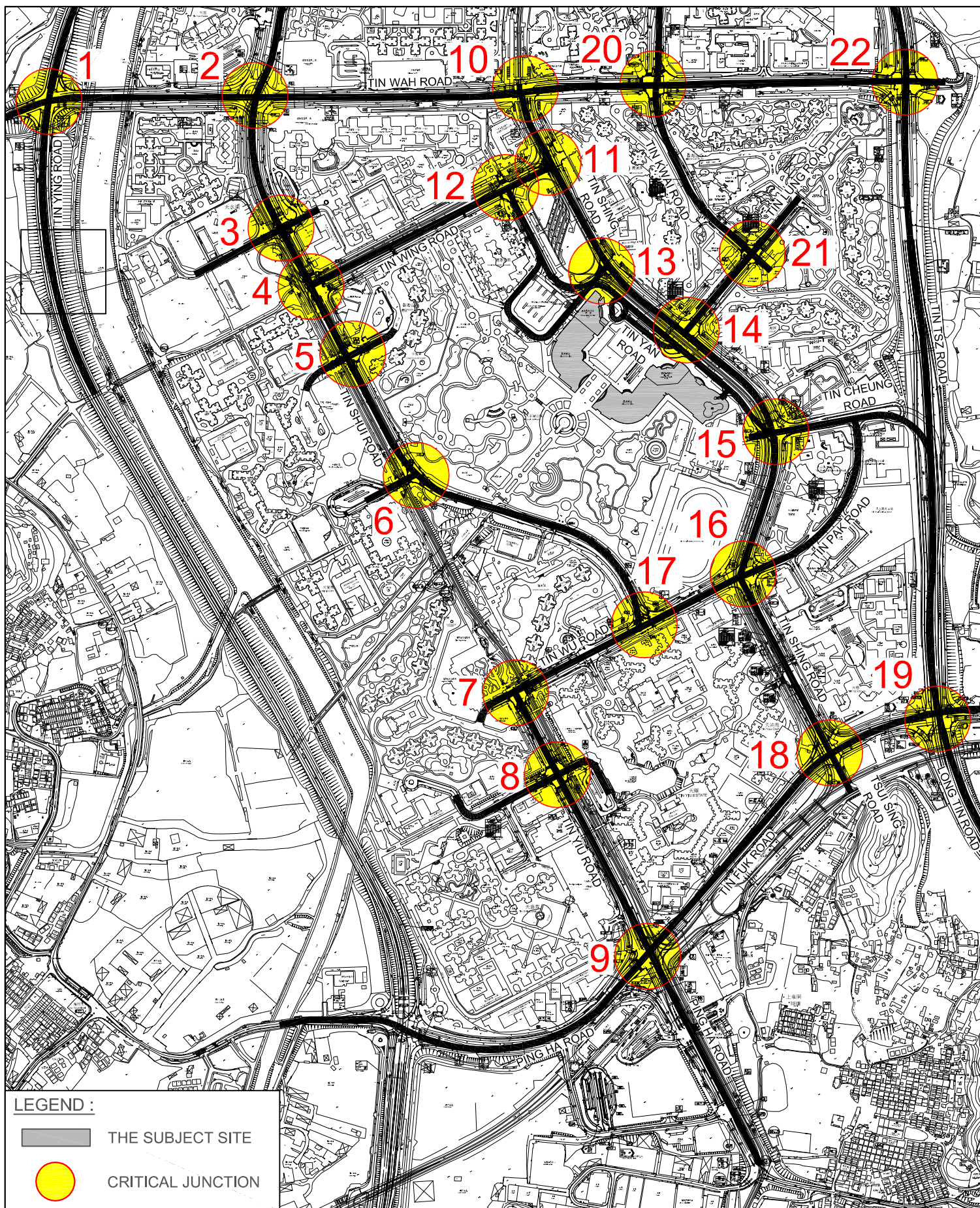



FIGURE NO.: 3.1		PROJECT TITLE: S16 Application Proposed Residential Development at Tin Shui Wai Town Lot No. 4	
PROJECT NO.: 22012HK		DRAWING TITLE:	
SCALE: 1 : 9000@A4	DATE: 11 APR 2022	KEY JUNCTIONS & EXISTING ROAD NETWORK	
		 CTA Consultants Limited 志達顧問有限公司	

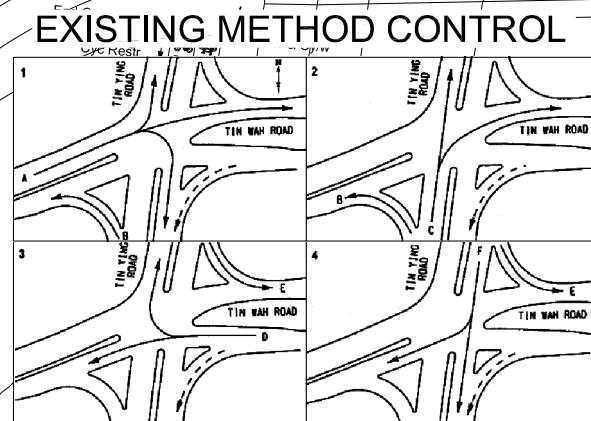
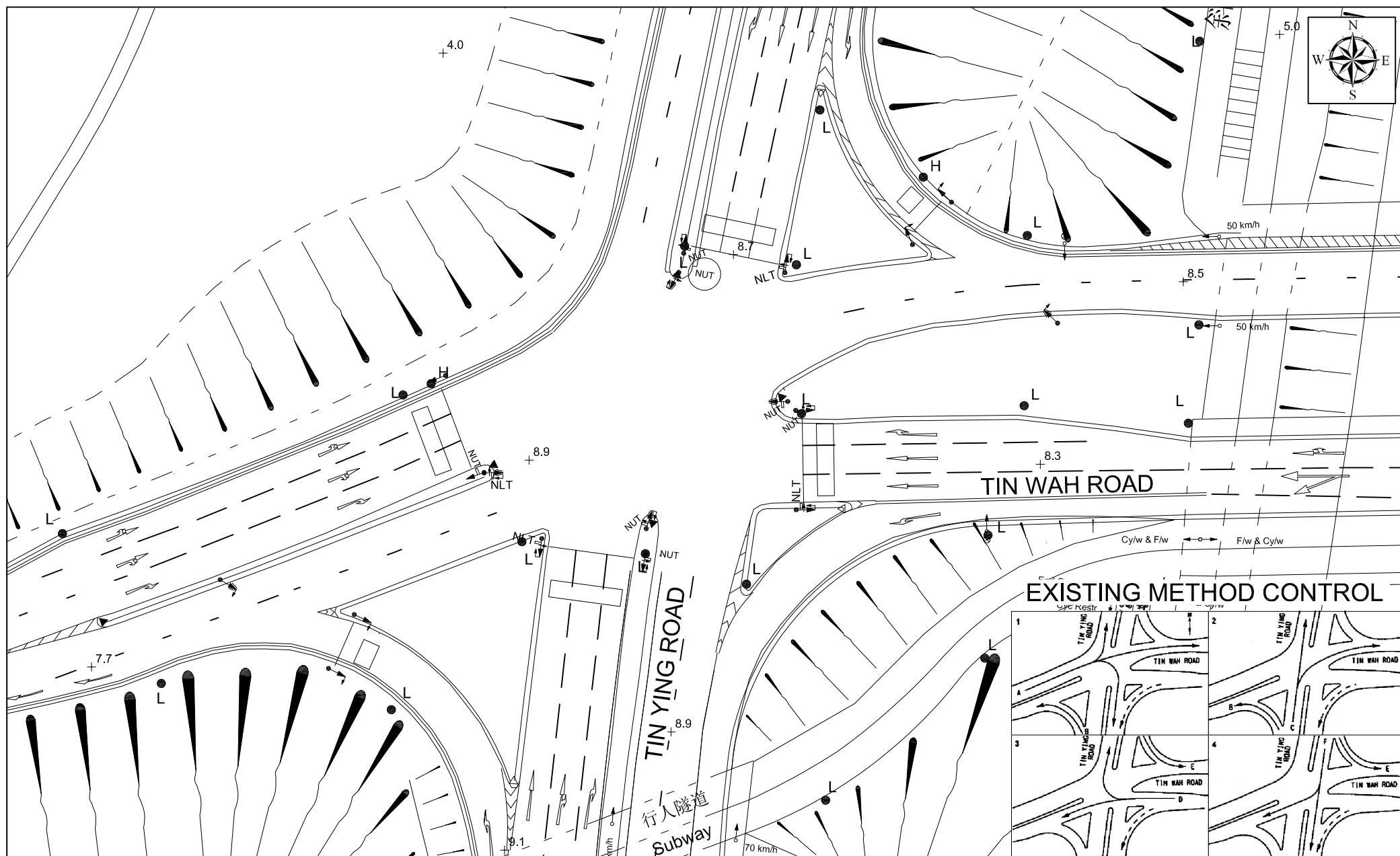

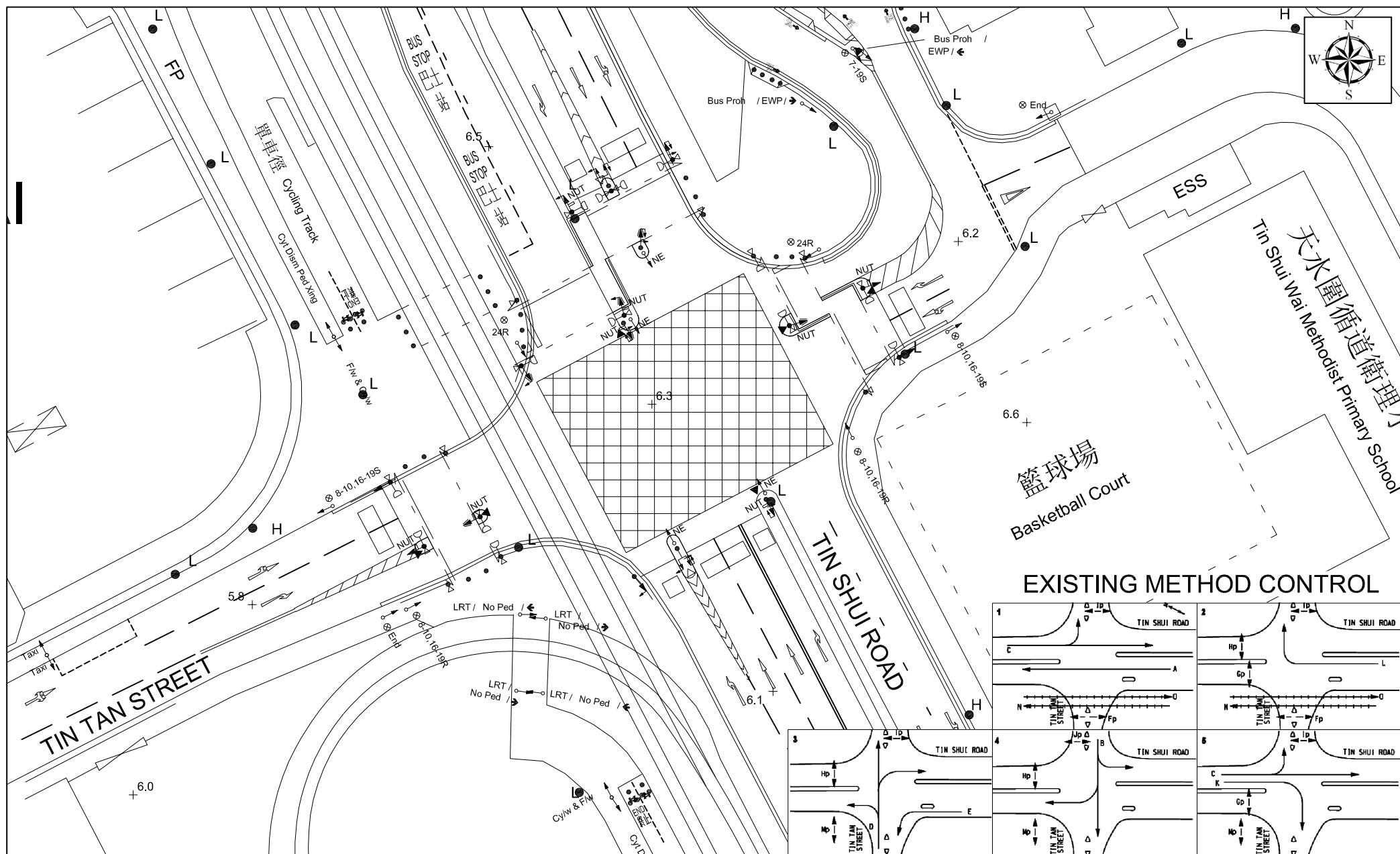


FIGURE NO.: <div>3.2</div>	PROJECT TITLE: S16 Application Proposed Residential Development at Tin Shui Wai Town Lot No. 4	<div>  <div> CTA Consultants Limited 志達顧問有限公司 </div> </div>
PROJECT NO.: 22012HK	DRAWING TITLE: <div>EXISTING JUNCTION LAYOUT OF TIN WAH ROAD / TIN YING ROAD (#1)</div>	
SCALE: 1 : 600@A4	DATE: 11 Apr 2022	



EXISTING METHOD CONTROL

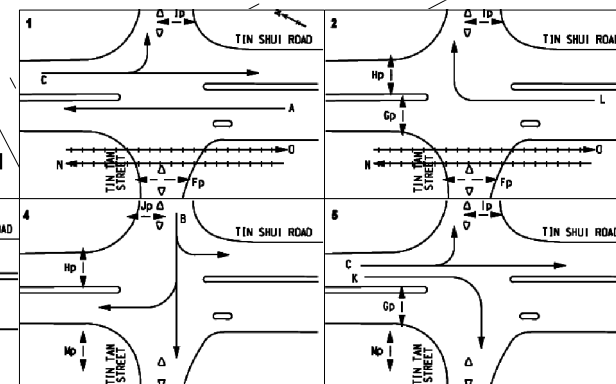
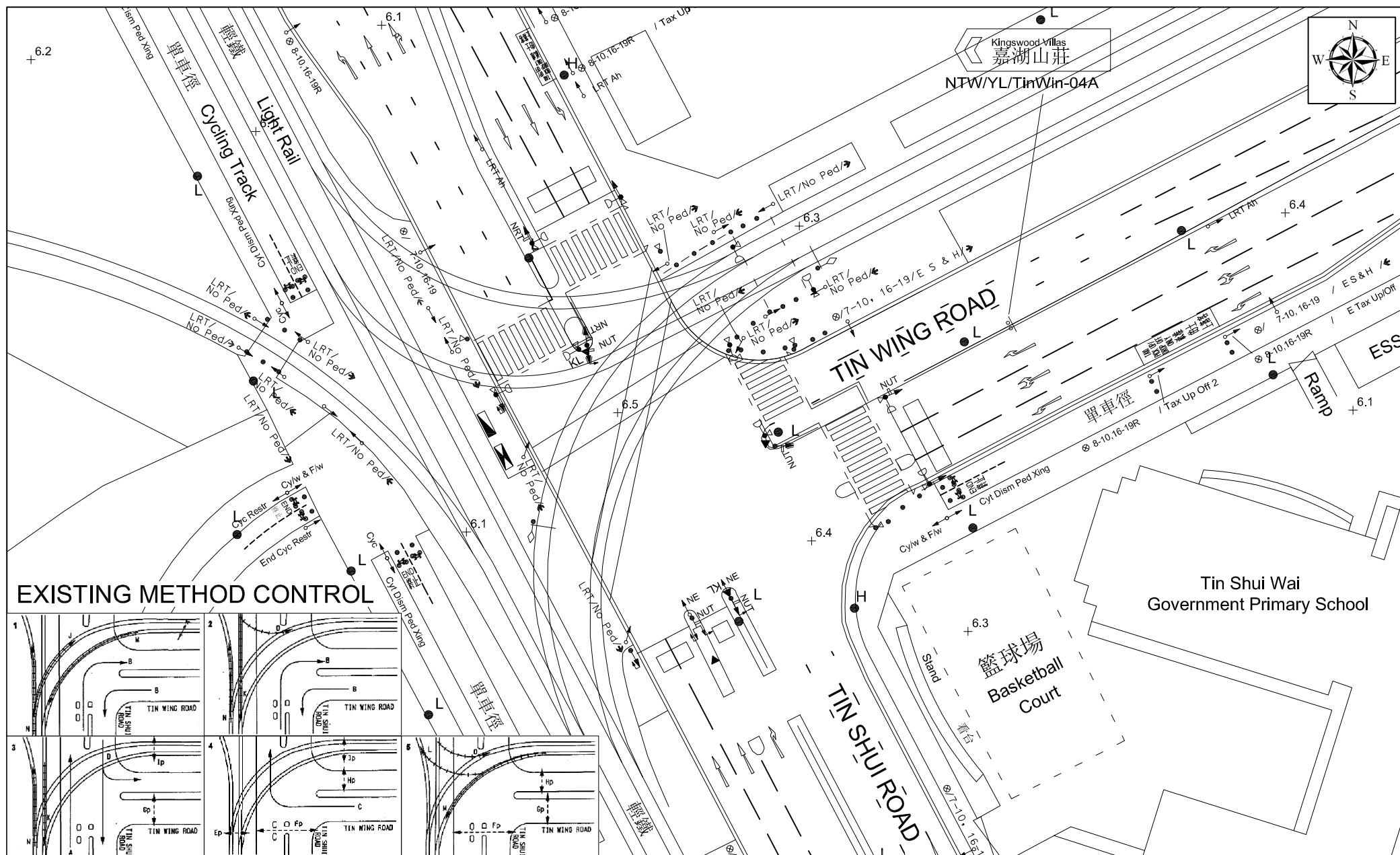


FIGURE NO.: 3.4	PROJECT TITLE: S16 Application Proposed Residential Development at Tin Shui Wai Town Lot No. 4	 CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 22012HK	DRAWING TITLE: EXISTING JUNCTION LAYOUT OF TIN SHUI ROAD / TIN TAN STREET (#3)	
SCALE: 1 : 600@A4	DATE: 11 Apr 2022	



EXISTING METHOD CONTROL

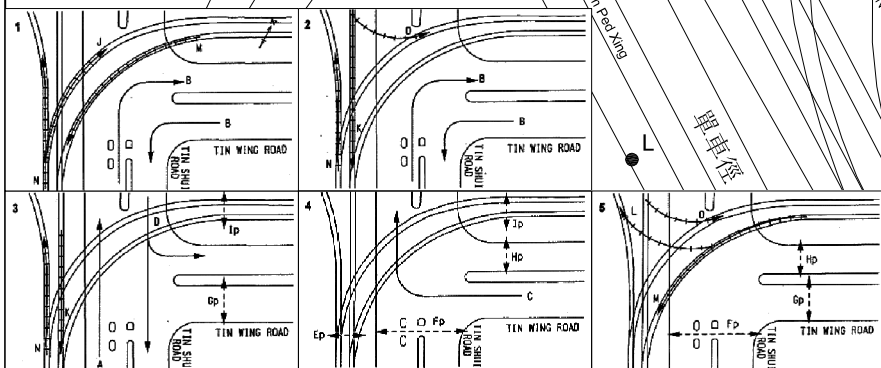

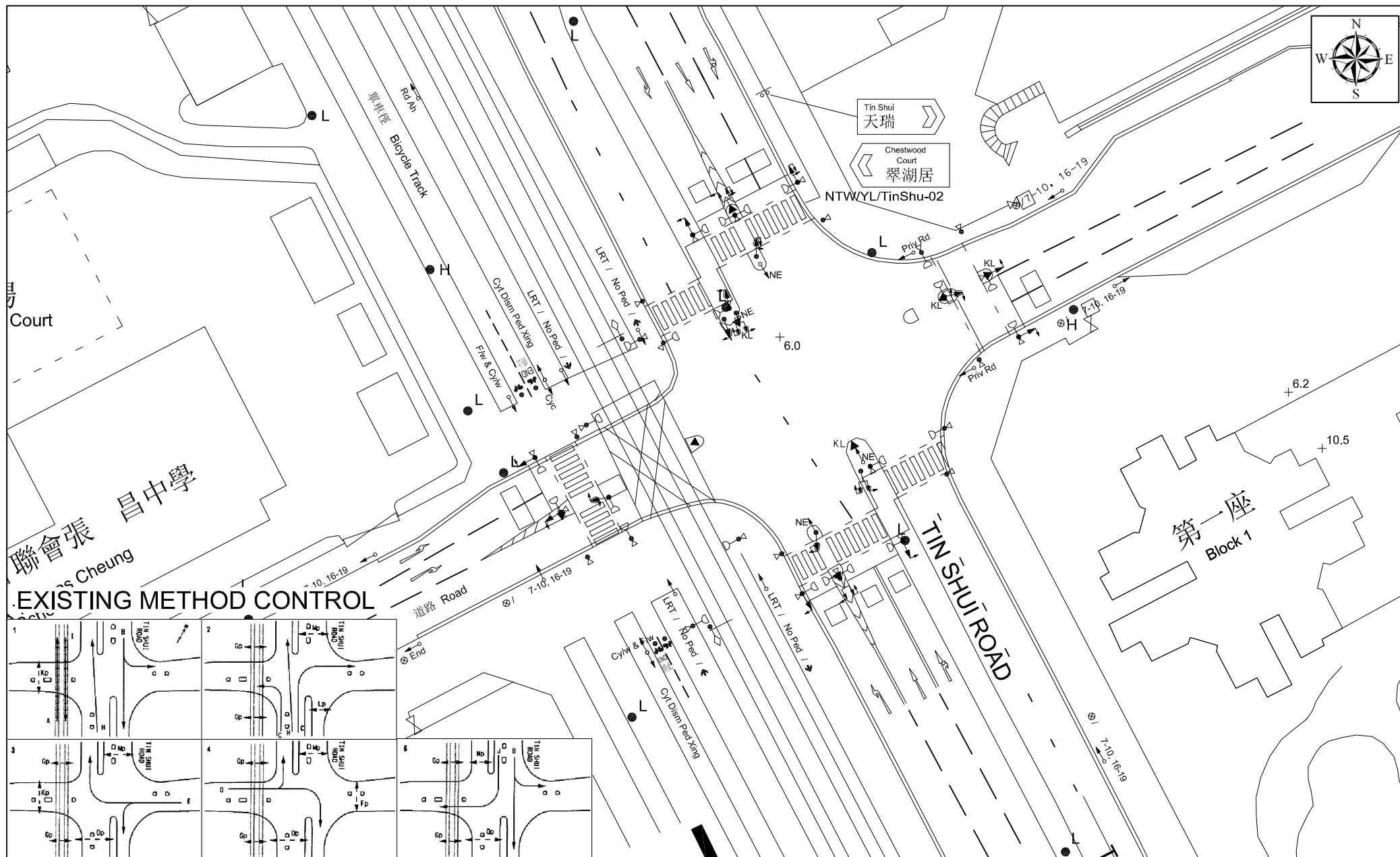
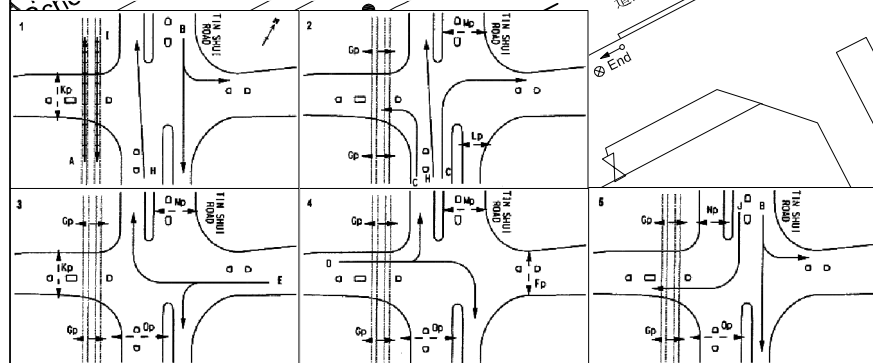



FIGURE NO.: <div>3.5</div>	PROJECT TITLE: S16 Application Proposed Residential Development at Tin Shui Wai Town Lot No. 4	<div>  <div> CTA Consultants Limited 志達顧問有限公司 </div> </div>
PROJECT NO.: 22012HK	DRAWING TITLE: <div>EXISTING JUNCTION LAYOUT OF TIN SHUI ROAD / TIN WING ROAD (#4)</div>	
SCALE: 1 : 600@A4	DATE: 11 Apr 2022	



EXISTING METHOD CONTROL



<p>FIGURE NO.:</p> <p>3.6</p>	<p>PROJECT TITLE:</p> <p>S16 Application Proposed Residential Development at Tin Shui Wai Town Lot No. 4</p>	 <p>CTA Consultants Limited 志達顧問有限公司</p>
<p>PROJECT NO.:</p> <p>22012HK</p>	<p>DRAWING TITLE:</p> <p>EXISTING JUNCTION LAYOUT OF TIN SHUI ROAD / ACCESS ROAD TO CHESTWOOD COURT (#5)</p>	
<p>SCALE:</p> <p>1 : 600@A4</p>	<p>DATE:</p> <p>11 Apr 2022</p>	

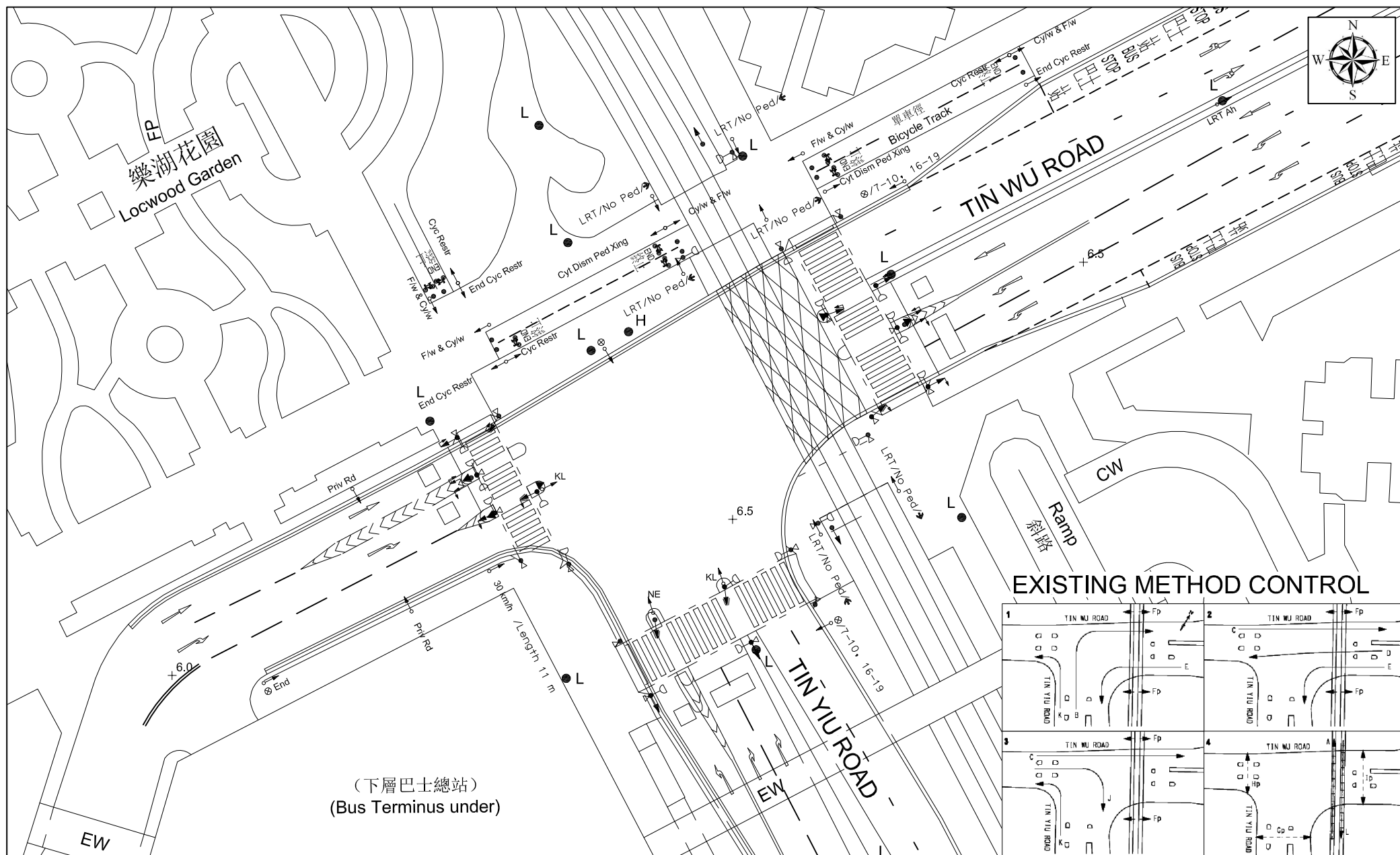



FIGURE NO.: <div>3.8</div>		PROJECT TITLE: S16 Application Proposed Residential Development at Tin Shui Wai Town Lot No. 4	
PROJECT NO.: 22012HK		DRAWING TITLE: EXISTING JUNCTION LAYOUT OF TIN YIU ROAD / TIN WU ROAD (#7)	
SCALE: 1 : 600@A4	DATE: 11 Apr 2022		



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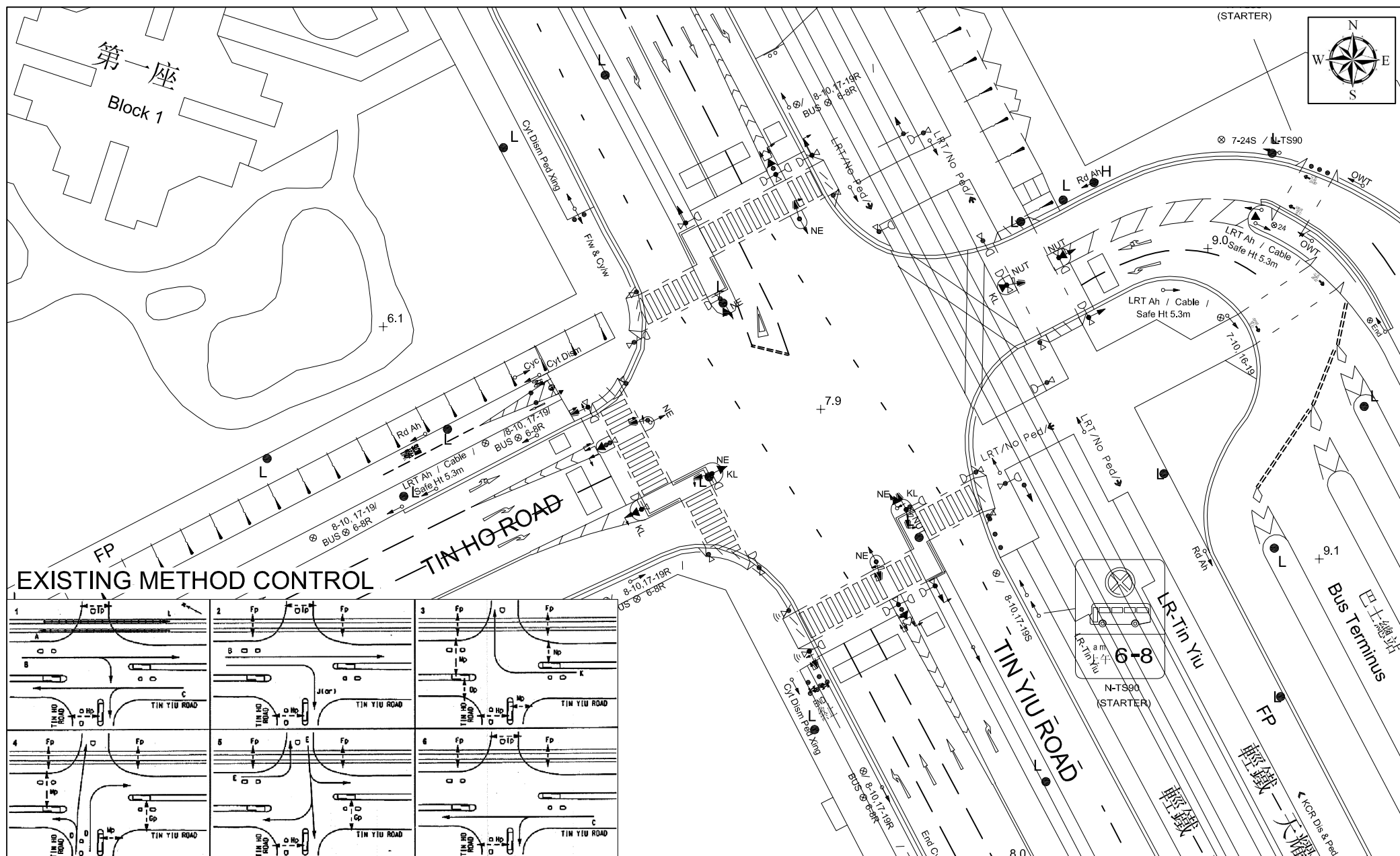



FIGURE NO.: 3.9	PROJECT TITLE: S16 Application Proposed Residential Development at Tin Shui Wai Town Lot No. 4	 CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 22012HK	DRAWING TITLE: EXISTING JUNCTION LAYOUT OF TIN YIU ROAD / TIN HO ROAD (#8)	
SCALE: 1 : 600@A4	DATE: 11 Apr 2022	

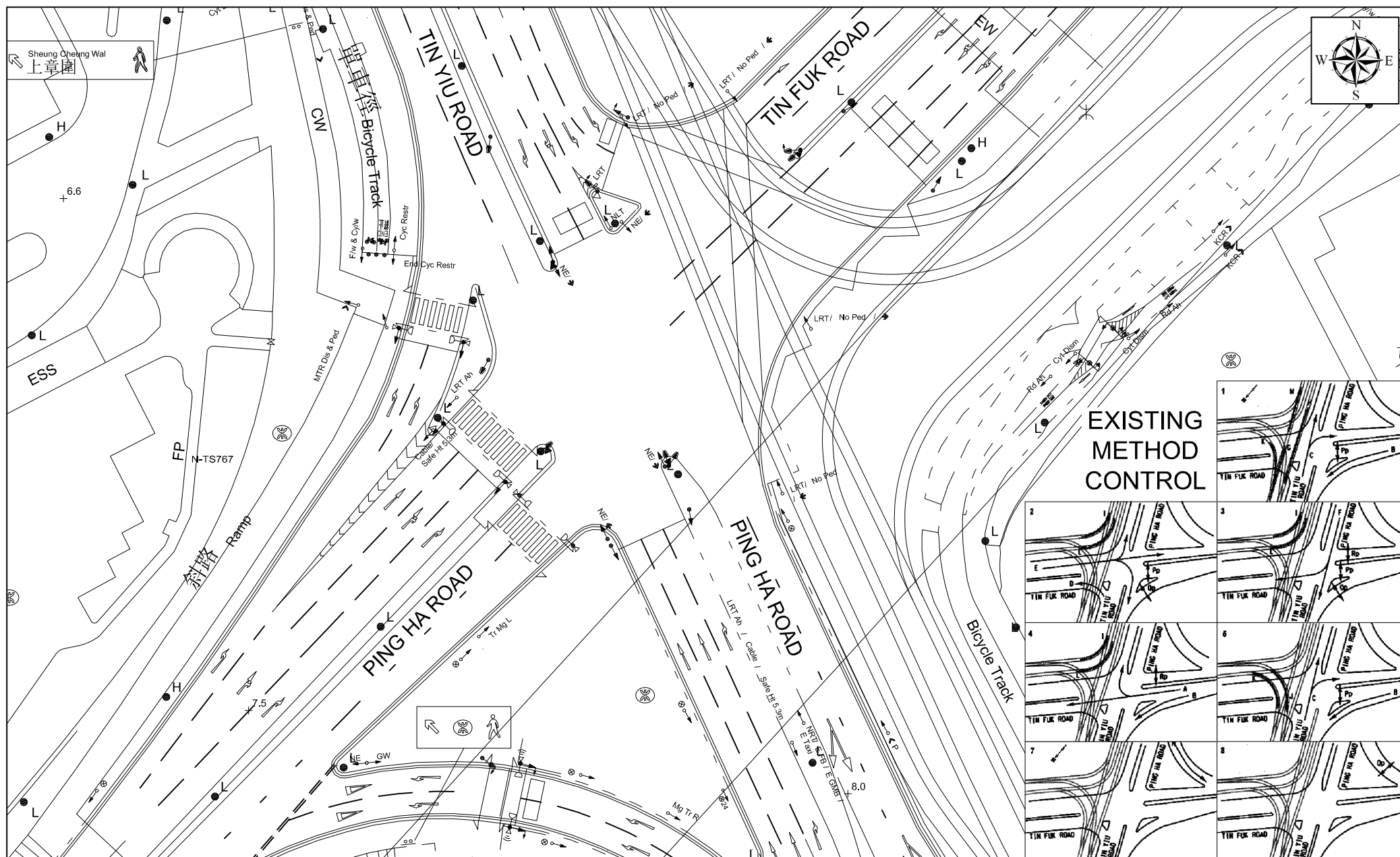



FIGURE NO.: <div>3.10</div>		PROJECT TITLE: S16 Application Proposed Residential Development at Tin Shui Wai Town Lot No. 4	
PROJECT NO.: <div>22012HK</div>		DRAWING TITLE: <div>EXISTING JUNCTION LAYOUT OF TIN FUK ROAD / TIN YIU ROAD / PING HA ROAD (#9)</div>	
SCALE: 1 : 700@A4	DATE: 11 Apr 2022		



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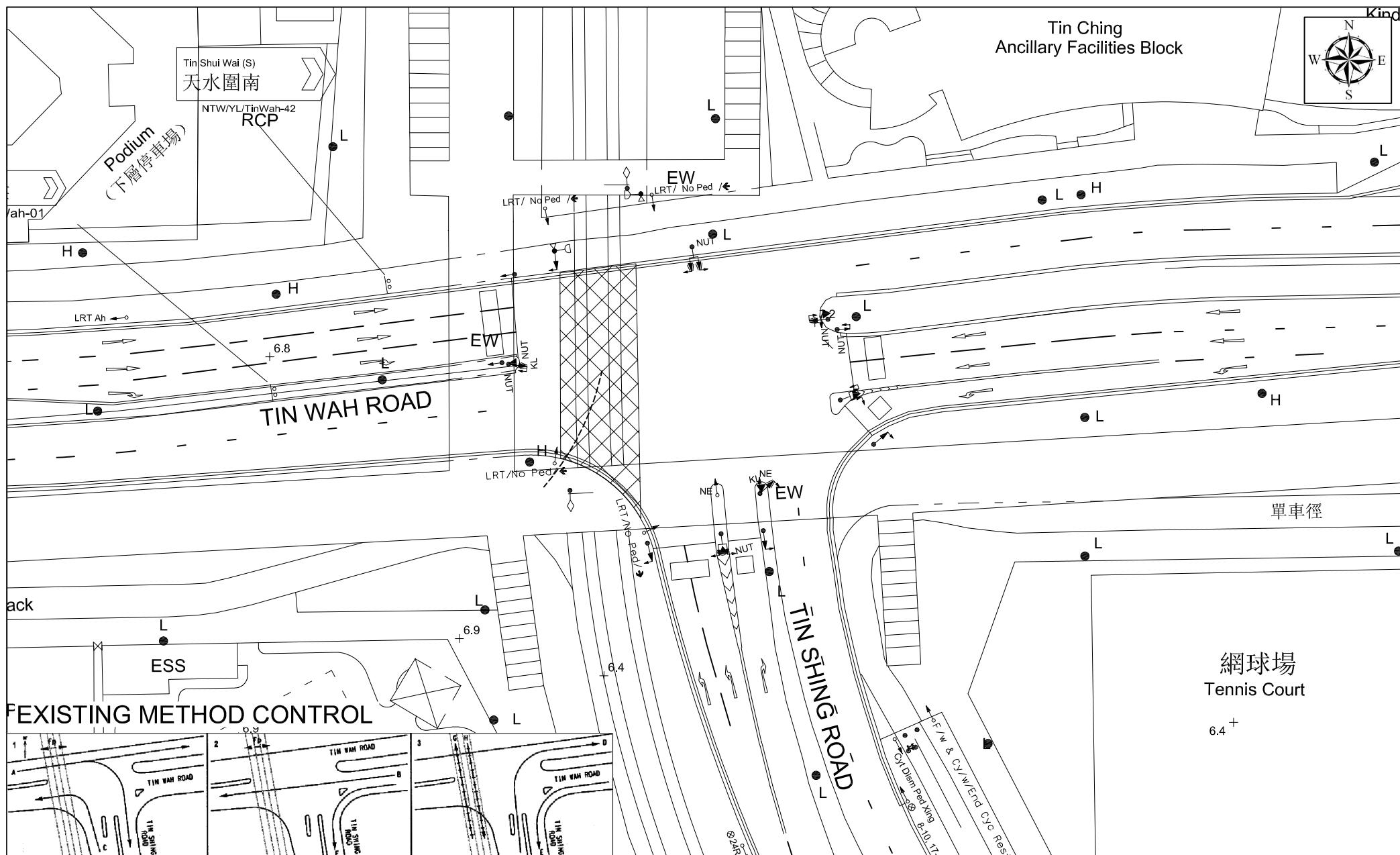

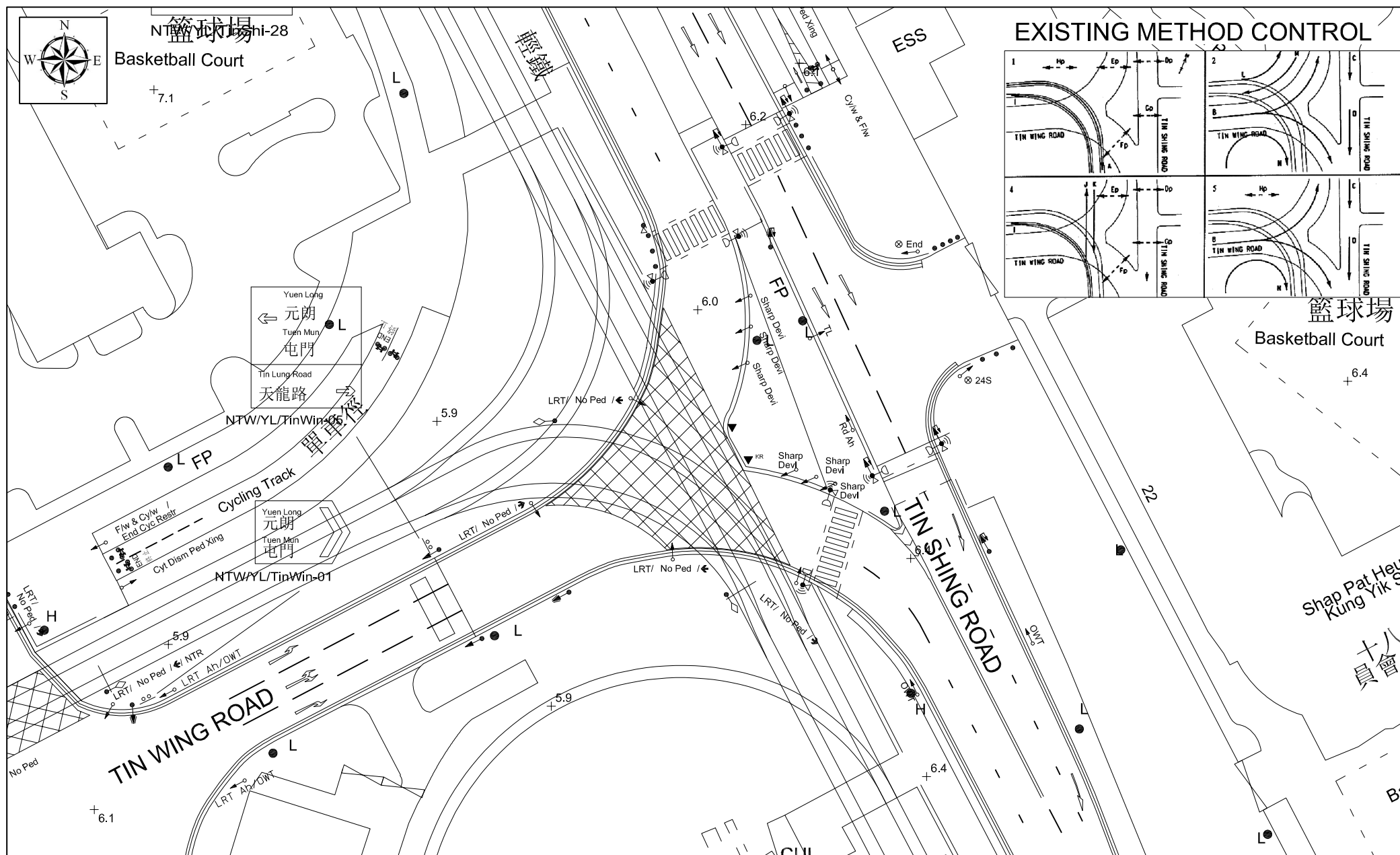
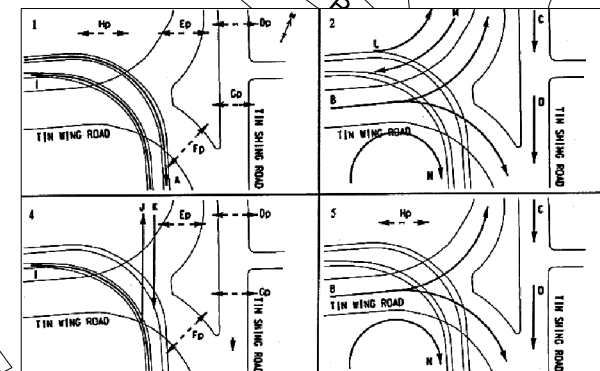



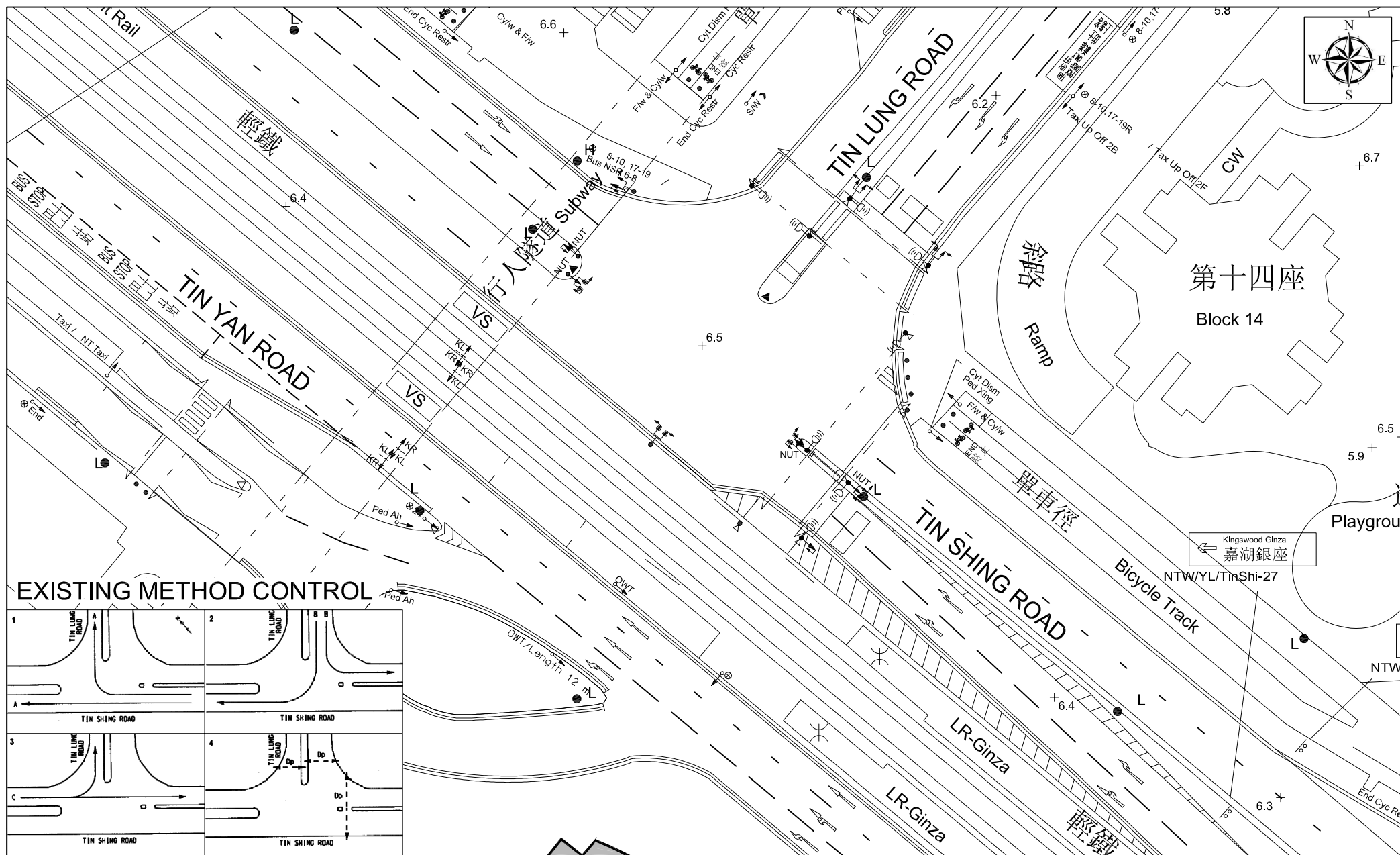
FIGURE NO.: <div>3.11</div>		PROJECT TITLE: S16 Application Proposed Residential Development at Tin Shui Wai Town Lot No. 4		<div> CTA Consultants Limited 志達顧問有限公司</div>
PROJECT NO.: <div>22012HK</div>		DRAWING TITLE: <div>EXISTING JUNCTION LAYOUT OF TIN WAH ROAD / TIN SHING ROAD (#10)</div>		
SCALE: 1 : 600@A4	DATE: 11 Apr 2022			



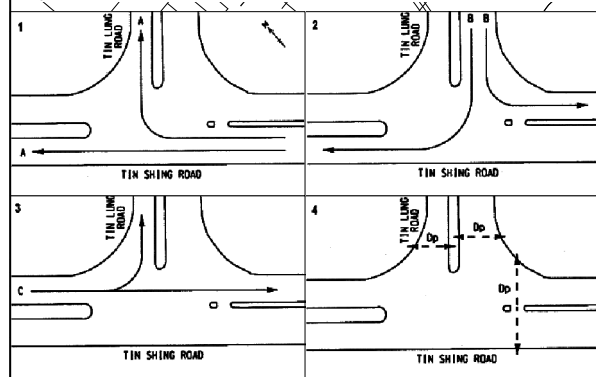
EXISTING METHOD CONTROL




<p>FIGURE NO.:</p> <p>3.12</p>	<p>PROJECT TITLE:</p> <p>S16 Application Proposed Residential Development at Tin Shui Wai Town Lot No. 4</p>	 <p>CTA Consultants Limited 志達顧問有限公司</p>
<p>PROJECT NO.:</p> <p>22012HK</p>	<p>DRAWING TITLE:</p> <p>EXISTING JUNCTION LAYOUT OF TIN SHING ROAD / TIN WING ROAD (#11)</p>	
<p>SCALE:</p> <p>1 : 600@A4</p>	<p>DATE:</p> <p>11 Apr 2022</p>	



EXISTING METHOD CONTROL



<p>FIGURE NO.:</p> <p>3.15</p>	<p>PROJECT TITLE:</p> <p>S16 Application Proposed Residential Development at Tin Shui Wai Town Lot No. 4</p>	 <p>CTA Consultants Limited 志達顧問有限公司</p>
<p>PROJECT NO.:</p> <p>22012HK</p>	<p>DRAWING TITLE:</p> <p>EXISTING JUNCTION LAYOUT OF TIN LUNG ROAD / TIN SHING ROAD (#14)</p>	
<p>SCALE:</p> <p>1 : 600@A4</p>	<p>DATE:</p> <p>11 Apr 2022</p>	

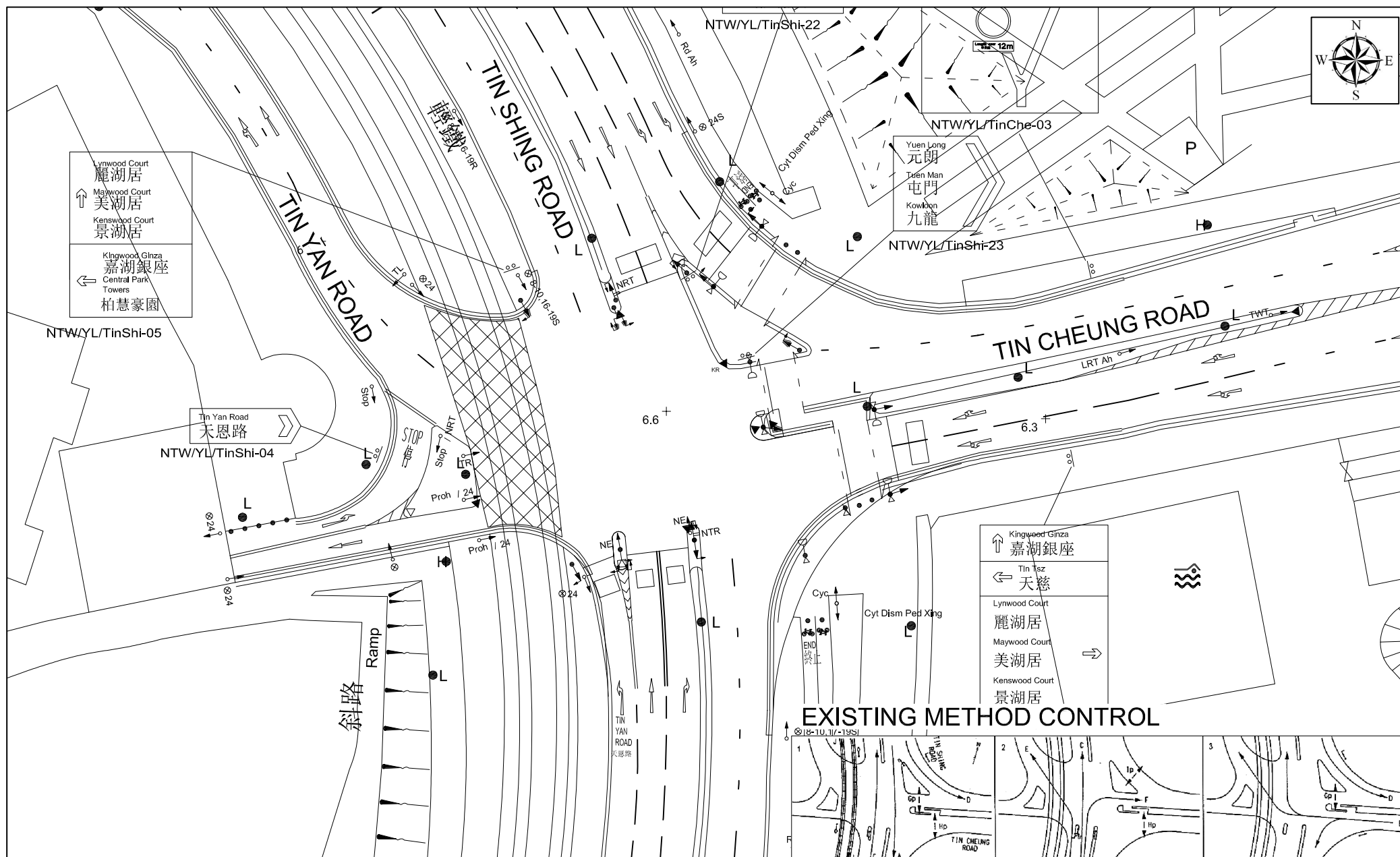

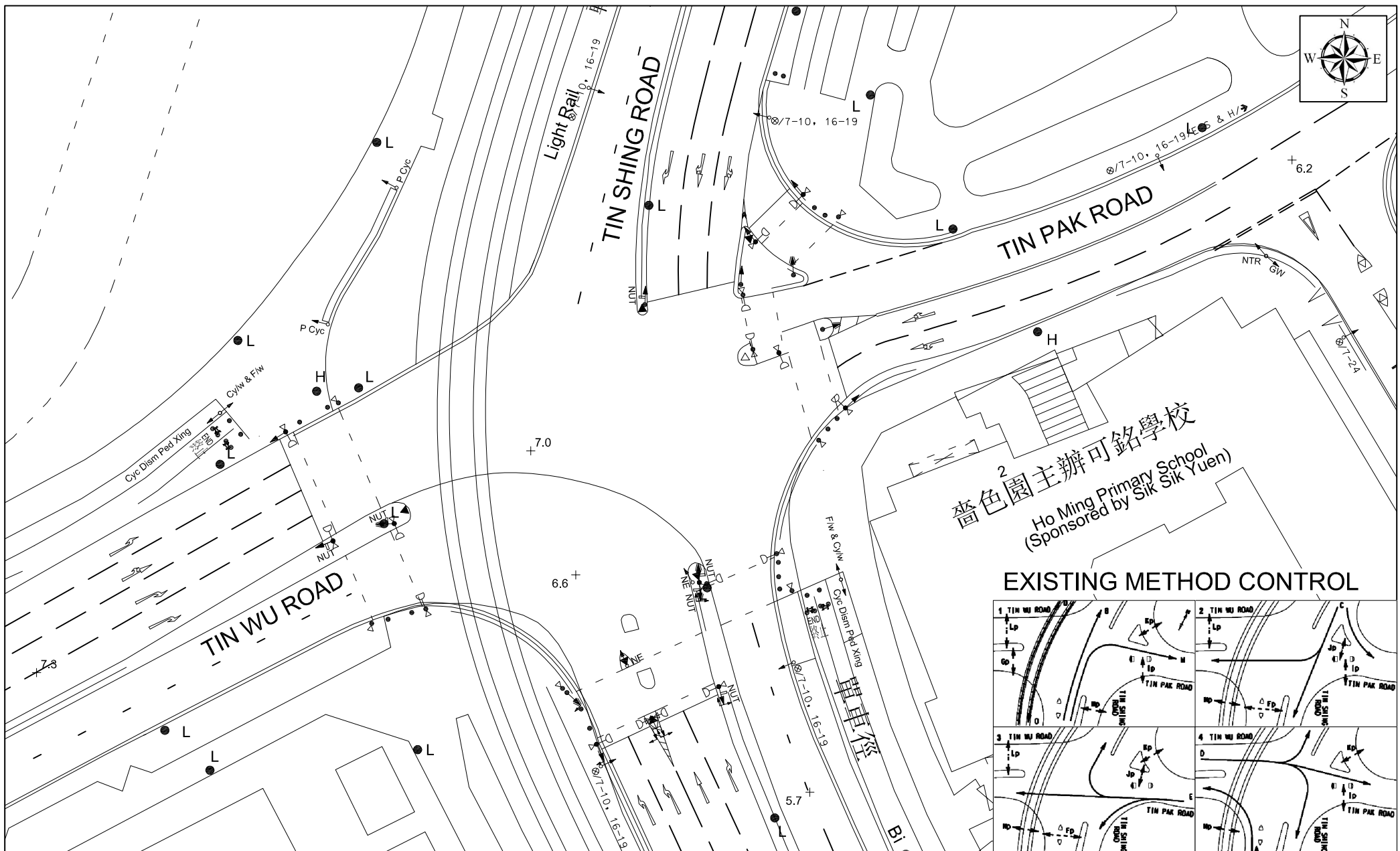


FIGURE NO.: <div>3.16</div>	PROJECT TITLE: S16 Application Proposed Residential Development at Tin Shui Wai Town Lot No. 4	<div>  <div> CTA Consultants Limited 志達顧問有限公司 </div> </div>
PROJECT NO.: 22012HK	DRAWING TITLE: <div>EXISTING JUNCTION LAYOUT OF TIN CHEUNG ROAD / TIN SHING ROAD (#15)</div>	
SCALE: 1 : 600@A4	DATE: 11 Apr 2022	



EXISTING METHOD CONTROL

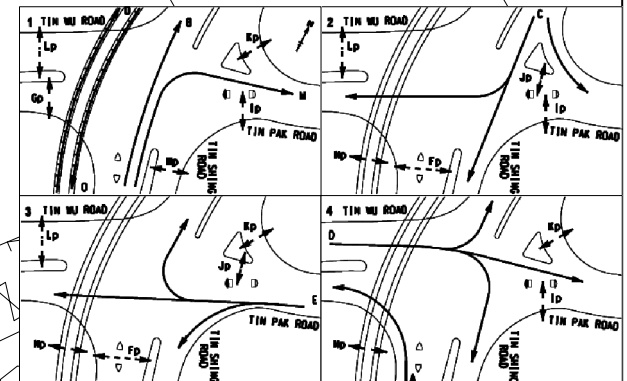



FIGURE NO.: <div>3.17</div>	PROJECT TITLE: S16 Application Proposed Residential Development at Tin Shui Wai Town Lot No. 4	<div>  <div> CTA Consultants Limited 志達顧問有限公司 </div> </div>
PROJECT NO.: 22012HK	DRAWING TITLE: <div> EXISTING JUNCTION LAYOUT OF TIN WU ROAD / TIN SHING ROAD / TIN PAK ROAD (#16) </div>	
SCALE: 1 : 600@A4	DATE: 11 Apr 2022	

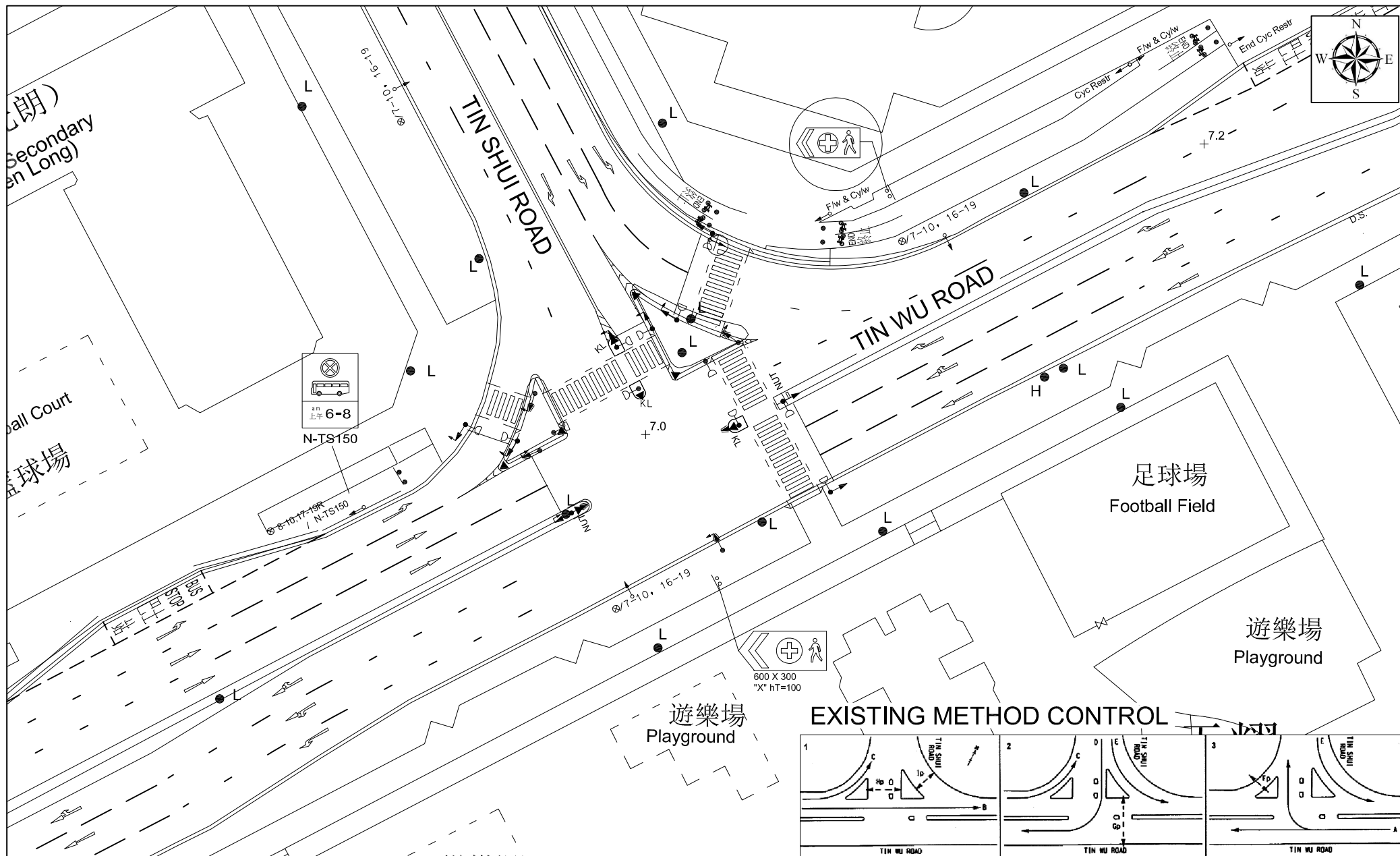
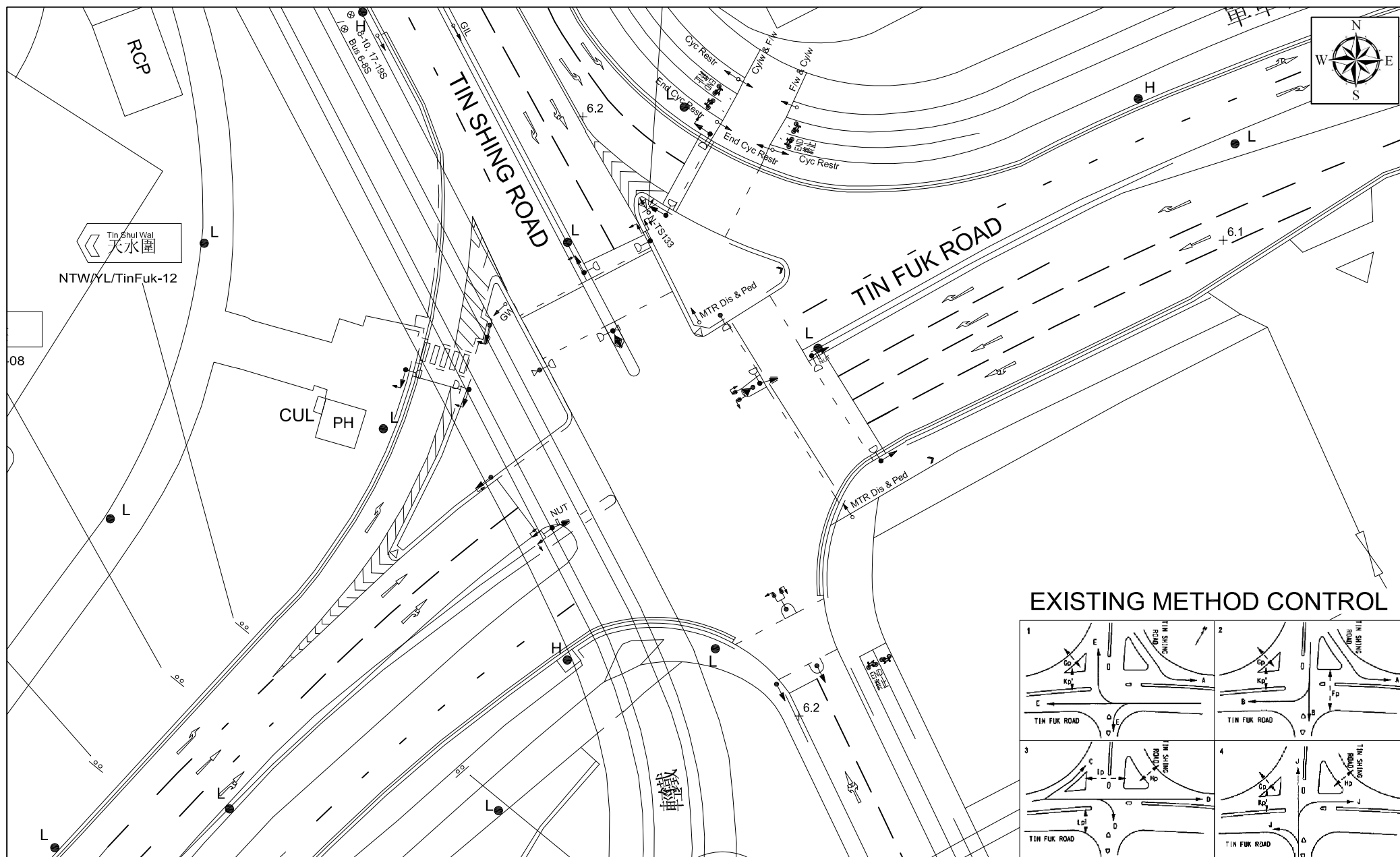


FIGURE NO.: 3.18	PROJECT TITLE: S16 Application Proposed Residential Development at Tin Shui Wai Town Lot No. 4	 CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 22012HK	DRAWING TITLE: EXISTING JUNCTION LAYOUT OF TIN WUI ROAD / TIN SHUI ROAD (#17)	
SCALE: 1 : 600@A4	DATE: 11 Apr 2022	



EXISTING METHOD CONTROL

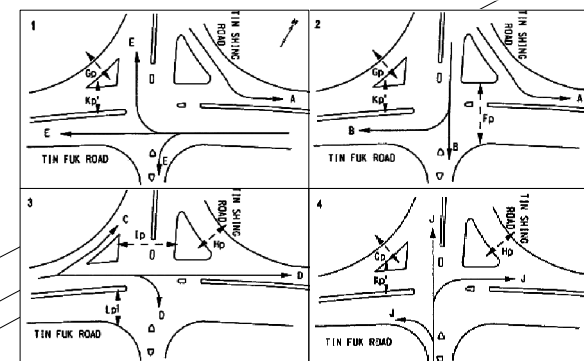

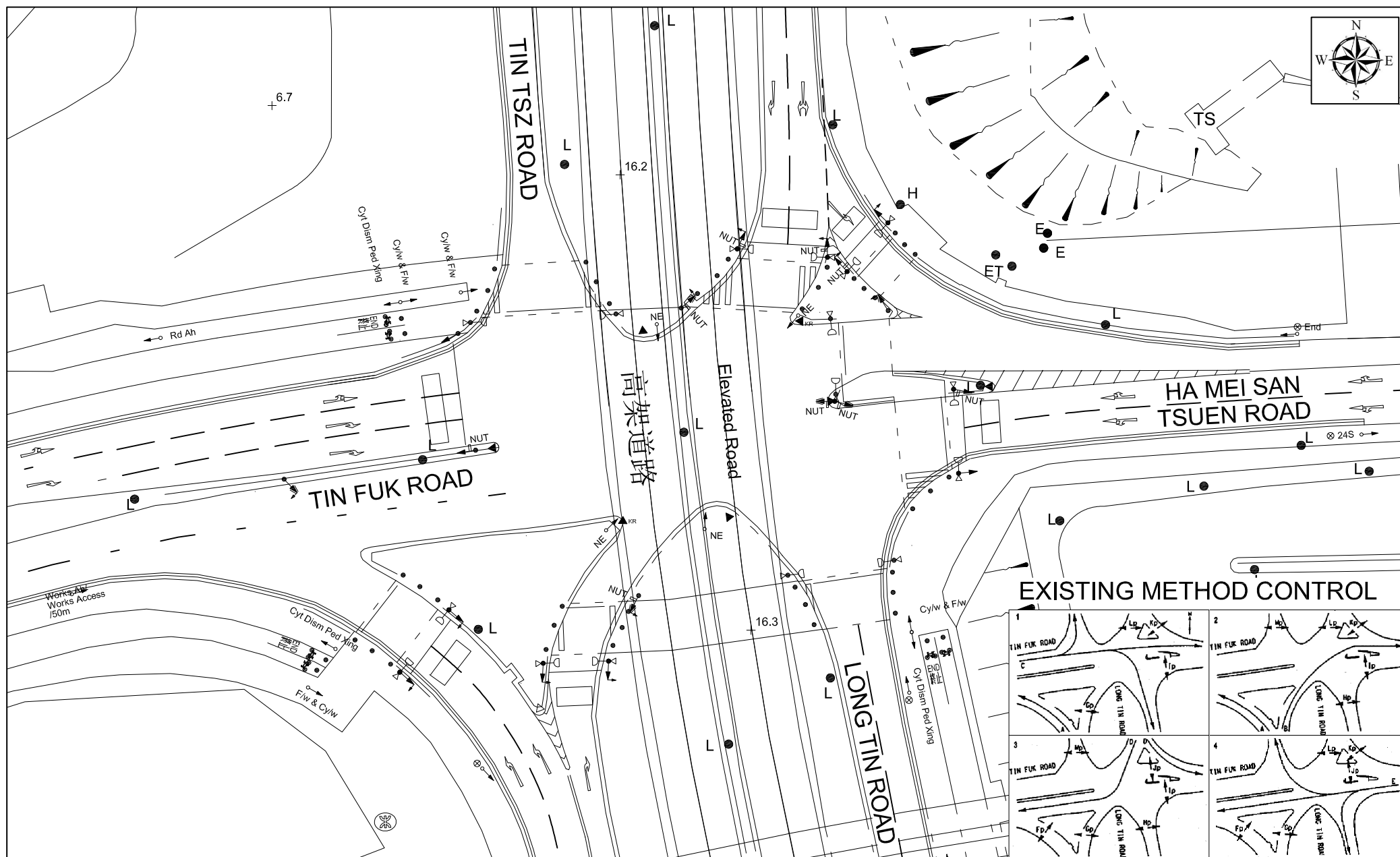


FIGURE NO.: <div>3.19</div>	PROJECT TITLE: S16 Application Proposed Residential Development at Tin Shui Wai Town Lot No. 4	<div>  <div> CTA Consultants Limited 志達顧問有限公司 </div> </div>
PROJECT NO.: 22012HK	DRAWING TITLE: <div>EXISTING JUNCTION LAYOUT OF TIN FUK ROAD / TIN SHING ROAD (#18)</div>	
SCALE: 1 : 600@A4	DATE: 11 Apr 2022	



EXISTING METHOD CONTROL

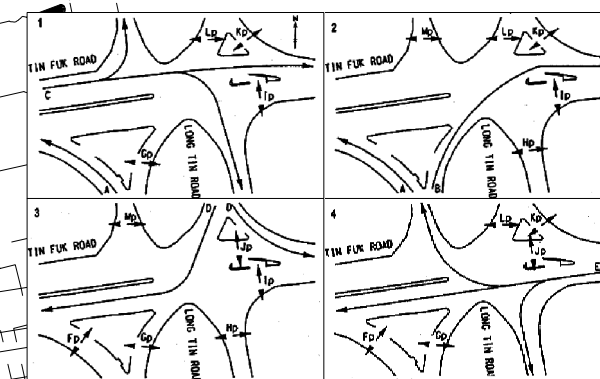
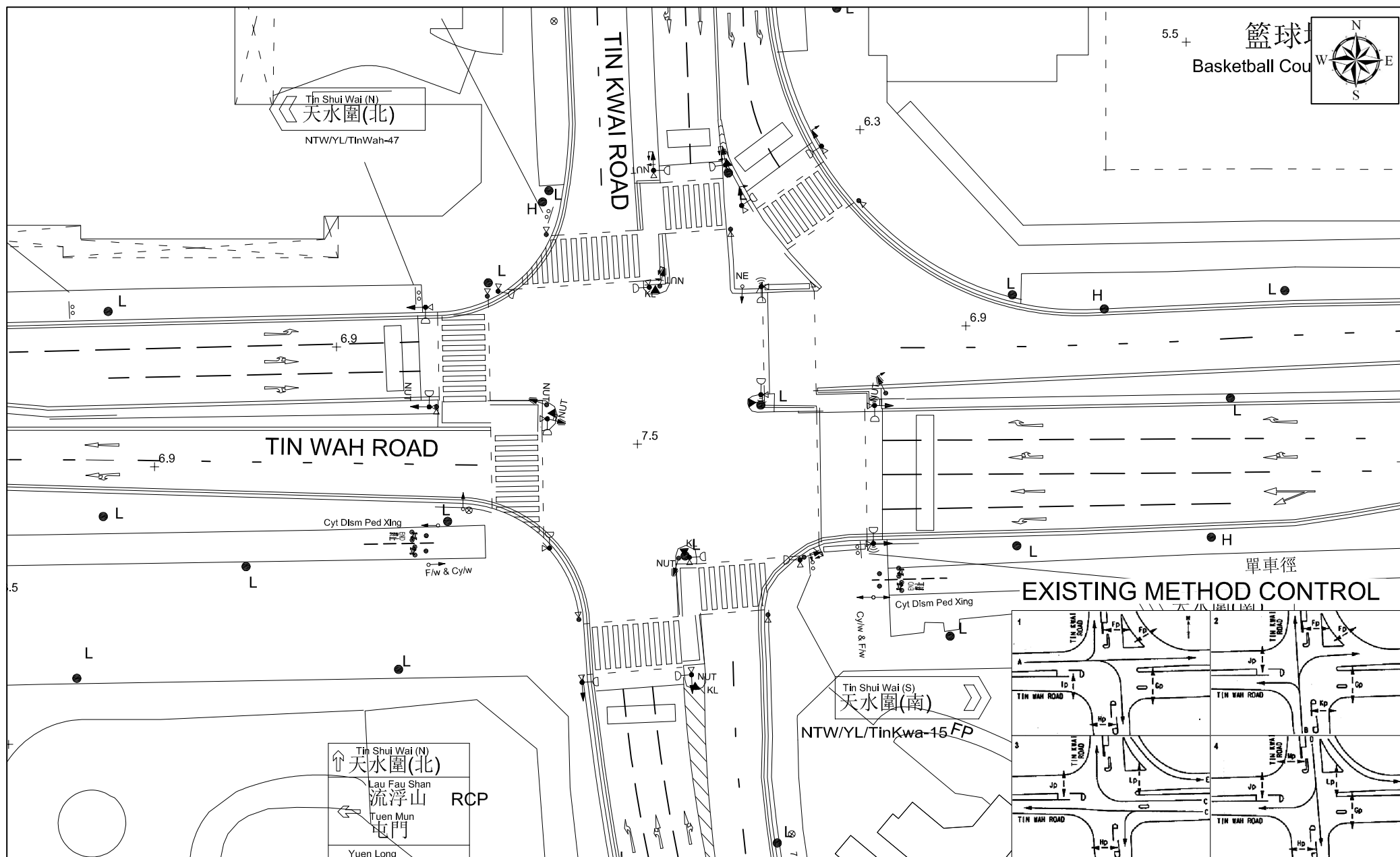


FIGURE NO.: <div>3.20</div>		PROJECT TITLE: S16 Application Proposed Residential Development at Tin Shui Wai Town Lot No. 4		<div> CTA Consultants Limited 志達顧問有限公司</div>
PROJECT NO.: <div>22012HK</div>		DRAWING TITLE: <div>EXISTING JUNCTION LAYOUT OF LONG TIN ROAD / TIN FUK ROAD / TIN TSZ ROAD (#19)</div>		
SCALE: 1 : 600@A4	DATE: 11 Apr 2022			



EXISTING METHOD CONTROL

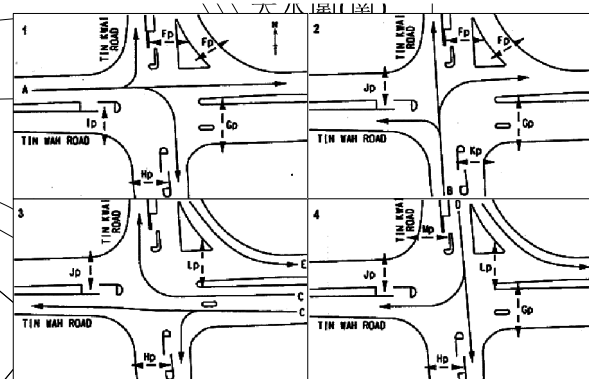

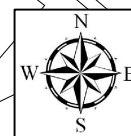


FIGURE NO.: <div>3.21</div>	PROJECT TITLE: S16 Application Proposed Residential Development at Tin Shui Wai Town Lot No. 4	<div>  <div> CTA Consultants Limited 志達顧問有限公司 </div> </div>
PROJECT NO.: 22012HK	DRAWING TITLE: <div>EXISTING JUNCTION LAYOUT OF TIN WAH ROAD / TIN KWAI ROAD (#20)</div>	
SCALE: 1 : 600@A4	DATE: 11 Apr 2022	

經營未經運輸署批准的居民巴士服務屬違法，並可能使有關車輛的第三者意外保險失效。
The operation of a residential bus service without the Transport Department's approval is an offence and may invalidate the third party risk insurance in respect of the motor vehicle concerned.

NTW/YL/TinKwa-RS01
(NT5847)



5.9 +

麗湖休憩處

Lynwood Sitting-out Area

Lynwood Court
麗湖居

NTW/YL/TinLun-02

龍園 3 區

Dragon Park 3

天樂幼稚園

Talent Kindergarten

TIN LUNG ROAD

TIN KWAI ROAD

嘉湖鄉村

Kingswood Country

EXISTING METHOD CONTROL

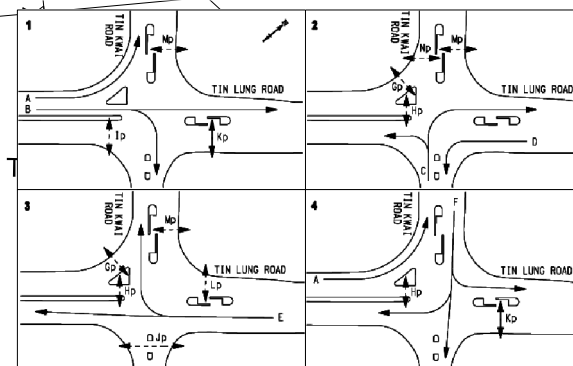

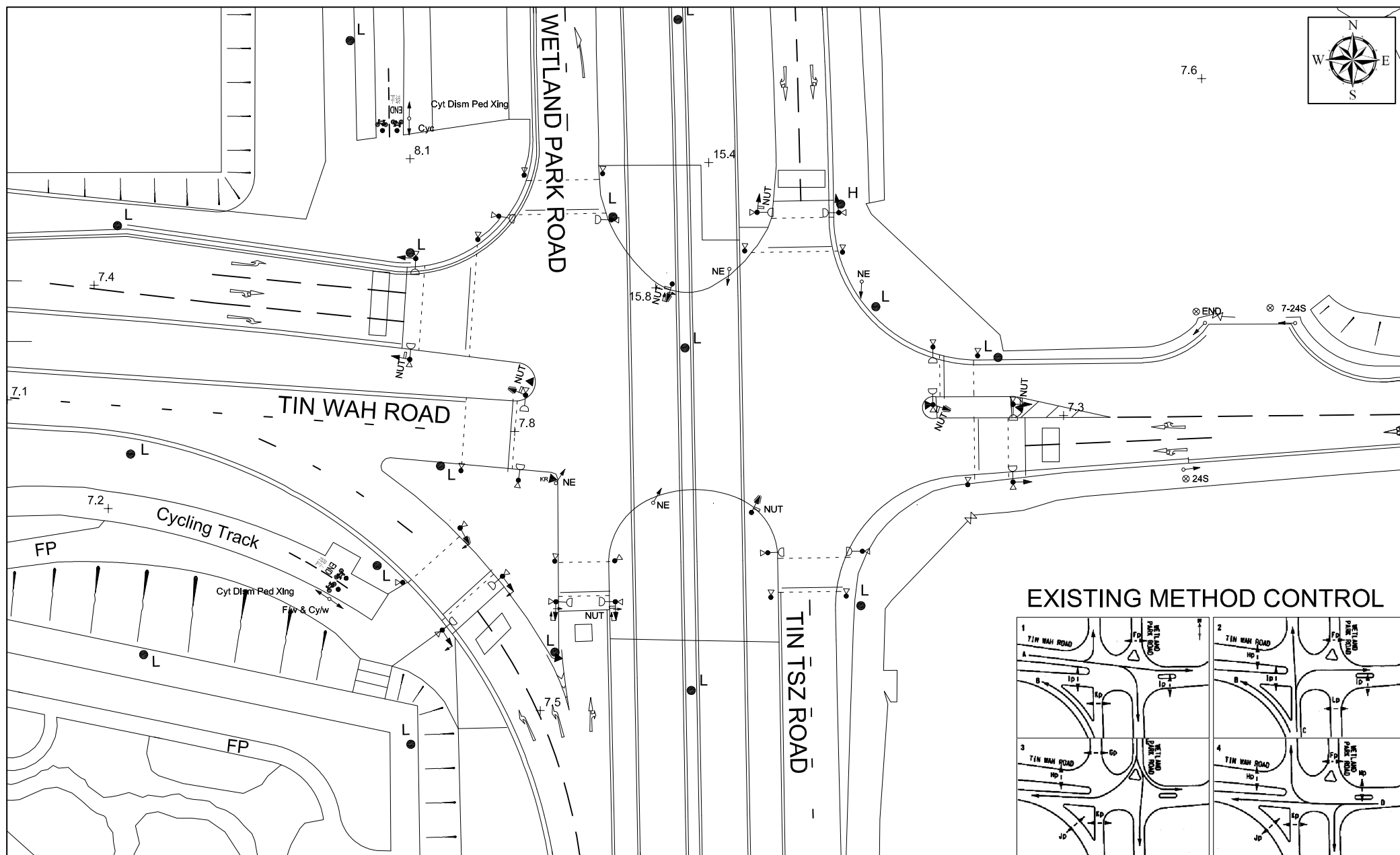


FIGURE NO.: 3.22	PROJECT TITLE: S16 Application Proposed Residential Development at Tin Shui Wai Town Lot No. 4	 CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 22012HK	DRAWING TITLE: EXISTING JUNCTION LAYOUT OF TIN LUNG ROAD / TIN KWAI ROAD (#21)	
SCALE: 1 : 600@A4	DATE: 11 Apr 2022	



EXISTING METHOD CONTROL

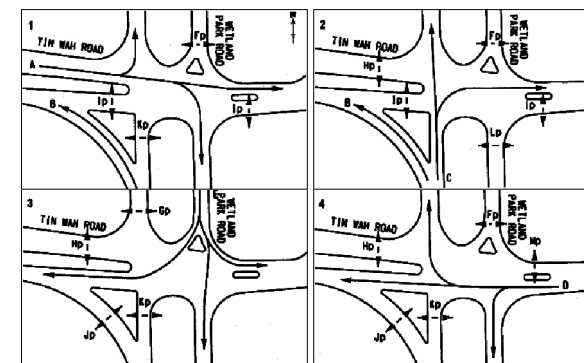
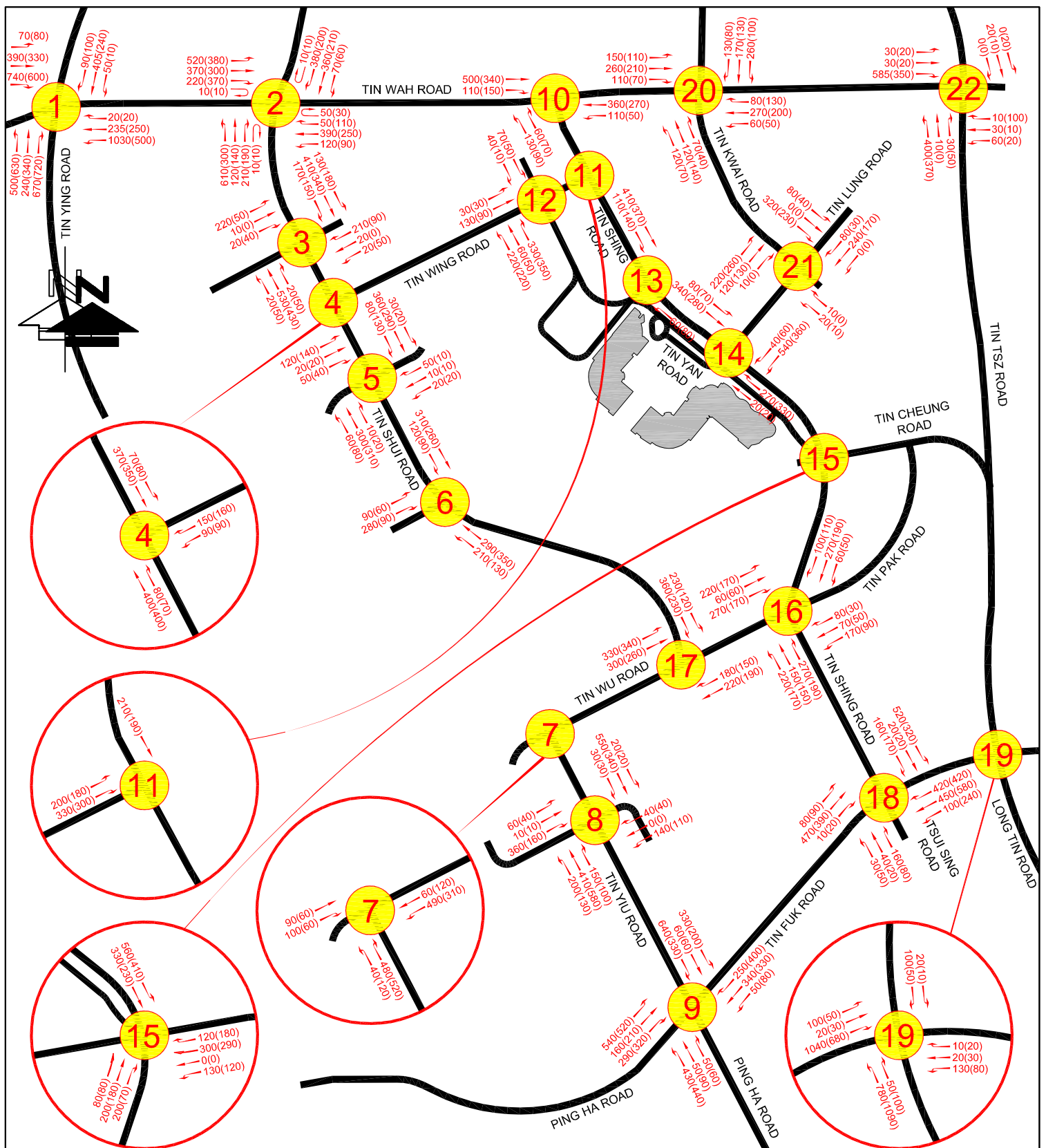


FIGURE NO.: 3.23	PROJECT TITLE: S16 Application Proposed Residential Development at Tin Shui Wai Town Lot No. 4	 CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 22012HK	DRAWING TITLE: <h3>EXISTING JUNCTION LAYOUT OF TIN WAH ROAD / TIN KWAI ROAD (#22)</h3>	
SCALE: 1 : 600@A4	DATE: 11 Apr 2022	



LEGEND :



THE SUBJECT SITE

440(445)

AM(PM) PEAK HOUR
TRAFFIC FLOW (IN PCU / HR)

FIGURE NO.:

3.24

PROJECT TITLE:

S16 Application Proposed Residential Development at Tin Shui Wai Town Lot No. 4

PROJECT NO.:

22012HK

DRAWING TITLE:

2019 OBSERVED TRAFFIC FLOWS

SCALE:

N. T. S. @A4

DATE:

11 APR 2022



CTA Consultants Limited
志達顧問有限公司

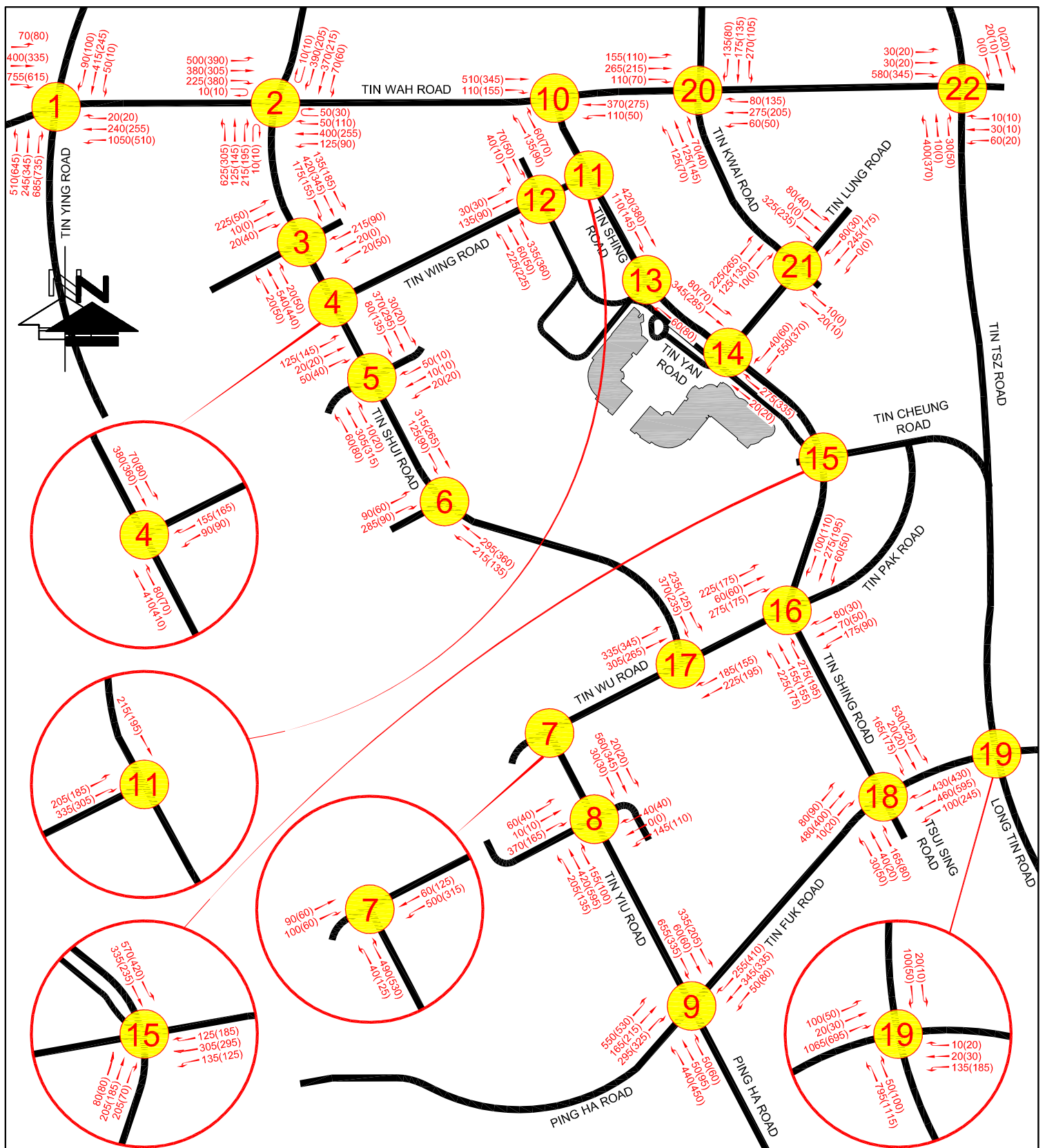



FIGURE NO.: 3.25		PROJECT TITLE: S16 Application Proposed Residential Development at Tin Shui Wai Town Lot No. 4	
PROJECT NO.: 22012HK		DRAWING TITLE: 2022 BASELINE FLOWS	
SCALE: N. T. S. @A4	DATE: 22 APR 2022	 CTA Consultants Limited 志達顧問有限公司	

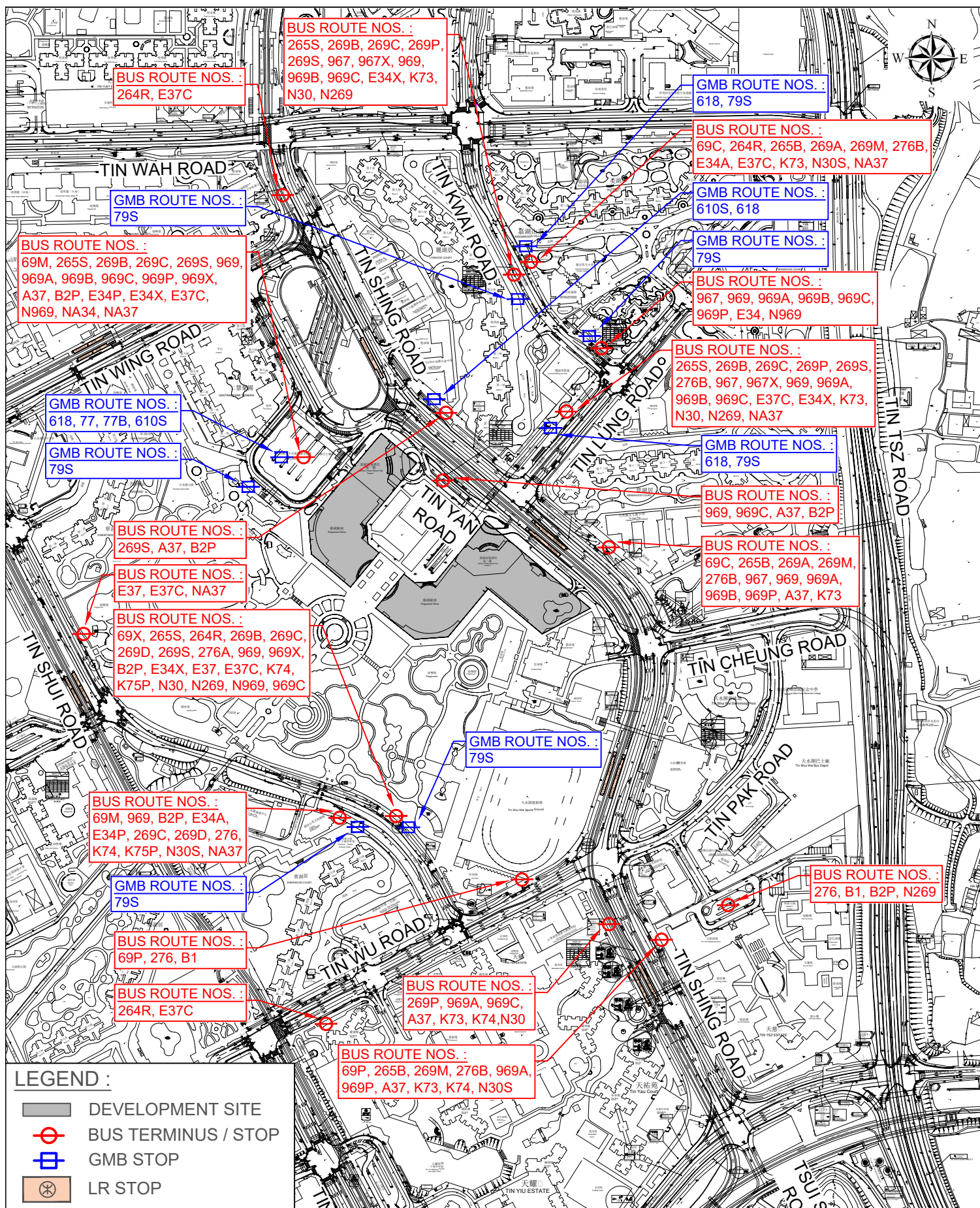



FIGURE NO.: 3.26		PROJECT TITLE: S16 Application Proposed Residential Development at Tin Shui Wai Town Lot No. 4	
PROJECT NO.: 22012HK		DRAWING TITLE: EXISTING PUBLIC TRANSPORT FACILITIES	
SCALE: 1 : 6000 @ A4	DATE: 11 APR 2022	 CTA Consultants Limited 同公限有司顧建地	

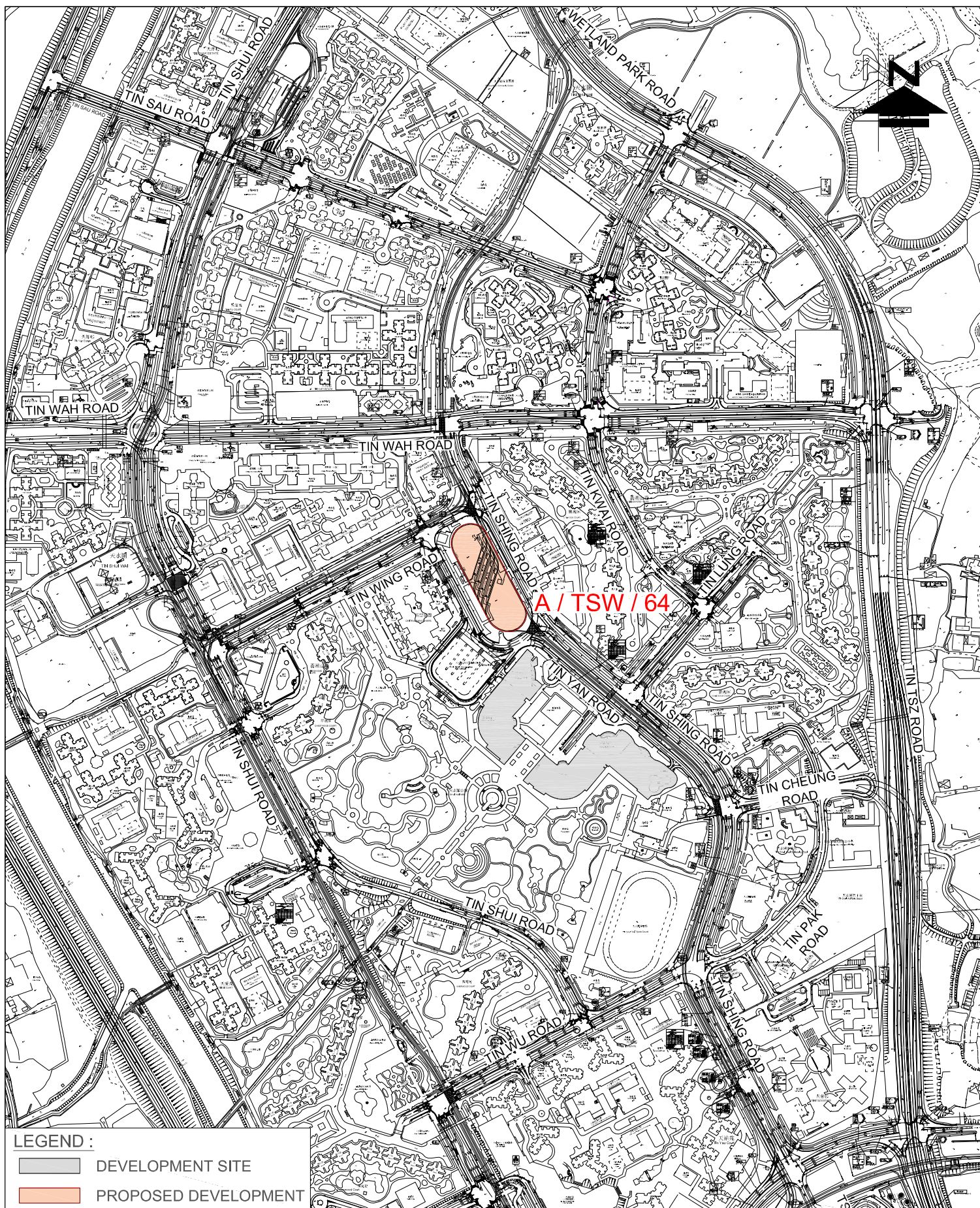


FIGURE NO.: 4.1		PROJECT TITLE: S16 Application at TSWTL 4 - Converting Hotel to Residential	
PROJECT NO.: 22012HK		DRAWING TITLE: PLANNED COMMITTED FUTURE DEVELOPMENT IN THE VICINTY	
SCALE: 1 : 8000 @A4	DATE: 25 APR 2022		

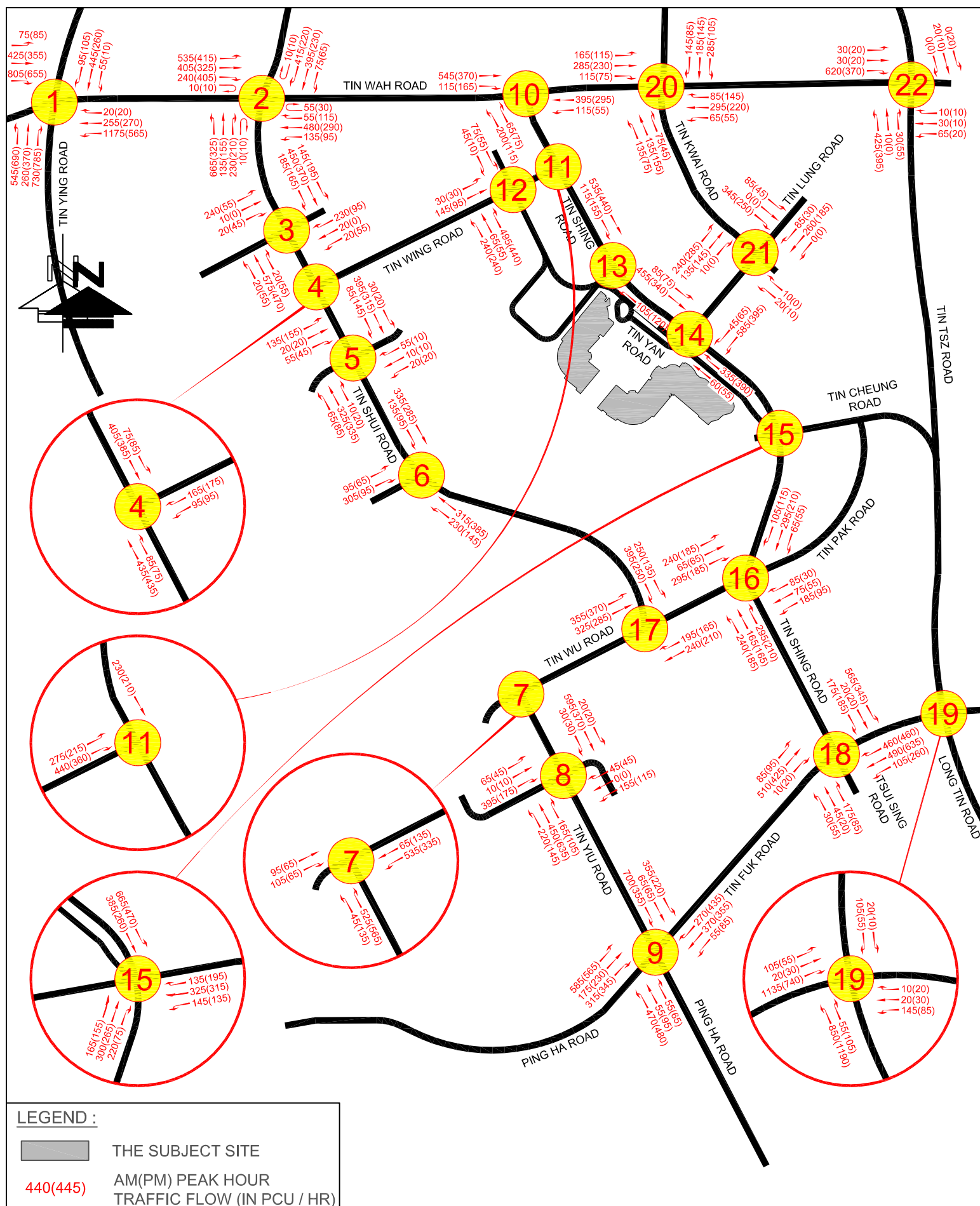



FIGURE NO.: 4.2		PROJECT TITLE: S16 Application Proposed Residential Development at Tin Shui Wai Town Lot No. 4	
PROJECT NO.: 22012HK		DRAWING TITLE: 2031 REFERENCE TRAFFIC FLOWS	
SCALE: N. T. S. @A4	DATE: 22 APR 2022	 CTA Consultants Limited 志達顧問有限公司	

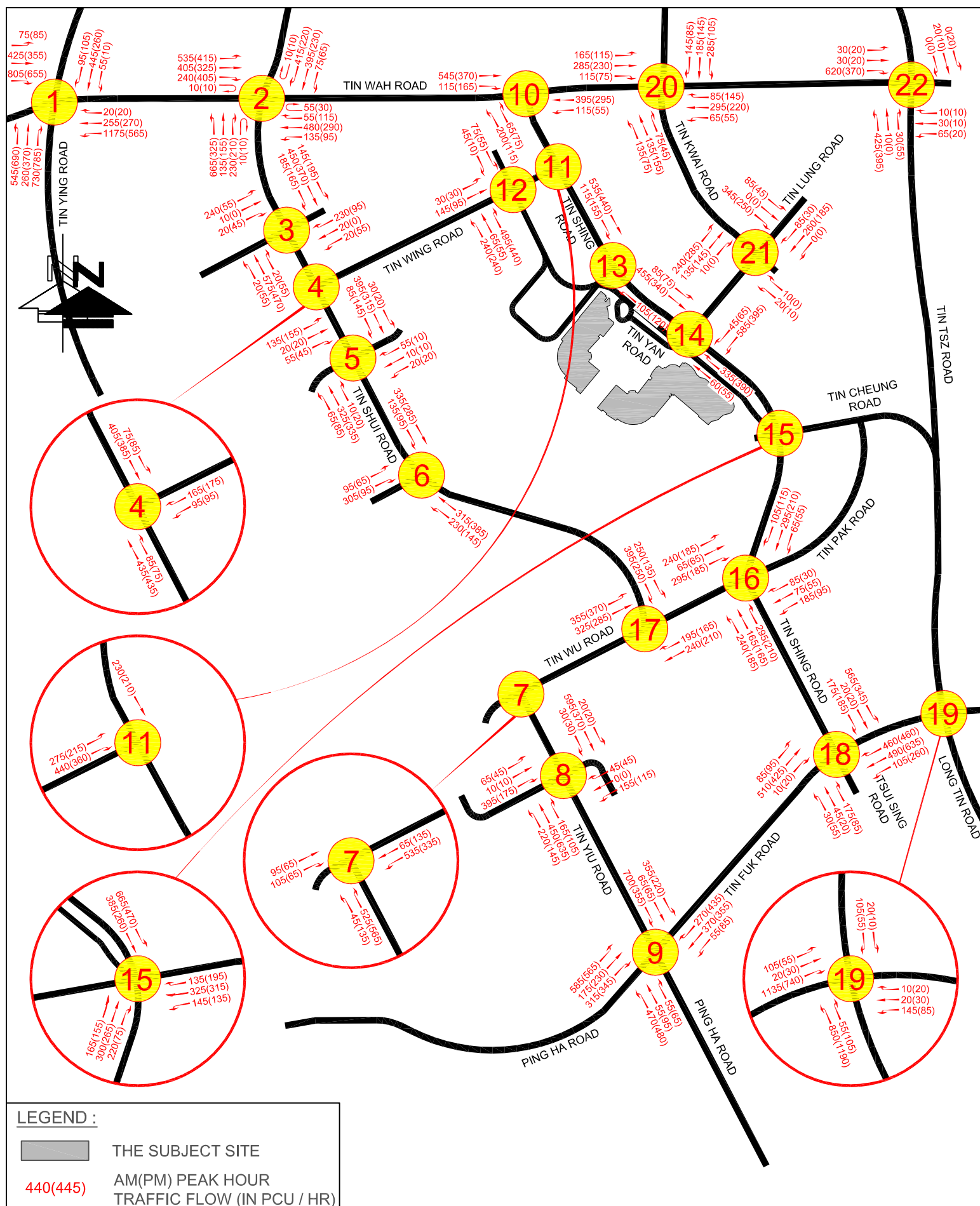



FIGURE NO.: 4.3		PROJECT TITLE: S16 Application Proposed Residential Development at Tin Shui Wai Town Lot No. 4	
PROJECT NO.: 22012HK		DRAWING TITLE: 2031 DESIGN TRAFFIC FLOWS	
SCALE: N. T. S. @A4	DATE: 22 APR 2022	 CTA Consultants Limited 志達顧問有限公司	



APPENDIX 1

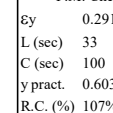
JUNCTION CALCULATION SHEETS

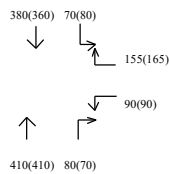
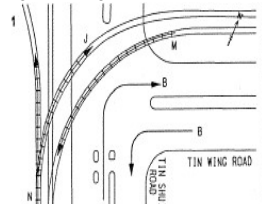
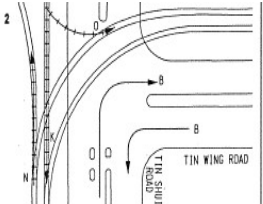
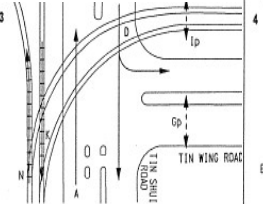
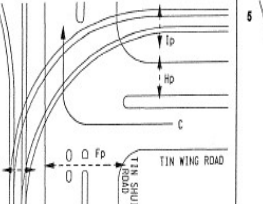
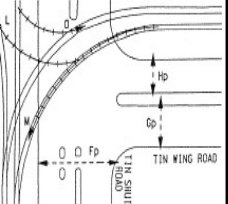
TRAFFIC SIGNALS CALCULATION										Job No: 22012HK										CTA Consultants Ltd.																			
Junction: (1) Tin Ying Road/ Tin Wah Road																																							
Description: 2022 Baseline Traffic Flows																																							
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak																			
						Left	Right		A.M.	P.M.			A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y																	
Tin Wah Road	E	↔	A	1	3.6	30	0	1	17%	23%	1975	6185	1960	1950	5800	5800	414	0.211		347	0.178																		
Tin Wah Road	E	↗	A	1	3.4	0	17.5	0	86%	80%	2095	0	1950	1960	0	0	412	0.211	0.211	348	0.178	0.178																	
Tin Wah Road	E	↘	A	1	3.6	0	12.5	0	100%	100%	2115	0	1890	1890	0	0	399	0.211		335	0.178																		
Tin Ying Road	N	↔	B	1,2	5.2	25	0	1	100%	100%	2135	2135	2015	2015	2015	2015	510	0.253		645	0.320																		
Tin Ying Road	N	↗	C	2	3.6	0	0	0	0%	0%	2115	6285	2115	2115	6100	6100	245	0.116		350	0.165																		
Tin Ying Road	N	↘	C	2	3.4	0	35	0	100%	100%	2095	0	2010	2010	0	0	348	0.173	0.173	373	0.186	0.186																	
Tin Ying Road	N	↖	C	2	3.2	0	30	0	100%	100%	2075	0	1975	1975	0	0	342	0.173		367	0.186																		
Tin Wah Road	W	↔	D	3	3.3	0	0	0	0%	0%	1945	4040	1945	1945	4040	4040	116	0.059		123	0.063																		
Tin Wah Road	W	↗	D	3	3.4	0	0	0	0%	0%	2095	0	2095	2095	0	0	124	0.059	0.059	132	0.063	0.063																	
Tin Wah Road	W	↘	D	3	3.1	0	15	0	100%	100%	2065	2065	1875	1875	1875	1875	20	0.011		20	0.011																		
Tin Ying Road	S	↔	E	3,4	4.6	25	0	1	100%	100%	2075	2075	1960	1960	1960	1960	50	0.026		10	0.005																		
Tin Ying Road	S	↗	F	4	3.3	0	0	0	0%	0%	1945	4030	1945	1945	4030	4030	200	0.103		118	0.061																		
Tin Ying Road	S	↘	F	4	3.3	0	0	0	0%	0%	2085	0	2085	2085	0	0	215	0.103	0.103	127	0.061	0.061																	
Tin Ying Road	S	↖	F	4	3.1	0	40	0	100%	100%	2065	2065	1990	1990	1990	1990	90	0.045		100	0.050																		
Pedestrian crossing																																							
Notes:										Traffic Flow (pcu / hr)										A.M. Check Phase					P.M. Check Phase														
																				Ey 0.547 L (sec) 27 C (sec) 120 y pract. 0.698 R.C. (%) 28%					Ey 0.487 L (sec) 27 C (sec) 120 y pract. 0.698 R.C. (%) 43%														
Stage/Phase Diagram:																																							
I/G=8s										I/G=8s										I/G=8s										I/G=7s									

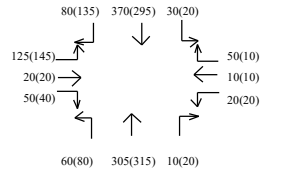
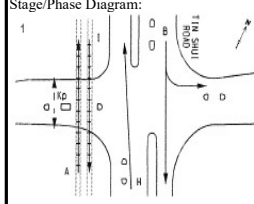
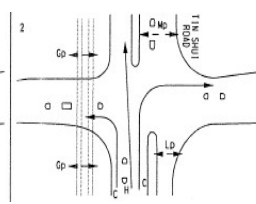
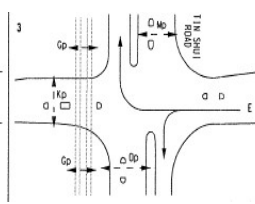
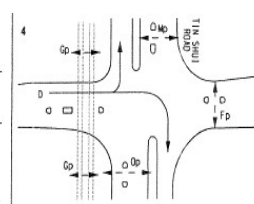
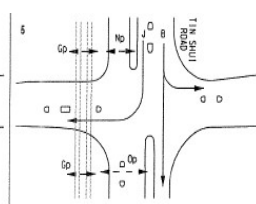
Description: **2022 Baseline Traffic Flows**

Category	Sub-category	Count	Min. Crossing Time
Pedestrian crossing	Fp	1,2	Min. Crossing Time = 8GM + 6FGM = 14s
	Gp	2,5	Min. Crossing Time = 8GM + 8FGM = 16s
	Hp	2-4	Min. Crossing Time = 7GM + 6FGM = 13s
	lp	1-3,5	Min. Crossing Time = 7GM + 7FGM = 14s
	Jp	4	Min. Crossing Time = 6GM + 6FGM = 12s
	Mp	3-5	Min. Crossing Time = 8GM + 8FGM = 16s

P.M. Check Phase



TRAFFIC SIGNALS CALCULATION										Job No: 22012HK										CTA Consultants Ltd.									
Junction: (4) Tin Shui Road/ Tin Wing Road																													
Description: 2022 Baseline Traffic Flows																													
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak									
						Left	Right		A.M.	P.M.			A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y							
Tin Shui Road	N	↑	A	3	3.4	0	0	1	0%	0%	1815	3910	1815	1815	3910	3910	190	0.105	0.105	190	0.105	0.105							
Tin Shui Road	N	↑	A	3	3.4	0	0	0	0%	0%	2095	0	2095	2095	0	0	220	0.105		220	0.105								
Tin Shui Road	N	↗	B	1,2	3.6	0	15	0	100%	100%	2115	2115	1925	1925	1925	1925	80	0.042		70	0.036								
Tin Wing Road	W	↖	B	1,2	3.3	15	0	1	100%	100%	1945	1945	1770	1770	1770	1770	90	0.051	0.051	90	0.051	0.051							
Tin Wing Road	W	↖	C	4	3.3	0	22.5	0	100%	100%	2085	4170	1955	1955	3895	3895	78	0.040		83	0.042								
Tin Wing Road	W	↖	C	4	3.3	0	20	0	100%	100%	2085	0	1940	1940	0	0	77	0.040	0.040	82	0.042	0.042							
Tin Shui Road	S	↘	D	3	3.3	13	0	1	100%	100%	1945	1945	1735	1735	1735	1735	70	0.040		80	0.046								
Tin Shui Road	S	↓	D	3	3.4	0	0	0	0%	0%	1955	4070	1955	1955	4070	4070	183	0.093		173	0.088								
Tin Shui Road	S	↓	D	3	3.6	0	0	0	0%	0%	2115	0	2115	2115	0	0	197	0.093		187	0.088								
Pedestrian crossing		←	Ep	4	Min. Crossing Time = 10GM + 10FGM = 20s																								
		↔	Fp	4,5	Min. Crossing Time = 12GM + 10FGM = 22s																								
		↕	Gp	3,5	Min. Crossing Time = 7GM + 10FGM = 17s																								
		↕	Hp	4,5	Min. Crossing Time = 7GM + 9FGM = 16s																								
		↕	Ip	3,4	Min. Crossing Time = 7GM + 8FGM = 15s																								
Notes:										Traffic Flow (pcu / hr)										A.M. Check Phase					P.M. Check Phase				
																				E _y 0.196 L (sec) 136 C (sec) 218 y pract. 0.339 R.C. (%) 73%					E _y 0.198 L (sec) 136 C (sec) 218 y pract. 0.339 R.C. (%) 71%				
Stage/Phase Diagram:																													
																													
I/G=47s						I/G=38s						I/G=41s						I/G=15s											

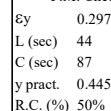
TRAFFIC SIGNALS CALCULATION										Job No: 22012HK										CTA Consultants Ltd.									
Junction: (5) Tin Shui Road/ Access Road to Chestwood Court																													
Description: 2022 Baseline Traffic Flows																													
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Neauside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak									
						Left	Right		A.M.	P.M.			A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y							
Access Road	E	↗	D	4	3.0	8	0	1	100%	100%	1915	1915	1595	1595	1595	1595	125	0.078	0.078	145	0.091	0.091							
Access Road	E	↘	D	4	3.0	0	15	0	100%	100%	2055	2055	1870	1870	1870	1870	50	0.027		40	0.021								
Tin Shui Road	N	↖	C	2	4.0	10	0	1	100%	100%	2015	2015	1750	1750	1750	1750	60	0.034	0.034	80	0.046	0.046							
Tin Shui Road	N	↑	H	1,2	3.4	0	0	0	0%	0%	2095	2095	2095	2095	2095	2095	305	0.146		315	0.150								
Tin Shui Road	N	↗	C	2	3.4	0	15	0	100%	100%	2095	2095	1905	1905	1905	1905	10	0.005		20	0.010								
Access Road	E	↖	E	3	3.6	12.5	0	1	100%	100%	1975	1975	1765	1765	1765	1765	20	0.011		20	0.011	0.011							
Access Road	E	↘	E	3	3.6	0	12.5	0	100%	100%	2115	2115	1890	1890	1890	1890	50	0.026	0.026	10	0.005								
Tin Shui Road	S	↘	B	1,5	3.3	15	0	1	16%	13%	1945	4030	1915	1920	4000	4005	192	0.100		151	0.079								
Tin Shui Road	S	↓	B	1,5	3.3	0	0	0	0%	0%	2085	0	2085	2085	0	0	209	0.100		164	0.079								
Tin Shui Road	S	↖	J	5	3.7	0	15	0	100%	100%	2125	2125	1930	1930	1930	1930	80	0.041	0.041	135	0.070	0.070							
Pedestrian crossing			↔	Fp	4	Min. Crossing Time = 7GM + 7FGM = 14s																							
			↔	Gp	2-5	Min. Crossing Time = 9GM + 9FGM = 18s																							
			↔	Kp	1,3	Min. Crossing Time = 12GM + 6FGM = 18s																							
			↔	Lp	2	Min. Crossing Time = 12GM + 8FGM = 20s																							
			↔	Mp	2-4	Min. Crossing Time = 7GM + 6FGM = 13s																							
			↔	Np	5	Min. Crossing Time = 14GM + 6FGM = 20s																							
			↔	Op	3-5	Min. Crossing Time = 8GM + 6FGM = 14s																							
Notes:										Traffic Flow (pcu / hr)										A.M. Check Phase					P.M. Check Phase				
																				E _y 0.181 L (sec) 48 C (sec) 108 y pract. 0.500 R.C. (%) 177%					E _y 0.218 L (sec) 48 C (sec) 108 y pract. 0.500 R.C. (%) 129%				
Stage/Phase Diagram:																													
																													
I/G=13s						I/G=14s						I/G=10s						I/G=6s						I/G=10s					

CTA Consultants Ltd.

Description: **2022 Baseline Traffic Flows**

Pedestrian crossing		Gp	1	Min. Crossing Time = 10GM + 10FGM = 20s
		Hp	2	Min. Crossing Time = 5GM + 5FGM = 10s
		Ip	2,4	Min. Crossing Time = 7GM + 7FGM = 14s
		Jp	2-4	Min. Crossing Time = 8GM + 8FGM = 16s
		Kp	3,4	Min. Crossing Time = 7GM + 7FGM = 14s
		Lp	3	Min. Crossing Time = 6GM + 6FGM = 12s

P.M. Check Phase



I/G=6s (AM) / 25s (PM)

TRAFFIC SIGNALS CALCULATION

Job No: 22012HK

CTA Consultants Ltd.

Junction: (7) Tin Yiu Road/ Tin Wu Road

Description: 2022 Baseline Traffic Flows

Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Neuroside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak		
						Left	Right		A.M.	P.M.			A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Tin Wu Road	E	→	C	2,3	3.5	0	0	1	0%	0%	1965	1965	1965	1965	1965	1965	90	0.046		60	0.031	
Tin Wu Road	E	↘	J	3	3.5	0	20	0	100%	100%	2105	2105	1960	1960	1960	1960	100	0.051	0.051	60	0.031	0.031
Tin Yiu Road	N	↙	K	1,3	4.0	10	0	1	100%	100%	2015	2015	1750	1750	1750	1750	40	0.023		125	0.071	
Tin Yiu Road	N	→	B	1	3.5	0	27.5	0	100%	100%	2105	4210	1995	1995	3980	3980	246	0.123	0.123	266	0.133	0.133
Tin Yiu Road	N	↘	B	1	3.5	0	25	0	100%	100%	2105	0	1985	1985	0	0	244	0.123		264	0.133	
Tin Wu Road	W	↙	E	1,2	3.3	20	0	1	100%	100%	1945	4030	1810	1810	3765	3765	202	0.112		286	0.158	
Tin Wu Road	W	↘	E	1,2	3.3	23	0	0	100%	100%	2085	0	1955	1955	0	0	218	0.112		309	0.158	
Tin Wu Road	W	←	D	2	4.4	0	0	0	0%	0%	2195	2195	2195	2195	2195	2195	60	0.027	0.027	125	0.057	0.057

Pedestrian crossing

→	Fp	1-3	Min. Crossing Time = 8GM + 8FGM = 16s
→	Gp	4	Min. Crossing Time = 12GM + 10FGM = 22s
→	Hp	4	Min. Crossing Time = 9GM + 7FGM = 16s
→	Ip	4	Min. Crossing Time = 8GM + 10FGM = 18s

Notes:

Traffic Flow (pcu / hr)

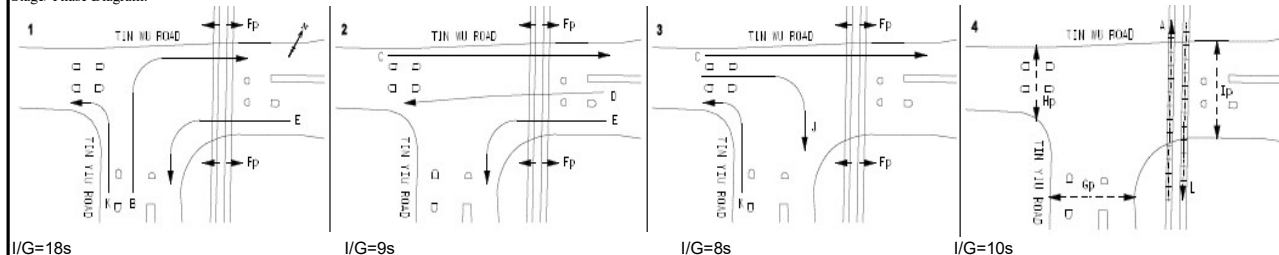
A.M. Check Phase

P.M. Check Phase

Ey	0.201	Ey	0.221
L (sec)	41	L (sec)	41
C (sec)	90	C (sec)	90
y pract.	0.490	y pract.	0.490
R.C. (%)	143%	R.C. (%)	122%

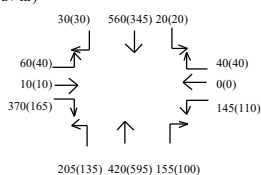


Stage/ Phase Diagram:



CTA Consultants Ltd.Description: **2022 Baseline Traffic Flows**Pedestrian crossing

Traffic Flow (pcu / hr)



Ey	0.394
L (sec)	30
C (sec)	101
y pract.	0.633
R.C. (%)	61%

Ey	0.318
L (sec)	30
C (sec)	101
y pract.	0.633
R.C. (%)	99%

$1/G=9s$

$$I/G=5s$$

$I/G=10s$

$1/G=5s$

 $1/G=6s$

CTA Consultants Ltd.Description: **2022 Baseline Traffic Flows**

Pedestrian crossing ← Fp 1.2 Min. Crossing Time = 7GM + 8FGM = 15s

Εγ	0.255	Εγ	0.193
L (sec)	24	L (sec)	24
C (sec)	57	C (sec)	57
y pract.	0.521	y pract.	0.521
R.C. (%)	105%	R.C. (%)	169%

$$I/G=5s$$

TRAFFIC SIGNALS CALCULATION										Job No: 22012HK		CTA Consultants Ltd.													
Junction: (11) Tin Shing Road / Tin Wing Road																									
Description: 2022 Baseline Traffic Flows																									
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside O/I	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		AM Peak			PM Peak					
						Left	Right		AM	PM			AM	PM	AM	PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y			
	E	↗	B	2	3.5	20.0	0	1	100%	100%	1965	6175	1830	1830	5750	5750	172	0.094	0.094	156	0.085	0.085			
	E	↘	B	2	3.5	20.0	20	0	18% / 82%	17% / 83%	2105	0	1960	1960	0	0	184	0.094		167	0.085				
	E	↕	B	2	3.5	0.0	20	0	100%	100%	2105	0	1960	1960	0	0	184	0.094		167	0.085				
Tin Shing Road	S	↕	C	2,3	3.5	0.0	0	0	0%	0%	2105	4210	2105	2105	4210	4210	108	0.051		98	0.046				
	S	↕	C	2,3	3.5	0.0	0	0	0%	0%	2105	0	2105	2105	0	0	108	0.051		98	0.046				
Pedestrian crossing			Dp			Min. Crossing Time = 8Gm + 8FGm =16s																			
			Ep			Min. Crossing Time = 7Gm + 9FGm =16s																			
			Fp			Min. Crossing Time = 8Gm + 9FGm =17s																			
			Gp			Min. Crossing Time = 8Gm + 8FGm =16s																			
			Hp			Min. Crossing Time = 7Gm + 8FGm =15s																			
Notes: (Nil)										Traffic Flow (pcu / hr)										AM Peak Check Phase			PM Peak Check Phase		
										<div>205(185) ↗ 213(195) ↓ 333(305) ↘</div>										E _y 0.094 L (sec) 91 C (sec) 149 y pract. 0.350 R.C. (%) 273%			E _y 0.085 L (sec) 91 C (sec) 149 y pract. 0.350 R.C. (%) 311%		
Stage / Phase Diagrams																									

CTA Consultants Ltd.Description: **2022 Baseline Traffic Flows**

Stage/ Phase Diagram:

1
I/G=16s







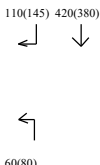
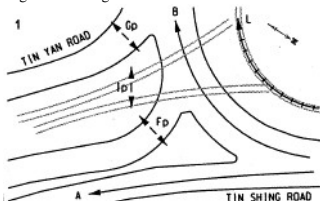
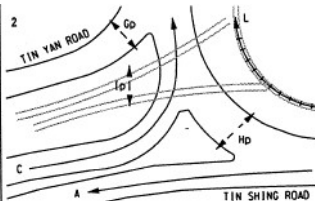
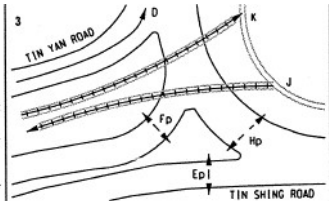
2
I/G=7s

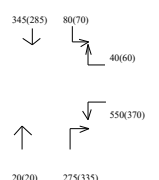
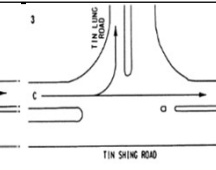
3
I/G=6s

4
I/G=9s

CTA Consultants Ltd.

Description: **2022 Baseline Traffic Flows**

Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak			
						Left	Right		A.M.	P.M.			A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y	
Tin Shing Road	N		C	2	4.0	20	0	1	100%	100%	2015	4160	1875	1875	3900	3900	29	0.015		38	0.021		
	N		C	2	3.9	25	0	0	100%	100%	2145	0	2025	2025	0	0	31	0.015		42	0.021		
Tin Shing Road	S		A	1,2	3.5	0	0	1	0%	0%	1965	6035	1965	1965	5955	5955	203	0.103	0.103	183	0.093	0.093	
	S		A,B	1,2	3.5	0	40	0	0%	0%	2105	0	2105	2105	0	0	217	0.103		197	0.093		
	S		B	1	3.5	0	35	1	100%	100%	1965	0	1885	1885	0	0	110	0.058		145	0.077		
Pedestrian crossing			Ep	3	Min. Crossing Time = 11GM + 7FGM = 18s																		
			Fp	1,3	Min. Crossing Time = 7GM + 7FGM = 14s																		
			Hp	2,3	Min. Crossing Time = 8GM + 8FGM = 16s																		
			Ip	1,2	Min. Crossing Time = 8GM + 8FGM = 16s																		
Notes:									Traffic Flow (pcu / hr)									A.M. Check Phase			P.M. Check Phase		
																		Ey 0.103 L (sec) 53 C (sec) 91 y pract. 0.376 R.C. (%) 264%			Ey 0.093 L (sec) 53 C (sec) 91 y pract. 0.376 R.C. (%) 303%		
Stage/ Phase Diagram:																							
																							
I/G=29s						I/G=5s						I/G=22s											

TRAFFIC SIGNALS CALCULATION										Job No: 22012HK										CTA Consultants Ltd.									
Junction: (14) Tin Lung Road / Tin Shing Road																													
Description: 2022 Baseline Traffic Flows																													
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		AM Peak			PM Peak									
						Left	Right		AM	PM			AM	PM	AM	PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y							
Tin Shung Road	N	↗	A	1	3.5	0.0	15	0	87%	89%	2105	4070	1935	1935	3720	3720	154	0.079	0.079	185	0.095	0.095							
	N	↘	A	1	3.5	0.0	15	1	100%	100%	1965	0	1785	1785	0	0	141	0.079		170	0.095								
Tin Lung Road	W	↙	B	2	3.5	15.0	0	1	100%	100%	1965	4070	1785	1785	3700	3700	265	0.149	0.149	179	0.100	0.100							
	W	↘	B	2	3.5	15.0	0	0	100%	100%	2105	0	1915	1915	0	0	285	0.149		192	0.100								
	W	↖	B	2	3.5	0.0	15	0	100%	100%	2105	2105	1915	1915	1915	1915	40	0.021		60	0.031								
Tin Shung Road	S	↘	C	3	3.5	10.0	0	1	40%	42%	1965	4070	1855	1850	3960	3955	199	0.107	0.107	166	0.090	0.090							
	S	↖	C	3	3.5	0.0	0	0	0%	0%	2105	0	2105	2105	0	0	226	0.107		189	0.090								
Pedestrian crossing			Dp		Min. Crossing Time = 15Gm + 13FGm =28s																								
Notes: (Nil)									Traffic Flow (pcu / hr)									AM Peak Check Phase				PM Peak Check Phase							
																		Ey 0.335 L (sec) 49 C (sec) 108 y pract. 0.492 R.C. (%) 47%				Ey 0.285 L (sec) 49 C (sec) 108 y pract. 0.492 R.C. (%) 72%							
Stage / Phase Diagrams																													
																													
I/G=4s						I/G=5s						I/G=5s						I/G=38s											

TRAFFIC SIGNALS CALCULATION										Job No: 18066HK										CTA Consultants Ltd.									
Junction: (15) Tin Cheung Road / Tin Shing Road																													
Description: 2022 Baseline Traffic Flows																													
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside O/I	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		AM Peak			PM Peak									
						Left	Right		AM	PM			AM	PM	AM	PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y							
Tin Shing Road	N	↖	E	2	3.5	15.0	0	1	100%	100%	1965	1965	1785	1785	1785	1785	80	0.045		80	0.045	0.045							
	N	↗	C	1,2	3.5	0.0	0	0	0%	0%	2105	2105	2105	2105	2105	2105	205	0.097		185	0.088								
	N	↘	F	2	3.5	0.0	15	0	100%	100%	2105	2105	1915	1915	1915	1915	205	0.107	0.107	70	0.037								
Tin Cheung Road	W	↖	B	3	3.5	20.0	0	1	50%	43%	1965	4070	1895	1905	3935	3920	272	0.144		294	0.154								
	W	↗	B	3	3.5	0.0	20	0	43%	59%	2105	0	2040	2015	0	0	293	0.144	0.144	311	0.154	0.154							
Tin Shing Road	S	↘	D	1,3	3.5	20.0	0	1	100%	100%	1965	4070	1830	1830	3790	3790	275	0.150		203	0.111								
	S	↙	D	1,3	3.5	20.0	0	0	100%	100%	2105	0	1960	1960	0	0	295	0.150		217	0.111								
	S	↓	A	1	3.5	0.0	0	0	0%	0%	2105	4210	2105	2105	4210	4210	168	0.080	0.080	118	0.056	0.056							
	S	↓	A	1	3.5	0.0	0	0	0%	0%	2105	0	2105	2105	0	0	168	0.080		118	0.056								
Pedestrian crossing			Gp		Min. Crossing Time = 10Gm + 5FGm =15s																								
Pedestrian crossing			Hp		Min. Crossing Time = 10Gm + 10FGm =20s																								
Pedestrian crossing			Ip		Min. Crossing Time = 10Gm + 7FGm =17s																								
Notes: (Nil)										<div>Traffic Flow (pcu / hr)</div> <div><div><div>335(235)</div><div>570(420)</div><div>125(185)</div><div>305(295)</div><div>135(125)</div><div>80(80)</div><div>205(185)</div><div>205(70)</div></div></div>										<div>AM Peak Check Phase</div> <div>Ey 0.330</div> <div>L (sec) 15</div> <div>C (sec) 57</div> <div>y pract. 0.663</div> <div>R.C. (%) 101%</div>					<div>PM Peak Check Phase</div> <div>Ey 0.255</div> <div>L (sec) 18</div> <div>C (sec) 57</div> <div>y pract. 0.616</div> <div>R.C. (%) 141%</div>				
Stage / Phase Diagrams																													
I/G = 6s						I/G = 5s (AM) / 10s (PM)						I/G = 7s (AM) / 5s (PM)																	

TRAFFIC SIGNALS CALCULATION										Job No: 22012HK		CTA Consultants Ltd.													
Junction: (16) Tin Wu Road / Tin Shing Road / Tin Pak Road																									
Description: 2022 Baseline Traffic Flows																									
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		AM Peak			PM Peak					
						Left	Right		AM	PM			AM	PM	AM	PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y			
Tin Wu Road	E	↵	D	4	3.5	30.0	0	1	100%	100%	1965	4070	1870	1870	3915	3920	136	0.073	0.073	112	0.060	0.060			
	E	↶	D	4	3.5	30.0	0	0	60%	51%	2105	0	2045	2050	0	0	149	0.073		123	0.060				
	E	↷	D	4	3.5	0.0	30	0	100%	100%	2105	4210	2005	2005	4010	4010	138	0.069		88	0.044				
	E	↵	D	4	3.5	0.0	30	0	100%	100%	2105	0	2005	2005	0	0	138	0.069		88	0.044				
Tin Shing Road	N	↵	A	4	3.5	20.0	0	1	100%	100%	1965	4070	1830	1830	3790	3790	109	0.059		84	0.046				
	N	↶	A	4	3.5	20.0	0	0	100%	100%	2105	0	1960	1960	0	0	116	0.059		91	0.046				
	N	↷	B	1	3.5	0.0	0	0	0%	0%	2105	2105	2105	2105	2105	2105	155	0.074		155	0.074				
	N	↵	M	1	3.5	0.0	20	0	100%	100%	2105	2105	1960	1960	1960	1960	275	0.140	0.140	195	0.099	0.099			
Tin Pak Road	W	↶	E	3	3.5	20.0	0	1	100%	100%	1965	4070	1830	1830	3870	3890	175	0.096		90	0.049				
	W	↷	E	3	3.5	0.0	25	0	53%	38%	2105	0	2040	2060	0	0	150	0.074	0.096	80	0.039	0.049			
Tin Shing Road	S	↶	C	2	3.0	10.0	0	1	38%	44%	1915	3970	1810	1795	3865	3850	157	0.087	0.087	114	0.064	0.064			
	S	↷	C	2	3.0	0.0	0	0	0%	0%	2055	0	2055	2055	0	0	178	0.087		131	0.064				
	S	↵	C	2	3.0	0.0	20	0	100%	100%	2055	2055	1910	1910	1910	1910	100	0.052		110	0.058				
Pedestrian crossing			Fp Gp Hp Ip Jp Kp Lp Np	Min. Crossing Time = 8Gm + 7FGm =15s Min. Crossing Time = 7Gm + 8FGm =15s Min. Crossing Time = 9Gm + 9FGm =18s Min. Crossing Time = 7Gm + 7FGm =16s Min. Crossing Time = 7Gm + 5FGm =12s Min. Crossing Time = 7Gm + 6FGm =13s Min. Crossing Time = 7Gm + 11FGm =18s Min. Crossing Time = 7Gm + 8FGm =15s																					
Notes: (Nil)										<div>Traffic Flow (pcu / hr)</div> <div></div>										<div>AM Peak Check Phase</div> <div>Ey 0.395 L (sec) 37 C (sec) 87 y pract. 0.517 R.C. (%) 31%</div>			<div>PM Peak Check Phase</div> <div>Ey 0.272 L (sec) 37 C (sec) 87 y pract. 0.517 R.C. (%) 90%</div>		
Stage / Phase Diagrams										<div></div>															
I/G = 8s										I/G = 19s										I/G = 5s			I/G = 9s		











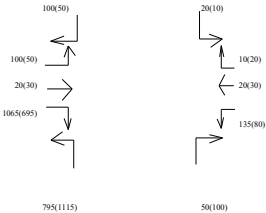



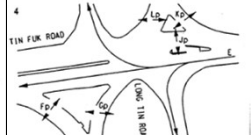
TRAFFIC SIGNALS CALCULATION										Job No: 22012HK				CTA Consultants Ltd.									
Junction: (17) Tin Wu Road / Tin Shui Road																							
Description: 2022 Baseline Traffic Flows																							
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		AM Peak			PM Peak			
						Left	Right		AM	PM			AM	PM	AM	PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y	
Tin Wu Road	E	↗	C	1,2	3.5	15.0	0	1	100%	100%	1965	1965	1785	1785	1785	1785	335	0.188		345	0.193		
	E	→	B	1	3.5	0.0	0	0	0%	0%	2105	4210	2105	2105	4210	4210	153	0.072	0.072	133	0.063	0.063	
	E	↘	B	1	3.5	0.0	0	0	0%	0%	2105	0	2105	2105	0	0	153	0.072		133	0.063		
Tin Wu Road	W	←	A	3	3.5	0.0	0	1	0%	0%	1965	4070	1965	1965	4070	4070	109	0.055		94	0.048		
	W	←	A	3	3.5	0.0	0	0	0%	0%	2105	0	2105	2105	0	0	116	0.055		101	0.048		
	W	↖	A	3	3.5	0.0	15	0	100%	100%	2105	2105	1915	1915	1915	1915	185	0.097	0.097	155	0.081	0.081	
Tin Shui Road	S	↘	E	2,3	3.5	20.0	0	1	100%	100%	1965	4070	1830	1830	3790	3790	113	0.062		60	0.033		
	S	↘	E	2,3	3.5	20.0	0	0	100%	100%	2105	0	1960	1960	0	0	122	0.062		65	0.033		
	S	↖	D	2	3.0	0.0	15	0	100%	100%	2055	2055	1870	1870	1870	1870	370	0.198	0.198	235	0.126	0.126	
Pedestrian crossing			Fp	Min. Crossing Time = 5Gm + 5FGm =10s																			
			Gp	Min. Crossing Time = 10Gm + 9FGm =19s																			
			Hp	Min. Crossing Time = 10Gm + 9FGm =19s																			
			Ip	Min. Crossing Time = 5Gm + 8FGm =13s																			
Notes: (Nil)									Traffic Flow (pcu / hr)								AM Peak Check Phase			PM Peak Check Phase			
																	E _y 0.367 L (sec) 20 C (sec) 108 y pract. 0.733 R.C. (%) 100%			E _y 0.270 L (sec) 20 C (sec) 108 y pract. 0.733 R.C. (%) 172%			
Stage / Phase Diagrams																							
I/G = 8s				I/G = 8s				I/G = 7s															

Description: **2022 Baseline Traffic Flows**

Notes: (Nil)		Traffic Flow (pcu / hr)		AM Peak Check Phase		PM Peak Check Phase	
		<div><div><div>16S(175)</div><div>80(90)</div><div>480(400)</div><div>10(20)</div><div>30(50)</div></div><div><div>20(20)</div><div>40(20)</div></div><div><div>530(325)</div><div>430(430)</div><div>460(595)</div><div>100(245)</div><div>16S(80)</div></div></div>	<div><div>γ_y 0.427</div><div>L (sec) 24</div><div>C (sec) 120</div><div>y pract. 0.720</div><div>R.C. (%) 68%</div></div>	<div><div>γ_y 0.440</div><div>L (sec) 24</div><div>C (sec) 120</div><div>y pract. 0.720</div><div>R.C. (%) 64%</div></div>			

$$1/G = 5s$$
$$I/G = 6s$$
 $I/G = 11$
$$1/G = 6s$$

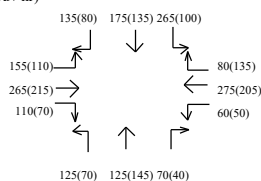
CTA Consultants Ltd.Description: **2022 Baseline Traffic Flows**

Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0:1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		AM Peak			PM Peak				
						Left	Right		AM	PM			AM	PM	AM	PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y		
Tin Fuk Road	E		C	1	3.5	20.0	0	1	83%	63%	1965	1965	1850	1875	1850	1875	120	0.065		80	0.043			
	E		C	1	3.5	0.0	25	0	100%	100%	2105	4210	1960	1960	3920	3920	533	0.272	0.272	348	0.177	0.177		
	E		C	1	3.5	0.0	25	0	100%	100%	2105	0	1960	1960	0	0	533	0.272		348	0.177			
Long Tin Road	N		A	1,2	3.5	20.0	0	1	100%	100%	1965	4070	1830	1830	3815	3815	381	0.208		535	0.292			
Long Tin Road	N		A	1,2	3.5	25.0	0	0	100%	100%	2105	0	1985	1985	0	0	414	0.208		580	0.292			
	N		B	2	3.5	0.0	20	0	100%	100%	2105	2105	1960	1960	1960	1960	50	0.026	0.026	100	0.051	0.051		
Ha Mei San Tsuen Road	W		E	4	3.5	0.0	30	0	33%	40%	2105	0	2070	2065	0	0	30	0.014		50	0.024			
	W		E	4	3.5	20.0	0	1	100%	100%	1965	4070	1830	1830	3900	3895	135	0.074	0.074	80	0.044	0.044		
Tin Tsz Road	S		D	3	3.5	20.0	20	1	35% / 65%	35% / 65%	1965	4070	1830	1830	3790	3790	58	0.032		29	0.016			
	S		D	3	3.5	0.0	20	0	100%	100%	2105	0	1960	1960	0	0	62	0.032	0.032	31	0.016	0.016		
Notes: (Nil)									Traffic Flow (pcu / hr) 										AM Peak Check Phase Ey 0.403 L (sec) 43 C (sec) 120 y pract. 0.578 R.C. (%) 43%			PM Peak Check Phase Ey 0.288 L (sec) 43 C (sec) 120 y pract. 0.578 R.C. (%) 101%		
Stage / Phase Diagrams																								
																								
V/G = 12s						V/G = 15s						V/G = 13s						V/G = 7s						

CTA Consultants Ltd.Description: **2022 Baseline Traffic Flows**

Pedestrian crossing

Traffic Flow (pcu / hr)



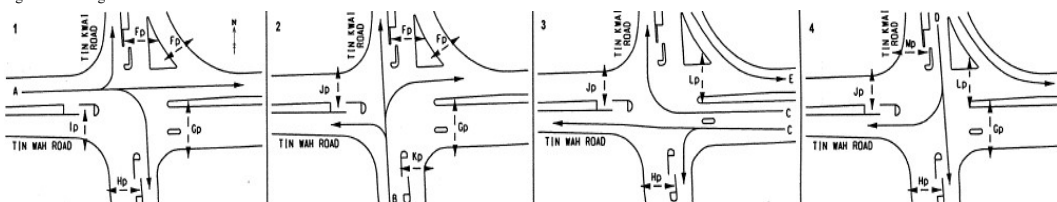
	A.M. Check Phase
--	------------------

Ey	0.295
L (sec)	43
C (sec)	93
y pract.	0.484
R.C. (%)	64%

	P.M. Check Phase
--	------------------

Ey	0.227
L (sec)	43
C (sec)	93
y pract.	0.484
R.C. (%)	113%

Stage/ Phase Diagram:



$I/G=15s$

$I/G=13s$

I/G=13s

 $I/G=6s$


















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Junction: (22) Tin Wah Road/ Wetland Park Road

Description: **2022 Baseline Traffic Flows**

Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside O/I	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak		
						Left	Right		A.M.	P.M.			A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	γ Value	Critical y	Flow (pcu/hr)	γ Value	Critical y
Tin Wah Road	E		A	1	3.2	15	0	1	100%	100%	1935	1935	1760	1760	1760	1760	30	0.017	0.153	20	0.011	0.091
	E		A	1	3.2	0	40	0	90%	89%	2075	4150	2005	2010	3995	4000	306	0.153		183	0.091	
	E		A	1	3.2	0	35	0	100%	100%	2075	0	1990	1990	0	0	304	0.153		182	0.091	
Tin Tsz Road	N		B	1,2	3.8	55	0	1	100%	100%	1995	4090	1940	1940	3975	3965	215	0.111		206	0.106	
	N		B,C	2	3.4	60	22.5	0	2% / 13.7% / 23%		2095	0	2035	2025	0	0	225	0.111	0.111	214	0.106	0.106
Access Road	W		D	4	3.5	15	0	1	100%	100%	1965	4050	1785	1785	3850	3825	60	0.034		20	0.011	
	W		D	4	3.3	0	35	0	25%	50%	2085	0	2065	2040	0	0	40	0.019	0.034	20	0.010	0.011
Wetland Park Road	S		E	3	3.5	20	0	1	0%	100%	1965	4070	1965	1830	4070	3935	10	0.005	0.005	20	0.011	0.011
	S		E	3	3.5	0	20	0	0%	0%	2105	0	2105	2105	0	0	10	0.005		10	0.005	
Pedestrian crossing			Fp	1,2,4	Min. Crossing Time = 5GM + 10FGM = 15s																	
			Gp	3	Min. Crossing Time = 5GM + 10FGM = 15s																	
			Hp	2-4	Min. Crossing Time = 5GM + 11FGM = 16s																	
			Ip	1,2	Min. Crossing Time = 5GM + 7FGM = 12s																	
			Jp	3,4	Min. Crossing Time = 5GM + 7FGM = 12s																	
			Kp	1,3,4	Min. Crossing Time = 5GM + 6FGM = 11s																	
			Lp	2	Min. Crossing Time = 5GM + 8FGM = 13s																	
			Mp	4	Min. Crossing Time = 5GM + 5FGM = 10s																	

Notes:		A.M. Check Phase		P.M. Check Phase	
		ϵ_y	0.302	ϵ_y	0.219
		L (sec)	41	L (sec)	41
		C (sec)	81	C (sec)	81
		y pract.	0.444	y pract.	0.444
		R.C. (%)	47%	R.C. (%)	103%

Notes:		A.M. Check Phase		P.M. Check Phase	
		ϵ_y	0.302	ϵ_y	0.219
		L (sec)	41	L (sec)	41
		C (sec)	81	C (sec)	81
		y pract.	0.444	y pract.	0.444
		R.C. (%)	47%	R.C. (%)	103%

Notes:		A.M. Check Phase		P.M. Check Phase	
		ϵ_y	0.302	ϵ_y	0.219
		L (sec)	41	L (sec)	41
		C (sec)	81	C (sec)	81
		y pract.	0.444	y pract.	0.444
		R.C. (%)	47%	R.C. (%)	103%

Notes:		A.M. Check Phase		P.M. Check Phase	
		ϵ_y	0.302	ϵ_y	0.219
		L (sec)	41	L (sec)	41
		C (sec)	81	C (sec)	81
		y pract.	0.444	y pract.	0.444
		R.C. (%)	47%	R.C. (%)	103%

Notes:		A.M. Check Phase		P.M. Check Phase	
		ϵ_y	0.302	ϵ_y	0.219
		L (sec)	41	L (sec)	41
		C (sec)	81	C (sec)	81
		y pract.	0.444	y pract.	0.444
		R.C. (%)	47%	R.C. (%)	103%

Notes:		A.M. Check Phase		P.M. Check Phase	
		ϵ_y	0.302	ϵ_y	0.219
		L (sec)	41	L (sec)	41
		C (sec)	81	C (sec)	81
		y pract.	0.444	y pract.	0.444
		R.C. (%)	47%	R.C. (%)	103%

Notes:		A.M. Check Phase		P.M. Check Phase	
		ϵ_y	0.302	ϵ_y	0.219
		L (sec)	41	L (sec)	41
		C (sec)	81	C (sec)	81
		y pract.	0.444	y pract.	0.444
		R.C. (%)	47%	R.C. (%)	103%

Notes:		A.M. Check Phase		P.M. Check Phase	
		ϵ_y	0.302	ϵ_y	0.219
		L (sec)	41	L (sec)	41
		C (sec)	81	C (sec)	81
		y pract.	0.444	y pract.	0.444
		R.C. (%)	47%	R.C. (%)	103%

Notes:		A.M. Check Phase		P.M. Check Phase	
		ϵ_y 0.302 L (sec) 41 C (sec) 81 y pract. 0.444 R.C. (%) 47%	ϵ_y 0.219 L (sec) 41 C (sec) 81 y pract. 0.444 R.C. (%) 103%		

Notes:		A.M. Check Phase		P.M. Check Phase	
		ϵ_y	0.302	ϵ_y	0.219
		L (sec)	41	L (sec)	41
		C (sec)	81	C (sec)	81
		y pract.	0.444	y pract.	0.444
		R.C. (%)	47%	R.C. (%)	103%

Notes:		A.M. Check Phase		P.M. Check Phase	
		ϵ_y 0.302 L (sec) 41 C (sec) 81 y pract. 0.444 R.C. (%) 47%	ϵ_y 0.219 L (sec) 41 C (sec) 81 y pract. 0.444 R.C. (%) 103%		

Notes:		A.M. Check Phase		P.M. Check Phase	
		ϵ_y 0.302 L (sec) 41 C (sec) 81 y pract. 0.444 R.C. (%) 47%	ϵ_y 0.219 L (sec) 41 C (sec) 81 y pract. 0.444 R.C. (%) 103%		

Notes:		A.M. Check Phase		P.M. Check Phase	
		ϵ_y 0.302 L (sec) 41 C (sec) 81 y pract. 0.444 R.C. (%) 47%	ϵ_y 0.219 L (sec) 41 C (sec) 81 y pract. 0.444 R.C. (%) 103%		

Notes:		A.M. Check Phase		P.M. Check Phase	
		ϵ_y 0.302 L (sec) 41 C (sec) 81 y pract. 0.444 R.C. (%) 47%	ϵ_y 0.219 L (sec) 41 C (sec) 81 y pract. 0.444 R.C. (%) 103%		

Notes:		A.M. Check Phase		P.M. Check Phase	
		ϵ_y 0.302 L (sec) 41 C (sec) 81 y pract. 0.444 R.C. (%) 47%	ϵ_y 0.219 L (sec) 41 C (sec) 81 y pract. 0.444 R.C. (%) 103%		

Notes:		A.M. Check Phase		P.M. Check Phase	
		ϵ_y 0.302 L (sec) 41 C (sec) 81 y pract. 0.444 R.C. (%) 47%	ϵ_y 0.219 L (sec) 41 C (sec) 81 y pract. 0.444 R.C. (%) 103%		

Notes:		A.M. Check Phase		P.M. Check Phase	
		ϵ_y 0.302 L (sec) 41 C (sec) 81 y pract. 0.444 R.C. (%) 47%	ϵ_y 0.219 L (sec) 41 C (sec) 81 y pract. 0.444 R.C. (%) 103%		

Notes:		A.M. Check Phase		P.M. Check Phase	
		ϵ_y 0.302 L (sec) 41 C (sec) 81 y pract. 0.444 R.C. (%) 47%	ϵ_y 0.219 L (sec) 41 C (sec) 81 y pract. 0.444 R.C. (%) 103%		

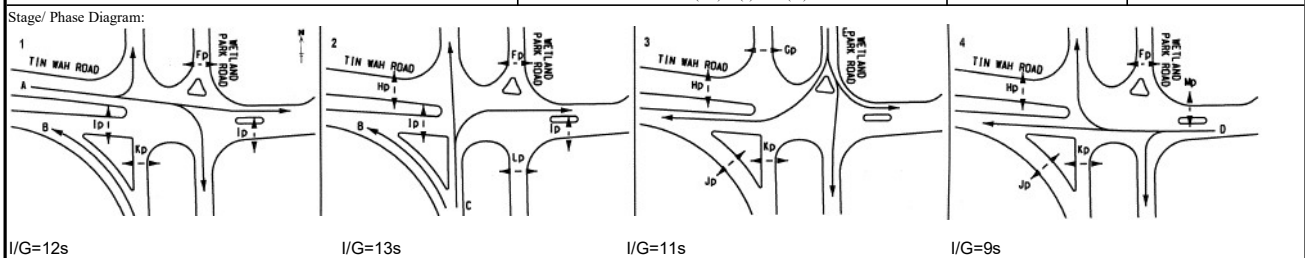
Stage/ Phase Diagram:

1
TIN WAH ROAD
WETLAND PARK ROAD
I/G=12s

2
TIN WAH ROAD
WETLAND PARK ROAD
I/G=13s

3
TIN WAH ROAD
WETLAND PARK ROAD
I/G=11s















4
TIN WAH ROAD
WETLAND PARK ROAD
I/G=9s



TRAFFIC SIGNALS CALCULATION

Job No: 22012HK

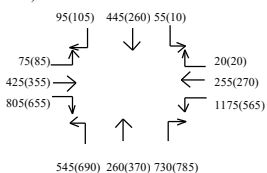
CTA Consultants Ltd.Junction: **(1) Tin Ying Road/ Tin Wah Road**Description: **2031 Reference Traffic Flows**

Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside O/I	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak		
						Left	Right		A.M.	P.M.			A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Tin Wah Road	E		A	1	3.6	30	0	1	17%	23%	1975	6185	1960	1950	5805	5800	444	0.227		368	0.189	
Tin Wah Road	E		A	1	3.4	0	17.5	0	85%	81%	2095	0	1955	1960	0	0	443	0.226	0.227	370	0.189	0.189
Tin Wah Road	E		A	1	3.6	0	12.5	0	100%	100%	2115	0	1890	1890	0	0	428	0.227		357	0.189	
Tin Ying Road	N		B	1,2	5.2	25	0	1	100%	100%	2135	2135	2015	2015	2015	2015	545	0.270		690	0.342	
Tin Ying Road	N		C	2	3.6	0	0	0	0%	0%	2115	6285	2115	2115	6100	6100	260	0.123		370	0.175	
Tin Ying Road	N		C	2	3.4	0	35	0	100%	100%	2095	0	2010	2010	0	0	368	0.183	0.183	396	0.197	0.197
Tin Ying Road	N		C	2	3.2	0	30	0	100%	100%	2075	0	1975	1975	0	0	362	0.183		389	0.197	
Tin Wah Road	W		D	3	3.3	0	0	0	0%	0%	1945	4040	1945	1945	4040	4040	123	0.063		130	0.067	
Tin Wah Road	W		D	3	3.4	0	0	0	0%	0%	2095	0	2095	2095	0	0	132	0.063	0.063	140	0.067	0.067
Tin Wah Road	W		D	3	3.1	0	15	0	100%	100%	2065	2065	1875	1875	1875	1875	20	0.011		20	0.011	
Tin Ying Road	S		E	3,4	4.6	25	0	1	100%	100%	2075	2075	1960	1960	1960	1960	55	0.028		10	0.005	
Tin Ying Road	S		F	4	3.3	0	0	0	0%	0%	1945	4030	1945	1945	4030	4030	215	0.110		125	0.065	
Tin Ying Road	S		F	4	3.3	0	0	0	0%	0%	2085	0	2085	2085	0	0	230	0.110	0.110	135	0.065	0.065
Tin Ying Road	S		F	4	3.1	0	40	0	100%	100%	2065	2065	1990	1990	1990	1990	95	0.048		105	0.053	

Pedestrian crossing

Notes:

Traffic Flow (pcu / hr)



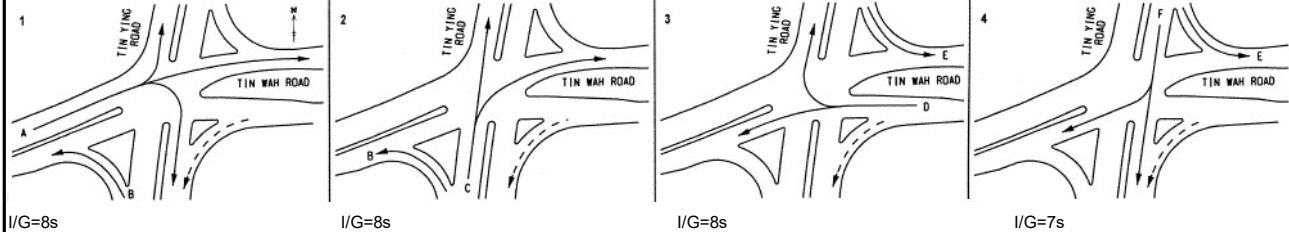
A.M. Check Phase

Ey	0.583
L (sec)	27
C (sec)	120
y pract.	0.698
R.C. (%)	20%

P.M. Check Phase

Ey	0.517
L (sec)	27
C (sec)	120
y pract.	0.698
R.C. (%)	35%

Stage/Phase Diagram:



Description: **2031 Reference Traffic Flows**

Category	Sub-category	Value	Calculation
Pedestrian crossing	Fp	1,2	Min. Crossing Time = 8GM + 6FGM = 14s
	Gp	2,5	Min. Crossing Time = 8GM + 8FGM = 16s
	Hp	2-4	Min. Crossing Time = 7GM + 6FGM = 13s
	Ip	1-3,5	Min. Crossing Time = 7GM + 7FGM = 14s
	Jp	4	Min. Crossing Time = 6GM + 6FGM = 12s
	Mp	3-5	Min. Crossing Time = 8GM + 8FGM = 16s

Ey	0.312
L (sec)	33
C (sec)	100
y pract.	0.603
R.C. (%)	93%

TRAFFIC SIGNALS CALCULATION										Job No: 22012HK										CTA Consultants Ltd.									
Junction: (4) Tin Shui Road/ Tin Wing Road																													
Description: 2031 Reference Traffic Flows																													
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Neuside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak									
						Left	Right		A.M.	P.M.			A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y							
Tin Shui Road	N	↑	A	3	3.4	0	0	1	0%	0%	1815	3910	1815	1815	3910	3910	202	0.111	0.111	202	0.111	0.111							
Tin Shui Road	N	↑	A	3	3.4	0	0	0	0%	0%	2095	0	2095	2095	0	0	233	0.111		233	0.111								
Tin Shui Road	N	↗	B	1,2	3.6	0	15	0	100%	100%	2115	2115	1925	1925	1925	1925	85	0.044		75	0.039								
Tin Wing Road	W	↘	B	1,2	3.3	15	0	1	100%	100%	1945	1945	1770	1770	1770	1770	95	0.054	0.054	95	0.054	0.054							
Tin Wing Road	W	↖	C	4	3.3	0	22.5	0	100%	100%	2085	4170	1955	1955	3895	3895	83	0.042		88	0.045								
Tin Wing Road	W	↖	C	4	3.3	0	20	0	100%	100%	2085	0	1940	1940	0	0	82	0.042	0.042	87	0.045	0.045							
Tin Shui Road	S	↘	D	3	3.3	13	0	1	100%	100%	1945	1945	1735	1735	1735	1735	75	0.043		85	0.049								
Tin Shui Road	S	↓	D	3	3.4	0	0	0	0%	0%	1955	4070	1955	1955	4070	4070	195	0.100		185	0.095								
Tin Shui Road	S	↓	D	3	3.6	0	0	0	0%	0%	2115	0	2115	2115	0	0	210	0.100		200	0.095								
Pedestrian crossing			←	Ep	4	Min. Crossing Time = 10GM + 10FGM = 20s																							
			↔	Fp	4,5	Min. Crossing Time = 12GM + 10FGM = 22s																							
			↕	Gp	3,5	Min. Crossing Time = 7GM + 10FGM = 17s																							
			↕	Hp	4,5	Min. Crossing Time = 7GM + 9FGM = 16s																							
			↕	Ip	3,4	Min. Crossing Time = 7GM + 8FGM = 15s																							
Notes:										Traffic Flow (pcu / hr)										A.M. Check Phase					P.M. Check Phase				
																				Ey 0.207 L (sec) 136 C (sec) 218 y pract. 0.339 R.C. (%) 63%					Ey 0.210 L (sec) 136 C (sec) 218 y pract. 0.339 R.C. (%) 61%				
Stage/Phase Diagram:																													
I/G=47s										I/G=38s										I/G=41s									

TRAFFIC SIGNALS CALCULATION										Job No: 22012HK										CTA Consultants Ltd.									
Junction: (5) Tin Shui Road/ Access Road to Chestwood Court																													
Description: 2031 Reference Traffic Flows																													
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Neauside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak									
						Left	Right		A.M.	P.M.			A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y							
Access Road	E	↗	D	4	3.0	8	0	1	100%	100%	1915	1915	1595	1595	1595	1595	135	0.085	0.085	155	0.097	0.097							
Access Road	E	↘	D	4	3.0	0	15	0	100%	100%	2055	2055	1870	1870	1870	1870	55	0.029		45	0.024								
Tin Shui Road	N	↖	C	2	4.0	10	0	1	100%	100%	2015	2015	1750	1750	1750	1750	65	0.037	0.037	85	0.049	0.049							
Tin Shui Road	N	↑	H	1,2	3.4	0	0	0	0%	0%	2095	2095	2095	2095	2095	2095	325	0.155		335	0.160								
Tin Shui Road	N	↗	C	2	3.4	0	15	0	100%	100%	2095	2095	1905	1905	1905	1905	10	0.005		20	0.010								
Access Road	E	↖	E	3	3.6	12.5	0	1	100%	100%	1975	1975	1765	1765	1765	1765	20	0.011		20	0.011	0.011							
Access Road	E	↘	E	3	3.6	0	12.5	0	100%	100%	2115	2115	1890	1890	1890	1890	55	0.029	0.029	10	0.005								
Tin Shui Road	S	↘	B	1,5	3.3	15	0	1	15%	12%	1945	4030	1915	1920	4000	4005	204	0.106		161	0.084								
Tin Shui Road	S	↓	B	1,5	3.3	0	0	0	0%	0%	2085	0	2085	2085	0	0	221	0.106		174	0.084								
Tin Shui Road	S	↖	J	5	3.7	0	15	0	100%	100%	2125	2125	1930	1930	1930	1930	85	0.044	0.044	145	0.075	0.075							
Pedestrian crossing		↔	Fp	4	Min. Crossing Time = 7GM + 7FGM = 14s																								
		↔	Gp	2-5	Min. Crossing Time = 9GM + 9FGM = 18s																								
		↔	Kp	1,3	Min. Crossing Time = 12GM + 6FGM = 18s																								
		↔	Lp	2	Min. Crossing Time = 12GM + 8FGM = 20s																								
		↔	Mp	2-4	Min. Crossing Time = 7GM + 6FGM = 13s																								
		↔	Np	5	Min. Crossing Time = 14GM + 6FGM = 20s																								
		↔	Op	3-5	Min. Crossing Time = 8GM + 6FGM = 14s																								
Notes:										Traffic Flow (pcu / hr)										A.M. Check Phase					P.M. Check Phase				
																				E _y 0.195 L (sec) 48 C (sec) 108 y pract. 0.500 R.C. (%) 157%					E _y 0.232 L (sec) 48 C (sec) 108 y pract. 0.500 R.C. (%) 115%				
Stage/Phase Diagram:																													
I/G=13s						I/G=14s						I/G=10s						I/G=6s						I/G=10s					







TRAFFIC SIGNALS CALCULATION

Job No: 22012HK

CTA Consultants Ltd.

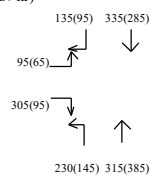
Junction: (6) Tin Shui Road/ Access Road to Tin Shui Estate

Description: 2031 Reference Traffic Flows

Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Neurside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak		
						Left	Right		A.M.	P.M.			A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Access Road	E		D	4	4.4	15	20	1	4% / 76.1% / 59%	2055	2055	1900	1895	1900	1895	400	0.211	0.211	160	0.084	0.084	
Tin Shui Road	N		F	3	3.6	20	0	1	100% / 100%	1975	1975	1835	1835	1835	1835	230	0.125	0.125	145	0.079		
Tin Shui Road	N		C	1,3	3.5	0	0	0	0% / 0%	2105	2105	2105	2105	2105	2105	315	0.150		385	0.183	0.183	
Tin Shui Road	S		B	1,2	3.7	0	0	1	0% / 0%	1985	1985	1985	1985	1985	1985	335	0.169	0.169	285	0.144		
Tin Shui Road	S		E	2	3.4	0	15	0	100% / 100%	2095	2095	1905	1905	1905	1905	135	0.071		95	0.050	0.050	
Pedestrian crossing			Gp Hp Ip Jp Kp Lp	1 2 2.4 2-4 3.4 3	Min. Crossing Time = 10GM + 10FGM = 20s Min. Crossing Time = 5GM + 5FGM = 10s Min. Crossing Time = 7GM + 7FGM = 14s Min. Crossing Time = 8GM + 8FGM = 16s Min. Crossing Time = 7GM + 7FGM = 14s Min. Crossing Time = 6GM + 6FGM = 12s																	

Notes:

Traffic Flow (pcu / hr)



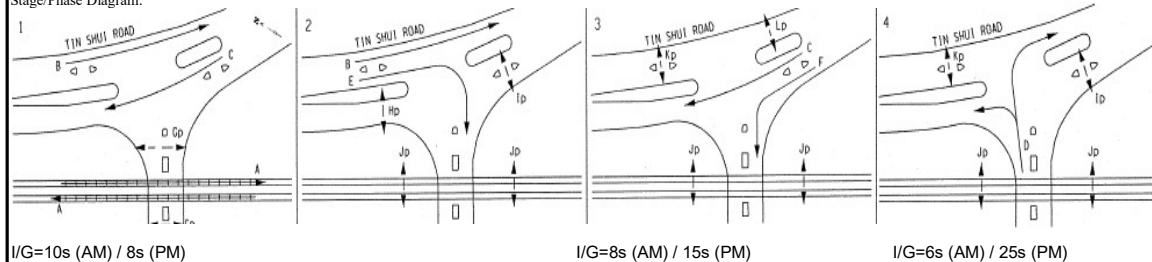
A.M. Check Phase

Ey 0.505
 L (sec) 20
 C (sec) 87
 y pract. 0.693
 R.C. (%) 37%

P.M. Check Phase

Ey 0.317
 L (sec) 44
 C (sec) 87
 y pract. 0.445
 R.C. (%) 40%

Stage/Phase Diagram:



I/G=10s (AM) / 8s (PM)

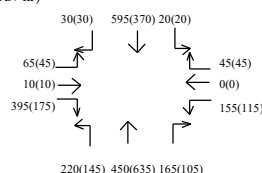
I/G=8s (AM) / 15s (PM)

I/G=6s (AM) / 25s (PM)

CTA Consultants Ltd.

Description: **2031 Reference Traffic Flows**[illegible]

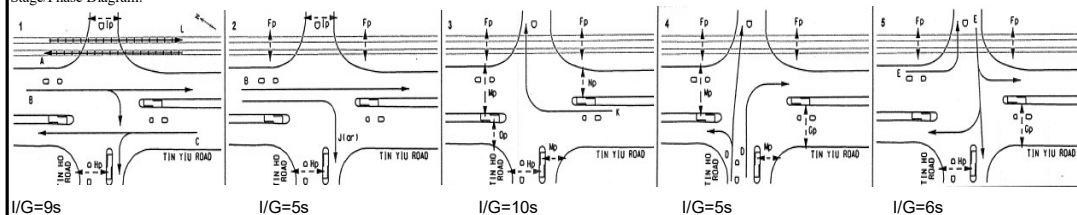
Traffic Flow (pcu / hr)



Ey	0.420
L (sec)	30
C (sec)	101
y pract.	0.633
R.C. (%)	51%

Ey	0.336
L (sec)	30
C (sec)	101
y pract.	0.633
R.C. (%)	88%

Stage/Phase Diagram:



Description: **2031 Reference Traffic Flows**

<p>Notes:</p>	<p>Traffic Flow (pcu / hr)</p>	<p>AM Peak Check Phase</p> <p>Ey 0.529</p> <p>L (sec) 28</p> <p>C (sec) 160</p> <p>y pract. 0.743</p> <p>R.C. (%) 40%</p>	<p>PM Peak Check Phase</p> <p>Ey 0.491</p> <p>L (sec) 28</p> <p>C (sec) 160</p> <p>y pract. 0.743</p> <p>R.C. (%) 51%</p>
<p>Stage / Phase Diagrams</p>			

TRAFFIC SIGNALS CALCULATION										Job No: 22012HK										CTA Consultants Ltd.									
Junction: (10) Tin Wah Road/ Tin Shing Road																													
Description: 2031 Reference Traffic Flows																													
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak									
						Left	Right		A.M.	P.M.			A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y							
Tin Wah Road	E	→	A	1	3.0	0	0	1	0%	0%	1775	3850	1775	1775	3850	3850	251	0.142	0.142	171	0.096	0.096							
Tin Wah Road	E	→	A	1	3.2	0	0	0	0%	0%	2075	0	2075	2075	0	0	294	0.142		199	0.096								
Tin Wah Road	E	↘	A	1	3.0	0	22.5	0	100%	100%	2055	2055	1925	1925	1925	1925	115	0.060		165	0.086								
Tin Shing Road	N	↖	C	1	3.7	15	0	1	100%	100%	1985	4110	1805	1805	3780	3780	96	0.053		55	0.030								
Tin Shing Road	N	↖	C	1	3.7	20	0	0	100%	100%	2125	0	1975	1975	0	0	104	0.053		60	0.030								
Tin Shing Road	N	↗	D	3	3.9	0	15	0	100%	100%	2145	2145	1950	1950	1950	1950	65	0.033	0.033	75	0.038	0.038							
Tin Wah Road	W	↖	E	2,3	4.8	18	0	1	100%	100%	2095	2095	1930	1930	1930	1930	115	0.060		55	0.028								
Tin Wah Road	W	←	B	2	3.4	0	0	0	0%	0%	1955	4050	1955	1955	4050	4050	191	0.098	0.098	142	0.073	0.073							
Tin Wah Road	W	←	B	2	3.4	0	0	0	0%	0%	2095	0	2095	2095	0	0	204	0.098		153	0.073								
Pedestrian crossing		←	Fp	1,2	Min. Crossing Time = 7GM + 8FGM = 15s																								
Notes:										Traffic Flow (pcu / hr)										A.M. Check Phase					P.M. Check Phase				
										<div>545(370)→ 115(165)↘ 200(115)</div> <div>395(295)← 115(55)↘ 65(75)</div>										Ey 0.272 L (sec) 24 C (sec) 57 y pract. 0.521 R.C. (%) 91%					Ey 0.207 L (sec) 24 C (sec) 57 y pract. 0.521 R.C. (%) 151%				
Stage/ Phase Diagram:																													
<div>1 M FD A TIN WAH ROAD TIN SHING ROAD C</div>										<div>2 FD TIN WAH ROAD B TIN SHING ROAD E</div>										<div>3 G H D TIN WAH ROAD TIN SHING ROAD F</div>									
I/G=12s										I/G=10s										I/G=5s									

TRAFFIC SIGNALS CALCULATION										Job No: 22012HK		CTA Consultants Ltd.										
Junction: (11) Tin Shing Road / Tin Wing Road																						
Description: 2031 Reference Traffic Flows																						
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Narrowed 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		AM Peak			PM Peak		
						Left	Right		AM	PM			AM	PM	AM	PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
	E	↗	B	2	3.5	20.0	0	1	100%	100%	1965	6175	1830	1830	5750	5750	228	0.124	0.124	183	0.100	0.100
	E	↘	B	2	3.5	20.0	20	0	19% / 81%	16% / 84%	2105	0	1960	1960	0	0	244	0.124		196	0.100	
	E	↔	B	2	3.5	0.0	20	0	100%	100%	2105	0	1960	1960	0	0	244	0.124		196	0.100	
Tin Shing Road	S	↓	C	2,3	3.5	0.0	0	0	0%	0%	2105	4210	2105	2105	4210	4210	115	0.055		105	0.050	
	S	↕	C	2,3	3.5	0.0	0	0	0%	0%	2105	0	2105	2105	0	0	115	0.055		105	0.050	
Pedestrian crossing			Dp	Min. Crossing Time = 8Gm + 8FGm = 16s																		
			Ep	Min. Crossing Time = 7Gm + 9FGm = 16s																		
			Fp	Min. Crossing Time = 8Gm + 9FGm = 17s																		
			Gp	Min. Crossing Time = 8Gm + 8FGm = 16s																		
			Hp	Min. Crossing Time = 7Gm + 8FGm = 15s																		
Notes: (Nil)												Traffic Flow (pcu / hr)										
												<div><div>275(215)</div><div>440(360)</div><div>230(210)</div></div>										
												<div><div>AM Peak Check Phase</div><div>Gv 0.124 L (sec) 91 C (sec) 149 y pract. 0.350 R.C. (%) 182%</div></div>										
												<div><div>PM Peak Check Phase</div><div>Gv 0.100 L (sec) 91 C (sec) 149 y pract. 0.350 R.C. (%) 250%</div></div>										
Stage / Phase Diagrams																						












TRAFFIC SIGNALS CALCULATION

Job No: 22012HK

CTA Consultants Ltd.

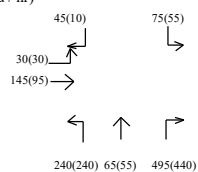
Junction: (12) Tin Wing Road/ Tin Yan Road

Description: 2031 Reference Traffic Flows

Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak		
						Left	Right		A.M.	P.M.			A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Tin Wing Road	E		D	2	3.7	15	0	1	36%	51%	1985	4110	1915	1890	4040	4015	83	0.043		59	0.031	
	E		D	2	3.7	0	0	0	0%	0%	2125	0	2125	2125	0	0	92	0.043	0.043	66	0.031	0.031
Tin Yan Road	N		K	1,4	3.2	15	0	1	100%	100%	1935	1935	1760	1760	1760	1760	240	0.136		240	0.136	
	N		B	1	3.2	0	20	0	77%	78%	2075	4150	1960	1960	3845	3845	286	0.146	0.146	252	0.129	0.129
	N		B	1	3.2	0	15	0	100%	100%	2075	0	1885	1885	0	0	274	0.146		243	0.129	
Tin Yan Road	S		C	3	3.6	15	12.5	1	3% / 38'5% / 15'		1975	1975	1785	1790	1785	1790	120	0.067	0.067	65	0.036	0.036
Pedestrian crossing			Ep	1-3	Min. Crossing Time = 8GM + 8FGM = 16s																	
			Fp	1,3,4	Min. Crossing Time = 8GM + 7FGM = 15s																	
			Gp	2	Min. Crossing Time = 7GM + 7FGM = 14s																	
			Hp	2,3	Min. Crossing Time = 8GM + 10FGM = 18s																	
			Ip	4	Min. Crossing Time = 7GM + 4FGM = 11s																	

Notes:

Traffic Flow (pcu / hr)



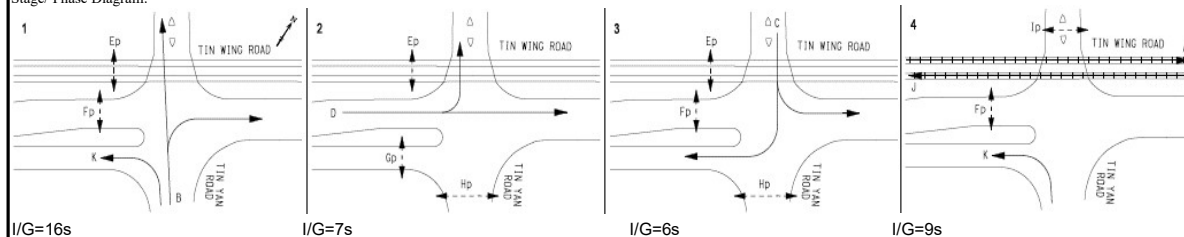
A.M. Check Phase

Ey 0.256
 L (sec) 34
 C (sec) 87
 y pract. 0.548
 $R.C.$ (%) 114%

P.M. Check Phase

Ey 0.196
 L (sec) 34
 C (sec) 87
 y pract. 0.548
 $R.C.$ (%) 179%

Stage/ Phase Diagram:



I/G=16s









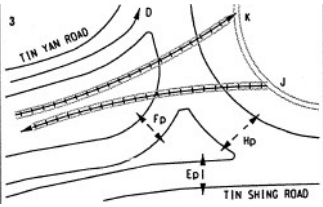
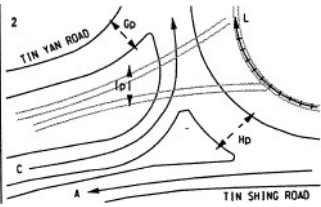
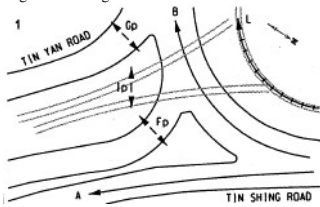
I/G=7s

I/G=6s








I/G=9s

CTA Consultants Ltd.

Description: **2031 Reference Traffic Flows**

Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak		
						Left	Right		A.M.	P.M.			A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Tin Shing Road	N		C	2	4.0	20	0	1	100%	100%	2015	4160	1875	1875	3900	3900	50	0.027		58	0.031	
	N		C	2	3.9	25	0	0	100%	100%	2145	0	2025	2025	0	0	55	0.027		62	0.031	
Tin Shing Road	S		A	1,2	3.5	0	0	1	0%	0%	1965	6035	1965	1965	5955	5955	258	0.131	0.131	212	0.108	0.108
	S		A,B	1,2	3.5	0	40	0	0%	0%	2105	0	2105	2105	0	0	277	0.131		228	0.108	
	S		B	1	3.5	0	35	1	100%	100%	1965	0	1885	1885	0	0	115	0.061		155	0.082	
Pedestrian crossing			Ep	3	Min. Crossing Time = 11GM + 7FGM = 18s																	
			Fp	1,3	Min. Crossing Time = 7GM + 7FGM = 14s																	
			Hp	2,3	Min. Crossing Time = 8GM + 8FGM = 16s																	
			Ip	1,2	Min. Crossing Time = 8GM + 8FGM = 16s																	
Notes:						Traffic Flow (pcu / hr) <div> </div>								A.M. Check Phase Ey 0.131 L (sec) 53 C (sec) 91 y pract. 0.376 R.C. (%) 186%				P.M. Check Phase Ey 0.108 L (sec) 53 C (sec) 91 y pract. 0.376 R.C. (%) 248%				
Stage/ Phase Diagram: <div></div>																						

CTA Consultants Ltd.Description: **2031 Reference Traffic Flows**

Tin Shung Road	N		A	1	3.5	0.0	15	0	71%	76%	2105	4070	1965	1955	3750	3740	207	0.105	0.105	233	0.119	0.119
	N		A	1	3.5	0.0	15	1	100%	100%	1965	0	1785	1785	0	0	188	0.105		212	0.119	
Tin Lung Road	W		B	2	3.5	15.0	0	1	100%	100%	1965	4070	1785	1785	3700	3700	282	0.158	0.158	191	0.107	0.107
	W		B	2	3.5	15.0	0	0	100%	100%	2105	0	1915	1915	0	0	303	0.158		204	0.107	
	W		B	2	3.5	0.0	15	0	100%	100%	2105	2105	1915	1915	1915	1915	45	0.023		65	0.034	
Tin Shung Road	S		C	3	3.5	10.0	0	1	33%	39%	1965	4070	1870	1860	3975	3965	254	0.136	0.136	195	0.105	0.105
	S		C	3	3.5	0.0	0	0	0%	0%	2105	0	2105	2105	0	0	286	0.136		220	0.105	











$$\text{Min. Crossing Time} = 15\text{Gm} + 13\text{FGm} = 28\text{s}$$

PM Peak Check Phase	
εy	0.330
L (sec)	49
C (sec)	108
y pract.	0.492
R.C. (%)	49%

TRAFFIC SIGNALS CALCULATION										Job No: 22012HK				CTA Consultants Ltd.									
Junction: (17) Tin Wu Road / Tin Shui Road																							
Description: 2031 Reference Traffic Flows																							
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		AM Peak			PM Peak			
						Left	Right		AM	PM			AM	PM	AM	PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y	
Tin Wu Road	E	↗	C	1,2	3.5	15.0	0	1	100%	100%	1965	1965	1785	1785	1785	1785	355	0.199		370	0.207		
	E	→	B	1	3.5	0.0	0	0	0%	0%	2105	4210	2105	2105	4210	4210	163	0.077	0.077	143	0.068	0.068	
	E	↘	B	1	3.5	0.0	0	0	0%	0%	2105	0	2105	2105	0	0	163	0.077		143	0.068		
Tin Wu Road	W	←	A	3	3.5	0.0	0	1	0%	0%	1965	4070	1965	1965	4070	4070	116	0.059		101	0.052		
	W	←	A	3	3.5	0.0	0	0	0%	0%	2105	0	2105	2105	0	0	124	0.059		109	0.052		
	W	↖	A	3	3.5	0.0	15	0	100%	100%	2105	2105	1915	1915	1915	1915	195	0.102	0.102	165	0.086	0.086	
Tin Shui Road	S	↘	E	2,3	3.5	20.0	0	1	100%	100%	1965	4070	1830	1830	3790	3790	121	0.066		65	0.036		
	S	↘	E	2,3	3.5	20.0	0	0	100%	100%	2105	0	1960	1960	0	0	129	0.066		70	0.036		
	S	↖	D	2	3.0	0.0	15	0	100%	100%	2055	2055	1870	1870	1870	1870	395	0.211	0.211	250	0.134	0.134	
Pedestrian crossing			Fp	Min. Crossing Time = 5Gm + 5FGm =10s																			
			Gp	Min. Crossing Time = 10Gm + 9FGm =19s																			
			Hp	Min. Crossing Time = 10Gm + 9FGm =19s																			
			Ip	Min. Crossing Time = 5Gm + 8FGm =13s																			
Notes: (Nil)									Traffic Flow (pcu / hr)								AM Peak Check Phase			PM Peak Check Phase			
									<div><div><div>395(250)</div><div>↖</div></div><div><div>355(370)</div><div>→</div></div><div><div>325(285)</div><div>↗</div></div></div> <div><div><div>250(135)</div><div>↖</div></div><div><div>195(165)</div><div>↗</div></div><div><div>240(210)</div><div>←</div></div></div>								Ey 0.390 L (sec) 20 C (sec) 108 y pract. 0.733 R.C. (%) 88%			Ey 0.288 L (sec) 20 C (sec) 108 y pract. 0.733 R.C. (%) 155%			
Stage / Phase Diagrams																							
I/G = 8s				I/G = 8s				I/G = 7s															

CTA Consultants Ltd.

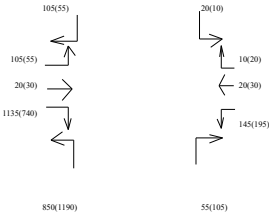
Description: **2031 Reference Traffic Flows**

Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0:1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		AM Peak			PM Peak		
						Left	Right		AM	PM			AM	PM	AM	PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Tin Fuk Road	E		C	1	3.5	20.0	0	1	84%	65%	1965	1965	1850	1875	1850	1875	125	0.068		85	0.045	
	E		C	1	3.5	0.0	25	0	100%	100%	2105	4210	1960	1960	3920	3920	568	0.290	0.290	370	0.189	0.189
	E		C	1	3.5	0.0	25	0	100%	100%	2105	0	1960	1960	0	0	568	0.290		370	0.189	
Long Tin Road	N		A	1,2	3.5	20.0	0	1	100%	100%	1965	4070	1830	1830	3815	3815	408	0.223		571	0.312	
Long Tin Road	N		A	1,2	3.5	25.0	0	0	100%	100%	2105	0	1985	1985	0	0	442	0.223		619	0.312	
	N		B	2	3.5	0.0	20	0	100%	100%	2105	2105	1960	1960	1960	1960	55	0.028	0.028	105	0.054	0.054
Ha Mei San Tsuen Road	W		E	4	3.5	0.0	30	0	33%	40%	2105	0	2070	2065	0	0	30	0.014		50	0.024	
	W		E	4	3.5	20.0	0	1	100%	100%	1965	4070	1830	1830	3900	3895	145	0.079	0.079	195	0.107	0.107
Tin Tsz Road	S		D	3	3.5	20.0	20	1	33% / 67%	32% / 68%	1965	4070	1830	1830	3790	3790	60	0.033		31	0.017	
	S		D	3	3.5	0.0	20	0	100%	100%	2105	0	1960	1960	0	0	65	0.033	0.033	34	0.017	0.017

Notes:

(Nil)

Traffic Flow (pcu / hr)



AM Peak Check Phase

Ey 0.430

L (sec) 43

C (sec) 120

y pract. 0.578

R.C. (%) 34%

PM Peak Check Phase

Ey 0.366

L (sec) 43


C (sec) 120

y pract. 0.578

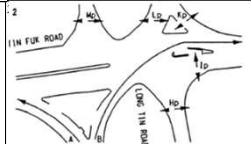
R.C. (%) 58%

Stage / Phase Diagrams

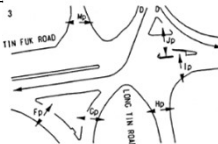
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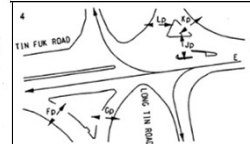
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3



4


















W/G = 12s

W/G = 15s

W/G = 13s

W/G = 7s

CTA Consultants Ltd.Description: **2031 Reference Traffic Flows**

Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nesside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak		
						Left	Right		A.M.	P.M.			A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Tin Wah Road	E		A	1	3.4	18	0	1	100%	100%	1955	6145	1800	1800	5770	5820	165	0.092		115	0.064	
	E		A	1	3.4	20	0	0	81%	56%	2095	0	1975	2010	0	0	205	0.104	0.104	156	0.077	0.077
	E		A	1	3.4	0	17.5	0	59%	50%	2095	0	1995	2010	0	0	195	0.098		149	0.074	
Tin Kwai Road	N		B	2	3.7	15	0	1	100%	100%	1985	6235	1805	1805	5780	5880	105	0.058		75	0.042	
	N		B	2	3.7	20	0	0	111%	62%	2125	0	1960	2030	0	0	122	0.062	0.062	102	0.050	0.050
	N		B	2	3.7	0	17.5	0	64%	46%	2125	0	2015	2045	0	0	118	0.058		98	0.048	
Tin Wah Road	W		C	3	3.5	13	0	1	100%	100%	1965	1965	1755	1755	1755	1755	65	0.037		55	0.031	
	W		C	3	4.0	0	0	0	0%	0%	2155	6405	2155	2155	6180	6130	148	0.068	0.068	128	0.060	0.060
	W		C	3	4.0	0	17.5	0	0%	27%	2155	0	2155	2105	0	0	148	0.068		125	0.060	
	W		C	3	3.4	0	12.5	0	100%	100%	2095	0	1870	1870	0	0	85	0.045		111	0.060	
Tin Kwai Road	S		E	3,4	4.8	35	0	1	100%	100%	2095	4330	2010	2010	4165	4165	138	0.068		51	0.025	
	S		E	3,4	4.8	40	0	0	100%	100%	2235	0	2155	2155	0	0	147	0.068		54	0.025	
	S		D	4	3.7	0	0	0	0%	0%	2125	4250	2125	2125	4070	4100	172	0.081	0.081	119	0.056	0.056
	S		D	4	3.7	0	15	0	92%	77%	2125	0	1945	1975	0	0	158	0.081		111	0.056	
Pedestrian crossing		Fp	1,2	Min. Crossing Time = 9GM + 8FGM = 17s																		
		Gp	1,2,4	Min. Crossing Time = 9GM + 13FGM = 22s																		
		Hp	1,3,4	Min. Crossing Time = 9GM + 9FGM = 18s																		
		Ip	1	Min. Crossing Time = 9GM + 9FGM = 18s																		
		Jp	2-4	Min. Crossing Time = 9GM + 10FGM = 19s																		
		Kp	2	Min. Crossing Time = 9GM + 9FGM = 18s																		
		Lp	3,4	Min. Crossing Time = 9GM + 10FGM = 19s																		
		Mp	4	Min. Crossing Time = 9GM + 13FGM = 22s																		

Traffic Flow (pcu / hr)

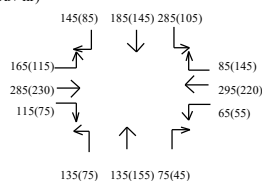


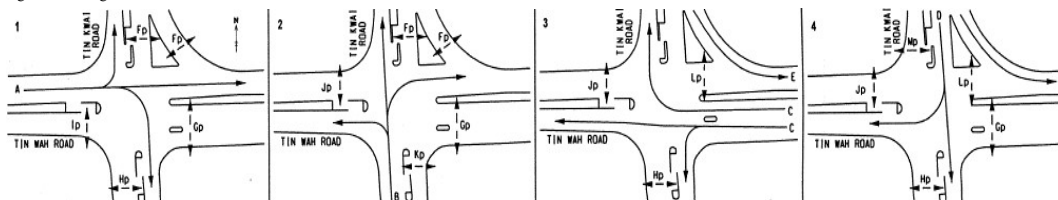
TABLE 1. CHECK PHASE	
ε_V	0.316
ε_{max}	0.316
ε_{min}	0.001
ε_{avg}	0.01
ε_{std}	0.001
$\varepsilon_{\text{max}}/\varepsilon_{\text{min}}$	316
$\varepsilon_{\text{max}}/\varepsilon_{\text{avg}}$	31.6
$\varepsilon_{\text{max}}/\varepsilon_{\text{std}}$	316
$\varepsilon_{\text{avg}}/\varepsilon_{\text{std}}$	10

L (sec)	43
C (sec)	93
y pract.	0.484
R.C. (%)	53%

ϵ_v	0.243
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L (sec)	43
C (sec)	93
y pract.	0.484
R.C. (%)	99%

Stage/ Phase Diagram:

 $I/G=6s$

TRAFFIC SIGNALS CALCULATION										Job No: 22012HK										CTA Consultants Ltd.																			
Junction: (22) Tin Wah Road/ Wetland Park Road																																							
Description: 2031 Reference Traffic Flows																																							
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Neurside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak																			
						Left	Right		A.M.	P.M.			A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y																	
Tin Wah Road	E	↷	A	1	3.2	15	0	1	100%	100%	1935	1935	1760	1760	1760	1760	30	0.017	0.163	20	0.011	0.098																	
	E	↷	A	1	3.2	0	40	0	91%	90%	2075	4150	2005	2005	3995	3995	326	0.163		196	0.098																		
	E	↶	A	1	3.2	0	35	0	100%	100%	2075	0	1990	1990	0	0	324	0.163		194	0.098																		
Tin Tsz Road	N	↶	B	1,2	3.8	55	0	1	100%	100%	1995	4090	1940	1940	3975	3965	227	0.117		220	0.114																		
	N	↷	B,C	2	3.4	60	22.5	0	3% / 13'6% / 24'		2095	0	2035	2025	0	0	238	0.117	0.117	230	0.113	0.113																	
Access Road	W	↶	D	4	3.5	15	0	1	100%	100%	1965	4050	1785	1785	3850	3825	65	0.036		20	0.011																		
	W	↷	D	4	3.3	0	35	0	25%	50%	2085	0	2065	2040	0	0	40	0.019	0.036	20	0.010	0.011																	
Wetland Park Road	S	↷	E	3	3.5	20	0	1	0%	100%	1965	4070	1965	1830	4070	3935	10	0.005	0.005	20	0.011	0.011																	
	S	↷	E	3	3.5	0	20	0	0%	0%	2105	0	2105	2105	0	0	10	0.005		10	0.005																		
Pedestrian crossing	←	Fp	1,2,4	Min. Crossing Time = 5GM + 10FGM = 15s																																			
	↷	Gp	3	Min. Crossing Time = 5GM + 10FGM = 15s																																			
	↷	Hp	2-4	Min. Crossing Time = 5GM + 11FGM = 16s																																			
	↷	Ip	1,2	Min. Crossing Time = 5GM + 7FGM = 12s																																			
	↷	Jp	3,4	Min. Crossing Time = 5GM + 7FGM = 12s																																			
	↷	Kp	1,3,4	Min. Crossing Time = 5GM + 6FGM = 11s																																			
	↷	Lp	2	Min. Crossing Time = 5GM + 8FGM = 13s																																			
	↷	Mp	4	Min. Crossing Time = 5GM + 5FGM = 10s																																			
Notes:										Traffic Flow (pcu / hr)										A.M. Check Phase					P.M. Check Phase														
																				Ey 0.321 L (sec) 41 C (sec) 81 y pract. 0.444 R.C. (%) 38%					Ey 0.233 L (sec) 41 C (sec) 81 y pract. 0.444 R.C. (%) 91%														
Stage/ Phase Diagram:																																							
I/G=12s										I/G=13s										I/G=11s										I/G=9s									

TRAFFIC SIGNALS CALCULATION										Job No: 22012HK										CTA Consultants Ltd.																			
Junction: (1) Tin Ying Road/ Tin Wah Road																																							
Description: 2031 Design Traffic Flows																																							
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak																			
						Left	Right		A.M.	P.M.			A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y																	
Tin Wah Road	E	↔	A	1	3.6	30	0	1	17%	23%	1975	6185	1960	1950	5805	5800	444	0.227		368	0.189																		
Tin Wah Road	E	↗	A	1	3.4	0	17.5	0	85%	81%	2095	0	1955	1960	0	0	443	0.226	0.227	370	0.189	0.189																	
Tin Wah Road	E	↘	A	1	3.6	0	12.5	0	100%	100%	2115	0	1890	1890	0	0	428	0.227		357	0.189																		
Tin Ying Road	N	↔	B	1,2	5.2	25	0	1	100%	100%	2135	2135	2015	2015	2015	2015	545	0.270		690	0.342																		
Tin Ying Road	N	↗	C	2	3.6	0	0	0	0%	0%	2115	6285	2115	2115	6100	6100	260	0.123		370	0.175																		
Tin Ying Road	N	↘	C	2	3.4	0	35	0	100%	100%	2095	0	2010	2010	0	0	368	0.183	0.183	396	0.197	0.197																	
Tin Ying Road	N	↖	C	2	3.2	0	30	0	100%	100%	2075	0	1975	1975	0	0	362	0.183		389	0.197																		
Tin Wah Road	W	↔	D	3	3.3	0	0	0	0%	0%	1945	4040	1945	1945	4040	4040	123	0.063		130	0.067																		
Tin Wah Road	W	↗	D	3	3.4	0	0	0	0%	0%	2095	0	2095	2095	0	0	132	0.063	0.063	140	0.067	0.067																	
Tin Wah Road	W	↘	D	3	3.1	0	15	0	100%	100%	2065	2065	1875	1875	1875	1875	20	0.011		20	0.011																		
Tin Ying Road	S	↔	E	3,4	4.6	25	0	1	100%	100%	2075	2075	1960	1960	1960	1960	55	0.028		10	0.005																		
Tin Ying Road	S	↗	F	4	3.3	0	0	0	0%	0%	1945	4030	1945	1945	4030	4030	215	0.110		125	0.065																		
Tin Ying Road	S	↘	F	4	3.3	0	0	0	0%	0%	2085	0	2085	2085	0	0	230	0.110	0.110	135	0.065	0.065																	
Tin Ying Road	S	↖	F	4	3.1	0	40	0	100%	100%	2065	2065	1990	1990	1990	1990	95	0.048		105	0.053																		
Pedestrian crossing																																							
Notes:										Traffic Flow (pcu / hr)										A.M. Check Phase					P.M. Check Phase														
																				E y 0.583 L (sec) 27 C (sec) 120 y pract. 0.698 R.C. (%) 20%					E y 0.517 L (sec) 27 C (sec) 120 y pract. 0.698 R.C. (%) 35%														
Stage/Phase Diagram:																																							
I/G=8s										I/G=8s										I/G=8s										I/G=7s									












TRAFFIC SIGNALS CALCULATION Job No: 22012HK **CTA Consultants Ltd.**

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Junction: (3) Tin Shui Road/ Tin Tan Street

Description:	2031 Design Traffic Flows
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Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside o/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak		
						Left	Right		A.M.	P.M.			A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Tin Tan Street	E		D	3	4.4	15	0	1	96%	100%	2055	2055	1875	1870	1875	1870	250	0.133	0.133	55	0.029	0.029
Tin Tan Street	E		D	3	3.6	0	15	0	100%	100%	2115	2115	1925	1925	1925	1925	20	0.010		45	0.023	
Tin Shui Road	N		E	3	4.6	15	0	1	100%	100%	2075	2075	1885	1885	1885	1885	20	0.011		55	0.029	
Tin Shui Road	N		A	1	3.6	0	0	0	0%	0%	1975	4080	1975	1975	4080	4080	278	0.141		228	0.115	
Tin Shui Road	N		A	1	3.5	0	0	0	0%	0%	2105	0	2105	2105	0	0	297	0.141	0.141	242	0.115	0.115
Tin Shui Road	N		L	2	2.9	0	12.5	0	100%	100%	2045	2045	1825	1825	1825	1825	20	0.011	0.011	55	0.030	0.030
Tin Tan Street	W		B	4	3.6	15	0	1	50%	100%	1975	1975	1880	1795	1880	1795	40	0.021		55	0.031	
Tin Tan Street	W		B	4	3.7	0	15	0	100%	100%	2125	2125	1930	1930	1930	1930	230	0.119	0.119	95	0.049	0.049
Tin Shui Road	S		C	1,5	3.5	13	0	1	52%	74%	1965	4040	1855	1810	3930	3885	281	0.151		263	0.145	
Tin Shui Road	S		C	1,5	3.2	0	0	0	0%	0%	2075	0	2075	2075	0	0	314	0.151		302	0.145	
Tin Shui Road	S		K	5	3.1	0	15	0	100%	100%	2065	2065	1875	1875	1875	1875	185	0.099	0.099	165	0.088	0.088

Pedestrian crossing		Fp	1,2
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Pedestrian crossing

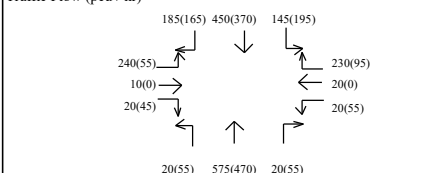
The diagram shows a cross-section of a road with five vehicle lanes and two pedestrian paths. From left to right, the lanes are: a left-turn lane (marked with a left-turn arrow), a through lane (marked with a straight-ahead arrow), a through lane (marked with a straight-ahead arrow), a through lane (marked with a straight-ahead arrow), and a right-turn lane (marked with a right-turn arrow). The pedestrian paths are on the far left and far right, each marked with a straight-ahead arrow. The lanes are labeled with vehicle types and their corresponding lane numbers: Fp (1,2) for the left-turn lane, Gp (2,5) for the first through lane, Hp (2-4) for the second through lane, Ip (1-3,5) for the third through lane, Jp (4) for the fourth through lane, and Mp (3-5) for the right-turn lane.

Vehicle Type	Lane Numbers
Fp	1,2
Gp	2,5
Hp	2-4
Ip	1-3,5
Jp	4
Mp	3-5

Pedestrian crossing		Fp	1,2	Min. Crossing Time = 8GM + 6FGM = 14s
		Gp	2,5	Min. Crossing Time = 8GM + 8FGM = 16s
		Hp	2-4	Min. Crossing Time = 7GM + 6FGM = 13s
		Ip	1-3,5	Min. Crossing Time = 7GM + 7FGM = 14s
		Jp	4	Min. Crossing Time = 6GM + 6FGM = 12s
		Mp	3-5	Min. Crossing Time = 8GM + 8FGM = 16s

Notes:

Traffic Flow (pcu / hr)



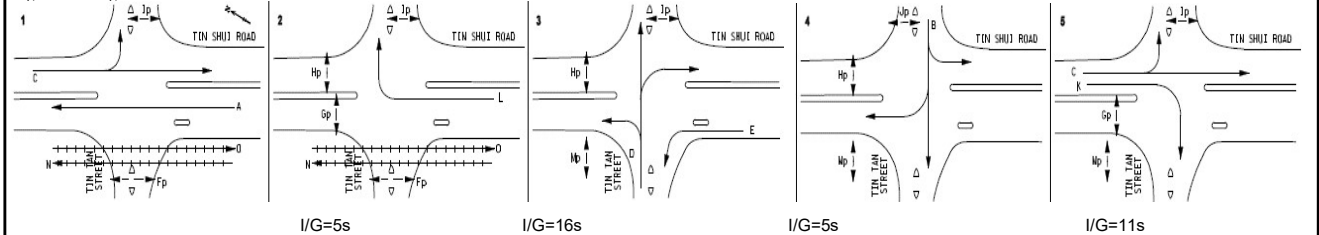
A.M. Check Phase

Ey	0.503
L (sec)	33
C (sec)	100
y pract.	0.603
R.C. (%)	20%

P.M. Check Phase

Ey	0.312
L (sec)	33
C (sec)	100
y pract.	0.603
R.C. (%)	93%

Stage/ Phase Diagram:



TRAFFIC SIGNALS CALCULATION

Job No: 22012HK

CTA Consultants Ltd.

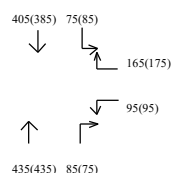
 Junction: **(4) Tin Shui Road/ Tin Wing Road**

 Description: **2031 Design Traffic Flows**

Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak		
						Left	Right		A.M.	P.M.			A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Tin Shui Road	N	↑	A	3	3.4	0	0	1	0%	0%	1815	3910	1815	1815	3910	3910	202	0.111	0.111	202	0.111	0.111
Tin Shui Road	N	↑	A	3	3.4	0	0	0	0%	0%	2095	0	2095	2095	0	0	233	0.111		233	0.111	
Tin Shui Road	N	↗	B	1,2	3.6	0	15	0	100%	100%	2115	2115	1925	1925	1925	1925	85	0.044		75	0.039	
Tin Wing Road	W	↖	B	1,2	3.3	15	0	1	100%	100%	1945	1945	1770	1770	1770	1770	95	0.054	0.054	95	0.054	0.054
Tin Wing Road	W	↖	C	4	3.3	0	22.5	0	100%	100%	2085	4170	1955	1955	3895	3895	83	0.042		88	0.045	
Tin Wing Road	W	↖	C	4	3.3	0	20	0	100%	100%	2085	0	1940	1940	0	0	82	0.042	0.042	87	0.045	0.045
Tin Shui Road	S	↘	D	3	3.3	13	0	1	100%	100%	1945	1945	1735	1735	1735	1735	75	0.043		85	0.049	
Tin Shui Road	S	↓	D	3	3.4	0	0	0	0%	0%	1955	4070	1955	1955	4070	4070	195	0.100		185	0.095	
Tin Shui Road	S	↓	D	3	3.6	0	0	0	0%	0%	2115	0	2115	2115	0	0	210	0.100		200	0.095	
Pedestrian crossing		<div><div>←</div><div>↔</div><div>↕</div><div>↕</div><div>↕</div></div>	<div><div>Ep</div><div>Fp</div><div>Gp</div><div>Hp</div><div>Ip</div></div>	<div><div>4</div><div>4,5</div><div>3,5</div><div>4,5</div><div>3,4</div></div>	<div>Min. Crossing Time = 10GM + 10FGM = 20s</div> <div>Min. Crossing Time = 12GM + 10FGM = 22s</div> <div>Min. Crossing Time = 7GM + 10FGM = 17s</div> <div>Min. Crossing Time = 7GM + 9FGM = 16s</div> <div>Min. Crossing Time = 7GM + 8FGM = 15s</div>																	

Notes:

Traffic Flow (pcu / hr)



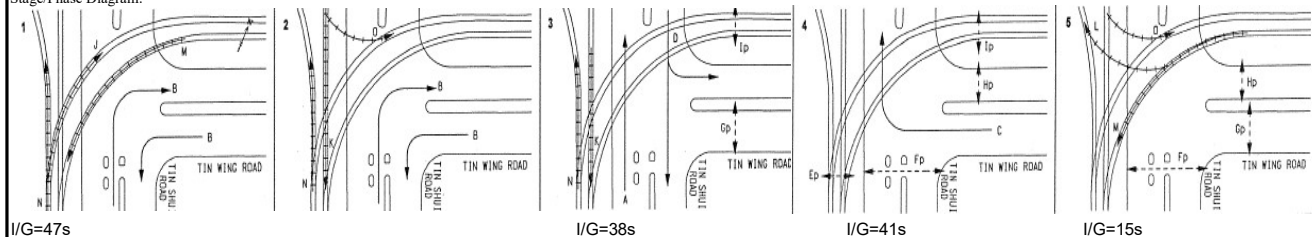
A.M. Check Phase

Ey	0.207
L (sec)	136
C (sec)	218
y pract.	0.339
R.C. (%)	63%

P.M. Check Phase

Ey	0.210
L (sec)	136
C (sec)	218
y pract.	0.339
R.C. (%)	61%

Stage/Phase Diagram:



I/G=47s

I/G=38s

I/G=41s

I/G=15s

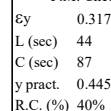
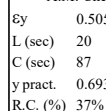
TRAFFIC SIGNALS CALCULATION										Job No: 22012HK										CTA Consultants Ltd.																			
Junction: (5) Tin Shui Road/ Access Road to Chestwood Court																																							
Description: 2031 Design Traffic Flows																																							
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Neuside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak																			
						Left	Right		A.M.	P.M.			A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y																	
Access Road	E	↗	D	4	3.0	8	0	1	100%	100%	1915	1915	1595	1595	1595	1595	135	0.085	0.085	155	0.097	0.097																	
Access Road	E	↘	D	4	3.0	0	15	0	100%	100%	2055	2055	1870	1870	1870	1870	55	0.029		45	0.024																		
Tin Shui Road	N	↖	C	2	4.0	10	0	1	100%	100%	2015	2015	1750	1750	1750	1750	65	0.037	0.037	85	0.049	0.049																	
Tin Shui Road	N	↑	H	1,2	3.4	0	0	0	0%	0%	2095	2095	2095	2095	2095	2095	325	0.155		335	0.160																		
Tin Shui Road	N	↗	C	2	3.4	0	15	0	100%	100%	2095	2095	1905	1905	1905	1905	10	0.005		20	0.010																		
Access Road	E	↖	E	3	3.6	12.5	0	1	100%	100%	1975	1975	1765	1765	1765	1765	20	0.011		20	0.011	0.011																	
Access Road	E	↘	E	3	3.6	0	12.5	0	100%	100%	2115	2115	1890	1890	1890	1890	55	0.029	0.029	10	0.005																		
Tin Shui Road	S	↘	B	1,5	3.3	15	0	1	15%	12%	1945	4030	1915	1920	4000	4005	204	0.106		161	0.084																		
Tin Shui Road	S	↓	B	1,5	3.3	0	0	0	0%	0%	2085	0	2085	2085	0	0	221	0.106		174	0.084																		
Tin Shui Road	S	↖	J	5	3.7	0	15	0	100%	100%	2125	2125	1930	1930	1930	1930	85	0.044	0.044	145	0.075	0.075																	
Pedestrian crossing		↔	Fp	4	Min. Crossing Time = 7GM + 7FGM = 14s																																		
		↔	Gp	2-5	Min. Crossing Time = 9GM + 9FGM = 18s																																		
		↔	Kp	1,3	Min. Crossing Time = 12GM + 6FGM = 18s																																		
		↔	Lp	2	Min. Crossing Time = 12GM + 8FGM = 20s																																		
		↔	Mp	2-4	Min. Crossing Time = 7GM + 6FGM = 13s																																		
		↔	Np	5	Min. Crossing Time = 14GM + 6FGM = 20s																																		
		↔	Op	3-5	Min. Crossing Time = 8GM + 6FGM = 14s																																		
Notes:										Traffic Flow (pcu / hr)										A.M. Check Phase					P.M. Check Phase														
																				E _y 0.195 L (sec) 48 C (sec) 108 y pract. 0.500 R.C. (%) 157%					E _y 0.232 L (sec) 48 C (sec) 108 y pract. 0.500 R.C. (%) 115%														
Stage/Phase Diagram:																																							
I/G=13s										I/G=14s										I/G=10s										I/G=6s									

CTA Consultants Ltd.

Description: **2031 Design Traffic Flows**

Pedestrian crossing		Gp	1	Min. Crossing Time = 10GM + 10FGM = 20s
		Hp	2	Min. Crossing Time = 5GM + 5FGM = 10s
		Ip	2,4	Min. Crossing Time = 7GM + 7FGM = 14s
		Jp	2-4	Min. Crossing Time = 8GM + 8FGM = 16s
		Kp	3,4	Min. Crossing Time = 7GM + 7FGM = 14s
		Lp	3	Min. Crossing Time = 6GM + 6FGM = 12s

P.M. Check Phase



I/G=6s (AM) / 25s (PM)

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Junction: (7) Tin Yiu Road/ Tin Wu Road

Description: 2031 Design Traffic Flows

Approach	Direction	Movement notation	Phase	Stage	Width (m)			Radius (m)		Neurside O/I	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak		
								Left	Right		A.M.	P.M.			A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Tin Wu Road	E	→	C	2,3	3.5	0	0	1	0%	0%	1965	1965	1965	1965	1965	1965	95	0.048		65	0.033			
Tin Wu Road	E	↘	J	3	3.5	0	20	0	100%	100%	2105	2105	1960	1960	1960	1960	105	0.054	0.054	65	0.033	0.033		
Tin Yiu Road	N	↙	K	1,3	4.0	10	0	1	100%	100%	2015	2015	1750	1750	1750	1750	45	0.026		135	0.077			
Tin Yiu Road	N	↗	B	1	3.5	0	27.5	0	100%	100%	2105	4210	1995	1995	3980	3980	263	0.132	0.132	283	0.142	0.142		
Tin Yiu Road	N	↗	B	1	3.5	0	25	0	100%	100%	2105	0	1985	1985	0	0	262	0.132		282	0.142			
Tin Wu Road	W	↙	E	1,2	3.3	20	0	1	100%	100%	1945	4030	1810	1810	3765	3765	257	0.142		161	0.089			
Tin Wu Road	W	↘	E	1,2	3.3	23	0	0	100%	100%	2085	0	1955	1955	0	0	278	0.142		174	0.089			
Tin Wu Road	W	←	D	2	4.4	0	0	0	0%	0%	2195	2195	2195	2195	2195	2195	65	0.030	0.030	135	0.062	0.062		

Pedestrian crossing		Fp	1-3	Min. Crossing Time = 8GM + 8FGM = 16s
		Gp	4	Min. Crossing Time = 12GM + 10FGM = 22s
		Hp	4	Min. Crossing Time = 9GM + 7FGM = 16s
		Ip	4	Min. Crossing Time = 8GM + 10FGM = 18s

Pedestrian crossing		Fp	1-3	Min. Crossing Time = 8GM + 8FGM = 16s
		Gp	4	Min. Crossing Time = 12GM + 10FGM = 22s
		Hp	4	Min. Crossing Time = 9GM + 7FGM = 16s
		Ip	4	Min. Crossing Time = 8GM + 10FGM = 18s

Pedestrian crossing		Fp	1-3	Min. Crossing Time = 8GM + 8FGM = 16s
		Gp	4	Min. Crossing Time = 12GM + 10FGM = 22s
		Hp	4	Min. Crossing Time = 9GM + 7FGM = 16s
		Ip	4	Min. Crossing Time = 8GM + 10FGM = 18s

Pedestrian crossing		Fp	1-3	Min. Crossing Time = 8GM + 8FGM = 16s
		Gp	4	Min. Crossing Time = 12GM + 10FGM = 22s
		Hp	4	Min. Crossing Time = 9GM + 7FGM = 16s
		Ip	4	Min. Crossing Time = 8GM + 10FGM = 18s

Notes:		Traffic Flow (pcu / hr)		A.M. Check Phase		P.M. Check Phase	
				Ey 0.215 L (sec) 41 C (sec) 90 y pract. 0.490 R.C. (%) 128%	Ey 0.237 L (sec) 41 C (sec) 90 y pract. 0.490 R.C. (%) 107%		

Notes:		Traffic Flow (pcu / hr)		A.M. Check Phase		P.M. Check Phase	
				Ey 0.215 L (sec) 41 C (sec) 90 y pract. 0.490 R.C. (%) 128%	Ey 0.237 L (sec) 41 C (sec) 90 y pract. 0.490 R.C. (%) 107%		

Notes:		Traffic Flow (pcu / hr)		A.M. Check Phase		P.M. Check Phase	
				Ey 0.215 L (sec) 41 C (sec) 90 y pract. 0.490 R.C. (%) 128%	Ey 0.237 L (sec) 41 C (sec) 90 y pract. 0.490 R.C. (%) 107%		

Notes:		Traffic Flow (pcu / hr)		A.M. Check Phase		P.M. Check Phase	
				Ey 0.215 L (sec) 41 C (sec) 90 y pract. 0.490 R.C. (%) 128%	Ey 0.237 L (sec) 41 C (sec) 90 y pract. 0.490 R.C. (%) 107%		

Notes:		A.M. Check Phase		P.M. Check Phase	
		E_y 0.215 L (sec) 41 C (sec) 90 y pract. 0.490 $R.C.$ (%) 128%	E_y 0.237 L (sec) 41 C (sec) 90 y pract. 0.490 $R.C.$ (%) 107%		

Notes:		Traffic Flow (pcu / hr)		A.M. Check Phase		P.M. Check Phase	
				Ey 0.215 L (sec) 41 C (sec) 90 y pract. 0.490 R.C. (%) 128%	Ey 0.237 L (sec) 41 C (sec) 90 y pract. 0.490 R.C. (%) 107%		

Notes:		Traffic Flow (pcu / hr)		A.M. Check Phase		P.M. Check Phase	
				Ey 0.215 L (sec) 41 C (sec) 90 y pract. 0.490 R.C. (%) 128%	Ey 0.237 L (sec) 41 C (sec) 90 y pract. 0.490 R.C. (%) 107%		

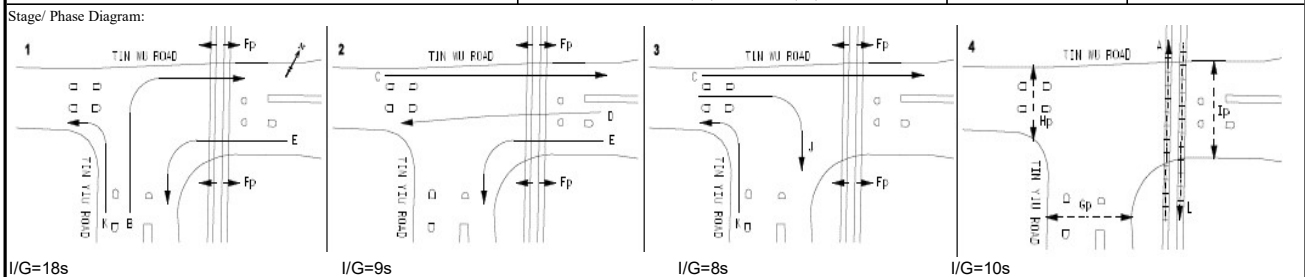
Stage/ Phase Diagram:

1 $I/G=18s$

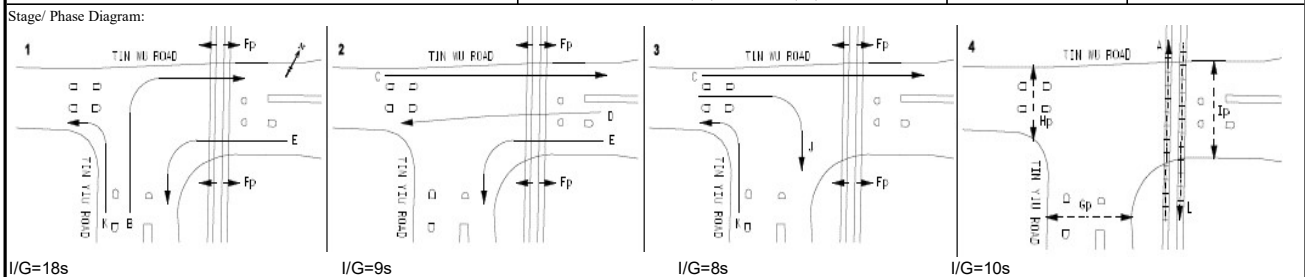
2 $I/G=9s$

3 $I/G=8s$

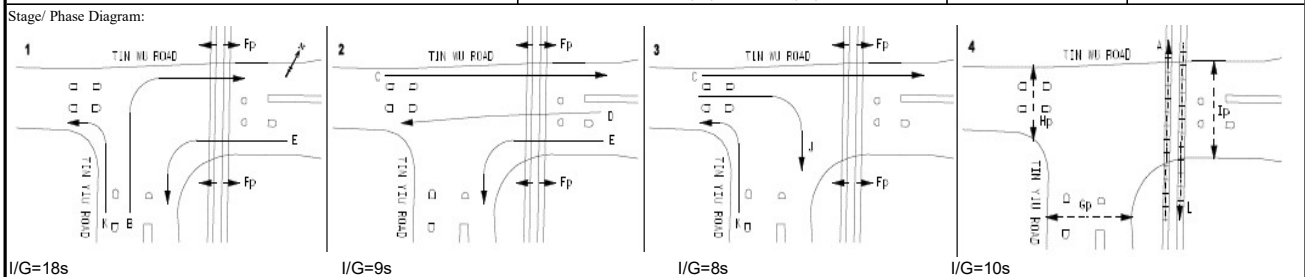
4 $I/G=10s$



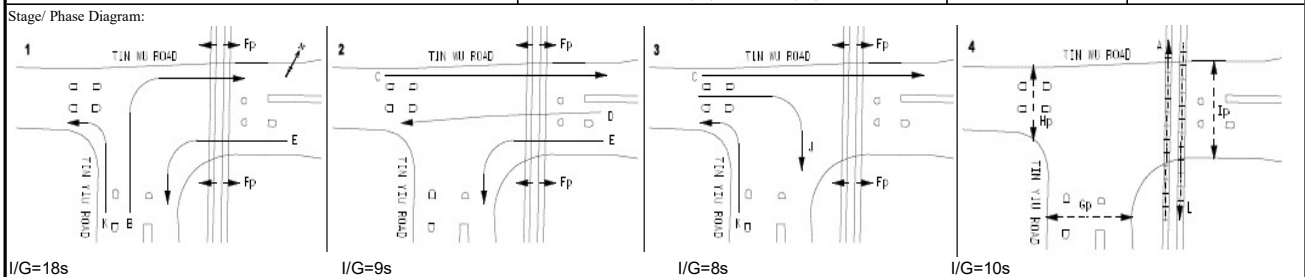
$I/G=18s$	$I/G=9s$	$I/G=8s$	$I/G=10s$
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$I/G=18s$	$I/G=9s$	$I/G=8s$	$I/G=10s$
-----------	----------	----------	-----------



$I/G=18s$	$I/G=9s$	$I/G=8s$	$I/G=10s$
-----------	----------	----------	-----------



$I/G=18s$	$I/G=9s$	$I/G=8s$	$I/G=10s$
-----------	----------	----------	-----------

CTA Consultants Ltd.Description: **2031 Design Traffic Flows**

Min. Crossing Time = 5GM + 8FGM = 13s
 Min. Crossing Time = 10GM + 9FGM = 19s
 Min. Crossing Time = 8GM + 6FGM = 14s
 Min. Crossing Time = 7GM + 6FGM = 13s
 Min. Crossing Time = 10GM + 9FGM = 19s
 Min. Crossing Time = 11GM + 7FGM = 18s
 Min. Crossing Time = 5GM + 9FGM = 14s

P.M. Check Phase

ϵy	0.336
L (sec)	30
C (sec)	101
y pract.	0.633
R.C. (%)	88%

Figure 1 consists of five sub-diagrams, labeled 1 through 5, each representing a different I/G ratio. The diagrams show a cross-section of a road with a central lane and two side lanes. A car is shown in the central lane, and a truck is shown in the side lane. The diagrams illustrate the relative positions of the car and truck at different stages of the race, with the truck's position being determined by the I/G ratio.

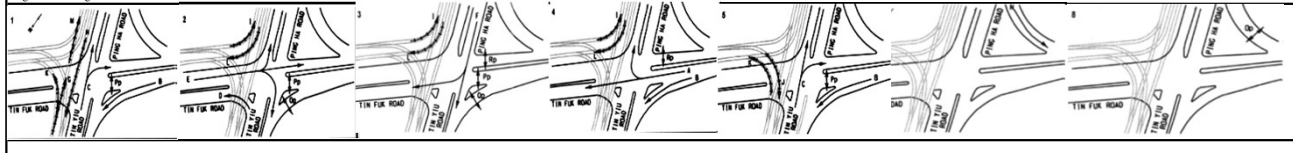
- Diagram 1: I/G=9s. The truck is in the side lane, and the car is in the central lane. The truck is ahead of the car.
- Diagram 2: I/G=5s. The truck is in the side lane, and the car is in the central lane. The truck is ahead of the car.
- Diagram 3: I/G=10s. The truck is in the side lane, and the car is in the central lane. The truck is ahead of the car.
- Diagram 4: I/G=5s. The truck is in the side lane, and the car is in the central lane. The truck is ahead of the car.
- Diagram 5: I/G=6s. The truck is in the side lane, and the car is in the central lane. The truck is ahead of the car.

 $1/G=6s$

Description: **2031 Design Traffic Flows**

Notes:		<p>AM Peak Check Phase</p> <p>Ey 0.529</p> <p>L (sec) 28</p> <p>C (sec) 160</p> <p>y pract. 0.743</p> <p>R.C. (%) 40%</p>	<p>PM Peak Check Phase</p> <p>Ey 0.491</p> <p>L (sec) 28</p> <p>C (sec) 160</p> <p>y pract. 0.743</p> <p>R.C. (%) 51%</p>
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Stage / Phase Diagrams



CTA Consultants Ltd.

Description: **2031 Design Traffic Flows**

Pedestrian crossing ← Fp 1.2 Min. Crossing Time = 7GM + 8FGM = 15s

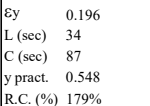
I/G=5s

TRAFFIC SIGNALS CALCULATION										Job No: 22012HK		CTA Consultants Ltd.													
Junction: (11) Tin Shing Road / Tin Wing Road																									
Description: 2031 Design Traffic Flows																									
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		AM Peak			PM Peak					
						Left	Right		AM	PM			AM	PM	AM	PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y			
	E	↗	B	2	3.5	20.0	0	1	100%	100%	1965	6175	1830	1830	5750	5750	228	0.124	0.124	183	0.100	0.100			
	E	↘	B	2	3.5	20.0	20	0	19% / 81%	16% / 84%	2105	0	1960	1960	0	0	244	0.124		196	0.100				
	E	↕	B	2	3.5	0.0	20	0	100%	100%	2105	0	1960	1960	0	0	244	0.124		196	0.100				
Tin Shing Road	S	↕	C	2,3	3.5	0.0	0	0	0%	0%	2105	4210	2105	2105	4210	4210	115	0.055		105	0.050				
	S	↕	C	2,3	3.5	0.0	0	0	0%	0%	2105	0	2105	2105	0	0	115	0.055		105	0.050				
Pedestrian crossing		Dp		Min. Crossing Time = 8Gm + 8FGm =16s																					
		Ep		Min. Crossing Time = 7Gm + 9FGm =16s																					
		Fp		Min. Crossing Time = 8Gm + 9FGm =17s																					
		Gp		Min. Crossing Time = 8Gm + 8FGm =16s																					
		Hp		Min. Crossing Time = 7Gm + 8FGm =15s																					
Notes: (Nil)										Traffic Flow (pcu / hr)										AM Peak Check Phase			PM Peak Check Phase		
										<div>275(215) ↗</div> <div>440(360) ↘</div> <div>230(210) ↕</div>										<div>Gv 0.124</div> <div>L (sec) 91</div> <div>C (sec) 149</div> <div>y pract. 0.350</div> <div>R.C. (%) 182%</div>			<div>Gv 0.100</div> <div>L (sec) 91</div> <div>C (sec) 149</div> <div>y pract. 0.350</div> <div>R.C. (%) 250%</div>		
Stage / Phase Diagrams																									

CTA Consultants Ltd.Description: **2031 Design Traffic Flows**1

Min. Crossing Time = 7 SM + 41 SM = 48 SM

P.M. Check Phase

 $I/G=9s$

CTA Consultants Ltd.

Description: **2031 Design Traffic Flows**

Notes:		Traffic Flow (pcu / hr)		A.M. Check Phase		P.M. Check Phase	
		115(155) 535(440)		Ey	0.131	Ey	0.108
		← ↓		L (sec)	53	L (sec)	53
				C (sec)	91	C (sec)	91
				y pract.	0.376	y pract.	0.376
				R.C. (%)	186%	R.C. (%)	248%
		105(120)					

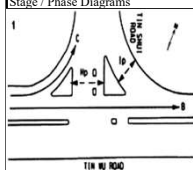
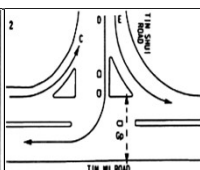
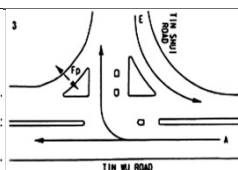
CTA Consultants Ltd.Description: **2031 Design Traffic Flows**
$$\text{Min. Crossing Time} = 15\text{Gm} + 13\text{FGm} = 28\text{s}$$

PM Peak Check Phase	
ϵ_y	0.330
L (sec)	49
C (sec)	108
y pract.	0.492
R.C. (%)	49%

CTA Consultants Ltd.Description: **2031 Design Traffic Flows**

Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside O/I	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		AM Peak			PM Peak									
						Left	Right		AM	PM			AM	PM	AM	PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y							
Tin Shing Road	N	↰	E	2	3.5	15.0	0	1	100%	100%	1965	1965	1785	1785	1785	1785	165	0.092		155	0.087	0.087							
	N	↱	C	1,2	3.5	0.0	0	0	0%	0%	2105	2105	2105	2105	2105	2105	300	0.143		265	0.126								
	N	↲	F	2	3.5	0.0	15	0	100%	100%	2105	2105	1915	1915	1915	1915	220	0.115	0.115	75	0.039								
Tin Cheung Road	W	↰	B	3	3.5	20.0	0	1	50%	43%	1965	4070	1895	1905	3935	3920	291	0.154		313	0.164								
	W	↱	B	3	3.5	0.0	20	0	43%	59%	2105	0	2040	2015	0	0	314	0.154	0.154	332	0.165	0.165							
Tin Shing Road	S	↲	D	1,3	3.5	20.0	0	1	100%	100%	1965	4070	1830	1830	3790	3790	321	0.175		227	0.124								
	S	↱	D	1,3	3.5	20.0	0	0	100%	100%	2105	0	1960	1960	0	0	344	0.175		243	0.124								
	S	↲	A	1	3.5	0.0	0	0	0%	0%	2105	4210	2105	2105	4210	4210	193	0.091	0.091	130	0.062	0.062							
	S	↱	A	1	3.5	0.0	0	0	0%	0%	2105	0	2105	2105	0	0	193	0.091		130	0.062								
Pedestrian crossing			Gp																										
Pedestrian crossing			Hp																										
Pedestrian crossing			Ip																										
									Min. Crossing Time = 10Gm + 5FGm =15s																				
									Min. Crossing Time = 10Gm + 10FGm =20s																				
									Min. Crossing Time = 10Gm + 7FGm =17s																				
Notes:									Traffic Flow (pcu / hr)									AM Peak Check Phase				PM Peak Check Phase							
(Nil)																		6y 0.360 L (sec) 15 C (sec) 57 y pract. 0.663 R.C. (%) 84%				6y 0.313 L (sec) 18 C (sec) 57 y pract. 0.616 R.C. (%) 97%							
Stage / Phase Diagrams																													
I/G = 6s						I/G = 5s (AM) / 10s (PM)						I/G = 7s (AM) / 5s (PM)																	

TRAFFIC SIGNALS CALCULATION										Job No: 22012HK				CTA Consultants Ltd.										
Junction: (16) Tin Wu Road / Tin Shing Road / Tin Pak Road																								
Description: 2031 Design Traffic Flows																								
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		AM Peak			PM Peak				
						Left	Right		AM	PM			AM	PM	AM	PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y		
Tin Wu Road	E	↖	D	4	3.5	30.0	0	1	100%	100%	1965	4070	1870	1870	3915	3925	146	0.078	0.078	119	0.064	0.064		
	E	↗	D	4	3.5	30.0	0	0	59%	50%	2105	0	2045	2055	0	0	159	0.078		131	0.064			
	E	↘	D	4	3.5	0.0	30	0	100%	100%	2105	4210	2005	2005	4010	4010	148	0.074		93	0.046			
	E	↙	D	4	3.5	0.0	30	0	100%	100%	2105	0	2005	2005	0	0	148	0.074		93	0.046			
Tin Shing Road	N	↖	A	4	3.5	20.0	0	1	100%	100%	1965	4070	1830	1830	3790	3790	116	0.063		89	0.049			
	N	↗	A	4	3.5	20.0	0	0	100%	100%	2105	0	1960	1960	0	0	124	0.063		96	0.049			
	N	↘	B	1	3.5	0.0	0	0	0%	0%	2105	2105	2105	2105	2105	2105	165	0.078		165	0.078			
	N	↙	M	1	3.5	0.0	20	0	100%	100%	2105	2105	1960	1960	1960	1960	295	0.151	0.151	210	0.107	0.107		
Tin Pak Road	W	↖	E	3	3.5	20.0	0	1	100%	100%	1965	4070	1830	1830	3870	3890	185	0.101		95	0.052			
	W	↗	E	3	3.5	0.0	25	0	53%	35%	2105	0	2040	2060	0	0	160	0.078	0.101	85	0.041	0.052		
Tin Shing Road	S	↖	C	2	3.0	10.0	0	1	39%	45%	1915	3970	1810	1795	3865	3850	169	0.093	0.093	124	0.069	0.069		
	S	↘	C	2	3.0	0.0	0	0	0%	0%	2055	0	2055	2055	0	0	191	0.093		141	0.069			
	S	↙	C	2	3.0	0.0	20	0	100%	100%	2055	2055	1910	1910	1910	1910	105	0.055		115	0.060			
Pedestrian crossing			Fp	Min. Crossing Time = 8Gm + 7FGm =15s																				
			Gp	Min. Crossing Time = 7Gm + 8FGm =15s																				
			Hp	Min. Crossing Time = 9Gm + 9FGm =18s																				
			Ip	Min. Crossing Time = 7Gm + 7FGm =16s																				
			Jp	Min. Crossing Time = 7Gm + 5FGm =12s																				
			Kp	Min. Crossing Time = 7Gm + 6FGm =13s																				
			Lp	Min. Crossing Time = 7Gm + 11FGm =18s																				
			Np	Min. Crossing Time = 7Gm + 8FGm =15s																				
Notes:									Traffic Flow (pcu / hr)									AM Peak Check Phase				PM Peak Check Phase		
(Nil)																		Ey 0.423 L (sec) 37 C (sec) 87 y pract. 0.517 R.C. (%) 22%				Ey 0.292 L (sec) 37 C (sec) 87 y pract. 0.517 R.C. (%) 77%		
Stage / Phase Diagrams																								
I/G = 8s					I/G = 19s					I/G = 5s					I/G = 9s									

TRAFFIC SIGNALS CALCULATION										Job No: 22012HK				CTA Consultants Ltd.											
Junction: (17) Tin Wu Road / Tin Shui Road																									
Description: 2031 Design Traffic Flows																									
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		AM Peak			PM Peak					
						Left	Right		AM	PM			AM	PM	AM	PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y			
Tin Wu Road	E	↗	C	1,2	3.5	15.0	0	1	100%	100%	1965	1965	1785	1785	1785	1785	355	0.199		370	0.207				
	E	→	B	1	3.5	0.0	0	0	0%	0%	2105	4210	2105	2105	4210	4210	163	0.077	0.077	143	0.068	0.068			
	E	↘	B	1	3.5	0.0	0	0	0%	0%	2105	0	2105	2105	0	0	163	0.077		143	0.068				
Tin Wu Road	W	←	A	3	3.5	0.0	0	1	0%	0%	1965	4070	1965	1965	4070	4070	116	0.059		101	0.052				
	W	←	A	3	3.5	0.0	0	0	0%	0%	2105	0	2105	2105	0	0	124	0.059		109	0.052				
	W	↖	A	3	3.5	0.0	15	0	100%	100%	2105	2105	1915	1915	1915	1915	195	0.102	0.102	165	0.086	0.086			
Tin Shui Road	S	↘	E	2,3	3.5	20.0	0	1	100%	100%	1965	4070	1830	1830	3790	3790	121	0.066		65	0.036				
	S	↘	E	2,3	3.5	20.0	0	0	100%	100%	2105	0	1960	1960	0	0	129	0.066		70	0.036				
	S	↖	D	2	3.0	0.0	15	0	100%	100%	2055	2055	1870	1870	1870	1870	395	0.211	0.211	250	0.134	0.134			
Pedestrian crossing			Fp	Min. Crossing Time = 5Gm + 5FGm =10s																					
			Gp	Min. Crossing Time = 10Gm + 9FGm =19s																					
			Hp	Min. Crossing Time = 10Gm + 9FGm =19s																					
			Ip	Min. Crossing Time = 5Gm + 8FGm =13s																					
Notes: (Nil)									Traffic Flow (pcu / hr)								AM Peak Check Phase			PM Peak Check Phase					
									<div><div>395(250)</div><div>355(370) 325(285)</div><div>↖ → ↗</div></div>								<div>250(135)</div> <div>195(165) 240(210)</div> <div>↖ ↗ ←</div>			E _y 0.390 L (sec) 20 C (sec) 108 y pract. 0.733 R.C. (%) 88%			E _y 0.288 L (sec) 20 C (sec) 108 y pract. 0.733 R.C. (%) 155%		
Stage / Phase Diagrams																									
																									
I/G = 8s				I/G = 8s				I/G = 7s																	

Description: **2031 Design Traffic Flows**

Stage / Phase Diagrams











1 $I/G = 5s$

2 $I/G = 6s$

3 $I/G = 11s$

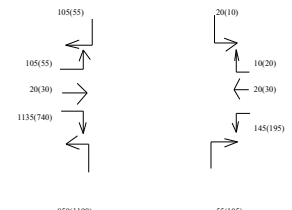
4 $I/G = 6s$

CTA Consultants Ltd.Description: **2031 Design Traffic Flows**

Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside d/l	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		AM Peak			PM Peak		
						Left	Right		AM	PM			AM	PM	AM	PM	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Tin Fuk Road	E		C	1	3.5	20.0	0	1	84%	65%	1965	1965	1850	1875	1850	1875	125	0.068		85	0.045	
	E		C	1	3.5	0.0	25	0	100%	100%	2105	4210	1960	1960	3920	3920	568	0.290	0.290	370	0.189	0.189
	E		C	1	3.5	0.0	25	0	100%	100%	2105	0	1960	1960	0	0	568	0.290		370	0.189	
Long Tin Road	N		A	1,2	3.5	20.0	0	1	100%	100%	1965	4070	1830	1830	3815	3815	408	0.223		571	0.312	
Long Tin Road	N		A	1,2	3.5	25.0	0	0	100%	100%	2105	0	1985	1985	0	0	442	0.223		619	0.312	
	N		B	2	3.5	0.0	20	0	100%	100%	2105	2105	1960	1960	1960	1960	55	0.028	0.028	105	0.054	0.054
Ha Mei San Tsuen Road	W		E	4	3.5	0.0	30	0	33%	40%	2105	0	2070	2065	0	0	30	0.014		50	0.024	
	W		E	4	3.5	20.0	0	1	100%	100%	1965	4070	1830	1830	3900	3895	145	0.079	0.079	195	0.107	0.107
Tin Tsz Road	S		D	3	3.5	20.0	20	1	33% / 67%	32% / 68%	1965	4070	1830	1830	3790	3790	60	0.033		31	0.017	
	S		D	3	3.5	0.0	20	0	100%	100%	2105	0	1960	1960	0	0	65	0.033	0.033	34	0.017	0.017

Notes:
(Nil)

Traffic Flow (pcu / hr)



AM Peak Check Phase


Ey 0.430
L (sec) 43
C (sec) 120
y pract. 0.578
R.C. (%) 34%

PM Peak Check Phase

Ey 0.366
L (sec) 43
C (sec) 120
y pract. 0.578
R.C. (%) 58%

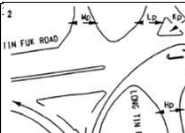
Stage / Phase Diagrams

1



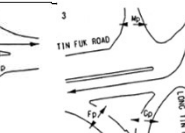
W/G = 12s

2



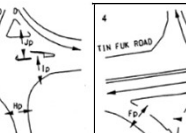
W/G = 15s

3



W/G = 13s

4



W/G = 7s

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TRAFFIC SIGNALS CALCULATION Job No: 22012HK **CTA Consultants Ltd.**

Junction: (20) Tin Wah Road/ Tin Kwai Road
Description: 2031 Design Traffic Flows

Junction: (20) Tin Wah Road/ Tin Kwai Road
Description: 2031 Design Traffic Flows

[illegible]

Notes:		Traffic Flow (pcu / hr)		A.M. Check Phase		P.M. Check Phase	
		E_y 0.316 L (sec) 43 C (sec) 93 y pract. 0.484 $R.C.$ (%) 53%	E_y 0.243 L (sec) 43 C (sec) 93 y pract. 0.484 $R.C.$ (%) 99%				

Notes:		Traffic Flow (pcu / hr)		A.M. Check Phase		P.M. Check Phase	
		E_y 0.316 L (sec) 43 C (sec) 93 y pract. 0.484 $R.C.$ (%) 53%	E_y 0.243 L (sec) 43 C (sec) 93 y pract. 0.484 $R.C.$ (%) 99%				

Notes:		Traffic Flow (pcu / hr)		A.M. Check Phase		P.M. Check Phase	
		E_y 0.316 L (sec) 43 C (sec) 93 y pract. 0.484 $R.C.$ (%) 53%	E_y 0.243 L (sec) 43 C (sec) 93 y pract. 0.484 $R.C.$ (%) 99%				

Notes:		Traffic Flow (pcu / hr)		A.M. Check Phase		P.M. Check Phase	
		E_y 0.316 L (sec) 43 C (sec) 93 y pract. 0.484 $R.C.$ (%) 53%	E_y 0.243 L (sec) 43 C (sec) 93 y pract. 0.484 $R.C.$ (%) 99%				

Notes:		Traffic Flow (pcu / hr)		A.M. Check Phase		P.M. Check Phase	
		E_y 0.316 L (sec) 43 C (sec) 93 y pract. 0.484 $R.C.$ (%) 53%	E_y 0.243 L (sec) 43 C (sec) 93 y pract. 0.484 $R.C.$ (%) 99%				

Notes:		Traffic Flow (pcu / hr)		A.M. Check Phase		P.M. Check Phase	
		E_y 0.316 L (sec) 43 C (sec) 93 y pract. 0.484 $R.C.$ (%) 53%	E_y 0.243 L (sec) 43 C (sec) 93 y pract. 0.484 $R.C.$ (%) 99%				

Notes:		Traffic Flow (pcu / hr)		A.M. Check Phase		P.M. Check Phase	
		E_y 0.316 L (sec) 43 C (sec) 93 y pract. 0.484 $R.C.$ (%) 53%	E_y 0.243 L (sec) 43 C (sec) 93 y pract. 0.484 $R.C.$ (%) 99%				

Notes:		Traffic Flow (pcu / hr)		A.M. Check Phase		P.M. Check Phase	
		E_y 0.316 L (sec) 43 C (sec) 93 y pract. 0.484 $R.C.$ (%) 53%	E_y 0.243 L (sec) 43 C (sec) 93 y pract. 0.484 $R.C.$ (%) 99%				

Notes:		Traffic Flow (pcu / hr)		A.M. Check Phase		P.M. Check Phase	
		E_y 0.316 L (sec) 43 C (sec) 93 y pract. 0.484 $R.C.$ (%) 53%	E_y 0.243 L (sec) 43 C (sec) 93 y pract. 0.484 $R.C.$ (%) 99%				

Notes:		Traffic Flow (pcu / hr)		A.M. Check Phase		P.M. Check Phase	
		E_y 0.316 L (sec) 43 C (sec) 93 y pract. 0.484 $R.C.$ (%) 53%	E_y 0.243 L (sec) 43 C (sec) 93 y pract. 0.484 $R.C.$ (%) 99%				

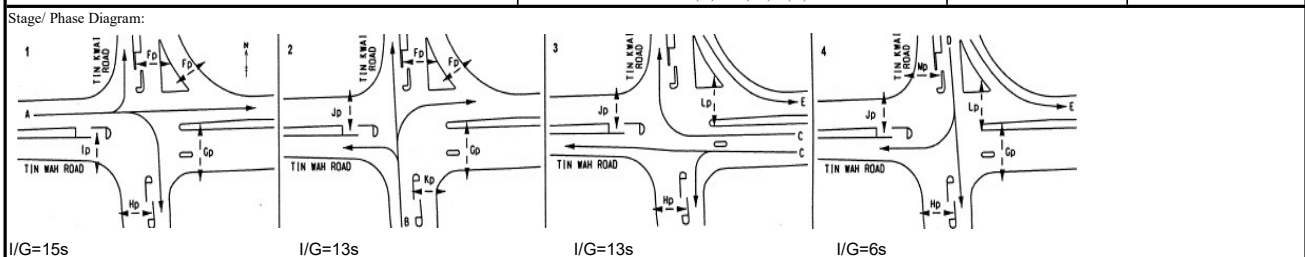
Stage/ Phase Diagram:

Diagram 1: I/G=15s

Diagram 2: I/G=13s

Diagram 3: I/G=13s

Diagram 4: I/G=6s



Stage/ Phase Diagram:

Diagram 1: I/G=15s

Diagram 2: I/G=13s

Diagram 3: I/G=13s

Diagram 4: I/G=6s

Stage/ Phase Diagram:

Diagram 1: I/G=15s

Diagram 2: I/G=13s

Diagram 3: I/G=13s

Diagram 4: I/G=6s

Stage/ Phase Diagram:

Diagram 1: I/G=15s

Diagram 2: I/G=13s

Diagram 3: I/G=13s

Diagram 4: I/G=6s

Stage/ Phase Diagram:

Diagram 1: I/G=15s

Diagram 2: I/G=13s

Diagram 3: I/G=13s

Diagram 4: I/G=6s


















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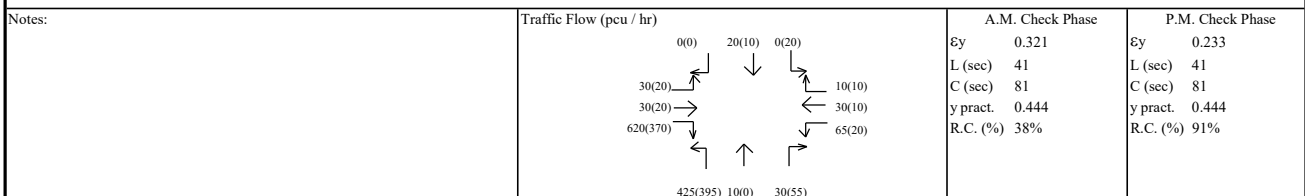
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside O/I	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak		
						Left	Right		A.M.	P.M.			A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Tin Wah Road	E		A	1	3.2	15	0	1	100%	100%	1935	1935	1760	1760	1760	1760	30	0.017	0.163	20	0.011	0.098
	E		A	1	3.2	0	40	0	91%	90%	2075	4150	2005	2005	3995	3995	326	0.163		196	0.098	
	E		A	1	3.2	0	35	0	100%	100%	2075	0	1990	1990	0	0	324	0.163		194	0.098	
Tin Tsz Road	N		B	1,2	3.8	55	0	1	100%	100%	1995	4090	1940	1940	3975	3965	227	0.117		220	0.114	
	N		B,C	2	3.4	60	22.5	0	3% / 13'6% / 24'		2095	0	2035	2025	0	0	238	0.117	0.117	230	0.113	0.113
Access Road	W		D	4	3.5	15	0	1	100%	100%	1965	4050	1785	1785	3850	3825	65	0.036		20	0.011	
	W		D	4	3.3	0	35	0	25%	50%	2085	0	2065	2040	0	0	40	0.019	0.036	20	0.010	0.011
Wetland Park Road	S		E	3	3.5	20	0	1	0%	100%	1965	4070	1965	1830	4070	3935	10	0.005	0.005	20	0.011	0.011
	S		E	3	3.5	0	20	0	0%	0%	2105	0	2105	2105	0	0	10	0.005		10	0.005	
Pedestrian crossing			Fp	1,2,4	Min. Crossing Time = 5GM + 10FGM = 15s																	
			Gp	3	Min. Crossing Time = 5GM + 10FGM = 15s																	
			Hp	2-4	Min. Crossing Time = 5GM + 11FGM = 16s																	
			Ip	1,2	Min. Crossing Time = 5GM + 7FGM = 12s																	
			Jp	3,4	Min. Crossing Time = 5GM + 7FGM = 12s																	
			Kp	1,3,4	Min. Crossing Time = 5GM + 6FGM = 11s																	
			Lp	2	Min. Crossing Time = 5GM + 8FGM = 13s																	
		Mp	4	Min. Crossing Time = 5GM + 5FGM = 10s																		

Notes:	Traffic Flow (pcu / hr)	A.M. Check Phase	P.M. Check Phase
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Notes:	Traffic Flow (pcu / hr)	A.M. Check Phase	P.M. Check Phase
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Notes:	Traffic Flow (pcu / hr)	A.M. Check Phase	P.M. Check Phase
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Notes:	Traffic Flow (pcu / hr)	A.M. Check Phase	P.M. Check Phase
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Notes:	Traffic Flow (pcu / hr)	A.M. Check Phase	P.M. Check Phase
	0(0) 20(10) 0(20)	Ev 0.321	Ev 0.233

Notes:	Traffic Flow (pcu / hr)	A.M. Check Phase	P.M. Check Phase
	0(0) 20(10) 0(20)	Ey 0.321	Ey 0.233
		L (sec) 41	L (sec) 41

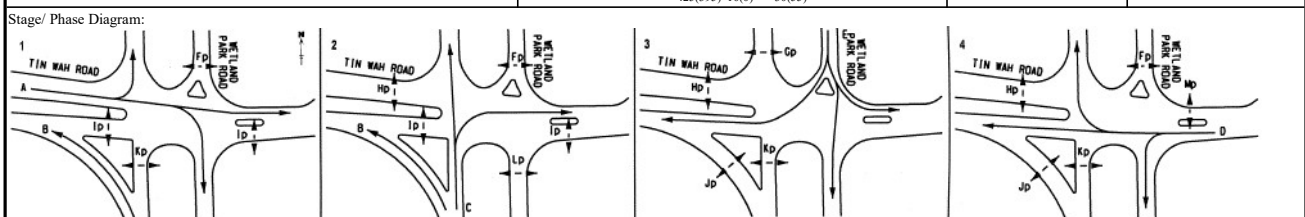
Notes:			A.M. Check Phase		P.M. Check Phase	
			Σy	0.321	Σy	0.233
			L (sec)	41	L (sec)	41
			C (sec)	81	C (sec)	81

Notes:	Traffic Flow (pcu / hr)		A.M. Check Phase		P.M. Check Phase	
			Σy	0.321	Σy	0.233
			L (sec)	41	L (sec)	41
			C (sec)	81	C (sec)	81
			y pract.	0.444	y pract.	0.444

Notes:	Traffic Flow (pcu / hr)		A.M. Check Phase		P.M. Check Phase	
			ϵy	0.321	ϵy	0.233
			L (sec)	41	L (sec)	41
			C (sec)	81	C (sec)	81
			y pract.	0.444	y pract.	0.444
			R.C. (%)	38%	R.C. (%)	91%

Notes:		A.M. Check Phase		P.M. Check Phase	
		ϵ_y	0.321	ϵ_y	0.233
		L (sec)	41	L (sec)	41
		C (sec)	81	C (sec)	81
		ypract.	0.444	ypract.	0.444
		R.C. (%)	38%	R.C. (%)	91%

Notes:		A.M. Check Phase		P.M. Check Phase	
		Ey	0.321	Ey	0.233
		L (sec)	41	L (sec)	41
		C (sec)	81	C (sec)	81
		y pract.	0.444	y pract.	0.444
		R.C. (%)	38%	R.C. (%)	91%

[illegible]

I/G=12s	I/G=13s	I/G=11s	I/G=9s
---------	---------	---------	--------

I/G=12s	I/G=13s	I/G=11s	I/G=9s
---------	---------	---------	--------

I/G=12s	I/G=13s	I/G=11s	I/G=9s
---------	---------	---------	--------

I/G=12s	I/G=13s	I/G=11s	I/G=9s
---------	---------	---------	--------

Junctions 8			
ARCADY 8 - Roundabout Module			
Version: 8.0.5.523 [19102,19/06/2015] © Copyright TRL Limited, 2022			
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Filename: Junction 2_Tin Shui_Tin Wah Road.arc8

Path: \\PROJSRV\Project\CTA Consultants Limited\CTA - Project\22012HK - S16 application at TSWTL 4 - converting hotel to residential\calculation\2022-04-14 (w adj)

Report generation date: 22/4/2022 15:01:38

- » Junction 2 - 2022 Existing, AM
- » Junction 2 - 2022 Existing, PM
- » Junction 2 - 2031 Reference, AM
- » Junction 2 - 2031 Reference, PM
- » Junction 2 - 2031 Design, AM
- » Junction 2 - 2031 Design, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
Junction 2 - 2022 Existing								
Arm 1	0.73	4.19	0.42	A	0.42	3.15	0.30	A
Arm 2	0.57	5.92	0.37	A	0.44	4.57	0.31	A
Arm 3	1.46	4.72	0.59	A	1.42	4.72	0.59	A
Arm 4	0.58	2.50	0.37	A	0.28	2.05	0.22	A
Junction 2 - 2031 Design								
Arm 1	1.01	5.02	0.50	A	0.50	3.41	0.33	A
Arm 2	0.73	7.03	0.42	A	0.51	4.94	0.34	A
Arm 3	1.79	5.44	0.64	A	1.72	5.37	0.63	A
Arm 4	0.66	2.69	0.40	A	0.32	2.17	0.24	A
Junction 2 - 2031 Reference								
Arm 1	1.02	5.07	0.51	A	0.50	3.41	0.33	A
Arm 2	0.73	7.03	0.42	A	0.51	4.94	0.34	A
Arm 3	1.79	5.44	0.64	A	1.72	5.37	0.63	A
Arm 4	0.67	2.71	0.40	A	0.32	2.17	0.24	A

Values shown are the maximum values over all time segments. Delay is the maximum value of average delay per arriving vehicle.

"D1 - 2022 Existing, AM" model duration: 8:00 - 9:30

"D2 - 2022 Existing, PM" model duration: 18:00 - 19:30

"D3 - 2031 Reference, AM" model duration: 8:00 - 9:30

"D4 - 2031 Reference, PM" model duration: 18:00 - 19:30

"D5 - 2031 Design, AM" model duration: 8:00 - 9:30

"D6 - 2031 Design, PM" model duration: 18:00 - 19:30

Run using Junctions 8.0.5.523 at 22/4/2022 15:01:34

File summary

Title	(untitled)
Location	
Site Number	
Date	20/3/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	user
Description	

Analysis Options

Vehicle Length (m)	Do Queue Variations	Calculate Residual Capacity	Residual Capacity Criteria Type	RFC Threshold	Average Delay Threshold (s)	Queue Threshold (PCU)
5.75			N/A	0.85	36.00	20.00

Units

Distance Units	Speed Units	Traffic Units Input	Traffic Units Results	Flow Units	Average Delay Units	Total Delay Units	Rate Of Delay Units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Junction 2 - 2022 Existing, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
Junction 2	ARCADY			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2022 Existing, AM	2022 Existing	AM		FLAT	08:00	09:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
2	Tin Shui Road/Tin Wah Road	Roundabout	1,2,3,4			4.11	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description
1	1	(untitled)	
2	2	(untitled)	
3	3	(untitled)	
4	4	(untitled)	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
1	0.00	99999.00
2	0.00	99999.00
3	0.00	99999.00
4	0.00	99999.00

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1	7.38	7.60	3.60	25.00	30.00	36.00	
2	3.40	6.90	10.00	37.00	30.00	38.00	
3	7.15	7.78	3.00	26.00	30.00	40.00	
4	9.17	11.80	8.60	24.00	30.00	38.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.770	2266.594
2		(calculated)	(calculated)	0.620	1522.336
3		(calculated)	(calculated)	0.759	2227.217
4		(calculated)	(calculated)	0.942	3118.879

The slope and intercept shown above include any corrections and adjustments.

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	FLAT	✓	625.00	100.000
2	FLAT	✓	350.00	100.000
3	FLAT	✓	1115.00	100.000
4	FLAT	✓	840.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 2 (for whole period)

		To			
From		1	2	3	4
	1	50.000	125.000	400.000	50.000
	2	215.000	10.000	0.000	125.000
	3	380.000	225.000	10.000	500.000
	4	70.000	370.000	390.000	10.000

Turning Proportions (PCU) - Junction 2 (for whole period)

		To			
From		1	2	3	4
	1	0.08	0.20	0.64	0.08
	2	0.61	0.03	0.00	0.36
	3	0.34	0.20	0.01	0.45
	4	0.08	0.44	0.46	0.01

Vehicle Mix

Average PCU Per Vehicle - Junction 2 (for whole period)

		To			
From		1	2	3	4
	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 2 (for whole period)

		To			
From		1	2	3	4
	1	0.0	0.0	0.0	0.0
	2	0.0	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0
	4	0.0	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.42	4.19	0.73	A
2	0.37	5.92	0.57	A
3	0.59	4.72	1.46	A
4	0.37	2.50	0.58	A

Main Results for each time segment

Main results: (08:00-08:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	625.00	622.12	1011.60	0.00	1487.24	0.420	0.72	4.148	A
2	350.00	347.73	906.54	0.00	960.37	0.364	0.57	5.855	A
3	1115.00	1109.25	457.24	0.00	1880.39	0.593	1.44	4.635	A
4	840.00	837.68	885.14	0.00	2284.93	0.368	0.58	2.483	A

Main results: (08:15-08:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	625.00	624.98	1014.98	0.00	1484.63	0.421	0.72	4.187	A
2	350.00	349.98	909.98	0.00	958.24	0.365	0.57	5.918	A
3	1115.00	1114.95	459.98	0.00	1878.31	0.594	1.45	4.715	A
4	840.00	839.99	889.96	0.00	2280.38	0.368	0.58	2.498	A

Main results: (08:30-08:45)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	625.00	625.00	1014.99	0.00	1484.62	0.421	0.72	4.187	A
2	350.00	350.00	909.99	0.00	958.23	0.365	0.57	5.918	A
3	1115.00	1114.99	459.99	0.00	1878.30	0.594	1.45	4.715	A
4	840.00	840.00	889.99	0.00	2280.36	0.368	0.58	2.498	A

Main results: (08:45-09:00)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	625.00	625.00	1015.00	0.00	1484.62	0.421	0.73	4.187	A
2	350.00	350.00	910.00	0.00	958.23	0.365	0.57	5.918	A
3	1115.00	1114.99	460.00	0.00	1878.30	0.594	1.46	4.715	A
4	840.00	840.00	889.99	0.00	2280.35	0.368	0.58	2.498	A

Main results: (09:00-09:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	625.00	625.00	1015.00	0.00	1484.62	0.421	0.73	4.187	A
2	350.00	350.00	910.00	0.00	958.23	0.365	0.57	5.918	A
3	1115.00	1115.00	460.00	0.00	1878.29	0.594	1.46	4.715	A
4	840.00	840.00	890.00	0.00	2280.35	0.368	0.58	2.498	A

Main results: (09:15-09:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	625.00	625.00	1015.00	0.00	1484.62	0.421	0.73	4.187	A
2	350.00	350.00	910.00	0.00	958.23	0.365	0.57	5.918	A
3	1115.00	1115.00	460.00	0.00	1878.29	0.594	1.46	4.715	A
4	840.00	840.00	890.00	0.00	2280.35	0.368	0.58	2.498	A

Junction 2 - 2022 Existing, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
Junction 2	ARCADY			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2022 Existing, PM	2022 Existing	PM		FLAT	18:00	19:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
2	Tin Shui Road/Tin Wah Road	Roundabout	1,2,3,4			3.84	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description
1	1	(untitled)	
2	2	(untitled)	
3	3	(untitled)	
4	4	(untitled)	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
1	0.00	99999.00
2	0.00	99999.00
3	0.00	99999.00
4	0.00	99999.00

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1	7.38	7.60	3.60	25.00	30.00	36.00	
2	3.40	6.90	10.00	37.00	30.00	38.00	
3	7.15	7.78	3.00	26.00	30.00	40.00	
4	9.17	11.80	8.60	24.00	30.00	38.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.770	2266.594
2		(calculated)	(calculated)	0.620	1522.336
3		(calculated)	(calculated)	0.759	2227.217
4		(calculated)	(calculated)	0.942	3118.879

The slope and intercept shown above include any corrections and adjustments.

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	FLAT	✓	485.00	100.000
2	FLAT	✓	350.00	100.000
3	FLAT	✓	1085.00	100.000
4	FLAT	✓	490.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 2 (for whole period)

		To			
From		1	2	3	4
	1	30.000	90.000	255.000	110.000
	2	195.000	10.000	0.000	145.000
	3	305.000	380.000	10.000	390.000
	4	60.000	215.000	205.000	10.000

Turning Proportions (PCU) - Junction 2 (for whole period)

		To			
From		1	2	3	4
	1	0.06	0.19	0.53	0.23
	2	0.56	0.03	0.00	0.41
	3	0.28	0.35	0.01	0.36
	4	0.12	0.44	0.42	0.02

Vehicle Mix

Average PCU Per Vehicle - Junction 2 (for whole period)

		To			
From		1	2	3	4
	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 2 (for whole period)

		To			
From		1	2	3	4
	1	0.0	0.0	0.0	0.0
	2	0.0	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0
	4	0.0	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.30	3.15	0.42	A
2	0.31	4.57	0.44	A
3	0.59	4.72	1.42	A
4	0.22	2.05	0.28	A

Main Results for each time segment

Main results: (18:00-18:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	485.00	483.31	826.96	0.00	1629.49	0.298	0.42	3.137	A
2	350.00	348.24	618.09	0.00	1139.18	0.307	0.44	4.541	A
3	1085.00	1079.39	497.73	0.00	1849.67	0.587	1.40	4.641	A
4	490.00	488.89	925.27	0.00	2247.11	0.218	0.28	2.046	A

Main results: (18:15-18:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	485.00	484.99	829.98	0.00	1627.16	0.298	0.42	3.151	A
2	350.00	349.99	619.99	0.00	1138.00	0.308	0.44	4.568	A
3	1085.00	1084.96	499.99	0.00	1847.96	0.587	1.41	4.718	A
4	490.00	490.00	929.97	0.00	2242.69	0.218	0.28	2.053	A

Main results: (18:30-18:45)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	485.00	485.00	829.99	0.00	1627.15	0.298	0.42	3.151	A
2	350.00	350.00	620.00	0.00	1138.00	0.308	0.44	4.568	A
3	1085.00	1084.99	500.00	0.00	1847.95	0.587	1.42	4.718	A
4	490.00	490.00	929.99	0.00	2242.67	0.218	0.28	2.053	A

Main results: (18:45-19:00)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	485.00	485.00	830.00	0.00	1627.15	0.298	0.42	3.151	A
2	350.00	350.00	620.00	0.00	1138.00	0.308	0.44	4.568	A
3	1085.00	1084.99	500.00	0.00	1847.95	0.587	1.42	4.718	A
4	490.00	490.00	930.00	0.00	2242.67	0.218	0.28	2.053	A

Main results: (19:00-19:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	485.00	485.00	830.00	0.00	1627.15	0.298	0.42	3.151	A
2	350.00	350.00	620.00	0.00	1138.00	0.308	0.44	4.568	A
3	1085.00	1085.00	500.00	0.00	1847.95	0.587	1.42	4.718	A
4	490.00	490.00	930.00	0.00	2242.66	0.218	0.28	2.053	A

Main results: (19:15-19:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	485.00	485.00	830.00	0.00	1627.15	0.298	0.42	3.151	A
2	350.00	350.00	620.00	0.00	1138.00	0.308	0.44	4.568	A
3	1085.00	1085.00	500.00	0.00	1847.95	0.587	1.42	4.718	A
4	490.00	490.00	930.00	0.00	2242.66	0.218	0.28	2.053	A

Junction 2 - 2031 Reference, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
Junction 2	ARCADY			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2031 Reference, AM	2031 Reference	AM		FLAT	08:00	09:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
2	Tin Shui Road/Tin Wah Road	Roundabout	1,2,3,4			4.78	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description
1	1	(untitled)	
2	2	(untitled)	
3	3	(untitled)	
4	4	(untitled)	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
1	0.00	99999.00
2	0.00	99999.00
3	0.00	99999.00
4	0.00	99999.00

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1	7.38	7.60	3.60	25.00	30.00	36.00	
2	3.40	6.90	10.00	37.00	30.00	38.00	
3	7.15	7.78	3.00	26.00	30.00	40.00	
4	9.17	11.80	8.60	24.00	30.00	38.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.770	2266.594
2		(calculated)	(calculated)	0.620	1522.336
3		(calculated)	(calculated)	0.759	2227.217
4		(calculated)	(calculated)	0.942	3118.879

The slope and intercept shown above include any corrections and adjustments.

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	FLAT	✓	725.00	100.000
2	FLAT	✓	375.00	100.000
3	FLAT	✓	1190.00	100.000
4	FLAT	✓	895.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 2 (for whole period)

		To			
From		1	2	3	4
	1	55.000	135.000	480.000	55.000
	2	230.000	10.000	0.000	135.000
	3	405.000	240.000	10.000	535.000
	4	75.000	395.000	415.000	10.000

Turning Proportions (PCU) - Junction 2 (for whole period)

		To			
From		1	2	3	4
	1	0.08	0.19	0.66	0.08
	2	0.61	0.03	0.00	0.36
	3	0.34	0.20	0.01	0.45
	4	0.08	0.44	0.46	0.01

Vehicle Mix

Average PCU Per Vehicle - Junction 2 (for whole period)

		To			
From		1	2	3	4
	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 2 (for whole period)

		To			
From		1	2	3	4
	1	0.0	0.0	0.0	0.0
	2	0.0	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0
	4	0.0	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.51	5.07	1.02	A
2	0.42	7.03	0.73	A
3	0.64	5.44	1.79	A
4	0.40	2.71	0.67	A

Main Results for each time segment

Main results: (08:00-08:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	725.00	720.98	1076.00	0.00	1437.62	0.504	1.01	4.996	A
2	375.00	372.12	1020.40	0.00	889.79	0.421	0.72	6.918	A
3	1190.00	1182.95	491.48	0.00	1854.41	0.642	1.76	5.307	A
4	895.00	892.33	943.98	0.00	2229.49	0.401	0.67	2.686	A

Main results: (08:15-08:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	725.00	724.96	1079.97	0.00	1434.57	0.505	1.02	5.073	A
2	375.00	374.97	1024.96	0.00	886.96	0.423	0.73	7.030	A
3	1190.00	1189.92	494.96	0.00	1851.77	0.643	1.78	5.437	A
4	895.00	894.98	949.93	0.00	2223.88	0.402	0.67	2.708	A

Main results: (08:30-08:45)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	725.00	724.99	1079.99	0.00	1434.55	0.505	1.02	5.073	A
2	375.00	374.99	1024.99	0.00	886.94	0.423	0.73	7.031	A
3	1190.00	1189.98	494.99	0.00	1851.75	0.643	1.79	5.439	A
4	895.00	895.00	949.98	0.00	2223.84	0.402	0.67	2.708	A

Main results: (08:45-09:00)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	725.00	725.00	1080.00	0.00	1434.54	0.505	1.02	5.073	A
2	375.00	375.00	1025.00	0.00	886.94	0.423	0.73	7.031	A
3	1190.00	1189.99	495.00	0.00	1851.75	0.643	1.79	5.439	A
4	895.00	895.00	949.99	0.00	2223.83	0.402	0.67	2.708	A

Main results: (09:00-09:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	725.00	725.00	1080.00	0.00	1434.54	0.505	1.02	5.073	A
2	375.00	375.00	1025.00	0.00	886.94	0.423	0.73	7.031	A
3	1190.00	1189.99	495.00	0.00	1851.75	0.643	1.79	5.439	A
4	895.00	895.00	949.99	0.00	2223.82	0.402	0.67	2.708	A

Main results: (09:15-09:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	725.00	725.00	1080.00	0.00	1434.54	0.505	1.02	5.073	A
2	375.00	375.00	1025.00	0.00	886.94	0.423	0.73	7.031	A
3	1190.00	1190.00	495.00	0.00	1851.75	0.643	1.79	5.439	A
4	895.00	895.00	950.00	0.00	2223.82	0.402	0.67	2.708	A

Junction 2 - 2031 Reference, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
Junction 2	ARCADY			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2031 Reference, PM	2031 Reference	PM		FLAT	18:00	19:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
2	Tin Shui Road/Tin Wah Road	Roundabout	1,2,3,4			4.26	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description
1	1	(untitled)	
2	2	(untitled)	
3	3	(untitled)	
4	4	(untitled)	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
1	0.00	99999.00
2	0.00	99999.00
3	0.00	99999.00
4	0.00	99999.00

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1	7.38	7.60	3.60	25.00	30.00	36.00	
2	3.40	6.90	10.00	37.00	30.00	38.00	
3	7.15	7.78	3.00	26.00	30.00	40.00	
4	9.17	11.80	8.60	24.00	30.00	38.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.770	2266.594
2		(calculated)	(calculated)	0.620	1522.336
3		(calculated)	(calculated)	0.759	2227.217
4		(calculated)	(calculated)	0.942	3118.879

The slope and intercept shown above include any corrections and adjustments.

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	FLAT	✓	530.00	100.000
2	FLAT	✓	375.00	100.000
3	FLAT	✓	1155.00	100.000
4	FLAT	✓	525.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 2 (for whole period)

		To			
From		1	2	3	4
	1	30.000	95.000	290.000	115.000
	2	210.000	10.000	0.000	155.000
	3	325.000	405.000	10.000	415.000
	4	65.000	230.000	220.000	10.000

Turning Proportions (PCU) - Junction 2 (for whole period)

		To			
From		1	2	3	4
	1	0.06	0.18	0.55	0.22
	2	0.56	0.03	0.00	0.41
	3	0.28	0.35	0.01	0.36
	4	0.12	0.44	0.42	0.02

Vehicle Mix

Average PCU Per Vehicle - Junction 2 (for whole period)

		To			
From		1	2	3	4
	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 2 (for whole period)

		To			
From		1	2	3	4
	1	0.0	0.0	0.0	0.0
	2	0.0	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0
	4	0.0	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.33	3.41	0.50	A
2	0.34	4.94	0.51	A
3	0.63	5.37	1.72	A
4	0.24	2.17	0.32	A

Main Results for each time segment

Main results: (18:00-18:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	530.00	528.01	881.41	0.00	1587.53	0.334	0.50	3.392	A
2	375.00	372.96	672.76	0.00	1105.30	0.339	0.51	4.902	A
3	1155.00	1148.24	527.39	0.00	1827.17	0.632	1.69	5.252	A
4	525.00	523.74	984.36	0.00	2191.45	0.240	0.31	2.158	A

Main results: (18:15-18:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	530.00	529.99	884.97	0.00	1584.80	0.334	0.50	3.412	A
2	375.00	374.99	674.99	0.00	1103.91	0.340	0.51	4.938	A
3	1155.00	1154.93	529.99	0.00	1825.21	0.633	1.71	5.370	A
4	525.00	524.99	989.95	0.00	2186.18	0.240	0.32	2.166	A

Main results: (18:30-18:45)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	530.00	530.00	884.99	0.00	1584.78	0.334	0.50	3.412	A
2	375.00	375.00	675.00	0.00	1103.91	0.340	0.51	4.938	A
3	1155.00	1154.98	530.00	0.00	1825.20	0.633	1.71	5.370	A
4	525.00	525.00	989.98	0.00	2186.15	0.240	0.32	2.166	A

Main results: (18:45-19:00)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	530.00	530.00	885.00	0.00	1584.78	0.334	0.50	3.412	A
2	375.00	375.00	675.00	0.00	1103.90	0.340	0.51	4.938	A
3	1155.00	1154.99	530.00	0.00	1825.20	0.633	1.72	5.371	A
4	525.00	525.00	989.99	0.00	2186.14	0.240	0.32	2.166	A

Main results: (19:00-19:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	530.00	530.00	885.00	0.00	1584.77	0.334	0.50	3.412	A
2	375.00	375.00	675.00	0.00	1103.90	0.340	0.51	4.938	A
3	1155.00	1154.99	530.00	0.00	1825.20	0.633	1.72	5.371	A
4	525.00	525.00	990.00	0.00	2186.13	0.240	0.32	2.166	A

Main results: (19:15-19:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	530.00	530.00	885.00	0.00	1584.77	0.334	0.50	3.412	A
2	375.00	375.00	675.00	0.00	1103.90	0.340	0.51	4.938	A
3	1155.00	1155.00	530.00	0.00	1825.20	0.633	1.72	5.371	A
4	525.00	525.00	990.00	0.00	2186.13	0.240	0.32	2.166	A

Junction 2 - 2031 Design, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
Junction 2	ARCADY			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2031 Design, AM	2031 Design	AM		FLAT	08:00	09:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
2	Tin Shui Road/Tin Wah Road	Roundabout	1,2,3,4			4.76	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description
1	1	(untitled)	
2	2	(untitled)	
3	3	(untitled)	
4	4	(untitled)	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
1	0.00	99999.00
2	0.00	99999.00
3	0.00	99999.00
4	0.00	99999.00

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1	7.38	7.60	3.60	25.00	30.00	36.00	
2	3.40	6.90	10.00	37.00	30.00	38.00	
3	7.15	7.78	3.00	26.00	30.00	40.00	
4	9.17	11.80	8.60	24.00	30.00	38.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.770	2266.594
2		(calculated)	(calculated)	0.620	1522.336
3		(calculated)	(calculated)	0.759	2227.217
4		(calculated)	(calculated)	0.942	3118.879

The slope and intercept shown above include any corrections and adjustments.

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	FLAT	✓	725.00	100.000
2	FLAT	✓	375.00	100.000
3	FLAT	✓	1190.00	100.000
4	FLAT	✓	885.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 2 (for whole period)

		To			
From		1	2	3	4
	1	55.000	135.000	480.000	55.000
	2	230.000	10.000	0.000	135.000
	3	405.000	240.000	10.000	535.000
	4	75.000	385.000	415.000	10.000

Turning Proportions (PCU) - Junction 2 (for whole period)

		To			
From		1	2	3	4
	1	0.08	0.19	0.66	0.08
	2	0.61	0.03	0.00	0.36
	3	0.34	0.20	0.01	0.45
	4	0.08	0.44	0.47	0.01

Vehicle Mix

Average PCU Per Vehicle - Junction 2 (for whole period)

		To			
From		1	2	3	4
	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 2 (for whole period)

		To			
From		1	2	3	4
	1	0.0	0.0	0.0	0.0
	2	0.0	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0
	4	0.0	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.50	5.02	1.01	A
2	0.42	7.03	0.73	A
3	0.64	5.44	1.79	A
4	0.40	2.69	0.66	A

Main Results for each time segment

Main results: (08:00-08:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	725.00	721.02	1066.04	0.00	1445.29	0.502	1.00	4.944	A
2	375.00	372.12	1020.44	0.00	889.76	0.421	0.72	6.918	A
3	1190.00	1182.95	491.49	0.00	1854.41	0.642	1.76	5.307	A
4	885.00	882.38	943.98	0.00	2229.49	0.397	0.66	2.668	A

Main results: (08:15-08:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	725.00	724.96	1069.97	0.00	1442.27	0.503	1.00	5.018	A
2	375.00	374.97	1024.96	0.00	886.96	0.423	0.73	7.030	A
3	1190.00	1189.92	494.96	0.00	1851.77	0.643	1.78	5.437	A
4	885.00	884.98	949.93	0.00	2223.88	0.398	0.66	2.688	A

Main results: (08:30-08:45)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	725.00	724.99	1069.99	0.00	1442.25	0.503	1.01	5.018	A
2	375.00	374.99	1024.99	0.00	886.94	0.423	0.73	7.031	A
3	1190.00	1189.98	494.99	0.00	1851.75	0.643	1.79	5.439	A
4	885.00	885.00	949.98	0.00	2223.84	0.398	0.66	2.688	A

Main results: (08:45-09:00)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	725.00	725.00	1070.00	0.00	1442.25	0.503	1.01	5.018	A
2	375.00	375.00	1025.00	0.00	886.94	0.423	0.73	7.031	A
3	1190.00	1189.99	495.00	0.00	1851.75	0.643	1.79	5.439	A
4	885.00	885.00	949.99	0.00	2223.83	0.398	0.66	2.688	A

Main results: (09:00-09:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	725.00	725.00	1070.00	0.00	1442.25	0.503	1.01	5.018	A
2	375.00	375.00	1025.00	0.00	886.94	0.423	0.73	7.031	A
3	1190.00	1189.99	495.00	0.00	1851.75	0.643	1.79	5.439	A
4	885.00	885.00	949.99	0.00	2223.82	0.398	0.66	2.688	A

Main results: (09:15-09:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	725.00	725.00	1070.00	0.00	1442.25	0.503	1.01	5.018	A
2	375.00	375.00	1025.00	0.00	886.94	0.423	0.73	7.031	A
3	1190.00	1190.00	495.00	0.00	1851.75	0.643	1.79	5.439	A
4	885.00	885.00	950.00	0.00	2223.82	0.398	0.66	2.688	A

Junction 2 - 2031 Design, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
Junction 2	ARCADY			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2031 Design, PM	2031 Design	PM		FLAT	18:00	19:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
2	Tin Shui Road/Tin Wah Road	Roundabout	1,2,3,4			4.26	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description
1	1	(untitled)	
2	2	(untitled)	
3	3	(untitled)	
4	4	(untitled)	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
1	0.00	99999.00
2	0.00	99999.00
3	0.00	99999.00
4	0.00	99999.00

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1	7.38	7.60	3.60	25.00	30.00	36.00	
2	3.40	6.90	10.00	37.00	30.00	38.00	
3	7.15	7.78	3.00	26.00	30.00	40.00	
4	9.17	11.80	8.60	24.00	30.00	38.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.770	2266.594
2		(calculated)	(calculated)	0.620	1522.336
3		(calculated)	(calculated)	0.759	2227.217
4		(calculated)	(calculated)	0.942	3118.879

The slope and intercept shown above include any corrections and adjustments.

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	FLAT	✓	530.00	100.000
2	FLAT	✓	375.00	100.000
3	FLAT	✓	1155.00	100.000
4	FLAT	✓	525.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 2 (for whole period)

		To			
From		1	2	3	4
	1	30.000	95.000	290.000	115.000
	2	210.000	10.000	0.000	155.000
	3	325.000	405.000	10.000	415.000
	4	65.000	230.000	220.000	10.000

Turning Proportions (PCU) - Junction 2 (for whole period)

		To			
From		1	2	3	4
	1	0.06	0.18	0.55	0.22
	2	0.56	0.03	0.00	0.41
	3	0.28	0.35	0.01	0.36
	4	0.12	0.44	0.42	0.02

Vehicle Mix

Average PCU Per Vehicle - Junction 2 (for whole period)

		To			
From		1	2	3	4
	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 2 (for whole period)

		To			
From		1	2	3	4
	1	0.0	0.0	0.0	0.0
	2	0.0	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0
	4	0.0	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.33	3.41	0.50	A
2	0.34	4.94	0.51	A
3	0.63	5.37	1.72	A
4	0.24	2.17	0.32	A

Main Results for each time segment

Main results: (18:00-18:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	530.00	528.01	881.41	0.00	1587.53	0.334	0.50	3.392	A
2	375.00	372.96	672.76	0.00	1105.30	0.339	0.51	4.902	A
3	1155.00	1148.24	527.39	0.00	1827.17	0.632	1.69	5.252	A
4	525.00	523.74	984.36	0.00	2191.45	0.240	0.31	2.158	A

Main results: (18:15-18:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	530.00	529.99	884.97	0.00	1584.80	0.334	0.50	3.412	A
2	375.00	374.99	674.99	0.00	1103.91	0.340	0.51	4.938	A
3	1155.00	1154.93	529.99	0.00	1825.21	0.633	1.71	5.370	A
4	525.00	524.99	989.95	0.00	2186.18	0.240	0.32	2.166	A

Main results: (18:30-18:45)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	530.00	530.00	884.99	0.00	1584.78	0.334	0.50	3.412	A
2	375.00	375.00	675.00	0.00	1103.91	0.340	0.51	4.938	A
3	1155.00	1154.98	530.00	0.00	1825.20	0.633	1.71	5.370	A
4	525.00	525.00	989.98	0.00	2186.15	0.240	0.32	2.166	A

Main results: (18:45-19:00)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	530.00	530.00	885.00	0.00	1584.78	0.334	0.50	3.412	A
2	375.00	375.00	675.00	0.00	1103.90	0.340	0.51	4.938	A
3	1155.00	1154.99	530.00	0.00	1825.20	0.633	1.72	5.371	A
4	525.00	525.00	989.99	0.00	2186.14	0.240	0.32	2.166	A

Main results: (19:00-19:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	530.00	530.00	885.00	0.00	1584.77	0.334	0.50	3.412	A
2	375.00	375.00	675.00	0.00	1103.90	0.340	0.51	4.938	A
3	1155.00	1154.99	530.00	0.00	1825.20	0.633	1.72	5.371	A
4	525.00	525.00	990.00	0.00	2186.13	0.240	0.32	2.166	A

Main results: (19:15-19:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	530.00	530.00	885.00	0.00	1584.77	0.334	0.50	3.412	A
2	375.00	375.00	675.00	0.00	1103.90	0.340	0.51	4.938	A
3	1155.00	1155.00	530.00	0.00	1825.20	0.633	1.72	5.371	A
4	525.00	525.00	990.00	0.00	2186.13	0.240	0.32	2.166	A

Appendix 5

Environmental Noise Impact Assessment

**PROPOSED RESIDENTIAL DEVELOPMENT AT
TIN SHUI WAI TOWN LOT NO. 4**

ENVIRONMENTAL NOISE IMPACT ASSESSMENT REPORT

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AUGUST 2022

WHA

DOCUMENT VERIFICATION

Page 1 of 1

JOB TITLE: Proposed Residential Development at Tin Shui Wai Town Lot No. 4 **JOB NO:** 22464

REPORT TITLE: Environmental Noise Impact Assessment Report

REPORT NO: 22464-N1 Rev A

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			Prepared by	Checked by	Approved by
		Name	Samuel Lee / Kit Wong	Kit Wong / Ir K K lu	Ir K K lu
		Signature			

Revision	Date	Filename	22464-N1a.doc		
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			Prepared by	Checked by	Approved by
		Name	Samuel Lee / Kit Wong	Kit Wong / Ir K K lu	Ir K K lu
		Signature	SL kw kw kw		Ir K K lu

Revision	Date	Filename			
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			Prepared by	Checked by	Approved by
		Name			
		Signature			

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APPENDICES

AIMS

To assess noise impacts on the proposed residential development at Tin Shui Wai Town Lot No. 4.

To recommend noise mitigation measures for the proposed Development, if necessary, and to assess the suitability of the proposed building layout and the recommended noise mitigation measures according to relevant requirements in the Hong Kong Planning Standards & Guidelines (HKPSG).

SUMMARY

Noise assessments have been conducted to predict the noise impacts at the proposed Development.

An assessment has been conducted to predict the road traffic noise impacts on the proposed Development. The prediction of road traffic noise was carried out based on the traffic forecast for Year 2043. For the Base Scenario (without any noise mitigation measures), the predicted maximum road traffic noise level of the residential flats will be 75dB(A), exceeding the 70dB(A) noise criterion. Therefore, noise mitigation measures are required.

With the provision of Acoustic Window (baffle type), the assessment results indicate that the predicted road traffic noise levels at all the residential flats (i.e. 100%) will comply with the 70dB(A) noise criterion.

For the rail noise assessment, site measurements have been conducted for the Light Rail Transit (LRT). The predicted rail noise results for the representative NSRs of the proposed Development will comply with the stipulated noise criteria.

Site surveys have been conducted to investigate the fixed noise sources in the vicinity of the proposed Development. Adverse noise impact on the proposed Development due to fixed noise sources is not anticipated.

1. INTRODUCTION

- 1.1 Westwood Hong & Associates Ltd (WHA) was commissioned to conduct an environmental noise impact assessment for the proposed residential Development at Tin Shui Wai Town Lot No. 4 (the “proposed Development”). Figure 1 shows the location of the proposed Development.
- 1.2 This environmental noise impact assessment report supports the S.16 Planning Application for the proposed Development.
- 1.3 The proposed Development will provide 1102 nos. of residential flats.
- 1.4 This report has been prepared based on the architectural drawings provided by the Client (Appendix 1).
- 1.5 This report presents assessments of the following:
- Road traffic noise affecting the proposed Development
 - Rail noise affecting the proposed Development
 - Fixed noise sources to and from the proposed Development

2. SITE LOCATION & BUILDING LAYOUT

Site Location

- 2.1 The project site adjoins Tin Shui Wai Park and is located southern west of Tin Yan Road. The Light Rail stops of Tin Wing Stop is located to the north, and Ginza Stop is located to the east of Area 23 (Figure 1).

Building Layout

- 2.2 The project site is occupied by 2 blocks of hotels (Harbour Plaza Resort City Phases 1 and 2) with 20 – 21 storeys and the shopping mall Fortune Kingswood Phases 1 and 2. The proposed Development will convert the upper floors of the two existing hotel blocks to residential flats and the lower floors of the hotels to commercial area (the proposed Development). The existing shopping mall Fortune Kingswood Phases 1 and 2 will be retained. The architectural drawings are provided in Appendix 1.

3. NOISE CRITERIA

Road Traffic Noise Criterion

- 3.1 According to the HKPSG^[1], road traffic noise criterion for domestic premises is 70dB(A) L10(1 hour) at the external facades for the hour having the peak traffic flow. This noise criterion applies to the domestic premises which rely on opened windows for ventilation.

Noise Criteria for Fixed Noise Sources

- 3.2 The proposed Development is located in a neighbourhood with plenty of high-rise residential developments. Therefore, the proposed Development is located within an urban area, not being affected by any Influencing Factor (IF) (e.g. industrial area or major road). With reference to the “Technical Memorandum for the Assessment of Noise from Places other than Domestic Premises, Public Places or Construction Sites”^[2] (TM – DP), an Area Sensitivity Rating (ASR) of "B" was assumed for the proposed Development. The Acceptable Noise Levels (ANLs) are shown in Table 3.1.

Table 3.1 ANLs for Day, Evening and Night Time Periods

Time Period	ANLs Leq (30 mins)		
	ASR “A”	ASR “B”	ASR “C”
Day (0700 to 1900 hours) and evening (1900 to 2300 hours)	60dB(A)	65dB(A)	70dB(A)
Night (2300 to 0700 hours)	50dB(A)	55dB(A)	60dB(A)

Note: In any event, the ASR and the ANLs adopted in this report are only indicative and they are used for assessment only. It should be noted that noise from fixed noise sources is controlled under section 13 of the Noise Control Ordinance. Therefore, the ASRs and ANLs determined in this report shall not prejudice the Noise Control Authority’s discretion to determine noise impact due to fixed noise sources on the basis of prevailing legislation and practices being in force, and taking account of contemporary conditions/ situations of adjoining land uses. The assessment of noise impacts due to fixed noise sources in this report shall not bind the Noise Control Authority in the context of law enforcement against any of the noise from fixed noise sources being assessed.

- 3.3 According to ProPECC Note 4/93^[5], the noise criteria for the design of noise sensitive developments near fixed noise sources shall refer to the TM – DP. Therefore, the assessment criteria for fixed noise sources for the proposed Development should refer to the ANLs in Table 3.1.

Rail Noise Criteria

- 3.4 It is recommended in the HKPSG that the rail traffic noise limits for noise sensitive receivers should be 65dB(A) Leq(24 hrs) and 85dB(A) Lmax(2300-0700 hr). These noise limits apply to uses that rely on opened windows for ventilation.
- 3.5 Noise limits recommended in the Noise Control Ordinance are 65dB(A) Leq(30mins) during day and evening periods, and 55dB(A) Leq(30mins) during the night-time period for the proposed Development, which is assigned an ASR of “B”.

4. SITE INSPECTION

Site Surveys

- 4.1 Site surveys were conducted on 4 April 2022, 13, 16 & 19 August 2019 and 6 September 2018. Photographs taken on site are given in Appendix 2.

Observations on site

- 4.2 Road traffic noise from the Tin Yan Road, Tin Shing Road and Ka Yan Street was identified as the dominant noise source affecting the proposed Development.
- 4.3 The residential development for "LRT Terminus at Tin Shui Wai Town Lot 23" was under construction during the site survey (Plates 12 of Appendix 2).

Instrumentation

- 4.4 The instrumentation used by WHA for the site surveys is listed in Table 4.1.

Table 4.1 Instruments Used for Site Surveys

Manufacturer	Type
Ono Sokki	Precision Integrating Sound Level Meter
Ono Sokki	Foam Windshield
Bruel and Kjaer	Noise Calibrator Type 4231

- 4.5 The sound level meter was calibrated before use and further checks on completion of the survey, and confirmed that the calibration levels from before and after the noise measurement agree to within 1.0dB.
- 4.6 The site measurements including measurement equipment, calibration procedure, measurement methodology and weather conditions were conducted in accordance with the TM – DP.

Fixed Noise Sources in the Vicinity

- 4.7 In the vicinity of the project site are mainly residential developments (e.g. Lynwood Court, Kingswood Villas, Kenswood Court, Maywood Court and Tin Chung Court). The potential significant fixed noise source identified is Tin Shui Wai Public Transport Interchange (PTI) located to the north of the project site (Plates 5 – 6 of Appendix 2). The PTI is covered by a landscaped deck. Ventilation fans were not found outside the PTI liable to affecting the project site (Plate 6 of Appendix 2).

- 4.8 Site measurements were made at the northern site boundary at the location close to the ingress of the PTI with an approximate 25m separation (Figure 2b). The distance between the project site and the egress of the PTI is about 95m; the egress is having relatively less noise contribution. The measurements were made during quiet time periods (i.e. around midnight) with relatively low road traffic noise (as the predominant noise source affecting the proposed Development was the main road traffic). The noise measurements results are provided in Table 4.2.

Table 4.2 Noise Measurement Results

Location	Description	Measurement Results, dB(A)
Loc 1	Northern Site Boundary	Daytime: 61 – 63 (façade) Night-time: 52 – 54 (façade)

- 4.9 The measured noise levels are within the daytime and night-time noise criteria (i.e. 65dB(A) for daytime and 55dB(A) for night-time), indicating that the project site will not be affected by the operation noise from PTI. The detailed fixed noise sources assessment will be provided in Section 8.
- 4.10 Site surveys revealed that there were 3 street pump hydrants and a substation in Tin Shui Wai Park with insignificant noise emission (Plates 7 – 11 of Appendix 2). Also, the Tin Shui Wai Sports Ground, Tin Shui Wai Sport Centre and Tin Shui Wai Swimming Pool did not have any fixed noise sources and did not produce any significant noise (Plates 13 – 16 of Appendix 2). However, the Tin Shui Wai Sports Ground is identified as potential fixed noise sources to the proposed Development, the detailed assessment will be provided in Section 8.

LRT Noise Measurement

- 4.11 Train noise measurements of LRT were made on 4 April 2022, 13 August 2019 and 6 September 2018 (3:00pm to 6:00pm). The ground was dry and the rail track was having the normal dry condition during the measurement.
- 4.12 The train noise measurements were made at the Tin Yan Road (i.e. Loc A and Loc B) and illustrated in Figure 2a. The distance between the microphone and the tracks are summarised in Table 4.3. The microphone was positioned at about 1.5m above local ground level, commanding a full 180-degree view of the tracks. The train pass-by events have a measurement period typically in the range of 10 to 27 seconds.

- 4.13 The measured train noise levels in 2022 are slightly lower than that in 2020 (which adopted in the previous submission). For conservative, the measured train noise data adopted in the previous submission would be adopted in this LRT assessment. The summary of measured Sound Exposure Level (SEL) and L_{max} to be adopted in the LRT noise assessment are given in Table 4.3. The details of the measured train noise data are provided in Appendix 6.

Table 4.3 Measured LRT Noise Levels Adopted in the LRT Noise Assessment

	Train Pass Event	Noise Levels, dB(A)		Distance from Track (m)
		SEL	L _{max}	
Loc A	North Bound	74	74	15
	South Bound	73	68	20
Loc B	North Bound	76	75	13
	South Bound	74	68	18

5. ROAD TRAFFIC NOISE IMPACT ASSESSMENT

- 5.1 The noise prediction has been conducted by employing the WS Atkins RoadNoise 2000^[3] computer software.

Traffic Forecast

- 5.2 The occupation year of the proposed Development is 2028, the maximum traffic in 15 years after occupation of the proposed Development (i.e. 2043) has been adopted for the purpose of the road traffic noise assessment. Transport Department (TD) have no objection to the methodology for traffic forecast (Appendix 3). The Traffic Consultant confirmed that the methodology approved by TD has been strictly adopted in the traffic forecast (Appendix 3).
- 5.3 The traffic forecast for Year 2043 was provided by the Traffic Consultant (CTA Consultants Limited), which given in Appendix 3. The definition of heavy vehicles in the U.K. Department of Transport's "Calculation of Road Traffic Noise" (CRTN)^[4] has been adopted. The traffic flow data for the main roads adopted in the noise prediction models are shown in Figure 3.
- 5.4 Review of the data indicates that the AM peak is in general higher than the PM peak. Therefore, the set of AM peak traffic data is employed for the assessment, representing the worst-case scenario.

Methodology of Road Traffic Noise Impact Assessment

- 5.5 The road traffic noise levels at the proposed Development have been predicted based on the predicted traffic flows in Year 2043 and in accordance with the procedures given in the CRTN. The predicted road traffic noise levels at the building facades include a 2.5dB(A) facade reflection and correction factors for gradient, distance, view angle, barriers and road surface material.
- 5.6 The assessment points are taken at the height of 1.2m above each residential floor and 1m away from the façade of openable windows of the noise sensitive rooms. All openings of noise sensitive uses are assigned with assessment points. The location of the assessment points for the noise sensitive rooms are illustrated in Appendix 4.
- 5.7 The road surface type of the roads in the prediction model are assumed to be “bitumen”.

Predicted Road Traffic Noise Levels (Base Scenario)

- 5.8 The predicted road traffic noise levels are presented in Appendix 4 for all Noise Sensitive Receivers (NSRs) of the proposed Development. The predicted maximum road traffic noise level of the residential flats will be 75dB(A), exceeding the stipulated 70dB(A) noise criterion. Noise mitigation measures are required.

Predicted Road Traffic Noise Levels (With Noise Mitigation Measures)

- 5.9 With the provision of noise mitigation measures of Acoustic Window (baffle type) (Figures 4a and 4b), all residential flats of the proposed Development can comply with the stipulated 70dB(A) noise limit. Details of the predicted noise levels are given in Appendix 5.
- 5.10 Noise Mitigation measures reducing the noise impacts on the occupants are given in Section 6.

6. NOISE MITIGATION MEASURES

- 6.1 Practicable noise mitigation measures will be considered in the proposed Development, as mentioned in the following sections.

Acoustic Window (Baffle Type)

- 6.2 The noise reduction of the Acoustic Window (Baffle type) with 5dB(A) will be assumed in the noise calculation. Detailed design of the window and the justification of noise performance are shown in Appendix 9. The locations of acoustic window are illustrated in Figures 4a and 4b. The project architect confirmed that the design of acoustic window (baffle type) could meet the natural ventilation requirement under the relevant building regulations.
- 6.3 The configuration and acoustic performance of the acoustic window (baffle type) would be reviewed during detailed design stage.

7. RAIL NOISE IMPACT ASSESSMENT

- 7.1 The existing LRT was considered in the rail noise impact assessment.

LRT Assessment Parameters

- 7.2 The rail noise calculation is based on the measured train noise data as provided in Table 4.3.
- 7.3 Due to the local epidemic situation, the LRT runs at reduced frequencies. The detailed train frequencies are provided in Appendix 7. For conservative, the train frequency adopted in the previous submission (in Year 2020) would be adopted in this assessment.
- 7.4 The LRT train services frequency is referenced to the latest information from MTRC (available from the MTRC's website^[6], and provided in Appendix 7. The detailed train frequency adopted in the calculation are summarised in Table 7.1 below.

Table 7.1 Train Frequency for LRT Noise Calculation

Parameter	Data adopted in the calculation
LRT Train Frequency (30 minutes) *	Daytime/ Evening: 30 Night-time: 15

Remark:

* Light Rail Routes 705, 706, 751 and 751P have been considered.

Methodology for Rail Noise Impact Assessment

- 7.5 Based on the measured SEL and Lmax, the Leq (30min) level during the night-time period was determined by taking into account the following factors:
- Distance correction [$10 \times \log (D / D_{ref})$]
where Dref (i.e. 13m – 20m) is reference distance during noise measurement
 - View angle correction [$10 \times \log (\pi \theta / 180 - \cos 2\alpha \sin \theta) - 5$]
where θ = view angle to railway track not significantly shielded from the NSR and α = acute defined in Calculation of Railway Noise (CRN) (view angle correction for the selected NSR and the worst case reference scenarios are determined and subtracted with each other to determine the net correction)
 - Façade correction [+2.5dB(A)]
 - Conversion from SEL to Leq (30min) during night-time [a frequency of 15 trains in 30 minutes per direction]
- 7.6 The Leq (24 hours) level was determined by taking into account the following factors:-
- Conversion from SEL to Leq (24 hour) [maximum frequency of 906 trains per day for each direction]. The maximum train frequency is based on the service hours available from MTRC's website (Appendix 7).
 - The distance correction, view angle correction and façade correction are same as Section 7.5.
- 7.7 The Lmax level was determined by taking into account the following factors:-
- The maximum value of the measured Lmax is adopted in the calculation (Appendix 6).
 - The distance correction, view angle correction and façade correction are same as Section 7.5
- 7.8 Rail noise impact has been computed for the most-affected NSRs in the proposed Development. The assessment points are taken at the height of 1.2m above each residential floor and 1m away from the façade of openable windows of the noise sensitive rooms.

Predicted Rail Noise Levels (Base Scenario)

- 7.9 The assessment results indicate that all representative NSRs can comply with the stipulated noise criteria. The summary of results are provided in Table 7.2 and the details predicted rail noise levels are given in Appendix 8.

Table 7.2 Summary of Predicted Rail Noise Levels

NSR	Predicted Noise Levels			
	Leq, 24hr	Leq, 30min (day and evening time)	Leq, 30min (night-time)	Lmax (2300 – 0700)
<u>Area 20</u>				
NSR 112	54	56	53	67
NSR 113	52	54	51	66
<u>Area 23</u>				
NSR 201	55	57	54	69
NSR 204	55	57	54	69
Noise Criteria	65	65	55	85

8. NOISE IMPACT ASSESSMENT OF FIXED NOISE SOURCES***Identified Fixed Noise Source Affecting the Proposed Development***

- 8.1 The only significant fixed noise source identified in the vicinity is the PTI located at the north of the proposed Development. The PTI is covered by a landscaped deck. The operation noise inside the PTI (i.e. idling engine and manoeuvring vehicles) can be screened off. The proposed Development would not have adverse noise impact from the operation noise inside the PTI.
- 8.2 The proposed Development would have line of sight to the ingress/egress of the PTI. Site measurements have been made at the northern site boundary to determine the noise impact from PTI (presented in Sections 4.8 – 4.9). The site measurements results were 61 – 63dB(A) during daytime period and 52 – 54dB(A) during night-time period, which comply with the stipulated noise limit. Therefore, the proposed Development would not have adverse noise impact from ingress/egress of the PTI.

- 8.3 The PTI is covered by a landscaped deck. No ventilation fans were found outside the PTI that could be affecting the project site (Plate 6 of Appendix 2). Therefore, adverse noise impact from the PTI for the proposed Development is not anticipated.

Identified Potential Fixed Noise Source Affecting the Proposed Development

- 8.4 The Tin Shui Wai Sports Ground located at about 180m south of the proposed Development. No industrial noise was observed during site surveys. However, reference has been made to the EIA report “Main Arena of the 2008 Olympic Equestrian Event”^[7], crowd noise and Public Address (PA) noise would be identified as the potential noise sources. The noise data and methodology in the EIA report would be adopted in the assessment. The detailed predicted fixed noise levels are given in Appendix 10. All residential flats of the proposed Development can comply with the stipulated noise limits provided in Section 3.

Fixed Noise Sources in the Proposed Development

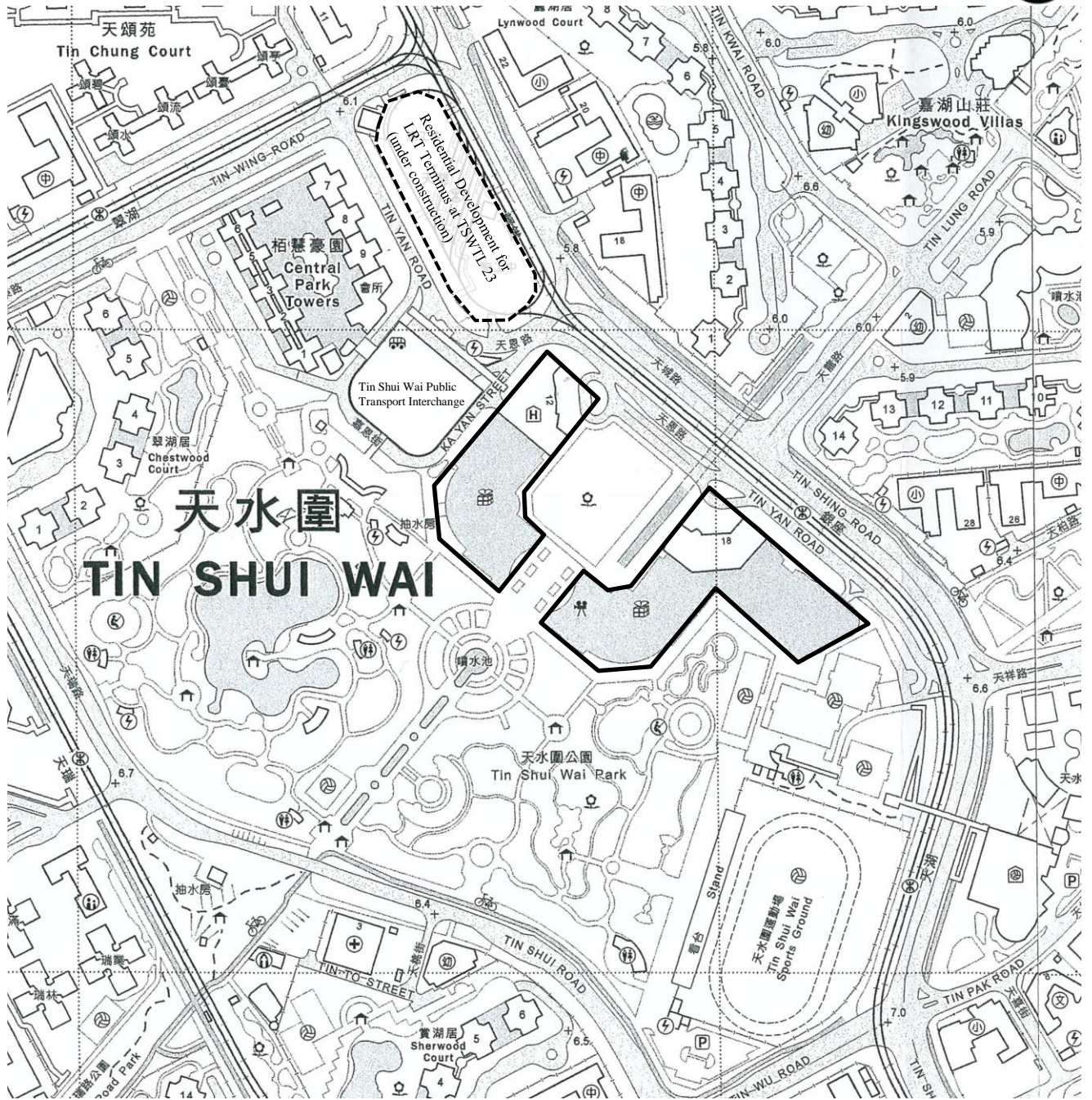
- 8.5 The noise emissions from any planned fixed noise sources associated with the proposed Development would be designed to meet the relevant criteria stipulated in the HKPSG.
- 8.6 The acoustic performance of the fixed noise sources would be reviewed during detailed design stage. If found necessary, acoustic treatments such as provision of acoustic silencers and acoustic enclosures shall be proposed in order to comply with the relevant noise requirements in the HKPSG.
- 8.7 The location of the fixed noise sources in the proposed Development and the required noise mitigation measures will be reviewed in the detailed design stage.

9. CONCLUSION

- 9.1 Noise assessments have been conducted to predict the noise impacts at the proposed Development.
- 9.2 An assessment has been conducted to predict the road traffic noise impacts on the proposed Development. The prediction of road traffic noise was carried out based on the traffic forecast for Year 2043. For the Base Scenario (without any noise mitigation measures), the predicted maximum road traffic noise level of the residential flats will be 75dB(A), which exceeds the 70dB(A) noise criterion. Therefore, noise mitigation measures are required.
- 9.3 With the provision of noise mitigation measures of acoustic window (baffle type), the assessment results indicate that the predicted road traffic noise levels at all the residential flats (i.e. 100%) will comply with the 70dB(A) noise criterion.
- 9.4 For the rail noise assessment, site measurements have been conducted for the LRT. The predicted rail noise results for the representative NSRs of the proposed Development will comply with the stipulated noise criteria.
- 9.5 Site surveys have been conducted to investigate the fixed noise sources in the vicinity of the proposed Development. The proposed Development would not be affected by the fixed noise sources.

10. REFERENCES

- [1] "Hong Kong Planning Standards & Guidelines" of March 2014 of Hong Kong Government.
- [2] "Technical Memorandum for the Assessment of Noise from Places Other than Domestic Premises, Public Places or Construction Sites" (TM – DP) issued under the Noise Control Ordinance.
- [3] "RoadNoise 2000" computer software of WS Atkins Noise and Vibration, England.
- [4] "Calculation of Road Traffic Noise" of the Department of Transport, Welsh Office, UK.
- [5] Practice Note for Professional Persons PN 4/93 "Planning and Designing Noise Sensitive Developments" of the Environmental Protection Department.
- [6] MTRC Website (http://www.mtr.com.hk/ch/customer/services/more_light_rail.html) with the Service Hours of LRT
- [7] EIA Report "Main Arena of the 2008 Olympic Equestrian Event" (EIA-118/2005)



Legend



Proposed Development Area

Westwood Hong & Associates Ltd

PROJECT: 22464

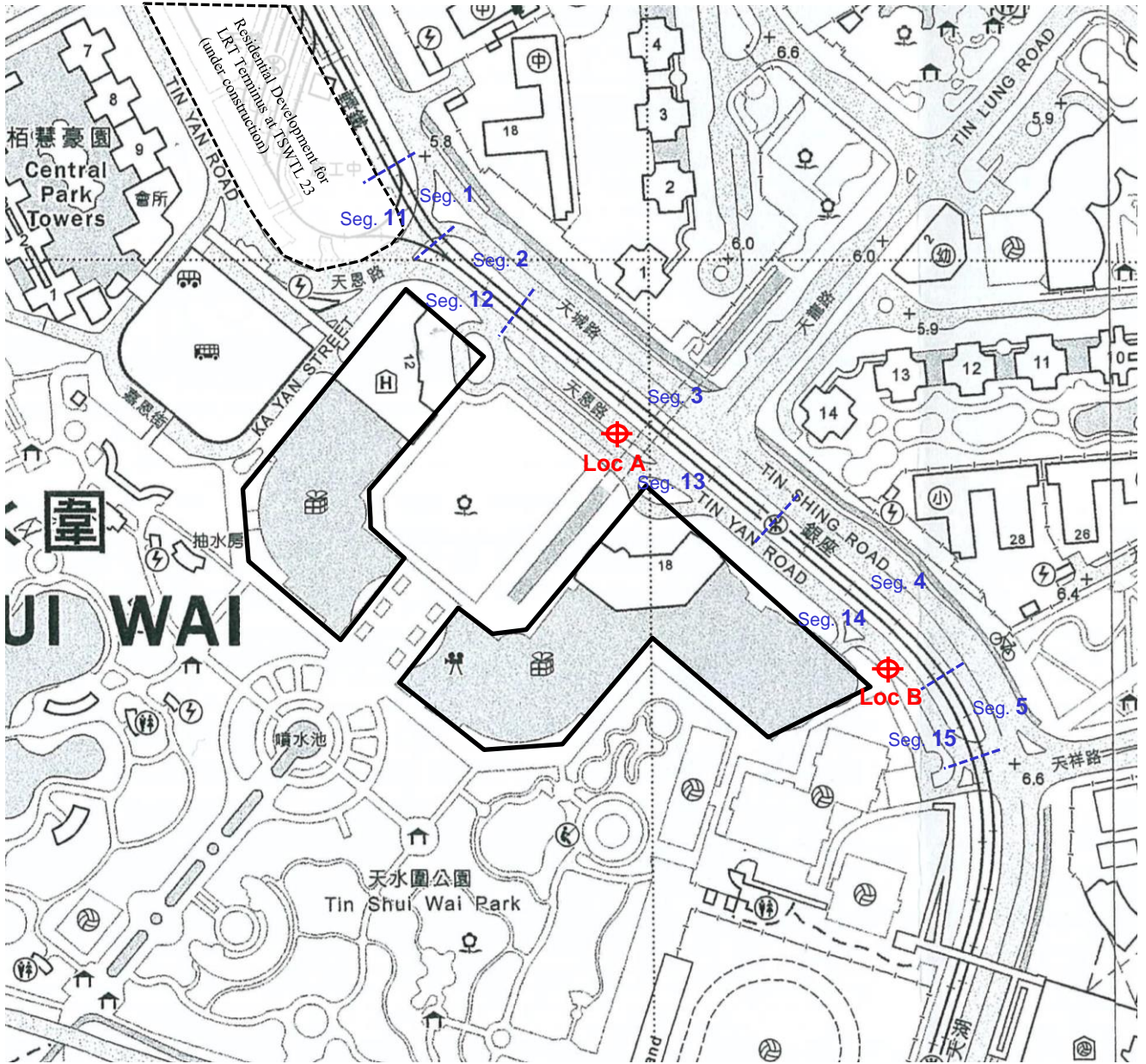
**Proposed Residential Development
at Tin Shui Wai Town Lot No. 4**

TITLE:


Site Location


FIGURE

1

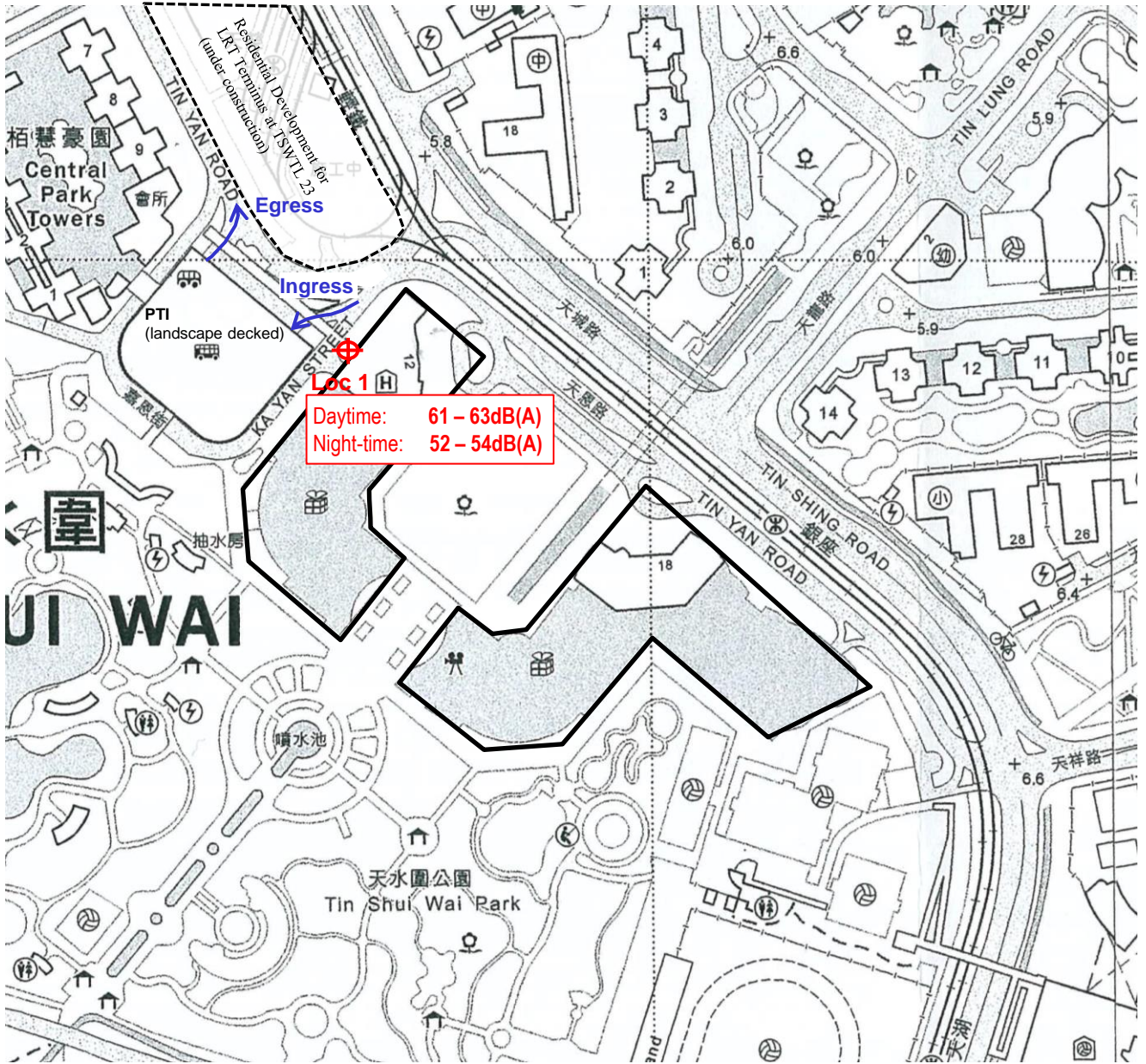


Legend

 Proposed Development Area

 Measurement Location

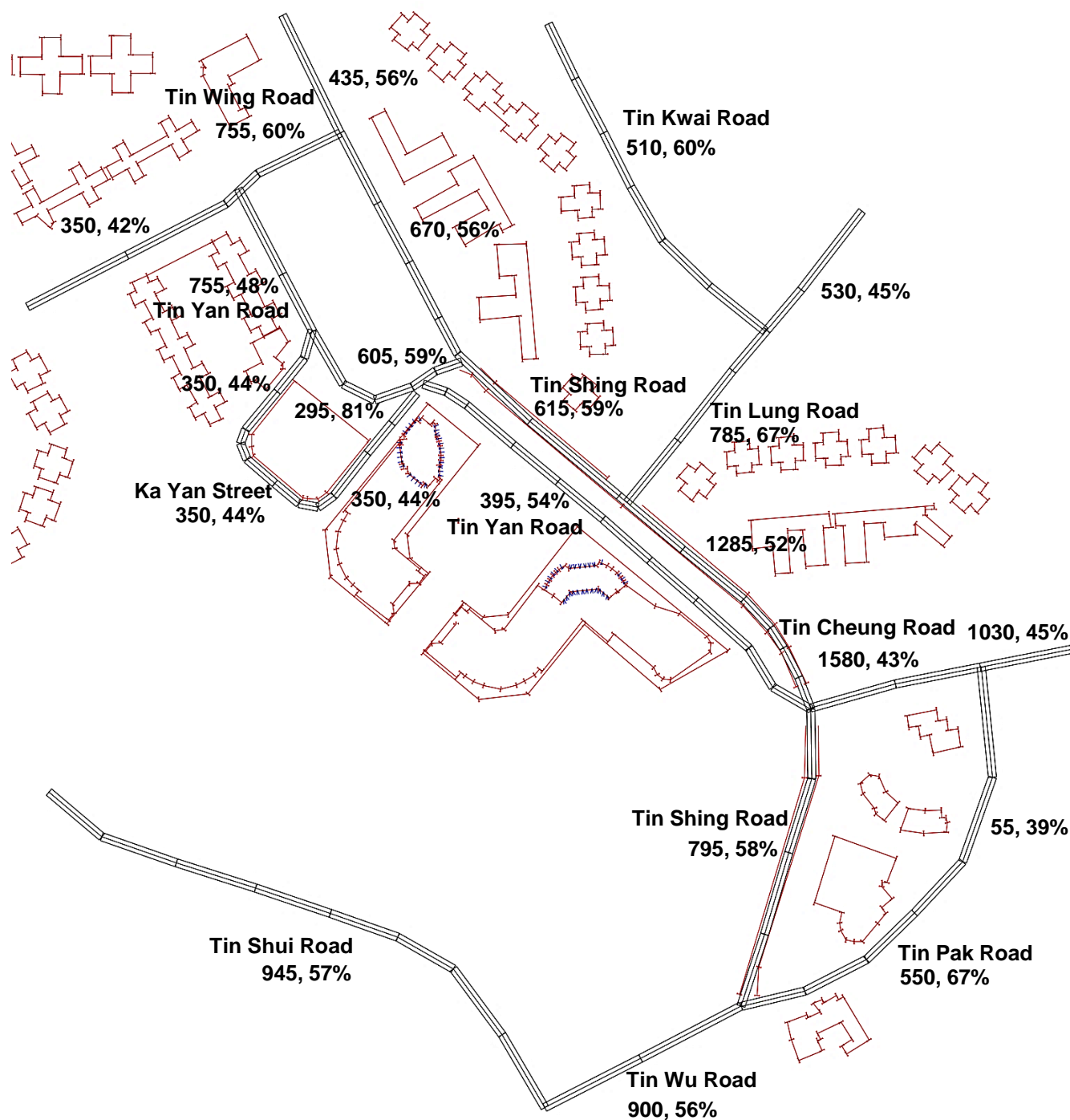
Westwood Hong & Associates Ltd	TITLE:	FIGURE
PROJECT: 22464 Proposed Residential Development at Tin Shui Wai Town Lot No. 4	Measurement Locations of LRT	2a



Legend

- Proposed Development Area
- Measurement Location

Westwood Hong & Associates Ltd	TITLE:	FIGURE
PROJECT: 22464 Proposed Residential Development at Tin Shui Wai Town Lot No. 4	Measurement Location of PTI	2b



Legend

350, 42% - 350 vehicles per hour, 42% heavy goods vehicles

Westwood Hong & Associates Ltd

PROJECT: 22464

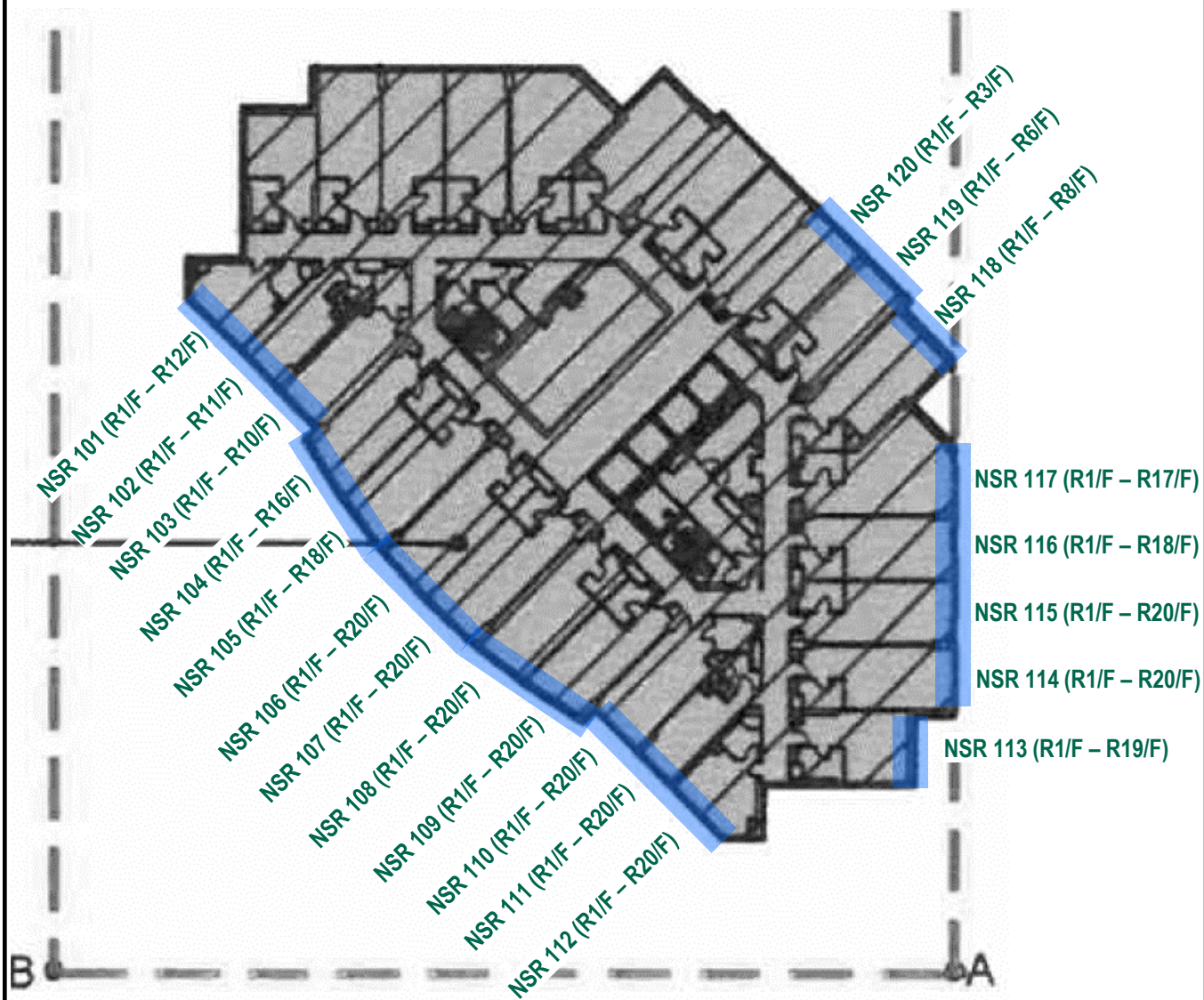
**Proposed Residential Development
at Tin Shui Wai Town Lot No. 4**

TITLE:

**Computer Plot of Road Scheme
(with yr. 2043 traffic forecast)**

FIGURE

3



Legend

 Acoustic Window (Baffle type)

Westwood Hong & Associates Ltd

PROJECT: 22464

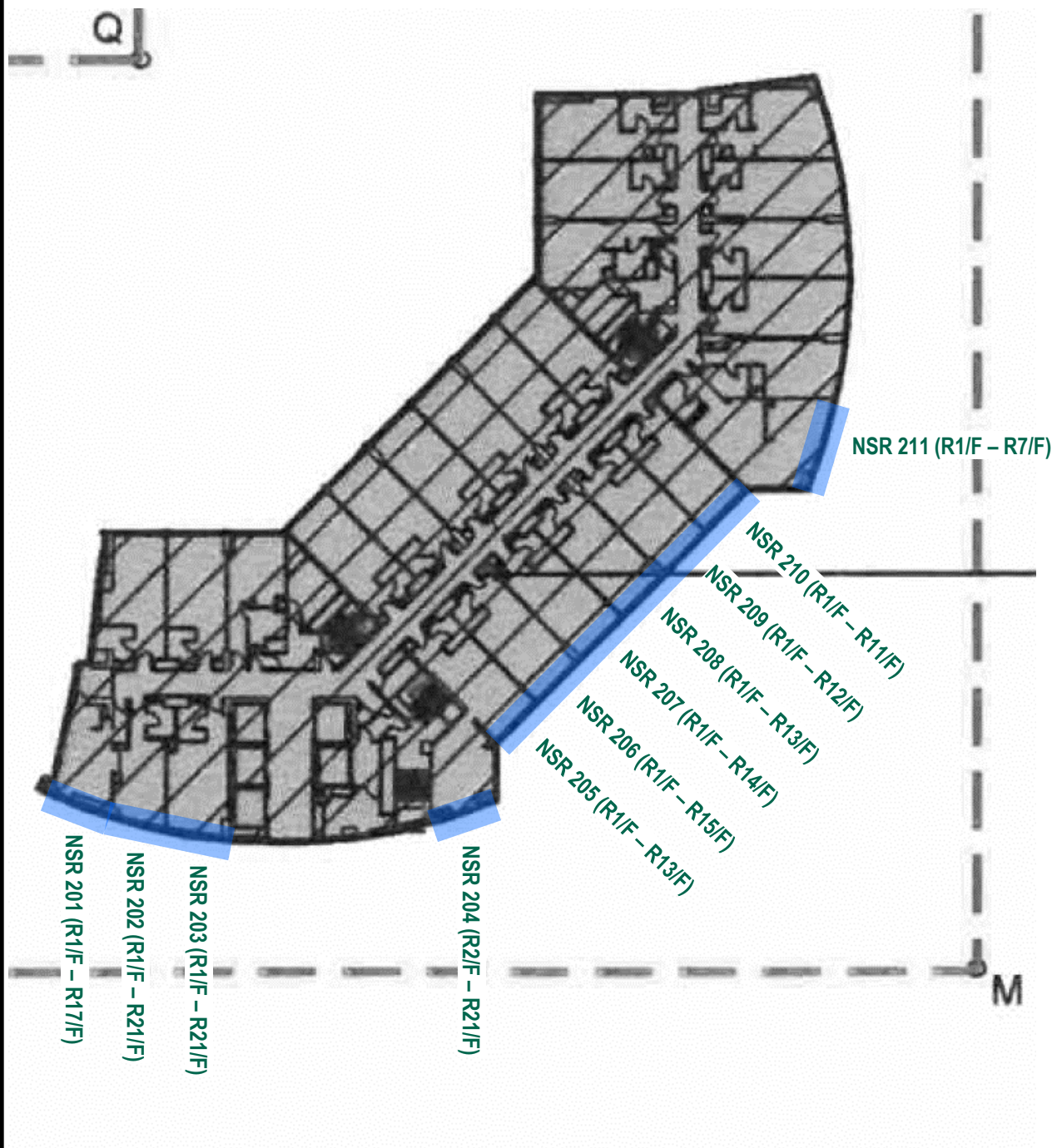
Proposed Residential Development
at Tin Shui Wai Town Lot No. 4

TITLE:

Noise Mitigation Measures (Area 20)

FIGURE

4a



Legend

 Acoustic Window (Baffle type)

Westwood Hong & Associates Ltd

PROJECT: 22464

Proposed Residential Development
at Tin Shui Wai Town Lot No. 4

TITLE:

Noise Mitigation Measures (Area 23)

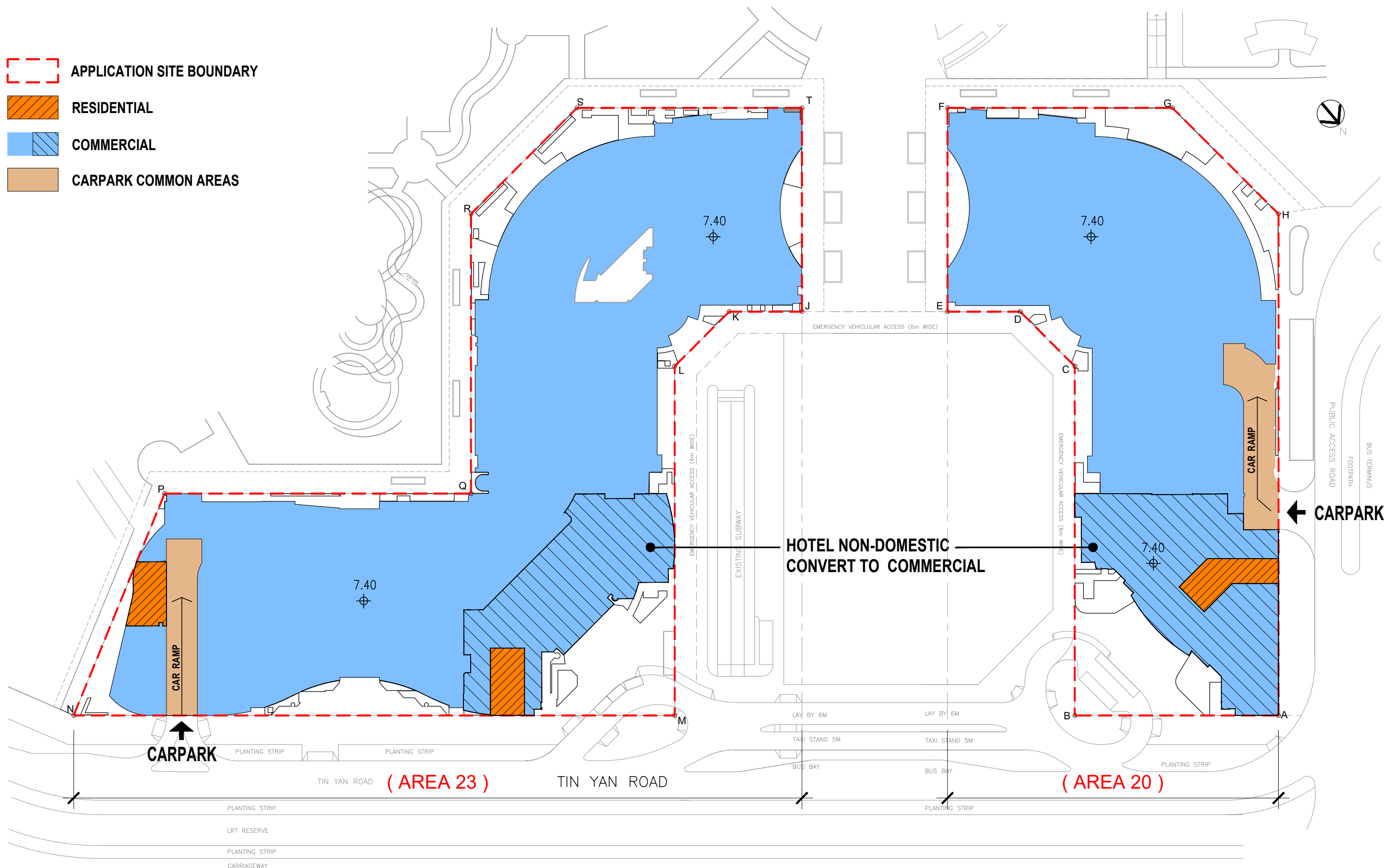
FIGURE

4b

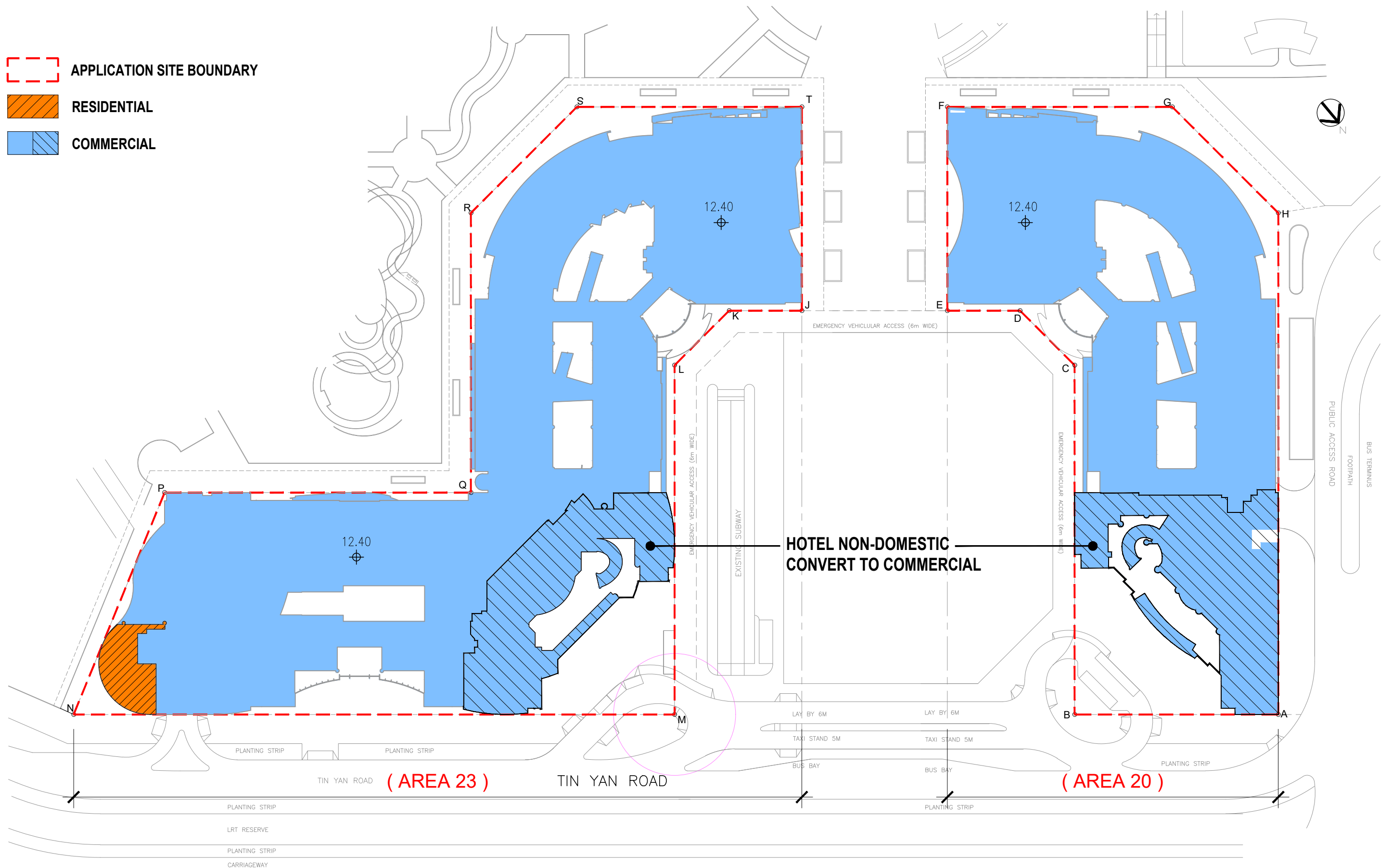
APPENDIX 1

ARCHITECTURAL DRAWINGS

- APPLICATION SITE BOUNDARY
- RESIDENTIAL
- COMMERCIAL
- CARPARK COMMON AREAS

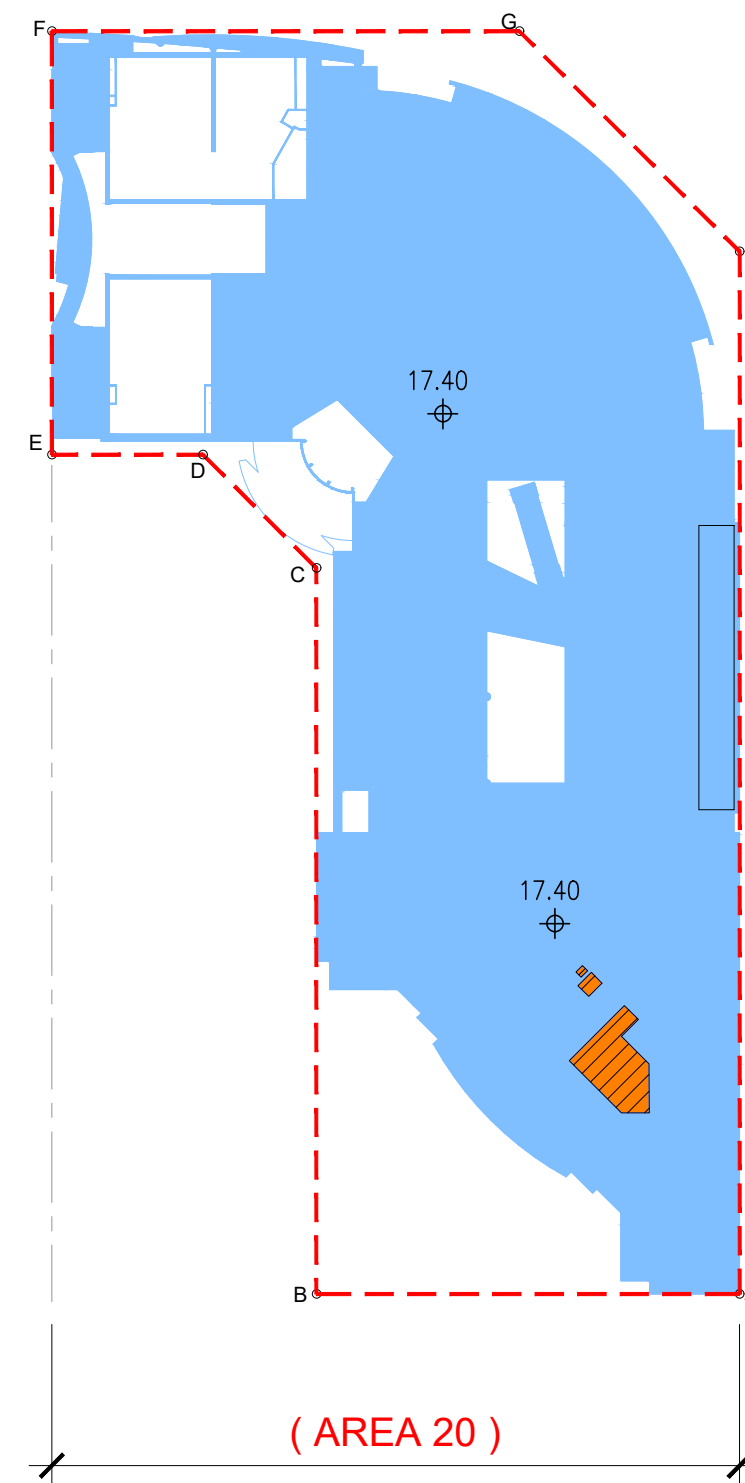
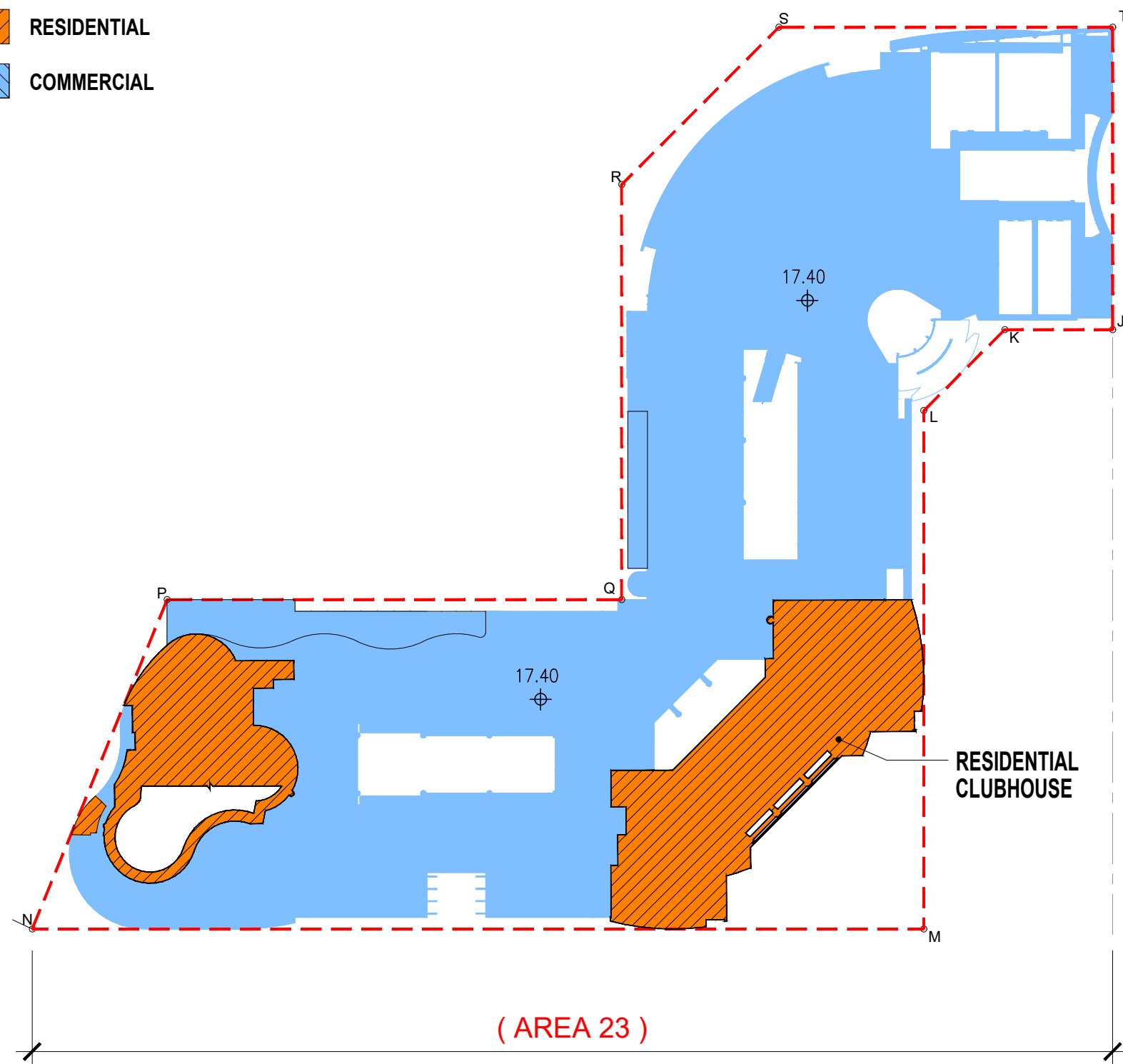


PROPOSED SCHEME



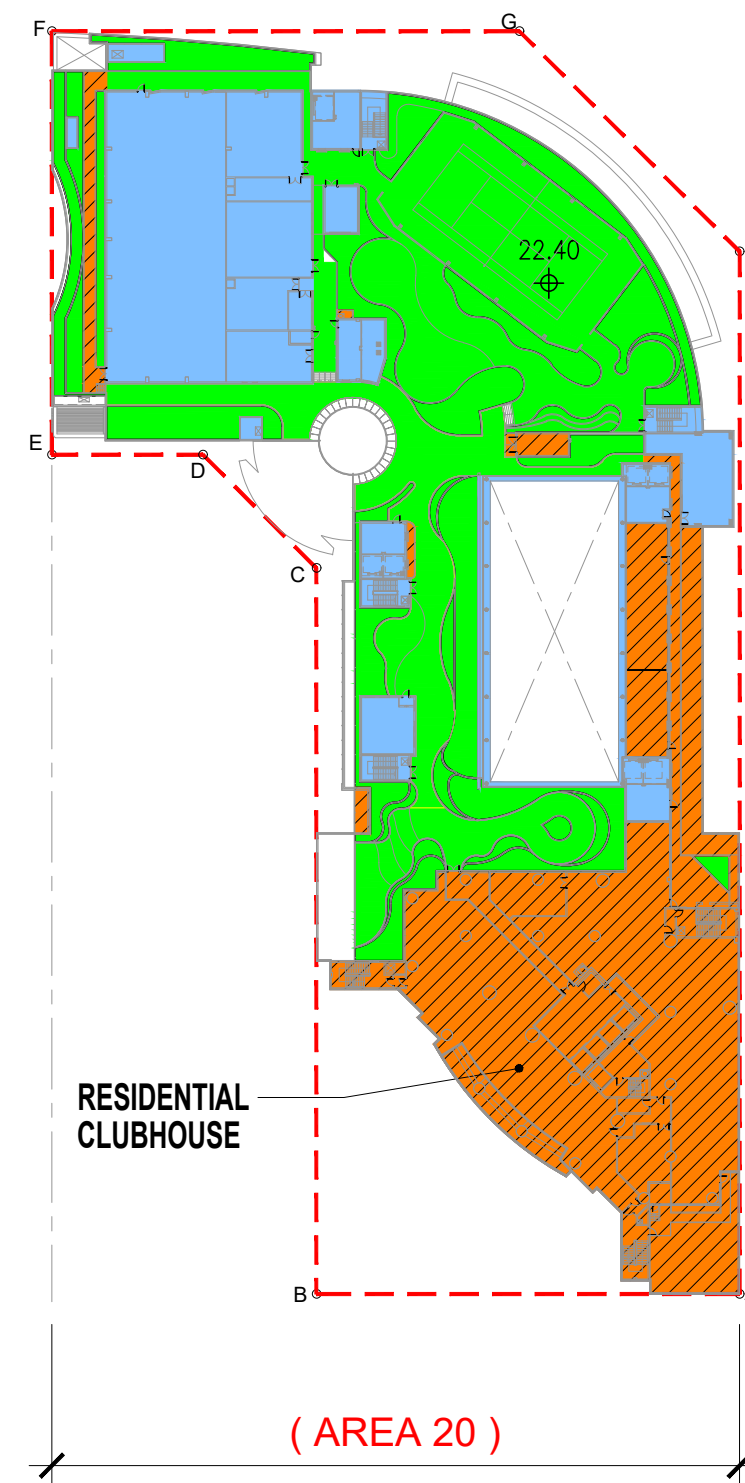
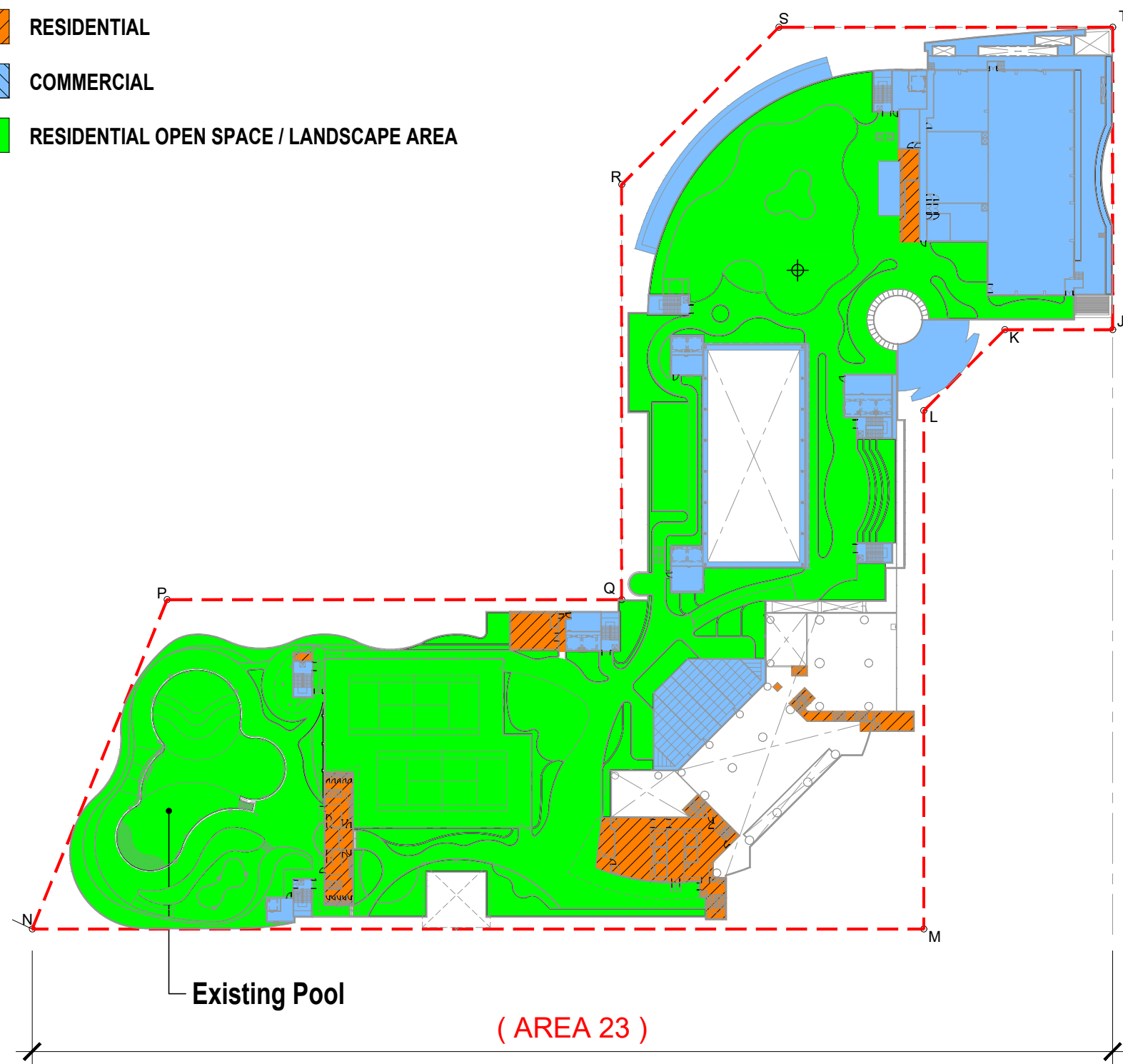
PROPOSED SCHEME

- APPLICATION SITE BOUNDARY
- RESIDENTIAL
- COMMERCIAL





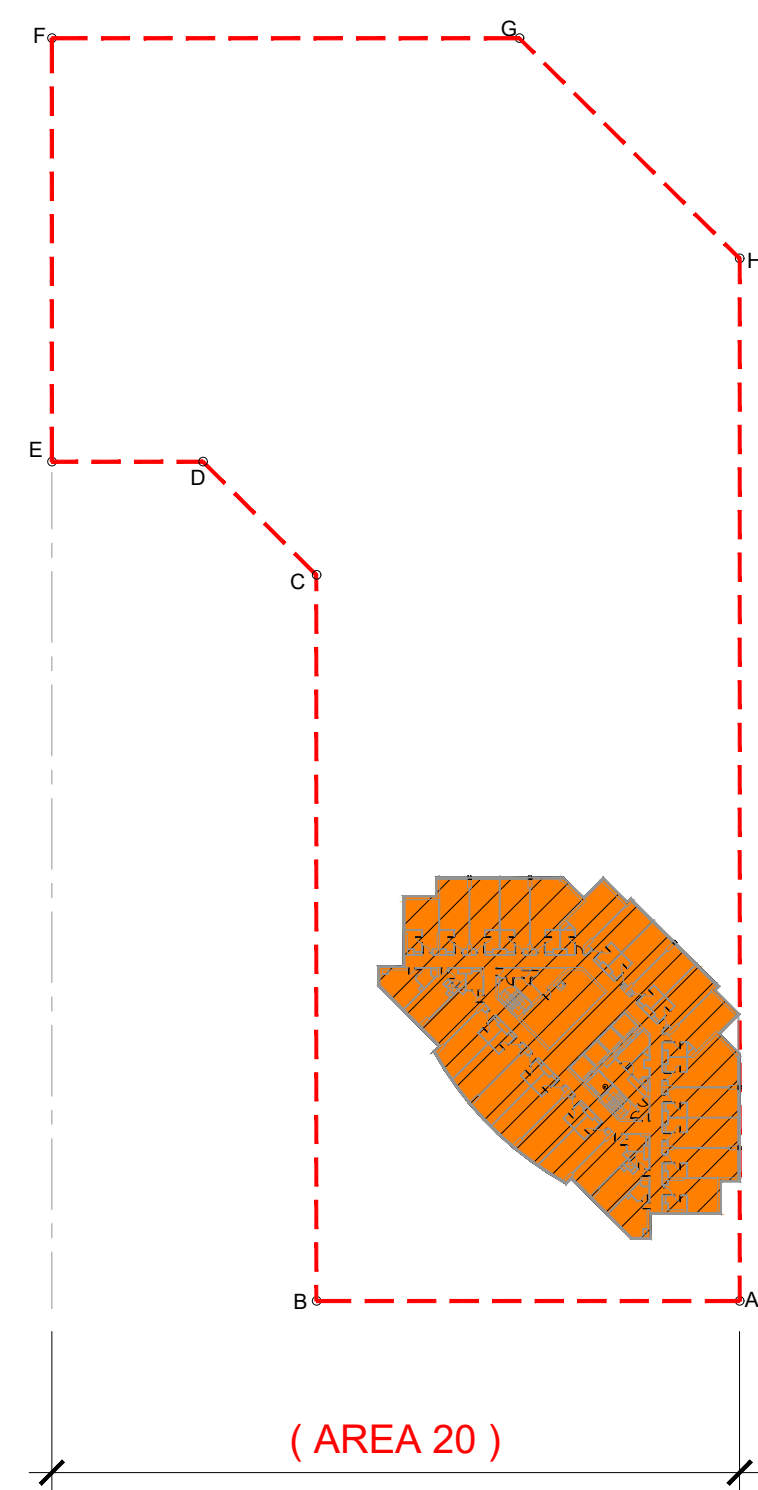
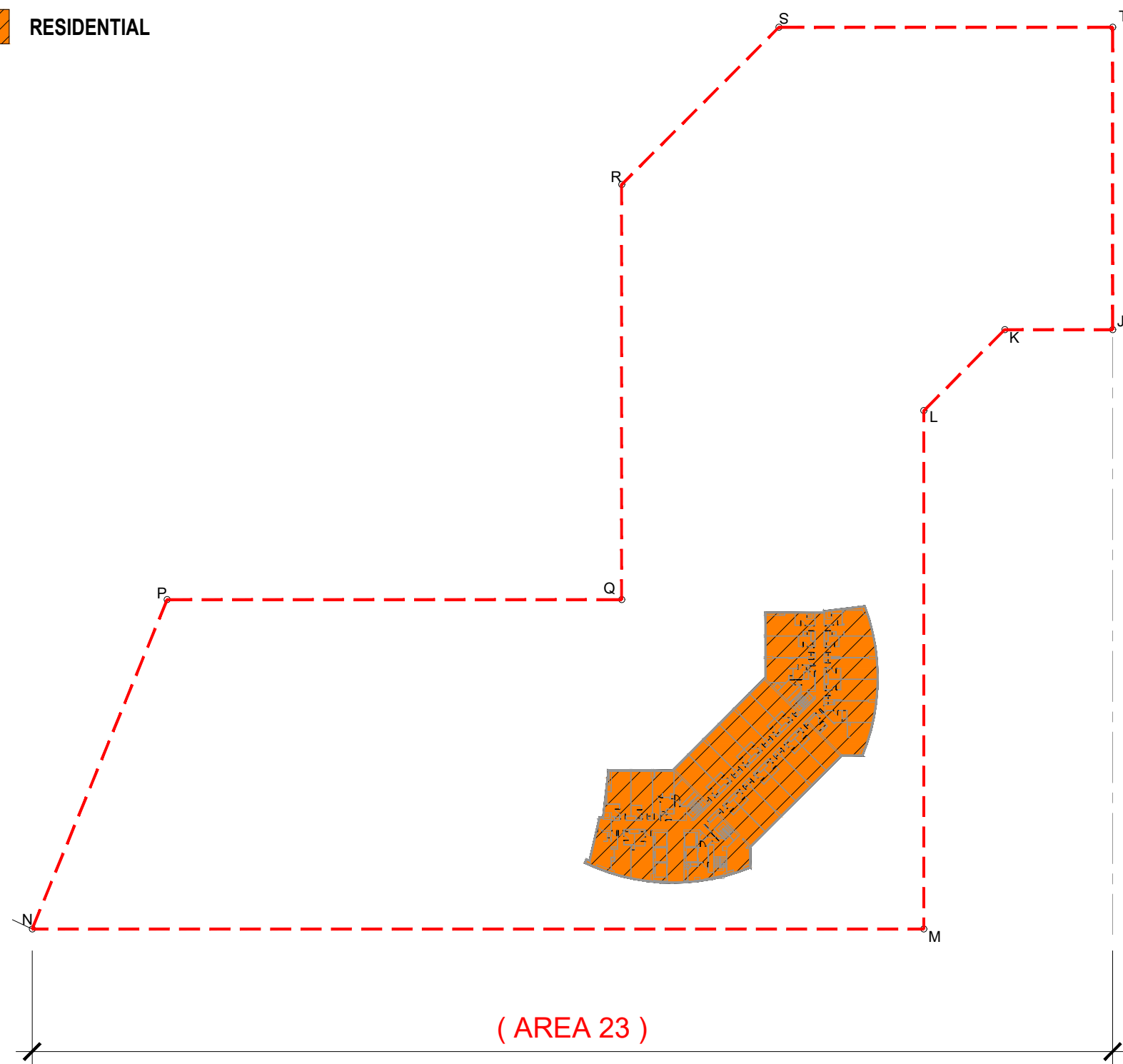
PROPOSED SCHEME

- APPLICATION SITE BOUNDARY
- RESIDENTIAL
- COMMERCIAL
- RESIDENTIAL OPEN SPACE / LANDSCAPE AREA

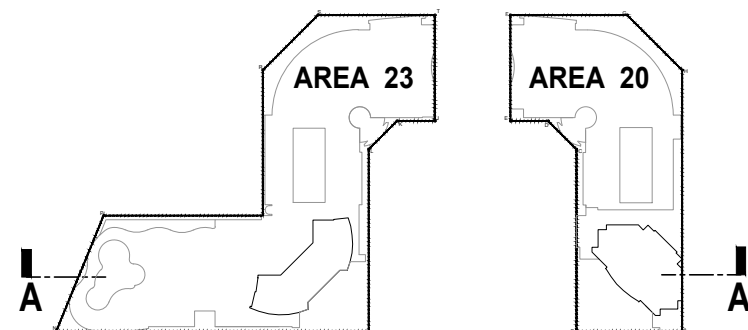


PROPOSED SCHEME

 APPLICATION SITE BOUNDARY
 RESIDENTIAL

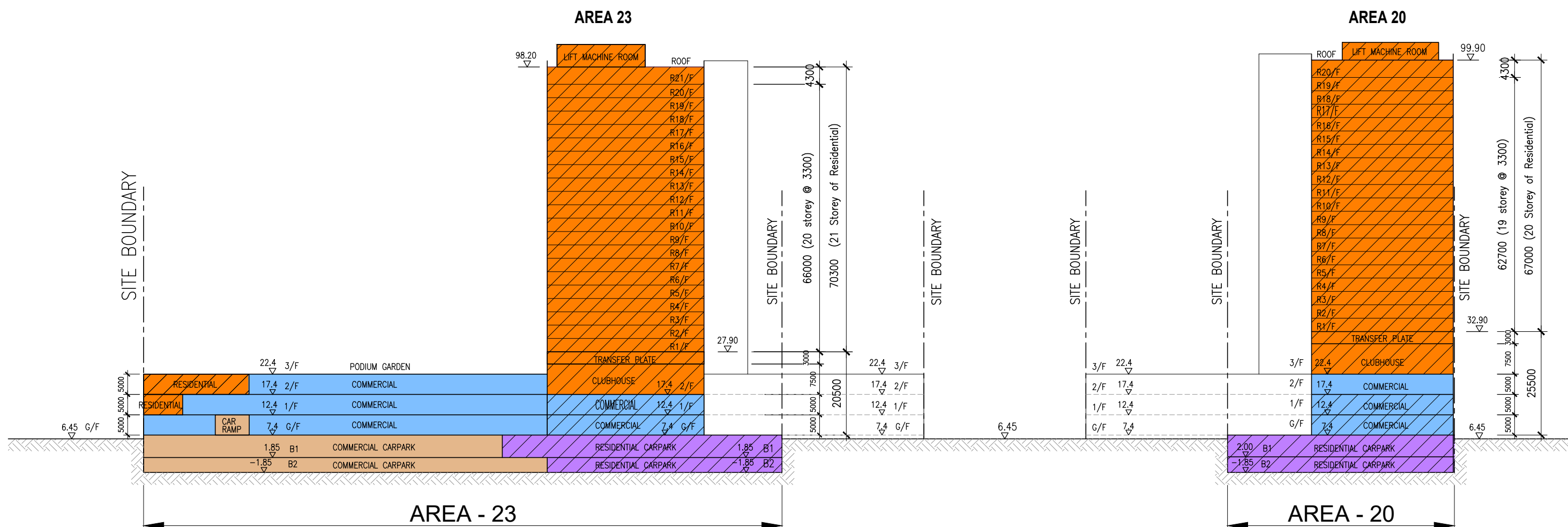


PROPOSED SCHEME



KEY PLAN (N.T.S.)

- APPLICATION SITE BOUNDARY
- RESIDENTIAL CARPARK
- COMMERCIAL
- COMMERCIAL CARPARK
- RESIDENTIAL









PROPOSED SCHEME

APPENDIX 2

PHOTOGRAPHS TAKEN ON SITE



Legend

-  The Proposed Development
-  Identified Fixed Noise Source
-  Residential Use
-  Landscape
-  Other Uses without noise emission
(e.g. school, swimming pool, sport centre,
sport ground, clinic, substation, tennis court)
-  Plate no. 13

Westwood Hong & Associates Ltd

PROJECT: 22464

**Proposed Residential
Development at Tin Shui Wai
Town Lot No. 4**

TITLE:

Land Uses in 300m Study Area

FIGURE

A2-1

Hotel in Area 23

Hotel in Area 20

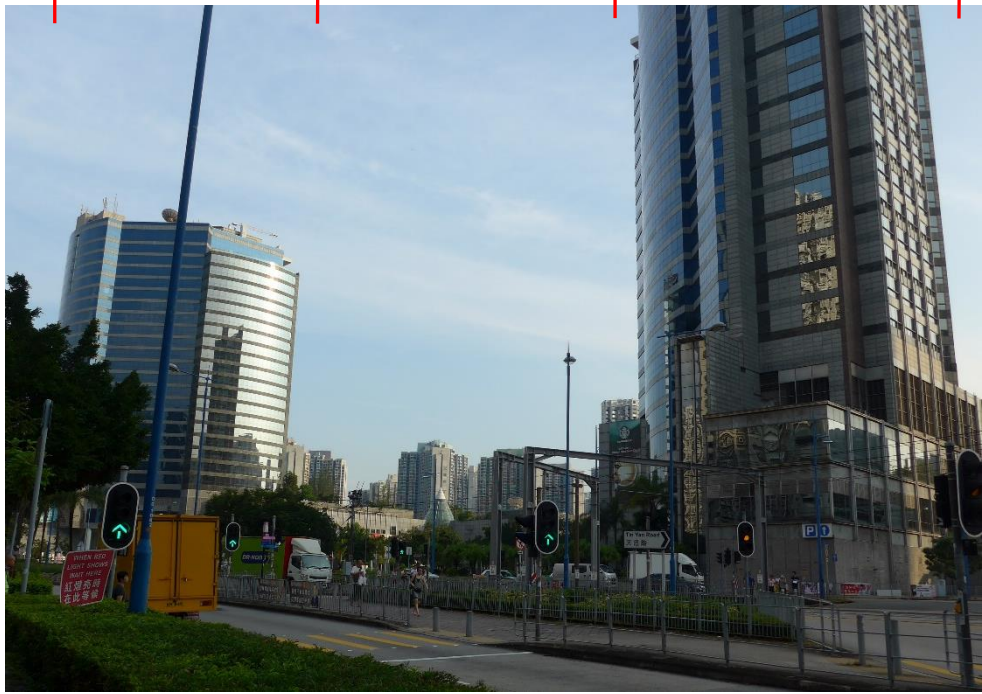


Plate 1: Project Site (the existing hotels)



Plate 2: The existing hotel (in Area 20)

Westwood Hong & Associates Ltd

PROJECT: 22464

Proposed Residential Development
at Tin Shui Wai Town Lot No. 4

TITLE:

Photographs taken on Site

FIGURE

A2-2



Plate 3: The existing hotel (in Area 23)



Plate 4: Ginza Stop

Westwood Hong & Associates Ltd

PROJECT: 22464

Proposed Residential Development
at Tin Shui Wai Town Lot No. 4

TITLE:

Photographs taken on Site

FIGURE

A2-3



Plate 5: Tin Shui Wai Public Transport Interchange



Plate 6: The side of PTI facing the project site (do not have any ventilation fan or louver)

<p>Westwood Hong & Associates Ltd</p>	<p>TITLE:</p> <p>Photographs taken on Site</p>	<p>FIGURE</p>
<p>PROJECT: 22464</p> <p>Proposed Residential Development at Tin Shui Wai Town Lot No. 4</p>		<p>A2-4</p>



Plate 7: Tin Shui Wai Park



- No noise emission

Plate 8: Tin Shui Wai Park Phase 2 Substation

Westwood Hong & Associates Ltd

PROJECT: 22464

**Proposed Residential Development
at Tin Shui Wai Town Lot No. 4**

TITLE:

Photographs taken on Site

FIGURE

A2-5



- No noise emission

Plate 9: Street Pump Hydrant A



- No noise emission

Plate 10: Street Pump Hydrant C

Westwood Hong & Associates Ltd

PROJECT: 22464

Proposed Residential Development
at Tin Shui Wai Town Lot No. 4

TITLE:

Photographs taken on Site

FIGURE

A2-6



- No noise emission

Plate 11: Street Pump Hydrant B



Plate 12: Residential Development for LRT Terminus at TSWTL 23 (under construction)

Westwood Hong & Associates Ltd

PROJECT: 22464

**Proposed Residential Development
at Tin Shui Wai Town Lot No. 4**

TITLE:

Photographs taken on Site

FIGURE

A2-7



- No noise emission, no fixed noise sources identified

Plate 13: Tin Shui Wai Swimming Pool



- No noise emission, no fixed noise sources identified

Plate 14: Tin Shui Wai Sport Centre

Westwood Hong & Associates Ltd

PROJECT: 22464

Proposed Residential Development
at Tin Shui Wai Town Lot No. 4

TITLE:

Photographs taken on Site

FIGURE

A2-8



Plate 15: Tennis Court



- No noise emission, no fixed noise sources identified

Plate 16: Tin Shui Wai Sports Ground

Westwood Hong & Associates Ltd

PROJECT: 22464

**Proposed Residential Development
at Tin Shui Wai Town Lot No. 4**

TITLE:

Photographs taken on Site

FIGURE

A2-9

APPENDIX 3

TRAFFIC FORECAST FOR YEAR 2043
(provided by CTA CONSULTANTS LTD),
TD'S ENDORSEMENT,
AND
LETTER FROM TRAFFIC CONSULTANT



Our Ref: 22012HK/kvl/mwy/02

19 July 2022

By E-mail & Post
(E-mail: htmak@epd.gov.hk)

**Environmental Protection Department,
Environmental Assessment Division,
Strategic Assessment Group
Yuen Long Section
27/F, Southorn Centre
130 Hennessy Road, Wan Chai,
Hong Kong**

Attn: Ms Mak Hoi Ting, Hyde (Env Protection Officer (Strategic Assessment 33))

Dear Ms Mak,

S16 Planning Application Proposed Residential Development at Tin Shui Wai Town Lot No. 4

Year 2043 Traffic Forecasts for Traffic Noise Impact Assessment (TNIA)

We, CTA Consultants Ltd, are commissioned as the Traffic Consultant for the captioned project.

We are pleased to confirm that the methodology on the traffic forecast for the road traffic noise assessment in support of the captioned project was accepted by Transport Department on 9th June 2022 as per enclosed. The above methodology has been strictly adopted in preparing traffic forecast for traffic noise impact assessment.

Should you have any queries or require further information, please do not hesitate to contact the undersigned at 2214 0849.

Thank you very much for your kind attention.

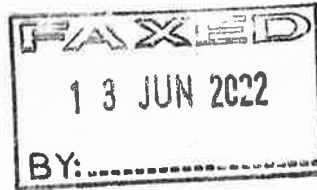
Yours faithfully,
For and on behalf of
CTA Consultants Limited

Kelvin Leung
CEO
Encl.



運輸署

Transport Department



By Fax
2214 0817

本署檔案 Our Ref. : (NKELG) in TD NR157/161/YLDD-126
來函檔號 Your Ref. : 22012HK/kvl/mwy/01
電話 Tel. : 2399 6913
圖文傳真 Fax : 2381 3799
電郵 Email : tikwaiwong@td.gov.hk

9 June 2022

CTA Consultants Limited
Unit 801, 8/F
Technology Plaza
651 King's Road
North Point, Hong Kong
(Attn: Mr Kelvin LEUNG)

Dear Kelvin,

**Section 16 Planning Application for
The Proposed Residential Development at Tin Shui Wai Town Lot No. 4**

**Technical Note on Methodology for Estimating Traffic Forecasts for
Traffic Noise Impact Assessment (TNIA)**

I refer to your above referenced letter dated 6 May 2022 on the subject.

I have no objection to the methodology of the traffic forecast for environmental assessment purpose from traffic engineering perspective.

Yours sincerely,

(Dicky WONG)
for Commissioner for Transport

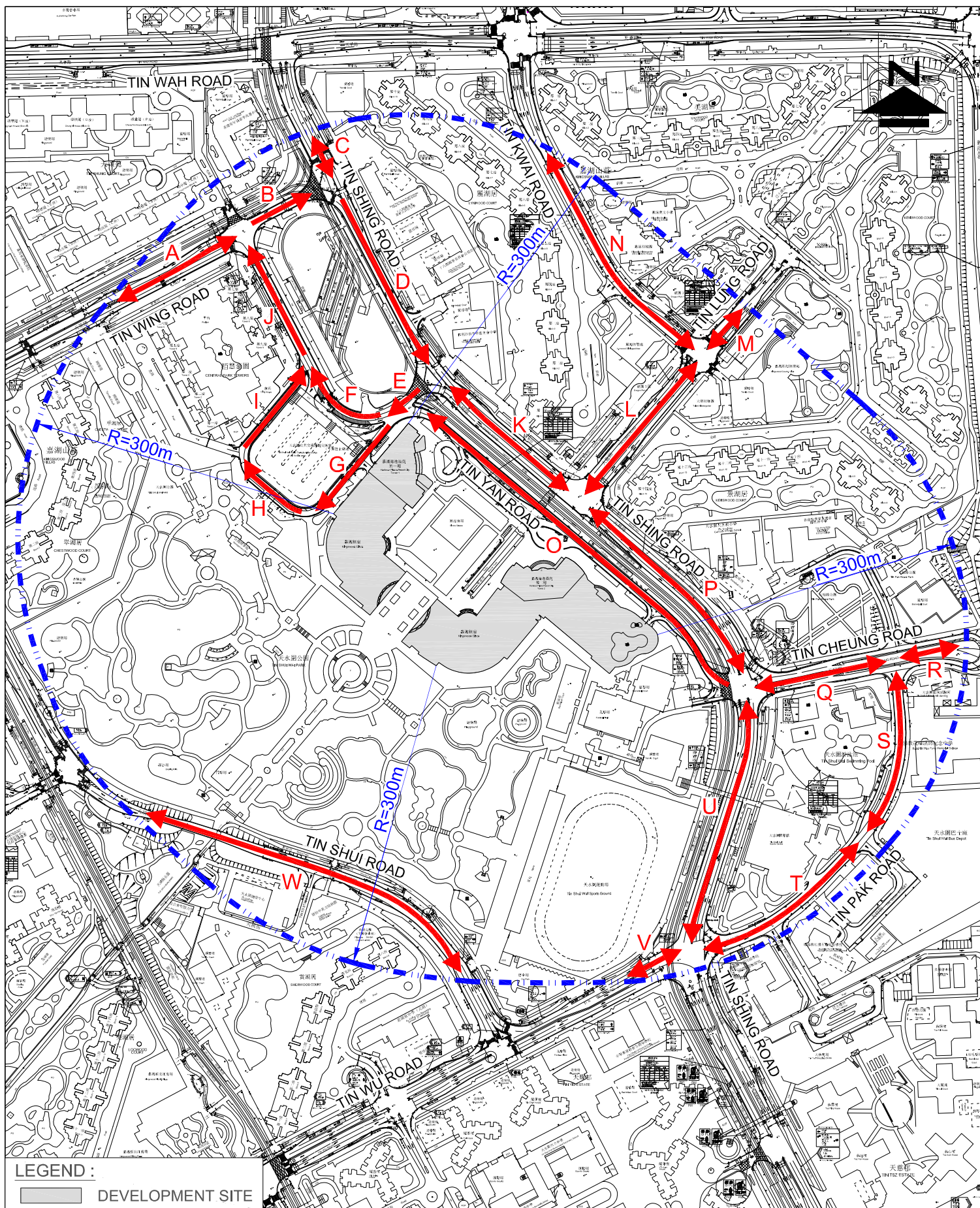


FIGURE NO.:

1

PROJECT TITLE:

S16 Application at TSWTL 4 - Converting Hotel to Residential

PROJECT NO.:

22012HK

DRAWING TITLE:

SURVEY INDEX FOR TNIA

SCALE:

1 : 4800 @A4

DATE:

10 MAR 2022



CTA Consultants Limited
志達顧問有限公司

22012HK - S16 Application at TSWTL4- Covertng Hotel to Residential
2043 Traffic Forecasts for Traffic Noise Impact Assessment

9-Mar-22

RESULT

Road Link	Road Name	Direction	Road Speed	AM Peak		PM Peak	
				2043 Peak Hour Traffic Flows (in veh/hr)	% of HV	2043 Peak Hour Traffic Flows (in veh/hr)	% of HV
A	Tin Wing Road (Between Tin Shui Rd and Tin Yan Rd)	2-way	50	350	42%	330	27%
B	Tin Wing Road (Between Tin Yan Rd and Tin Shing Rd))	1-way	50	755	60%	550	55%
C	Tin Shing Road (Between Tin Wah Rd and Tin Wing Rd)	2-way	50	435	56%	360	60%
D	Tin Shing Road (Between Tin Wing Rd and Tin Yan Rd)	1-way	50	670	56%	520	58%
E	Tin Yan Road (Tin Shing Rd linkage)	1-way	50	605	59%	670	47%
F	Tin Yan Road (North of Tin Shui Wai PTI)	1-way	50	295	81%	320	75%
G	Ka Yan Street (Southeast of Tin Shui Wai PTI)	1-way	50	350	44%	395	31%
H	Ka Yan Street (Southwest of Tin Shui Wai PTI)	1-way	50	350	44%	395	31%
I	Ka Yan Street (Northwest of Tin Shui Wai PTI)	1-way	50	350	44%	395	31%
J	Tin Yan Road (Between Tin Wing Rd and Ka Yan Rd)	1-way	50	755	48%	745	53%
K	Tin Shing Road (Between Tin Yan Rd and Tin Lung Rd)	2-way	50	615	59%	455	47%
L	Tin Lung Road (Between Tin Shing Rd and Tin Kwai Rd)	2-way	50	785	67%	700	63%
M	Tin Lung Road (Between Tin Kwai Rd and access road to Kenswood Court)	2-way	50	530	45%	435	15%
N	Tin Kwai Road	2-way	50	510	60%	380	64%
O	Tin Yan Road (Next to Ginza Square)	1-way	50	395	54%	445	30%
P	Tin Shing Road (Between Tin Lung Rd and Tin Cheung Rd)	2-way	50	1,285	52%	1,030	38%
Q	Tin Cheung Road (Between Tin Shing Rd and Tin Pak Rd)	2-way	50	1,580	43%	1,340	40%
R	Tin Cheung Road (Between Tin Pak Rd and Tin Tsz Rd)	2-way	50	1,030	45%	1,305	39%
S	Tin Pak Road (Between Tin Cheung Rd and Tin Chuk St)	2-way	50	55	39%	55	43%
T	Tin Pak Road (Between Tin Chuk St and Tin Shing Rd)	2-way	50	550	67%	405	57%
U	Tin Shing Road (Between Tin Cheung Rd and Tin Wu Rd)	2-way	50	795	58%	650	56%
V	Tin Wu Road (Between Tin Shui Rd and Tin Shing Rd)	2-way	50	900	56%	745	47%
W	Tin Shui Road	2-way	50	945	57%	710	55%

Notes : HV includes Light Van, Public Light Bus, Light Goods Vehicle, Medium Goods Vehicle, Heavy Goods Vehicle and Container/Tractor, Coach and Bus

APPENDIX 4

PREDICTED ROAD TRAFFIC NOISE LEVELS FOR ALL FLOORS (BASE SCENARIO)

PROJECT: 22464

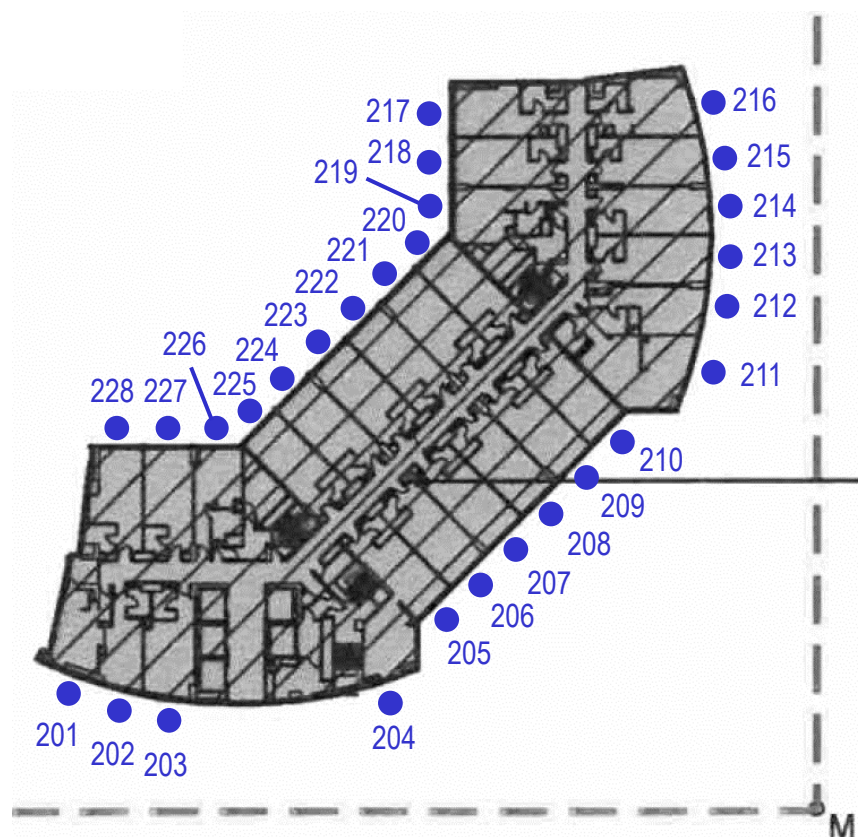
Tin Shui Wai,
Town Lot No. 4

TITLE:

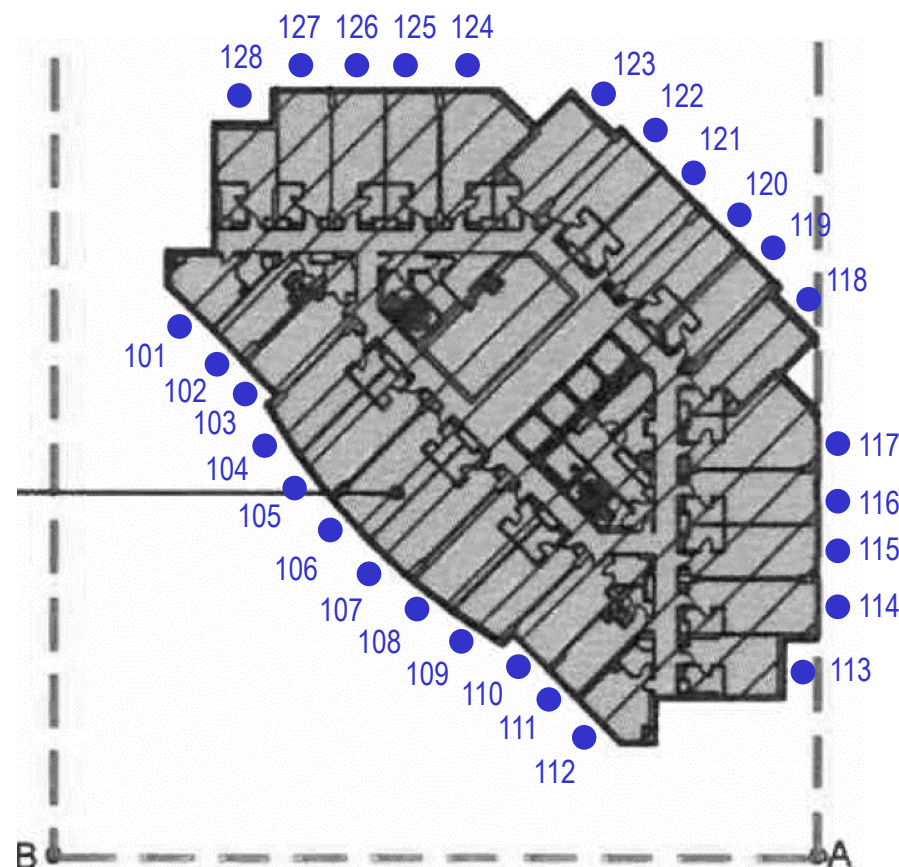
**Location of
Assessment
Point
(Road Traffic
Noise
Assessment)**

FIGURE

A4



Area 23



Area 20

Job No. : 22464

Job Title : TSWTL 4

Scenario : Unmitigated, 2043 Traffic Forecast, AM Peak

Percentage of flats in the development within the facade noise level

Noise level in dB(A)	No. of flats	Total No. of flats	%
<70	620	1102	56%
71	205	1102	19%
72	131	1102	12%
73	75	1102	7%
74	44	1102	4%
75	27	1102	2%
76	0	1102	0%

% OF EXCEEDANCE = 43.7%

Job No. : 22464

Job Title : TSWTL 4

Scenario: Unmitigated, 2043 Traffic Forecast, AM Peak

Floor	Floor Level (mPD)	Receiver																											
		Area 20																											
		101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128
R1	34.1	70.8	70.9	70.8	71.5	71.9	72.3	72.5	72.8	73.0	72.8	73.2	73.9	74.2	74.3	74.0	73.7	73.5	72.1	71.6	70.9	70.1	68.3	66.8	61.4	61.0	60.9	62.4	62.4
R2	37.4	70.9	70.9	70.9	71.5	71.9	72.3	72.5	72.7	72.9	72.8	73.1	73.7	74.0	74.0	73.7	73.4	73.2	71.9	71.4	70.8	70.4	69.6	67.7	62.3	61.9	61.7	63.0	63.0
R3	40.7	70.9	70.9	70.9	71.5	71.9	72.3	72.5	72.6	72.8	72.6	73.0	73.6	73.7	73.8	73.4	73.2	73.0	71.7	71.1	70.6	70.3	69.8	68.8	63.0	62.4	62.2	63.3	63.3
R4	44.0	70.9	70.9	70.8	71.5	71.8	72.2	72.4	72.5	72.7	72.6	72.8	73.5	73.5	73.6	73.2	72.9	72.7	71.4	70.9	70.4	70.1	69.8	69.1	63.6	62.9	62.5	63.5	63.4
R5	47.3	70.9	70.9	70.8	71.4	71.7	72.1	72.3	72.5	72.6	72.4	72.7	73.3	73.3	73.4	73.0	72.7	72.5	71.2	70.7	70.2	69.9	69.6	69.1	64.4	63.3	62.8	63.7	63.5
R6	50.6	70.8	70.8	70.8	71.3	71.7	72.0	72.2	72.3	72.5	72.3	72.6	73.1	73.1	73.2	72.7	72.5	72.3	71.0	70.5	70.0	69.7	69.5	69.0	65.3	64.0	63.1	63.8	63.6
R7	53.9	70.8	70.8	70.7	71.3	71.6	71.9	72.1	72.2	72.3	72.2	72.4	73.0	72.9	73.0	72.5	72.3	72.1	70.8	70.3	69.8	69.6	69.3	68.9	65.8	64.5	63.6	64.0	63.7
R8	57.2	70.7	70.7	70.6	71.2	71.5	71.8	72.0	72.1	72.2	72.0	72.3	72.9	72.7	72.8	72.3	72.1	71.9	70.6	70.1	69.6	69.3	69.1	68.8	66.0	65.1	64.0	64.3	63.7
R9	60.5	70.7	70.6	70.6	71.1	71.4	71.7	71.9	72.0	72.1	71.9	72.1	72.7	72.5	72.6	72.2	71.9	71.7	70.4	69.9	69.5	69.2	69.0	68.6	66.0	65.4	64.6	64.6	63.7
R10	63.8	70.6	70.6	70.5	71.1	71.3	71.6	71.8	71.9	72.0	71.8	72.0	72.6	72.3	72.4	72.0	71.7	71.5	70.2	69.7	69.3	69.1	68.8	68.5	66.0	65.5	65.0	65.1	63.8
R11	67.1	70.5	70.5	70.4	71.0	71.2	71.5	71.7	71.8	71.9	71.7	71.9	72.4	72.2	72.2	71.8	71.5	71.4	70.0	69.6	69.1	68.9	68.7	68.3	65.9	65.5	65.1	65.4	63.8
R12	70.4	70.5	70.4	70.3	70.9	71.1	71.4	71.6	71.7	71.7	71.6	71.8	72.3	72.0	72.1	71.6	71.4	71.2	69.9	69.4	69.0	68.8	68.6	68.2	65.9	65.5	65.2	65.5	63.9
R13	73.7	70.4	70.3	70.2	70.8	71.0	71.3	71.4	71.6	71.6	71.4	71.7	72.2	71.8	71.9	71.5	71.2	71.1	69.7	69.3	68.8	68.6	68.4	68.1	65.8	65.5	65.2	65.6	63.9
R14	77.0	70.3	70.2	70.2	70.7	70.9	71.2	71.4	71.4	71.5	71.3	71.5	72.0	71.7	71.8	71.3	71.1	70.9	69.6	69.2	68.7	68.5	68.3	68.0	65.7	65.4	65.2	65.6	63.9
R15	80.3	70.2	70.2	70.1	70.6	70.9	71.1	71.2	71.3	71.4	71.2	71.4	71.9	71.5	71.6	71.2	70.9	70.8	69.4	69.0	68.6	68.3	68.2	67.9	65.6	65.4	65.1	65.6	63.8
R16	83.6	70.1	70.1	70.0	70.5	70.7	71.0	71.1	71.2	71.3	71.1	71.3	71.8	71.4	71.5	71.0	70.8	70.6	69.3	68.9	68.5	68.2	68.1	67.7	65.5	65.3	65.1	65.6	63.8
R17	86.9	70.1	70.0	69.9	70.4	70.7	70.9	71.0	71.1	71.2	71.0	71.2	71.7	71.2	71.3	70.9	70.6	70.5	69.2	68.8	68.3	68.1	67.9	67.7	65.5	65.2	65.0	65.5	63.8
R18	90.2	70.0	69.9	69.8	70.3	70.6	70.8	70.9	71.0	71.1	70.8	71.1	71.6	71.1	71.2	70.7	70.5	70.3	69.1	68.6	68.2	68.0	67.9	67.5	65.4	65.1	65.0	65.5	63.8
R19	93.5				70.3			70.7	70.8	70.9	71.0	70.7	70.9	71.4	71.0	71.1	70.6	70.4	70.2	68.9		68.1		67.7		65.3	65.1		65.4
R20	96.8				70.2			70.6	70.7	70.8	70.8	70.6	70.8	71.3		70.9	70.5	70.2	70.1	68.8				67.7		65.3	65.1		65.4
R21																													
Number of flats within the noise level																													
Noise level in dB(A)		Number of flats																											
<70		6	7	8	4	0	0	0	0	0	0	0	0	0	0	0	2	3	12	12	17	18	20	18	20	20	18	20	18
71		12	11	10	12	10	9	8	7	6	8	6	2	4	4	7	7	5	5	3	0	0	0	0	0	0	0	0	0
72		0	0	0	4	8	11	9	8	8	8	8	6	7	6	5	5	3	1	0	0	0	0	0	0	0	0	0	0
73		0	0	0	0	0	0	3	5	6	4	6	6	5	5	5	4	0	0	0	0	0	0	0	0	0	0	0	0
74		0	0	0	0	0	0	0	0	0	0	0	4	4	4	2	1	1	0	0	0	0	0	0	0	0	0	0	0
75		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
76		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
77		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
78		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Floor	Floor Level (mPD)	Area 23																											
		201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228
R1	29.1	75.1	75.3	75.4		72.2	72.1	71.9	71.6	71.3	71.0	70.6	69.8	69.3	68.6	67.5	66.9	62.5	62.2	62.1	62.0	62.0	61.9	61.8	61.7	61.6	61.6	61.8	62.7
R2	32.4	75.1	75.2	75.3	74.8	72.1	72.1	71.9	71.6	71.2	71.1	70.7	69.8	69.4	68.7	67.7	67.3	63.8	63.3	63.2	63.2	63.2	63.1	62.8	62.7	62.5	62.5	62.6	63.8
R3	35.7	75.0	75.1	75.2	74.7	72.0	72.0	71.8	71.5	71.3	71.0	70.7	69.9	69.4	68.8	67.9	67.5	64.6	64.2	64.0	63.9	64.0	63.9	63.7	63.3	63.1	63.1	63.2	64.6
R4	39.0	74.9	75.0	75.1	74.5	71.8	71.9	71.7	71.5	71.2	71.0	70.6	69.8	69.4	68.8	68.0	67.5	65.3	64.8	64.6	64.5	64.6	64.5	64.2	63.8	63.5	63.4	63.6	65.4
R5	42.3	74.9	74.9	75.0	74.4	71.7	71.8	71.6	71.4	71.1	71.0	70.6	69.8	69.4	68.8	68.0	67.6	65.9	65.4	65.1	65.0	65.1	65.0	64.7	64.3	63.7	63.6	63.8	65.8
R6	45.6	74.7	74.8	74.8	74.2	71.6	71.7	71.5	71.3	71.1	70.9	70.5	69.8	69.4	68.8	68.0	67.6	66.2	65.8	65.5	65.4	65.4	65.4	65.1	64.6	63.8	63.7	63.9	66.1
R7	48.9	74.6	74.6	74.7	74.1	71.4	71.6	71.4	71.2	71.0	70.8	70.5	69.7	69.3	68.7	67.9	67.5	66.5	66.1	65.8	65.7	65.7	65.6	65.3	64.8	63.9	63.7	64.0	66.2
R8	52.2	74.5	74.5	74.5	73.9	71.3	71.4	71.3	71.1	70.9	70.7	70.4	69.6	69.2	68.6	67.9	67.5	66.8	66.3	66.0	65.9	65.9	65.8	65.5	64.9	64.0	63.8	64.0	66.4
R9	55.5	74.3	74.4	74.4	73.7	71.2	71.3	71.1	71.0	70.8	70.7	70.3	69.5	69.1	68.6	67.8	67.4	67.0	66.5	66.1	66.0	66.0	65.9	65.6	64.9	64.0	63.8	64.0	66.5
R10	58.8	74.2	74.2	74.2	73.6	71.0	71.1	71.0	70.9	70.7	70.6	70.3	69.4	69.1	68.5	67.7	67.4	67.1	66.6	66.2	66.1	66.1	65.9	65.6	65.0	64.0	63.9	64.1	66.5
R11	62.1	74.1	74.0	74.1	73.5	70.8	71.0	70.9	70.8	70.6	70.5	70.1	69.4	69.0	68.4	67.7	67.4	67.1	66.6	66.3	66.2	66.1	66.0	65.7	65.0	64.0	63.9	64.1	66.6
R12	65.4	73.9	73.9	73.9	73.3	70.7	70.9	70.8	70.7	70.5	70.4	70.0	69.3	68.9	68.4	67.7	67.3	67.2	66.7	66.3	66.2	66.2	66.1	65.8	65.1	64.1	63.9	64.1	66.6
R13	68.7	73.8	73.8	73.8	73.2	70.6	70.8	70.7	70.5	70.4	70.2	69.9	69.2	68.8	68.3	67.6	67.3	67.2	66.7	66.3	66.2	66.3	66.1	65.8	65.1	64.1	63.9	64.1	66.6
R14	72.0	73.7	73.6	73.7	73.1	70.4	70.6	70.6	70.4	70.3	70.1	69.8	69.1	68.7	68.3	67.6	67.2	67.2	66.7	66.4	66.3	66.3	66.2	65.8	65.1	64.1	63.9	64.1	66.6
R15	75.3	73.5	73.6	73.5	72.9	70.3	70.5	70.4	70.3	70.2	70.0	69.7	69.0	68.7	68.2	67.5	67.2	67.2	66.7	66.4	66.3	66.3	66.2	65.8	65.1	64.1	63.9	64.1	66.6
R16	78.6	73.4	73.4	73.4	72.8	70.2	70.3	70.3	70.2	70.1	69.9	69.7	68.9	68.6	68.1	67.4	67.1	67.2	66.8	66.4	66.3	66.3	66.2	65.8	65.1	64.1	63.9	64.2	66.5
R17	81.9	73.3	73.3	73.3	72.7	70.0	70.2	70.2	70.1	69.9	69.8	69.6	68.8	68.5	68.0	67.4	67.1	67.3	66.8	66.4	66.3	66.3	66.1	65.8	65.1	64.1	63.9	64.2	66.5
R18	85.2		73.2	73.1	72.5	69.9	70.1	70.1	70.0	69.8	69.7	69.5	68.7	68.4	68.0	67.3	67.0	67.2	66.8	66.4	66.3	66.3	66.1	65.8	65.1	64.1	63.9	64.2	66.5
R19	88.5		73.1	73.0	72.4	69.8	70.0	69.9	69.9	69.8	69.6	69.4	68.7	68.4	67.9	67.3	67.0	67.2	66.8	66.4	66.3	66.3	66.1	65.8	65.1	64.1	63.9	64.2	66.5
R20	91.8		72.9	72.9	72.3	69.7	69.9	69.8	69.8	69.6	69.5								66.7		66.3		66.1		65.1		64.0	64.2	66.5
R21	95.1		72.8	72.8	72.2	69.5	69.8	69.7	69.6	69.5	69.4								66.7		66.2		66.1		65.1		64.0	64.1	66.4
Number of																													
Noise level																													
in dB(A)																													
<70		0	0	0	0	8	6	7	8	9	10	12	19	19	19	19	19	19	21	19	21	19	21	19	21	19	21	21	21
71		0	0	0	0	7	8	8	9	12	11	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
72		0	0	0	3	6	7	6	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
73		2	6	6	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
74		7	7	7	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
75		8	8	8	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
76		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
77		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
78		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

APPENDIX 5

PREDICTED ROAD TRAFFIC NOISE LEVELS FOR ALL FLOORS (WITH NOISE MITIGATION MEASURES)

Job No. : 22464

Job Title : TSWTL 4

Scenario : With Acoustic Window (Baffle Type), 2043 Traffic Forecast, AM Peak

Percentage of flats in the development within the facade noise level

Noise level in dB(A)	No. of flats	Total No. of flats	%
<70	1102	1102	100%
71	0	1102	0%
72	0	1102	0%
73	0	1102	0%
74	0	1102	0%
75	0	1102	0%
76	0	1102	0%

% OF EXCEEDANCE = 0.0%

Job No. : 22464
Job Title : TSWTL 4
Scenario: With Acoustic Window (Baffle Type), 2043 Traffic Forecast, AM Peak

Floor	Floor Level (mPD)	Receiver																											
		Area 20																											
		101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128
R1	34.1	65.8	65.9	65.8	66.5	66.9	67.3	67.5	67.8	68.0	67.8	68.2	68.9	69.2	69.3	69.0	68.7	68.5	67.1	66.6	65.9	70.1	68.3	66.8	61.4	61.0	60.9	62.4	62.4
R2	37.4	65.9	65.9	65.9	66.5	66.9	67.3	67.5	67.7	67.9	67.8	68.1	68.7	69.0	69.0	68.7	68.4	68.2	66.9	66.4	65.8	70.4	69.6	67.7	62.3	61.9	61.7	63.0	63.0
R3	40.7	65.9	65.9	65.9	66.5	66.9	67.3	67.5	67.6	67.8	67.6	68.0	68.6	68.7	68.8	68.4	68.2	68.0	66.7	66.1	65.6	70.3	69.8	68.8	63.0	62.4	62.2	63.3	63.3
R4	44.0	65.9	65.9	65.8	66.5	66.8	67.2	67.4	67.5	67.7	67.6	67.8	68.5	68.5	68.6	68.2	67.9	67.7	66.4	65.9	70.4	70.1	69.8	69.1	63.6	62.9	62.5	63.5	63.4
R5	47.3	65.9	65.9	65.8	66.4	66.7	67.1	67.3	67.5	67.6	67.4	67.7	68.3	68.3	68.4	68.0	67.7	67.5	66.2	65.7	70.2	69.9	69.6	69.1	64.4	63.3	62.8	63.7	63.5
R6	50.6	65.8	65.8	65.8	66.3	66.7	67.0	67.2	67.3	67.5	67.3	67.6	68.1	68.1	68.2	67.7	67.5	67.3	66.0	65.5	70.0	69.7	69.5	69.0	65.3	64.0	63.1	63.8	63.6
R7	53.9	65.8	65.8	65.7	66.3	66.6	66.9	67.1	67.2	67.3	67.2	67.4	68.0	67.9	68.0	67.5	67.3	67.1	65.8	70.3	69.8	69.6	69.3	68.9	65.8	64.5	63.6	64.0	63.7
R8	57.2	65.7	65.7	65.6	66.2	66.5	66.8	67.0	67.1	67.2	67.0	67.3	67.9	67.7	67.8	67.3	67.1	66.9	65.6	70.1	69.6	69.3	69.1	68.8	66.0	65.1	64.0	64.3	63.7
R9	60.5	65.7	65.6	65.6	66.1	66.4	66.7	66.9	67.0	67.1	66.9	67.1	67.7	67.5	67.6	67.2	66.9	66.7	70.4	69.9	69.5	69.2	69.0	68.6	66.0	65.4	64.6	64.6	63.7
R10	63.8	65.6	65.6	65.5	66.1	66.3	66.6	66.8	66.9	67.0	66.8	67.0	67.6	67.3	67.4	67.0	66.7	66.5	70.2	69.7	69.3	69.1	68.8	68.5	66.0	65.5	65.0	65.1	63.8
R11	67.1	65.5	65.5	70.4	66.0	66.2	66.5	66.7	66.8	66.9	66.7	66.9	67.4	67.2	67.2	66.8	66.5	66.4	70.0	69.6	69.1	68.9	68.7	68.3	65.9	65.5	65.1	65.4	63.8
R12	70.4	65.5	70.4	70.3	65.9	66.1	66.4	66.6	66.7	66.7	66.6	66.8	67.3	67.0	67.1	66.6	66.4	66.2	69.9	69.4	69.0	68.8	68.6	68.2	65.9	65.5	65.2	65.5	63.9
R13	73.7	70.4	70.3	70.2	65.8	66.0	66.3	66.4	66.6	66.6	66.4	66.7	67.2	66.8	66.9	66.5	66.2	66.1	69.7	69.3	68.8	68.6	68.4	68.1	65.8	65.5	65.2	65.6	63.9
R14	77.0	70.3	70.2	70.2	65.7	65.9	66.2	66.4	66.4	66.5	66.3	66.5	67.0	66.7	66.8	66.3	66.1	65.9	69.6	69.2	68.7	68.5	68.3	68.0	65.7	65.4	65.2	65.6	63.9
R15	80.3	70.2	70.2	70.1	65.6	65.9	66.1	66.2	66.3	66.4	66.2	66.4	66.9	66.5	66.6	66.2	65.9	65.8	69.4	69.0	68.6	68.3	68.2	67.9	65.6	65.4	65.1	65.6	63.8
R16	83.6	70.1	70.1	70.0	65.5	65.7	66.0	66.1	66.2	66.3	66.1	66.3	66.8	66.4	66.5	66.0	65.8	65.6	69.3	68.9	68.5	68.2	68.1	67.7	65.5	65.3	65.1	65.6	63.8
R17	86.9	70.1	70.0	69.9	70.4	65.7	65.9	66.0	66.1	66.2	66.0	66.2	66.7	66.2	66.3	65.9	65.6	65.5	69.2	68.8	68.3	68.1	67.9	67.7	65.5	65.2	65.0	65.5	63.8
R18	90.2	70.0	69.9	69.8	70.3	65.6	65.8	65.9	66.0	66.1	65.8	66.1	66.6	66.1	66.2	65.7	65.5	70.3	69.1	68.6	68.2	68.0	67.9	67.5	65.4	65.1	65.0	65.5	63.8
R19	93.5				70.3		65.7	65.8	65.9	66.0	65.7	65.9	66.4	66.0	66.1	65.6	70.4	70.2	68.9		68.1		67.7		65.3	65.1		65.4	
R20	96.8				70.2		65.6	65.7	65.8	65.8	65.6	65.8	66.3		65.9	65.5	70.2	70.1	68.8				67.7		65.3	65.1		65.4	
R21																													
<div>Remark:</div> <div>- <div></div> = Acoustic Window (Baffle type) (-5dB(A))</div> <div>- The presented predicted noise level after adopting acoustic windows (baffle type) (i.e. mitigated noise level) does not necessarily represent the noise level at 1m away from the external façade, but the equivalent noise level at 1m from the external façade after accounting the reduction in noise levels inside the flat offered by the acoustic windows (baffle type).</div>																													
Number of flats within the noise level																													
Noise level in dB(A)		Number of flats																											
<70		18	18	18	20	18	20	20	20	20	20	20	20	19	20	20	20	20	20	18	20	18	20	18	20	20	18	20	18
71		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
72		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
73		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
74		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
75		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
76		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
77		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
78		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Floor	Floor Level (mPD)	Area 23																											
		201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228
R1	29.1	70.1	70.3	70.4		67.2	67.1	66.9	66.6	66.3	66.0	65.6	69.8	69.3	68.6	67.5	66.9	62.5	62.2	62.1	62.0	62.0	61.9	61.8	61.7	61.6	61.6	61.8	62.7
R2	32.4	70.1	70.2	70.3	69.8	67.1	67.1	66.9	66.6	66.2	66.1	65.7	69.8	69.4	68.7	67.7	67.3	63.8	63.3	63.2	63.2	63.2	63.1	62.8	62.7	62.5	62.5	62.6	63.8
R3	35.7	70.0	70.1	70.2	69.7	67.0	67.0	66.8	66.5	66.3	66.0	65.7	69.9	69.4	68.8	67.9	67.5	64.6	64.2	64.0	63.9	64.0	63.9	63.7	63.3	63.1	63.1	63.2	64.6
R4	39.0	69.9	70.0	70.1	69.5	66.8	66.9	66.7	66.5	66.2	66.0	65.6	69.8	69.4	68.8	68.0	67.5	65.3	64.8	64.6	64.5	64.6	64.5	64.2	63.8	63.5	63.4	63.6	65.4
R5	42.3	69.9	69.9	70.0	69.4	66.7	66.8	66.6	66.4	66.1	66.0	65.6	69.8	69.4	68.8	68.0	67.6	65.9	65.4	65.1	65.0	65.1	65.0	64.7	64.3	63.7	63.6	63.8	65.8
R6	45.6	69.7	69.8	69.8	69.2	66.6	66.7	66.5	66.3	66.1	65.9	65.5	69.8	69.4	68.8	68.0	67.6	66.2	65.8	65.5	65.4	65.4	65.4	65.1	64.6	63.8	63.7	63.9	66.1
R7	48.9	69.6	69.6	69.7	69.1	66.4	66.6	66.4	66.2	66.0	65.8	65.5	69.7	69.3	68.7	67.9	67.5	66.5	66.1	65.8	65.7	65.7	65.6	65.3	64.8	63.9	63.7	64.0	66.2
R8	52.2	69.5	69.5	69.5	68.9	66.3	66.4	66.3	66.1	65.9	65.7	70.4	69.6	69.2	68.6	67.9	67.5	66.8	66.3	66.0	65.9	65.9	65.8	65.5	64.9	64.0	63.8	64.0	66.4
R9	55.5	69.3	69.4	69.4	68.7	66.2	66.3	66.1	66.0	65.8	65.7	70.3	69.5	69.1	68.6	67.8	67.4	67.0	66.5	66.1	66.0	66.0	65.9	65.6	64.9	64.0	63.8	64.0	66.5
R10	58.8	69.2	69.2	69.2	68.6	66.0	66.1	66.0	65.9	65.7	65.6	70.3	69.4	69.1	68.5	67.7	67.4	67.1	66.6	66.2	66.1	66.1	65.9	65.6	65.0	64.0	63.9	64.1	66.5
R11	62.1	69.1	69.0	69.1	68.5	65.8	66.0	65.9	65.8	65.6	65.5	70.1	69.4	69.0	68.4	67.7	67.4	67.1	66.6	66.3	66.2	66.1	66.0	65.7	65.0	64.0	63.9	64.1	66.6
R12	65.4	68.9	68.9	68.9	68.3	65.7	65.9	65.8	65.7	65.5	70.4	70.0	69.3	68.9	68.4	67.7	67.3	67.2	66.7	66.3	66.2	66.2	66.1	65.8	65.1	64.1	63.9	64.1	66.6
R13	68.7	68.8	68.8	68.8	68.2	65.6	65.8	65.7	65.5	70.4	70.2	69.9	69.2	68.8	68.3	67.6	67.3	67.2	66.7	66.3	66.2	66.3	66.1	65.8	65.1	64.1	63.9	64.1	66.6
R14	72.0	68.7	68.6	68.7	68.1	70.4	65.6	65.6	70.4	70.3	70.1	69.8	69.1	68.7	68.3	67.6	67.2	67.2	66.7	66.4	66.3	66.3	66.2	65.8	65.1	64.1	63.9	64.1	66.6
R15	75.3	68.5	68.6	68.5	67.9	70.3	65.5	70.4	70.3	70.2	70.0	69.7	69.0	68.7	68.2	67.5	67.2	67.2	66.7	66.4	66.3	66.3	66.2	65.8	65.1	64.1	63.9	64.1	66.6
R16	78.6	68.4	68.4	68.4	67.8	70.2	70.3	70.3	70.2	70.1	69.9	69.7	68.9	68.6	68.1	67.4	67.1	67.2	66.8	66.4	66.3	66.3	66.2	65.8	65.1	64.1	63.9	64.2	66.5
R17	81.9	68.3	68.3	68.3	67.7	70.0	70.2	70.2	70.1	69.9	69.8	69.6	68.8	68.5	68.0	67.4	67.1	67.3	66.8	66.4	66.3	66.3	66.1	65.8	65.1	64.1	63.9	64.2	66.5
R18	85.2		68.2	68.1	67.5	69.9	70.1	70.1	70.0	69.8	69.7	69.5	68.7	68.4	68.0	67.3	67.0	67.2	66.8	66.4	66.3	66.3	66.1	65.8	65.1	64.1	63.9	64.2	66.5
R19	88.5		68.1	68.0	67.4	69.8	70.0	69.9	69.9	69.8	69.6	69.4	68.7	68.4	67.9	67.3	67.0	67.2	66.8	66.4	66.3	66.3	66.1	65.8	65.1	64.1	63.9	64.2	66.5
R20	91.8		67.9	67.9	67.3	69.7	69.9	69.8	69.8	69.6	69.5							66.7		66.3		66.1		65.1		64.0	64.2	66.5	
R21	95.1		67.8	67.8	67.2	69.5	69.8	69.7	69.6	69.5	69.4							66.7		66.2		66.1		65.1		64.0	64.1	66.4	
Number of Noise level in dB(A)	Remark: - <div></div> = Acoustic Window (Baffle type) (-5dB(A)) - The presented predicted noise level after adopting acoustic windows (baffle type) (i.e. mitigated noise level) does not necessarily represent the noise level at 1m away from the external façade, but the equivalent noise level at 1m from the external façade after accounting the reduction in noise levels inside the flat offered by the acoustic windows (baffle type).																												
	<70		17	21	21	20	21	21	21	21	21	19	19	19	19	19	19	19	21	19	21	19	21	19	21	19	21	21	21
	71		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	72		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	73		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	74		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	75		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	76		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	77		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	78		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

APPENDIX 6

RAIL NOISE MEASUREMENT DATA

Summary of Rail Noise Measurement (LRT)

Project Title: Proposed Residential Development at Tin Shui Wai Town Lot No. 4
 Job No.: 22464

Measurement Location: **Loc A**

Measurement Date: **Year 2020, adopted in the previous submission**

	SB (Segments 1, 2, 3)					NB (Segments 11, 12, 13)				
Distance from mic to track	20m					15m				
Item	Description	SEL dB(A)	Lmax dB(A)	LEQ dB(A)	Duration (s)	Description	SEL dB(A)	Lmax dB(A)	LEQ dB(A)	Duration (s)
1	2-car	70.4	66.0	62.9	12	2-car	72.3	66.7	62.5	12
2	1-car	67.5	63.3	59.5	11	1-car	71.5	68.9	63.2	10
3	1-car	69.1	67.2	63.2	11	2-car	71.3	64.6	60.9	14
4	2-car	72.1	68.0	61.7	14	2-car	73.1	72.3	64.3	10
5	2-car	71.9	66.9	60.8	16	2-car	73.8	69.2	65.1	10
6	2-car	72.6	65.3	62.3	13	2-car	68.4	62.8	59.5	13
7	1-car	67.0	64.7	58.6	13	1-car	73.8	68.3	64.7	11
8	1-car	68.6	63.7	60.1	11	2-car	73.7	74.2	65.7	10
9						1-car	73.8	67.6	65.2	10
10						2-car	69.2	64.6	60.9	10
11						1-car	73.6	66.8	63.9	11
12						2-car	73.1	65.7	61.9	15
Background		66.6		57.4			66.6		57.4	
Average :		69.9	65.6			Average :	72.3	67.6		
Max. :		72.6	68.0			Max. :	73.8	74.2		

Measurement Date: **4-Apr-22**

	SB (Segments 1, 2, 3)					NB (Segments 11, 12, 13)				
Distance from mic to track	20m					15m				
Item	Description	SEL dB(A)	Lmax dB(A)	LEQ dB(A)	Duration (s)	Description	SEL dB(A)	Lmax dB(A)	LEQ dB(A)	Duration (s)
1	2-car	71.8	64.6	59.8	16	2-car	71.6	63.9	59.0	18
2	2-car	72.3	63.0	61.3	12	2-car	72.1	63.5	59.2	19
3	2-car	71.0	63.8	60.2	11	2-car	71.8	62.6	60.1	14
4	2-car	70.3	63.6	58.5	10	2-car	73.7	72.7	62.4	13
5	2-car	72.5	62.5	60.5	15	2-car	71.5	63.6	59.7	14
6	2-car	71.1	63.7	59.1	15	2-car	73.0	63.4	60.5	17
7	2-car	71.5	62.7	58.6	19	2-car	71.4	60.4	58.6	18
8	2-car	72.5	66.6	61.5	14	2-car	71.8	66.2	59.7	16
9	2-car	71.3	65.5	59.8	14	2-car	72.7	63.5	60.0	18
10						2-car	72.0	62.9	60.1	15
11						2-car	72.3	62.8	60.4	15
Background		65.3		56.2			65.3		56.2	
Average :		71.6	64.0			Average :	72.2	64.1		
Max. :		72.5	66.6			Max. :	73.7	72.7		

Measurement Location: **Loc B**Measurement Date: **Year 2020, adopted in the previous submission**

	SB (Segments 4, 5)					NB (Segments 14, 15)				
Distance from mic to track	18m					13m				
Item	Description	SEL dB(A)	Lmax dB(A)	LEQ dB(A)	Duration (s)	Description	SEL dB(A)	Lmax dB(A)	LEQ dB(A)	Duration (s)
1	2-car	71.6	64.1	62.1	13	2-car	72.5	68.0	63.1	12
2	1-car	73.5	65.0	63.1	12	1-car	72.9	70.3	64.9	12
3	1-car	72.5	66.0	62.7	16	2-car	75.2	72.3	63.7	16
4	2-car	73.7	68.2	60.3	16	2-car	74.2	64.7	63.0	16
5	2-car	71.1	64.5	61.0	15	2-car	74.8	69.5	65.0	12
6	2-car	70.9	67.8	61.9	12	2-car	71.1	66.9	62.5	11
7	1-car	71.1	62.2	59.7	14	1-car	75.5	73.4	65.5	15
8	2-car	68.4	65.9	63.0	16	2-car	75.5	74.4	64.8	15
9	1-car	69.3	63.5	60.5	14	1-car	75.4	71.6	65.0	13
10						1-car	75.3	74.6	64.7	15
Background		66.9		58.3			66.9		58.3	
Average :		71.3	65.2			Average :	74.2	70.6		
Max. :		73.7	68.2			Max. :	75.5	74.6		

Measurement Date: **4-Apr-22**

	SB (Segments 1, 2, 3)					NB (Segments 11, 12, 13)				
Distance from mic to track	20m					15m				
Item	Description	SEL dB(A)	Lmax dB(A)	LEQ dB(A)	Duration (s)	Description	SEL dB(A)	Lmax dB(A)	LEQ dB(A)	Duration (s)
1	2-car	72.9	62.6	59.0	24	2-car	73.2	66.2	60.4	19
2	2-car	73.4	63.4	59.7	23	2-car	73.7	67.4	60.9	19
3	2-car	73.7	63.7	61.0	18	2-car	74.8	67.3	61.6	20
4	2-car	73.0	66.2	59.1	24	2-car	72.7	65.7	59.5	21
5	2-car	73.6	64.7	59.7	24	2-car	73.4	65.2	59.9	22
6	2-car	72.2	66.2	58.3	25	2-car	71.8	62.1	58.0	20
7	2-car	73.3	65.6	58.8	27	2-car	72.8	65.3	60.0	19
8	2-car	72.3	63.7	59.3	19	2-car	71.6	64.9	59.0	18
9	2-car	73.7	65.1	59.5	26	2-car	74.0	66.6	61.6	17
10	2-car	70.7	60.0	56.8	24	2-car	72.8	65.5	60.2	18
11	2-car	73.5	67.6	60.2	21					
13	2-car	72.8	67.7	60.0	19					
Background		66.1		57.0			66.1		57.0	
Average :		72.9	64.7			Average :	73.1	65.6		
Max. :		73.7	67.7			Max. :	74.8	67.4		

Remark:

The maximum value among the measurements, to be adopted in the rail noise calculations

APPENDIX 7

TRAIN FREQUENCY OF LRT

Train Frequency in Year 2022:(From MTRC's website: http://www.mtr.com.hk/ch/customer/services/train_service_index.html)

	平日、星期日 及公眾假期 (以分鐘計算)	平日、星期日 及公眾假期 (以分鐘計算)	平日、星期日 及公眾假期 (以分鐘計算)	星期六 (以分鐘 計算)	星期六 (以分鐘 計算)	星期六 (以分鐘 計算)
	平日早上 繁忙時段	平日晚上 繁忙時段	平日非繁忙時 段/ 星期日及公眾 假期*	早上 繁忙時段	晚上 繁忙時段	非繁忙 時段*
路線705	8-16	9-16	15-17	15-16	15-16	15-17
路線706	8-16	9-16	15-17	15-16	15-16	15-17
路線751	15-16	15-16	15-19	15-16	15-16	15-19
路線751P#	60	60	-	-	-	-

#學校假期及暫停面授課堂期間，輕鐵路線751P的服務班次會相應減少。

Daytime Daytime Night-time Daytime Daytime Night-time

Light Rail Route	Daytime Period		Night-time Period	
	Frequency *	No. of trains during 30mins	Frequency	No. of trains during 30mins
705	8 mins	4	15 mins	2
706	8 mins	4	15 mins	2
751	15 mins	2	15 mins	2
751P	60 mins	1	-	-
Total		11		6

Remark:

* Taking the minimum interval in order to be conservative

Total Train Frequency in Year 2022:

	Train Frequency
Daytime	<u>11</u> trains per 30mins
Night-time	<u>6</u> trains per 30mins
24-hour	<p>705: $4 \times 16 \times 2 + 2 \times 4 \times 2 = 144$ 706: $4 \times 16 \times 2 + 2 \times 4 \times 2 = 144$ 751: $2 \times 16 \times 2 + 2 \times 4 \times 2 = 80$ 751P: $1 \times 5.5 \times 2 = 11$</p> <p>Total: 379 trains</p>

Due to the local epidemic situation, the LRT runs at reduced frequencies. For conservative, the train frequency adopted in the previous submission (in Year 2020) would be adopted in this assessment.

Frequency in Year 2020 (adopted in the previous submission) :

	平日、星期日 及公眾假期 (以分鐘計算)	平日、星期日 及公眾假期 (以分鐘計算)	平日、星期日 及公眾假期 (以分鐘計算)	星期六 (以分鐘 計算)	星期六 (以分鐘 計算)	星期六 (以分鐘 計算)
	平日早上 繁忙時段	平日晚上 繁忙時段	平日非繁忙時 段/ 星期日及公眾 假期*	早上 繁忙時段	晚上 繁忙時段	非繁忙 時段*
路線705	5 - 6	5 - 7	6 - 11	4 - 6	5 - 6	5 - 11
路線706	5 - 7	5 - 7	6 - 13	5 - 6	4 - 7	6 - 10
路線751	4 - 9	5 - 9	7 - 16	5 - 9	8 - 11	8 - 16
路線751P	7 - 15	5 - 12	-	-	-	-
	↑ Daytime	↑ Daytime	↑ Night-time	↑ Daytime	↑ Daytime	↑ Night-time

Light Rail Route	Daytime Period		Night-time Period	
	Frequency *	No. of trains during 30mins	Frequency	No. of trains during 30mins
705	4 mins	8	5 mins	6
706	4 mins	8	6 mins	5
751	4 mins	8	7 mins	4
751P	5 mins	6	-	-
Total		30		15

Remark:

* Taking the minimum interval in order to be conservative

Total Train Frequency in Year 2020, adopted in this assessment:

	Train Frequency
Daytime	30 trains per 30mins
Night-time	15 trains per 30mins
24-hour	<p> 705: $7.5 \times 16 \times 2 + 6 \times 4 \times 2 = 288$ 706: $7.5 \times 16 \times 2 + 5 \times 4 \times 2 = 280$ 751: $7.5 \times 16 \times 2 + 4 \times 4 \times 2 = 272$ 751P: $6 \times 5.5 \times 2 = 66$ </p> <p>Total: 906 trains</p>

APPENDIX 8

SUMMARY AND SAMPLE CALCULATION OF LRT NOISE IMPACT

PROJECT: 22464

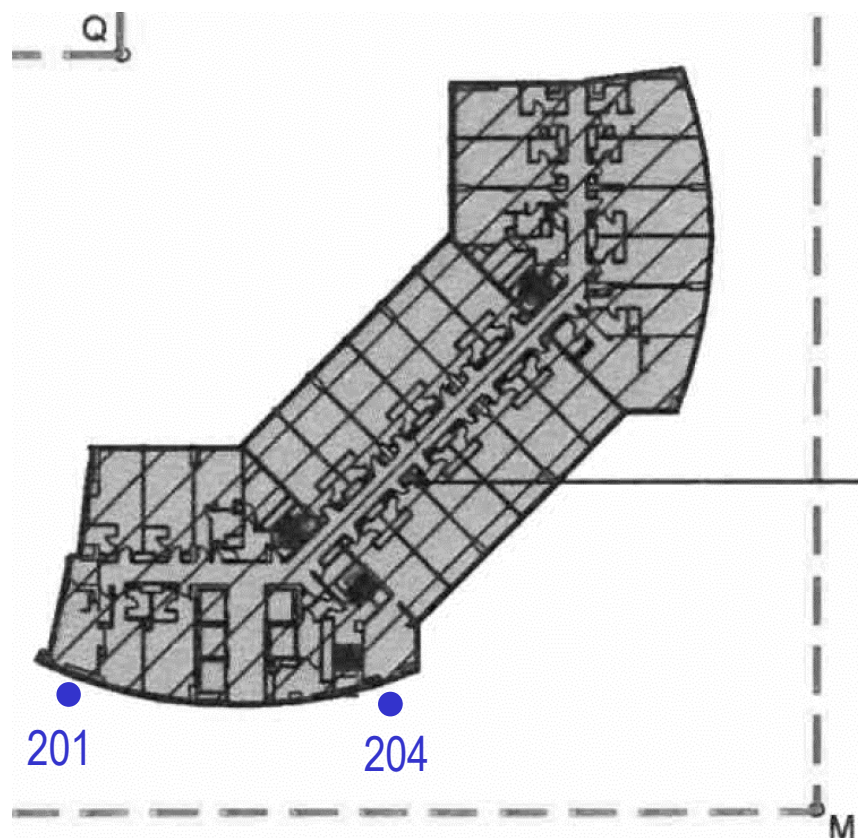
Tin Shui Wai,
Town Lot No. 4

TITLE:

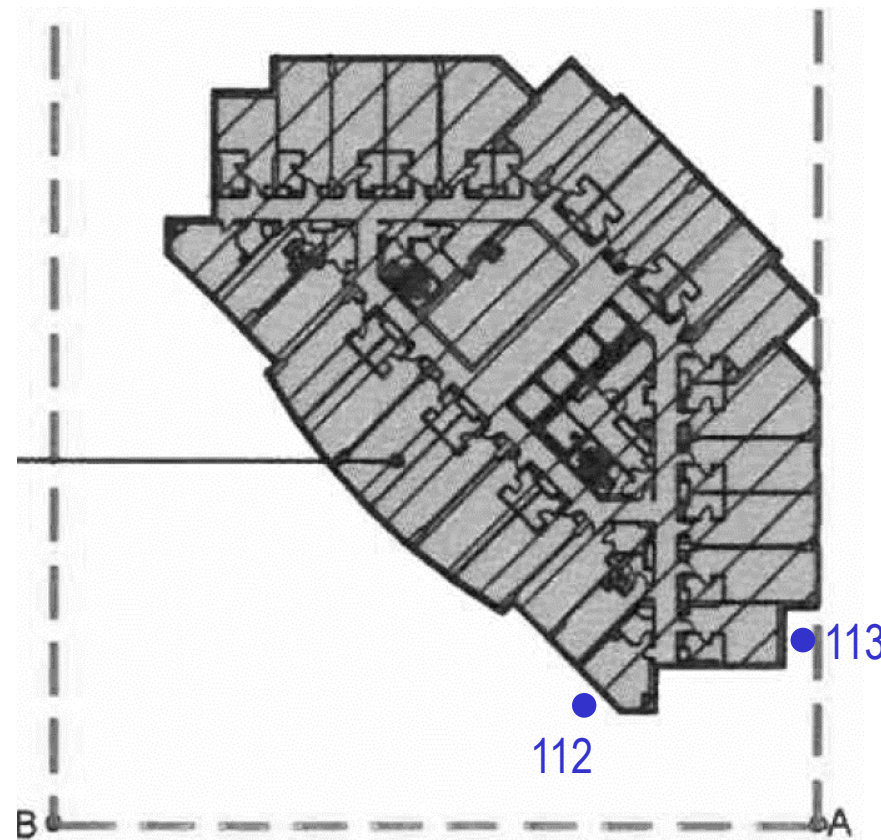
**Location of
Assessment
Point
(LRT Noise
Assessment)**

FIGURE

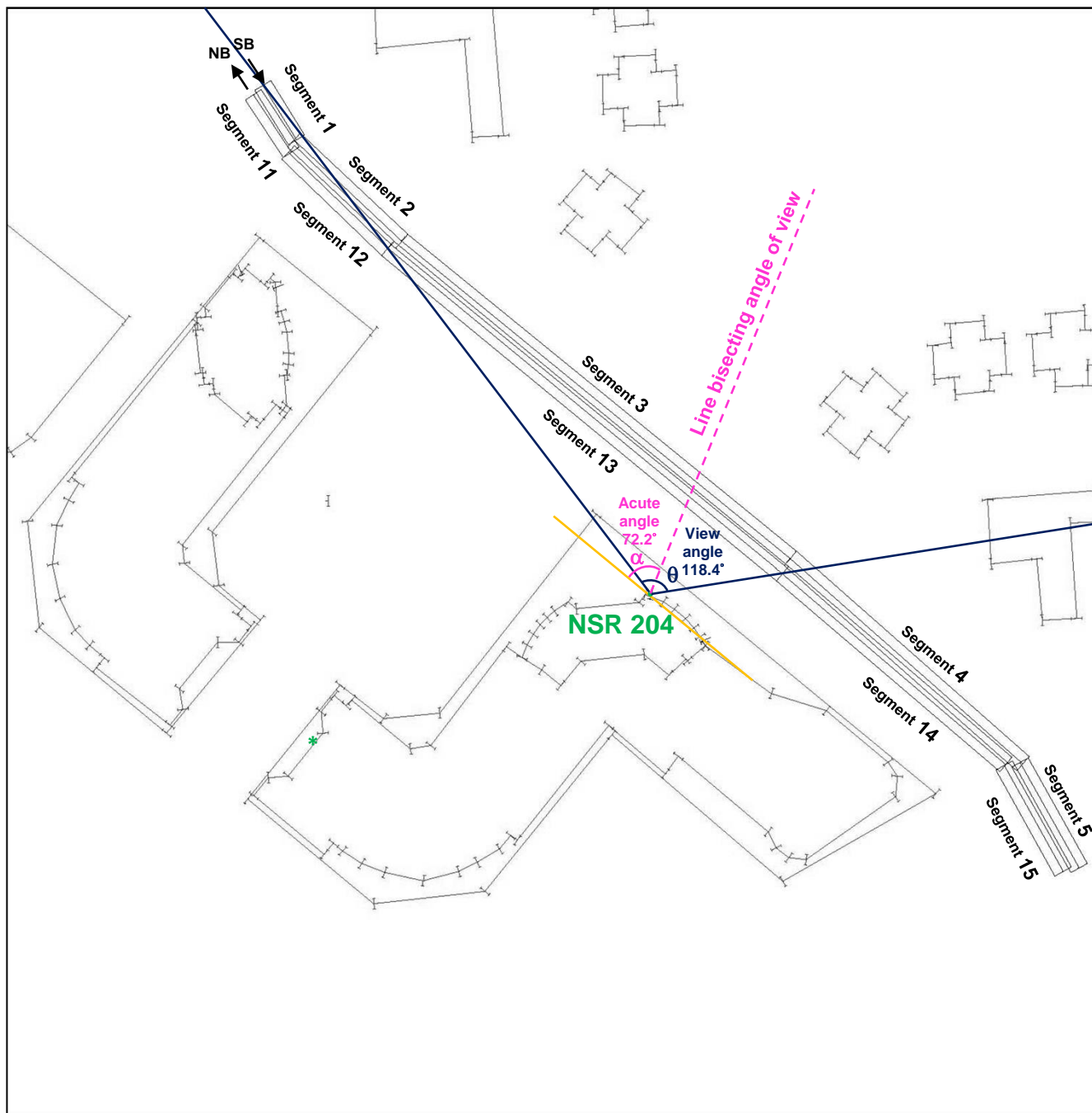
A8-1



Area 23



Area 20



Westwood Hong & Associates Ltd

PROJECT: 22464

Proposed Residential Development
at Tin Shui Wai Town Lot No. 4

TITLE:

**Sample NSR Location for LRT Calculation
(NSR 204)**

FIGURE

A8-2

Summary of Predicted Noise Results

Job Title : Proposed Residential Development at Tin Shui Wai Town Lot No. 4
 Job No. : 22464
 Date : 2022/4/8
 Scenario : Existing LRT

NSR: **NSR 112**

NSR	Noise Level, dB(A)			
	L _{eq} , 24 hr	Day Time	Night Time	L _{max}
		L _{eq} , 0.5 hr	L _{eq} , 0.5 hr	
NSR 112-1/F	54	56	53	67
NSR 112-5/F	53	55	52	65
NSR 112-10/F	52	54	51	63
NSR 112-15/F	51	53	50	62
NSR 112-20/F	51	53	50	60

Max. **54** **56** **53** **67**

Criteria **65** **65** **55** **85**

Exceedance of Criteria 0 0 0 0

NSR: **NSR 113**

NSR	Noise Level, dB(A)			
	L _{eq} , 24 hr	Day Time	Night Time	L _{max}
		L _{eq} , 0.5 hr	L _{eq} , 0.5 hr	
NSR 113-1/F	52	54	51	66
NSR 113-5/F	51	53	50	65
NSR 113-10/F	50	52	49	63
NSR 113-15/F	49	51	48	61
NSR 113-20/F	49	51	48	60

Max. **52** **54** **51** **66**

Criteria **65** **65** **55** **85**

Exceedance of Criteria 0 0 0 0

Summary of Predicted Noise Results

Job Title : Proposed Residential Development at Tin Shui Wai Town Lot No. 4
 Job No. : 22464
 Date : 2022/4/8
 Scenario : Existing LRT

NSR: **NSR 201**

NSR	Noise Level, dB(A)			
	L _{eq} , 24 hr	Day Time	Night Time	L _{max}
		L _{eq} , 0.5 hr	L _{eq} , 0.5 hr	
NSR 201-1/F	55	57	54	69
NSR 201-5/F	54	56	53	67
NSR 201-10/F	54	56	53	64
NSR 201-15/F	53	55	52	62
NSR 201-21/F	52	54	51	60

Max. **55** **57** **54** **69**

Criteria **65** **65** **55** **85**

Exceedance of Criteria 0 0 0 0

NSR: **NSR 204**

NSR	Noise Level, dB(A)			
	L _{eq} , 24 hr	Day Time	Night Time	L _{max}
		L _{eq} , 0.5 hr	L _{eq} , 0.5 hr	
NSR 204-1/F	55	57	54	69
NSR 204-5/F	54	56	53	67
NSR 204-10/F	53	55	52	64
NSR 204-15/F	52	54	51	62
NSR 204-21/F	51	53	50	60

Max. **55** **57** **54** **69**

Criteria **65** **65** **55** **85**

Exceedance of Criteria 0 0 0 0

Rail Noise Assessment

Calculations of Train Noise

Job Title : Proposed Residential Development at Tin Shui Wai Town Lot No. 4
Job No. : 22464
Date : 2022/4/8
Scenario : Existing LRT

NSR : NSR 112-1/F

Period	Description	Segments 1 & 11		Segments 2 & 12		Segments 3 & 13		Segments 4 & 14		Segments 5 & 15		
		LRT		LRT		LRT		LRT		LRT		
		segment 1	segment 11	segment 2	segment 12	segment 3	segment 13	segment 4	segment 14	segment 5	segment 15	
L _{eq} , 24hr	Measured SEL, dB(A)	73	74	73	74	73	74	74	76	74	76	
	Distance from Mic to track, d ₁ , m	20	15	20	15	20	15	18	13	18	13	
	View angle (at Mic), θ ₁ , deg	145	145	145	145	160	160	180	180	180	180	
	Total number of events, N	906	906	906	906	906	906	906	906	906	906	
	Horiz. distance from track to NSR, m	32	29	41	36	39	34	48	38	154	149	
	Vert. distance from track to NSR, m	34	34	34	34	34	34	34	34	34	34	
	Slant distance from track to NSR, d ₂ , m	46	45	53	49	52	48	59	51	158	153	
	Corr for no. of events, 10log(N), dB(A)	30	30	30	30	30	30	30	30	30	30	
	Corr for distance, 10log(d ₁ /d ₂), dB(A)	-4	-5	-4	-5	-4	-5	-5	-6	-9	-11	
	Corr for view angle, dB(A)	-14	-14	-2	-2	-7	-7	-24	-26	-21	-22	
	Façade Correction	3	3	3	3	3	3	3	3	3	3	
	Corr for sound energy spread over 24 hr duration	-49.4	-49.4	-49.4	-49.4	-49.4	-49.4	-49.4	-49.4	-49.4	-49.4	
	L _{eq, 24hrs} for each train activity, dB(A)	37	38	49	49	44	44	27	26	26	26	
	L _{eq, 24hrs} for all train activities, dB(A)	53.6										
	Criterion	65										
Exceedence	0											
L _{eq} , 0.5hr (Daytime)	Measured SEL, dB(A)	73	74	73	74	73	74	74	76	74	76	
	Distance from Mic to track, d ₁ , m	20	15	20	15	20	15	18	13	18	13	
	View angle (at Mic), θ ₁ , deg	145	145	145	145	160	160	180	180	180	180	
	Total number of events, N	30	30	30	30	30	30	30	30	30	30	
	Distance from track to NSR, d ₂ , m	46	45	53	49	52	48	59	51	158	153	
	Corr for no. of events, 10log(N), dB(A)	15	15	15	15	15	15	15	15	15	15	
	Corr for distance, 10log(d ₁ /d ₂), dB(A)	-4	-5	-4	-5	-4	-5	-5	-6	-9	-11	
	Corr for view angle, dB(A)	-14	-14	-2	-2	-7	-7	-24	-26	-21	-22	
	Façade Correction	3	3	3	3	3	3	3	3	3	3	
	Corr for sound energy spread over 0.5 hr duration	-32.6	-32.6	-32.6	-32.6	-32.6	-32.6	-32.6	-32.6	-32.6	-32.6	
	L _{eq, 0.5hrs} for each train activity, dB(A)	39	40	51	51	46	46	29	28	28	28	
	L _{eq, 0.5hrs} for all train activities, dB(A)	55.6										
	Criterion	65										
	Exceedence	0										
	L _{eq} , 0.5hr (Night-time)	Measured SEL, dB(A)	73	74	73	74	73	74	74	76	74	76
Distance from Mic to track, d ₁ , m		20	15	20	15	20	15	18	13	18	13	
View angle (at Mic), θ ₁ , deg		145	145	145	145	160	160	180	180	180	180	
Total number of events, N		15	15	15	15	15	15	15	15	15	15	
Distance from track to NSR, d ₂ , m		46	45	53	49	52	48	59	51	158	153	
Corr for no. of events, 10log(N), dB(A)		12	12	12	12	12	12	12	12	12	12	
Corr for distance, 10log(d ₁ /d ₂), dB(A)		-4	-5	-4	-5	-4	-5	-5	-6	-9	-11	
Corr for view angle, dB(A)		-14	-14	-2	-2	-7	-7	-24	-26	-21	-22	
Façade Correction		3	3	3	3	3	3	3	3	3	3	
Corr for sound energy spread over 0.5 hr duration		-32.6	-32.6	-32.6	-32.6	-32.6	-32.6	-32.6	-32.6	-32.6	-32.6	
L _{eq, 0.5hrs} for each train activity, dB(A)		36	37	48	48	43	43	26	25	25	25	
L _{eq, 0.5hrs} for all train activities, dB(A)		52.6										
Criterion		55										
Exceedence		0										
L _{max}		Measured L _{max} , dB(A)	68	74	68	74	68	74	68	75	68	75
	Distance from Mic to track, d ₁ , m	20	15	20	15	20	15	18	13	18	13	
	Distance from track to NSR, d ₂ , m	46	45	53	49	52	48	59	51	158	153	
	Corr for distance, 20log(d ₁ /d ₂), dB(A)	-7	-9	-9	-10	-8	-10	-10	-12	-19	-21	
	Façade Correction	3	3	3	3	3	3	3	3	3	3	
	L _{max} , for each train activity, dB(A)	63	67	62	66	62	67	60	65	52	56	
	L _{max} , for all train activities, dB(A)	67.2										
	Criterion	85										
	Exceedence	0										

Rail Noise Assessment

Calculations of Train Noise

Job Title : Proposed Residential Development at Tin Shui Wai Town Lot No. 4
Job No. : 22464
Date : 2022/4/8
Scenario : Existing LRT

NSR : NSR 113-1/F

Period	Description	Segments 1 & 11		Segments 2 & 12		Segments 3 & 13		Segments 4 & 14		Segments 5 & 15		
		LRT		LRT		LRT		LRT		LRT		
		segment 1	segment 11	segment 2	segment 12	segment 3	segment 13	segment 4	segment 14	segment 5	segment 15	
L _{eq} , 24hr	Measured SEL, dB(A)	73	74	73	74	73	74	74	76	74	76	
	Distance from Mic to track, d ₁ , m	20	15	20	15	20	15	18	13	18	13	
	View angle (at Mic), θ ₁ , deg	145	145	145	145	160	160	180	180	180	180	
	Total number of events, N	906	906	906	906	906	906	906	906	906	906	
	Horiz. distance from track to NSR, m	41	37	46	41	0	0	0	0	0	0	
	Vert. distance from track to NSR, m	34	34	34	34	34	34	34	34	34	34	
	Slant distance from track to NSR, d ₂ , m	53	51	58	54	34	34	34	34	34	34	
	Corr for no. of events, 10log(N), dB(A)	30	30	30	30	30	30	30	30	30	30	
	Corr for distance, 10log(d ₁ /d ₂), dB(A)	-4	-5	-5	-6	-2	-4	-3	-4	-3	-4	
	Corr for view angle, dB(A)	-10	-9	-3	-3	0	0	0	0	0	0	
	Façade Correction	3	3	3	3	3	3	3	3	3	3	
	Corr for sound energy spread over 24 hr duration	-49.4	-49.4	-49.4	-49.4	-49.4	-49.4	-49.4	-49.4	-49.4	-49.4	
	L _{eq, 24hrs} for each train activity, dB(A)	41	42	47	48	0	0	0	0	0	0	
	L _{eq, 24hrs} for all train activities, dB(A)	51.5										
	Criterion	65										
Exceedence	0											
L _{eq} , 0.5hr (Daytime)	Measured SEL, dB(A)	73	74	73	74	73	74	74	76	74	76	
	Distance from Mic to track, d ₁ , m	20	15	20	15	20	15	18	13	18	13	
	View angle (at Mic), θ ₁ , deg	145	145	145	145	160	160	180	180	180	180	
	Total number of events, N	30	30	30	30	30	30	30	30	30	30	
	Distance from track to NSR, d ₂ , m	53	51	58	54	34	34	34	34	34	34	
	Corr for no. of events, 10log(N), dB(A)	15	15	15	15	15	15	15	15	15	15	
	Corr for distance, 10log(d ₁ /d ₂), dB(A)	-4	-5	-5	-6	-2	-4	-3	-4	-3	-4	
	Corr for view angle, dB(A)	-10	-9	-3	-3	0	0	0	0	0	0	
	Façade Correction	3	3	3	3	3	3	3	3	3	3	
	Corr for sound energy spread over 0.5 hr duration	-32.6	-32.6	-32.6	-32.6	-32.6	-32.6	-32.6	-32.6	-32.6	-32.6	
	L _{eq, 0.5hrs} for each train activity, dB(A)	43	44	49	50	0	0	0	0	0	0	
	L _{eq, 0.5hrs} for all train activities, dB(A)	53.5										
	Criterion	65										
	Exceedence	0										
	L _{eq} , 0.5hr (Night-time)	Measured SEL, dB(A)	73	74	73	74	73	74	74	76	74	76
Distance from Mic to track, d ₁ , m		20	15	20	15	20	15	18	13	18	13	
View angle (at Mic), θ ₁ , deg		145	145	145	145	160	160	180	180	180	180	
Total number of events, N		15	15	15	15	15	15	15	15	15	15	
Distance from track to NSR, d ₂ , m		53	51	58	54	34	34	34	34	34	34	
Corr for no. of events, 10log(N), dB(A)		12	12	12	12	12	12	12	12	12	12	
Corr for distance, 10log(d ₁ /d ₂), dB(A)		-4	-5	-5	-6	-2	-4	-3	-4	-3	-4	
Corr for view angle, dB(A)		-10	-9	-3	-3	0	0	0	0	0	0	
Façade Correction		3	3	3	3	3	3	3	3	3	3	
Corr for sound energy spread over 0.5 hr duration		-32.6	-32.6	-32.6	-32.6	-32.6	-32.6	-32.6	-32.6	-32.6	-32.6	
L _{eq, 0.5hrs} for each train activity, dB(A)		40	41	46	47	0	0	0	0	0	0	
L _{eq, 0.5hrs} for all train activities, dB(A)		50.5										
Criterion		55										
Exceedence		0										
L _{max}		Measured L _{max} , dB(A)	68	74	68	74	68	74	68	75	68	75
	Distance from Mic to track, d ₁ , m	20	15	20	15	20	15	18	13	18	13	
	Distance from track to NSR, d ₂ , m	53	51	58	54	34	34	34	34	34	34	
	Corr for distance, 20log(d ₁ /d ₂), dB(A)	-8	-11	-9	-11	-5	-7	-6	-8	-6	-8	
	Façade Correction	3	3	3	3	3	3	3	3	3	3	
	L _{max} , for each train activity, dB(A)	62	66	61	66	0	0	0	0	0	0	
	L _{max} , for all train activities, dB(A)	66.1										
	Criterion	85										
	Exceedence	0										

Rail Noise Assessment

Calculations of Train Noise

Job Title : Proposed Residential Development at Tin Shui Wai Town Lot No. 4
Job No. : 22464
Date : 2022/4/8
Scenario : Existing LRT

NSR : NSR 201-1/F

Period	Description	Segments 1 & 11		Segments 2 & 12		Segments 3 & 13		Segments 4 & 14		Segments 5 & 15	
		LRT		LRT		LRT		LRT		LRT	
		segment 1	segment 11	segment 2	segment 12	segment 3	segment 13	segment 4	segment 14	segment 5	segment 15
L _{eq} , 24hr	Measured SEL _L , dB(A)	73	74	73	74	73	74	74	76	74	76
	Distance from Mic to track, d ₁ , m	20	15	20	15	20	15	18	13	18	13
	View angle (at Mic), θ ₁ , deg	145	145	145	145	160	160	180	180	180	180
	Total number of events, N	906	906	906	906	906	906	906	906	906	906
	Horiz. distance from track to NSR, m	0	0	28	20	41	35	41	35	78	73
	Vert. distance from track to NSR, m	29	29	29	29	29	29	29	29	29	29
	Slant distance from track to NSR, d ₂ , m	29	29	40	35	50	45	50	45	83	78
	Corr for no. of events, 10log(N), dB(A)	30	30	30	30	30	30	30	30	30	30
	Corr for distance, 10log(d ₁ /d ₂), dB(A)	-2	-3	-3	-4	-4	-5	-4	-5	-7	-8
	Corr for view angle, dB(A)	0	0	-34	-37	-2	-2	-3	-4	-15	-15
	Façade Correction	3	3	3	3	3	3	3	3	3	3
	Corr for sound energy spread over 24 hr duration	-49.4	-49.4	-49.4	-49.4	-49.4	-49.4	-49.4	-49.4	-49.4	-49.4
	L _{eq, 24hrs} for each train activity, dB(A)	0	0	19	16	49	49	49	49	35	36
	L _{eq, 24hrs} for all train activities, dB(A)	55.2									
	Criterion	65									
	Exceedence	0									
L _{eq} , 0.5hr (Daytime)	Measured SEL _L , dB(A)	73	74	73	74	73	74	74	76	74	76
	Distance from Mic to track, d ₁ , m	20	15	20	15	20	15	18	13	18	13
	View angle (at Mic), θ ₁ , deg	145	145	145	145	160	160	180	180	180	180
	Total number of events, N	30	30	30	30	30	30	30	30	30	30
	Distance from track to NSR, d ₂ , m	29	29	40	35	50	45	50	45	83	78
	Corr for no. of events, 10log(N), dB(A)	15	15	15	15	15	15	15	15	15	15
	Corr for distance, 10log(d ₁ /d ₂), dB(A)	-2	-3	-3	-4	-4	-5	-4	-5	-7	-8
	Corr for view angle, dB(A)	0	0	-34	-37	-2	-2	-3	-4	-15	-15
	Façade Correction	3	3	3	3	3	3	3	3	3	3
	Corr for sound energy spread over 0.5 hr duration	-32.6	-32.6	-32.6	-32.6	-32.6	-32.6	-32.6	-32.6	-32.6	-32.6
	L _{eq, 0.5hrs} for each train activity, dB(A)	0	0	21	18	51	51	51	51	37	38
	L _{eq, 0.5hrs} for all train activities, dB(A)	57.2									
	Criterion	65									
	Exceedence	0									
L _{eq} , 0.5hr (Night-time)	Measured SEL _L , dB(A)	73	74	73	74	73	74	74	76	74	76
	Distance from Mic to track, d ₁ , m	20	15	20	15	20	15	18	13	18	13
	View angle (at Mic), θ ₁ , deg	145	145	145	145	160	160	180	180	180	180
	Total number of events, N	15	15	15	15	15	15	15	15	15	15
	Distance from track to NSR, d ₂ , m	29	29	40	35	50	45	50	45	83	78
	Corr for no. of events, 10log(N), dB(A)	12	12	12	12	12	12	12	12	12	12
	Corr for distance, 10log(d ₁ /d ₂), dB(A)	-2	-3	-3	-4	-4	-5	-4	-5	-7	-8
	Corr for view angle, dB(A)	0	0	-34	-37	-2	-2	-3	-4	-15	-15
	Façade Correction	3	3	3	3	3	3	3	3	3	3
	Corr for sound energy spread over 0.5 hr duration	-32.6	-32.6	-32.6	-32.6	-32.6	-32.6	-32.6	-32.6	-32.6	-32.6
	L _{eq, 0.5hrs} for each train activity, dB(A)	0	0	18	15	48	48	48	48	34	35
	L _{eq, 0.5hrs} for all train activities, dB(A)	54.2									
	Criterion	55									
	Exceedence	0									
L _{max}	Measured L _{max} , dB(A)	68	74	68	74	68	74	68	75	68	75
	Distance from Mic to track, d ₁ , m	20	15	20	15	20	15	18	13	18	13
	Distance from track to NSR, d ₂ , m	29	29	40	35	50	45	50	45	83	78
	Corr for distance, 20log(d ₁ /d ₂), dB(A)	-3	-6	-6	-7	-8	-10	-9	-11	-13	-16
	Façade Correction	3	3	3	3	3	3	3	3	3	3
	L _{max} , for each train activity, dB(A)	0	0	64	69	63	67	62	66	57	62
	L _{max} , for all train activities, dB(A)	69.3									
	Criterion	85									
	Exceedence	0									

Rail Noise Assessment

Calculations of Train Noise

Job Title : Proposed Residential Development at Tin Shui Wai Town Lot No. 4
Job No. : 22464
Date : 2022/4/8
Scenario : Existing LRT

NSR : NSR 204-1/F

Period	Description	Segments 1 & 11		Segments 2 & 12		Segments 3 & 13		Segments 4 & 14		Segments 5 & 15		
		LRT		LRT		LRT		LRT		LRT		
		segment 1	segment 11	segment 2	segment 12	segment 3	segment 13	segment 4	segment 14	segment 5	segment 15	
L _{eq} , 24hr	Measured SEL, dB(A)	73	74	73	74	73	74	74	76	74	76	
	Distance from Mic to track, d ₁ , m	20	15	20	15	20	15	18	13	18	13	
	View angle (at Mic), θ ₁ , deg	145	145	145	145	160	160	180	180	180	180	
	Total number of events, N	906	906	906	906	906	906	906	906	906	906	
	Horiz. distance from track to NSR, m	0	0	29	22	40	34	42	35	87	82	
	Vert. distance from track to NSR, m	29	29	29	29	29	29	29	29	29	29	
	Slant distance from track to NSR, d ₂ , m	29	29	41	36	50	45	51	45	92	87	
	Corr for no. of events, 10log(N), dB(A)	30	30	30	30	30	30	30	30	30	30	
	Corr for distance, 10log(d ₁ /d ₂), dB(A)	-2	-3	-3	-4	-4	-5	-4	-5	-7	-8	
	Corr for view angle, dB(A)	0	0	-32	-35	-1	-1	-8	-10	-16	-17	
	Façade Correction	3	3	3	3	3	3	3	3	3	3	
	Corr for sound energy spread over 24 hr duration	-49.4	-49.4	-49.4	-49.4	-49.4	-49.4	-49.4	-49.4	-49.4	-49.4	
	L _{eq, 24hrs} for each train activity, dB(A)	0	0	21	18	51	51	44	43	33	33	
	L _{eq, 24hrs} for all train activities, dB(A)	54.7										
	Criterion	65										
Exceedence	0											
L _{eq} , 0.5hr (Daytime)	Measured SEL, dB(A)	73	74	73	74	73	74	74	76	74	76	
	Distance from Mic to track, d ₁ , m	20	15	20	15	20	15	18	13	18	13	
	View angle (at Mic), θ ₁ , deg	145	145	145	145	160	160	180	180	180	180	
	Total number of events, N	30	30	30	30	30	30	30	30	30	30	
	Distance from track to NSR, d ₂ , m	29	29	41	36	50	45	51	45	92	87	
	Corr for no. of events, 10log(N), dB(A)	15	15	15	15	15	15	15	15	15	15	
	Corr for distance, 10log(d ₁ /d ₂), dB(A)	-2	-3	-3	-4	-4	-5	-4	-5	-7	-8	
	Corr for view angle, dB(A)	0	0	-32	-35	-1	-1	-8	-10	-16	-17	
	Façade Correction	3	3	3	3	3	3	3	3	3	3	
	Corr for sound energy spread over 0.5 hr duration	-32.6	-32.6	-32.6	-32.6	-32.6	-32.6	-32.6	-32.6	-32.6	-32.6	
	L _{eq, 0.5hrs} for each train activity, dB(A)	0	0	23	20	53	53	46	45	35	35	
	L _{eq, 0.5hrs} for all train activities, dB(A)	56.7										
	Criterion	65										
	Exceedence	0										
	L _{eq} , 0.5hr (Night-time)	Measured SEL, dB(A)	73	74	73	74	73	74	74	76	74	76
Distance from Mic to track, d ₁ , m		20	15	20	15	20	15	18	13	18	13	
View angle (at Mic), θ ₁ , deg		145	145	145	145	160	160	180	180	180	180	
Total number of events, N		15	15	15	15	15	15	15	15	15	15	
Distance from track to NSR, d ₂ , m		29	29	41	36	50	45	51	45	92	87	
Corr for no. of events, 10log(N), dB(A)		12	12	12	12	12	12	12	12	12	12	
Corr for distance, 10log(d ₁ /d ₂), dB(A)		-2	-3	-3	-4	-4	-5	-4	-5	-7	-8	
Corr for view angle, dB(A)		0	0	-32	-35	-1	-1	-8	-10	-16	-17	
Façade Correction		3	3	3	3	3	3	3	3	3	3	
Corr for sound energy spread over 0.5 hr duration		-32.6	-32.6	-32.6	-32.6	-32.6	-32.6	-32.6	-32.6	-32.6	-32.6	
L _{eq, 0.5hrs} for each train activity, dB(A)		0	0	20	17	50	50	43	42	32	32	
L _{eq, 0.5hrs} for all train activities, dB(A)		53.7										
Criterion		55										
Exceedence		0										
L _{max}		Measured L _{max} , dB(A)	68	74	68	74	68	74	68	75	68	75
	Distance from Mic to track, d ₁ , m	20	15	20	15	20	15	18	13	18	13	
	Distance from track to NSR, d ₂ , m	29	29	41	36	50	45	51	45	92	87	
	Corr for distance, 20log(d ₁ /d ₂), dB(A)	-3	-6	-6	-8	-8	-10	-9	-11	-14	-17	
	Façade Correction	3	3	3	3	3	3	3	3	3	3	
	L _{max} , for each train activity, dB(A)	0	0	64	69	63	67	62	66	57	61	
	L _{max} , for all train activities, dB(A)	69.1										
	Criterion	85										
	Exceedence	0										

APPENDIX 9

DESIGN OF ACOUSTIC WINDOW

Proposed Residential Development at Tin Shui Wai Town Lot No. 4

Justification of Noise Performance for Acoustic Window (Baffle Type)

Table A9-1a: Comparison Between Referenced Case and Proposed Development

	Item	Dimensions in Referenced Case		Dimensions in Proposed Development	
1	Room Size (m ²)	14.6		32.0	
2	Outer Opening Area (m ²)	0.699		1.002	
	Outer Opening Width / Height (mm)	600	1165	600	1670
3	Inner Opening Area (m ²)	3.905		3.340	
	inner Opening Width / Height (mm)	1627	2400	2000	1670
4	Gap Width (mm)	100		100	
5	Overlapping Width (mm)	255 & 268		250 & 250	
6	With Sound Absorptive Material (SAM) in plenum	Yes		Yes	
	Noise Reduction (dB(A))	6.7		5	

Note: Reference to the MER of "The Development of an Innovative Noise Mitigation Measure for a Luxury Seaview Residential Development" by Michelle Chan and David BK Yeung, Proceedings of Inter-noise 2019, Madrid (2019)

Table A9-1b: Correction for Outer Opening Area

(Reference Case) Outer Opening Area (ref) (m ²)	(Proposed Development) Outer Opening Area (m ²)	Correction for Outer Opening Area, dB(A)
0.699	1.002	-1.6

Correction for outer opening area is calculated by $10 \log [\text{Outer Opening Area (ref)} / \text{Outer Opening Area}]$

Table A9-1c: Corrected Noise Reduction:

(Reference Case) Reduction Performance (dB(A))	Corrected Noise Reduction (dB(A))
6.7	5.1

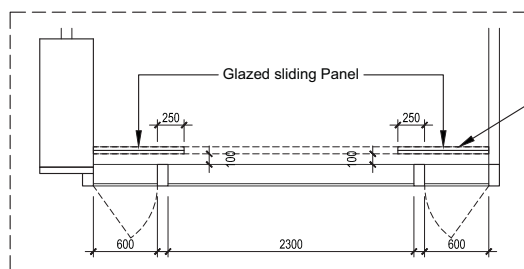
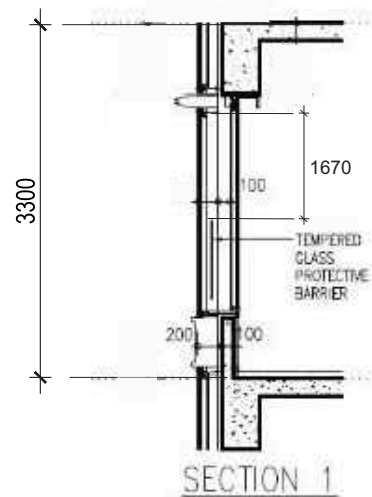
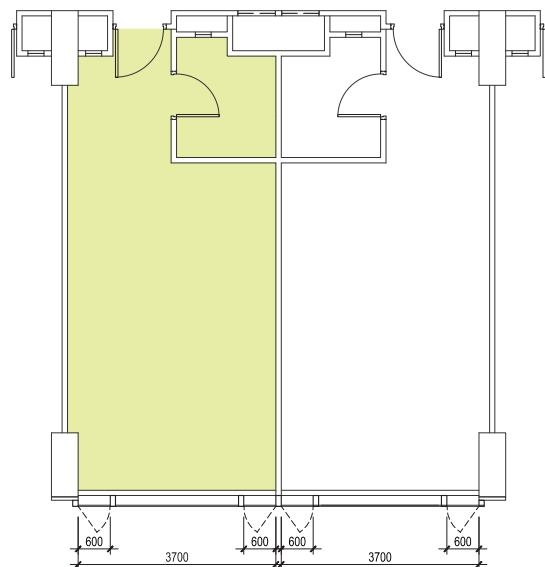
Corrected Noise Reduction = Reduction Performance (ref) in Table A9-1a + Correction for Outer Opening Area in Table A9-1b

Conclusion:

With considering the correction of outer opening area, the corrected noise reduction is 5.1dB(A).

The noise reduction adopted in the assessment of 5dB(A) is considered conservative.

Acoustic Window (Baffle Type)



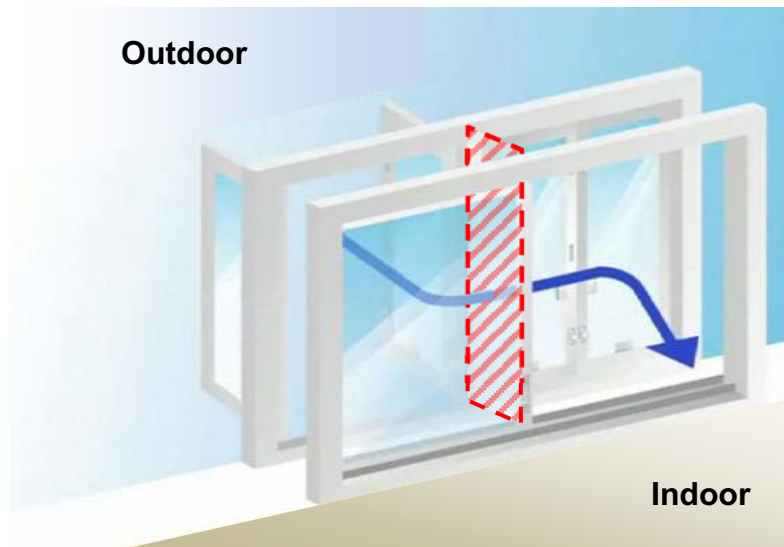
Acoustic Window - Detail

6. Acoustic Windows

6.1 For a primary or secondary opening with an acoustic “double glazing” window¹ comprising an outer openable window and an inner sliding glass panel designed for the dual purposes of natural ventilation under the B(P)Rs and noise reduction as shown in Diagrams H and I, its openable window area can be taken as 90% of the cross-sectional area of the air gap between the two panes of glass for the purposes of regulations 30 and 31 of the B(P)Rs and Part III of this Appendix if the window meets the following parameters:-

- (a) the width of the air gap is between 100mm to 175mm;
- (b) the length of the air gap is not less than 100mm;
- (c) the outer openable window satisfies the natural lighting requirements stipulated under the B(P)Rs or in paragraph 1(a) of PNAP APP-130; and
- (d) the openable area of the outer openable window is not less than the cross-sectional area of the air gap.

Diagram H : Acoustic window designed for the dual purposes of natural ventilation under the B(P)R and noise reduction

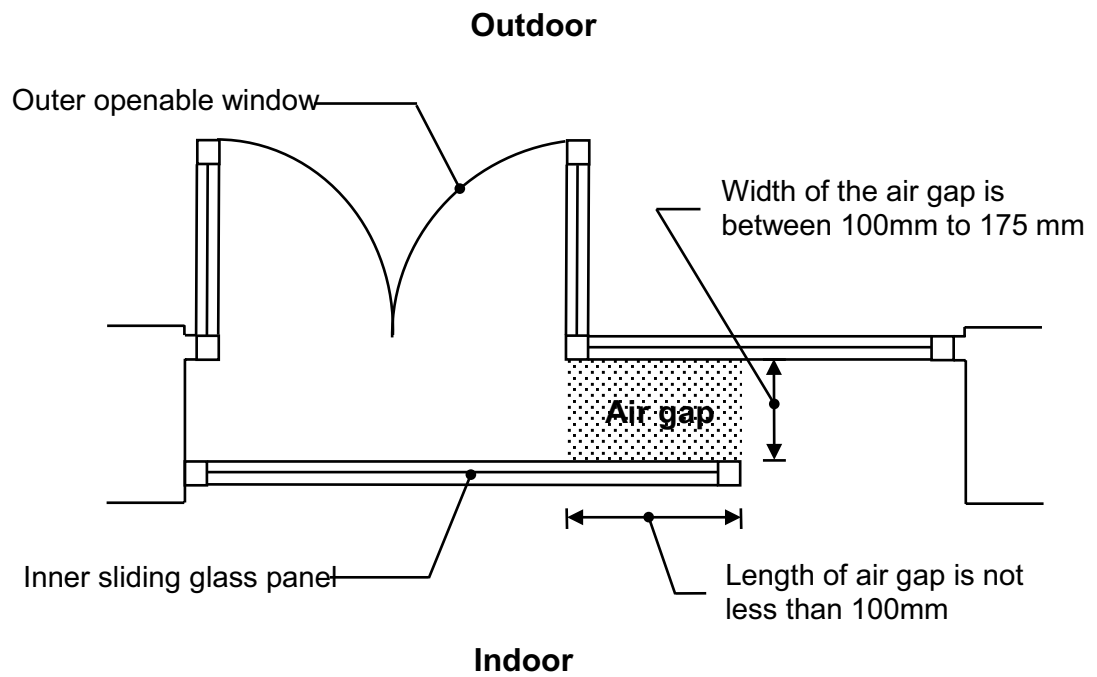


 Wind direction

 Cross-sectional area of the air gap

¹ This type of window has an inner sliding glass panel behind an openable window for creating an air gap for the supply of fresh air with noise mitigation effect. To optimise the noise reduction function, the sliding glass panel will be slid open only for maintenance, repair, opening or closing the outer window.

Diagram I : Air gap of an acoustic window

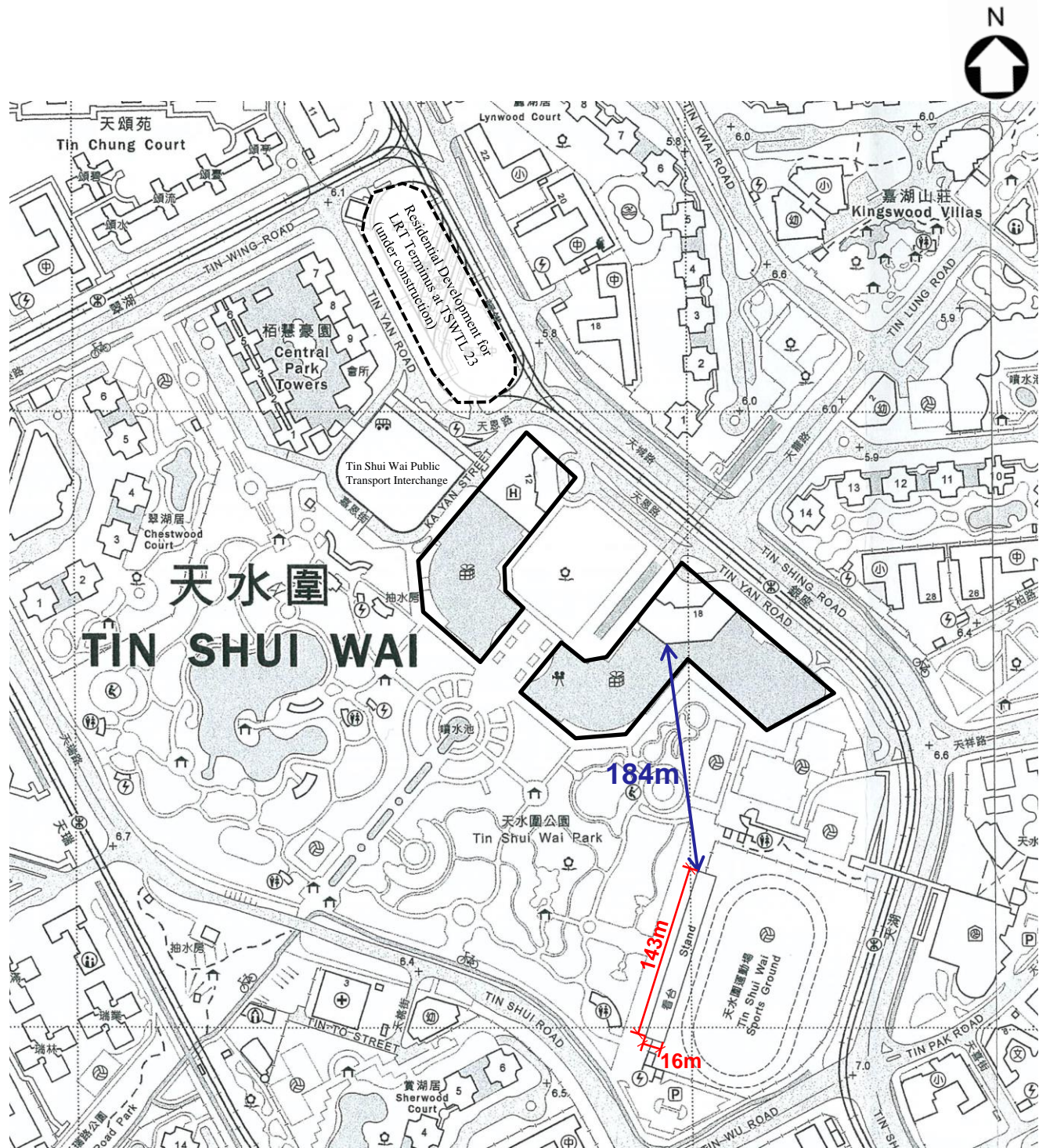


PLAN (NOT TO SCALE)

(Rev. 2/2015)

APPENDIX 10

SAMPLE CALCULATION OF FIXED NOISE SOURCES



Legend



Proposed Development Area

Westwood Hong & Associates Ltd

PROJECT: 22464

Proposed Residential Development
at Tin Shui Wai Town Lot No. 4

TITLE:

**Distance between Tin Shui Wai Sports
Ground and the Proposed Development**

FIGURE

A10-1

Project: Proposed Residential Development at Tin Shui wai Town Lot No. 4

Job no.: 22464

Title: Calculation of Crowd Noise and PA Noise Level from Tin Shui Wai Sports Ground

Referenced Noise Level [1]	68	dB(A)
Tin Shui Wai Sport Ground:		
Dimension (Length x Width)	143 x 16	m
Area of Spectator Seating	2288	m ²
Area Correction [2]	34	dB(A)
Sound Power Level, dB(A)	102	dB(A)
Horizontal Distance, m	184	m
Distance Correction.	-53	dB(A)
Screening Correction	0	dB(A)
Façade Correction	3	dB(A)
Noise Level at the nearest NSR of proposed Development	51	dB(A)
(Comply with the stipulated noise limits (i.e. 65dB(A) during daytime and 55dB(A) during night-time)		

Notes:-

[1] The crowd noise and PA noise levels adopted in EIA report "Main Arena of the 2008 Olympic Equestrian Event" have been referenced.

[2] Area Correction = $10 \log (S)$, where S = Area of Spectator Seating

Appendix 6

Environmental Air Quality Impact Assessment

Report No: 22464-A1 Rev A

PROPOSED RESIDENTIAL DEVELOPMENT AT TIN SHUI WAI TOWN LOT NO. 4

ENVIRONMENTAL AIR QUALITY IMPACT ASSESSMENT REPORT

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JULY 2022

WHA

DOCUMENT VERIFICATION

Page 1 of 1

JOB TITLE: Proposed Residential Development at
Tin Shui Wai Town Lot No. 4

JOB NO: 22464

REPORT TITLE: Environmental Air Quality Impact Assessment Report

REPORT NO: 22464-A1 Rev A

Revision	Date	Filename	22464-A1.doc		
1st issue	11-Apr-22	Description	Air Quality impact assessment for the proposed Development		
			Prepared by	Checked by	Approved by
		Name	Samuel Lee / Kit Wong	Kit Wong / Ir K K Lu	Ir K K Lu
		Signature			
Revision	Date	Filename	22464-A1a.doc		
A	14-Jul-22	Description	Air Quality impact assessment for the proposed Development		
			Prepared by	Checked by	Approved by
		Name	Samuel Lee / Kit Wong	Kit Wong / Ir K K Lu	Ir K K Lu
		Signature	SL [Signature]	[Signature] [Signature]	[Signature]
Revision	Date	Filename			
		Description			
			Prepared by	Checked by	Approved by
		Name			
		Signature			

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APPENDICES

AIMS

To assess the air quality impact due to the surrounding industrial and vehicular emissions on the proposed residential development at Tin Shui Wai Town Lot No. 4.

To assess the air quality impact with respect to the air quality requirements stipulated in the Hong Kong Planning Standards & Guidelines (HKPSG).

SUMMARY

The buffer distance requirements in the proposed Development as set out for vehicular emissions in Table 3.1, Chapter 9 of HKPSG are satisfied. No industrial chimney was identified within 500m of the site. Therefore, no adverse air quality impacts on the proposed Development are anticipated.

Dust control requirements in the Air Pollution Control (Construction Dust) Regulation will be complied with. Relevant mitigation measures for dust emissions, if any, will be implemented accordingly. Under such circumstances, no adverse air quality impacts in association with the proposed Development during construction phase are anticipated.

1. INTRODUCTION

- 1.1 Westwood Hong & Associates Ltd. was commissioned to prepare an environmental air quality impact assessment report to assess the potential air quality impact caused by air pollution sources in the vicinity of the proposed residential Development at Tin Shui Wai Town Lot No. 4 (the “proposed Development”).
- 1.2 This air quality impact assessment report aims to support the S.16 Planning Application for the proposed Development.
- 1.3 The proposed Development will provide 1102 nos. of residential flats.
- 1.4 This report has been prepared based on the architectural drawings provided by the Client (Appendix 1).
- 1.5 The report presents assessments of the following:
- Industrial chimney emission impact on the proposed Development
 - Vehicular emission impact on the proposed Development
 - Dust impact control during construction

2. SITE LOCATION

Site Location

- 2.1 The project site adjoins Tin Shui Wai Park and is located southern west of Tin Yan Road. The Light Rail stops of Tin Wing Stop is located to the north, and Ginza Stop is located to the east of Area 23.

Building Layout

- 2.2 The project site is occupied by 2 blocks of hotels (Harbour Plaza Resort City Phases 1 and 2) with 20 – 21 storeys and the shopping mall Fortune Kingswood Phases 1 and 2. The proposed Development will convert the upper floors of the two existing hotel blocks to residential flats and the lower floors of the hotels to commercial area (the proposed Development). The existing shopping mall Fortune Kingswood Phases 1 and 2 will be retained. The architectural drawings are provided in Appendix 1.

3. SITE INSPECTION

Site survey

- 3.1 Site survey was conducted on 4 April 2022. Photographs taken on site are given in Appendix 2.

Industrial Emissions in the Vicinity

- 3.2 Site inspection has revealed that no industrial chimney was identified within 500m of the project site.
- 3.3 The site inspection has confirmed that odour was not detected at the site boundaries and that emission of dust or fluff was not observed from buildings in the vicinity of the proposed Development.

4. HONG KONG AIR QUALITY OBJECTIVES

4.1 Table 4.1 shows the standards set out in the new Hong Kong Air Quality Objectives (HKAQO):-

Table 4.1 Hong Kong Air Quality Objectives

Pollutant	Averaging Time	AQO concentration ($\mu\text{g}/\text{m}^3$)	Number of exceedances allowed
Sulphur Dioxide	10 minute	500	3
	24 hour	50	3
Respirable Suspended Particulate (PM10) (ii)	24 hour	100	9
	Annual	50	NA
Fine Suspended Particulates (PM2.5) (iii)	24 hour	50	35
	Annual	25	NA
Nitrogen Dioxide	1 hour	200	18
	Annual	40	NA
Carbon Monoxide	1 hour	30,000	0
	8 hour	10,000	0
Ozone	8 hour	160	9
Lead	Annual	0.5	NA

- Notes:-
- (i) All measurements of the concentration of gaseous air pollutants, i.e., sulphur dioxide, nitrogen dioxide, ozone and carbon monoxide, are to be adjusted to a reference temperature of 293 Kelvin and a reference pressure of 101.325 kilopascal.
 - (ii) Respirable suspended particulates means suspended particles in air with a nominal aerodynamic diameter of 10 micrometres or less.
 - (iii) Fine suspended particulates means suspended particles in air with a nominal aerodynamic diameter of 2.5 micrometres or less.

5. EXISTING AND FUTURE AIR QUALITY IN TIN SHUI WAI AREA

5.1 Air quality monitoring data from the Air Quality Monitoring Station (AQMS) operated by EPD have been examined. The air quality monitoring data in the nearest AQMS (i.e. Yuen Long) for recent 5 years (i.e. Year 2017 to Year 2021) are tabulated in Table 5.1 below.

Table 5.1 Summary of AQMS Data from Year 2017 to Year 2021

Pollutant	Year	Highest 1-hour Conc. beyond the allowed exceedance ($\mu\text{g}/\text{m}^3$)	Annual Conc. ($\mu\text{g}/\text{m}^3$)	Highest 10-minutes Conc. beyond the allowed exceedance ($\mu\text{g}/\text{m}^3$)	Highest 24-hour Conc. beyond the allowed exceedance ($\mu\text{g}/\text{m}^3$)
NO₂	2017	156	41	-	-
	2018	150	43	-	-
	2019	161	44	-	-
	2020	135	32	-	-
	2021	148	40	-	-
	5-year Mean	150 [75%]	40 [100%]	-	-
	AQOs	200 (18)	40	N/A	N/A
SO₂	2017	-	-	80	20
	2018	-	-	52	16
	2019	-	-	42	11
	2020	-	-	26	10
	2021	-	-	24	14
	5-year Mean	-	-	45 [9%]	14 [28%]
	AQOs	N/A	N/A	500 (3)	50 (3)
RSP (PM₁₀)	2017	-	40	-	87
	2018	-	37	-	75
	2019	-	37	-	83
	2020	-	30	-	77
	2021	-	30	-	73
	5-year Mean	-	35 [70%]	-	79 [79%]
	AQOs	N/A	50	N/A	100 (9)

Pollutant	Year	Highest 1-hour Conc. beyond the allowed exceedance ($\mu\text{g}/\text{m}^3$)	Annual Conc. ($\mu\text{g}/\text{m}^3$)	Highest 10-minutes Conc. beyond the allowed exceedance ($\mu\text{g}/\text{m}^3$)	Highest 24-hour Conc. beyond the allowed exceedance ($\mu\text{g}/\text{m}^3$)
FSP (PM_{2.5})	2017	-	22	-	39
	2018	-	20	-	34
	2019	-	20	-	34
	2020	-	16	-	28
	2021	-	17	-	31
	5-year Mean	-	19 [76%]	-	33 [66%]
	AQOs	N/A	25	N/A	50 (35)

- Notes: (i) Underlined and **bold** values mean exceedance of the AQOs.
(ii) Values in () mean the number of exceedances allowed.
(iii) Percentages (%) of the AQOs are shown in []. The 5-year mean is the arithmetic average.
(iv) In consideration of the numbers of exceedances allowance in the AQOs, the 4th highest 10-minute and 24-hr SO₂, 19th highest 1-hr NO₂, 10th highest 24-hour RSP and 36th highest FSP concentrations are presented in above table.
(v) N/A – Not applicable since there are no AQOs for these parameters.

5.2 The future background concentration data predicted by PATH v2.1 in Year 2025 at Grids (23_48) is summarised in Table 5.2 below.

Table 5.2 Summary of PATH v2.1 Background in Year 2025

Pollutant	PATH Grid	Highest 1-hour Conc. beyond the allowed exceedance ($\mu\text{g}/\text{m}^3$) ^[1]	Annual Conc. ($\mu\text{g}/\text{m}^3$)	Highest 10-minutes Conc. beyond the allowed exceedance ($\mu\text{g}/\text{m}^3$) ^{[2] [3]}	Highest 24-hour Conc. beyond the allowed exceedance ($\mu\text{g}/\text{m}^3$) ^[4]
NO₂	(23_48)	114	22	-	-
	AQOs	200 (18)^[5]	40	N/A	N/A
SO₂	(23_48)	-	-	63	14
	AQOs	N/A	N/A	500 (3)	50 (3)
RSP^[6]	(23_48)	-	28	-	71
	AQOs	N/A	50	N/A	100 (9)
FSP^[7]	(23_48)	-	16	-	27
	AQOs	N/A	25	N/A	50 (35)

Noted:

[1] 19th highest 1-hour concentration of NO₂

- [2] 4th highest 10-minute SO₂ concentration
- [3] Conversion factor referenced to EPD's "Guidelines on the Estimation of 10-minute Average SO₂ Concentration for Air Quality Assessment in Hong Kong".
- [4] 4th highest 24-hour concentration of SO₂; 10th highest 24-hour concentration of RSP; 36th highest 24-hour concentration of FSP.
- [5] Values in () mean the number of exceedances allowed.
- [6] According to Section 2.8 of EPD's "Guideline on Choices of Models and Model Parameters", adjustments of PATH-v2.1's output of RSP concentrations by adding 11.0µg/m³ and 10.3µg/m³ into 10th highest daily RSP concentration and annual RSP concentration have been followed respectively.
- [7] According to Section 2.8 of EPD's "Guideline on Choices of Models and Model Parameters", adjustments of PATH-v2.1's output of FSP concentrations by adding 3.5µg/m³ into annual FSP concentration have been followed respectively.

5.3 It can be seen from the above Table 5.1 that, the trends of NO₂, RSP and FSP concentrations in the area have been decreasing in general since 2017. According to the PATH data, the predicted concentrations for all the pollutants in 2025 are below the AQO limit values.

6. PLUME IMPINGEMENT ASSESSMENT

- 6.1 According to the HKPSG^[1], the buffer distance for industrial chimneys is 200m. For the proposed Development, as validated by the site survey conducted on 4 April 2022, no industrial chimney is being identified within a 500m radius of the project site. Therefore, air quantitative impact assessment due to the industrial emission is hence not necessary. It is confirmed that adverse air quality impact due to industrial chimney is not anticipated for the proposed Development.

7. VEHICULAR EMISSION ASSESSMENT

- 7.1 According to the Annual Traffic Census 2020, Tin Yan Road is classified as local distributor. As confirmed by Transport Department, Ka Yan Street is classified as local access road (Appendix 3).
- 7.2 According to the HKPSG, the required buffer distances for 'Local Distributor' is 5m. For the proposed Development, the separation between the roads and the site boundary are greater than the required buffer distance as specified in the HKPSG (Figure 2). No air-sensitive uses including fresh air intake of ventilation system, openable windows and active recreational uses in open space will be located within the buffer zones from the nearby roads. Therefore, adverse air quality impact due to vehicle emission is not anticipated for the proposed Development. Table 7.1 summarises the shortest distance between the site boundary of the proposed Development and the roads.

Table 7.1 Separation Between the Road and The Site Boundary

Road name	Road Type	Shortest Distance between Site Boundary and the Roads	Remark
Tin Yan Road	Local Distributor	12m	All ASRs comply with the HKPSG requirement
Ka Yan Street	Local Access Road	5m	All ASRs comply with the HKPSG requirement

8. AIR QUALITY IMPACT DUE TO PUBLIC TRANSPORT INTERCHANGE

- 8.1 The Tin Shui Wai Public Transport Interchange (PTI) is located to the west of the proposed Development. Based on the observation from site survey, the location of the exhaust outlet of the PTI ventilation system is facing south and away from the proposed Development. The location of the exhaust outlet and the separation distance between the exhaust outlet and the nearest ASR of the proposed Development are provided in Figure 3.
- 8.2 The ASRs of the proposed Development is located away from the exhaust outlet of PTI as far as practicable. With significant separation distance between the ASR of the proposed Development and the exhaust outlet, adverse air quality impact due to the PTI is not anticipated.

9. AIR QUALITY IMPACT DUE TO CARPARK OF THE PROPOSED DEVELOPMENT

- 9.1 The detailed design of the proposed carpark is not available at this stage. The location of the exhaust outlet would be designed with reference to the “ProPECC PN 2/96 – Control of Air Pollution in Car Park”^[2]. The exhaust air from the carpark would be discharged to the atmosphere with proper mitigation treatments in such a manner and at a location not to result in any air nuisance to occupants in the proposed Development and to the neighboring building and to the public. Hence, adverse air quality impact due to the proposed carpark is not anticipated.

10. IDENTIFIED AIR SENSITIVE RECEIVERS

- 10.1 In accordance with Annex 12 of the TM-EIAO, ASRs include any domestic premises, hotel, hostel, hospital, clinic, nursery, temporary housing accommodation, school, educational institution, office, factory, shop, shopping centre, place of public worship, library, court of law, sports stadium or performing arts centre. Any other premises or places with which, in terms of duration or number of people affected, have a similar sensitivity to the air pollutant as the aforelisted premises and places would also be considered as a sensitive receiver.
- 10.2 Existing ASRs were identified by means of reviewing topographic maps, aerial photos and supplemented by site inspection. They mainly include developed residential buildings and schools. Representative ASRs within 500m radius assessment area have been identified in Table 10.1 and shown in Figure 4.

Table 10.1 Representative ASRs

ASR ID	Description	Existing Land Status	Distance from the Proposed Development	Number of Storeys
A01	Future Residential Development for LRT Terminus at TSWTL 23	Residential	25m	42
A02	Central Park Towers	Residential	115m	50
A03	Lynwood Court	Residential	80m	35
A04	Queen Elizabeth School	School	75m	7
A05	Shap Pat Heung Rural Committee Kung Yik She Secondary School	School	135m	7
A06	Shap Pat Heung Rural Committee Kung Yik She Primary School	School	195m	7
A07	H.K.F.Y.G. Lee Shau Kee Primary School	School	290m	8
A08	Tin Chung Court	Residential	300m	41
A09	The Jockey Club Eduyoung College	School	350m	7
A10	Tin Shui Wai Methodist Primary School	School	420m	7
A11	Tin Shui Wai Government Primary School	School	340m	7
A12	Chestwood Court	Residential	230m	35
A13	Cuhk Faa Thomas Cheung Secondary School	School	430m	8
A14	Tin Shui (I) Estate	Residential	475m	37
A15	Tin Shui Shopping Centre	Shopping centre	360m	5
A16	Tin Shui (II) Estate	Residential	390m	40
A17	Tin Shui Wai Health Centre	Clinic	260m	2
A18	Zenith Kindergarten & International Nursery	School	240m	2

A19	Sherwood Court	Residential	260m	40
A20	Ju Ching Chu Secondary School	School	300m	7
A21	Tin Yiu Estate	Residential	380m	37
A22	Ccc Fong Yun Wah Primary School	School	320m	7
A23	Tin Shui Wai Government Secondary School	School	440m	7
A24	Tin Tsz Shopping Centre	Shopping centre	400m	2
A25	Tin Tsz Estate	Residential	450m	40
A26	Ho Ming Primary School	School	300m	8
A27	Buddhist To Chi Fat She Yeung Yat Lam Memorial School	School	295m	4
A28	Tin Shui Wai Sports Ground	Recreational	100m	-
A29	Tin Shui Wai Sports Centre	Recreational	180m	3
A30	Tin Shui Wai Bus Depot	Transportational	270m	-
A31	Tin Shui Wai Swimming Pool	Recreational	115m	-
A32	Buddhist Mau Fung Memorial College	School	250m	7
A33	Water Supplies Department Tin Shui Wai Building	GIC	260m	6
A34	Tin Shui Wai Catholic Primary School	School	70m	8
A35	The Hong Kong Management Association K S Lo College	School	120m	7
A36	Kenswood Court	Residential	80m	35
A37	Talent Kindergarten & Nursery	School	170m	2
A38	Gigamind Kindergarten and Children's House	School	270m	2
A39	Gigamind English Primary School	School	300m	2
A40	Tin Ching Estate	Residential	440m	40
A41	H.K.F.Y.G. Lee Shau Kee College	School	450m	8
A42	Man Kwan Pak Kau College	School	460m	8
A43	Basketball Court in Tin Shui Wai Park	Recreational	10m	-
A44	Tennis Court in Tin Shui Wai Park	Recreational	70m	-
A45	Football Court in Tin Shui Wai Park	Recreational	20m	-
A46	Children Playground in Tin Shui Wai Park	Recreational	20m	-
A47	Children Playground in Tin Shui Wai Park	Recreational	240m	-
A48	Gateball Court in Tin Shui Wai Park	Recreational	190m	-
A49	Skateboard Ground in Tin Shui Wai Park	Recreational	220m	-
A50	Sitting area in Tin Shui Wai Park	Recreational	20m	-
A51	Sitting area in Ginza Square	Recreational	5m	-

11. DUST CONTROL FOR CONSTRUCTION WORK

11.1 The major construction activities of the proposed Development are Alterations and Additions works (A&A works), no excavation work will be carried out. In addition, the construction activities will not be taking place concurrently at entire work sites.

11.2 During the construction phase, dust would be generated from dusty activities such as vehicles movement on haul roads, loading or unloading stockpile material, stockpiling of material and wind erosion of exposed areas etc.

11.3 Appropriate dust control measures stipulated in the Air Pollution Control (Construction Dust) Regulation would be implemented during construction stage to reduce the dust emission. These measures include:-

- Any stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed where practicable within 24 hours of unloading;
- Any dusty material remaining after a stockpile is removed should be wetted with water and removed where practicable;
- A stockpile of dusty material should not extend beyond the pedestrian barriers, fencing or traffic cones;
- The load of dusty materials on vehicles leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle;
- Where practicable, vehicles washing facilities including a high pressure water jet should be provided at every designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores;
- Immediately before leaving a construction site, all vehicles shall be washed to remove any dusty materials from its body and wheels;
- Provide electric power supply for on-site machinery as far as practicable and avoid using diesel generators to minimize the gaseous and PM emissions;
- Locate all the dusty activities away from any nearby ASRs as far as practicable;
- Erect higher hoarding at the locations with ASRs in immediate proximity to the project site boundary;
- Locate the haul road away from concerned ASRs.

Emission from Fuel Combustion Equipment

- 11.4 Apart from the dust impact during construction phase, there will be exhaust emissions from the construction plants and machineries. Requirements stipulated in the Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation and Air Pollution Control (Fuel Restriction) Regulations (i.e. using liquid fuel with a Sulphur content of less than 0.005% by weight) will be complied with to minimise the exhaust emissions from non-road mobile machineries. The scale of the project is relatively small, the number of construction plants will be limited.

Concurrent Project

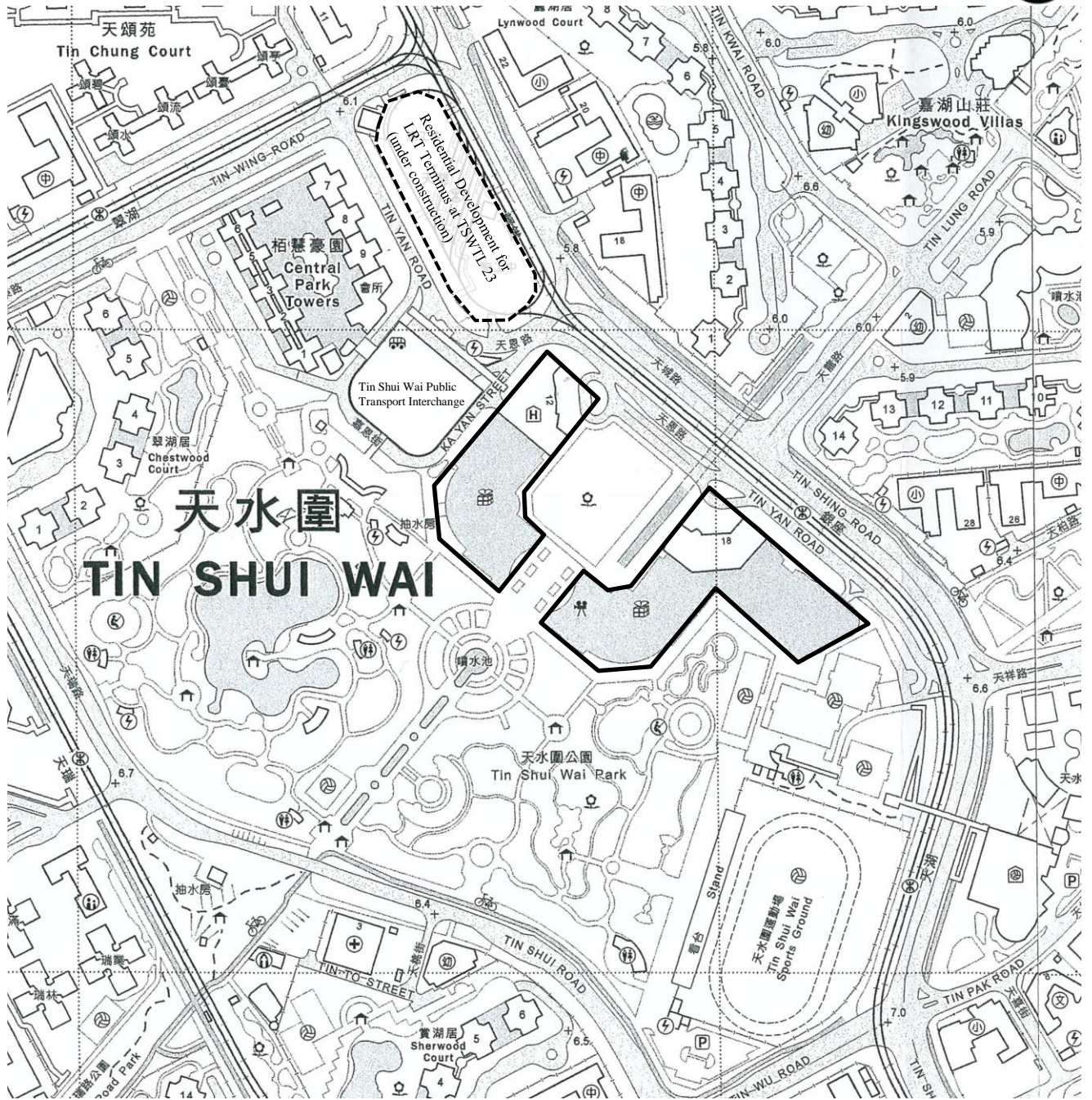
- 11.5 The residential development for LRT Terminus at TSWTL 23 is identified as concurrent project in the surrounding area. According to MTRC's website, it is a proposed residential development comprises of 3 towers and a podium deck over the LRT terminus, and the expected completion year is 2024. The construction works of the proposed Development will be commenced after the approval of the Planning Application, lease modification and General Building Plan. As such, overlapping between the construction phase of the proposed Development and the identified concurrent project is not expected. With the implementation of dust control measures stipulated in the Air Pollution Control (Construction Dust) Regulation and requirements stipulated in the Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation, in addition the relatively small scale construction works of the proposed Development, adverse cumulative air quality impact is not anticipated.
- 11.6 Therefore, the potential dust and exhaust emission impact from the construction works to the ASRs in the vicinity would be limited.

12. CONCLUSION

- 12.1 The proposed Development satisfies the buffer distance requirements for vehicular and chimney emissions stipulated under the Hong Kong Planning Standards and Guidelines (re. Table 3.1, Chapter 9, HKPSG). Therefore, no adverse air quality impact associated with the proposed Development during operational phase is anticipated.
- 12.2 Dust control requirements in the Air Pollution Control (Construction Dust) Regulation will be followed. Relevant mitigation measures for dust emissions will also be implemented. Therefore, no adverse air quality impact associated with the proposed Development during construction phase is anticipated.

13. REFERENCE

- [1] "Hong Kong Planning Standards & Guidelines" of March 2014 of Hong Kong Government
- [2] PN 2/96 "Control of Air Pollution in Car Park" of the Environmental Protection Department



Legend

 Proposed Development Area

Westwood Hong & Associates Ltd

PROJECT: 22464

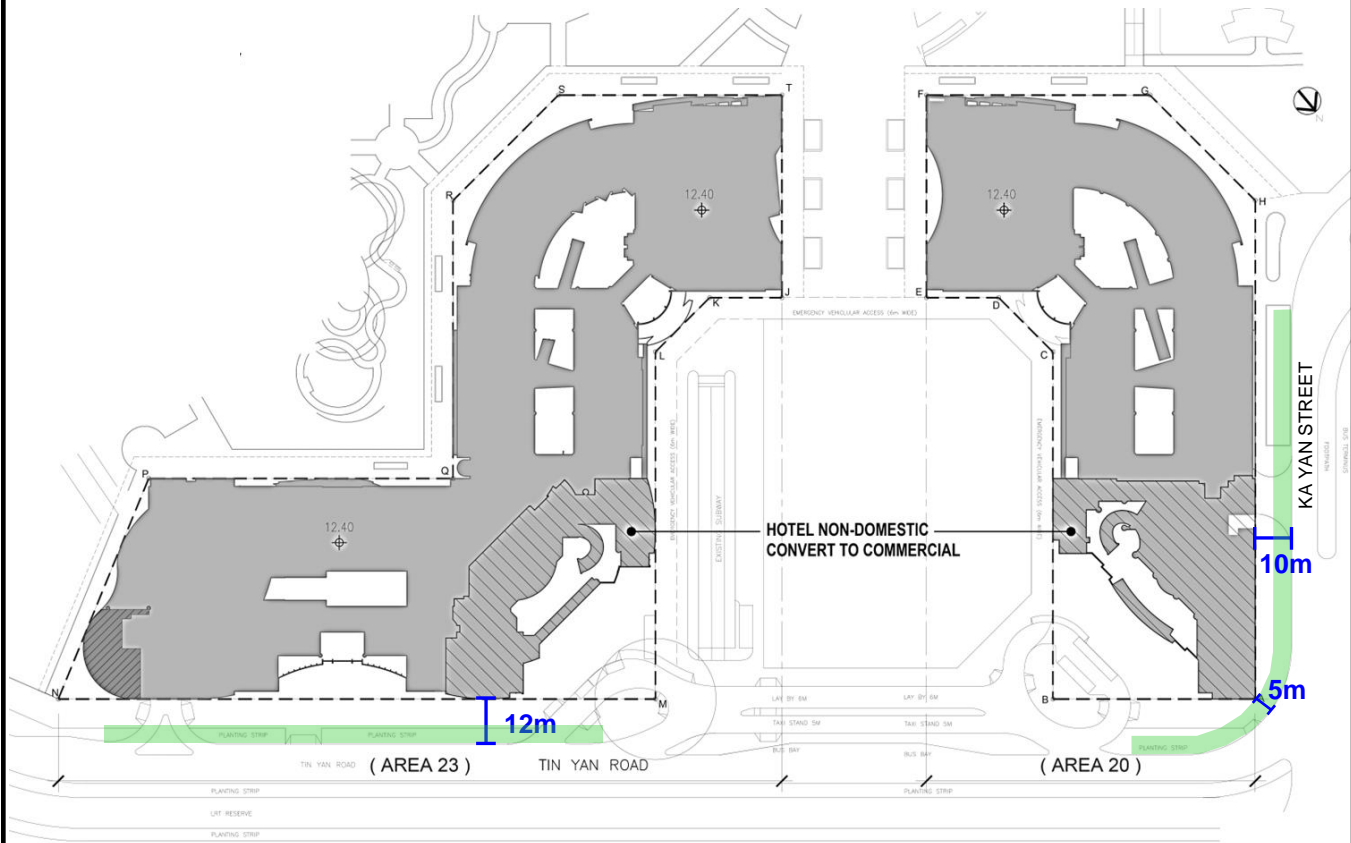
**Proposed Residential Development
at Tin Shui Wai Town Lot No. 4**

TITLE:

Site Locations

FIGURE

1



Legend

5m Buffer Distance from Road

*Remark: no air-sensitive uses including fresh air intake of ventilation system, openable windows of the buildings and active recreational uses in open space shall be located within the buffer zones.

Westwood Hong & Associates Ltd

PROJECT: 22464

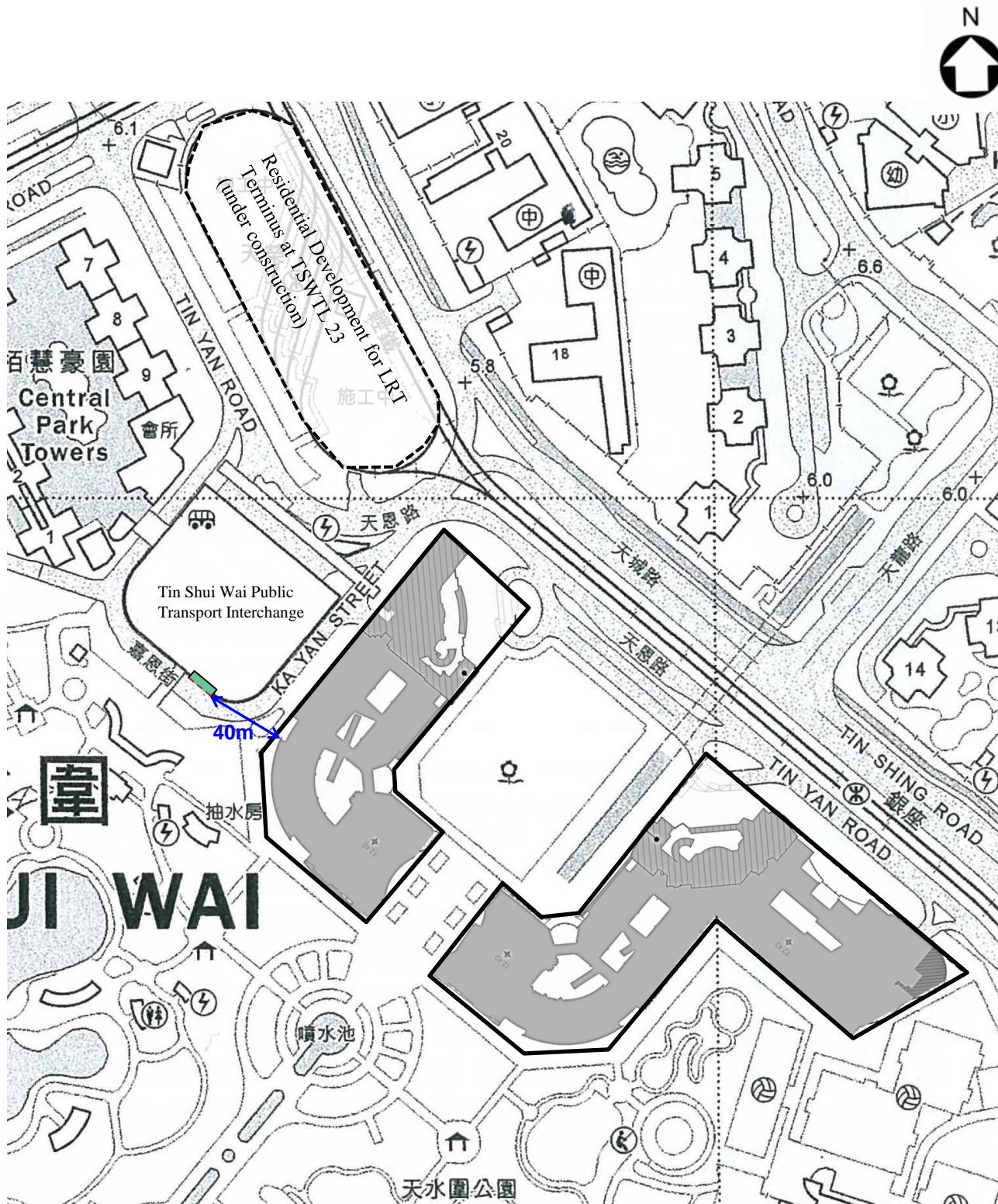
**Proposed Residential Development
at Tin Shui Wai Town Lot No. 4**

TITLE:

**Shortest Separation Between Site
Boundary and Roads**

FIGURE

2



Legend

- Proposed Development Area
- Exhaust Outlet of PTI Ventilation System (Opening)

Westwood Hong & Associates Ltd

PROJECT: 22464

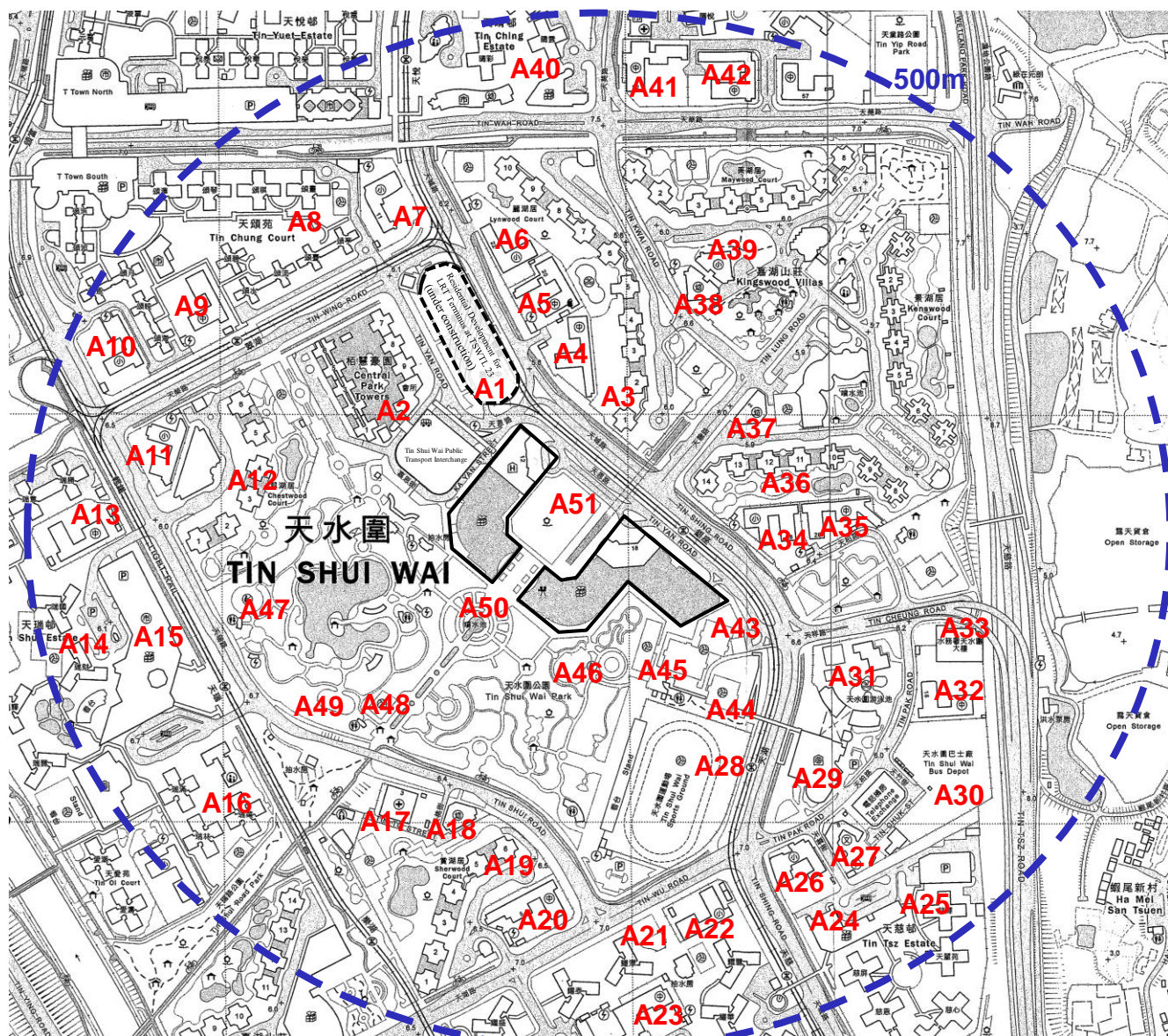
Proposed Residential Development
at Tin Shui Wai Town Lot No. 4

TITLE:

**Location of the Exhaust Outlet of PTI Ventilation
System and the Separation Distance between
the Exhaust Outlet and Nearest ASR of the
Proposed Development**

FIGURE

3



Legend



Proposed Development Area

Westwood Hong & Associates Ltd

PROJECT: 22464

Proposed Residential Development
at Tin Shui Wai Town Lot No. 4

TITLE:

**Locations of Identified ASRs within 500m
from the Proposed Development Site
Boundary during Construction Phase**

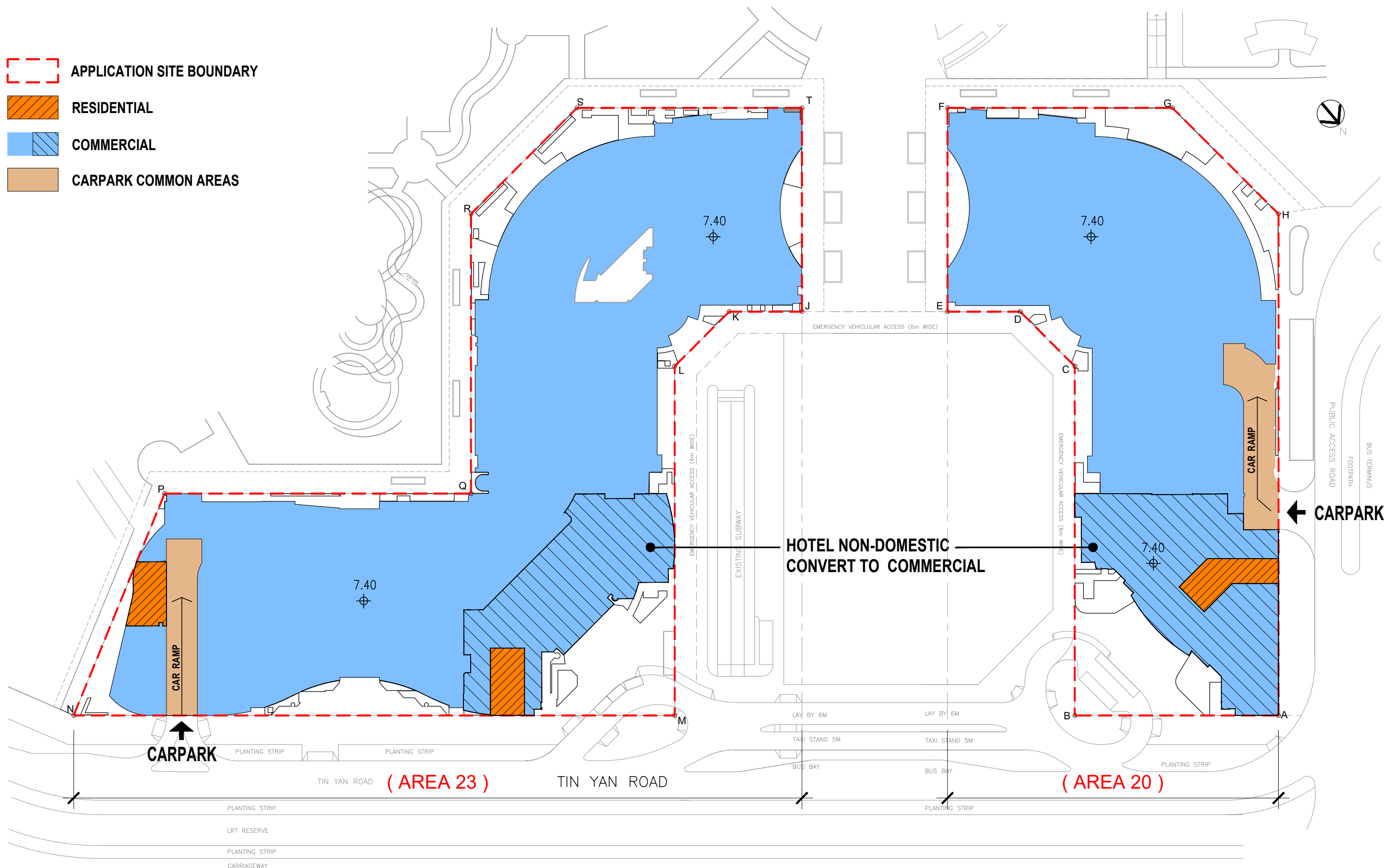
FIGURE

4

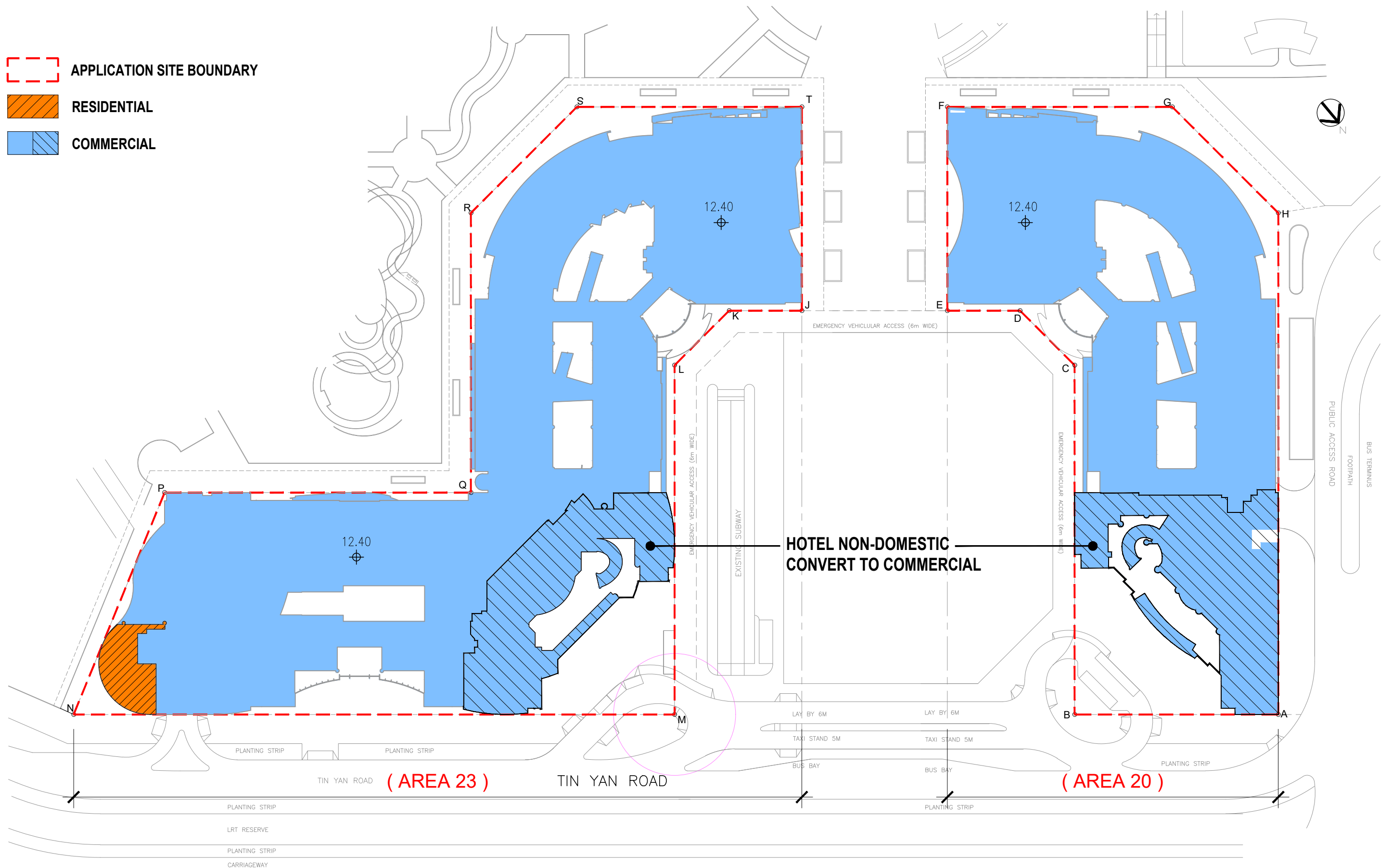
APPENDIX 1

ARCHITECTURAL DRAWINGS

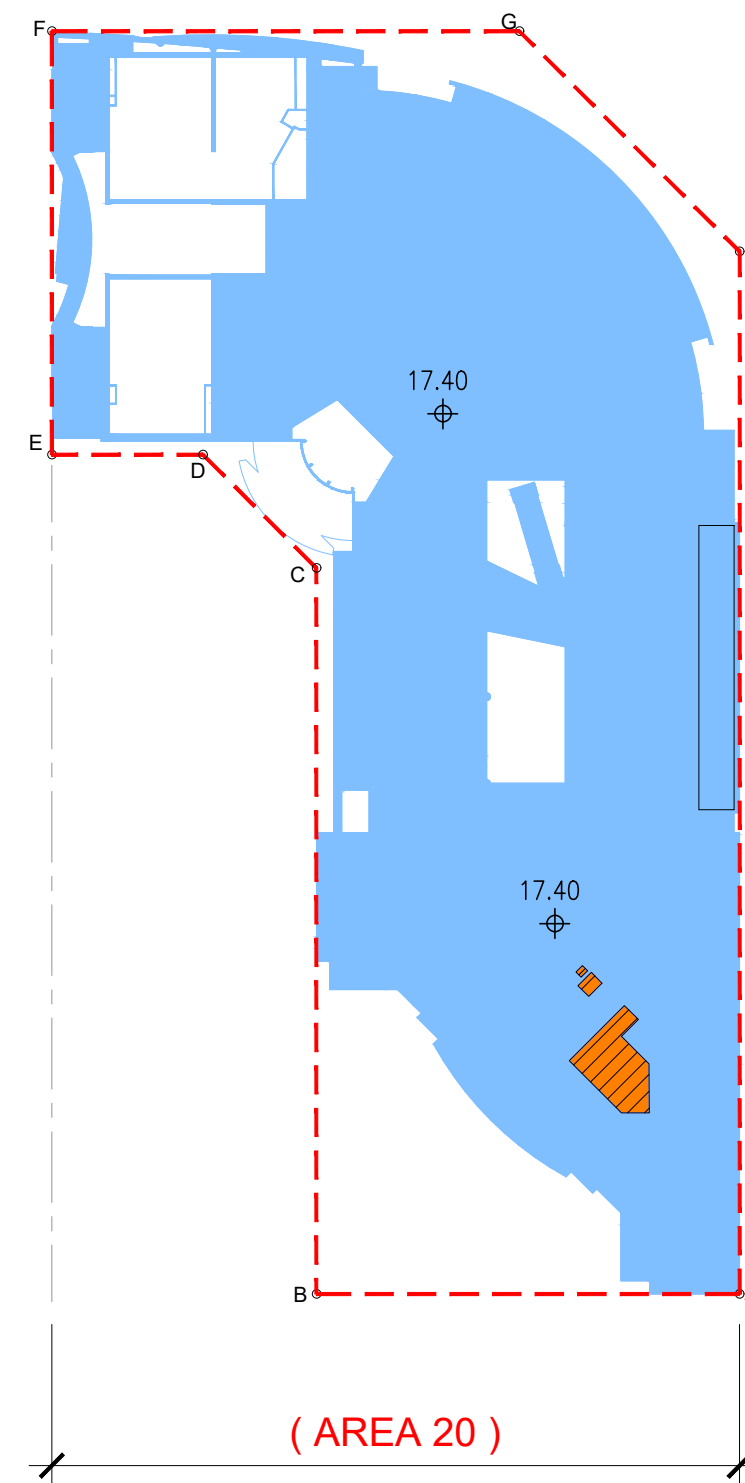
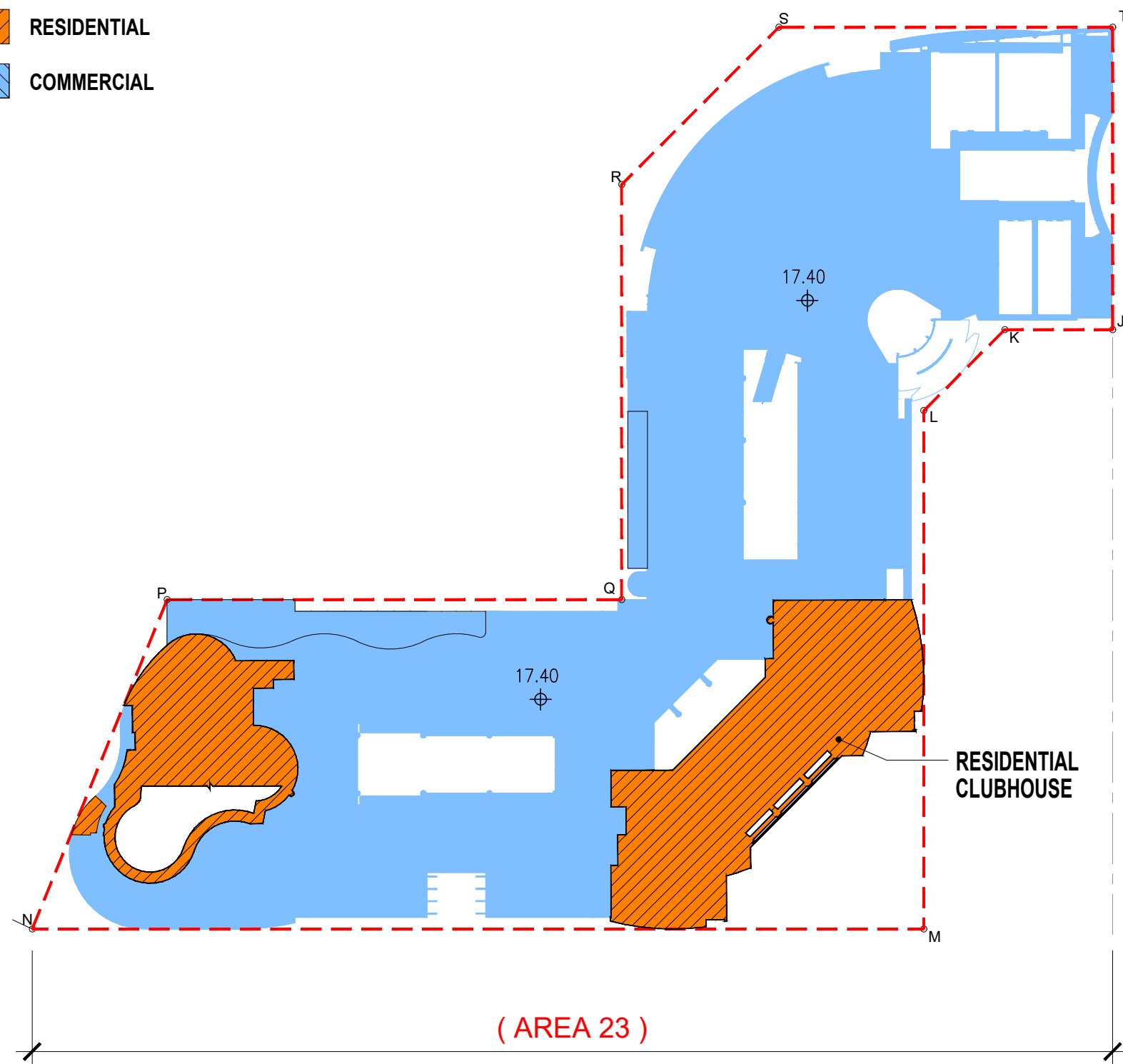
- APPLICATION SITE BOUNDARY
- RESIDENTIAL
- COMMERCIAL
- CARPARK COMMON AREAS



PROPOSED SCHEME

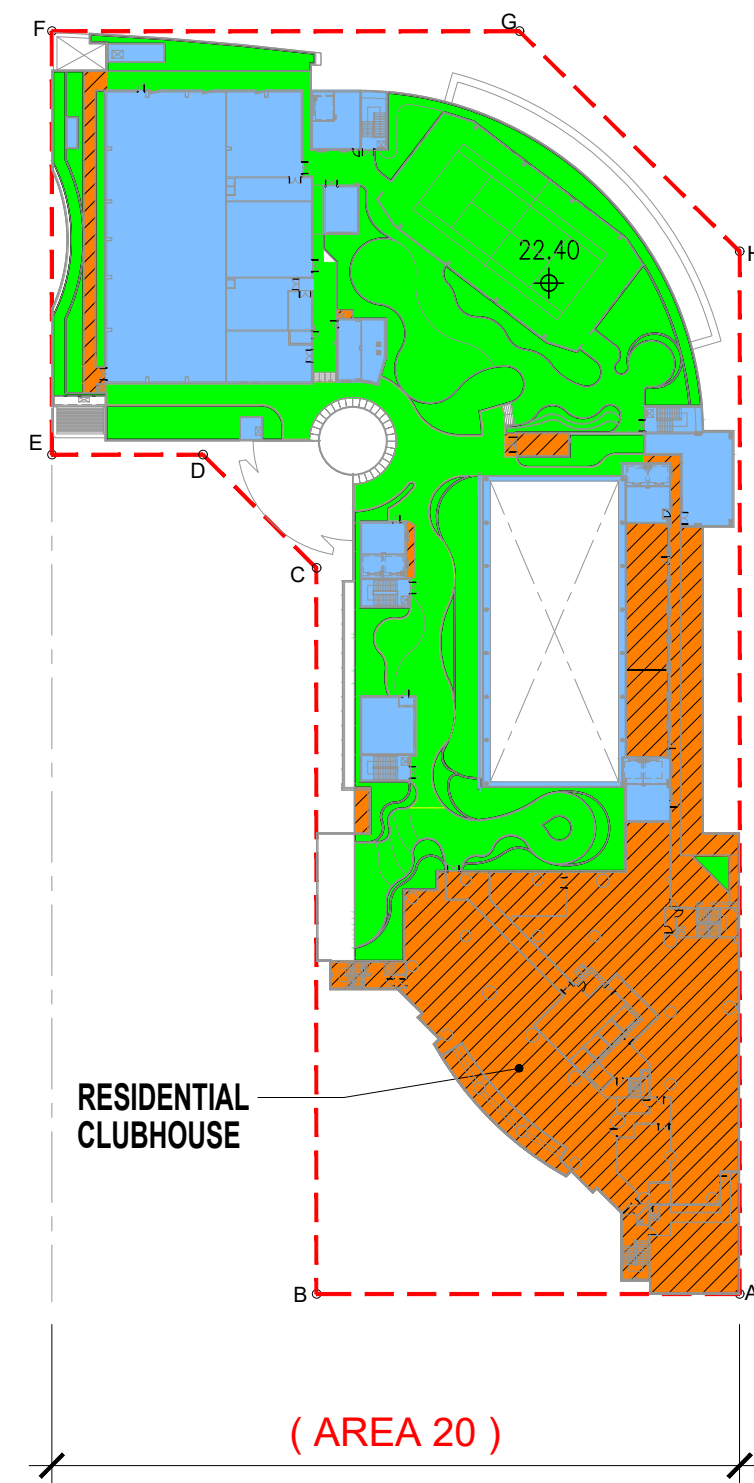
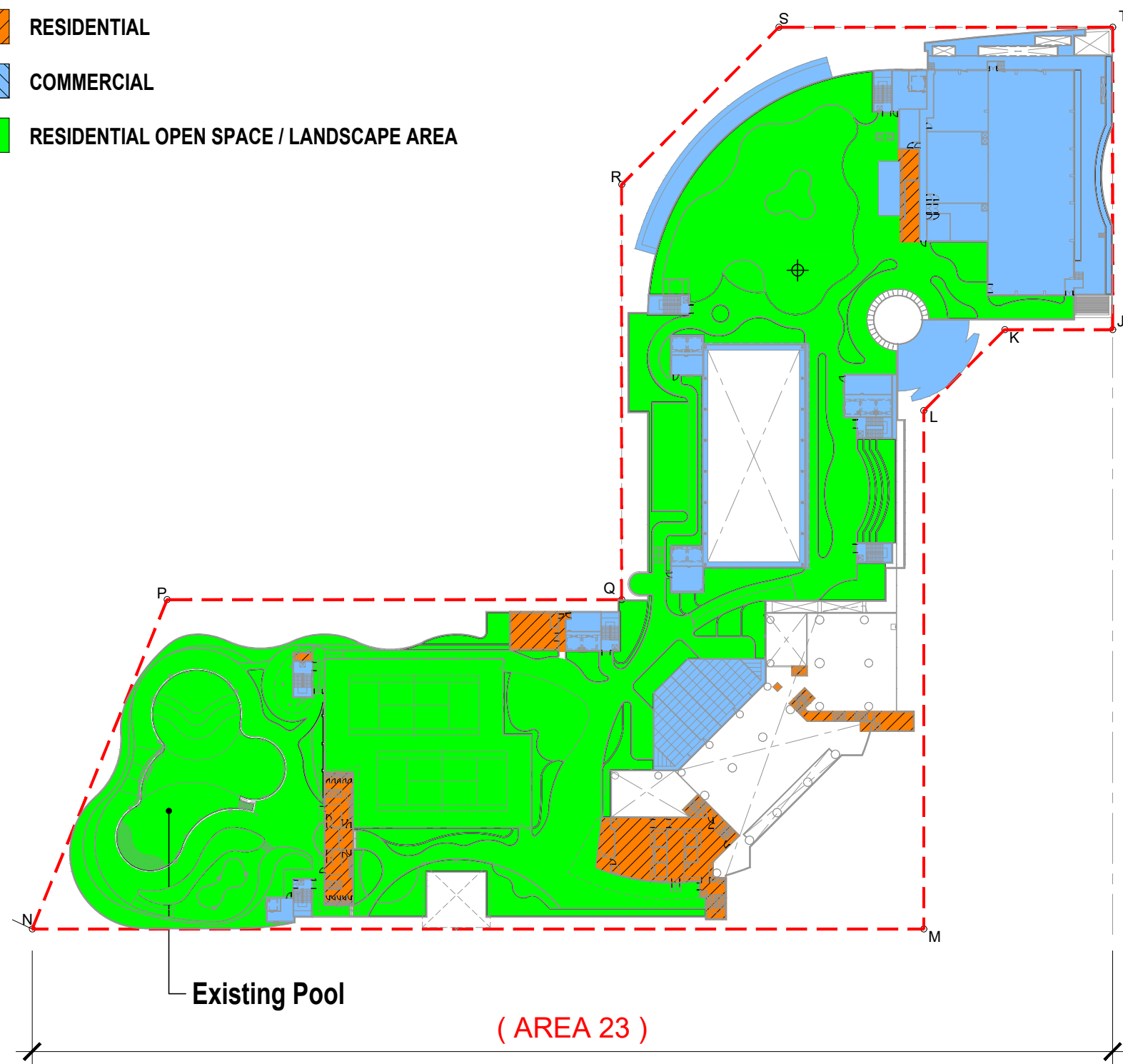


- APPLICATION SITE BOUNDARY
- RESIDENTIAL
- COMMERCIAL





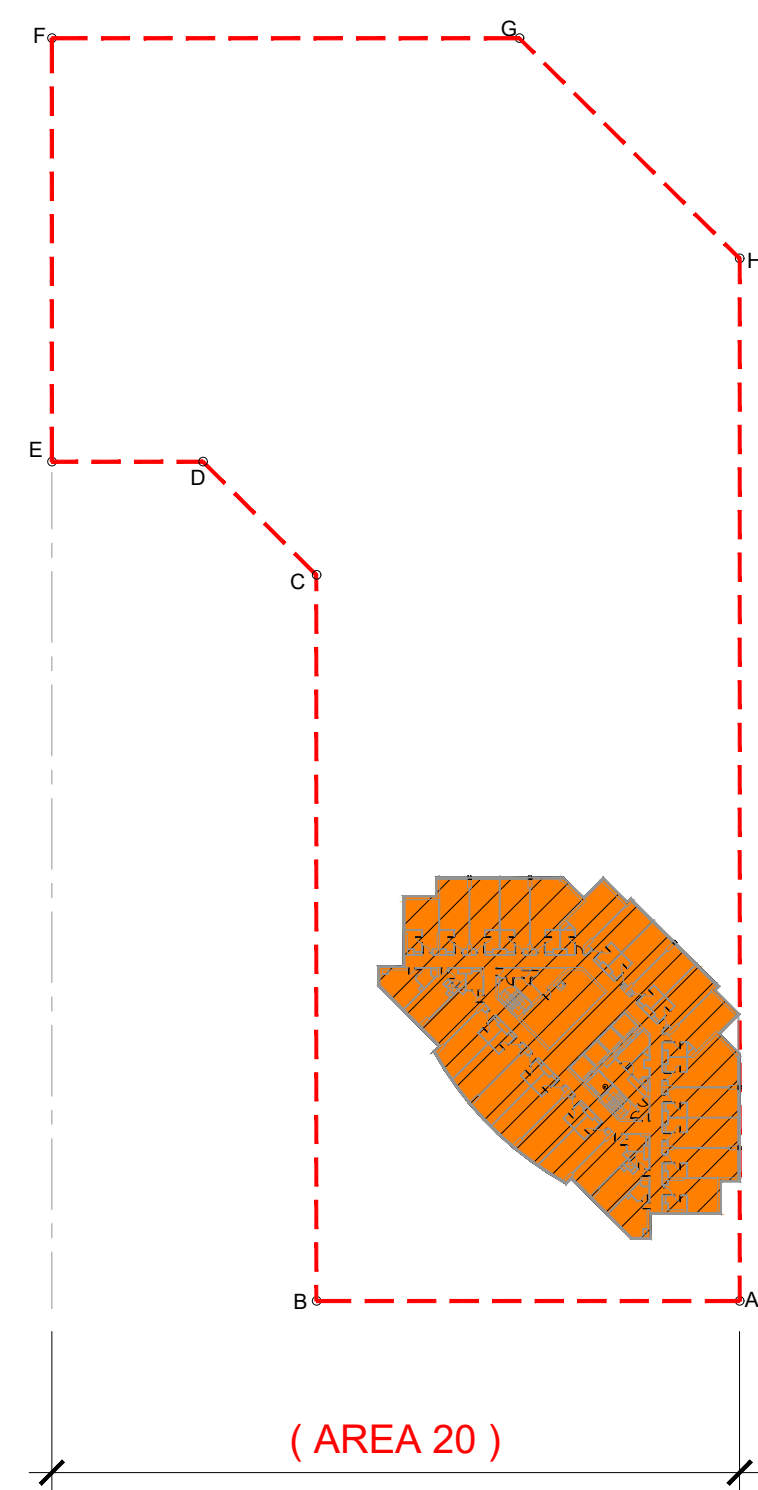
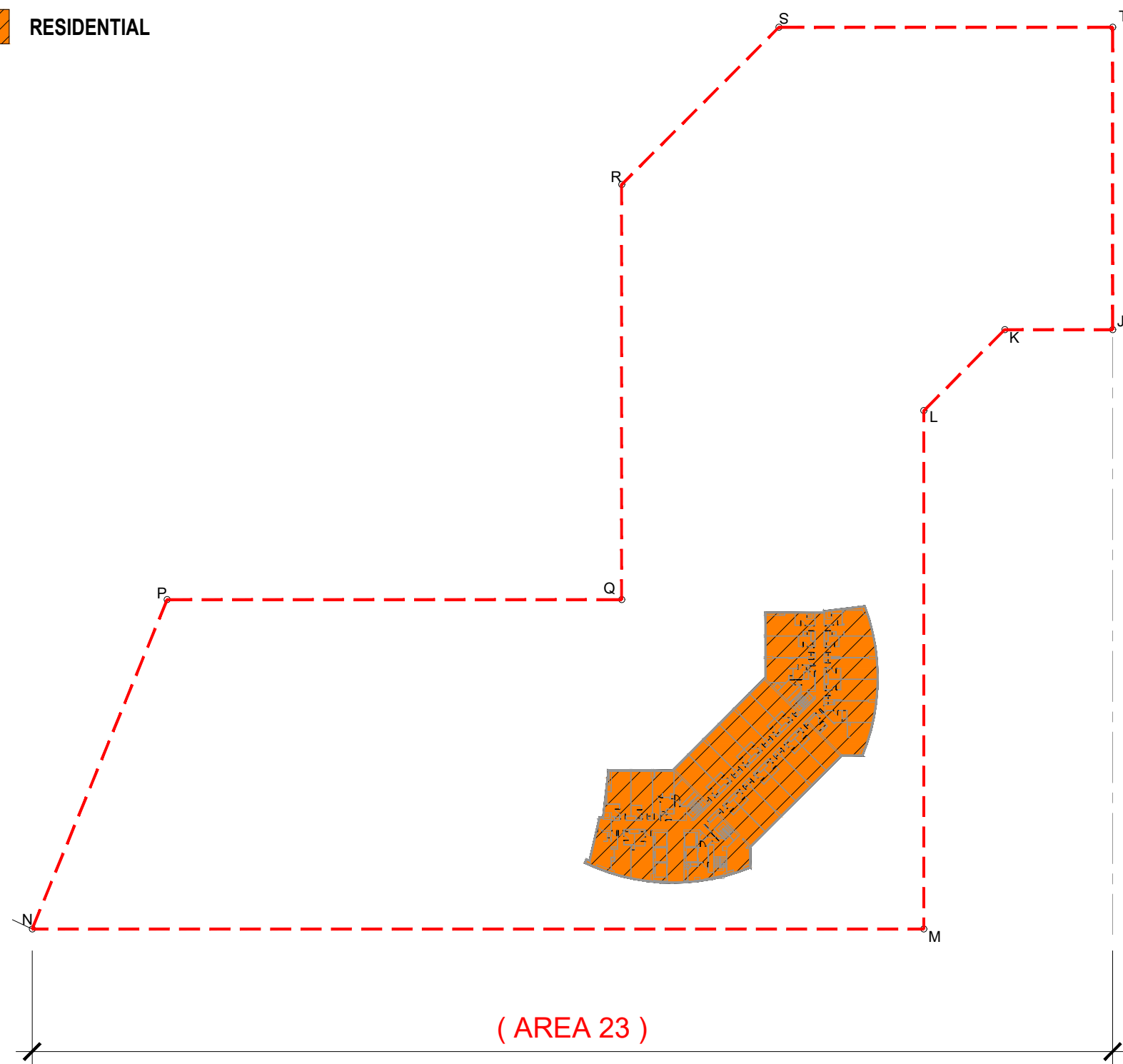
PROPOSED SCHEME

- APPLICATION SITE BOUNDARY
- RESIDENTIAL
- COMMERCIAL
- RESIDENTIAL OPEN SPACE / LANDSCAPE AREA

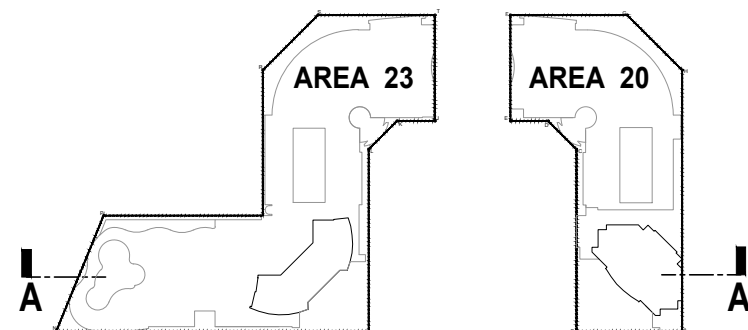


PROPOSED SCHEME

 APPLICATION SITE BOUNDARY
 RESIDENTIAL

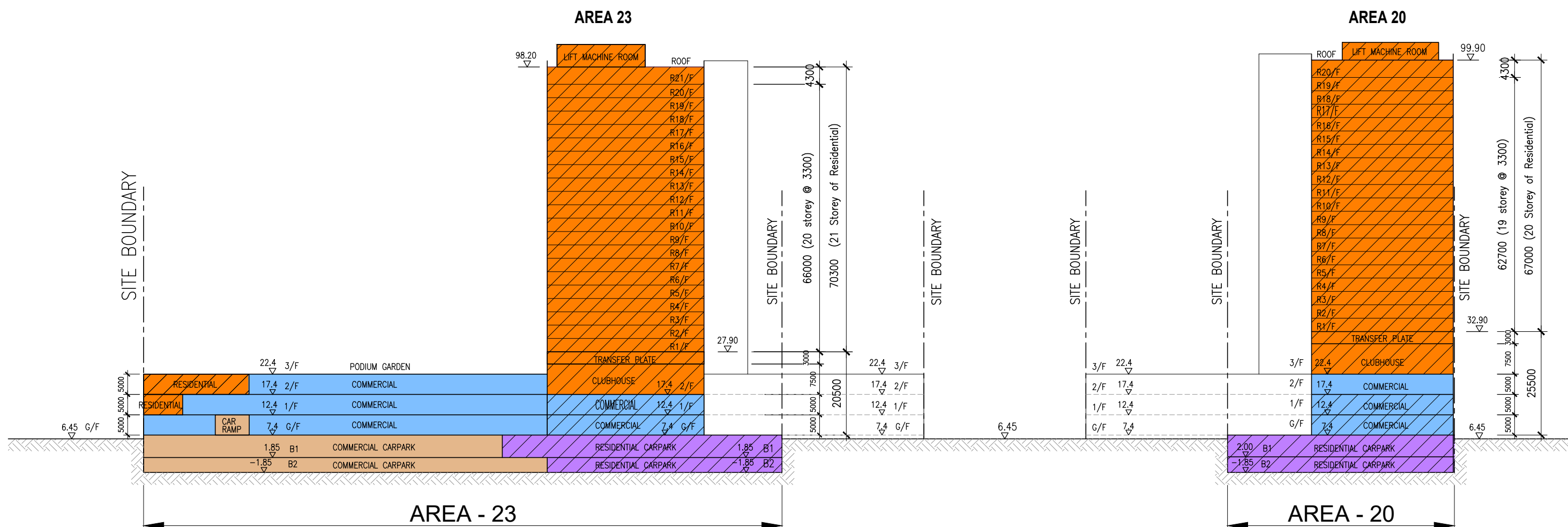


PROPOSED SCHEME



KEY PLAN (N.T.S.)

- APPLICATION SITE BOUNDARY
- RESIDENTIAL CARPARK
- COMMERCIAL
- COMMERCIAL CARPARK
- RESIDENTIAL



PROPOSED SCHEME

APPENDIX 2

PHOTOGRAPHS TAKEN ON SITE

Hotel in Area 23

Hotel in Area 20

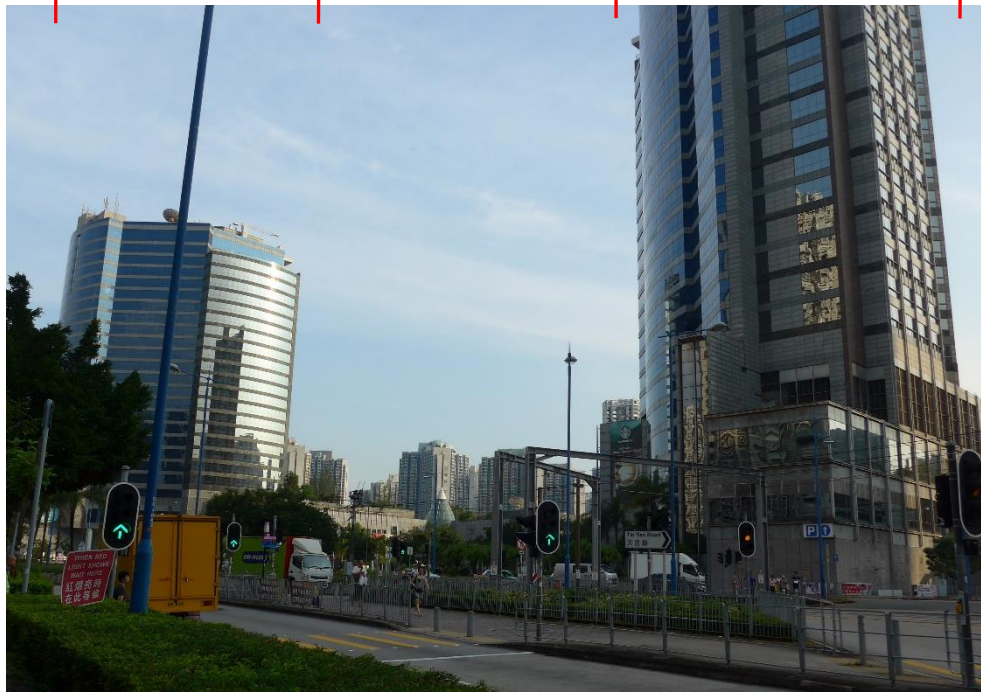


Plate 1: Project Site (the existing hotels)

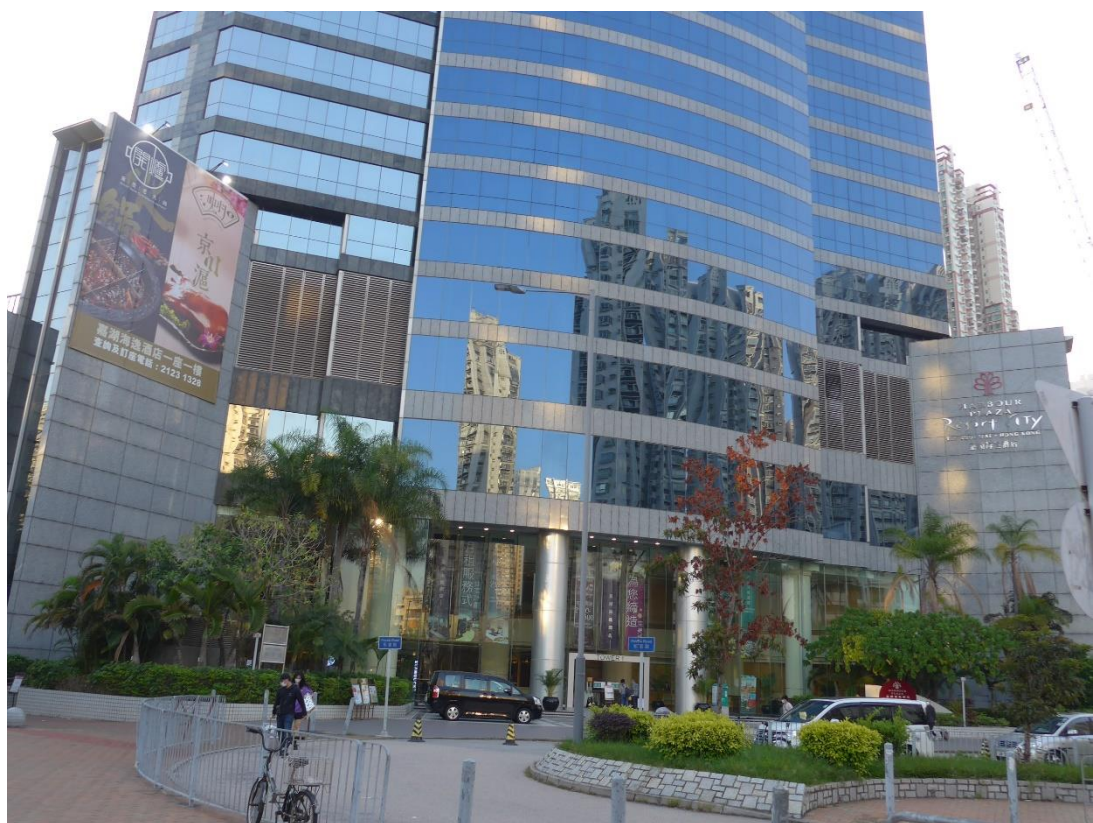


Plate 2: The existing hotel (in Area 20)

Westwood Hong & Associates Ltd

PROJECT: 22464

**Proposed Residential Development
at Tin Shui Wai Town Lot No. 4**

TITLE:

Photographs taken on Site

FIGURE

A2-1



Plate 3: The existing hotel (in Area 23)

Westwood Hong & Associates Ltd

PROJECT: 22464

**Proposed Residential Development
at Tin Shui Wai Town Lot No. 4**

TITLE:

Photographs taken on Site

FIGURE

A2-2

APPENDIX 3

CONFIRMATION FROM TD

Claudia Yim

From: Tik Wai WONG <tikwaiwong@td.gov.hk>
Sent: Monday, October 3, 2022 5:25 PM
To: Claudia Yim
Cc: 'Kelvin Leung'; Wilson KH MAN
Subject: Re: S16 Planning Application Proposed Residential Development at Tin Shui Wai Town Lot No. 4 - Road Type Classification
Attachments: 22012HK road type EPD's email.pdf; FIG 1 - SURVEY INDEX FOR TNIA .pdf

Dear Claudia,

I have no objection to the proposed road type for road link G, H and I.

Thanks and regards,
Dicky Wong
E/SD5, TE(NTW), TD
Tel: 2399 6913

From: "Claudia Yim " <claudiayim@ctaconsultants.com>
To: <tikwaiwong@td.gov.hk>
Cc: "'Kelvin Leung'" <kelvinleung@ctaconsultants.com>
Date: 11/07/22 18:11
Subject: S16 Planning Application Proposed Residential Development at Tin Shui Wai Town Lot No. 4 - Road Type Classification

Dear Mr Wong,

As per comments from EPD via the email dated on 8 July 2022, classification of road types for a few nearby roads of the proposed development are required to be endorsed by TD. Comments from EPD is attached and highlighted for your reference.

Thus, we would like to seek your confirmation and endorsement of the classification of road types for the nearby roads of the proposed development as follows:

Road Link	Road Name	Proposed Road Type	Justification
G	Ka Yan Street (southeast of Tin Shui Wai PTI)	Local Access Road	Connects to the local dis
H	Ka Yan Street (southwest of Tin Shui Wai PTI)	Local Access Road	Connects to the Local ac
I	Ka Yan Street (northwest of Tin Shui Wai PTI)	Local Access Road	Connects to the local dis

Should you have any quires require further information, please feel free to contact the undersigned at 22140849.

Many thanks and your earliest reply will be highly appreciated!

Best regards,

Appendix 7

Sewerage Impact Assessment

PROJECT NO. P2327

**SEWERAGE IMPACT ASSESSMENT REPORT
FOR
PROPOSED RESIDENTIAL DEVELOPMENT
IN
TIN SHUI WAI TOWN LOT NO. 4**

GREG WONG & ASSOCIATES LTD.

Prepared by:	Kelvin Au Yeung
Checked by:	Felix Cheng
Approved by:	Kevin Tang
Report No.:	2327G003
Revision:	-
Date:	Apr 2022

INDEX

Section

1.	Introduction.....	3
2.	Existing Sewerage Condition	3
3.	Sewerage Generation of the Proposed Redevelopment of the Hotel Portion	10
4.	Changes to Sewerage Characteristics and Potential Sewerage Impacts that Might Arise	13
5.	Conclusion.....	13

Appendices

Appendix A	Site Location Plan
Appendix B	Master Layout Plan
Appendix C	Sewerage and Land Use Plan
Appendix D	Sewerage Record Plan
Appendix E	Sewerage Catchment Index Plan and Proposed Sewerage Plan
Appendix F	Hydraulic Design Check for Proposed Sewerage System
Appendix G	Draft Tin Shui Wai Outline Development Plan

1. Introduction

Greg Wong & Associates was commissioned to carry out a sewerage impact assessment (SIA) for a Section 16 planning application in Tin Shui Wai Town Lot No. 4.

The development proposal involves the conversion of the existing hotel buildings on site with 55,668m² GFA (i.e. Harbour Plaza Resort City (Towers 1 and 2)) for residential uses and a minor portion of 5,863m² from G/F to 1/F that integrates with the existing shopping mall for commercial uses. The existing commercial mall Fortune Kingswood Phases I and II and the basement carpark will be retained. It is proposed that the gross floor area for the shopping facilities at the Lot will slightly increase from 46,532m² to 52,395m².

Sewerage impact assessment (hereinafter referred to as 'SIA') including any adverse sewerage impacts as may arise from the conversion of the hotel blocks at the Lot, and any necessary mitigation and improvement works shall be submitted to the relevant government department for their approval.

The Lot comprises two sites in the project, namely Area 20 and Area 23. The site area of Area 20 is 11,000 square meter while the site area of Area 23 is 16,900 square meter. Two sites are both similar to a "L" shape. Both sites are zoned Commercial in the outline zoning plan.

The existing hotel rooms will be converted into 1,102 residential units in the proposed development. As the existing commercial podium and basement carpark will be retained, no filling up of ground will be necessary. The estimated project intake year will be 2028.

The location plan and master layout plan of the proposed development are enclosed in [Appendices A](#) and [B](#). The existing land use is shown in [Appendix C](#). This Sewerage Impact Assessment (SIA) report is prepared for approval from authorities concerned.

2. Design Codes and Reference

The design has been carried out in accordance with the following codes and guidelines:

- EPD/TP 1/05
- Commercial and Industrial Floor Space Utilization Survey
- Sewerage Manual (2013)

3. Existing Sewerage Condition (excluding the existing hotel uses at Area 20 and Area 23 at TSWTL 4)

3.1 The Site

The total site covers 27,900 square metre. It is situated on the existing Harbour Plaza Resort City Tower I and II. The site is located in urban area. A site reconnaissance has been carried out and the existing land uses of the site are recorded on the Sewerage and Land Use Plans in [Appendix C](#).

3.2 Existing Sewerage

The sewerage record plans for the site have been retrieved from Drainage Services Department. A comprehensive sewerage system is found in the vicinity of site since it is a developed urban area. The sewerage record plans are enclosed in [Appendix D](#). The calculation of the discharge of the existing catchment is shown in the

following. The catchment index plan and calculations for the capacity of the existing sewers are enclosed in **Appendix E** and **Appendix F** respectively.

The design assumption has been carried out in accordance with website data and guidelines. For the students, teachers and staff in school, Kindergarten, Primary School and Secondary website are referred to estimated the sewerage generation. For the resident of apartment, real estate website is considered to check the no. of flats in a building. The sewerage generation from residential are estimated by occupant per flats in accordance to Census 2016. Leisure and Cultural Services Department are checked for public swimming pool volume.

			Shap Pat Heung Rural Committee Kung Yik She Primary School (C1A)	Shap Pat Heung Rural Committee Kung Yik She Secondary School (C1A)	Queen Elizabeth School Old Students' Association Secondary School (C1B)
No. of Flats			0	0	0
Occupant per Flats (2016 census)			2.8	2.8	2.8
Population	Residential		0	0	0
	Employee		0	0	0
	Students		600	900	900
	Teachers & Staff		100	100	100
Unit Flow Factor (UFF)	Domestic	m ³ /day/person	0.000	0.000	0.000
	Commercial Employee	m ³ /day/employee	0.080	0.080	0.080
	Commercial Activities	m ³ /day/employee	0.200	0.200	0.200
	Students	m ³ /day/students	0.040	0.040	0.040
	Teachers & Staff	m ³ /day/teachers	0.280	0.280	0.280
Foul Water Flow (Q)	Domestic	m ³ /s	0.000000	0.000000	0.000000
	Commercial Employee	m ³ /s	0.000000	0.000000	0.000000
	Commercial Activities	m ³ /s	0.000000	0.000000	0.000000
	Students	m ³ /s	0.000278	0.000417	0.000417
	Teachers & Staff	m ³ /s	0.000324	0.000324	0.000324
	Total	m³/s	0.000602	0.000741	0.000741

Table 3.1 Assumed Populations and Average Foul Flow which catchment covers the existing developments within C1A + C1B to manhole FMH1009422

	Catchment C1 (C1A + C1B)
Calculated Total Average Flow (m ³ /s)	0.002083
Peaking Factor (Main Stream)	8*
Total Peak Flow (m ³ /s)	0.016664

**Peaking Factor Calculation is attached in Table 3.12*

Table 3.2 Total Peak Flow Calculations from existing developments (Catchment C1A + C1B) to manhole FMH1009422

			Fortune Kingswood Phase I Area 20 of TSWTL4 (to be retained)	
Population	Commercial Activities		Retail	Restaurant
	Gross Floor Area (GFA)	m ²	14671.000	6287.000
	Worker Density	workers per GFA (in 100 m ²)	2.1	5.1
	Employee		308	321
Unit Flow Factor (UFF)	Commercial Employee	m ³ /day/employee	0.08	0.08
	Commercial Activities	m ³ /day/employee	0.20	1.50
Foul Water Flow (Q)	Commercial Employee	m ³ /s	0.000285185	0.000297222
	Commercial Activities	m ³ /s	0.000712963	0.005572917
	<i>Sub-total</i>	<i>m³/s</i>	<i>0.000998148</i>	<i>0.005870139</i>
Peaking Factor (P) (From Terminal Manhole)			5*	
Catchment Inflow Factor (PCIF)			1	
Peak Foul Water Flow (Qp)	$= Q \times P$	m ³ /s	0.034341435	

**Peaking Factor Calculation is attached in Table 4.5*

Table 3.3 Total Peak Flow Calculations from existing Fortune Kingswood Phase I (to be retained) to manhole FMH1009422

			Lynwood Court (C2A)	Gigamind Primary School (C2B)	Gigamind Kindergarten (C2B)	Maywood Court (1-8 Blocks) (C2B)	Kenswood Court (1-7 Blocks) (C2C)	Talent Kindergarten (C2C)	Kingswood Villas Clubhouse, Dragon Park and Integrated Services Centre (C2C)
No. of Flats			2863	0	0	2306	1985	0	0
Occupant per Flats (2016 census)			2.8	2.8	2.8	2.8	2.8	2.8	2.8
Population	Residential		8016	0	0	6457	5558	0	0
	Employee		100	0	0	80	80	0	120
	Students		0	600	180	0	0	180	0
	Teachers & Staff		0	100	100	0	0	100	0
Unit Flow Factor (UFF)	Domestic	m ³ /day/person	0.270	0.000	0.000	0.270	0.270	0.000	0.000
	Commercial Employee	m ³ /day/employee	0.080	0.080	0.080	0.080	0.080	0.080	0.080
	Commercial Activities	m ³ /day/employee	0.200	0.200	0.200	0.200	0.200	0.200	0.200
	Students	m ³ /day/students	0.040	0.040	0.040	0.040	0.040	0.040	0.040
	Teachers & Staff	m ³ /day/teachers	0.280	0.280	0.280	0.280	0.280	0.280	0.280
Foul Water Flow (Q)	Domestic	m ³ /s	0.025050	0.000000	0.000000	0.020178	0.017369	0.000000	0.000000
	Commercial Employee	m ³ /s	0.000093	0.000000	0.000000	0.000074	0.000074	0.000000	0.000111
	Commercial Activities	m ³ /s	0.000231	0.000000	0.000000	0.000185	0.000185	0.000000	0.000278
	Students	m ³ /s	0.000000	0.000278	0.000083	0.000000	0.000000	0.000083	0.000000
	Teachers & Staff	m ³ /s	0.000000	0.000324	0.000324	0.000000	0.000000	0.000324	0.000000
	Total	m³/s	0.025374	0.000602	0.000407	0.020437	0.017628	0.000407	0.000389

Table 3.4 Assumed Populations and Average Foul Flow from existing developments (C2A+C2B+C2C) to manhole FMH1009163 which catchment covers the existing developments within C1A + C1B + C2A + C2B + C2C

Swimming Pool	Lynwood Court	Maywood Court
Existing Backwashing Volume for Each Filter (m3) (Filter Area of Swimming Pool)	150	80
Turnover Rate (s)	21600	21600
Backwashing Flowrate (m3/s)	0.006944444	0.003703704
Number of Filter	1	1
Backwash Duration (min/day)	15	15
Backwash Volume (m3)	6.25	3.33
Backwash Discharge (m3/day)	6.25	3.33
Backwashing Discharge (m3/s)	7.2338E-05	3.85802E-05

Table 3.5 Backwash Flows of the existing Swimming Pool in Catchment C2 to manhole FMH1009163

Existing Swimming Pool	Area 23 Swimming Pool
Existing Backwashing Volume for Each Filter (m3) (Filter Area of Swimming Pool)	180
Turnover Rate (s)	21600
Backwashing Flowrate (m3/s)	0.008333333
Number of Filter	1
Backwash Duration (min/day)	15
Backwash Volume (m3)	7.50
Backwash Discharge (m3/day)	7.5
Backwashing Discharge (m3/s)	8.68056E-05

Table 3.6 Backwash Flows of the existing area 23 Swimming Pool from the Proposed Development to manhole FMH1009432

	Catchment C1+C2+Kingswood Phase I+Commercial (Area 20) Residential (Area20+Area23) (C1A+C1B+C2A+C2B+C2C+Area 20+Residential Area23)
Calculated Total Average Flow (m3/s)	$0.002083+0.065355+0.014834=0.082272$
Peaking Factor (Main Stream)	4*
Total Peak Flow (m3/s)	$(0.002083+0.065244+0.014747) \times 4 + 7.2338E-5 + 3.85802E-5 + 8.68056E-5$ $=0.328494$

**Peaking Factor Calculation is attached in Table 3.12*

Table 3.7 Total Peak Flow Calculations from existing developments (Catchment C1A + C1B + C2A + C2B + C2C) and proposed developments (Area 20+Area 23) and existing Kingswood Phase I to manhole FMH1009163

			Fortune Kingswood Phase II Area 23 of TSWTL4 (to be retained)	
Population	Commercial Activities		Retail	Restaurant
	Gross Floor Area (GFA)	m ²	22006.000	9431.000
	Worker Density	workers per GFA (in 100 m ²)	2.1	5.1
	Employee		462	481
Unit Flow Factor (UFF)	Commercial Employee	m ³ /day/employee	0.08	0.08
	Commercial Activities	m ³ /day/employee	0.20	1.50
Foul Water Flow (Q)	Commercial Employee	m ³ /s	0.000427778	0.00044537
	Commercial Activities	m ³ /s	0.001069444	0.008350694
	<i>Sub-total</i>	<i>m³/s</i>	<i>0.001497222</i>	<i>0.008796065</i>
Peaking Factor (P) (From Terminal Manhole)			5*	
Catchment Inflow Factor (PCIF)			1	
Peak Foul Water Flow (Qp)	$= Q \times P$	<i>m³/s</i>	<i>0.051466435</i>	

**Peaking Factor Calculation is attached in Table 4.4*

Table 3.8 Total Peak Flow Calculations from existing Fortune Kingswood Phase II (to be retained) to manhole FMH1009169

			Kenswood Court Tower 8-14 (C3A)	Ha Mei San Tsuen (C3B)	Tin Shui Wai Catholic Primary School (C3C)	The HKMA KS LO College(C3D)	Buddhist Mau Fung Memorial College(C3E)
No. of Flats			1986	216	0	0	0
Occupant per Flats (2016 census)			2.8	2.8	2.8	2.8	2.8
Population	Residential		5561	605	0	0	0
	Employee		70	20	0	0	0
	Students		0	0	900	900	900
	Teachers & Staff		0	0	100	100	100
Unit Flow Factor (UFF)	Domestic	m ³ /day/person	0.270	0.270	0.000	0.000	0.000
	Commercial Employee	m ³ /day/employee	0.080	0.080	0.080	0.080	0.080
	Commercial Activities	m ³ /day/employee	0.200	0.200	0.200	0.200	0.200
	Students	m ³ /day/students	0.040	0.040	0.040	0.040	0.040
	Teachers & Staff	m ³ /day/teachers	0.280	0.280	0.280	0.280	0.280
Foul Water Flow (Q)	Domestic	m ³ /s	0.017378	0.001891	0.000000	0.000000	0.000000
	Commercial Employee	m ³ /s	0.000065	0.000019	0.000000	0.000000	0.000000
	Commercial Activities	m ³ /s	0.000162	0.000046	0.000000	0.000000	0.000000
	Students	m ³ /s	0.000000	0.000000	0.000417	0.000417	0.000417
	Teachers & Staff	m ³ /s	0.000000	0.000000	0.000324	0.000324	0.000324
	Total	m³/s	0.017605	0.001955	0.000741	0.000741	0.000741

Table 3.9 Assumed Populations and Average Foul Flow from existing development (C3A+C3B+C3C+C3D+C3E) to manhole FMH1009175 which catchment covers the existing developments within C1A+C1B+C2A+C2B+C2C+C3A+C3B+C3C+C3D+C3E

Swimming Pool	TSW Swimming Pool (C3F)
Existing Backwashing Volume for Each Filter (m3) (Filter Area of Swimming Pool)	180
Turnover Rate (s)	21600
Backwashing Flowrate (m3/s)	0.008333333
Number of Filter	1
Backwash Duration (min/day)	15
Backwash Volume (m3)	7.50
Backwash Discharge (m3/day)	7.5
Backwashing Discharge (m3/s)	8.68056E-05

Table 3.10 Backwash Flows of the existing Swimming Pool in Catchment C3 to manhole FMH1009175

	Catchment C1+C2+C3+Area 20+Area 23 (C1A+C1B+C2A+C2B+C2C+C3A+C3B+C3C+C3D+C3E+C3F+Area 20+Area 23)
Calculated Total Average Flow (m3/s)	0.082272+0.021870+0.011449=0.115591
Peaking Factor (Main Stream)	4*
Total Peak Flow (m3/s)	(0.002083+0.065244+0.021783+0.026197)×4+7.2338E-5+3.85802E-5+8.68056E-5 =0.461426

*Peaking Factor Calculation is attached in Table 3.12

Table 3.11 Total Peak Flow Calculations from existing developments (Catchment C1A+C1B+C2A+C2B+C2C+C3A+C3B+C3C+C3D+C3E) and existing and proposed developments (Area 20 + Area 23) to manhole FMH1009175

	Catchment C1	Catchment C1+C2+Proposed Area 20+Proposed Residential Area 23+Existing Kingswood Phase I	Catchment C1+C2+C3+Proposed Area 20+Proposed Area 23+Existing Kingswood Phase I and II
Calculated Total Average Flow (m3/day)	180	7108.41	9987.15
Contributing Population	667	26328	36990
Peaking Factor (Main Stream)	8	4	4

Table 3.12 Peaking Factor Calculations of existing catchments (C1+C2+C3) and existing and proposed development (Area 20+Area 23)

4. Sewerage Generation of the Proposed Development

Sewerage generation of the Proposed Development will be from the residential GFA of 55,668m² and the commercial GFA of 5,863m² that are proposed to be converted from the existing hotel at Area 20 and Area 23. The estimated no. of flats of proposed residential units at Area 20 and Area 23 are 485 and 617 residents respectively. Despite the average unit size of the proposed development is much lower than the Median Floor Area for Private Permanent Housing for Tin Shui Wai, for conservative assessment purpose, PPOF of 2.8 is adopted in this sewage impact assessment. According to the Draft Tin Shui Wai Outline Development Plan No. D/TSW-S/1H (attached in Appendix G), the residential sites in the vicinity of TSWTL4 including Central Park Towers and Kingswood Villas are Zoned "Residential Zone 1 (R1)". Also, with reference to the HKPSG, R1 covers the highest density of residential development and applies to districts well served by high capacity public transport systems such as rail station or other major transport interchange. The Lot is located at the centre of Tin Shui Wai New Town and is located right next to LRT Tin Wing Station as well as the major public transport interchange at TSWTL 24. The proposed development on the Lot is a R1 development with a significant component of a shopping mall of 52,395 m² on the lowest 3 floors and residential development. The maximum domestic plot ratio is 1.995.

According to Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning EPD/TP1/05, Domestic Unit Flow Factor for R1 development is 0.19 m³/day/person. The Peaking Factor from Sewerage Manual and EPD Report no. EPD/TP1/05 has been used

to determine the dry weather flow and peak sewerage flow from the development. According to Section 11.5, under normal situation, peaking factors (excluding stormwater allowance) are applicable to planning sewerage facilities receiving flow from new upstream sewerage systems which essentially have no misconnections and defects for infiltration. Therefore, peaking factor 5 is adopted for the proposed development of Area 20, Area 23, Fortune Kingswood Phase I and Fortune Kingswood Phase II. The design calculation for sewerage discharge from the proposed development is tabulated in the following table:

			Area 20	Area 23
No. of Flats			485	617
Occupant per Flats (HKPSG)			2.8	2.8
Population	Residential		1358	1728
	Employee		50	50
Unit Flow Factor (UFF)	Domestic	m ³ /day/person	0.190	0.190
	Commercial Employee	m ³ /day/employee	0.080	0.080
	Commercial Activities	m ³ /day/employee	0.200	0.200
Foul Water Flow (Q)	Domestic	m ³ /s	0.002986	0.003800
	Commercial Employee	m ³ /s	0.000046	0.000046
	Commercial Activities	m ³ /s	0.000116	0.000116
	<i>Total</i>	<i>m³/s</i>	<i>0.003148</i>	<i>0.003962</i>
Peaking Factor (P) (From Terminal Manhole)			5*	5*
Peak Foul Water Flow (Q _p)	$= Q \times P$	<i>m³/s</i>	<i>0.015742</i>	<i>0.01981</i>

**Peaking Factor Calculation is attached in Table 4.5*

Table 4.1 Assumed Populations and Peak Foul Flow from Proposed Residential Development area 20 and area 23 to manhole FMH1009432 (From Terminal Manhole)

The indicative breakdown of the employee in the proposed development is shown below:

Area 20

Security Staff: 15

Management Staff: 10

Operational Staff: 25

Total: 50

Area 23

Security: 15

Management Staff: 10

Operational Staff: 25

Total: 50

		Fortune Kingswood Phase I Area 20 of TSWTL4		Fortune Kingswood Phase II Area 23 of TSWTL4	
		Retail	Restaurant	Retail	Restaurant
Gross Floor Area (m ²)	Commercial GFA to be converted from the hotel	1642*	703*	2463*	1055*

Table 4.2 Commercial Gross Floor Area to be converted from the hotel

*The retail to restaurant ratio is assumed at 7:3

			Fortune Kingswood Phase I Area 20 of TSWTL4 (proposed commercial)		Fortune Kingswood Phase II Area 23 of TSWTL4 (proposed commercial)	
Population	Commercial Activities		Retail	Restaurant	Retail	Restaurant
	Gross Floor Area (GFA)	m ²	1642.000**	703.000**	2463.000**	1055.000**
	Worker Density	workers per GFA (in 100 m ²)	2.1	5.1	2.1	5.1
	Employee		34	36	52	54
Unit Flow Factor (UFF)	Commercial Employee	m ³ /day/employee	0.08	0.08	0.08	0.08
	Commercial Activities	m ³ /day/employee	0.20	1.50	0.20	1.50
Foul Water Flow (Q)	Commercial Employee	m ³ /s	3.14815E-05	3.33333E-05	4.81481E-05	0.00005
	Commercial Activities	m ³ /s	7.87037E-05	0.000625	0.00012037	0.0009375
	<i>Sub-total</i>	<i>m³/s</i>	<i>0.000110185</i>	<i>0.000658333</i>	<i>0.000168519</i>	<i>0.0009875</i>
Peaking Factor (P) (From Terminal Manhole)			5*		5*	
Catchment Inflow Factor (PCIF)			1		1	
Peak Foul Water Flow (Qp)	$= Q \times P$	<i>m³/s</i>	<i>0.003842593</i>		<i>0.005780093</i>	

*Peaking Factor Calculation is attached in Table 3.5

*Existing and Redeveloping Commercial Gross Floor Area is attached in Table 4.2

Table 4.3 Total Peak Flow Calculations from Proposed commercial area 20 and area 23 to manhole FMH1009422 and manhole FMH1009169 respectively

	Proposed Residential Area 20 + Area 23	Kingswood Phase I and Proposed Commercial (Area 20)	Kingswood Phase II and Proposed Commercial (Area 23)
Calculated Total Average Flow (m ³ /day)	621.84	659.82	989.22
Contributing Population	2304	2444	3664
Peaking Factor (From Terminal Manhole)	5	5	5

Table 4.4 Peaking Factor Calculation of Proposed Development with Shopping Mall (From Terminal Manhole)

- Note:
1. Peak Foul Water Flow (Q_p) = Peaking Factor (P) x Foul Water Flow (Q)
 2. EPD Technical Paper Report no. EPD/TP1/05, Table T-5:
 3. Contributing population = Calculated Total Average Flow / 0.27

The calculated peak sewerage flow from proposed redevelopment of Residential Portion at Area 20 is about 0.0157 cu.m/s. The calculation is attached in [Appendix F](#).

The calculated peak sewerage flow from proposed redevelopment of Residential Portion at Area 23 is about 0.0199 cu.m/s.

The calculated peak sewerage flow from proposed redevelopment and existing Commercial Portion at Area 20 is about 0.0382 cu.m/s.

The calculated peak sewerage flow from proposed redevelopment and existing Commercial Portion at Area 23 is about 0.0572 cu.m/s.

5. Changes to Sewerage Characteristics and Potential Sewerage Impacts that Might Arise

It is considered that the existing sewerage characteristics will not be adversely affected by the proposed development.

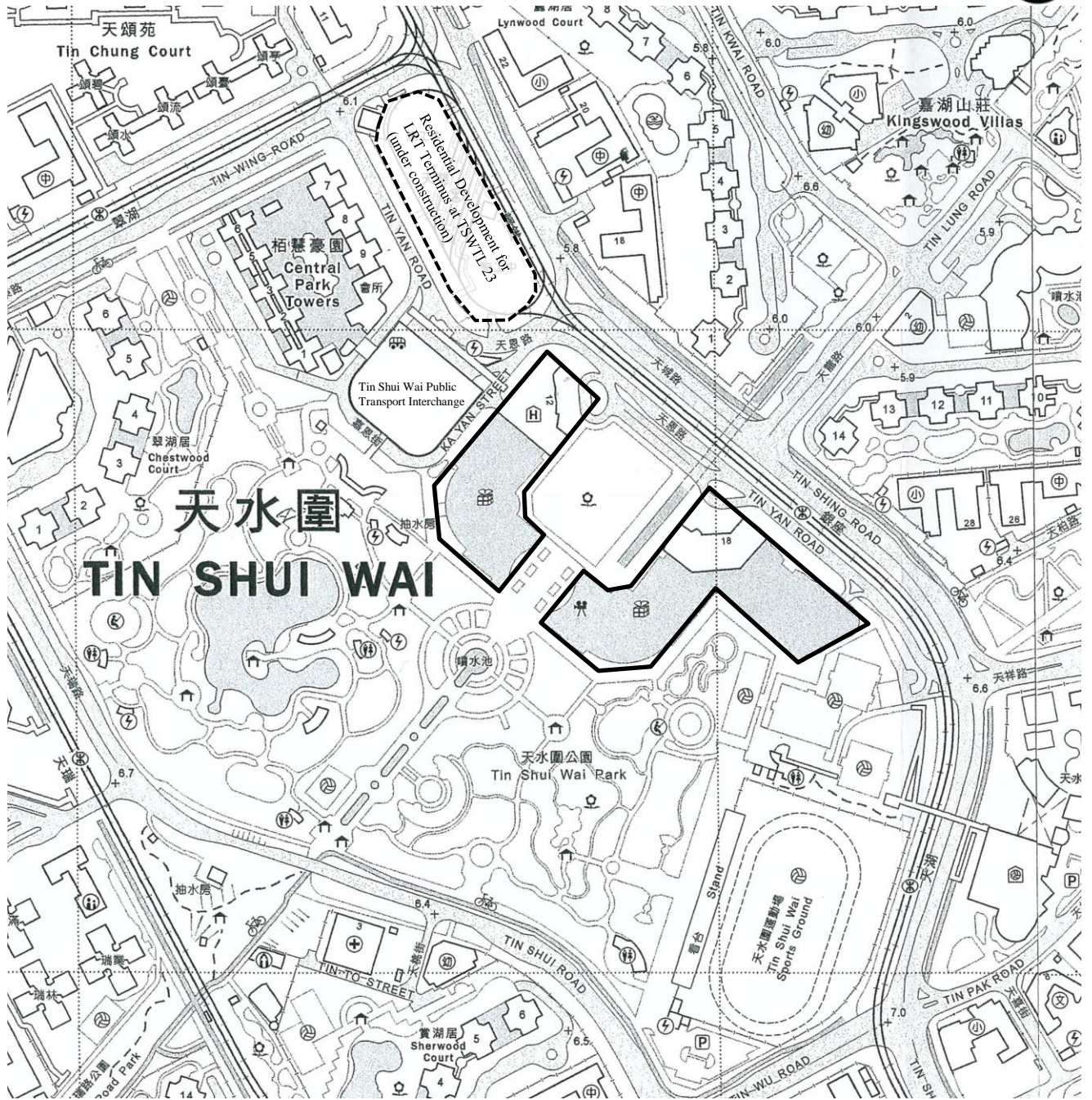
6. Conclusion

- 6.1 There is a well-developed sewerage system in nearby area of the proposed development. The existing sewerage system has sufficient capacity to cater for the discharge from the proposed development globally.
- 6.2 The proposed sewerage from Existing Kingswood Phase I and Proposed Commercial in area 20 will be discharged into FMH1009421. The proposed sewerage from Existing Kingswood Phase II and Proposed Commercial in area 23 will be discharged into FMH1009437. The proposed Residential Development of area 20 and area 23 will be diverted together and discharged into FMH1009431.
- 6.3 This sewerage impact assessment demonstrates that the proposed development will pose no adverse impact to the sewerage in the locality and to the downstream sewerage system.
- 6.4 Save for minor changes classified as Class A amendments under the Town Planning Ordinance, any changes in planning parameters in the future, resulting in increase in population for the proposed development, shall be supported by a revised sewage

impact assessment with appropriate mitigation measures where necessary and subject to the approval of the Town Planning Board.

Appendix A

Site Location Plan



Legend

 Proposed Development Area

Greg Wong & Associates Ltd

PROJECT:

**Proposed Residential Development
at Tin Shui Wai Town Lot No. 4**

TITLE:

Site Locations

FIGURE

1

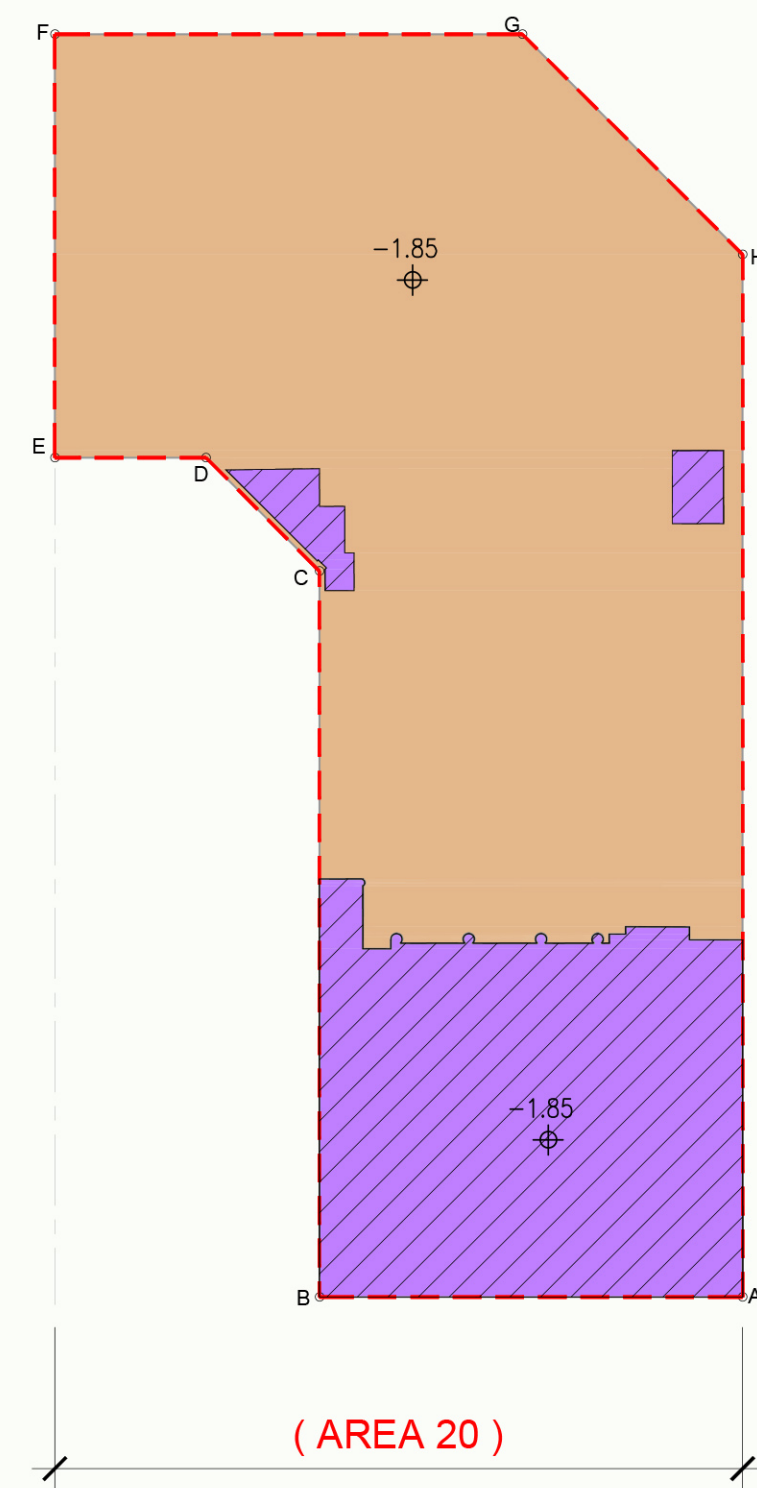
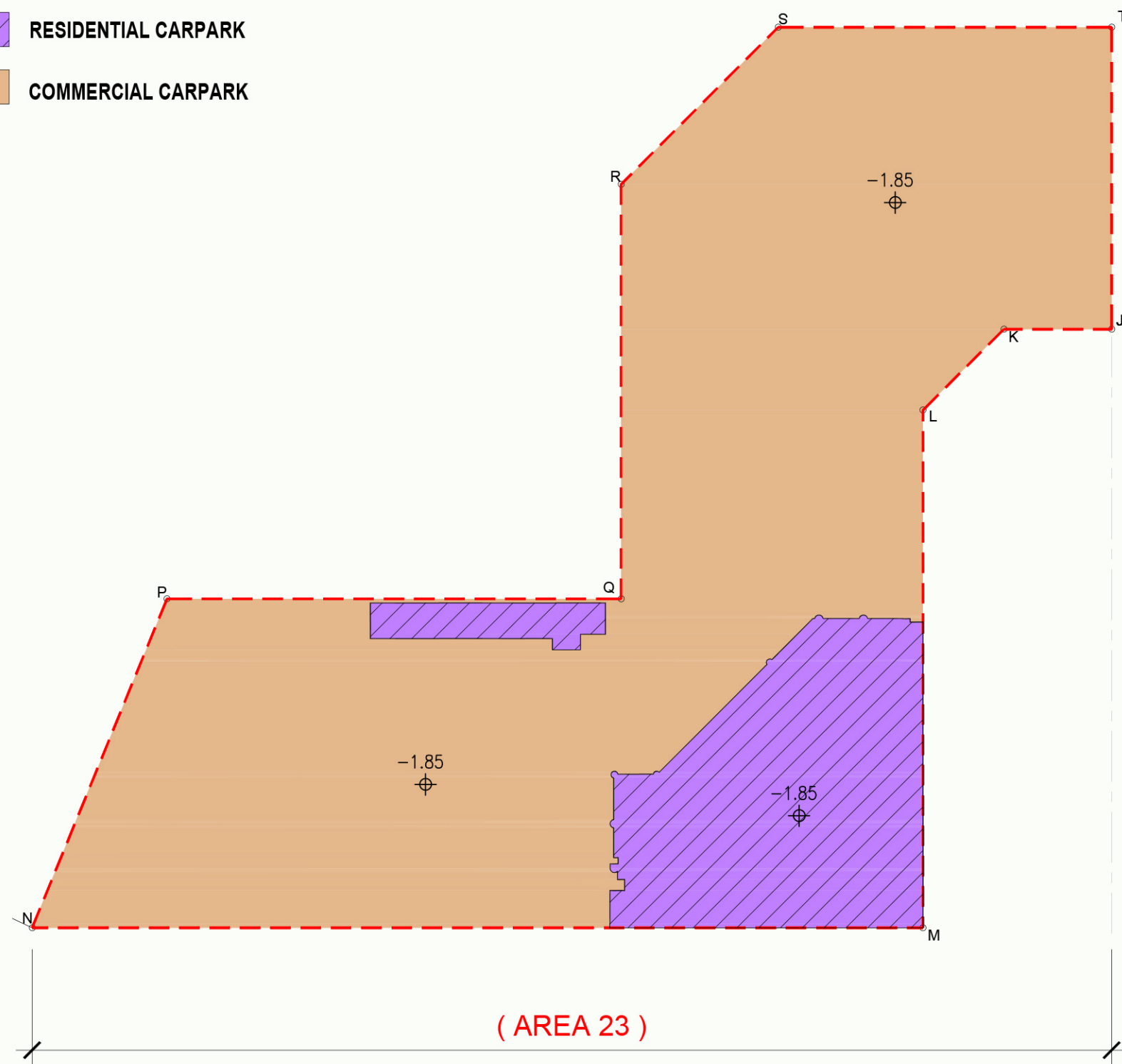
Appendix B

Master Layout Plan

 APPLICATION SITE BOUNDARY

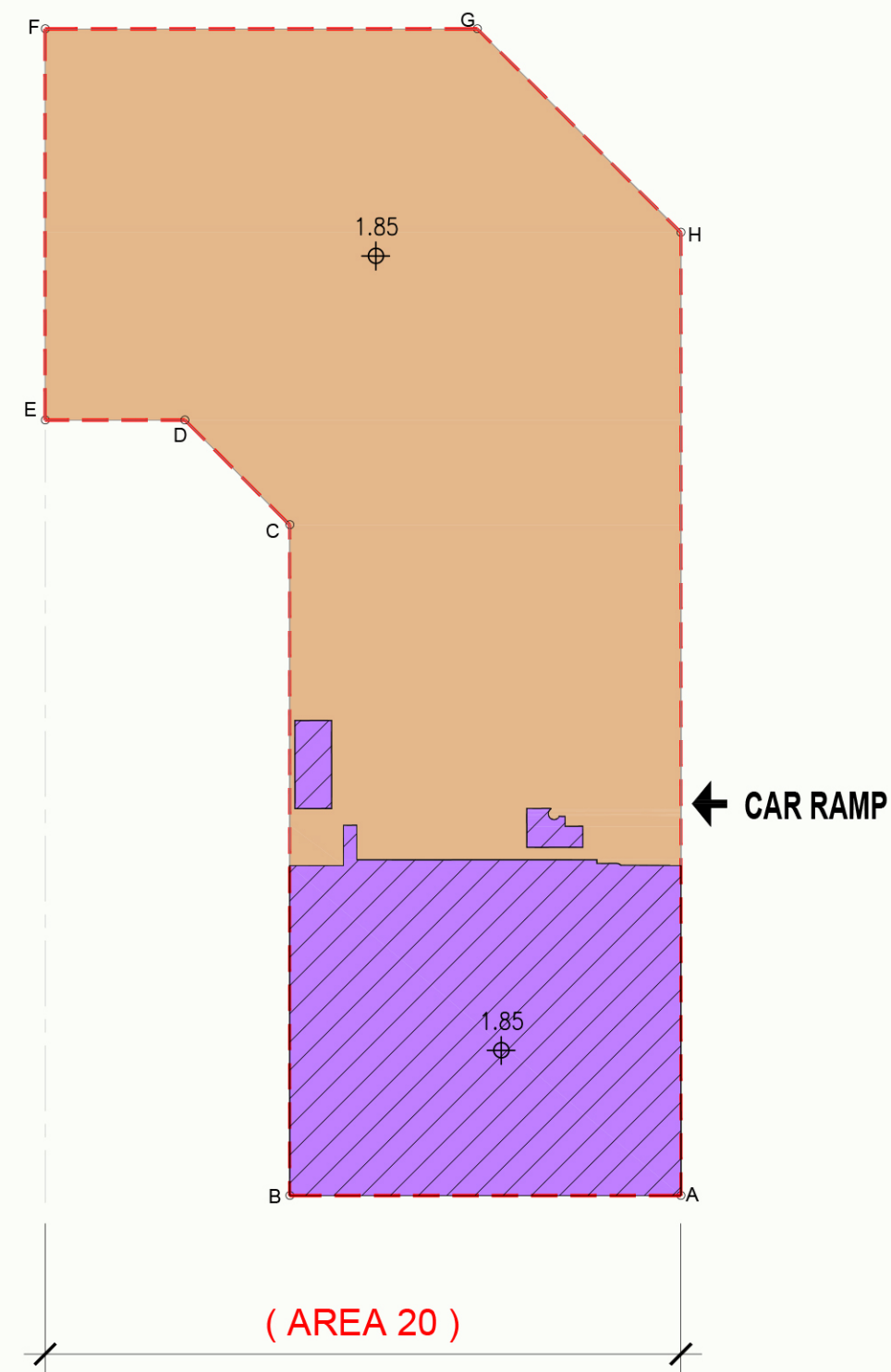
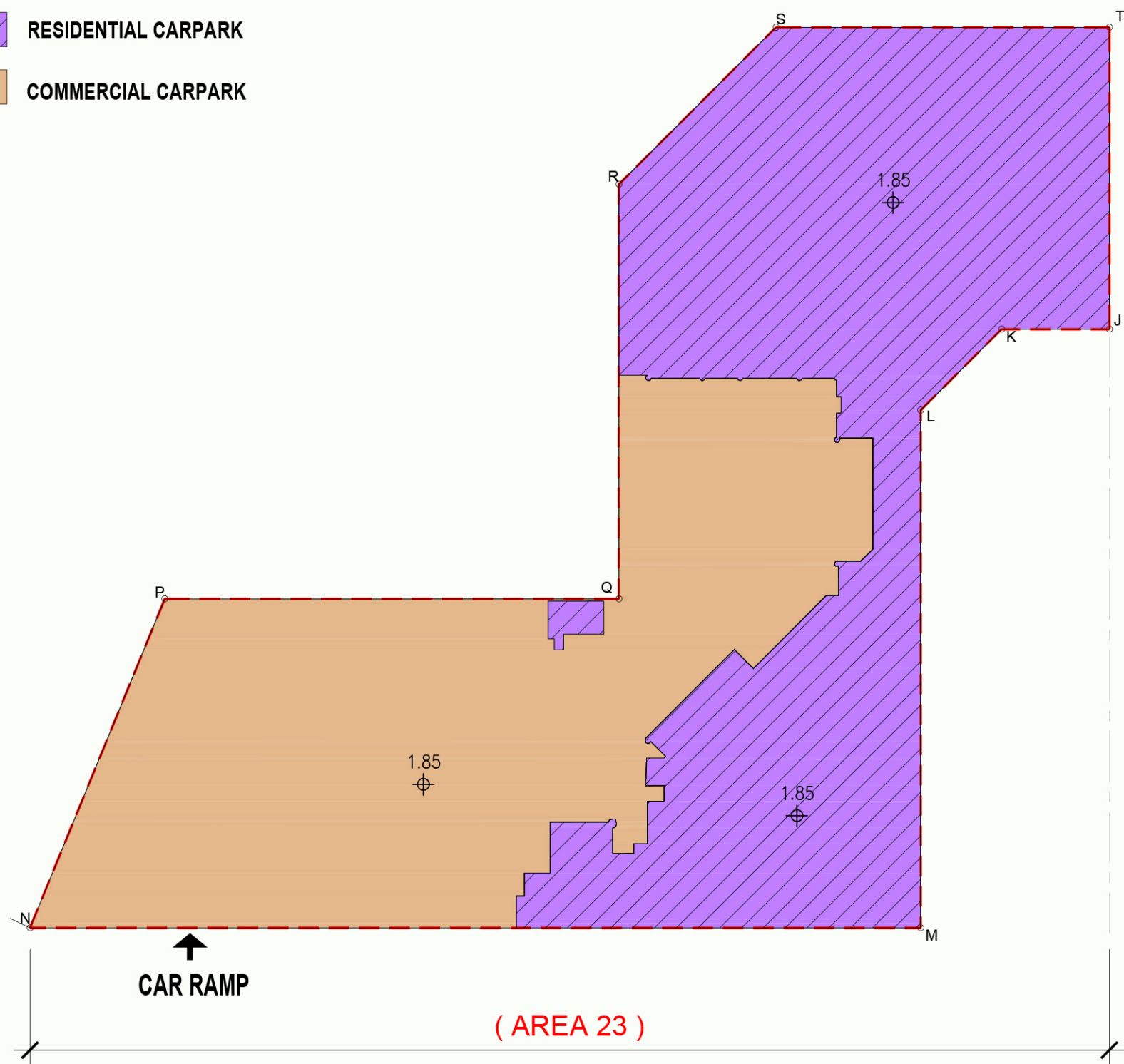
 RESIDENTIAL CARPARK

 COMMERCIAL CARPARK



PROPOSED SCHEME


- APPLICATION SITE BOUNDARY
- RESIDENTIAL CARPARK
- COMMERCIAL CARPARK




PROPOSED SCHEME

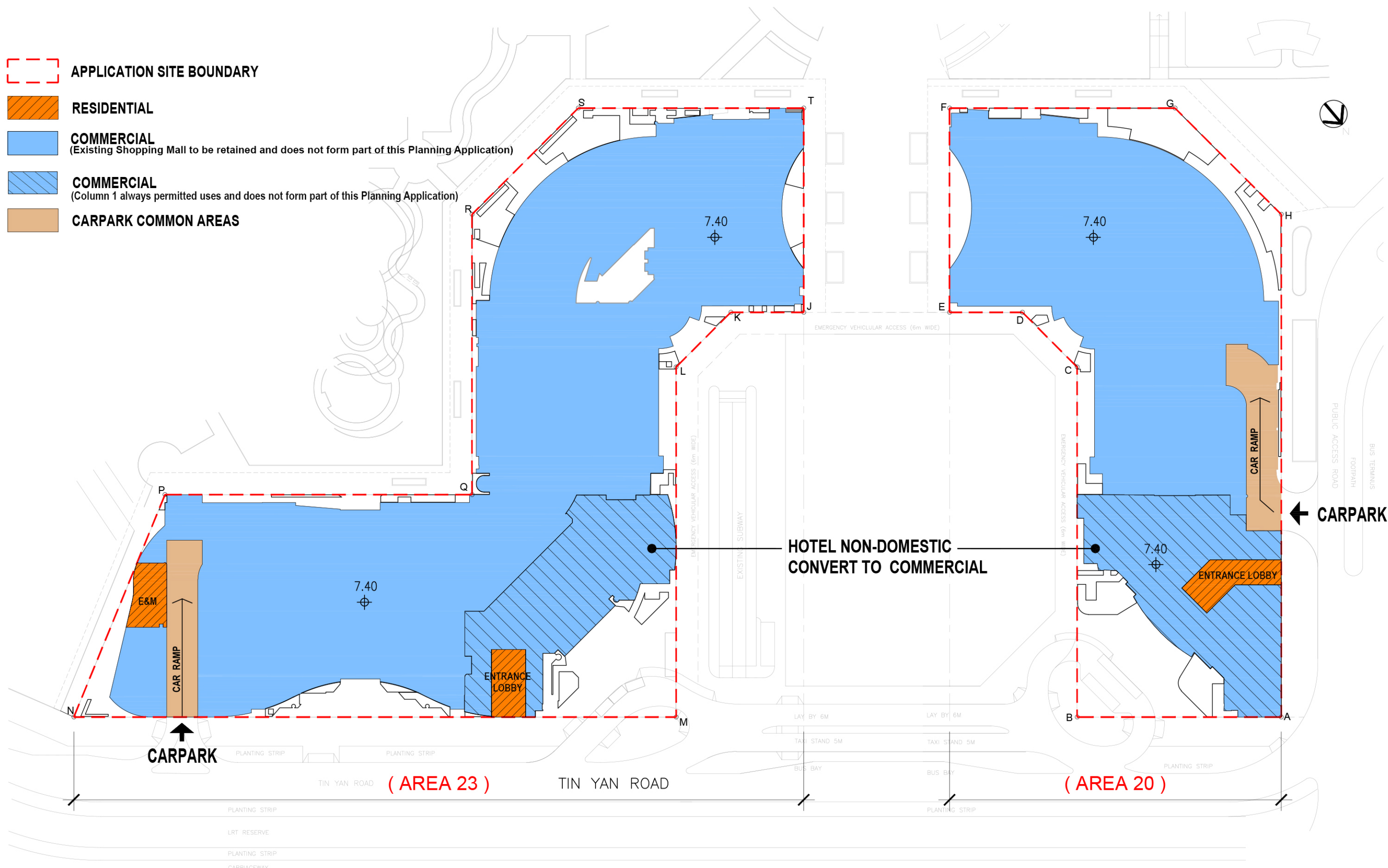
 APPLICATION SITE BOUNDARY

 RESIDENTIAL

 COMMERCIAL
(Existing Shopping Mall to be retained and does not form part of this Planning Application)

 COMMERCIAL
(Column 1 always permitted uses and does not form part of this Planning Application)


 CARPARK COMMON AREAS




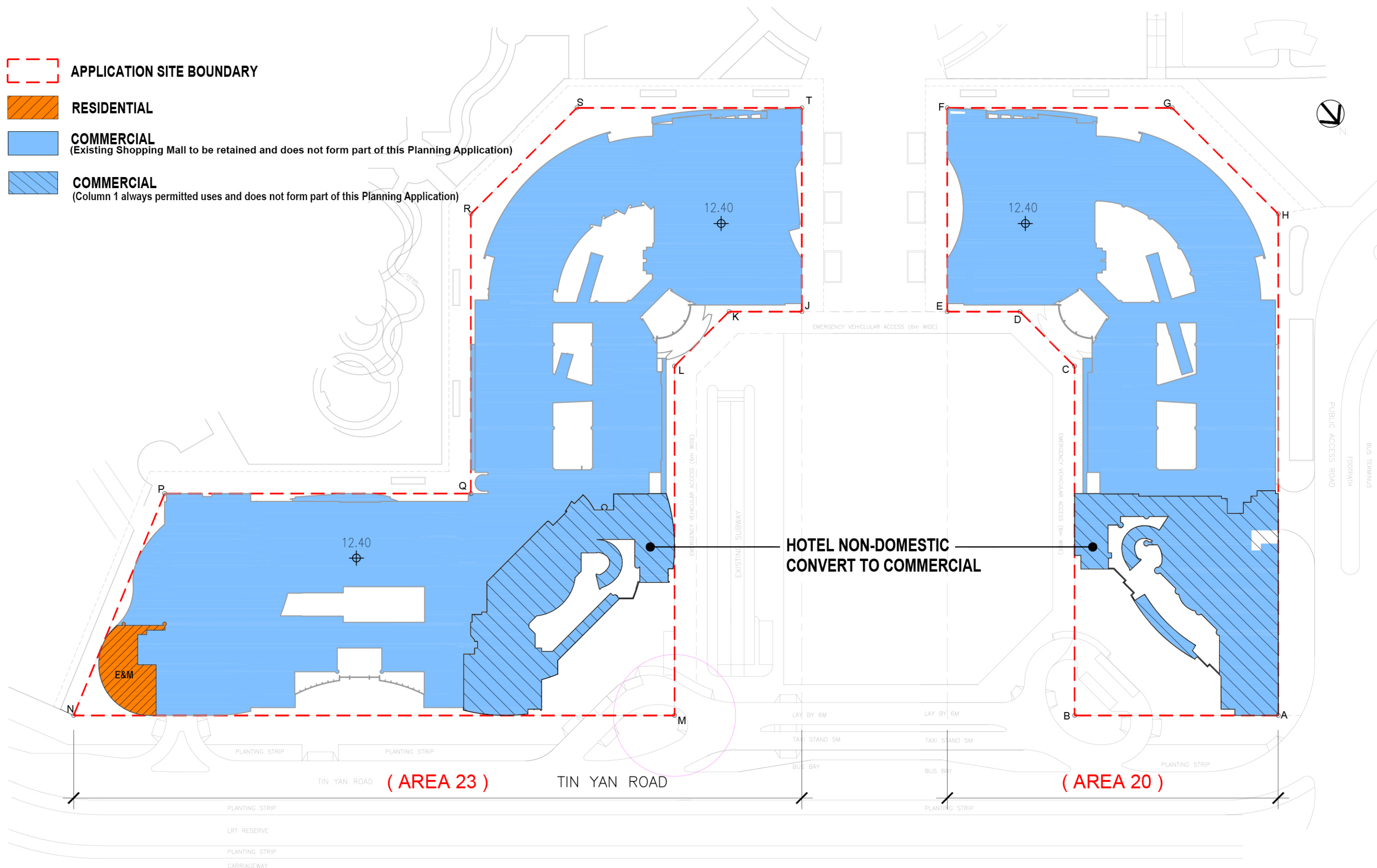
PROPOSED SCHEME

 APPLICATION SITE BOUNDARY

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 COMMERCIAL
(Existing Shopping Mall to be retained and does not form part of this Planning Application)


 COMMERCIAL
(Column 1 always permitted uses and does not form part of this Planning Application)

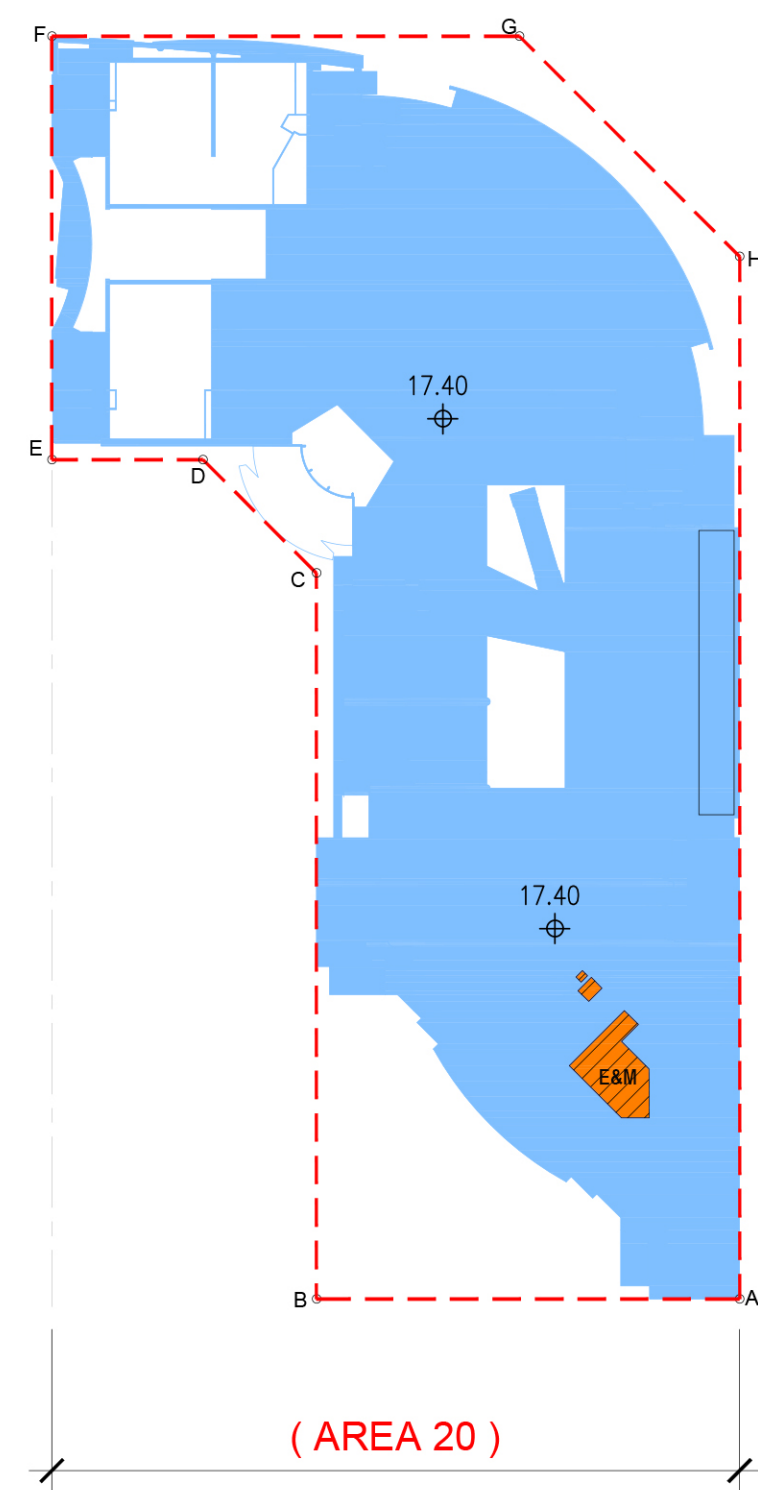
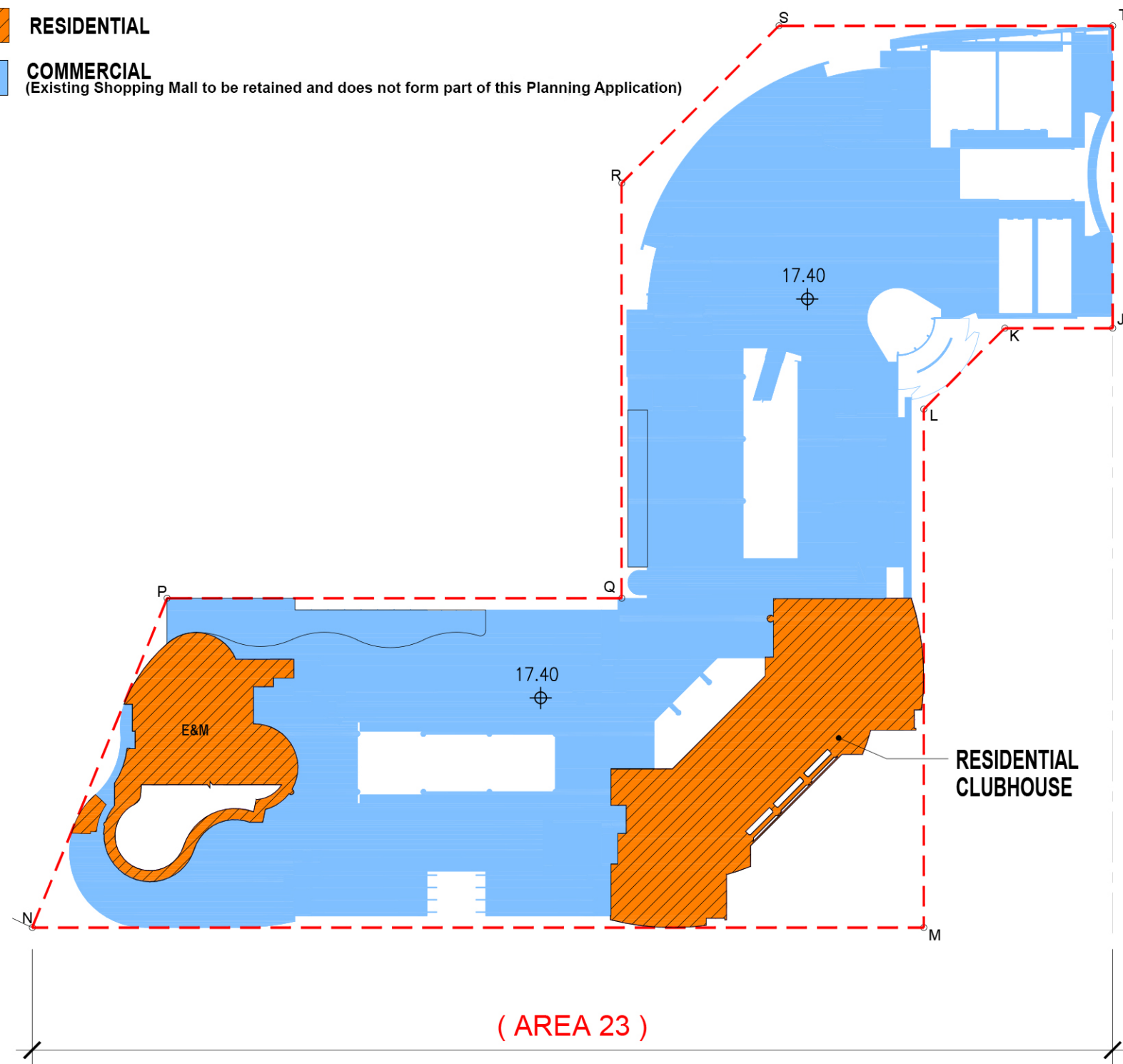


PROPOSED SCHEME

 APPLICATION SITE BOUNDARY

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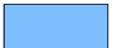
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(Existing Shopping Mall to be retained and does not form part of this Planning Application)



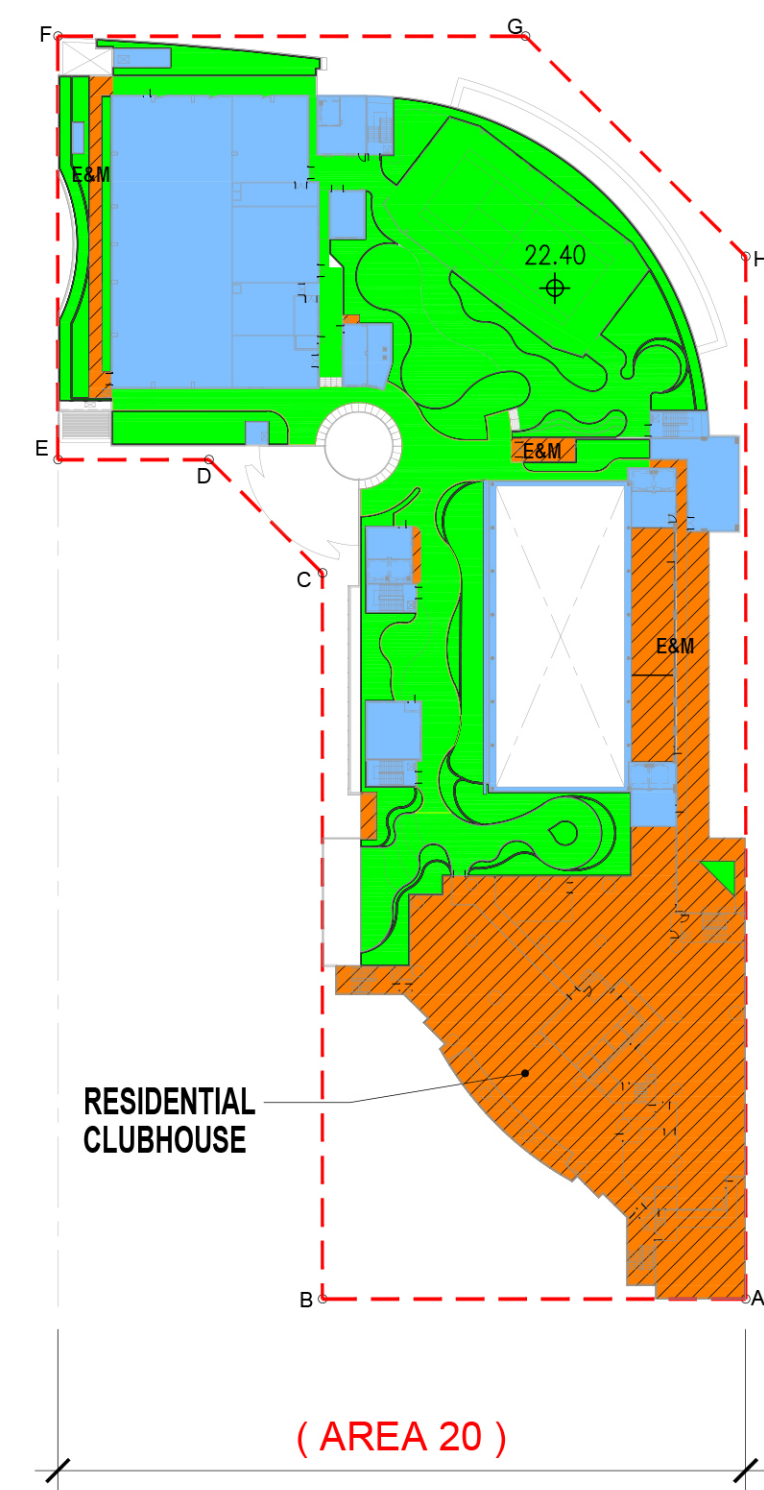
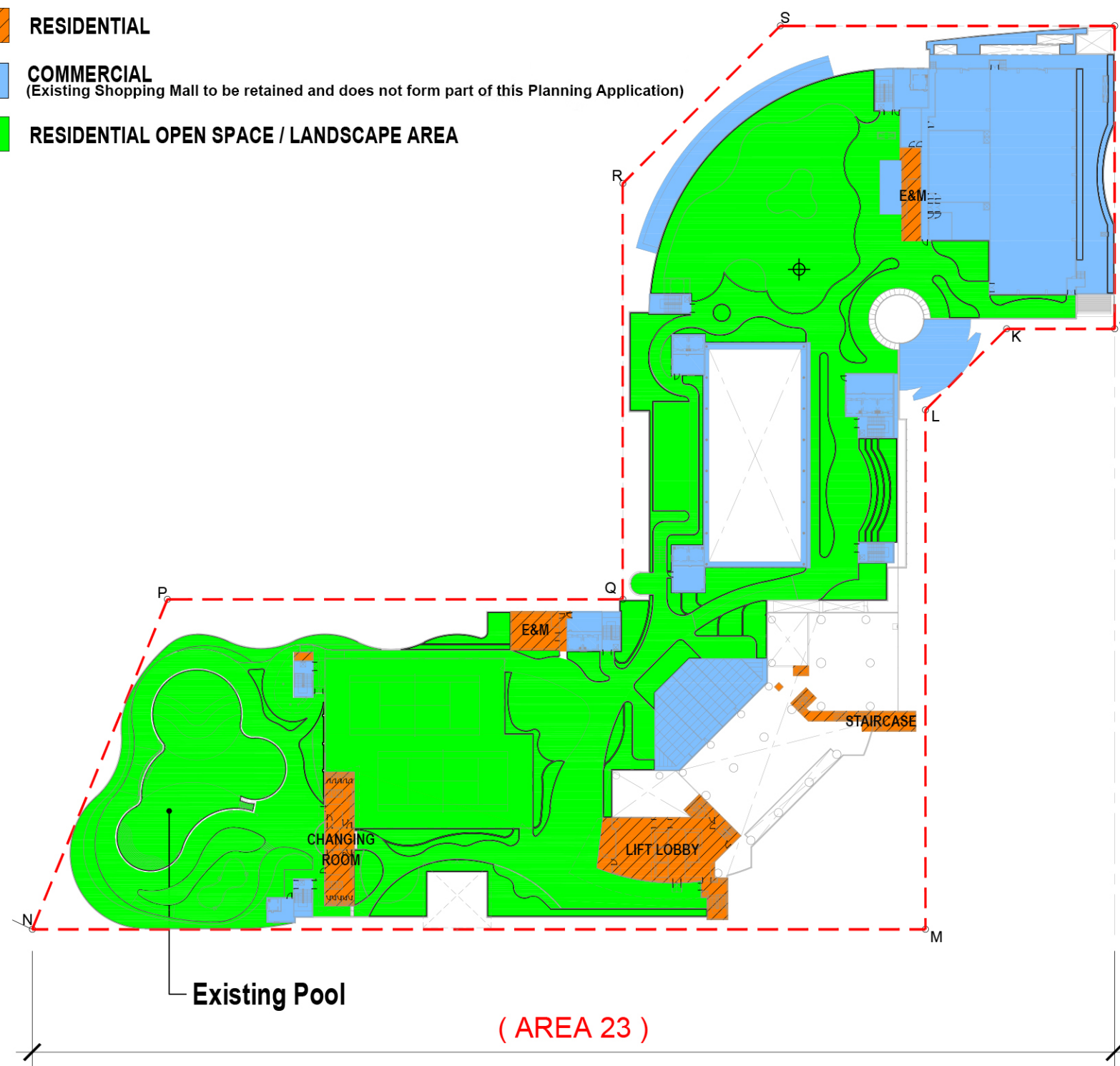
PROPOSED SCHEME

 APPLICATION SITE BOUNDARY



 RESIDENTIAL

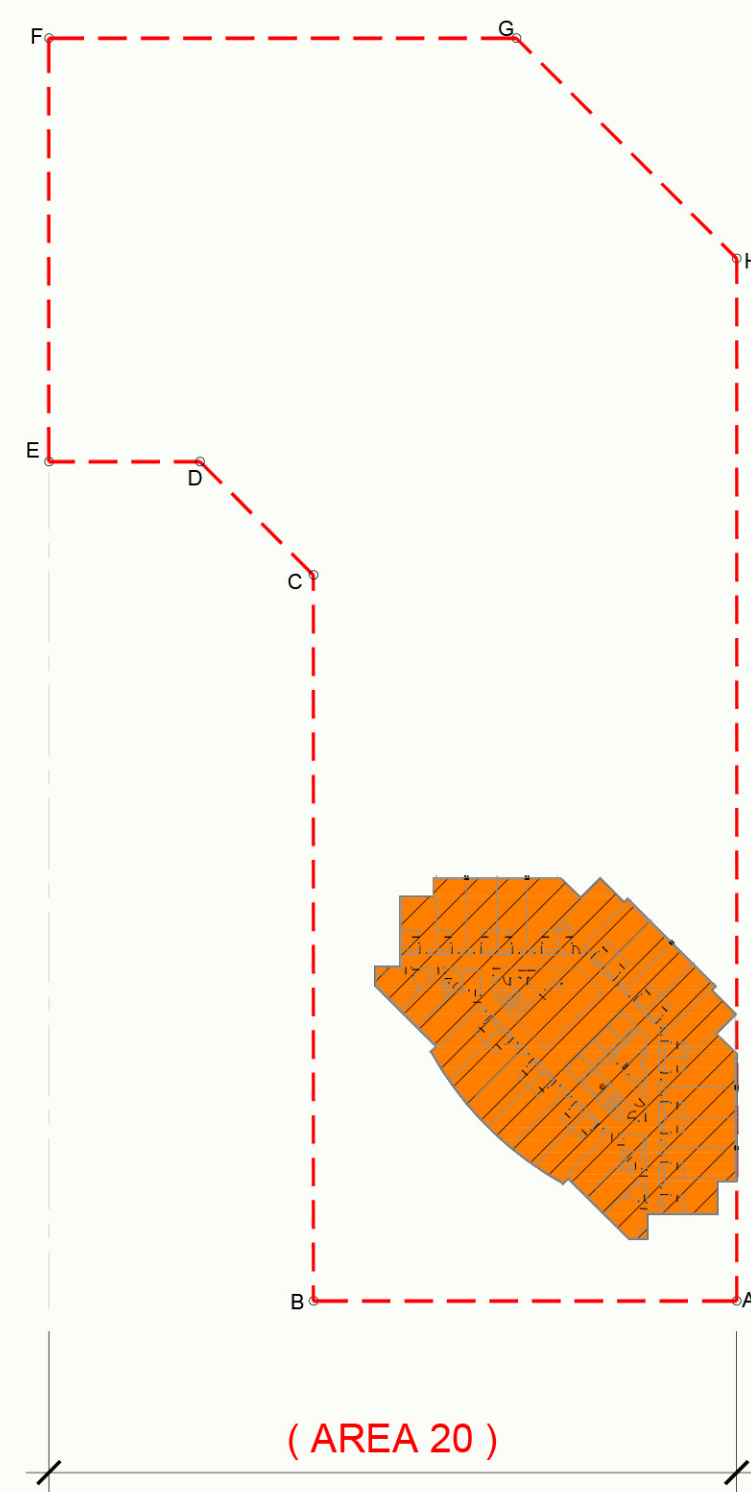
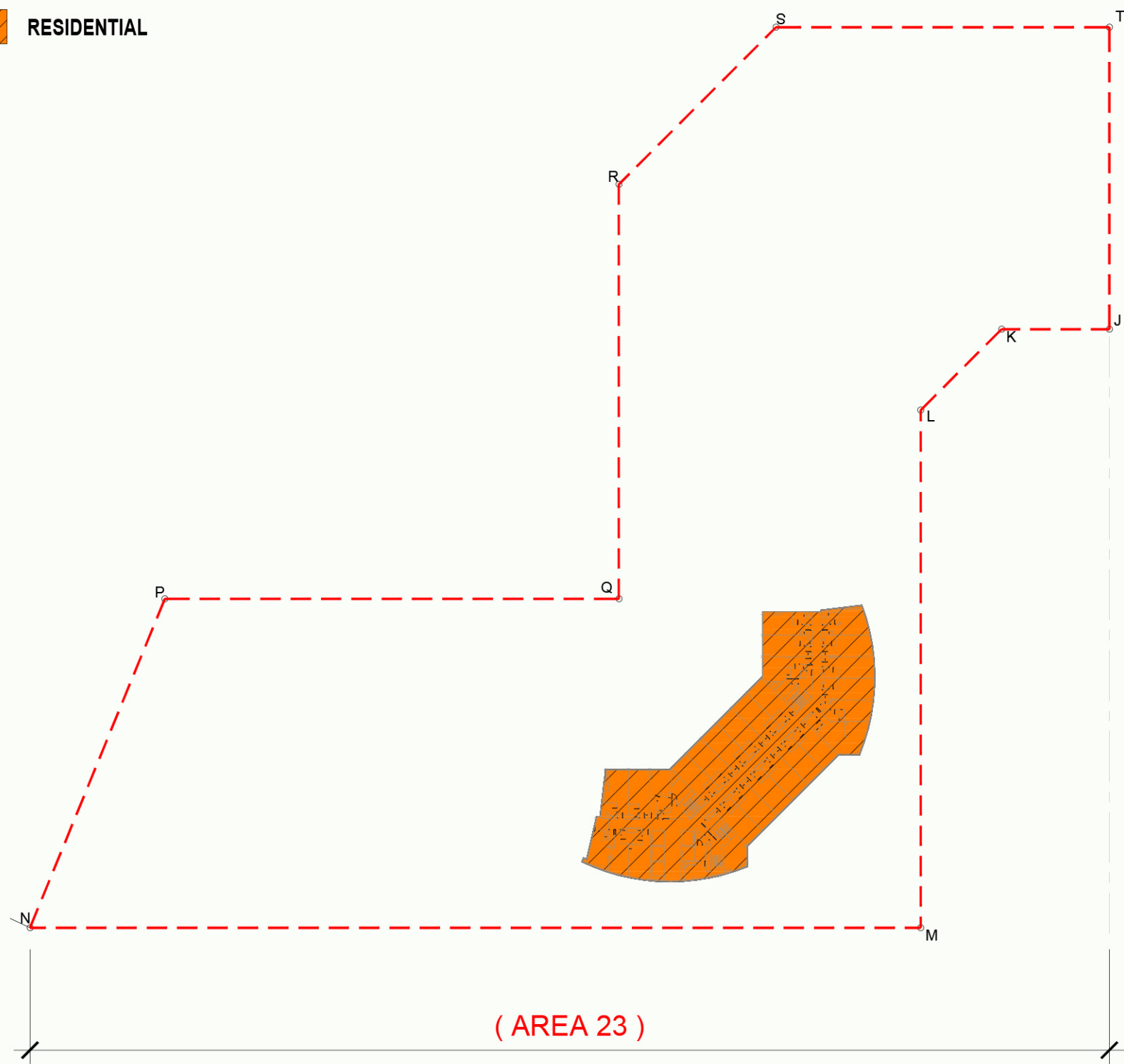
 COMMERCIAL
(Existing Shopping Mall to be retained and does not form part of this Planning Application)

 RESIDENTIAL OPEN SPACE / LANDSCAPE AREA

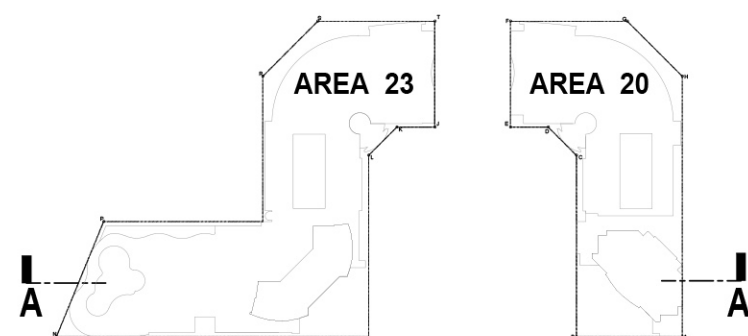


PROPOSED SCHEME

 APPLICATION SITE BOUNDARY
 RESIDENTIAL

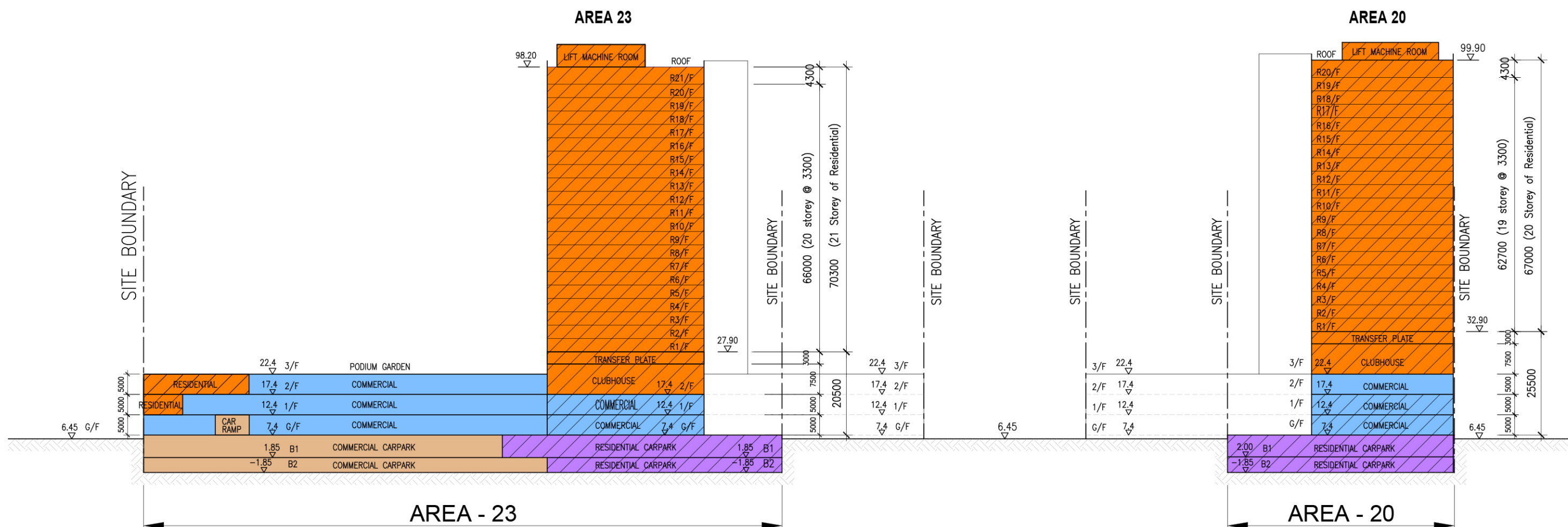


PROPOSED SCHEME



KEY PLAN (N.T.S.)

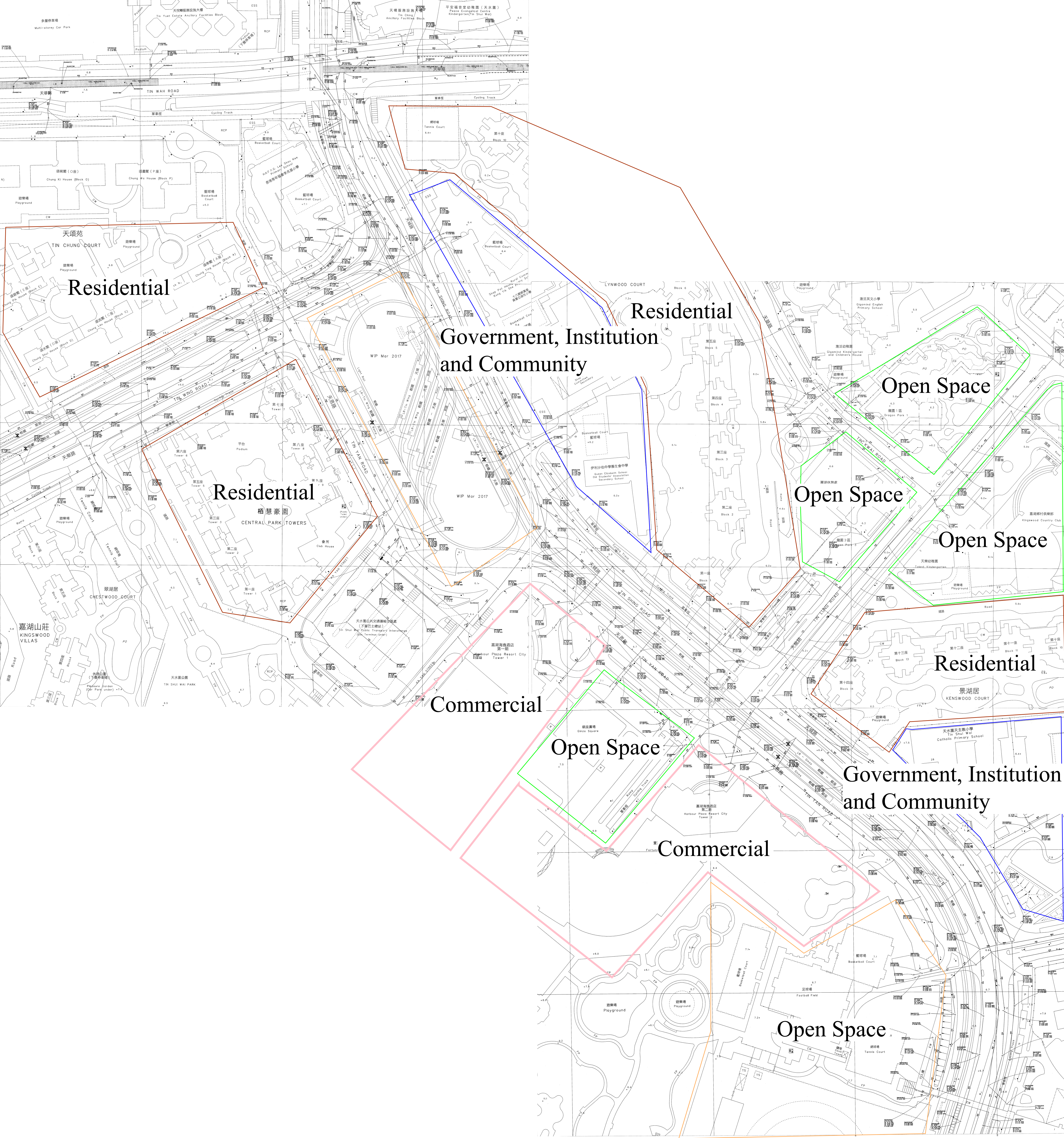
- APPLICATION SITE BOUNDARY
- RESIDENTIAL CARPARK
- COMMERCIAL
(Existing Shopping Mall to be retained and does not form part of this Planning Application)
- COMMERCIAL
(Column 1 always permitted uses and does not form part of this Planning Application)
- COMMERCIAL CARPARK
- RESIDENTIAL



PROPOSED SCHEME

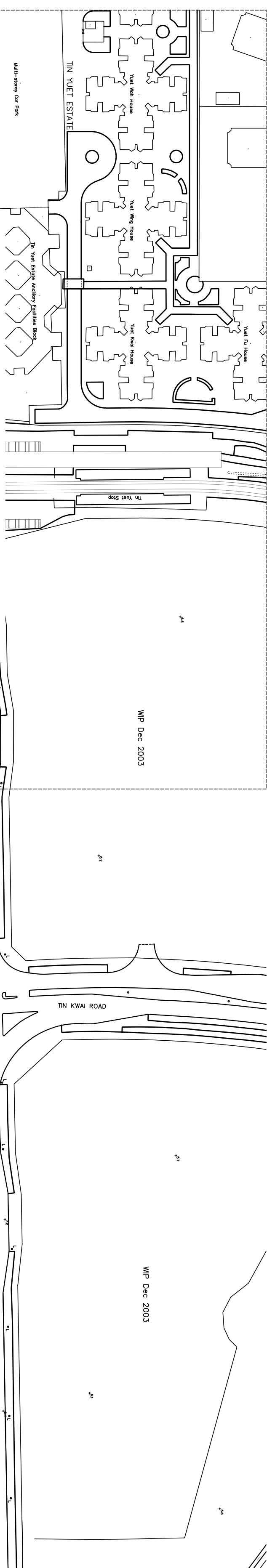
Appendix C

Sewerage and Land Use Plan

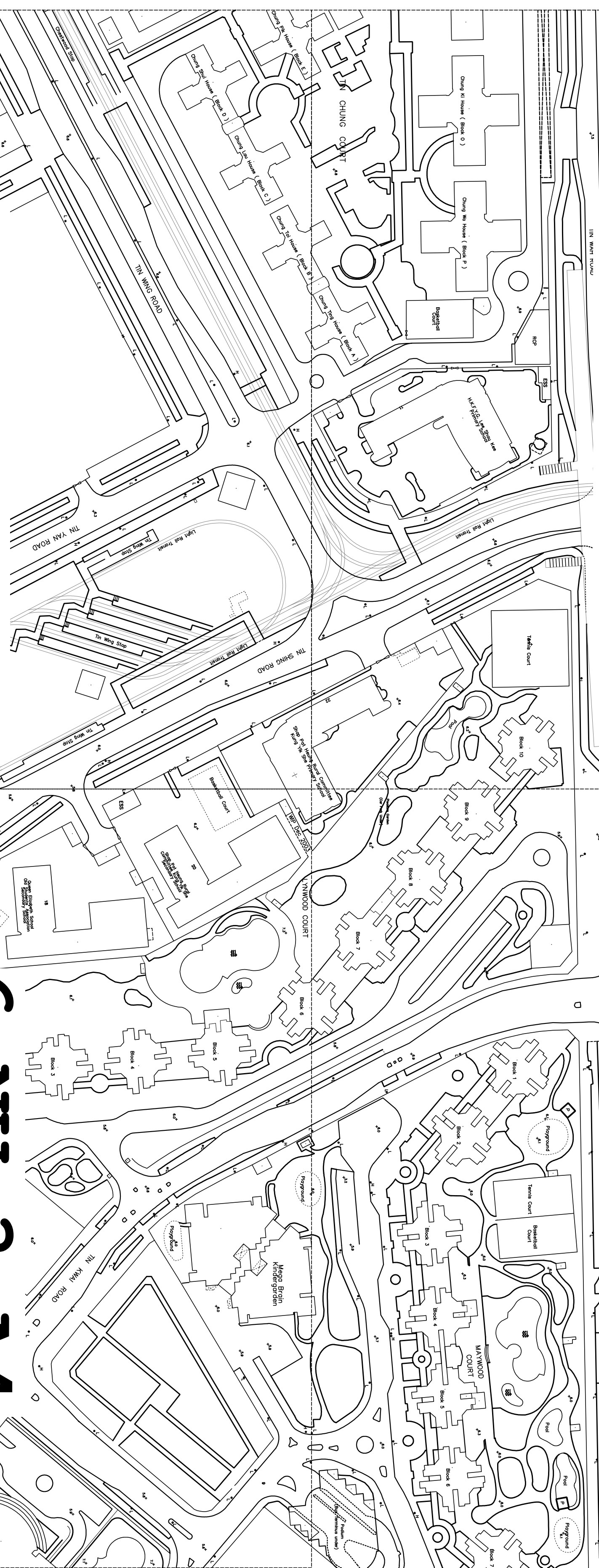


Appendix D

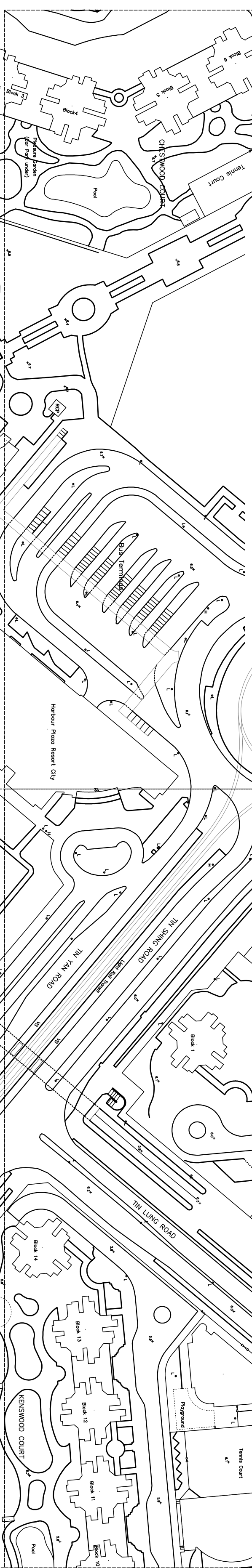
Sewerage Record Plan



6-NW-3-A1



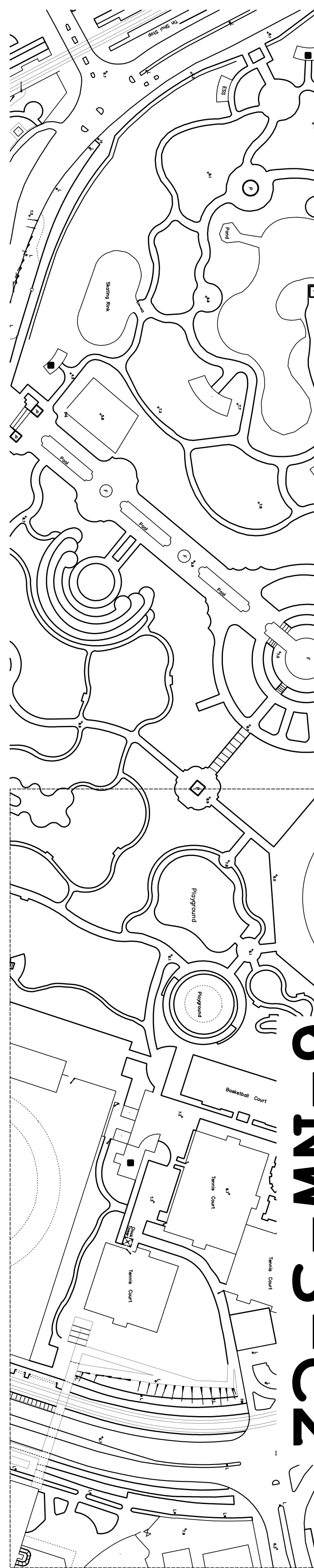
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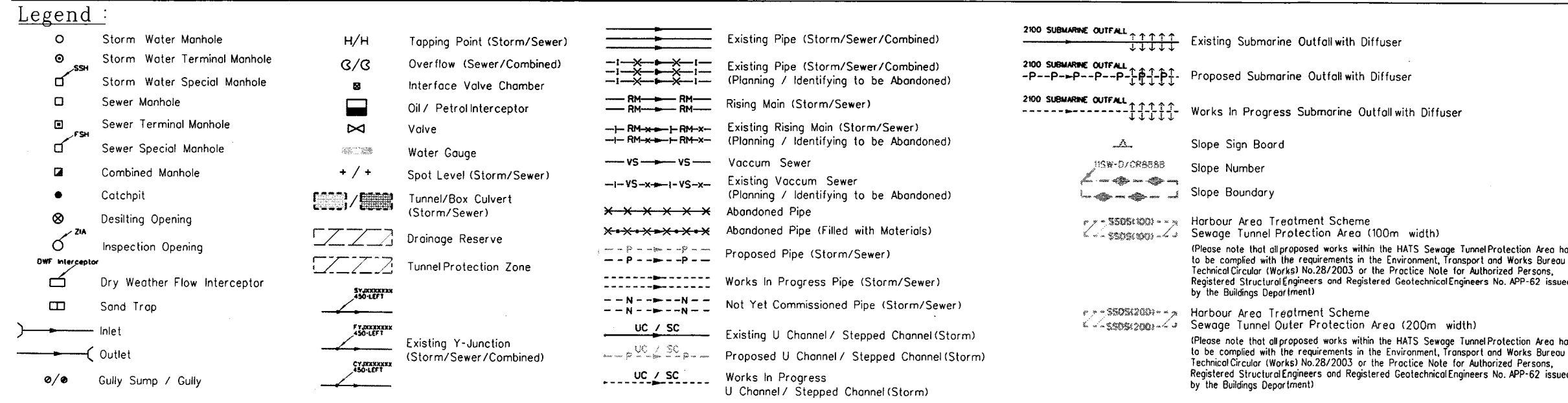
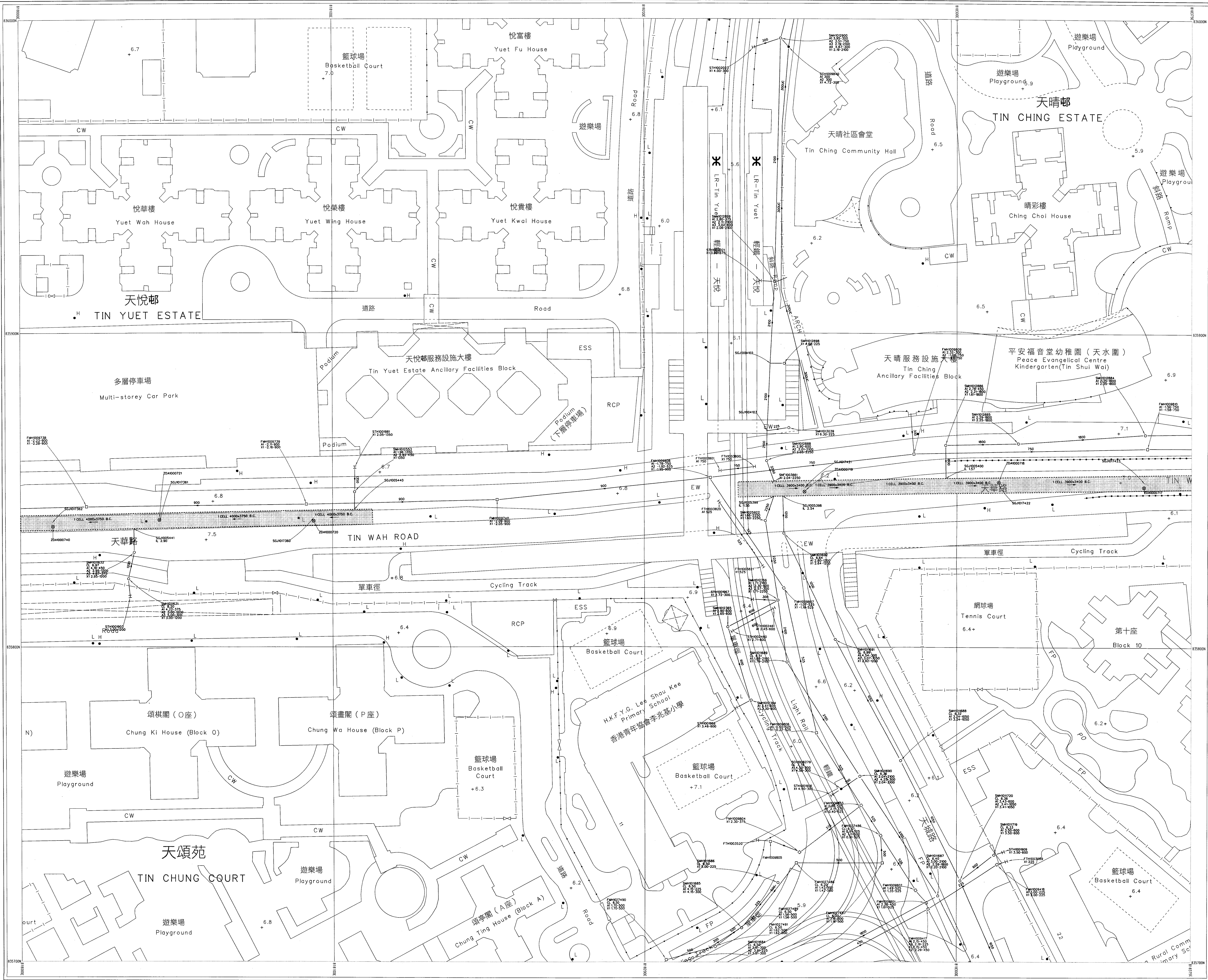


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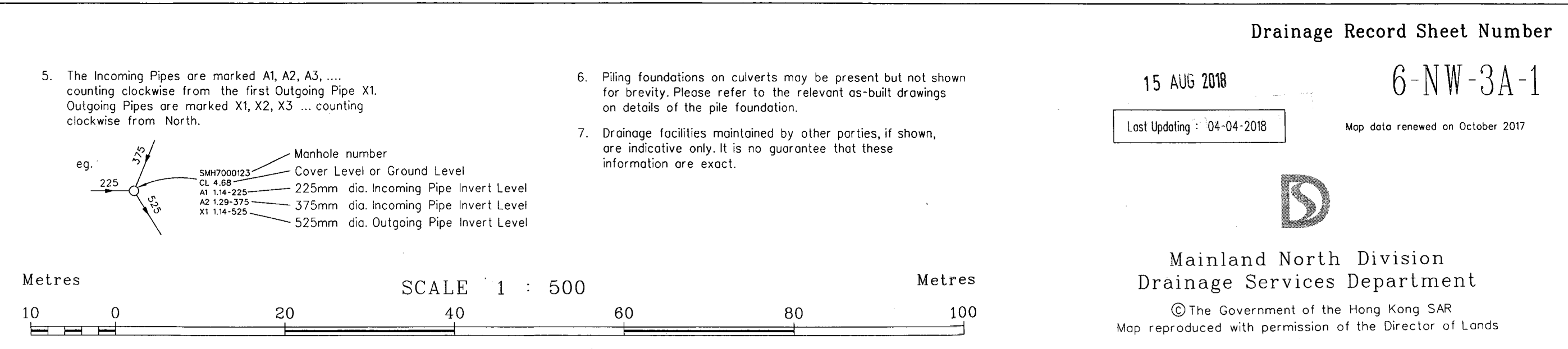
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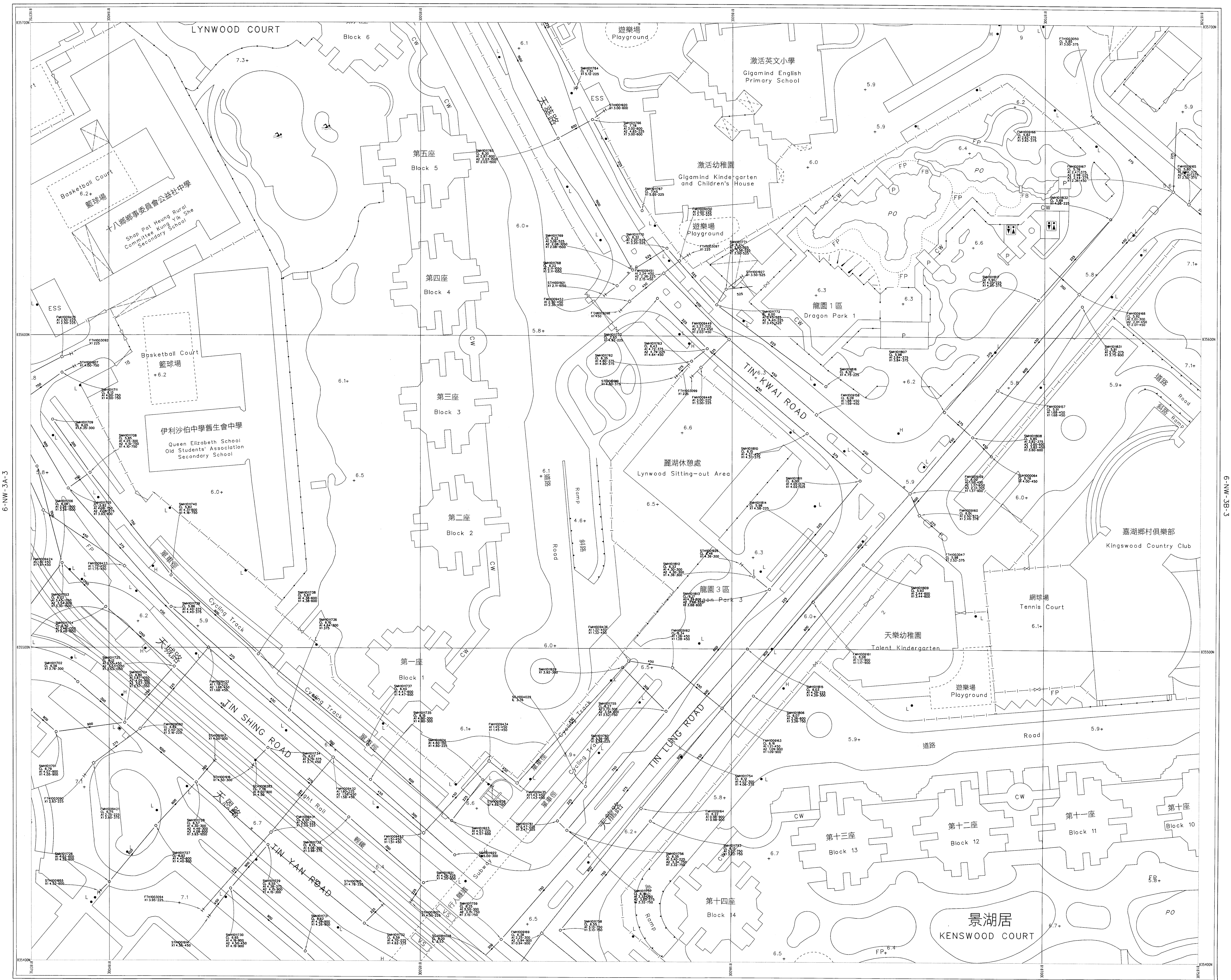




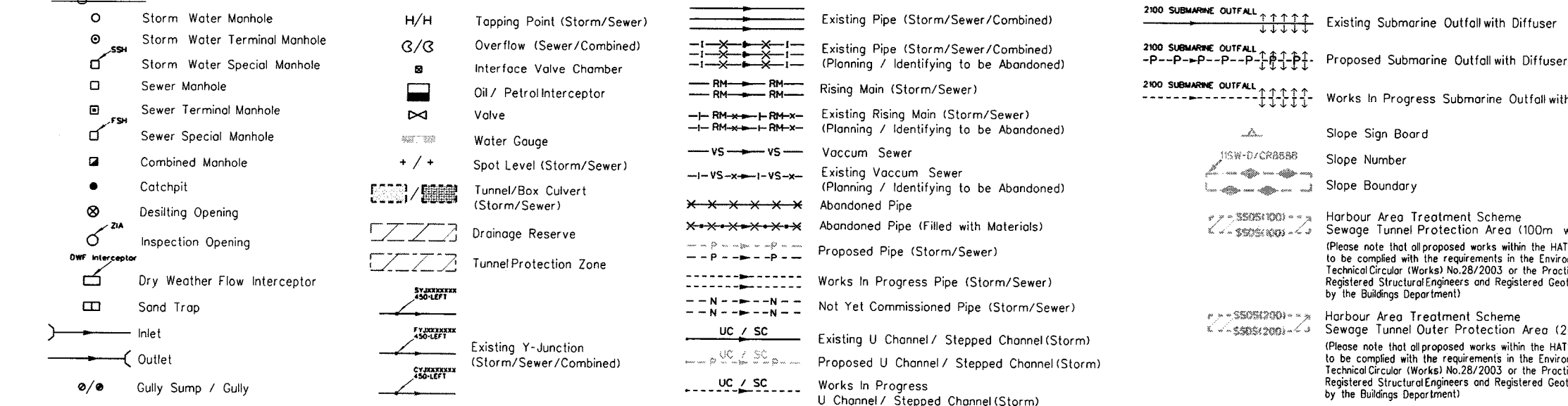
Notes

- All levels are in metres principle datum.
- All dimensions shown are in millimetres unless otherwise stated.
- The information shown on the record drawings are subject to verification on site and no guarantee can be given that this is a complete record.
- Abbreviations for Channels of width smaller or equal to 1200mm:
900C = 900mm width Surface Channel
900SC = 900mm width Stepped Channel
900UC = 900mm width U Channel
900WWFC = 900mm width Dry Weather Flow Channel





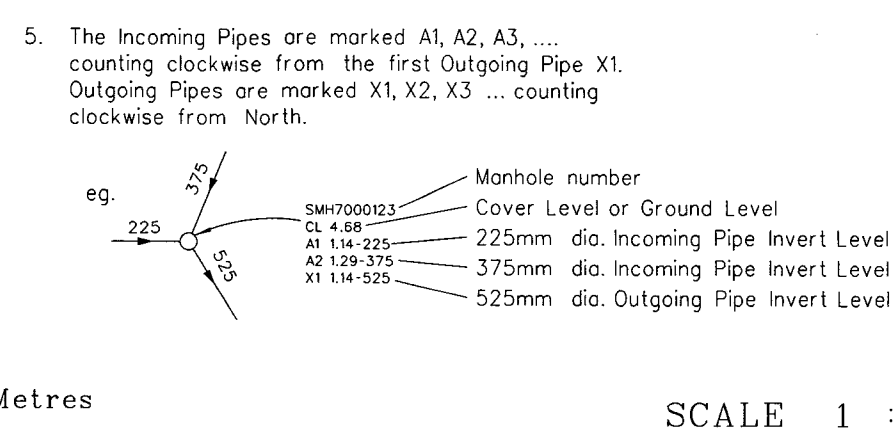
Legend:



6-NW-3C-2

Notes:

- All levels are in metres principle datum.
- All dimensions shown are in millimetres unless otherwise stated.
- The information shown on the record drawings are subject to verification on site and no guarantee can be given that this is a complete record.
- Abbreviations for Channels of width smaller or equal to 1200mm:
 - 900C = 900mm width Surface Channel
 - 900SC = 900mm width Stepped Channel
 - 900UC = 900mm width U Channel
 - 900WFC = 900mm width Dry Weather Flow Channel



- The Incoming Pipes are marked A1, A2, A3, ... counting clockwise from the first Outgoing Pipe X1. Outgoing Pipes are marked X1, X2, X3, ... counting clockwise from North.
- Piling foundations on culverts may be present but not shown for brevity. Please refer to the relevant as-built drawings on details of the pile foundation.
- Drainage facilities maintained by other parties, if shown, are indicative only. It is no guarantee that these information are exact.

Drainage Record Sheet Number

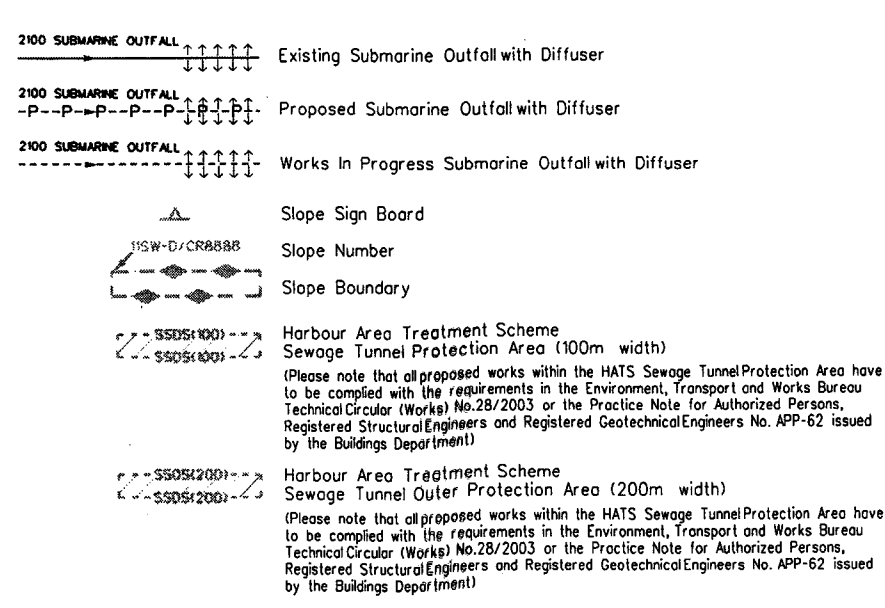
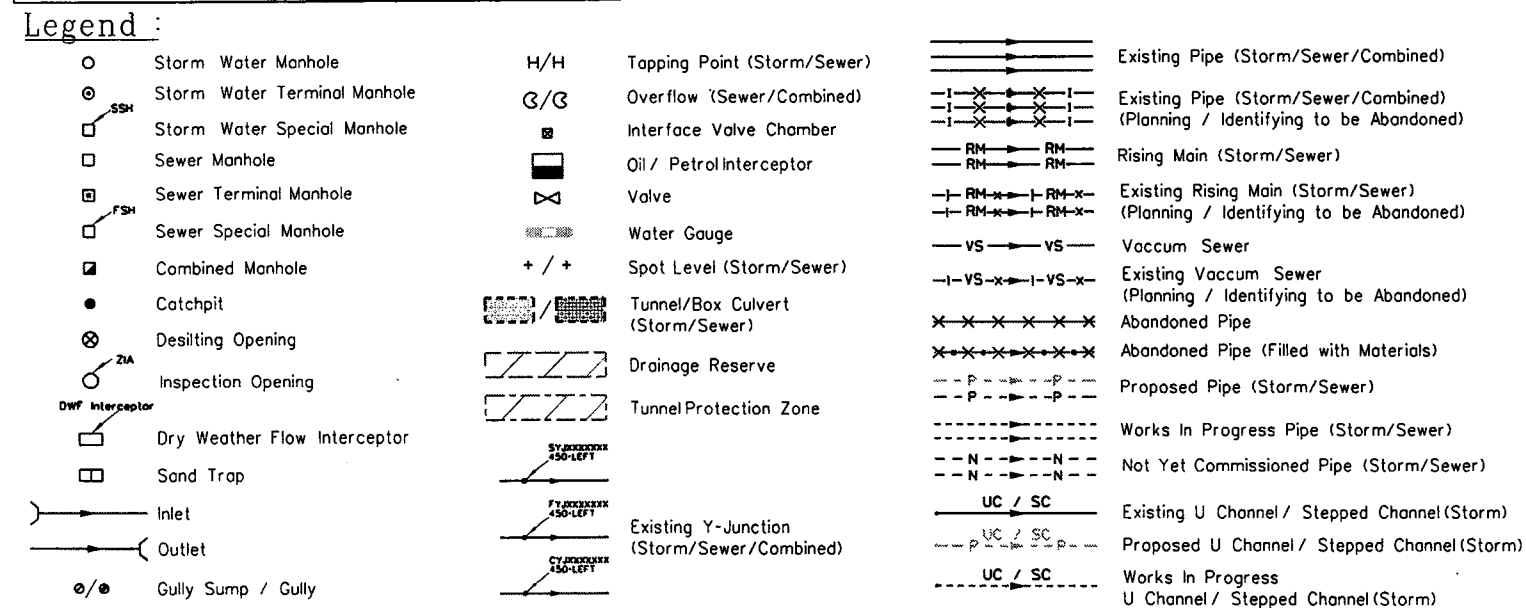
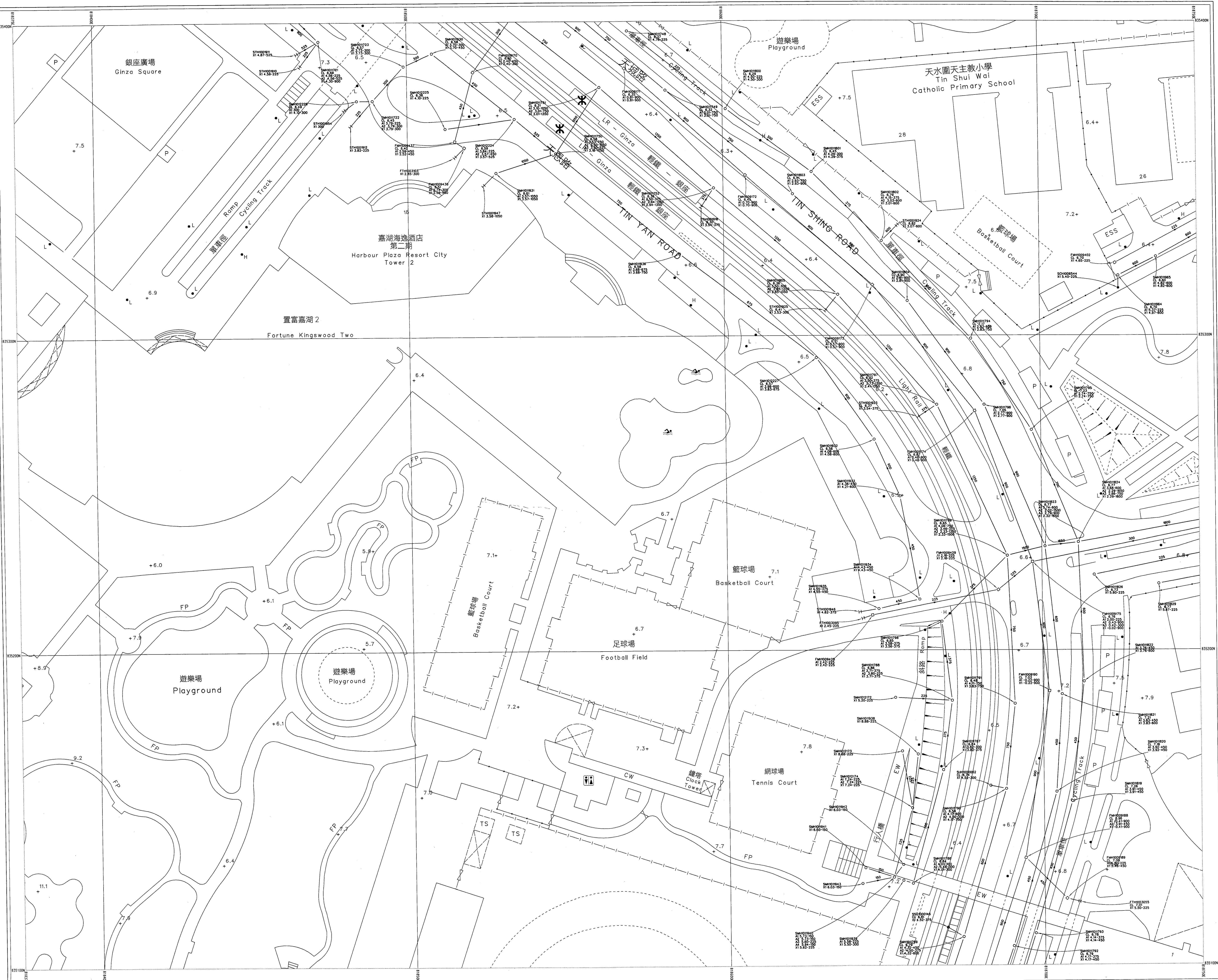
15 HWS
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6-NW-3A-4

Map data renewed on October 2017

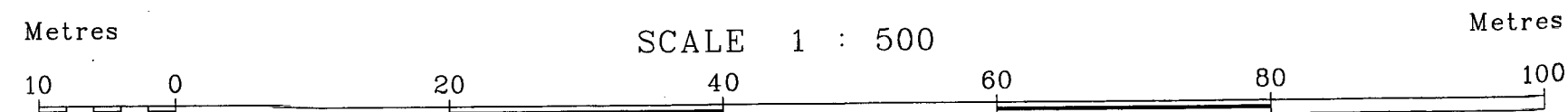
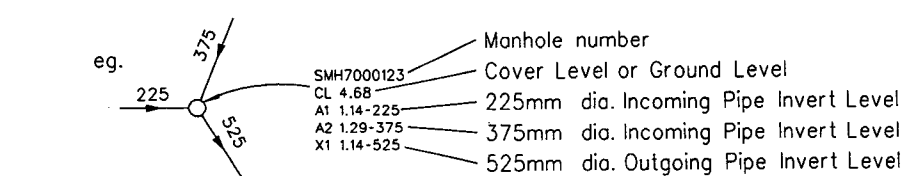


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Drainage Services Department
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**Notes:**

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- The Incoming Pipes are marked A1, A2, A3, ... counting clockwise from the first Outgoing Pipe X1. Outgoing Pipes are marked X1, X2, X3 ... counting clockwise from North.



Drainage Record Sheet Number

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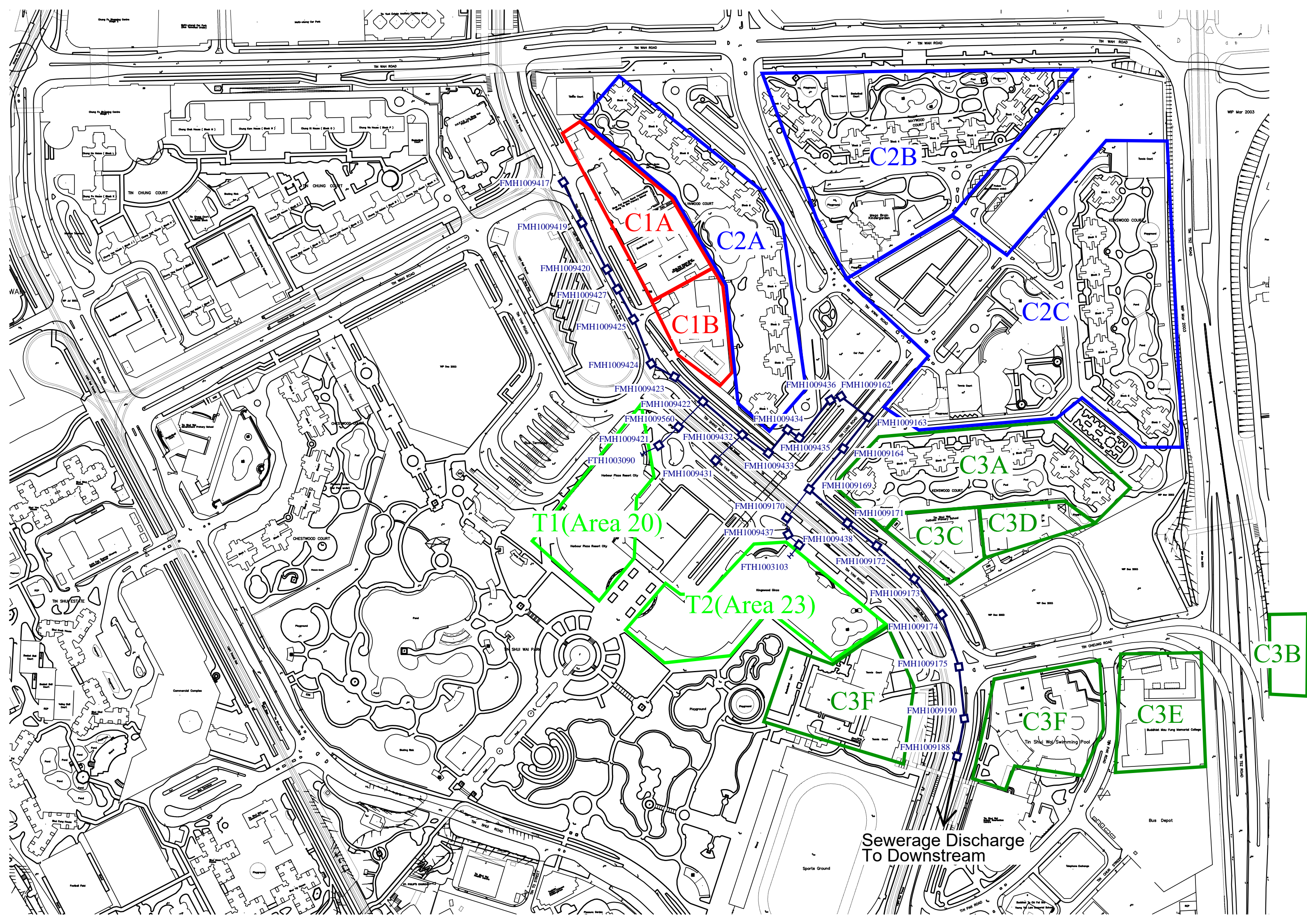
Last Updating : 04-04-2018

Map data renewed on January 2018

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Appendix E

Sewerage Catchment Index Plan and Proposed Sewerage Plan



C1A

C2A

C2B

C2C

C1B

T1(Area 20)

T2(Area 23)

C3A

C3C

C3D

C3B

C3F

C3F

C3E

Sewerage Discharge
To Downstream

FMH1009417

FMH1009419

FMH1009420

FMH1009427

FMH1009425

FMH1009424

FMH1009423

FMH1009422

FMH1009560

FMH1009421

FTH1003090

FMH1009431

FMH1009432

FMH1009434

FMH1009435

FMH1009433

FMH1009170

FMH1009437

FTH1003103

FMH1009438

FMH1009172

FMH1009173

FMH1009174

FMH1009175

FMH1009190

FMH1009188

FMH1009436

FMH1009162

FMH1009163

FMH1009164

FMH1009169

FMH1009171

Bus Depot

Sports Ground

Telephone Exchange

Building on the site has
been the last remaining

WP Mar 2003

WP Mar 2003

WP Dec 2002

WP Dec 2002

WP Dec 2002

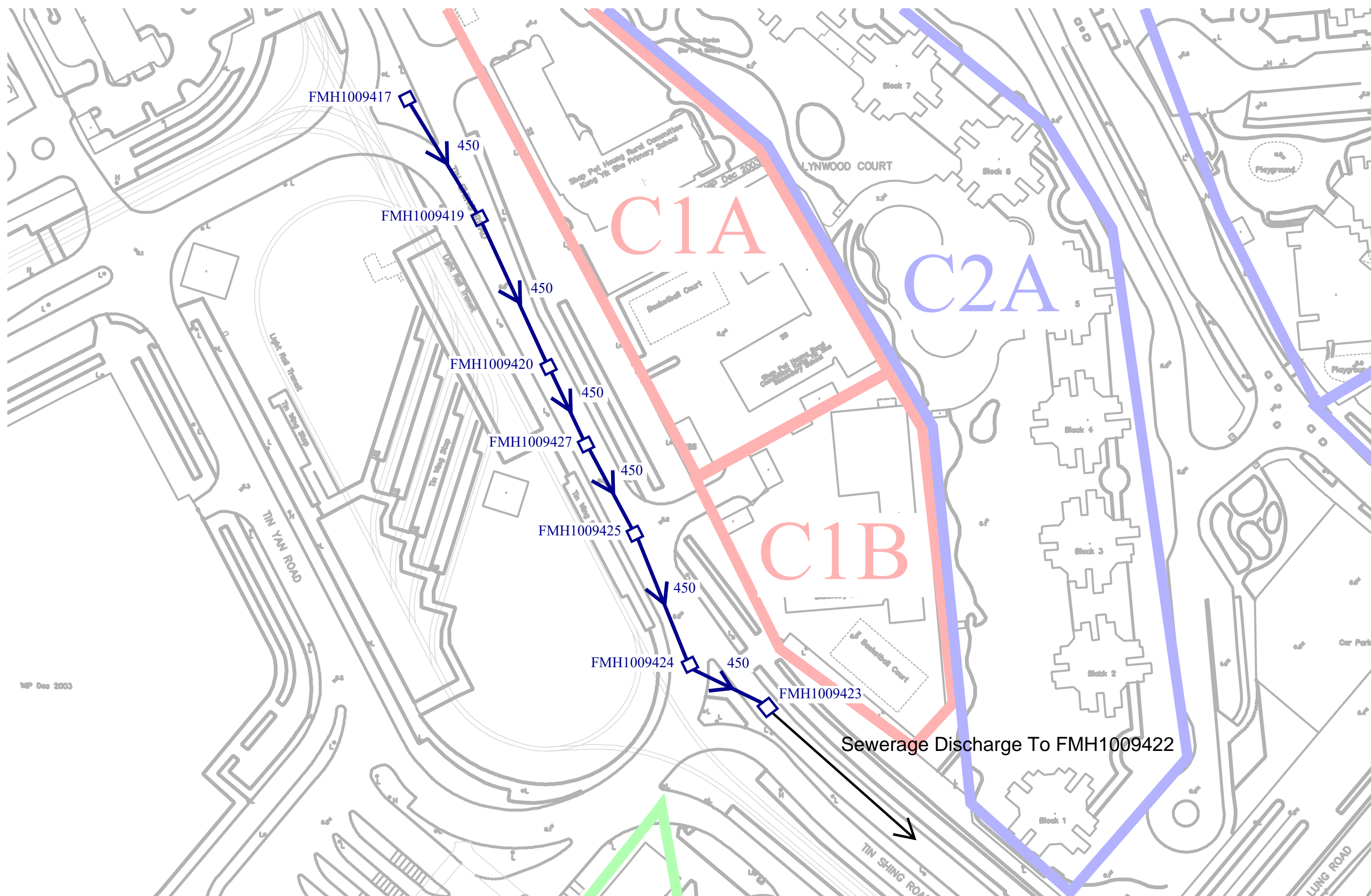
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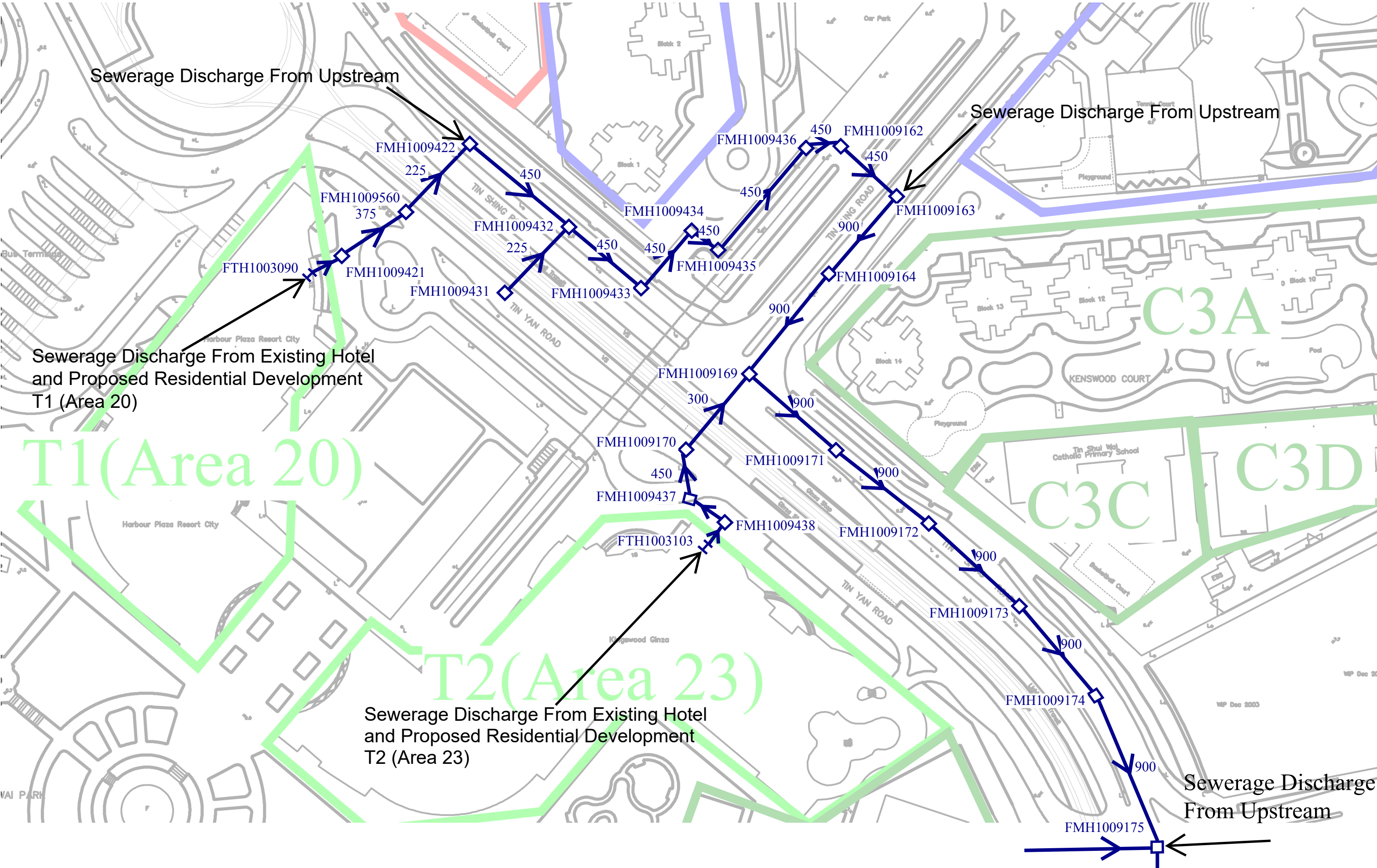
WP Dec 2002

WP Dec 2002

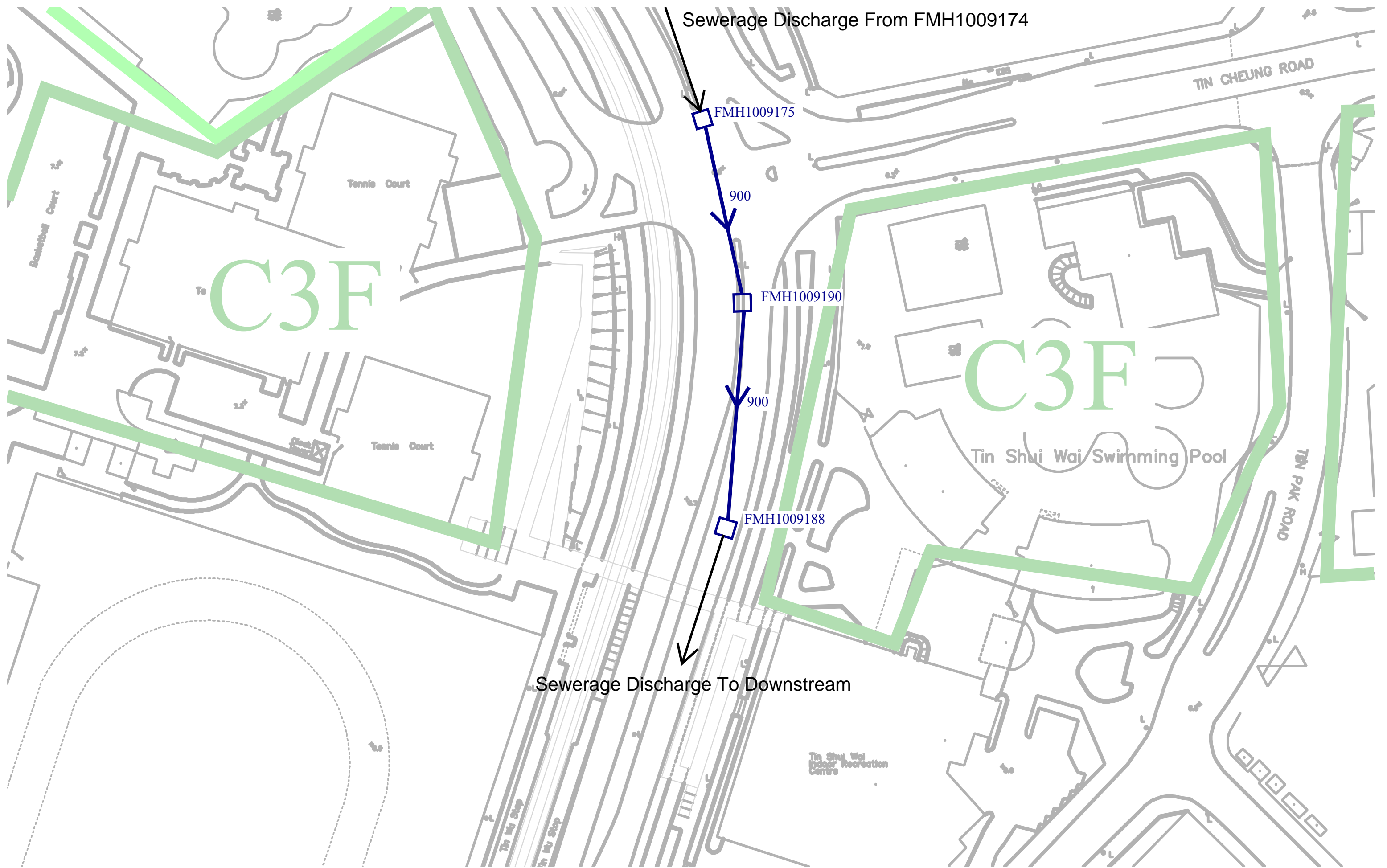
Existing Sewerage Plan 1 (Zoomed)



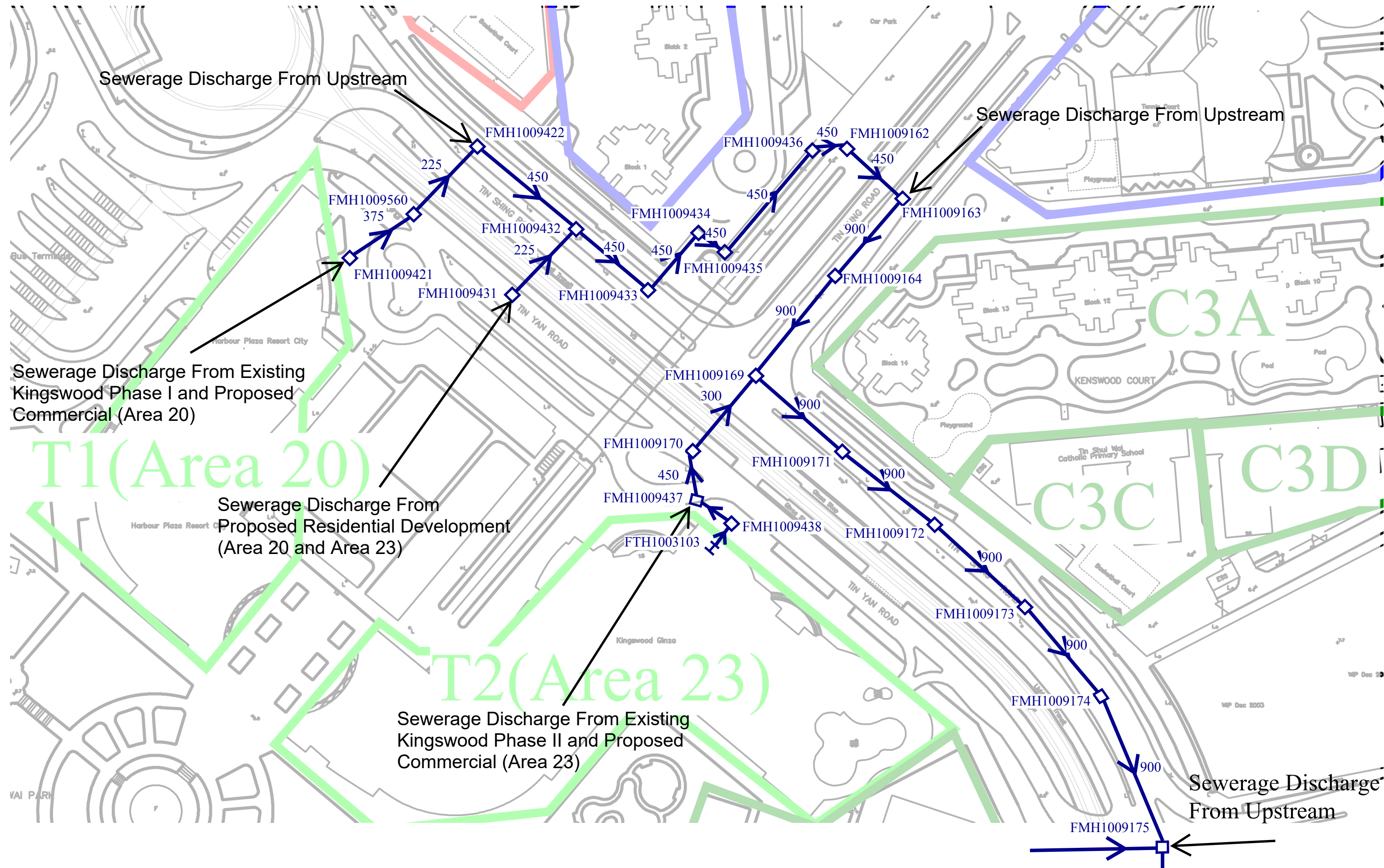
Existing Sewerage Plan 2 (Zoomed)



Existing Sewerage Plan 3 (Zoomed)



Proposed Sewerage Plan (Zoomed)



Appendix F

Hydraulic Design Check for Proposed Sewerage System

Sewerage Drainage
Design

Proposed Sewerage Scheme

Catchment Label	C1		Proposed Development T1	Kingswood Phase I	C1+C2	Swimming Pool of Lynwood and Maywood Court	Proposed Development T2+Swimming Pool	Kingswood Phase II	C1+C2+C3	TSW Swimming Pool	Proposed Commercial (Area 20)	Proposed Commercial (Area 23)			
Peak Foul Water Flow (m ³ /s) (For main stream)	0.0167		0.0126	0.0275	0.2693	0.0001	0.0159	0.0412	0.3564	0.0001	0.0031	0.0046			

Main Stream Peaking Foul Water Flow Calculation (from Table 3.12)

=0.002083x8

=0.003148x4

=0.000687x4

=(0.002083+0.065244)x0.5244x4

=0.003962x4+8.68E-5

=0.010293x4

=(0.002083+0.065244+0.021783)x4

=0.000769x4

=0.001156x4

From Sewerage Manual Part 1,
Third Edition, May 2013:

	Proposed Development T1	Proposed Development T2+Swimming Pool	Kingswood Phase I	Kingswood Phase II	Proposed Commercial (Area 20)	Proposed Commercial (Area 23)
Peak Foul Water Flow (m ³ /s) (From Terminal manhole)	0.0157	0.0199	0.0343	0.0515	0.0038	0.0058

Colebrook-White Equation for

circular pipes flowing full,

Velocity, V =

$$-\sqrt{(8gDs)} \log\left(\frac{ks}{3.7D} + \frac{2.51v}{D\sqrt{(2\pi Ds)}}\right)$$

Capacity, Q =

$$V \times \pi \times D^2 / 4$$

Assumptions:

Kinematic Viscosity of fluid, v =

0.00000114

m²/s

Hydraulic Pipeline Roughness, ks =

3

mm

(for slimed sewers - clayware in poor condition; Table 5, Sewerage Manual Part 1, Third Edition, May 2013)

From Manhole	To Manhole	Diameter, D (m)	Cross-section (m ²)	Wetted Perimeter (m)	Length (m)	Inlet Invert	Outlet Invert	Slope, s	Hydraulic Radius (m)	Viscosity, ν (m ² /s)	Roughness, ks (m)	Velocity, V (m/s)	Capacity, Q (m ³ /s)	Estimated FLOW, F (m ³ /s)	Ref. Area	% of Capacity
Upstream																
C1 Catchment																
FMH1009417	FMH1009419	0.450	0.159	1.414	44.60	2.15	2.07	0.002	0.113	0.00000114	0.003	0.69	0.1094	0.0167	C1 Catchment	15.2%
FMH1009419	FMH1009420	0.450	0.159	1.414	44.40	2.07	1.99	0.002	0.113	0.00000114	0.003	0.69	0.1096	0.0167		15.2%
FMH1009420	FMH1009427	0.450	0.159	1.414	30.70	1.99	1.94	0.002	0.113	0.00000114	0.003	0.66	0.1042	0.0167		16.0%
FMH1009427	FMH1009425	0.450	0.159	1.414	30.90	1.94	1.88	0.002	0.113	0.00000114	0.003	0.72	0.1138	0.0167		14.6%
FMH1009425	FMH1009424	0.450	0.159	1.414	40.00	1.88	1.81	0.002	0.113	0.00000114	0.003	0.68	0.1080	0.0167		15.4%
FMH1009424	FMH1009423	0.450	0.159	1.414	31.80	1.81	1.75	0.002	0.113	0.00000114	0.003	0.71	0.1122	0.0167		14.9%
FMH1009423	FMH1009422	0.450	0.159	1.414	37.50	1.75	1.68	0.002	0.113	0.00000114	0.003	0.70	0.1116	0.0167		14.9%
C1 Catchment+Pr T1+Pr T2+Kingswood P1+Pr Com20																
FMH1009422	FMH1009432	0.450	0.159	1.414	53.70	1.68	1.58	0.002	0.113	0.00000114	0.003	0.73	0.1164	0.0472	C1 Catchment+Kingswood P1+Pr Com20	40.6%
FMH1009432	FMH1009433	0.450	0.159	1.414	36.5	1.58	1.51	0.002	0.113	0.00000114	0.003	0.73	0.1155	0.0757	C1 Catchment+Pr T1+Pr T2+Kingswood P1+Pr Com20	65.6%
FMH1009433	FMH1009434	0.450	0.159	1.414	29.9	1.51	1.45	0.002	0.113	0.00000114	0.003	0.75	0.1195	0.0757		63.4%
FMH1009434	FMH1009435	0.450	0.159	1.414	10	1.45	1.43	0.002	0.113	0.00000114	0.003	0.73	0.1155	0.0757		65.6%
FMH1009435	FMH1009436	0.450	0.159	1.414	51	1.43	1.32	0.002	0.113	0.00000114	0.003	0.75	0.1200	0.0757		63.1%
FMH1009436	FMH1009162	0.450	0.159	1.414	15.2	1.32	1.28	0.003	0.113	0.00000114	0.003	0.83	0.1326	0.0757		57.1%
FMH1009162	FMH1009163	0.450	0.159	1.414	19.40	1.28	1.21	0.004	0.113	0.00000114	0.003	0.98	0.1553	0.0757		48.8%
C1+Pr T1+Pr T2+Kingwood P1+Pr Com20+C2+Lynwood & Maywood Swimming Pool																
FMH1009163	FMH1009164	0.900	0.636	2.827	40.3	1.09	0.98	0.003	0.225	0.00000114	0.003	1.33	0.8487	0.3285	C1+Pr T1+Pr T2+Kingwood P1+Pr Com20+C2+Lynwood & Maywood Swimming Pool	38.7%
FMH1009164	FMH1009169	0.900	0.636	2.827	51.4	0.98	0.94	0.001	0.225	0.00000114	0.003	0.79	0.5008	0.3285		65.6%

Sewerage Drainage
Design

Proposed Sewerage Scheme

Catchment Label	C1		Proposed Development T1	Kingswood Phase I	C1+C2	Swimming Pool of Lynwood and Maywood Court	Proposed Development T2+Swimming Pool	Kingswood Phase II	C1+C2+C3	TSW Swimming Pool	Proposed Commercial (Area 20)	Proposed Commercial (Area 23)			
Peak Foul Water Flow (m ³ /s) (For main stream)	0.0167		0.0126	0.0275	0.2693	0.0001	0.0159	0.0412	0.3564	0.0001	0.0031	0.0046			

Main Stream Peaking Foul Water Flow Calculation (from Table 3.12)

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=0.000687x4

=(0.002083+0.065244)x0.5

=0.003962x4+8.68E-5

=0.010293x4

=(0.002083+0.065244+0.021783)x4

=0.000769x4

=0.001156x4

From Sewerage Manual Part 1,
Third Edition, May 2013:

	Proposed Development T1	Proposed Development T2+Swimming Pool	Kingswood Phase I	Kingswood Phase II	Proposed Commercial (Area 20)	Proposed Commercial (Area 23)
Peak Foul Water Flow (m ³ /s) (From Terminal manhole)	0.0157	0.0199	0.0343	0.0515	0.0038	0.0058

Colebrook-White Equation for
circular pipes flowing full,

Velocity, V =

$$-\sqrt{\frac{8gDs}{3.7D}} \log\left(\frac{ks}{3.7D} + \frac{2.51v}{D\sqrt{f/2\pi Ds}}\right)$$

Capacity, Q =

$$\sqrt{x} \pi \times D^2 / 4$$

Assumptions:

Kinematic Viscosity of fluid, v =

0.00000114

m²/s

Hydraulic Pipeline Roughness, ks =

3

mm

(for slimed sewers - clayware in poor condition; Table 5, Sewerage Manual Part 1, Third Edition, May 2013)

From Manhole	To Manhole	Diameter, D (m)	Cross-section (m ²)	Wetted Perimeter (m)	Length (m)	Inlet Invert	Outlet Invert	Slope, s	Hydraulic Radius (m)	Viscosity, v (m ² /s)	Roughness, ks (m)	Velocity, V (m/s)	Capacity, Q (m ³ /s)	Estimated Flow, F (m ³ /s)	Ref. Area	% of Capacity
C1+Pr T1+Kingwood P1+C2+Pr T2+Kingwood P2+Pr Com20+Pr Com23+Lynwood & Maywood Swimming Pool																
FMH1009169	FMH1009171	0.900	0.636	2.827	39.6	0.94	0.81	0.003	0.225	0.00000114	0.003	1.46	0.9310	0.3743	C1+Pr T1+Kingwood P1+C2+Pr T2+Kingwood P2+Pr Com20+Pr Com23+Lynwood & Maywood Swimming Pool	40.2%
FMH1009171	FMH1009172	0.900	0.636	2.827	50.2	0.81	0.70	0.002	0.225	0.00000114	0.003	1.24	0.7908	0.3743		47.3%
FMH1009172	FMH1009173	0.900	0.636	2.827	53.50	0.70	0.57	0.002	0.225	0.00000114	0.003	1.26	0.8007	0.3743		46.7%
FMH1009173	FMH1009174	0.900	0.636	2.827	50.0	0.57	0.48	0.002	0.225	0.00000114	0.003	1.14	0.7226	0.3743		51.8%
FMH1009174	FMH1009175	0.900	0.636	2.827	50.20	0.48	0.43	0.001	0.225	0.00000114	0.003	0.95	0.6051	0.3743		61.9%
C1+Pr T1+Kingwood P1+C2+Pr T2+Kingwood P2+Pr Com20+Pr Com23+Lynwood & Maywood Swimming Pool+C3+TSW Swimming Pool																
FMH1009175	FMH1009190	0.900	0.636	2.827	41.60	-0.02	-0.22	0.005	0.225	0.00000114	0.003	1.77	1.1270	0.4615	C1+Pr T1+Kingwood P1+C2+Pr T2+Kingwood P2+Pr Com20+Pr Com23+Lynwood & Maywood Swimming Pool+C3+TSW Swimming Pool	40.9%
FMH1009190	FMH1009188	0.900	0.636	2.827	53.40	-0.22	-0.41	0.004	0.225	0.00000114	0.003	1.52	0.9693	0.4615		47.6%
Kingwood P1+Pr Com20 to FMH1009422																
FMH1009421	FMH1009560	0.375	0.110	1.178	17.80	2.6	2.40	0.011	0.094	0.00000114	0.003	1.53	0.1689	0.0382	Kingwood P1+Pr Com20 to FMH1009422	22.6%
FMH1009560	FMH1009422	0.225	0.040	0.707	34.00	2.16	1.78	0.011	0.056	0.00000114	0.003	1.08	0.0430	0.0382		88.7%
Kingwood P2+Pr Com23 to FMH1009169																
FMH1009437	FMH1009170	0.450	0.159	1.414	21.50	2.52	2.40	0.006	0.113	0.00000114	0.003	1.22	0.1933	0.0572	Kingwood P2+Pr Com23 to FMH1009169	29.6%
FMH1009170	FMH1009169	0.300	0.071	0.942	28.90	2.40	2.25	0.005	0.075	0.00000114	0.003	0.90	0.0639	0.0572		89.6%
Pr T1 + Pr T2 to FMH1009432																
FMH1009431	FMH1009432	0.225	0.040	0.707	30.00	2.03	1.60	0.014	0.056	0.00000114	0.003	1.23	0.0488	0.0356	Pr T1 + Pr T2 to FMH1009432	73.1%

Appendix G

Draft Tin Shui Wai Outline Development Plan



土地用途及面積一覽表
SCHEDULE OF USES AND AREAS

地帶 ZONES		大約面積及百分率 APP. AREA & %	
		公頃 HECTARES	百分率 %
C	商業 COMMERCIAL	2.80	1.34
RS	公共屋宇 SPECIAL RESIDENTIAL	53.50	25.62
R1	住宅發展密度第1區 RESIDENTIAL - ZONE 1	32.42	15.53
G	政府 GOVERNMENT	12.55	6.01
IC	機構或社區 INSTITUTION OR COMMUNITY	1.41	0.68
E	教育 EDUCATION	11.73	5.62
DO	地區休憩用地 DISTRICT OPEN SPACE	14.89	7.13
LO	鄰舍休憩用地 LOCAL OPEN SPACE	8.48	4.06
A	美化市容 AMENITY	1.82	0.87
OU	其他指定用途 OTHER SPECIFIED USES	4.23	2.03
U	未決定用途 UNDETERMINED	0.09	0.04
——	道路等 ROAD, ETC	64.87	31.07
發展區總面積 TOTAL DEVELOPMENT AREA		208.79	100.00
排水道 DRAINAGE CHANNEL		9.26	
規劃範圍總面積 TOTAL PLANNING SCHEME AREA		218.05	

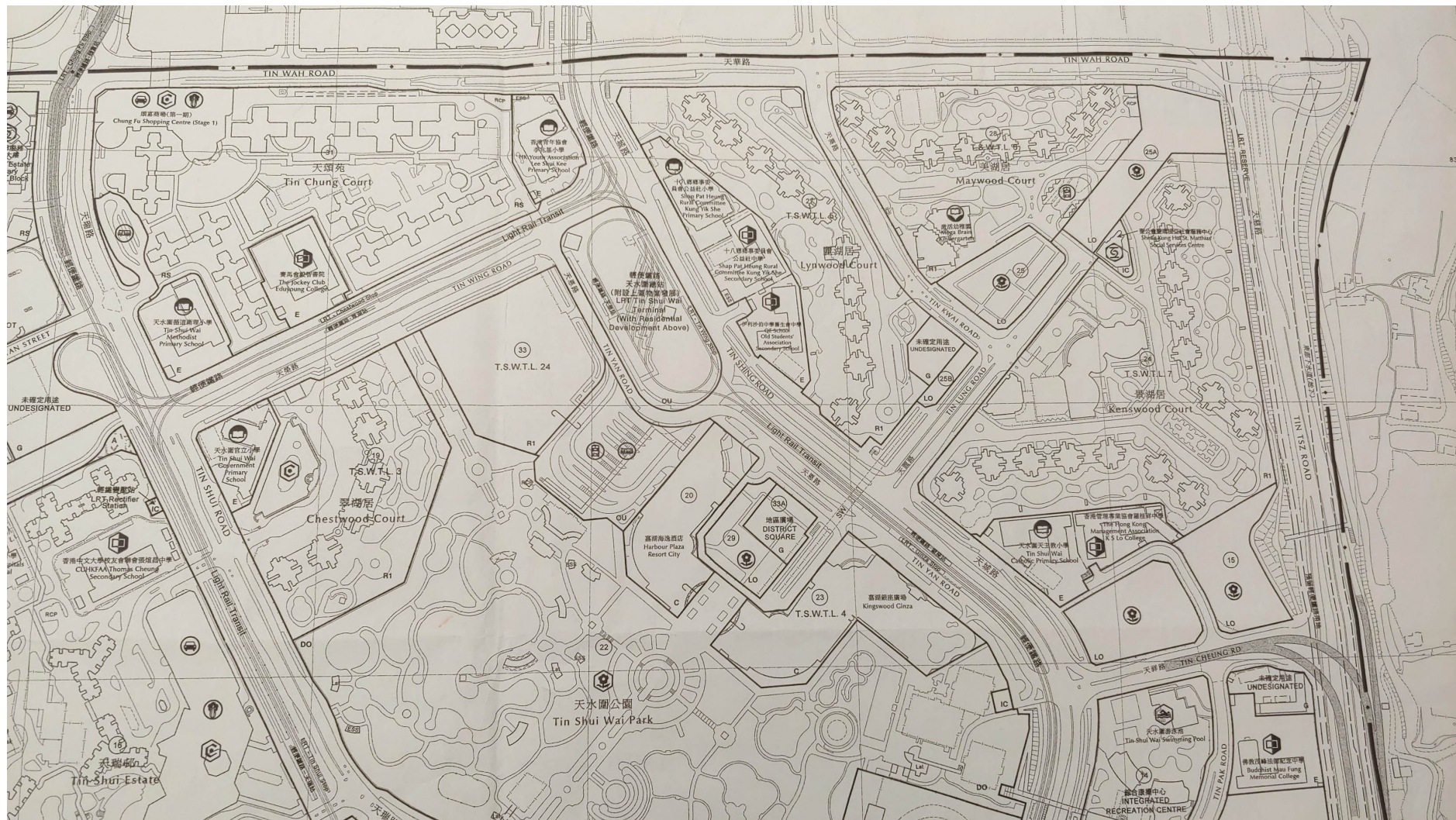
規劃及土地發展委員會於 年 月 日核准
APPROVED BY COMMITTEE ON PLANNING AND LAND
DEVELOPMENT ON

採納 ADOPTED

房屋及規劃地政局常任秘書長(規劃及地政)
PERMANENT SECRETARY FOR HOUSING, PLANNING AND LANDS
(PLANNING AND LANDS)
日期 DATE

TIN SHU

米 METRES 50
E



Appendix 8

Responses-to-Comments Tables included in Previous Further Information Submissions

**Proposed Wholesale Conversion of an Existing Hotel for 'Flat' and Permitted Commercial Use
Tin Shui Wai Town Lot No. 4, Tin shui Wai
(Planning Application No. A/TSW/77)**

Comments Forwarded from Tuen Mun and Yuen Long West District Planning Office

Comments	Responses
Comments from Environmental Protection Department (Received on 8 July 2022) (Contact Person: Ms Hyde MAK, Tel: 2835 1123)	
Comments on AQIA	
1. Table 5.1: The 4th highest 24-hr SO ₂ concentration in 2018 is incorrect. Please revise.	Table 5.1 of the AQIA report has been revised (Annex A refers).
2. Table 5.2: - The 4th highest 10-min SO ₂ concentration in grid (23,48) is incorrect. Please revise. - (Note [2]) It should be 4th highest 10-min SO ₂ concentration. Please revise.	Table 5.2 of the AQIA report has been revised (Annex A refers).
3. Section 5.3: The last sentence shall read as "According to the PATH data, the predicted concentrations for all the pollutants in 2025 are below the AQO limit values". Please revise.	Section 5.3 of the AQIA report has been revised accordingly (Annex A refers).
4. Section 6.1: Please be reminded that it is the responsibility of the applicant and their consultants to ensure the validity of the chimney data by their own site surveys. Should the information of industrial chimneys be subsequently found to be incorrect, the assessment result presented in the planning application would be invalid.	Noted. Site survey conducted on 4 April 2022 has confirmed that no industrial chimney was identified within 500m of the project site.
5. Section 7.1 & Table 7.1: Please identify the road type of the concerned roads referring to the latest Annual Traffic Census by Transport Department. Since Ka Yan Street is not included in the Annual Traffic Census, please seek Transport Department's agreement on its road type.	The road type of Tin Yan Road is referenced from the latest Annual Traffic Census, which is classified as local distributor. As advised by the Transport Consultant, Ka Yan Street is classified as local distributor. Confirmation from the Transport Department will be provided once available.

Comments	Responses
<p>6. Section 7:</p> <ul style="list-style-type: none"> - Please address the potential air quality impact on the proposed development from the nearby Tin Shui Wai PTI by indicating the location of the exhaust outlet of the PTI ventilation system in the map and determining the separation distance between the ASRs of the proposed development and the exhaust outlet. Please also note that any air-sensitive uses of the proposed development such as openable windows and fresh air intake points shall be located away from the PTI and its exhaust as far as possible for good air quality planning. 	<p>Based on the observation from site survey, the location of the exhaust outlet of the PTI ventilation system is facing south and away from the Proposed Development. The location of the exhaust outlet and the separation distance between the exhaust outlet and the nearest ASR of the proposed Development are provided in Figure 3 of the revised AQIA report (Annex A refers).</p> <p>The ASRs of the proposed Development are located away from the exhaust outlet of PTI as far as practicable. With significant separation distance between the ASR of the Proposed Development and the exhaust outlet, adverse air quality impact due to the PTI is not anticipated.</p>
<ul style="list-style-type: none"> - Please note that the lower floors of the existing hotels will be converted to commercial area (carparking spaces as mentioned in the Planning Statement) which will be emission sources of air pollutants during the operation phase. Please indicate the locations of the planned carparking spaces in the map and address the potential air quality impact on the nearby ASRs from these carparking spaces and their exhausts if any. 	<p>The detailed design of the proposed carpark is not available at this stage. The location of the exhaust outlet would be designed with reference to the "ProPECC PN 2/96 – Control of Air Pollution in Car Park". The exhaust air from the carpark would be discharged to the atmosphere with proper mitigation treatments in such a manner and at a location not to result in any air nuisance to occupants in the Proposed Development and to the neighboring building and to the public. Hence, adverse air quality impact due to the proposed carpark is not anticipated.</p>
<p>7. Section 8: Please provide more details about the construction activities for the proposed development including but not limited to:</p> <ul style="list-style-type: none"> - clarify whether there will be any excavation work in addition to the A&A works. If positive, please provide the size of excavation and amount of excavated material to be handled; - type and scale of the dusty activities; - number of dump trucks per time over the work site; 	<ul style="list-style-type: none"> - There will be no excavation work. - Dusty activities include vehicles movement on haul roads, loading or unloading stockpile material, stockpiling of material and wind erosion of exposed areas etc. As the construction activities for the proposed Development only include A&A works, the scale of these activities are relatively small, adverse air quality impact due to the dusty activities is considered to be minimal. - The details of site dump trucks and mechanical machineries are not

Comments	Responses
<ul style="list-style-type: none"> - number and types of on-site mechanical machineries; - identification of air sensitive receivers (ASRs) in the surrounding area and the corresponding separation distances between the ASRs and the project site boundary; - identification of any concurrent project in the surrounding area and address the cumulative air quality impact. 	<p>available at this stage. With the implementation of dust control measures stipulated in the Air Pollution Control (Construction Dust) Regulation (Section 11.3) and requirements stipulated in the Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation (Section 11.4), in addition the relatively small scale construction works, adverse air quality impact due to site dump trucks and mechanical machineries is considered to be minimal.</p> <ul style="list-style-type: none"> - ASRs in the surrounding area and the corresponding separation distances between the ASRs and the project site boundary are provided in Section 10 and Figure 4 of the revised AQIA report (Annex A refers). - The residential development for LRT Terminus at TSWTL 23 is identified as concurrent project in the surrounding area. According to MTRC's website, it is a proposed residential development comprises of 3 towers and a podium deck over the LRT terminus, and the expected completion year is 2024. The construction works of the Proposed Development will be commenced after the approval of the Planning Application, Lease Modification and General Building Plan. As such, overlapping between the construction phase of the Proposed Development and the identified concurrent project is not expected. With implementation of dust control measures stipulated in the Air Pollution Control (Construction Dust) Regulation (Section 11.3) and requirements stipulated in the Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation (Section 11.4), in addition the relatively small scale construction works of the Proposed Development, adverse cumulative air quality impact is not anticipated.
<p>8. Section 8.2: Please consider including the following mitigation measures:</p> <ul style="list-style-type: none"> - Provide electric power supply for on-site machinery as far as practicable and avoid using diesel generators to minimize the gaseous and PM emissions. - Locate all the dusty activities away from any nearby ASRs as far as practicable. 	<p>The mitigation measures are included in Section 11.3 of the revised AQIA report (Annex A refers).</p>

Comments	Responses
<ul style="list-style-type: none"> - Erect higher hoarding at the locations with ASRs in immediate proximity to the project site boundary. - Locate the haul road (if any) away from those concerned ASRs. 	
<u>Comments on SIA</u>	
1. Section 1: Please state estimated project intake year.	Project intake year 2028 is stated in Section 1 of the revised SIA report (Annex B refers)
2. Section 2: i) Please suggest the assessment criteria, methodology, and reference guideline.	The assessment criteria, methodology and reference guideline are stated in Section 2 of the revised SIA report (Annex B refers).
ii) For para. 2.2, please clarify the data source of assumed population or employment in different catchments.	The data source of assumed population or employment in different catchments are stated in Para. 3.2 of the revised SIA report (Annex B refers).
3. Table 2.3 i) Working density for “all types” of retail trade should be adopted when assuming the no. of employee for retail activities.	The proposed commercial is clearly not related to office/factories/industries category and the private commercial matches with the proposed retail premises planning. In the previously approved SIA for the Site, private commercial is adopted for the worker density. Therefore, we considered working density for private commercial of retail trade is reasonable to be adopted.
ii) Please check the peaking factor. The peaking factor (including stormwater allowance) should be adopted for existing sewerage facilities. Also, peaking factor is defined according to the contributing population, please refer to Table T-5 and para. 12 of EPD's guideline (EPD/TP1/05) for details.	The peaking factor (excluding stormwater allowance) is adopted for proposed new development with no existing upstream sewerage. All drainage pipes within the site are newly constructed which can ensure no misconnections and defects for infiltration.
iii) Please clarify the data source of existing commercial gross floor area since Table 3.3 does not show relevant information.	It has been clarified in Table 4.2 of the revised SIA report (Annex B refers).
4. Table 2.6 i) Peak flow of Kingswood Phase I, which is also discharged to FMH1009163, is missing in the total peak flow. Please supplement.	Peak flow of existing Kingswood Phase I, proposed commercial area 20 and proposed residential area 20 is added to total average flow in Table 3.7 of the revised SIA report (Annex B refers).

Comments	Responses
ii) Calculation of total peak flow 0.2776 m ³ /s is incorrect. Please check	The calculation of total peak flow is revised in Table 3.7 of the revised SIA report (Annex B refers).
iii) Please consider to use one table instead of multiple tables, to cover all catchment discharging to FMH1009163.	One table is used to cover all C2 area sewerage discharge in Table 3.4 of the revised SIA report (Annex B refers).
5. Table 2.8 & Table 3.4 i) Working density for "all types" of retail trade should be adopted when assuming the no. of employee for retail activities.	Please refer to Response 3i.
ii) Please check the peaking factor. The peaking factor (including stormwater allowance) should be adopted for existing sewerage facilities. Also, peaking factor is defined according to the contributing population, please refer to Table T-5 and para. 12 of EPD's guideline (EPD/TP1/05) for details.	Please refer to Response 3ii.
6. Table 2.10 i) Please consider to include all the upstream catchment in the table.	Catchment C1+C2+C3+Area 20+Area 23 are included to manhole FMH1009175 in Table 3.11 of the revised SIA report (Annex B refers).
ii) Calculation of total peak flow 0.3467 m ³ /s is incorrect. Please check.	The total peak flow is revised by total average flow times peaking factor in Table 3.11 of the revised SIA report (Annex B refers).
7. Table 2.12 i) The calculation is incorrect, please include all the upstream catchment with cumulative flow for calculating peaking factor.	The calculation has been revised and included all the upstream catchment include area 20 and area 23 in Table 3.12 of the revised SIA report (Annex B refers).
8. Table 3.1 i) 1,102 residential units are mentioned in Section 1. Please consider to use no. of flats (1,102) for estimating the no. of residents with population density in Area 20 & Area 23.	It has been revised by considering the use of no. of flats (1102) for estimating the no. of residents in Table 4.1 of the revised SIA report (Annex B refers).
ii) UFF of R2 (0.27) should be adopted for private development in Area 20 & Area 23.	According to the Draft Tin Shui Wai Outline Development Plan No. D/TSW-S/1H last circulated in 2004 (attached in Appendix G), the residential sites in the vicinity of TSWTL4 including Central Park Towers and Kingswood Villas are zoned "Residential - Zone 1 ("R1"). Therefore, UFF of R1 (0.19) is adopted for private development in Area 20 & Area 23 in Table 4.1 of the revised SIA report (Annex B refers).

Comments	Responses
iii) Please state the manholes that the sewage from Area 20 & Area 23 to be discharged.	The manholes that the sewage from Area 20 & Area 23 to be discharge to FMH1009432 are stated in Table 4.1 of the revised SIA report (Annex B refers).
iv) Please check the peaking factor. The peaking factor (including stormwater allowance) should be adopted for existing sewerage facilities. Also, peaking factor is defined according to the contributing population, please refer to Table T-5 and para. 12 of EPD's guideline (EPD/TP1/05) for details.	Please refer to Response 3ii.
9. Table 2.7, Table 2.11 & Table 3.2: i) Please show the calculation steps for peak backwash volume for the swimming pools. Please also note that the peak backwashing volume and backwashing duration are not reasonable.	The peak backwash volume is the volume of the swimming pool. The assumed backwashing duration for whole volume of the swimming pool is 6 hours. The assumed number of filter and backwash duration is 1 and 15 mins/day. The swimming pool calculation is revised with reduced backwashing duration in Table 3.6, Table 3.10 & Table 4.2 of the revised SIA report (Annex B refers).
ii) For table 3.2, please state the manhole from which backwash of swimming pool would be discharged to.	The manhole which the existing swimming pool discharge to is stated in Table 3.6 of the revised SIA report (Annex B refers).
iii) For table 3.2, please confirm whether it is an existing or a proposed swimming pool as the description of table is not consistent with its title.	It is an existing swimming pool in Table 3.6 of the revised SIA report (Annex B refers).
10. Table 3.5: Please show the details of the calculation.	The detail of the calculation of contributing population is stated in notes under Table 4.4 of the revised SIA report (Annex B refers).
11. Paragraphs after Table 3.5: Please check if 0.0144 cu.m/s is Residential Portion at Area 23, 0.0343 cu.m/s is Kingswood Phase I and 0.0412 cu.m/s is Kingswood Phase II as they do not tally with the description mentioned in the paragraphs.	The calculated peak sewerage flow of residential area 23, existing and redevelopment of commercial area 20 and 23 are revised in paragraphs after Table 4.4 of the revised SIA report (Annex B refers).
11. Appendix B: The master layout plan is not available in Appendix 1 of the supporting statement. Please check.	The Master Layout Plan is enclosed at Appendix B of the revised SIA report (Annex B refers).
12. Appendix D: Please provide colour copy of the drainage record.	Only black and white copy of drainage record plan could be obtained from DSD.

Comments	Responses
13. Appendix E: Please also show the sewage pipe line in the sewerage catchment index plan.	The sewage pipe line is added in the sewerage catchment index plan in Appendix E of the revised SIA report (Annex B refers).
14. Appendix F i) Please use cumulative flow to calculate the peak flow in all catchments.	Cumulative flow to calculate the peak flow in all catchments are adopted. The peak flow calculation is stated in Table 3.12 of the revised SIA report (Annex B refers).
ii) Typo of the invert level of pipe FMH1009434 – FMH1009435, FMH1009438-FMH1009437. Please check.	The invert level of pipe FMH1009434 – FMH1009435 is revised in Appendix F according to sewerage record plan. In the drainage record plan, FMH1009437 and FMH1009438 have same invert level, the sewerage from existing Kingswood Phase II and Proposed Commercial (Area 23) will be directly diverted from terminal manhole to FMH1009437 as stated in Appendix E of the revised SIA report (Annex B refers).
iii) Calculation of peak flow for FMH1009175 – FMH1009190 is incorrect. Please check.	It is checked with correct peak flow sum up in all catchment.
iv) Proposed commercial of Area 20 & Area 23 is missing in the calculation. Please review.	The peak flow of commercial of Area 20 and Area 23 has been added into the Kingswood Phase I and II. It is revised with separate peak foul water flow in Appendix F of the revised SIA report (Annex B refers).
v) Peak flow calculation of each segment of pipe is incorrect, it should be estimated by multiplying the total average daily flow discharged to it with the corresponding peaking factor (derived from contributing population).	The peak flow factor is stated in Table 3.12 and Table 4.4 and the peak foul water flow already included multiplying the peaking factor in Appendix F of the revised SIA report (Annex B refers).

Compiled by: KTA

Date: 15 July 2022

File Ref: 20220715_A_TSW_77_FI1_V01

**Proposed Wholesale Conversion of an Existing Hotel for 'Flat' and Permitted Commercial Use
Tin Shui Wai Town Lot No. 4, Tin shui Wai
(Planning Application No. A/TSW/77)**

Comments Forwarded from Tuen Mun and Yuen Long West District Planning Office

Comments	Responses
Comments from Environmental Protection Department (Received on 8 July 2022) (Contact Person: Ms Hyde MAK, Tel: 2835 1123)	
Comments on AQIA	
1. Table 5.1: The 4th highest 24-hr SO ₂ concentration in 2018 is incorrect. Please revise.	Table 5.1 of the AQIA report has been revised (Annex A refers).
2. Table 5.2: - The 4th highest 10-min SO ₂ concentration in grid (23,48) is incorrect. Please revise. - (Note [2]) It should be 4th highest 10-min SO ₂ concentration. Please revise.	Table 5.2 of the AQIA report has been revised (Annex A refers).
3. Section 5.3: The last sentence shall read as "According to the PATH data, the predicted concentrations for all the pollutants in 2025 are below the AQO limit values". Please revise.	Section 5.3 of the AQIA report has been revised accordingly (Annex A refers).
4. Section 6.1: Please be reminded that it is the responsibility of the applicant and their consultants to ensure the validity of the chimney data by their own site surveys. Should the information of industrial chimneys be subsequently found to be incorrect, the assessment result presented in the planning application would be invalid.	Noted. Site survey conducted on 4 April 2022 has confirmed that no industrial chimney was identified within 500m of the project site.
5. Section 7.1 & Table 7.1: Please identify the road type of the concerned roads referring to the latest Annual Traffic Census by Transport Department. Since Ka Yan Street is not included in the Annual Traffic Census, please seek Transport Department's agreement on its road type.	The road type of Tin Yan Road is referenced from the latest Annual Traffic Census, which is classified as local distributor. As advised by the Transport Consultant, Ka Yan Street is classified as local distributor. Confirmation from the Transport Department will be provided once available.

Comments	Responses
<p>6. Section 7:</p> <ul style="list-style-type: none"> - Please address the potential air quality impact on the proposed development from the nearby Tin Shui Wai PTI by indicating the location of the exhaust outlet of the PTI ventilation system in the map and determining the separation distance between the ASRs of the proposed development and the exhaust outlet. Please also note that any air-sensitive uses of the proposed development such as openable windows and fresh air intake points shall be located away from the PTI and its exhaust as far as possible for good air quality planning. 	<p>Based on the observation from site survey, the location of the exhaust outlet of the PTI ventilation system is facing south and away from the Proposed Development. The location of the exhaust outlet and the separation distance between the exhaust outlet and the nearest ASR of the proposed Development are provided in Figure 3 of the revised AQIA report (Annex A refers).</p> <p>The ASRs of the proposed Development are located away from the exhaust outlet of PTI as far as practicable. With significant separation distance between the ASR of the Proposed Development and the exhaust outlet, adverse air quality impact due to the PTI is not anticipated.</p>
<ul style="list-style-type: none"> - Please note that the lower floors of the existing hotels will be converted to commercial area (carparking spaces as mentioned in the Planning Statement) which will be emission sources of air pollutants during the operation phase. Please indicate the locations of the planned carparking spaces in the map and address the potential air quality impact on the nearby ASRs from these carparks and their exhausts if any. 	<p>The detailed design of the proposed carpark is not available at this stage. The location of the exhaust outlet would be designed with reference to the "ProPECC PN 2/96 – Control of Air Pollution in Car Park". The exhaust air from the carpark would be discharged to the atmosphere with proper mitigation treatments in such a manner and at a location not to result in any air nuisance to occupants in the Proposed Development and to the neighboring building and to the public. Hence, adverse air quality impact due to the proposed carpark is not anticipated.</p>
<p>7. Section 8: Please provide more details about the construction activities for the proposed development including but not limited to:</p> <ul style="list-style-type: none"> - clarify whether there will be any excavation work in addition to the A&A works. If positive, please provide the size of excavation and amount of excavated material to be handled; - type and scale of the dusty activities; - number of dump trucks per time over the work site; 	<ul style="list-style-type: none"> - There will be no excavation work. - Dusty activities include vehicles movement on haul roads, loading or unloading stockpile material, stockpiling of material and wind erosion of exposed areas etc. As the construction activities for the proposed Development only include A&A works, the scale of these activities are relatively small, adverse air quality impact due to the dusty activities is considered to be minimal. - The details of site dump trucks and mechanical machineries are not

Comments	Responses
<ul style="list-style-type: none"> - number and types of on-site mechanical machineries; - identification of air sensitive receivers (ASRs) in the surrounding area and the corresponding separation distances between the ASRs and the project site boundary; - identification of any concurrent project in the surrounding area and address the cumulative air quality impact. 	<p>available at this stage. With the implementation of dust control measures stipulated in the Air Pollution Control (Construction Dust) Regulation (Section 11.3) and requirements stipulated in the Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation (Section 11.4), in addition the relatively small scale construction works, adverse air quality impact due to site dump trucks and mechanical machineries is considered to be minimal.</p> <ul style="list-style-type: none"> - ASRs in the surrounding area and the corresponding separation distances between the ASRs and the project site boundary are provided in Section 10 and Figure 4 of the revised AQIA report (Annex A refers). - The residential development for LRT Terminus at TSWTL 23 is identified as concurrent project in the surrounding area. According to MTRC's website, it is a proposed residential development comprises of 3 towers and a podium deck over the LRT terminus, and the expected completion year is 2024. The construction works of the Proposed Development will be commenced after the approval of the Planning Application, Lease Modification and General Building Plan. As such, overlapping between the construction phase of the Proposed Development and the identified concurrent project is not expected. With implementation of dust control measures stipulated in the Air Pollution Control (Construction Dust) Regulation (Section 11.3) and requirements stipulated in the Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation (Section 11.4), in addition the relatively small scale construction works of the Proposed Development, adverse cumulative air quality impact is not anticipated.
<p>8. Section 8.2: Please consider including the following mitigation measures:</p> <ul style="list-style-type: none"> - Provide electric power supply for on-site machinery as far as practicable and avoid using diesel generators to minimize the gaseous and PM emissions. - Locate all the dusty activities away from any nearby ASRs as far as practicable. 	<p>The mitigation measures are included in Section 11.3 of the revised AQIA report (Annex A refers).</p>

Comments	Responses
<ul style="list-style-type: none"> - Erect higher hoarding at the locations with ASRs in immediate proximity to the project site boundary. - Locate the haul road (if any) away from those concerned ASRs. 	
<u>Comments on SIA</u>	
1. Section 1: Please state estimated project intake year.	Project intake year 2028 is stated in Section 1 of the revised SIA report (Annex B refers)
2. Section 2: i) Please suggest the assessment criteria, methodology, and reference guideline.	The assessment criteria, methodology and reference guideline are stated in Section 2 of the revised SIA report (Annex B refers).
ii) For para. 2.2, please clarify the data source of assumed population or employment in different catchments.	The data source of assumed population or employment in different catchments are stated in Para. 3.2 of the revised SIA report (Annex B refers).
3. Table 2.3 i) Working density for “all types” of retail trade should be adopted when assuming the no. of employee for retail activities.	The proposed commercial is clearly not related to office/factories/industries category and the private commercial matches with the proposed retail premises planning. In the previously approved SIA for the Site, private commercial is adopted for the worker density. Therefore, we considered working density for private commercial of retail trade is reasonable to be adopted.
ii) Please check the peaking factor. The peaking factor (including stormwater allowance) should be adopted for existing sewerage facilities. Also, peaking factor is defined according to the contributing population, please refer to Table T-5 and para. 12 of EPD's guideline (EPD/TP1/05) for details.	The peaking factor (excluding stormwater allowance) is adopted for proposed new development with no existing upstream sewerage. All drainage pipes within the site are newly constructed which can ensure no misconnections and defects for infiltration.
iii) Please clarify the data source of existing commercial gross floor area since Table 3.3 does not show relevant information.	It has been clarified in Table 4.2 of the revised SIA report (Annex B refers).
4. Table 2.6 i) Peak flow of Kingswood Phase I, which is also discharged to FMH1009163, is missing in the total peak flow. Please supplement.	Peak flow of existing Kingswood Phase I, proposed commercial area 20 and proposed residential area 20 is added to total average flow in Table 3.7 of the revised SIA report (Annex B refers).

Comments	Responses
ii) Calculation of total peak flow 0.2776 m ³ /s is incorrect. Please check	The calculation of total peak flow is revised in Table 3.7 of the revised SIA report (Annex B refers).
iii) Please consider to use one table instead of multiple tables, to cover all catchment discharging to FMH1009163.	One table is used to cover all C2 area sewerage discharge in Table 3.4 of the revised SIA report (Annex B refers).
5. Table 2.8 & Table 3.4 i) Working density for "all types" of retail trade should be adopted when assuming the no. of employee for retail activities.	Please refer to Response 3i.
ii) Please check the peaking factor. The peaking factor (including stormwater allowance) should be adopted for existing sewerage facilities. Also, peaking factor is defined according to the contributing population, please refer to Table T-5 and para. 12 of EPD's guideline (EPD/TP1/05) for details.	Please refer to Response 3ii.
6. Table 2.10 i) Please consider to include all the upstream catchment in the table.	Catchment C1+C2+C3+Area 20+Area 23 are included to manhole FMH1009175 in Table 3.11 of the revised SIA report (Annex B refers).
ii) Calculation of total peak flow 0.3467 m ³ /s is incorrect. Please check.	The total peak flow is revised by total average flow times peaking factor in Table 3.11 of the revised SIA report (Annex B refers).
7. Table 2.12 i) The calculation is incorrect, please include all the upstream catchment with cumulative flow for calculating peaking factor.	The calculation has been revised and included all the upstream catchment include area 20 and area 23 in Table 3.12 of the revised SIA report (Annex B refers).
8. Table 3.1 i) 1,102 residential units are mentioned in Section 1. Please consider to use no. of flats (1,102) for estimating the no. of residents with population density in Area 20 & Area 23.	It has been revised by considering the use of no. of flats (1102) for estimating the no. of residents in Table 4.1 of the revised SIA report (Annex B refers).
ii) UFF of R2 (0.27) should be adopted for private development in Area 20 & Area 23.	According to the Draft Tin Shui Wai Outline Development Plan No. D/TSW-S/1H last circulated in 2004 (attached in Appendix G), the residential sites in the vicinity of TSWTL4 including Central Park Towers and Kingswood Villas are zoned "Residential - Zone 1 ("R1"). Therefore, UFF of R1 (0.19) is adopted for private development in Area 20 & Area 23 in Table 4.1 of the revised SIA report (Annex B refers).

Comments	Responses
iii) Please state the manholes that the sewage from Area 20 & Area 23 to be discharged.	The manholes that the sewage from Area 20 & Area 23 to be discharge to FMH1009432 are stated in Table 4.1 of the revised SIA report (Annex B refers).
iv) Please check the peaking factor. The peaking factor (including stormwater allowance) should be adopted for existing sewerage facilities. Also, peaking factor is defined according to the contributing population, please refer to Table T-5 and para. 12 of EPD's guideline (EPD/TP1/05) for details.	Please refer to Response 3ii.
9. Table 2.7, Table 2.11 & Table 3.2: i) Please show the calculation steps for peak backwash volume for the swimming pools. Please also note that the peak backwashing volume and backwashing duration are not reasonable.	The peak backwash volume is the volume of the swimming pool. The assumed backwashing duration for whole volume of the swimming pool is 6 hours. The assumed number of filter and backwash duration is 1 and 15 mins/day. The swimming pool calculation is revised with reduced backwashing duration in Table 3.6, Table 3.10 & Table 4.2 of the revised SIA report (Annex B refers).
ii) For table 3.2, please state the manhole from which backwash of swimming pool would be discharged to.	The manhole which the existing swimming pool discharge to is stated in Table 3.6 of the revised SIA report (Annex B refers).
iii) For table 3.2, please confirm whether it is an existing or a proposed swimming pool as the description of table is not consistent with its title.	It is an existing swimming pool in Table 3.6 of the revised SIA report (Annex B refers).
10. Table 3.5: Please show the details of the calculation.	The detail of the calculation of contributing population is stated in notes under Table 4.4 of the revised SIA report (Annex B refers).
11. Paragraphs after Table 3.5: Please check if 0.0144 cu.m/s is Residential Portion at Area 23, 0.0343 cu.m/s is Kingswood Phase I and 0.0412 cu.m/s is Kingswood Phase II as they do not tally with the description mentioned in the paragraphs.	The calculated peak sewerage flow of residential area 23, existing and redevelopment of commercial area 20 and 23 are revised in paragraphs after Table 4.4 of the revised SIA report (Annex B refers).
11. Appendix B: The master layout plan is not available in Appendix 1 of the supporting statement. Please check.	The Master Layout Plan is enclosed at Appendix B of the revised SIA report (Annex B refers).
12. Appendix D: Please provide colour copy of the drainage record.	Only black and white copy of drainage record plan could be obtained from DSD.

Comments	Responses
13. Appendix E: Please also show the sewage pipe line in the sewerage catchment index plan.	The sewage pipe line is added in the sewerage catchment index plan in Appendix E of the revised SIA report (Annex B refers).
14. Appendix F i) Please use cumulative flow to calculate the peak flow in all catchments.	Cumulative flow to calculate the peak flow in all catchments are adopted. The peak flow calculation is stated in Table 3.12 of the revised SIA report (Annex B refers).
ii) Typo of the invert level of pipe FMH1009434 – FMH1009435, FMH1009438-FMH1009437. Please check.	The invert level of pipe FMH1009434 – FMH1009435 is revised in Appendix F according to sewerage record plan. In the drainage record plan, FMH1009437 and FMH1009438 have same invert level, the sewerage from existing Kingswood Phase II and Proposed Commercial (Area 23) will be directly diverted from terminal manhole to FMH1009437 as stated in Appendix E of the revised SIA report (Annex B refers).
iii) Calculation of peak flow for FMH1009175 – FMH1009190 is incorrect. Please check.	It is checked with correct peak flow sum up in all catchment.
iv) Proposed commercial of Area 20 & Area 23 is missing in the calculation. Please review.	The peak flow of commercial of Area 20 and Area 23 has been added into the Kingswood Phase I and II. It is revised with separate peak foul water flow in Appendix F of the revised SIA report (Annex B refers).
v) Peak flow calculation of each segment of pipe is incorrect, it should be estimated by multiplying the total average daily flow discharged to it with the corresponding peaking factor (derived from contributing population).	The peak flow factor is stated in Table 3.12 and Table 4.4 and the peak foul water flow already included multiplying the peaking factor in Appendix F of the revised SIA report (Annex B refers).
Comments from Drainage Services Department (Received on 15 July 2022) (Contact Person: Ms. Vicky SY; Tel: 2300 1347)	
Sewerage Impact Assessment (SIA) (a) Appendix E – Please check if there is sewage generated from the catchment of Central Park Towers via pipe no. FGJ1013759 and the public toilet via pipe no. FGL1013760.	The sewage generated from the catchment of Central Park Tower and the public toilet will be discharged to FMH1009801 (northern existing drainage system). There is no foul water flow from stated catchments connected to the FMH1009419 (to proposed development).
(b) Table 2.9 – For C3B, please clarify if the flow from Ha Mei San Tsuen SPS has been included (of have you counter-checked with the recorded flow of SPS?)	The sewage flow from Ha Mei San Tsuen and upstream catchment has been included for C3B catchment.
(c) Section 5 – Please indicate that the project proponent will be responsible for the construction of the required sewerage works.	It has been revised in Section 4 of the SIA report (Annex B refers)

Comments	Responses
(d) The SIA report needs to meet the satisfaction of EPD, the planning authority of sewerage infrastructure.	Noted

Compiled by: KTA

Date: 27 July 2022

File Ref: 20220727_A_TSW_77_FI2_V01

**Proposed Wholesale Conversion of an Existing Hotel for 'Flat' and Permitted Commercial Use
Tin Shui Wai Town Lot No. 4, Tin shui Wai
(Planning Application No. A/TSW/77)**

Comments Forwarded from Tuen Mun and Yuen Long West District Planning Office

Comments	Responses
Comments from Environmental Protection Department (Received on 13 July 2022) (Contact Person: Ms Hyde MAK, Tel: 2835 1123)	
Comments on NIA	
(1) S.5.2 - Please document TD's agreement on the traffic forecast data in the NIA report once available. In case TD has no comment on the methodology for traffic forecast only, the consultant should provide written confirmation from the respective competent party (e.g. traffic consultant) that TD's endorsed methodology has been strictly adopted in preparing the traffic forecast data, and hence the validity of traffic data can be confirmed.	TD's endorsement on the traffic forecast is provided in Appendix 3 of the revised NIA report (Annex A refers). The traffic consultant also confirmed that the TD's endorsed methodology has been strictly adopted in preparing the traffic forecast data. The letter from traffic consultant is also provided in Appendix 3 of the revised NIA report (Annex A refers).
(2) S.4.10 - Please address if Tin Shui Wai Sports Ground, about 200m away from Tower 2, would be a potential noise source to the proposed NSRs. You may consider to make reference to the 2008 Olympic Equestrian Event EIA Report.	Tin Shui Wai Sports Ground is identified as a potential fixed noise source. According to the EIA report "Main Arena of the 2008 Olympic Equestrian Event", the noise sources include crowd noise and PA noise. Fixed noise calculation for this potential noise sources are conducted. The results indicate that all the NSRs of the proposed Development will comply with the stipulated noise criteria (Appendix 10 of the revised NIA report refers).
(3) S.6.2 - Noted from the EA, the predicted maximum traffic noise level is 75.4 dB(A) without noise mitigation measures, and the consultant proposed the acoustic window to alleviate the traffic noise impact. Please provide the details of the acoustic window, such as dimension and overlapping width, to justify that such noise mitigation would achieve noise reduction.	The configuration of the acoustic window and the justification of the noise performance are provided in Appendix 9 of the revised NIA report (Annex A refers).
Comments from Transport Department (Received on 26 July 2022) (Contact Person: Mr Wilson MAN, Tel: 2399 2156)	

Comments	Responses
a) Table 3.3, as compared to the approved application case (i.e. A/TSW/72) at the same site, the number of the residential parking spaces for private cars is reduced from 374 to 297. The proposed GPS of the subject application is about 5.5 only. In this connection, a higher parking provision shall be adopted at the subject site.	This planning application is for the wholesale conversion of the existing hotel. The residential parking spaces will be accommodated within the existing back of house (BOH) spaces at the two basement levels. Given the constraints of the size of the existing BOH area and the existing structural columns of the hotel buildings, preliminary study suggests that the area can accommodate minimum 297 spaces. The maximum number can be worked out in detailed design stage after approval of the planning application and during the processing of the lease modification application. The Applicant has no objection that an approval condition be imposed for the design and provision of parking spaces, loading/unloading and lay-by facilities to the satisfaction of the Commissioner for Transport or the TPB.
b) Table 3.3, 12 motorcycle parking spaces shall be provided within the subject site.	Noted. 12 motorcycle parking spaces shall be provided within the subject site.
Comments from Environmental Protection Department (received on 9 August 2022) (Contact Person: Ms Hyde MAK, Tel: 2835 1123)	
It is noted that the FI provided responses to departmental comments of EPD and DSD with a revised Air Quality Impact Assessment (AQIA) and revised Sewerage Impact Assessment (SIA). However, the noise comments provided have not been addressed. Please address the noise comments as appropriate. Below comments on the revised AQIA and SIA for your follow up:-	/
<u>Air Quality</u>	
1. Table 5.2: The 4th highest 10-min SO ₂ concentration in grid (23, 48) is incorrect. Please revise.	Table 5.2 is revised (Annex B refers).
2. Section 5.3: Please delete "and Table 5.2" in line 1 and add "in general" after "decreasing" in line 2.	Section 5.3 is revised accordingly (Annex B refers).
3. Figure 2: Please clarify and show clearly the separation distance of the project site boundary at corner A from Ka Yan street, which shall be less than 10 m.	Figure 2 and Table 7.1 are revised. The shortest separation distance of the project site boundary from Ka Yan street is 5m and comply with the HKPSG requirement (Annex B refers).
4. Figure 3: According to the architectural drawings, there are air-sensitive uses (such as recreational uses in open space) of the proposed development which are much less than 80 m from the ventilation outlet	Figure 3 is revised (Annex B refers).

Comments	Responses
of the TI. Please revise the figure by showing the separation distances of the closest air-sensitive uses.	
5. Figure 4: Please revise the title to “Locations of Identified ASRs within 500 m from the Proposed Development Site Boundary during Construction Phase”.	Title of Figure 4 is revised (Annex B refers).
<u>Sewerage Impact Assessment</u>	
1. R-t-C 3(iii): The applicant mentioned that data source has been clarified in Table 4.2 of the revised SIA report (Annex B). However, such information is not found, please clarify.	The retail to restaurant ratio is assumed at 7:3 as indicated under Table 4.2 (Annex C refers).
2. R-t-C 8(ii): Please provide plot ratio by referring to Section 6 Table 2 - Maximum Domestic Plot Ratios - New Towns (excluding Tsuen Wan) of Hong Kong Planning Standards and Guidelines Chapter 2 Residential Densities.	The domestic plot ratio of the proposed wholesale conversion of the hotel to residential development is 1.995, the low plot ratio is purely governed by the existing GFA of the hotel but not other planning or infrastructural capacity considerations. The adopted R1 density for the proposed wholesale conversion is in line with the residential densities adopted by Planning Department as indicated in the <u>Draft Tin Shui Wai Outline Development Plan No. D/TSW-S/1H</u> (extract of the plan is attached in <u>Appendix G</u>) that the residential sites surrounding the Application Site (which is at the town centre of Tin Shui Wai) are Zoned R1. Also, according to HKPSG, R1 applies to districts well served by high capacity public transport system such as rail station. The Application Site is served by LRT Tin Wing Station, Ginza Station as well as the major public transport interchange at TSWTL 24. Therefore, the proposed development on the Lot is adopted as a R1 development.
3. R-t-C 9 (i) (i.e Table 3.5, 3.6 & 3.10 in revised SIA) (i) Based on ProPECC PN 5/93, swimming pool water should be connected to stormwater drains while the filtration plant backwash should be discharged to foul sewers. Therefore, the peak backwash volume is foul water generated from filtration plant instead of the whole volume of the swimming pool. Please revise. (ii) Please provide estimated filter area of swimming pools and backwash flowrate and show calculation of backwash volume.	(i)The peak backwash volume is the backwashing discharge in the bottom. Table 3.6 for example, the volume of area 23 swimming pool is 180m ³ . The assumed turnover rate for the whole swimming pool is 6hrs/21600s. The total backwash duration per day is only 15mins/day. The peak backwash per day is 180/21600x15x60=7.5m ³ /day (ii)The mentioned data are provided in Table 3.5, 3.6 & 3.10 (Annex C refers).
4. Table 3.7	

Comments	Responses
(i) Title of Table 3.7 “existing Kingswood Phase I to manhole FMH1009163” is incorrect, please check.	It measures the total foul water flow in the main stream to FMH1009163 including existing Kingswood Phase I foul water flow from upstream.
5. Table 3.8 (i) Typo of “Peaking Factor Calculation is attached in Table 4.5”, should Table 4.5 be read as Table 3.12?	Typo of “Peaking Factor Calculation is attached in Table 4.5” is revised as Table 4.4 (Annex C) refers). It calculates the peak foul water flow in pipe from terminal manhole to main stream.
6. Table 3.12 (i) Please clarify the title of “Catchment C1+C2+Area 20+Proposed Commercial of Area 23”. It should include Kingswood Phase I. (ii) Please include all the catchment in the title of “Catchment C1+C2+C3+Area20+Area 23”.	(i) The title of “Catchment C1+C2+Area 20+Proposed Commercial of Area 23” is revised with including Kingswood Phase I in Table 3.12 (Annex C) refers). (ii) The title of “Catchment C1+C2+C3+Area 20+Area 23” is revised with including all the catchment in Table 3.12 (Annex C) refers).
7. Table 4.3 (i) Please double check the peaking factor (excluding stormwater allowance) of cumulative flow of "Area 20 with Kingswood Phase I (proposed commercial)" and "Area 23 with Kingswood Phase II (proposed commercial)" as they are discharged to FMH1009422 and FMH1009169 respectively.	The peaking factor 5 in Table 4.3 indicate the sewers from terminal manhole to main stream. For the main stream, peaking factor 4 is calculated in Table 3.12 (Annex C) refers).
8. Table 4.4 (i) Please double check the Calculated Total Average Flow of “Kingswood Ph1 & Proposed Commercial (Area 20)” & “Kingswood Ph 2 & Proposed Commercial (Area 23)”. The figures appeared to be reversed. (ii) Please delete the word "Proposed" from Proposed Kingswood Phase I and Proposed Kingswood Phase II.	(i)The calculated total average flow of “Kingswood Ph1 & Proposed Commercial (Area 20)” & “Kingswood Ph 2 & Proposed Commercial (Area 23)” are revised in Table 4.4 (Annex C) refers). (ii)The word “Proposed” are deleted from Kingswood Phase I and II in Table 4.4 (Annex C) refers).
9. Appendix E (Proposed Sewerage Plan (Zoomed))	

Comments	Responses
(i) According to para 6.2, sewerage from existing Kingswood Phase I and Proposed Commercial (Area 20) is discharged to FMH1009421. Please delete the pipe FTH1003090 – FMH1009421 in the layout plan.	The pipe FTH1003090-FMH1009421 is deleted from Proposed Sewerage Plan (Zoomed) in Appendix E (Annex C refers).
<p>10. Appendix F</p> <p>(i) Typo of the Inlet Invert of pipe FMH1009417 – FMH100919. Please check.</p> <p>(ii) Please show the calculation of peak flow (main stream) for T1, T2 and swimming pool, Kingswood Phase I & II, Proposed Commercial Area 20 and A23.</p> <p>(iii) The calculation of peak flow (main stream) is incorrect. It should be estimated using formula contributing population of all upstream catchments (to same manhole) = cumulative total average daily flow / 0.27 (Para. 12.1 and Table T-5 of EPD/TP 1/05 Guideline refer). Please revise.</p> <p>(iv) Please show the peak flow (main stream) of C2 and C3 individually instead of C1 + C2 & C1 +C2 + C3 in the table.</p> <p>(v) Peak flow of FMH1009163-FMH1009164 and FMH1009175T-FMH1009190 do not tally with that as shown in Table 3.7 & Table 3.12. Please check.</p>	<p>(i)The invert level of FMH1009417-FMH1009419 is double checked with DSD drainage plan and GEOINFO MAP with no typo mistake. Please review.</p> <p>(ii)The calculation of peak flow (main stream) for T1, T2 and swimming pool, Kingswood Phase I & II, proposed commercial area 20 and 23 is indicated under peak foul water flow.</p> <p>(iii)The peak flow (main stream) is indicated in Table 3.12 and calculation is revised in (C1+C2) and (C1+C2+C3) (Annex C refers).</p> <p>(iv)The calculation of peak flow (main stream is included and peaking factor are indicated</p> <p>(v)The mentioned peak flow is revised in Appendix E and tally with Table 3.7 and Table 3.12 (Annex C refers).</p>

Compiled by: KTA

Date: 17 August 2022

File Ref: 20220817_A_TSW_77_FI 3_V01

**Proposed Wholesale Conversion of an Existing Hotel for 'Flat' and Permitted Commercial Use
Tin Shui Wai Town Lot No. 4, Tin shui Wai
(Planning Application No. A/TSW/77)**

Comments Forwarded from Tuen Mun and Yuen Long West District Planning Office

Comments	Responses
Comments from Drainage Services Department (Received on 13 September 2022) (Contact Person: Ms. Vicky SY; Tel: 2300 1347)	
Sewerage Impact Assessment (SIA) (a) Appendix E – Please check if there is sewage generated from the existing catchment of Central Park Towers and Tin Pak Road Park.	The sewage generated from the catchment of Central Park Tower and the public toilet will be discharged to FMH1009801 (northern existing drainage system). There is no foul water flow from stated catchments connected to the FMH1009419 (to the proposed development). There is also no sewage generated from Tin Pak Road Park.
(a) Appendix E – For C3B, please clarify if the flow from Ha Mei San Tsuen SPS has been included (or have you counter-checked with the recorded flow of SPS?)	The sewage flow from Ha Mei San Tsuen and upstream catchment has been included for C3B catchment.
(b) Section 5 – Please indicate that the project proponent will be responsible for the construction of required sewerage works.	It has been revised in Section 4 of the revised SIA report included in FI No. 3.
(c) Appendix F – Why the estimated flow to existing DN900 pipes are lower than the flow to the upstream DN450 pipes.	The estimated flow to existing DN900 pipes are larger than the flow to the upstream DN450 pipes in last submission. No revision is required.
(d) The SIA report needs to meet the satisfaction of EPD, the planning authority of sewerage infrastructure.	Noted.
Comments from Environmental Protection Department (received on 14 September 2022) (Contact Person: Ms Hyde MAK; Tel: 2835 1123)	
(1) <u>Figure 4 of the AQIA</u> : Please note that any sitting areas, children playgrounds and active recreational uses within the Tin Shui Wai Park shall also be included as ASRs since they are likely the closest ASRs during the construction stage. Please revise the figure and relevant text accordingly.	The Table 10.1 and Figure 4 of the AQIA have been revised (Annex A refers).

Comments	Responses
(2) <u>Figure 1 – Site location Plan of the SIA</u> : the Site boundary of this figure is not the same as those presented in the NIA and AQIA, and is also not the same as the Master Layout Plan presented in Appendix B of the SIA. Please check the plans and ensure consistency and correctness.	Figure 1 has been revised (Annex B refers).

Compiled by: KTA

Date: 21 September 2022

File Ref: 20220921_A_TSW_77_FI4_V01

**Proposed Wholesale Conversion of an Existing Hotel for 'Flat' and Permitted Commercial Use
Tin Shui Wai Town Lot No. 4, Tin shui Wai
(Planning Application No. A/TSW/77)**

Comments Forwarded from Tuen Mun and Yuen Long West District Planning Office

Comments	Responses
Comments from Transport Department (Received on 21 September 2022) (Contact Person: Mr Wilson MAN; Tel: 2399 2156)	
On the basis of the R-t-C, the applicant shall provide the replacement pages of the TIA, showing the revised parking provision and associated calculation.	The revised parking provision and associated calculation are provided in Table 3.3 (Annex A refers).
Comments from Highways Department (received on 21 September 2022) (Contact Person: Mr Ben CHAN; Tel: 2762 3953)	
Appendix 1, G/F Plan - If the proposed vehicular accesses on Tin Yan Road and Ka Yan Street are agreed by TD, the applicant should ensure an access road or a run-in/out is constructed at each vehicular access pursuant to the prevailing HyD standards to the satisfaction of this Office.	The existing vehicular accesses of the Proposed Development would remain unchanged upon the conversion works.
Comments from Buildings Department (received on 21 September 2022) (Contact Person: Mr Amen YUNG; Tel. 2626 1434)	
The applicant's attention is drawn to the following points:	
(i) Before any new building works are to be carried out on the application sites, prior approval and consent of the Building Authority (BA) should be obtained, otherwise they are unauthorized building works (UBW). An Authorized Person should be appointed as the co-ordinator for the proposed building works in accordance with the Buildings Ordinance (BO);	Noted.
(ii) The sites shall be provided with means of obtaining access thereto from a street and emergency vehicular access in accordance with Regulations 5 and 41D of the Building (Planning) Regulations [B(P)R] respectively;	Noted.
(iii) The subject lot is comprised of two parcels of individual sites and the site classification is Class A according to the record building plans. The permitted development intensity of the sites shall be determined separately under the First Schedule of the B(P)R at building plan submission stage;	Noted.

Comments	Responses
(iv) The site coverage, i.e. not more than 50%, stated by the applicant appears to stand for non-domestic use. The applicant should separately provide the site coverage for domestic and non-domestic use. My position under B(P)R20 is reserved;	The site coverage for domestic (above 15m) is not more than 50% while site coverage for non-domestic (under 15m) is not more than 100%.
(v) If the applicant applies for GFA concession under PNAP APP-151, compliance with the SBD guideline on building separation, building setback and site coverage of the greenery stipulated in PNAP APP-152, where applicable, is required.	Noted.
(vii) For any carparking spaces to be disregarded from GFA calculation under Regulation 23(3)(b) of the B(P)R, the applicant shall comply with PNAP APP-2;	Noted.
(viii) According to the submitted supporting planning statement and the record building plans, the area used for the existing back of house area serving hotel is proposed to be converted to carparking space area on basement floors. Unless such area is converted to carparking spaces and/or mandatory plant rooms which shall be disregarded from the GFA calculation under Regulation 23(3)(b) of the B(P)R, such area and its circulation area shall be GFA accountable;	Noted.
(ix) For clubhouse at residential towers to be exempted from GFA calculation, compliance with the requirements stipulated in PNAP APP-2 and PNAP APP-104 is required. Besides, we reserve the comment on the high headroom of about 7.5m for the clubhouse in the planning application stage and detailed comment under the BO on the high headroom issue will be carried out at building plan submission stage;	Noted.
(x) Detailed checking under the BO; including but not limited to the Gross Floor Area assessment and calculation, plot ratio and site coverage calculation, will be carried out at building plan submission state.	Noted.
Comments from Tuen Mun and Yuen Long West District Planning Office, Planning Department (received on 21 September 2022)	
1. Please specify the type(s) (in Town Planning Board Use Terms) of commercial use at G/F and 1/F converted from hotel use, and whether the new commercial floor spaces would form part of the shopping mall (as expansion of the mall). If not, please provide details on the arrangement of the new commercial floor spaces (how will they be used when it would not form part of the existing mall as expansion).	The types of commercial use at G/F and 1/F converted from hotel use would be 'Shop and Services' and/or 'Eating Place'. Detailed arrangement of the commercial floor spaces within the proposed wholesale conversion development (including any openings onto the shopping mall) is yet to be formulated at detailed design stage.
2. Please confirm the followings:	

Comments	Responses
<ul style="list-style-type: none"> Number of podium floors, in particular whether there is any floor spaces on the landscape garden on 3/F of Area 23 (esp. those areas coloured blue), and whether the said landscape garden should be counted as 1 storey. Upon confirmation, please rectify the inconsistency as appropriate (e.g. paras. 2.1.1, Table 3.1 and the section). 	<p>The number of podium floors is 6 storeys (including G/F, podium roof at 3/F and 2 nos. of basement floors). The last sentence of para. 2.1.1 should be rectified to “The Site is currently occupied by a <u>6-storey</u> (including G/F, podium roof at 3/F and 2 levels of basement) shopping centre.....”.</p>
<ul style="list-style-type: none"> There are multiple uses on 3/F of Area 20 as shown on the floor plan, instead of just residential clubhouse as shown on the section. Please rectify the inconsistency as appropriate. 	<p>The section of Area 20 is only showing where the section line cuts through i.e. the clubhouse area. Hence, there is no inconsistency between the floor plan and section.</p>
<ul style="list-style-type: none"> Whether there is any hotel guest room in the existing hotel or residential units proposed in the current scheme at the podium floors (i.e. G/F to 3/F). 	<p>There is no hotel guest room in the existing hotel or residential units proposed in the current scheme at the podium floors (i.e. G/F to 3/F).</p>
<ul style="list-style-type: none"> Whether the converted floor spaces (purple hatched area) at the basement floors would also be used for provision of commercial carparking spaces. If yes, whether there is any implications on the GFA of the proposed wholesale conversion. 	<p>No. There is no implication on the GFA of the proposed wholesale conversion.</p>
<ul style="list-style-type: none"> Apart from the confirmation that the existing trees and plantings on G/F and 3/F will remain intact, please also confirm whether there will be any alteration work proposed for the existing landscape garden on 3/F for (partial?) conversion to residential private open space. Is it right to say that the landscape garden on 3/F, together with the remaining portions of the basement floors and the existing shopping mall would remain intact? 	<p>No major alteration works will be proposed for the existing landscape garden on 3/F upon the conversion to residential private open space.</p> <p>The landscape garden on 3/F, together with the remaining portions of the basement floors and the existing shopping mall would remain intact.</p>
<ul style="list-style-type: none"> Whether there is any bicycle parking spaces under the current application 	<p>No bicycle parking spaces will be provided.</p>
<ul style="list-style-type: none"> Whether the existing hotel is entirely mechanically ventilated (with no openable windows) 	<p>The existing hotel has openable windows at various levels so it is not entirely mechanically ventilated.</p>

Comments	Responses																																																
<ul style="list-style-type: none">The greenery ratio is 30% of the Site as specified in paragraph 4.12.1	The greenery ratio of the Proposed Development is about 30%.																																																
3. Please clarify the uses of the small orange hatched areas (without annotations) shown on 2/F and 3/F plans without labelling.	The uses of the small orange hatched areas shown on 2/F and 3/F without labelling are for E&M uses in support of the proposed residential development.																																																
4. Please provide a comparison table on the parameters (plot ratio, site coverage, GFA, building height, etc.) for the existing hotel and proposed residential development, and confirm whether there is any change of GFA/plot ratio as a result of the proposed conversion (esp. upon conversion of hotel back-of-house areas).	<table><tr><th></th><th>Existing Hotel</th><th>Proposed Development</th></tr><tr><td>Plot Ratio</td><td>3.873</td><td>3.873</td></tr><tr><td>- Domestic</td><td>N/A</td><td>1.995</td></tr><tr><td>- Non-domestic</td><td>3.873</td><td>1.878</td></tr><tr><td>Total GFA</td><td>108,063m²</td><td>108,063m²</td></tr><tr><td>- Domestic</td><td>N/A</td><td>55,668m²</td></tr><tr><td>- Non-domestic</td><td></td><td></td></tr><tr><td>- Hotel</td><td>61,531m²</td><td>N/A</td></tr><tr><td>- Shopping Mall (Existing)</td><td>46,532m²</td><td>46,532m²</td></tr><tr><td>- Commercial uses (converted from existing hotel)</td><td>N/A</td><td>5,863m²</td></tr><tr><td>Site Coverage</td><td></td><td></td></tr><tr><td>- above 15m</td><td>Not more than 50%</td><td>Not more than 50%</td></tr><tr><td>- below 15m</td><td>Not more than 100%</td><td>Not more than 100%</td></tr><tr><td>Building Height (at main roof)</td><td></td><td></td></tr><tr><td>- Area 20</td><td>99.9mPD</td><td>99.9mPD</td></tr><tr><td>- Area 23</td><td>98.2mPD</td><td>98.2mPD</td></tr></table> <p>Please note that the hotel back-of-house area at basement floors will be converted to carparking spaces for residential development. There is no change on GFA/plot ratio as a result of the proposed conversion.</p>		Existing Hotel	Proposed Development	Plot Ratio	3.873	3.873	- Domestic	N/A	1.995	- Non-domestic	3.873	1.878	Total GFA	108,063m ²	108,063m ²	- Domestic	N/A	55,668m ²	- Non-domestic			- Hotel	61,531m ²	N/A	- Shopping Mall (Existing)	46,532m ²	46,532m ²	- Commercial uses (converted from existing hotel)	N/A	5,863m ²	Site Coverage			- above 15m	Not more than 50%	Not more than 50%	- below 15m	Not more than 100%	Not more than 100%	Building Height (at main roof)			- Area 20	99.9mPD	99.9mPD	- Area 23	98.2mPD	98.2mPD
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- Area 23	98.2mPD	98.2mPD																																															
5. Please advise the reason(s) for lodging the current application for wholesale conversion, despite the previous planning permission (under application No. A/TSW/72) for redevelopment which is still valid.	The Applicant is exploring different development options including redevelopment and wholesale conversion of existing hotel to increase housing supply while balancing all other market and technical considerations. The development option will be confirmed upon more detailed studies are available.																																																

Comments	Responses
6. Please confirm the PPOF adopted, which seems to be different between that for open space calculation (3013/1102 = 2.734) and SIA (2.8). If the difference is to maintain, what are the justifications for adopting a lower PPOF for open space calculation.	Please note that the PPOF for open space calculation is derived based on the flat mix of the Proposed Development (i.e. PPOF of 2 for flat size of 31 to 40 sq.m and PPOF of 2.8 for flat size > 40sq.m). A more conservative PPOF of 2.8 has been adopted in the SIA to assess the sewerage impact under a worst case scenario.
7. Please confirm if there is any differences between the current uses on each floor of the existing hotel and those specified under the Occupation Permits (e.g. staff canteen, health club and hotel offices on the basement floors). Please supplement the table comparing the current uses and proposed uses with greater detail as appropriate.	Please refer to the comparison table attached (Annex B refers).
8. Please submit a consolidated planning statement and responses-to-comments table incorporating all previous responses to comments and revised technical assessments before scheduled TPB meeting.	Noted. A consolidated planning statement will be submitted before the scheduled TPB meeting.

Compiled by: KTA

Date: 27 September 2022

File Ref: 20220927_A_TSW_77_FI5_V01

Previous s.16 Application covering the Application Site

Approved Application

<u>Application No.</u>	<u>Proposed Use</u>	<u>Zoning</u>	<u>Date of Consideration (RNTPC)</u>	<u>Approval Conditions</u>
A/TSW/72	Proposed Flat and Permitted Commercial Development with Minor Relaxation of Gross Floor Area Restriction	C	18.12.2020	(1) to (7)

Approval Conditions:

- (1) Submission and implementation of revised Landscape Master Plan;
- (2) Submission of revised Noise Impact Assessment before commencement of construction works, and implementation of the mitigation measures identified therein;
- (3) Implementation of the drainage facilities identified in the Drainage Impact Assessment;
- (4) Submission of revised Sewerage Impact Assessment, and implementation of the mitigation measures identified therein;
- (5) Design and provision of junction improvement works;
- (6) Design and provision of ingress/egress point, vehicular access, parking spaces, loading/unloading and lay-by facilities; and
- (7) Provision of water supplies for firefighting and fire service installations.

MTR Corporation Limited
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Appendix III-1 of RNTPC
Paper No. A/TSW/77

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

Our ref: T&ESD/E&IC/ES/EnvE/L1145

Date: - 6 JUL 2022

By Post and Fax
(Fax no.: 2877 0245 / 2522 8426)

Dear Sir/Madam,

Comments on the Section 16 Planning Application of Proposed Wholesale Conversion of an Existing Hotel for 'Flat' and Permitted Commercial Use at Tin Shui Wai Town Lot No. 4

(Application No. A/TSW/77)

Operational Railway Noise Concerns

The Corporation has, in general, no objection to the Section 16 Planning Application (Application No. A/TSW/77) for the proposed wholesale conversion of an existing hotel for 'flat' and permitted commercial use at Tin Shui Wai Town Lot No. 4. As the proposed development is situated close to the Light Rail Transit (LRT), noise from train operations could have a potential impact on any future occupants.

We understand that the applicant has already conducted a Noise Impact Assessment, including a Railway Noise Impact Assessment (RNIA), which will be reviewed by the Environmental Protection Department (EPD) to ensure full compliance with the statutory requirements. We noticed from the RNIA that the predicted noise levels at some of the noise sensitive receivers marginally comply with the noise limit and therefore no mitigation measures are proposed for the railway noise. We wish to caution that the proposed development can be sensitive to air-borne noise issue, especially the noise emitted from the nearby curved tracks of LRT and the motoring/ braking of the light rail vehicles, given that the subject site is approximately less than 30m away from the LRT. The RNIA should take into account and address any air-borne noise issue, especially at locations in the vicinity of the curved tracks, as it could result in potential adverse noise impact to the future occupants. It is recommended that the applicant's consultant i) considers conducting noise measurement at locations closer to the curved tracks to collect more specific and representative on-site noise source data for noise assessment, and ii) conducts analysis of tonal characteristics of the noise by allowing appropriate corrections in the noise assessment where necessary.

Page 1 of 2

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Our ref: T&ESD/E&IC/ES/EnvE/L1145

Date: ~ 6 JUL 2022

Should approval be granted to the Section 16 Planning Application, we urge the Town Planning Board to include in the planning approval condition requiring the applicant to conduct noise assessment to evaluate the air-borne noise impacts from the LRT taking into account the above comments, as well as identify and incorporate all necessary noise mitigation measures at their own cost and to the satisfaction of the Director of Environmental Protection, such that the future residents of the development will not be exposed to noise impacts from railway operations.

Should you have any queries, please feel free to contact our Acting Lead Environmental Manager Ms. Catherine Leung at 2993-4127.

Yours faithfully,

A handwritten signature in black ink, appearing to read 'Chan Hing Keung'.

Chan Hing Keung
General Manager – Engineering & Innovation Centre

c.c Mr. TSANG Sai Wing, Terence	- Assistant Director of EPD (Environmental Assessment)
Mr. LEE Chee Kwan	- Principal Environmental Protection Officer (Assessment & Noise)

Page 2 of 2

就規劃申請/覆核提出意見 Making Comment on Planning Application / Review

參考編號

Reference Number:

220625-221343-86054

提交限期

Deadline for submission:

08/07/2022

提交日期及時間

Date and time of submission:

25/06/2022 22:13:43

有關的規劃申請編號

The application no. to which the comment relates:

A/TSW/77

「提意見人」姓名/名稱

Name of person making this comment:

夫人 Mrs. 方

意見詳情

Details of the Comment :

反對此規劃申請：交通容量已飽和，屯馬線已超出負荷，共27車站，紅磡已接近沒法上車，車箱擁擠，但大部分人士是在天水圍下車。另外輕鐵也很難登車，其他交通配套也不足夠。

☐ Urgent ☐ Return Receipt Requested ☐ Sign ☐ Encrypt ☐ Mark Subject Restricted ☐ Expand personal&publi



A/TSW/77 Tin Shui Wai Town Lot No 4
07/07/2022 02:34

From:
To: tpbpd <tpbpd@pland.gov.hk>
File Ref:

A/TSW/77

Tin Shui Wai Town Lot No.4

Site area :About 27,900m²

Zoning : "Commercial"

Applied Development : 1,102 Units / 964 Vehicle Parking / Open Space 3,013m² all on podium / 52,395sq.m Commercial

Dear TPB Members,

So Cheung Kong was going to resolve our housing issues by constructing 5,000 nano flats and gullible TPB members approved even though this entailed demolishing the existing structures above the shopping mall and creating massive amounts of construction waste and air pollution.

But the bottom has fallen out of the nano flat market. They are no longer selling like hot cakes and it is clear from the rental portals that people are no longer prepared to fork out high rents for units in which all you can fit is a double bed.

So about turn. No mention even of the previous contribution to society. Now it is marching to a new Goose Step, refurbishing the existing structure and *"the immediate provision of residential units in a short time frame and encouraging home ownership of families"*

Approved 18 Dec 2020

Conversion

Residential : 139,500sq.m / PR 5

55,618sq.m / PR 1.995

Commercial: 47,936sq.m / PR 1.718

52,395sq.m / PR 1,878

*The proposal was in line with the government policy to encourage maximising use of scarce land resources by increasing the development intensity as appropriate and would not generate adverse impact nor insurmountable problems. The applicant also indicated their willingness to explore the **provision of a child care centre** in the development at the detailed design stage*

The proposal involved redevelopment of two existing 24/25-storey hotel blocks into two 51-storey residential towers while the existing three-storey shopping centres at the podium and 2-level basements would be retained;

While the about turn re demolishing the structures is welcome, members should reflect on their failure to address the issue of the need for a certain amount of hotel rooms in each district. The quarantine measures may be with us for years to come and it is clear that these amenities are essential

"according to the applicant, the occupancy rate of the existing hotel (with 1,102 hotel rooms) was about 90% before the outbreak of COVID-19"

In addition the hotel had high occupancy and there is need to ensure that if/when travel restrictions are lifted there will be sufficient facilities.

AS THIS APPLICATION PROVIDES THE OPPORTUNITY TO ADDRESS SUCH ISSUES, MEMBERS SHOULD PROPOSE THAT ONE OF THE TOWERS BE RETAINED FOR HOTEL USE.

In addition, where is the CHILD CARE CENTRE????

Also despite the significant reduction in the number of units there is little reduction in the parking facilities even though Tin Shui Wai has access to both MTR and Light Rail. NO BICYCLE PARKING???

Members have a duty to review their previous views in light of current circumstances and lessons learned in the battle against Covid.

Mary Mulvihill

From:

To: tpbpd <tpbpd@pland.gov.hk>

Date: Wednesday, 2 December 2020 2:10 AM CST

Subject: Re: A/TSW/72 Tin Shui Wai Town Lot No 4

Dear TPB Members,

The applicant submitted further information providing responses to the departmental comments, updated site section plan with **reduced building height**, revised visual appraisal, junction calculation sheet and replacement pages of environmental noise impact assessment.

But the original application gave a height of 160mPD and the latest version is 171.5mPD? Bicycle parking reduced to 150 from 334.

In addition the PR is increased from 6.6 to 6.718 so essentially a Gimme More and we give you less.

Previous objections upheld and reinforced.

Mary Mulvihill

From:

To: "tpbpd" <tpbpd@pland.gov.hk>

Sent: Monday, July 27, 2020 2:48:50 AM

Subject: Re: A/TSW/72 Tin Shui Wai Town Lot No 4

Dear TPB Members,

A few pastel images of the now ubiquitous green walls - would young folk squeezed into 200sq.ft units be prepared to pay for the high maintenance costs? - do not detract from the lessons that should be learned from Covid, like cramming 10,000+ folk to concrete pens with insufficient ventilation and natural light, community facilities, genuine open space etc.

That this plan has not been withdrawn underlines that while our tycoons boast of donating millions to charities, this largesse comes at enormous societal cost.

TPB must reject this application.

Mary Mulvihill

From:

To: "tpbpd" <tpbpd@pland.gov.hk>

Sent: Friday, May 1, 2020 3:35:14 AM

Subject: Re: A/TSW/72 Tin Shui Wai Town Lot No 4

Dear TPB Members,

In addition it is quite clear that going forward each district must have an adequate provision of diverse services to cater for unexpected circumstances.

There are only two hotels in this area to serve a large population. There must be sufficient temporary accommodation to cope with urgent need generated via natural disasters and incidents.

In addition with the possibility of restrictions on travel abroad for the foreseeable future, it is imperative that there be opportunities via Staycations provided locally to cater for the need of Hong Kong residents to unwind and relax.

This application must be rejected.

Mary Mulvihill

From:

To: "tpbpd" <tpbpd@pland.gov.hk>

Sent: Thursday, April 2, 2020 3:50:57 AM

Subject: Re: A/TSW/72 Tin Shui Wai Town Lot No 4

Dear TPB Members,

Check the image. The current health crisis should be a wake up call. Packing thousands of people into small units with inadequate ventilation, no windows to kitchens and bathrooms, shared drainage pipes, is a recipe for disaster.

Lining tycoons pockets at the expense of the public welfare can no longer be tolerated. Last Sunday many residents at the new towers on Tsuen Wan Waterfront were trying to ventilate their home but with only a small openable window at one side it was clear that this was a futile exercise.

Previous objections upheld.

Mary Mulvihill

From:

To: "tpbpd" <tpbpd@pland.gov.hk>

Sent: Wednesday, February 5, 2020 3:04:43 AM

Subject: Re: A/TSW/72 Tin Shui Wai Town Lot No 4

Dear TPB Members,

Some planter boxes do not change the fundamental issues.

Tin Shui Wai needs jobs not mini units.

Previous objections upheld.

Mary Mulvihill

From:

To: "tpbpd" <tpbpd@pland.gov.hk>

Sent: Thursday, October 3, 2019 3:44:51 AM

Subject: Re: A/TSW/72 Tin Shui Wai Town Lot No 4

Dear TPB Members,

What is required in Tin Shui Wai is more commercial activity, more jobs.

This plan adds shoves more people into little boxes in high towers with nothing more than heat attracting pavement and a few flower beds.

Cheung Kong has been allowed to stifle commercial activity in the town for far too long.

If it wants out then the site should be sold to another company that would fulfill the zoning intention.

Previous objections upheld. Do you hear the people sing?

Mary Mulvihill

From:

To: "tpbpd" <tpbpd@pland.gov.hk>

Sent: Tuesday, January 29, 2019 11:30:08 PM

Subject: A/TSW/72 Tin Shui Wai Town Lot No 4

A/TSW/72

Tin Shui Wai Town Lot No.4

Site area :About 27,900m²

Zoning : "Commercial"

Applied Development : 5,000 Mini Units / 1,030 Vehicle Parking / Open Space
7,500m² all on podium / 14% 'Minor' **Relaxation GFA ACTUALLY 38%**

Dear TPB Members,

I strongly object to this application. It is quite obvious that TSW is grossly deficient in local employment opportunities. The intention of the 'Commercial' zoning is both to provide service and to encourage a degree of job creation.

I would recommend that members take time to study :

Tin Shui Wai OZP No. S/TSW/13 LAND USE ZONINGS

10.1 Commercial ("C") : Total Area: 3.44 ha

10.1.1 This zone is intended primarily for commercial developments, which may include shop, services, place of entertainment and eating place, functioning mainly as local shopping centres serving the immediate neighbourhood.

10.1.2 In the DZ, sites zoned "C" are located in Areas 20 and 23 south of the LRT Terminus. They are known as **Tin Shui Wai Town Lot (TSWTL) No. 4**. The sites are developed as the town centre providing **retail and other commercial facilities to serve Tin Shui Wai New Town**. A hotel has also been developed within the zone. The development and future redevelopment of the zone was governed by the Conditions of Grant and the Master Layout Plan approved under the lease. To provide flexibility for innovative design adapted to the characteristics of particular sites, minor relaxation of the restrictions stated in the Notes may be considered by the Board through the planning permission system. Each proposal will be considered on its individual planning merits.

10.2 Comprehensive Development Area ("CDA") : Total Area: **13.98 ha** (Areas close to Wetland Park)

10.3 Residential (Group A) ("R(A)") : Total Area: **101.6 ha**

10.4 Residential (Group B) ("R(B)") : Total Area: **37.78 ha**

10.5 Government, Institution or Community ("G/IC") : Total Area: **27.91 ha**

10.6 Open Space ("O") : Total Area: **42.69 ha**

10.7 Other Specified Uses ("OU") : Total Area: **5.86 ha** (LRT, etc)

10.8 Undetermined ("U") : Total Area: **1.86 ha**

10.9 Conservation Area ("CA") : Total Area: **3.75 ha**

10.10 Country Park ("CP") : Total Area: **61.52 ha**

Total Area = 300.39 ha of which Commercial is less than 1.15%

2011 Population estimated to be 287,900, It is estimated that the total planned population will be about 298,200 person.

Tin Shui Wai New Town is planned to provide a good mix of various types of housing development to meet the forecast demand and sufficient open space and community facilities for the residents. **Goals were self-containment and balanced development.**

While a new venue, Hotel COZi Wetland with 336 rooms, recently opened this is not large enough to provide hospitality facilities commensurate with a population of almost 300,000. Moreover the COZi is close to the Wetlands to provide opportunities for short breaks close to an environmentally sensitive attraction.

I would also encourage members to take the time to read this report, one of the contributors is Law Chi-Kwong, currently Secretary for Welfare :

A Study on Tin Shui Wai New Town

<http://www.nentnda.gov.hk/doc/techreport/r3.pdf>

In June 2008 PD commissioned the Dept of Social Work and Social Administration HKU to conduct a study on TSW New Town with a view to identifying lessons learnt and shedding light on future planning for New Development Areas in HK.

Issues – Provision of employment opportunities

Lack of a vital local economy caused by the distance from the urban centre and the inorganic management of commercial and retail outlets because of its limited number of management. Lack of competition in TSW was quite evident. This resulted in higher prices for foodstuffs and other commodities.

In addition limited employment opportunities in Yuen Long and Tuen Mun. In terms of jobs per person in the labour force, lowest in all the territory.

To ensure that there are sufficient jobs in the new towns we would have to turn to the two largest sectors, namely the trade and retail industry, and the community/social/personal service industry

Monopolistic development should be avoided

The development of TSW is a classic example of manipulation by a developer that over the years has held back the local economy via monopolistic practices.

Now like a blood sucking vampire it wants to execute the final coup before bowing out of the 'City of Sadness' it helped create. But of course it intends to cunningly hold onto the shopping mall.

A residential development will provide only a few dozen cleaning and security jobs. A well planned commercial development could generate hundreds of jobs. One block of the hotel could be developed into offices and services. The opening of the Cyber Games Arena in MKK is an example of the new economy.

TPB cannot allow the already very limited scope for local employment to be decimated.

This application must not be approved.

Mary Mulvihill

就規劃申請/覆核提出意見 Making Comment on Planning Application / Review

參考編號
Reference Number: 220801-090259-56301

提交限期
Deadline for submission: 19/08/2022

提交日期及時間
Date and time of submission: 01/08/2022 09:02:59

有關的規劃申請編號
The application no. to which the comment relates: A/TSW/77

「提意見人」姓名/名稱
Name of person making this comment: 先生 Mr. Eason

意見詳情
Details of the Comment :

反對酒店改建住宅，該區人口密集

☐ Urgent ☐ Return Receipt Requested ☐ Sign ☐ Encrypt ☐ Mark Subject Restricted ☐ Expand personal&publi



A/TSW/77 反對
08/07/2022 16:24

From:

To:

File Ref:

[REDACTED]
tpbpd@pland.gov.hk

A/TSW/77 反對

就規劃申請/覆核提出意見 Making Comment on Planning Application / Review

參考編號
Reference Number: 220801-085456-28987

提交限期
Deadline for submission: 19/08/2022

提交日期及時間
Date and time of submission: 01/08/2022 08:54:56

有關的規劃申請編號
The application no. to which the comment relates: A/TSW/77

「提意見人」姓名/名稱
Name of person making this comment: 女士 Ms. Kwok hoi lam

意見詳情
Details of the Comment :

反對

Recommended Advisory Clauses

- (a) the approval of the application does not imply that any proposal on building design elements to fulfil the requirements under the Sustainable Building Design Guidelines and/or the relevant requirements under the lease, and any proposal on GFA concession for the proposed development will be approved/granted by the Building Authority (BA). The applicant should approach the Buildings Department (BD) and the Lands Department (LandsD) direct to obtain the necessary approval. If the building design elements and the GFA concession are not approved/granted by BA and the Lands Authority, and major changes to the current scheme are required, a fresh planning application to the Town Planning Board may be required;
- (b) to resolve any land issues relating to the development with the concerned owner(s) of the Site;
- (c) to note the comments of the District Lands Officer/Yuen Long, LandsD (DLO/YL, LandsD) that:
 - (i) the subject lot (i.e. TSWTL No. 4) together with other lots (i.e. TSWTLs No. 1 to 3, 5 to 7) are all governed by New Grant No. 3466 dated 21.5.1985 as varied and modified by modification letters dated 10.11.1989, 5.5.1992 and 27.11.1993 (collectively “the New Grant”) for non-industrial (excluding godown) purposes. Under Special Conditions (S.C.) (10) of the New Grant, the total GFA of building(s) erected on all of the lots for either residential or non-residential purposes shall be specified in the Development Schedule of the Master Layout Plan as referred to in S.C. (4)(a)(I) of the New Grant, which shall not exceed 972,000m² for residential purposes, and shall not exceed a total of 75,000m² for non-domestic purposes for all of the lots. By way of modification letter dated 7.1.1994 affecting the subject lot, an additional GFA of not exceeding 60,000m² for non-domestic purposes is permitted on the subject lot. According to S.C. (8)(a) of the New Grant, the lot shall be developed in all respects comply with the Master Layout Plan and Landscape Proposals;
 - (ii) the GFA figures and relevant details of the existing development as mentioned in the planning statement have not been verified at this stage. It will be considered in detail at the lease modification application stage, if submitted by the lot owners;
 - (iii) noting that the existing basements (i.e. B2/F and B1/F) would be retained and converted to accommodate the proposed parking provisions which would be greatly increased, the applicant is reminded to ensure the retained basements could accommodate the additional parking provisions; and
 - (iv) the owners of the subject lot are required to jointly apply to LandsD for modification of the lease of TSWTL No. 4 to implement the proposed scheme. However, there is no guarantee that the said application, including the granting of any Government land (if any), will be approved. Such application will be dealt with by LandsD acting in the capacity as the landlord at LandsD’s discretion, and if it is approved will be subject to such terms and conditions including among others, the payment of premium and administrative fee as may be imposed by LandsD;
- (d) to note the comments of the Chief Highway Engineer/New Territories West, Highways Department (CHE/NTW, HyD) that adequate drainage measures shall be provided to

prevent surface water running from the Site to the nearby public roads and drains;

- (e) to note the comments of the Chief Town Planner/Urban Design and Landscape that approval of the planning application does not imply approval of such tree works as pruning, transplanting and/or felling under the lease. Applicant is reminded to approach relevant authority/government department(s) direct to obtain the necessary approval on tree works. Also, approval of the planning application does not imply approval of site coverage of greenery requirements under Practice Notes for Authorized Persons, Registered Structural Engineers and Registered Geotechnical Engineers (PNAP) No. APP-152 and/or under the lease. The site coverage of greening calculation should be submitted separately to BD for approval;
- (f) to note the comments of the Director of Fire Services (D of FS) that detailed fire safety requirements will be formulated upon receipt of formal submission of general building plans. The emergency vehicular access provision in the Site shall comply with the standard as stipulated in Section 6, Part D of the Code of Practice for Fire Safety in Buildings 2011 under the Building (Planning) Regulation (B(P)R) 41D which is administered by the BD;
- (g) to note the comments of the Chief Building Surveyor/New Territories West, BD (CBS/NTW, BD) that:
 - (i) before any new building works are to be carried out on the Site (comprising two parcels of individual sites), prior approval and consent of the BA should be obtained, otherwise they are unauthorised building works (UBW). An Authorised Person should be appointed as the co-ordinator for the proposed building works in accordance with the Building Ordinance (BO);
 - (ii) the Site (comprising two parcels of individual sites) shall be provided with means of obtaining access thereto from a street and emergency vehicular access in accordance with Regulations 5 and 41D of B(P)R respectively;
 - (iii) the Site comprises two parcels of individual sites and the site classification is Class A according to the record building plans. The permitted development intensity of the two parcels shall be determined separately under the First Schedule of B(P)R at building plan submission stage;
 - (iv) after the proposed conversion, the domestic site coverage of the subject development will exceed 33.3%, i.e. the maximum permitted site coverage under Regulation 20(1)(a) of B(P)R;
 - (v) if the applicant applies for GFA concession under PNAP No. APP-151, compliance with the Sustainable Building Design Guidelines on building separation, building setback and site coverage of the greenery stipulated in PNAP No. APP-152, where applicable, is required;
 - (vi) for any carparking spaces to be disregarded from GFA calculation under Regulation 23(3)(b) of B(P)R, the applicant shall comply with PNAP No. APP-2;
 - (vii) according to the submitted supporting planning statement and the record building plans, the area used for the existing back-of-house area serving hotel is proposed to be converted to car parking space area on basement floors. Unless such area is converted to car parking spaces and/or mandatory plant rooms which shall be

disregarded from GFA calculation under Regulation 23(3)(b) of the B(P)R, such area and its circulation area shall be GFA accountable;

- (viii) for clubhouse at residential towers to be exempted from GFA calculation, compliance with the requirements stipulated in PNAP No. APP-2 and APP-104 is required. Detailed comment under BO on the high headroom issue will be carried out at building plan submission stage; and
- (ix) detailed checking under BO, including but not limited to the GFA assessment and calculation, plot ratio and site coverage calculation, will be carried out at building plan submission stage;
- (h) to note the comments of the Head of Geotechnical Engineering Office, CEDD (H(GEO), CEDD) that the Site is located within Scheduled Area No. 2 and may be underlain by cavernous marble. Depending on the nature of foundation of the new development proposed at the Site, extensive geotechnical investigation may be required, as necessary. This would require a high-level involvement of experienced geotechnical engineer(s), both in the design and supervision of geotechnical aspects of the works to be carried out on the Site; and
- (i) to note the comments of the Director of Food and Environmental Hygiene (DFEH) that work and operation shall not cause any environmental nuisance, pest infestation and obstruction to the surrounding. Proper licence/permit issued by Food and Environmental Hygiene Department (FEHD) is required if there is any catering service/activities regulated by DFEH under the Public Health and Municipal Services Ordinance (Cap. 132) and other relevant legislation for the public. The refuse collection point (RCP) of domestic waste and the commercial waste should be clearly separated. The share use of RCP for both domestic and commercial waste is not recommended. The RCP should be designed to such a condition that within which a refuse collection vehicle (RCV) of 3.0m in width and 10m in length can make a 3 point turn and park without restriction. A designated operational space with dimension 5m (W) × 12m (L) should be provided in the RCP and the headroom of RCP should not be less than 4.5m. The RCP should be provided with a water point and foul water drainage system for clean-up of the RCV and discharge of foul water before leaving of RCV. Foul water drainage should be provided in RCP. The width of driveway of RCV should be 4m in width (single direction). As the RCP may located at the basement, it should be provided with adequate ventilation and an effective RCV exhaust extractor with related coupling/detaching device. The ground surface of the driveway should be designed to withstand the weight of a vehicle up to 25T GVW. No part of the access road including the part connecting the entrance/exit and the roadway of RCV should exceed the gradient of 1 in 10 and in no case the change of slope at any point should exceed 8 degrees. For any waste generated from building and residential development, the applicant should arrange its disposal properly at her own expenses. If domestic waste collection service of FEHD is required, prior comments from FEHD on the waste collection plan should be sought. If the proposal involves any commercial/trading activities, no environmental nuisance should be generated to the surroundings. Also, for any waste generated from the commercial/trading activities, the applicant should handle on their own/at their expenses.