此文件在 2025年 12月 30日 收到。城市規劃委員會只會在收到所有必要的資料及文件後才正式確認收到申請的日期。

This document is received on 30 DEC 2025
The Town Planning Board will formally acknowledge the date of receipt of the application only upon receipt of all the required information and documents.

Form No. S16-I
表格第 S16-I 號

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

根據《城市規劃條例》(第131章)第16條遞交的許可申請

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

(i) Construction of "New Territories Exempted House(s)";
興建「新界豁免管制屋宇」;

(ii) Temporary use/development of land and/or building not exceeding 3 years in rural areas or Regulated Areas; and
位於鄉郊地區或受規管地區土地上及/或建築物內進行為期不超過三年的臨時用途/發展;及

(iii) Renewal of permission for temporary use or development in rural areas or Regulated Areas
位於鄉郊地區或受規管地區的臨時用途或發展的許可續期

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

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

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

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

& Please attach documentary proof 請夾附證明文件

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

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

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

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

2502964 2025.12.24 By Hand

Form No. S16-I 表格第 S16-I 號

For Official Use Only 請勿填寫此欄	Application No. 申請編號	A/YL-LFS/192
	Date Received 收到日期	30 DEC 2025

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

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

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

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1. Name of Applicant 申請人姓名/名稱

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

Environmental Protection Department

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）	Government Land in D.D. 129, Deep Bay Road, Tsim Bei Tsui, Yuen Long, New Territories
(b) Site area and/or gross floor area involved 涉及的地盤面積及／或總樓面面積	☑ Site area 地盤面積 3,080 sq.m 平方米 ☑ About 約 ☑ Gross floor area 總樓面面積 616 sq.m 平方米 ☑ About 約
(c) Area of Government land included (if any) 所包括的政府土地面積（倘有）	3,080 sq.m 平方米 ☑ About 約

(d)	Name and number of the related statutory plan(s) 有關法定圖則的名稱及編號	Approved Lau Fau Shan and Tsim Bei Tsui Outline Zoning Plan No. S/YL-LFS/11
(e)	Land use zone(s) involved 涉及的土地用途地帶	"Green Belt" zone and Area shown as 'Road'
(f)	Current use(s) 現時用途	Vacant (If there are any Government, institution or community facilities, please illustrate on plan and specify the use and gross floor area) (如有任何政府、機構或社區設施，請在圖則上顯示，並註明用途及總樓面面積)

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

The applicant 申請人 –

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

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

☐ is not a "current land owner"#.
並不是「現行土地擁有人」#。

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

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

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

(b) The applicant 申請人 –

☐ has obtained consent(s) of ..... "current land owner(s)"#.
已取得 ..... 名「現行土地擁有人」#的同意。

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

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

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

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

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

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

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

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

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

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

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

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

Others 其他

☐ others (please specify)
其他（請指明）

_____

_____

_____

_____

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

6. Type(s) of Application 申請類別

☐ Type (i) 第(i)類 Change of use within existing building or part thereof 更改現有建築物或其部分內的用途

☐ Type (ii) 第(ii)類 Diversion of stream / excavation of land / filling of land / filling of pond as required under Notes of Statutory Plan(s) 根據法定圖則《註釋》內所要求的河道改道／挖土／填土／填塘工程

☐ Type (iii) 第(iii)類 Public utility installation / Utility installation for private project 公用事業設施裝置/私人發展計劃的公用設施裝置

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

☑ Type (v) 第(v)類 Use / development other than (i) to (iii) above 上述的(i)至(iii)項以外的用途／發展

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

(i) For Type (i) application 供第(i)類申請

(a) Total floor area involved 涉及的總樓面面積	sq.m 平方米		
(b) Proposed use(s)/development 擬議用途/發展	(If there are any Government, institution or community facilities, please illustrate on plan and specify the use and gross floor area) (如有任何政府、機構或社區設施，請在圖則上顯示，並註明用途及總樓面面積)		
(c) Number of storeys involved 涉及層數		Number of units involved 涉及單位數目	
(d) Proposed floor area 擬議樓面面積	Domestic part 住用部分 ..... sq.m 平方米 ☐About 約		
	Non-domestic part 非住用部分..... sq.m 平方米 ☐About 約		
	Total 總計 ..... sq.m 平方米 ☐About 約		

(e) Proposed uses of different floors (if applicable) 不同樓層的擬議用途(如適用) (Please use separate sheets if the space provided is insufficient) (如所提供的空間不足，請另頁說明)	Floor(s) 樓層	Current use(s) 現時用途	Proposed use(s) 擬議用途

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

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

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

(a) Nature and scale
性質及規模

☐ Public utility installation 公用事業設施裝置

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

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

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

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

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

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

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

(v) For Type (v) application 供第(v)類申請

(a) Proposed use(s)/development 擬議用途/發展	Proposed 'Government Use' (GBA Air Quality Laboratory and Meterological Monitoring Supersite) (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	616 sq.m 平方米	☑About 約
Proposed plot ratio 擬議地積比率	0.2	☑About 約
Proposed site coverage 擬議上蓋面積	20 %	☑About 約
Proposed no. of blocks 擬議座數	5 *	
Proposed no. of storeys of each block 每座建築物的擬議層數	1 storeys 層 ☐ include 包括.....storeys of basements 層地庫 ☐ exclude 不包括.....storeys of basements 層地庫	
Proposed building height of each block 每座建築物的擬議高度	Not more than .....30... mPD 米(主水平基準上) ..... m 米	☐About 約 ☐About 約

* incl. Block A, Block B, Emergency Generator Room, FS Pump Room and FS Water Tank

☐ 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

GFA 總樓面面積

☐ eating place 食肆	..... sq. m 平方米	☐About 約
☐ hotel 酒店	..... sq. m 平方米	☐About 約
	(please specify the number of rooms 請註明房間數目)	
☐ office 辦公室	..... sq. m 平方米	☐About 約
☐ shop and services 商店及服務行業	..... sq. m 平方米	☐About 約

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

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

GBA Air Quality Laboratory and Meteorological Monitoring Supersite about 616sq.m.

☐ other(s) 其他

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

.....
.....
.....

☐ Open space 休憩用地

(please specify land area(s) 請註明地面面積)

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

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

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

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

2 nos. of private carparking spaces; planting area; H-pole with switch-gear

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 Q4

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

Any vehicular access to the site/subject building? 是否有車路通往地盤／有關建築物？	Yes 是	☑ There is an existing access. (please indicate the street name, where appropriate) 有一條現有車路。(請註明車路名稱(如適用)) Deep Bay Road ☐ There is a proposed access. (please illustrate on plan and specify the width) 有一條擬議車路。（請在圖則顯示，並註明車路的闊度）
	No 否	☐
Any provision of parking space for the proposed use(s)? 是否有為擬議用途提供停車位？	Yes 是	☑ (Please specify type(s) and number(s) and illustrate on plan) 請註明種類及數目並於圖則上顯示) Private Car Parking Spaces 私家車車位 2 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) ____ _____ ____ _____ ____
	No 否	☐
Any provision of loading/unloading space for the proposed use(s)? 是否有為擬議用途提供上落客貨車位？	Yes 是	☐ (Please specify type(s) and number(s) and illustrate on plan) 請註明種類及數目並於圖則上顯示) Taxi Spaces 的士車位 ____ Coach Spaces 旅遊巴車位 ____ Light Goods Vehicle Spaces 輕型貨車車位 ____ Medium Goods Vehicle Spaces 中型貨車車位 ____ Heavy Goods Vehicle Spaces 重型貨車車位 ____ Others (Please Specify) 其他 (請列明) ____ _____ ____ _____ ____ _____ ____
	No 否	☑

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

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

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

Would the development proposal cause any adverse impacts? 擬議發展計劃會否造成不良影響？			
	On environment 對環境	Yes 會 ☐	No 不會 ☑
	On traffic 對交通	Yes 會 ☐	No 不會 ☑
	On water supply 對供水	Yes 會 ☐	No 不會 ☑
	On drainage 對排水	Yes 會 ☐	No 不會 ☑
	On slopes 對斜坡	Yes 會 ☐	No 不會 ☑
	Affected by slopes 受斜坡影響	Yes 會 ☐	No 不會 ☑
	Landscape Impact 構成景觀影響	Yes 會 ☐	No 不會 ☑
	Tree Felling 砍伐樹木	Yes 會 ☐	No 不會 ☑
	Visual Impact 構成視覺影響	Yes 會 ☐	No 不會 ☑
	Others (Please Specify) 其他 (請列明)	Yes 會 ☐	No 不會 ☐
	_____		
	_____		

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

Please refer to the Supporting Planning Statement and Landscape Proposal
.....
.....
.....
.....

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 Supporting Planning Statement.

11. Declaration 聲明

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

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

Signature 簽署 ..... ☐ Applicant 申請人 / ☑ Authorised Agent 獲授權代理人

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

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 RPP No. 130

on behalf of 代表 KTA Planning Limited

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

Date 日期 24/12/2025 (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:
如發展涉及骸灰安置所用途，請另外填妥以下資料:

Ash interment capacity 骨灰安放容量@

Maximum number of sets of ashes that may be interred in the niches
在龕位內最多可安放骨灰的數量 _____

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

Total number of niches 龕位總數 _____

Total number of single niches
單人龕位總數 _____

Number of single niches (sold and occupied)
單人龕位數目 (已售並佔用) _____

Number of single niches (sold but unoccupied)
單人龕位數目 (已售但未佔用) _____

Number of single niches (residual for sale)
單人龕位數目 (待售) _____

Total number of double niches
雙人龕位總數 _____

Number of double niches (sold and fully occupied)
雙人龕位數目 (已售並全部佔用) _____

Number of double niches (sold and partially occupied)
雙人龕位數目 (已售並部分佔用) _____

Number of double niches (sold but unoccupied)
雙人龕位數目 (已售但未佔用) _____

Number of double niches (residual for sale)
雙人龕位數目 (待售) _____

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

_____

Number. of niches (sold and fully occupied)
龕位數目 (已售並全部佔用) _____

Number of niches (sold and partially occupied)
龕位數目 (已售並部分佔用) _____

Number of niches (sold but unoccupied)
龕位數目 (已售但未佔用) _____

Number of niches (residual for sale)
龕位數目 (待售) _____

Proposed operating hours 擬議營運時間 _____

_____

@ Ash interment capacity in relation to a columbarium means –
就骸灰安置所而言，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
在該骸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	Government Land in D.D. 129, Deep Bay Road, Tsim Bei Tsui, Yuen Long, New Territories
Site area 地盤面積	3,080 sq. m 平方米 ☑ About 約 (includes Government land of 包括政府土地 3,080 sq. m 平方米 ☑ About 約)
Plan 圖則	Approved Lau Fau Shan and Tsim Bei Tsui Outline Zoning Plan No. S/YL-LFS/11
Zoning 地帶	"Green Belt" zone and Area shown as 'Road'
Applied use/ development 申請用途/發展	Proposed 'Government Use' (GBA Air Quality Laboratory and Meterological Monitoring Supersite)

			sq.m 平方米	Plot Ratio 地積比率
(i)	Gross floor area and/or plot ratio 總樓面面積及／或地積比率	Domestic 住用	N/A ☐ About 約 ☐ Not more than 不多於	N/A ☐About 約 ☐Not more than 不多於
		Non-domestic 非住用	616 ☑ About 約 ☐ Not more than 不多於	0.2 ☑About 約 ☐Not more than 不多於
(ii)	No. of blocks 幢數	Domestic 住用		
		Non-domestic 非住用	5 *	
		Composite 綜合用途		

* incl. Block A, Block B, Emergency Generator Room, FS Pump Room and FS Water Tank

(iii)	Building height/No. of storeys 建築物高度／層數	Domestic 住用	m 米 ☐ (Not more than 不多於)
			mPD 米(主水平基準上) ☐ (Not more than 不多於)
			Storeys(s) 層 ☐ (Not more than 不多於) *(☐Include 包括/☐ Exclude 不包括* ☐ *Carport 停車間* ☐ *Basement 地庫* ☐ *Refuge Floor 防火層* ☐ *Podium 平台)*
		Non-domestic 非住用	m 米 ☐ (Not more than 不多於)
			30 mPD 米(主水平基準上) ☑ (Not more than 不多於)
			1 Storeys(s) 層 ☐ (Not more than 不多於) *(☐Include 包括/☐ Exclude 不包括* ☐ *Carport 停車間* ☐ *Basement 地庫* ☐ *Refuge Floor 防火層* ☐ *Podium 平台)*
		Composite 綜合用途	m 米 ☐ (Not more than 不多於)
			mPD 米(主水平基準上) ☐ (Not more than 不多於)
			Storeys(s) 層 ☐ (Not more than 不多於) *(☐Include 包括/☐ Exclude 不包括* ☐ *Carport 停車間* ☐ *Basement 地庫* ☐ *Refuge Floor 防火層* ☐ *Podium 平台)*
(iv)	Site coverage 上蓋面積		20 % ☑ About 約
(v)	No. of units 單位數目		
(vi)	Open space 休憩用地	Private 私人	sq.m 平方米 ☐ Not less than 不少於
		Public 公眾	sq.m 平方米 ☐ Not less than 不少於

(vii) No. of parking spaces and loading / unloading spaces 停車位及上落客貨車位數目	Total no. of vehicle parking spaces 停車位總數 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) _____ _____	2 2
	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 中型貨車位 Heavy Goods Vehicle Spaces 重型貨車車位 Others (Please Specify) 其他 (請列明) _____ _____	0

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

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

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

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

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

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S16 PLANNING APPLICATION
APPROVED LAU FAU SHAN AND TSIM BEI TSUI OZP NO. S/YL-LFS/11

Proposed 'Government Use' (GBA Air Quality Laboratory and Meteorological Monitoring Supersite) in "Green Belt" Zone and Area shown as 'Road', on Deep Bay Road, Tsim Bei Tsui, New Territories

SUPPORTING PLANNING STATEMENT

December 2025

Applicant:
Environmental Protection Department

Consultancy Team:
KTA Planning Ltd.
Landes Ltd.
Greg Wong & Associates Ltd.
ERM-Hong Kong Limited
C Arch Design Consultant Limited

PLANNING LIMITED
規劃顧問有限公司

EXECUTIVE SUMMARY

This Planning Application is prepared and submitted on behalf of Environmental Protection Department ("EPD" or "the Applicant) to seek approval from the Town Planning Board ("TPB") under Section 16 of the Town Planning Ordinance for the Proposed 'Government Use' (Greater Bay Area Air Quality Laboratory and Meteorological Monitoring Supersite) on Deep Bay Road, Tsim Bei Tsui ("the Application Site" or "the Site"). The Site is currently vacant, covered by trees, and falling within an area zoned "Green Belt" ("GB") and an area shown as 'Road' on the approved Lau Fau Shan and Tsim Bei Tsui Outline Zoning Plan ("approved OZP") No. S/YL-LFS/11.

To strengthen collaboration within the Greater Bay Area ("GBA") in joint prevention and control of air pollution, as well as combating climate change, the EPD and the Hong Kong Observatory ("HKO") aim to cooperate with the academic research institutions in the Mainland and Hong Kong to develop the Supersite. Equipped with international state-of-the-art equipment, the Supersite aims to enhance Hong Kong's capability in dealing with complex air quality issues, monitoring and forecasting regional air pollution, extreme weather and related risks, while promoting scientific research and academic exchanges among Hong Kong, Macao, the Mainland and international scholars and nurturing scientific research talents.

Two individual compartment units, each is a single-storey unit with GFA not more than 230 m^2, are proposed along with outdoor ancillary facilities, incl. the emergency generator room, FS pump room and FS water tank, etc. The total development will result in an equivalent PR of about 0.2. As 'Government Use (not elsewhere specified)' is a Column 2 use in "GB" zone, a S.16 Application is required. The Proposed Supersite is fully justified due to the following reasons:

- There is a need for Supersite for accurate air quality, meteorological monitoring, and forecasting.
- The Site is at a suitable location that responds to the government policy of strengthening collaboration within the GBA in combating climate change.
- The scale and building height of the proposed development are minimised and will lead to minimal adverse visual and landscape impact.
- The Proposed Development will not lead to adverse drainage, ecological or

geotechnical impacts.

- The Proposed Development fully complies with Town Planning Board Guidelines No. 10 & No. 12C.

Based on the above, the TPB is sincerely requested to give favourable consideration to this S16 Planning Application from planning and technical points of view.

申請摘要

(內文如有差異，應以英文版本為準)

本規劃申請是代表環境保護署（下稱「環保署」或「申請人」）擬就《城市規劃條例》第 16 條向城市規劃委員會（下稱「城規會」）申請批准於尖鼻咀深灣路（下稱「申請地點」）作「政府用途」（大灣區空氣質素實驗室及氣象監測超級站）。申請地點現時為一幅空置土地，長滿樹木，位於流浮山及尖鼻咀分區計劃大綱核准圖編號 S/YL-LFS/11 上的「綠化地帶」及圖上顯示為「道路」的地方內。

為加強大灣區在區域聯防聯控空氣污染以及應對氣候變化方面的合作，環保署及香港天文台期望與內地及本港學術科研機構合作，建立是次超級站。該設施將配備國際最先進的儀器設備，旨在提升香港應對複雜空氣質素問題的能力，加強區域空氣污染、極端天氣及相關風險的監測及預測，同時促進香港、澳門、內地及國際科研學者之間的科學研究與交流，並培育科研人才。

是次申請包括兩個獨立組合式單層建築物（每個建築物的總樓面面積不超過 230 平方米），以及相關室外輔助設施，包括：緊急發電機房、消防泵房及消防水缸等。整體發展的地積比率約為 0.2。由於「政府用途（未另有列明者）」在「綠化地帶」屬第二欄用途，故須提交是次規劃申請。

擬議申請作「政府用途」（大灣區空氣及氣象監測超級站）有充份理據支持，其原因如下：

- 有需要興建超級站以進行準確的空氣質素及氣象監測與預測；
- 申請地點位置恰當，回應加強大灣區合作以應對氣候變化的政策；
- 擬議發展之規模及建築物高度已盡量縮減，以減輕對視覺及景觀的影響；
- 擬議發展不會對區內排水系統、生態及土力造成不良影響；
- 擬議發展完全符合《城規會指引》第 10 號及第 12C 號。

根據以上各點，希望是次的規劃申請在規劃及技術層面上能獲得城規會支持。

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S16 Planning Application
Approved Lau Fau Shan and Tsim Bei Tsui Outline Zoning Plan
No. S/YL-LFS/11

Proposed 'Government Use' (GBA Air Quality Laboratory and Meteorological Monitoring Supersite) in "Green Belt" Zone and Area shown as 'Road' on Deep Bay Road, Tsim Bei Tsui, New Territories

Supporting Planning Statement

1. INTRODUCTION

1.1 Purpose

1.1.1 This Planning Application is prepared and submitted on behalf of Environmental Protection Department ("EPD" or "the Applicant) to seek approval from the Town Planning Board ("TPB") under section 16 of the Town Planning Ordinance for the Proposed 'Government Use' (GBA Air Quality Laboratory and Meteorological Monitoring Supersite) on Deep Bay Road, Tsim Bei Tsui ("the Application Site" or "the Site"). The Site falls within an area zoned "Green Belt" ("GB") with minor portion of land along the northern site boundary in an area shown as 'Road' on the approved Lau Fau Shan and Tsim Bei Tsui Outline Zoning Plan ("approved OZP") No. S/YL-LFS/11. This Supporting Planning Statement is to provide the TPB with the necessary information to facilitate consideration of this Planning Application.

1.2 Report Structure

1.2.1 Following this Introductory Section, the background of the Project will be briefly discussed in Section 2 while the site and planning context will be briefly set out in Section 3. The proposed development scheme is explained in Section 4 followed by planning justifications for the Planning Application in Section 5. Section 6 concludes and summarises this Supporting Planning Statement.

2. BACKGROUND OF AIR QUALITY AND METEOROLOGICAL MONITORING SUPERSITE

2.1 Background of Air Quality and Meteorological Monitoring in Hong Kong

2.1.1 The air monitoring network currently operated by the EPD comprises 18 monitoring stations distributed across the territory, with their locations and design primarily intended for local basic air monitoring.

2.1.2 Climate change is expected to bring more extreme weather events, such as heavy precipitation and flooding, rising sea levels, and increased tropical cyclone intensity. Addressing such challenges requires coordinated efforts and contributions from all countries and regions. One of the key tasks is to monitor and maintain a comprehensive understanding of the latest developments in climate change. Currently, the basic instruments installed at the King's Park Meteorological Station by the Hong Kong Observatory (HKO) and at the Cape D'Aguilar Supersite Air Quality Monitoring Station by the EPD are only capable of measuring CO_2 concentrations among greenhouse gases. Besides, as these two monitoring sites are spatially relatively remote from other GBA cities, there may be limitations in assessing and tracking the spatial distribution of greenhouse gases across the GBA.

2.1.3 O_3 is also an important indicator of regional air pollution, which is a strong irritant and can induce respiratory illnesses. To enhance monitoring work on O_3, EPD have to conduct the monitoring at a more strategic location in order to monitor more effectively the regional distribution of O_3 and its two precursor pollutants (i.e. nitrogen oxides (NOx) and volatile organic compounds (VOCs)), so as to have a better understanding of the photochemistry mechanism involved with a view to mapping out suitable emission control strategies at regional level.

2.2 Need for the Supersite

2.2.1 In the 2022 Policy Address, the Chief Executive announced that to strengthen collaboration among Guangdong, Hong Kong and Macao in the GBA in combating climate change as well as joint prevention and control of air pollution, the Government is preparing to set up a supersite for GBA air quality laboratory and meteorology monitoring in Hong Kong to provide

regional air pollution and meteorological monitoring and forecasting services[1].

2.2.2 A Supersite is equipped with the latest technology and equipment, meeting the standards of the State Key Laboratory. It provides a comprehensive range of real-time atmospheric monitoring data and serves as an educational and exchange platform. The advanced equipment of the Supersite is summarised as follows:

- **Air Quality Monitoring System:** Equipped with instruments to monitor trace levels of pollutants and VOCs species, and advanced Light Detection and Ranging (LiDAR) equipment, this system provides high-performance regional air quality monitoring and forecasting, enabling research and academic institutions to develop and validate micro-climate models.

- **Greenhouse Gases Monitoring System:** Designed to monitor greenhouse gas emissions such as methane (CH_4) and nitrous oxide (N_2O) in addition to CO_2, this system quantifies the current status of greenhouse gases to enhance monitoring capabilities, strengthening research on the technology for monitoring and analysing major greenhouse gases and their isotopes.

2.2.3 The Supersite will be equipped with Fourier transform infrared (FTIR) spectrometers, which shall be installed inside a building / mobile container cabin, vertically positioned to a solar tracker enclosed by a Dome and mounted on the roof. Additionally, a weather station (monitoring surface pressure, surface temperature and other meteorological parameters) shall be installed on the roof.

2.3 Site Requirements for the Supersite

2.3.1 The location for the Proposed Supersite will have to meet several relevant requirements.

2.3.2 Firstly, the location should be **in a sparsely populated area** without major pollution sources nearby. Tsim Bei Tsui lies within Hong Kong's frontier closed area, where the surrounding population is sparse and there are no

[1] With reference to LC Paper No. CB(1)42/2023(05) – Establishing a Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite

significant pollution sources. The nearest villages, Sha Kiu Tsuen and Mong Tseng Wai, are over 900m to the south the Site, helping to avoid interference with regional monitoring work.

2.3.3 Secondly, the selected site should be **closer to the GBA** (**Figure 2.1** refers). Tsim Bei Tsui, situated right at the east of the Pearl River Estuary, is considered suitable for assessing air quality and meteorological data in the GBA. This allows for effective monitoring of air transport routes under different weather conditions, providing comprehensive and representative data on regional air pollution and meteorology.

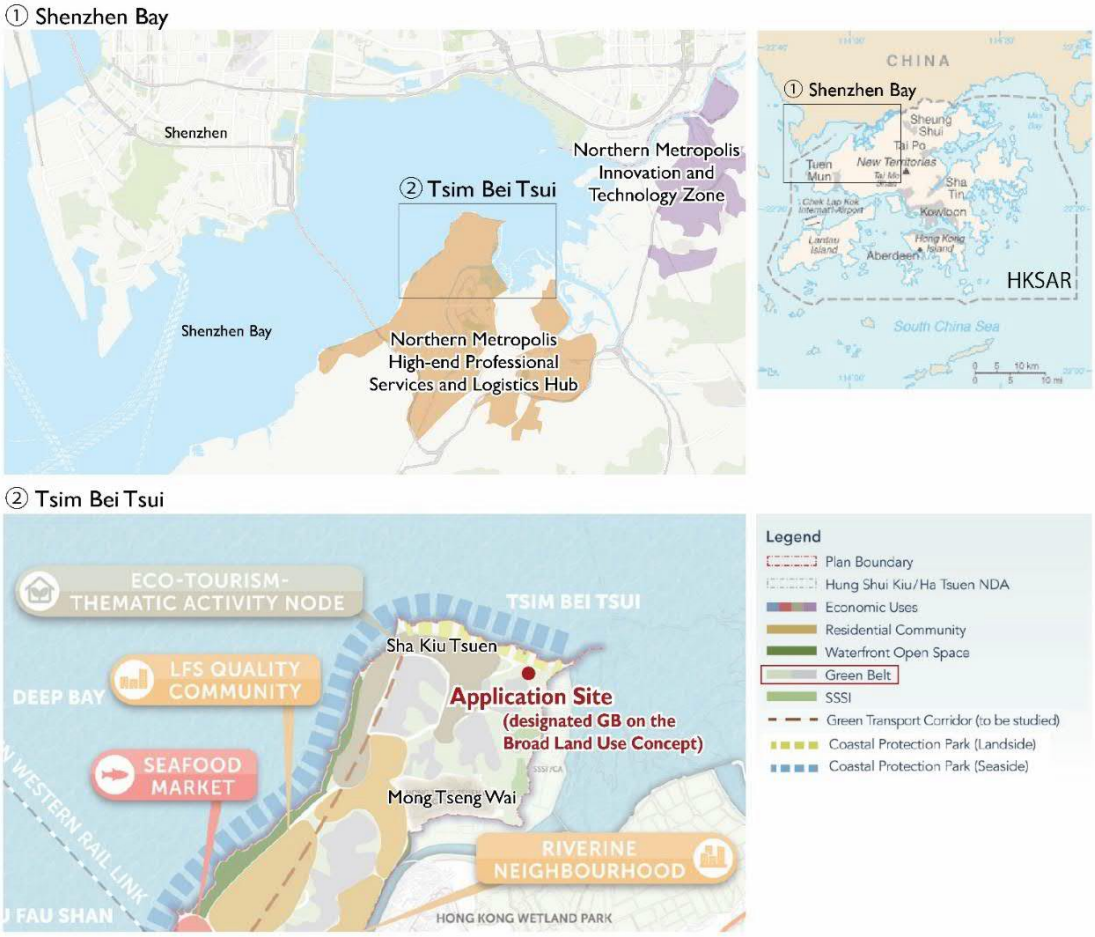


Figure 2.1 Location of the Proposed Supersite in relation to the GBA and the NM

2.3.4 Furthermore, to ensure sustained and effective operation, the Site should **not be located within any major planned development**. According to the Lau Fau Shan New Digi Bay Broad Land Use Concept Plan, the location of the Site is designated as green belt and is adjacent to a node intended for eco-tourism. Located at the fringe of the Lau Fau Shan New Digi Bay Area, it is noted that there are no major planned developments in the vicinity of the Site. Therefore, the character and development density of the surrounding area are expected to remain unchanged.

2.3.5 In conclusion, the Site is deemed suitable for the necessary development of the Supersite for public needs, collaborative investigation and educational uses.

3. SITE AND PLANNING CONTEXT

3.1 Site Location

3.1.1 The Site is located at Deep Bay Road, Tsim Bei Tsui, to the north of Lau Fau Shan (**Figure 3.1** refers). It is bounded by a car park to its west, Deep Bay Road to its north and registered slopes 2SW-D/F 3 and 2SW-D/C 24 to its east and south, respectively. The Site is currently vacant and occupied by natural vegetation (**Photos 1 and 2** refer). The total site area is approximately 3,080m^2.

Photo 1 The Site (as viewed from the immediate west)

Photo 2 The Site (as viewed from the immediate north)

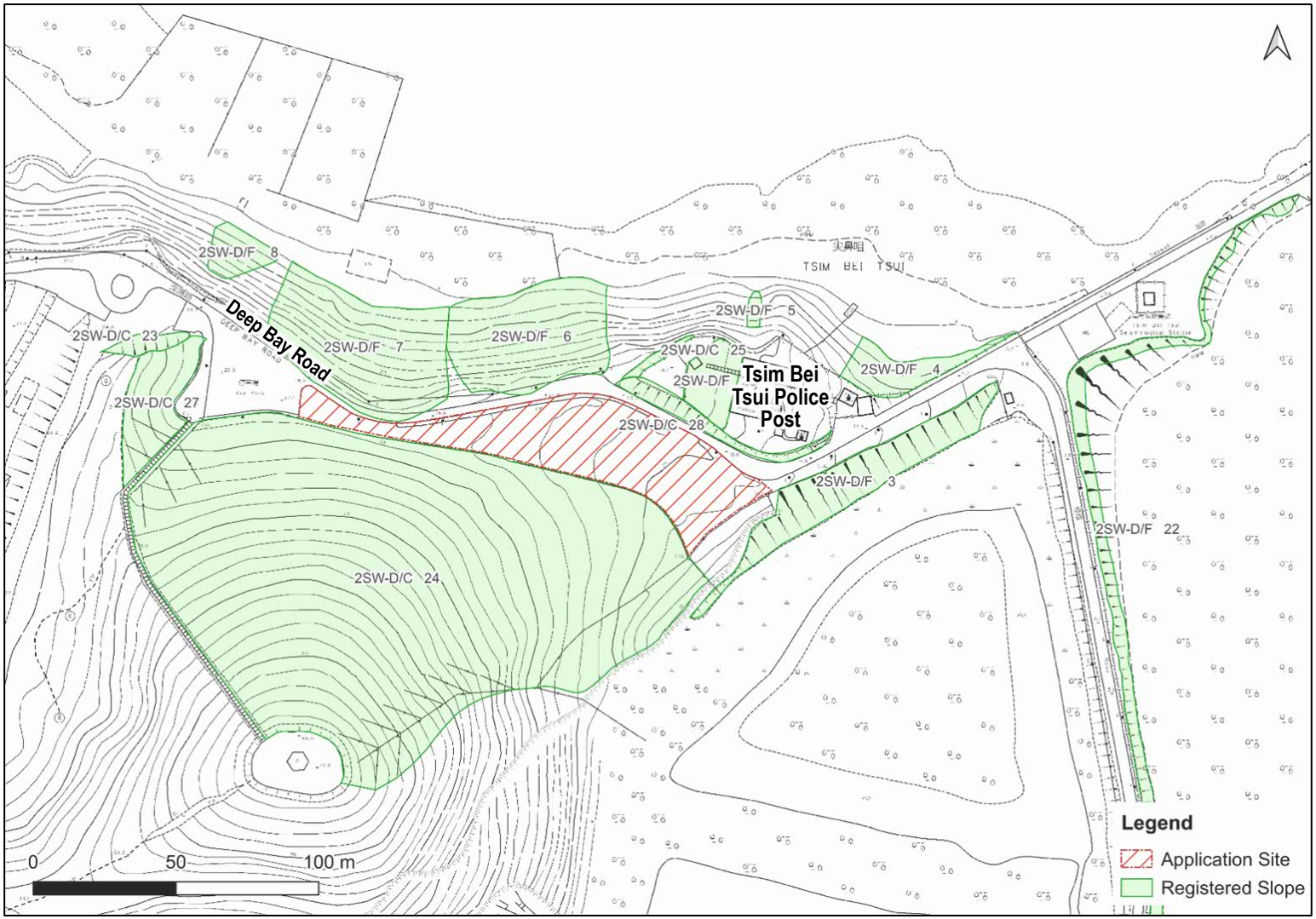


Figure 3.1 Site Location Plan

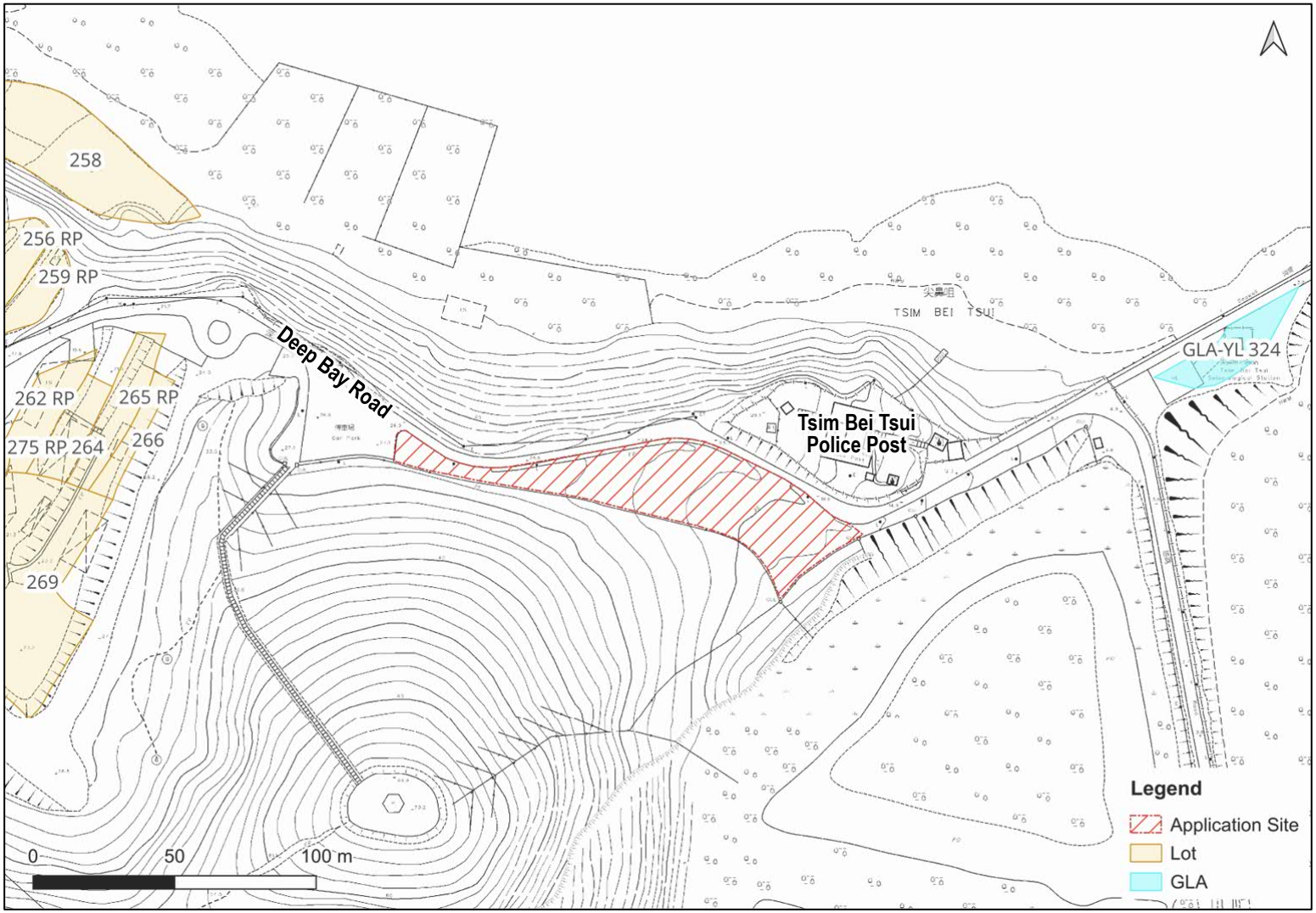


Figure 3.2 Lot Index Plan

3.2 Land Status

3.2.1 The Site comprises wholly government land (**Figure 3.2** refers).

3.3 Statutory Planning Context

3.3.1 The Site falls within an area zoned "GB" with minor portion of land along the northern site boundary in an area shown as 'Road' (about 308m^2, 10% of the Application Site) on the approved Lau Fau Shan and Tsim Bei Tsui Outline Zoning Plan ("approved OZP") No. S/YL-LFS/11 (**Figure 3.3** refers). According to the Statutory Notes of the approved OZP, the "GB" zone is intended "*primarily for defining the limits of urban and sub-urban development areas by natural features and to contain urban sprawl as well as to provide passive recreational outlets".* It is also stated that *"there is a general presumption against development within this zone".*

3.3.2 The proposed Supersite is classified as 'Public Utility Installation' according to the Definition of Terms of the TPB and is a column 2 use under the Statutory Notes for the "GB" zone of the approved OZP, which may be permitted on application to the TPB.

3.3.3 According to the "Remarks" that "*no new development, or addition, alteration and/or modification to or redevelopment of an existing building (including structure(s)) shall result in a total development and/or redevelopment in excess of a maximum building height specified below or the height of the existing building (including structure(s)), whichever is the greater"*. It is also stated that "*based on the individual merits of a development or redevelopment proposal, minor relaxation of the building height restriction may be considered by the TPB on application under section 16 of the Town Planning Ordinance*".

3.3.4 For the portion of land falling within an area shown as 'Road', according to the covering Notes of the OZP, the proposed 'Government Use' would require planning permission from the TPB .

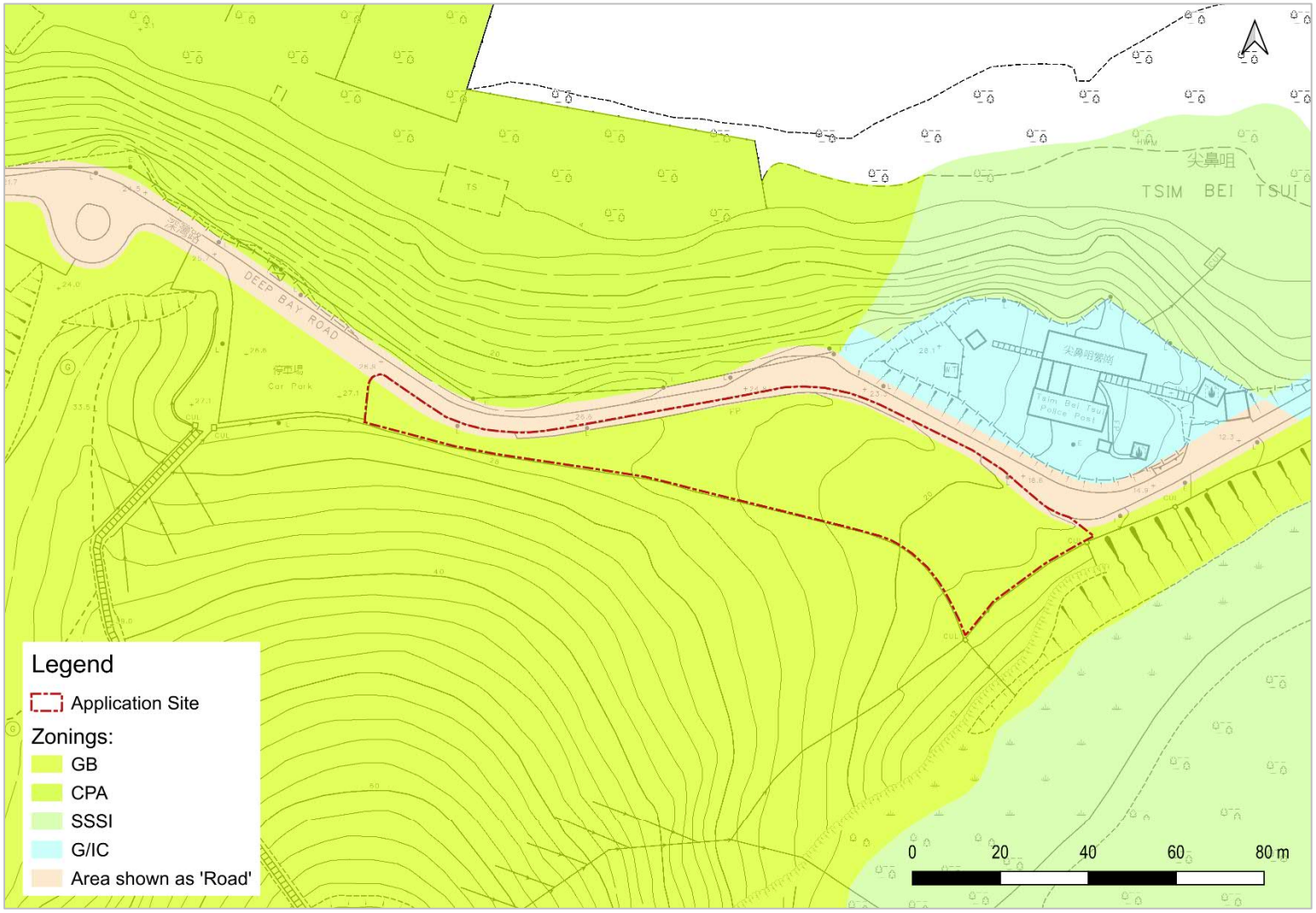


Figure 3.3 Zoning Context Plan

3.4 Surrounding Land Use Pattern

3.4.1 The Site is primarily surrounded by natural vegetation. It is bounded by Deep Bay Road to the north, a public car park to the west, and registered slopes to the east and south (**Figure 3.1** refers). Across Deep Bay Road, to the northeast of the Site, is the Tsim Bei Tsui Police Post. Some temporary uses such as storage and animals' shelter are found to the further west (**Figure 3.4** refers).

3.4.2 Further to the north and east, beyond the slopes, lie mangroves along the coastline. Mai Po Inner Deep Bay Ramsar Site is found to the north and to the east. To the south of the Site, there is a small hill with a pavilion situated at its peak at about 70mPD. There is slope feature No. 2SW-D/C 24 adjoining the south of the Site. The Site is separate from this slope feature by an existing U-channel.

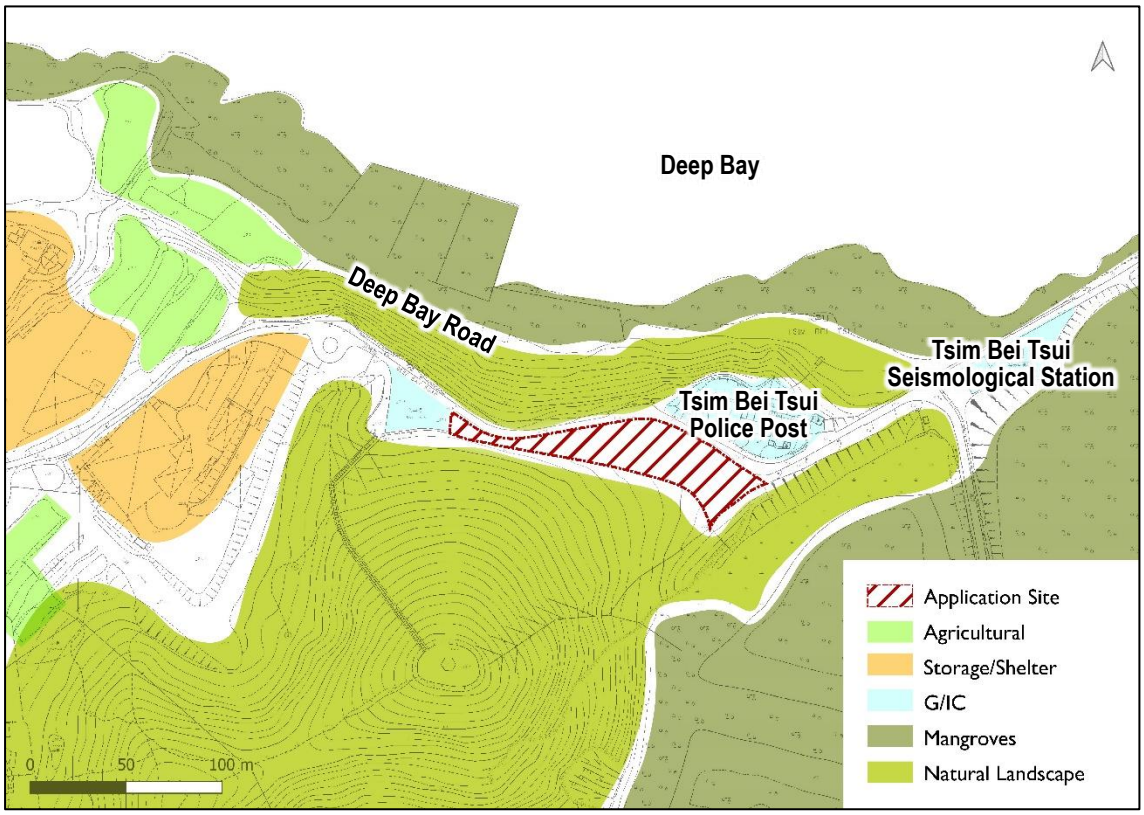


Figure 3.4 Surrounding Land Uses

3.4.3 In terms of terrain, the Site is located on a slope that rises uphill towards the south, where a lookout pavilion is situated at the top. To the northeast, a small hill forms where the Police Post stands.

3.5 Town Planning Board Guidelines No. 10

3.5.1 The planning intention of the "GB" zone is primarily to promote the conservation of the natural environment and to safeguard it from encroachment by urban-type developments. To preserve the character and nature of the "GB" zone, there is a general presumption against development, while the only uses which will always be permitted by the Town Planning Board (the Board) are compatible uses which are essential and for public purpose such as waterworks, water catchment areas, nature reserves, agriculture, forestry and certain passive recreational uses. Other uses, including government/institution/community (G/IC), residential development and public utility installations will require planning permission from the Board and each proposal will be assessed on its individual merits.

3.6 Town Planning Board Guidelines No. 12C

3.6.1 The Deep Bay, Mai Po Marshes and its adjacent area, including Hoo Hok Wai (collectively known as the Deep Bay Area) is recognised as a wetland of international importance. A two-pronged approach to landuse planning control is adopted through the designation of Wetland Conservation Area (WCA) for all existing continuous and adjoining active/abandoned fish ponds and the designation of Wetland Buffer Area (WBA) to protect the ecological integrity of the WCA.

3.6.2 The intention of the WBA is to protect the ecological integrity of the fish ponds and wetland within the WCA and prevent development that would have a negative off-site disturbance impact on the ecological value of fish ponds. Within the WBA, for development or redevelopment which requires planning permission from the Board, an ecological impact assessment would also need to be submitted.

3.6.3 As the Site stands within the WBA, yet outside of the WCA, an ecological impact assessment is carried out to demonstrate the development will not cause a net increase in pollution load to Deep Bay.

4. PROPOSED DEVELOPMENT SCHEME

4.1 The Proposed Development Scheme

4.1.1 Schematic drawings for the proposed development of the Supersite have been devised. Two single-storey blocks – Block A (5m high) and Block B (5.35m high), with a max. GFA of 230m^2 each, are designed to accommodate the specialised equipment required for the Supersite's monitoring duties, both indoors and on the rooftops. The main roof levels of Block A and Block B will be not more than 30mPD, such that the main roof level of the lower block (Block B) is higher than the platform of Tsim Bei Tsui Police Post at 28.1mPD.

4.1.2 Monitoring devices will be housed indoors with the dome for FTIR and sampling inlets proposed to be mounted on the main roofs, with an approximate height of 2m above roof level for the optimum position to take air samples and capture sunlight. A solar tracker enclosed by a dome and mounted on the roof will be installed directly on top of the spectrometer to guide direct solar radiation into the FTIR instrument in the FTIR Room.

4.1.3 In addition to the two main blocks, the outdoor area of the Site mainly consists of an outdoor equipment area on a reinforced concrete plinth to the south of the two blocks as well as a Fire Services Water Tank, a Fire Services Pump Room and an Emergency Generator Room. Two pole-type transformers (H-pole with switch-gear on a 2m-tall pole) for electricity supply as well as the electrical cut out will be set up to the west of Block A. Additionally, two private car parking spaces for staff (in case) are provided adjacent to Block B. Vehicular access to the Site is via Deep Bay Road at +22.64mPD.

4.1.4 Nevertheless, the proposed development would typically operate unmanned on a 24 x 7 basis. It is not expected to produce noise, glare and other emission during operation. Inspection and maintenance would be carried out during daytime on a need basis or at an expected frequency of not more than once a week.

4.1.5 The architectural drawings, including Master Layout Plan, Schematic Elevation and Block Layout Plans, can be found in **Appendix 1**, while the major development parameters and proposed uses are summarised in **Table 4.1** and the preliminary rendering image is shown on **Figure 4.1.**

Table 4.1 Key Development Parameters

	Total
Site Area	About 3,080m^2
Plot Ratio	About 0.2
Site Coverage	About 20%
No. of Blocks	5, incl. Blocks A & B, Emergency Generator Room, FS Pump Room and FS Water Tank
No. of Storeys	1
Total GFA	**Total: About 616m^2** Incl. Blocks A & B (230m^2 each): About 460m^2 Supporting Facilities, incl. Emergency Generator Room, FS Pump Room and FS Water Tank, etc. About 156m^2
Maximum Building Height	Main Roof level not more than +30mPD Notes: ▪ excluding rooftop monitoring devices and meteorological monitoring system ▪ total height of the blocks: about 5m (Block A) & about 5.35m (Block B) ▪ ground level of Blocks A & B: +24.63mPD and +22.79mPD respectively
Proposed Uses	Block A: ▪ G/F: Air Monitoring Equipment, Store, UPS Room, Server Room, VOC Analyser Support Room, Zone for GHGS Monitoring and Tracing, etc. ▪ R/F: Monitoring devices and meteorological monitoring system Block B: ▪ G/F: FTIR Room, Zone for Photochemical Composition Monitoring System, Zone for Particulate Matters, Zone for Standard AQMS, etc. ▪ R/F: Monitoring devices incl. FTIR device with solar tracker enclosed by a dome and sampling inlets

Existing Condition

Proposed Development

Figure 4.1 Rendering Image of the Proposed Development

4.2 Landscape Proposal

4.2.1 Existing trees are evenly distributed across the site, most of which are semi-mature and exhibit poor tree form and health conditions. No Old and Valuable Trees (OVTs) have been identified in accordance with DEVB TCW No. 5/2020 – Registration and Preservation of Old and Valuable Trees, and the Forests and Countryside Ordinance (Cap. 96). The tree species recorded within the Site are mostly common species found in Hong Kong, such as *Melaleuca cajuput Roxb. subsp. cumingiana* 白千層 (81 nos.) and *Casuarina equisetifolia* 木麻黃 (60 nos.). Although there are three nos. of *Pterocarpus indicus* 紫檀 recorded within the Site, which are protected under Cap. 586, the three trees exhibit poor tree form and health conditions in general. Signs of health deterioration, such as wilted branches, leaning forms, and restricted roots caused by structures, are found on these trees. Therefore, none of them is recommended for transplantation. Nevertheless, such tree species are cultivated, readily available from nurseries, and widely planted in Hong Kong's urban landscape.

4.2.2 Trees have a scavenging effect for gaseous pollutants, provide surfaces for particulate deposition, and may also restrict the airflow which may affect sampling. In addition, VOCs naturally released by trees and vegetation as part of their metabolic processes would become local biogenic sources that interfere with air quality monitoring. Therefore, the existing mature trees near the equipment area should be cleared to prevent obstruction of light and potential VOC emissions, which could compromise data accuracy.

4.2.3 Furthermore, due to the narrow and congested nature of the Site, the remaining space outside the indoor and outdoor equipment areas will be required for temporary construction activities, including material storage and delivery. Consequently, none of the existing trees within the Site will be retained in-situ.

4.2.4 With reference to general air quality monitoring stations, it is recommended that sample air intake probe should be separated by more than 20m from trees and vegetation to minimise impact on measurement on air pollutant. While the solar tracker and FTIR monitoring device will be installed on the eastern portion at the roof of Block B, which is the most suitable location within the Site, being away from the hill to the south, no standard tree planting is proposed in the outdoor area near the eastern tip of Block B.

4.2.5 To maintain balance between landscape and visual relief as well as accuracy on air pollutant measurement, it is proposed to provide standard tree planting along the roadside of the western and northwestern boundary; woodland mix for a mix of trees (at max. 1m tall), shrubs and groundcover in the western and southeastern corners. The portion of area closer to the pole-type transformers will be for shrubs and groundcover, with other outdoor areas surrounding the two blocks provided with grasscrete paver. Climbing plants on the boundary fence are also proposed to enhance the visual appeal of the roadside environment. The proposed site formation levels are also carefully designed to follow the natural topography of the Site to minimise the extent of site formation work, including cutting and filling, and the landscape impact.

4.2.6 The Landscape Proposal can be found in **Appendix 2**. After necessary tree felling for the development of the Supersite and compensation planting within the Site, a compensation ratio of about 1:1.06 is achieved (**Table 4.2** refers).

Table 4.2 Details on Tree Felling and Compensation

Item	Height	Quantity
Trees to be Felled	Varied	202 (excluding 23 undesirable species – *Leucaena leucocephala*)
Proposed Standard Trees	1.75m	34
Proposed Tree Whips in Woodland Mix	1m	180
Total Compensatory Trees		**214**
Compensation Ratio		***1:1.06***

4.3 The Need for the Proposed Building Height

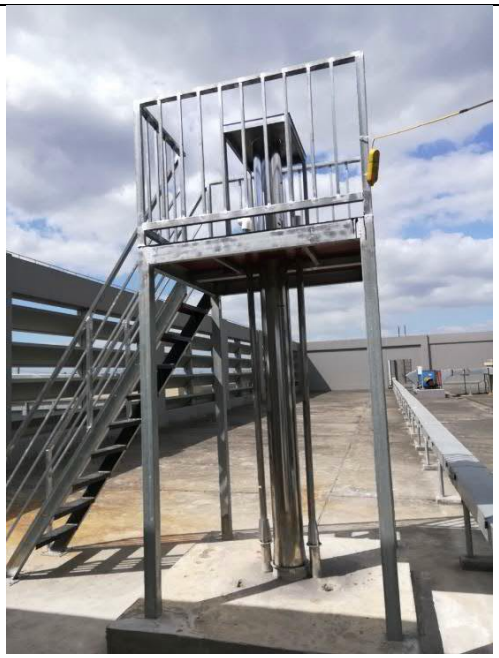
4.3.1 The two proposed blocks will be not more than 30mPD at main roof level, with 2m-tall rooftop structures. To accommodate the required indoor equipment and monitoring system, as well as the building service zone to accommodate the air conditioning and ventilation system, each block itself will have to maintain a headroom of at least about 4.4m to 4.7m. Coupled with the depth of the floor slab and height reservation for the proposed MiC construction method, the building height of at least 5m and 5.35m is necessary for Block A and for Block B (particularly for the FTIR monitoring) respectively, and fully justified.

4.3.2 Apart from air quality monitoring, there will also be a solar tracker installed on the rooftop to guide direct solar radiation into the FTIR instrument within the block. Please refer to **Figure 4.2** for the reference image of the dome for the FTIR monitor device on the rooftop of a Supersite block in Mainland China. In particular, the dome will be raised by a structure approximately 2m tall on the roof to minimise the influence of surrounding vegetation and topography, thereby maximising the capture of sunlight and ensuring more accurate data collection.

Solar Tracker enclosed by a dome

Solar Tracker enclosed by a dome

Rooftop measurement device



Structure for raising the Dome with Solar Tracker up to 2m high above R/F

Figure 4.2 Reference Images of the Rooftop Monitoring and Measurement Device and Setup for Supersite [Source: from EPD]

4.4 Visual Appraisal

4.4.1 The height of the two blocks within the Site is about 5m with rooftop equipments of about 2m, including the dome for FTIR and sampling inlets. Metal fences of 2.5m tall will be erected at the perimeter of the Supersite. As mentioned above, compensatory planting will be provided within the development. As the proposed building height is not that significant compared with the existing surrounding vegetations, it is anticipated that the development would still be compatible with the surrounding visual context from a planning perspective.

4.4.2 Photomontages from two public sensitive viewpoints (**Figures 4.4** and **4.5**) have been prepared, representing the viewpoints (VPs) from the northwest and southwest (**Figure 4.3** and **Table 4.3** refer). As shown in the photomontages, although the existing vegetation within the Site has been cleared, with the relatively low-rise building height and proposed compensatory planting, it is anticipated that the overall visual impact is negligible.

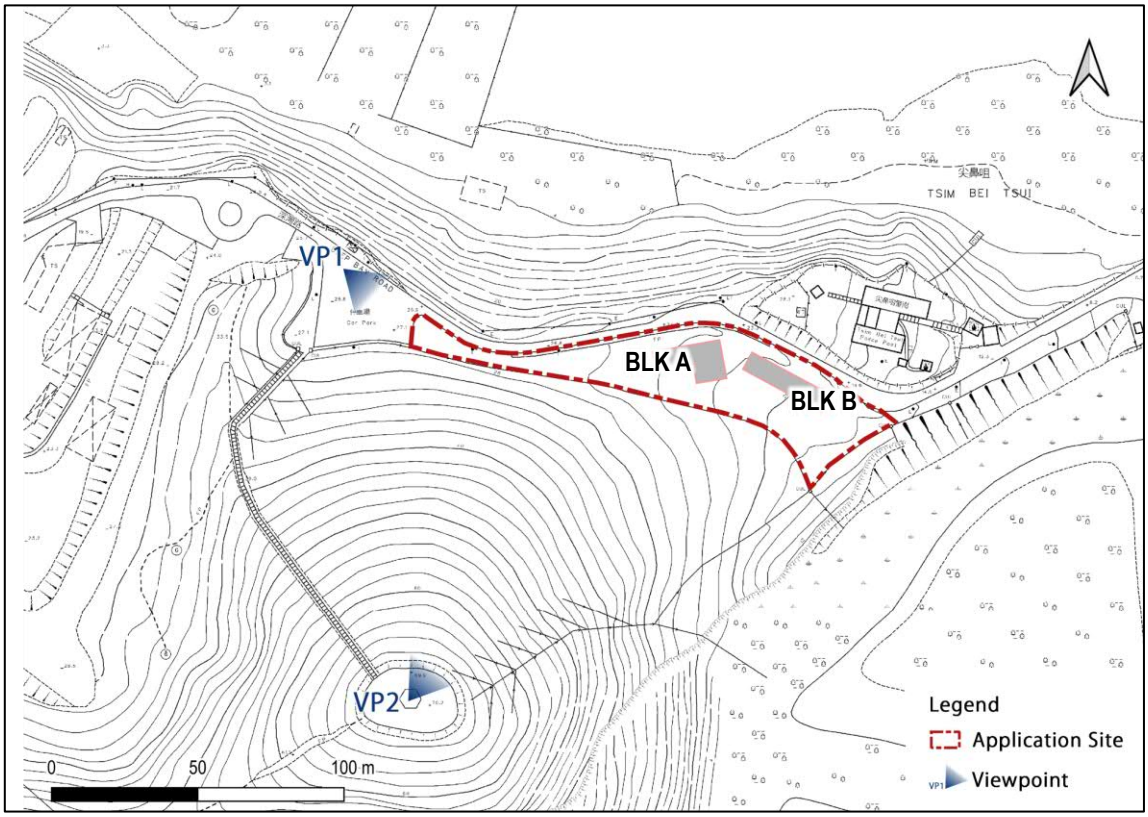


Figure 4.3 Viewpoint Location Plan

Table 4.3 Identified Visually Sensitive Viewpoints Analysis

Viewpoints	Distance / Direction (Approx.)	Height in mPD (Approx.)	Nature of VP
VP1 Public Carpark at Deep Bay Road near Lookout Pavilion	28m from the Site (106m from Block A) / Northwest	+26	Transient/ Passive Recreation
VP2 Tong Ha Liu Lookout Pavilion	118m from the Site (139m from Block A) / Southwest	+70	Passive Recreation

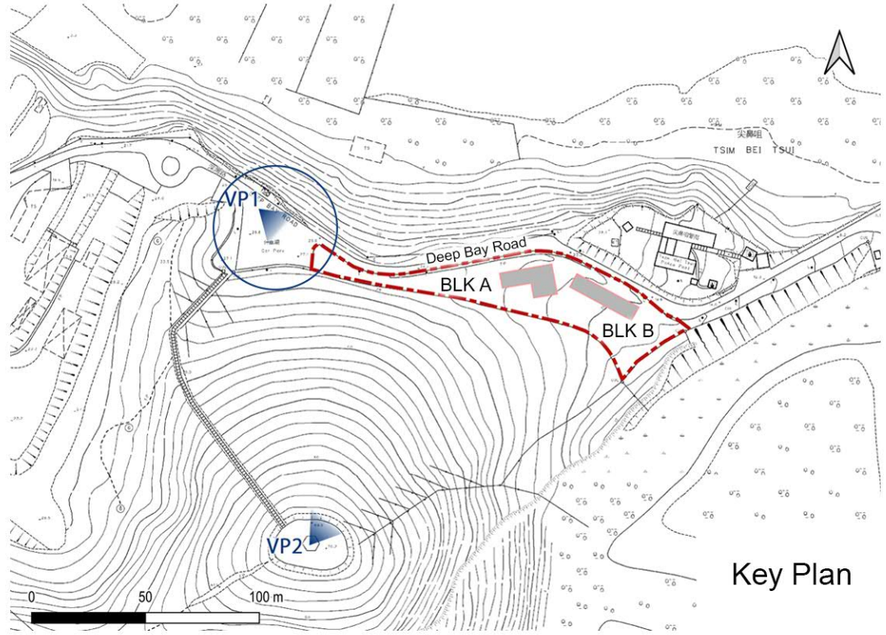
4.4.3 VP1 is taken about 28m to the northwest of the Site and about 106m from Block A. It is near the lookout pavilion adjacent to the public carpark directly adjoining the Site. Drivers and hikers are the users of the carpark and the lookout point, respectively. The existing view comprises mainly overgrown trees in the middle ground and the background, while the public carpark and Deep Bay Road dominate the foreground. As shown in **Figure 4.4**, the fencing along the perimeter and compensatory plantings within the Site are mainly visible from this VP. While the existing trees in the Site will be replaced by new trees in the western portion of the Site and along the site boundary, a more open, wider and clearer sky view will be seen, and two blocks are barely visible on the left-hand side of this VP. Therefore, it is considered that the visual impact on VP1 is **negligible**.

4.4.4 VP2 is taken at Tong Ha Liu Lookout atop a hill about 118m south of the Site and about 139m from Block A, at an elevation of about +70mPD. It is a common viewpoint and resting place for hikers and nearby residents. The VP is about 138m southwest of Block A. The existing view is mainly screened off by the existing trees on the slope of the hill. As shown in **Figure 4.5**, the proposed blocks are not visible at VP2 as the view is mainly screened off by trees. Therefore, it is considered that the visual impact on VP2 is **negligible**.

4.4.5 Based on the photomontages and analysis above, it is concluded that the overall visual impact is considered **negligible** from the two identified public sensitive viewpoints. The two proposed blocks in the Site would still be compatible with the surrounding visual context even though existing trees within the Site have to be removed to ensure accurate data collection.

Existing Condition

Proposed Development



Key Plan

PLANNING LIMITED
規劃顧問有限公司

Viewpoint 1 – Public Carpark at Deep Bay Road Near Lookout Pavilion

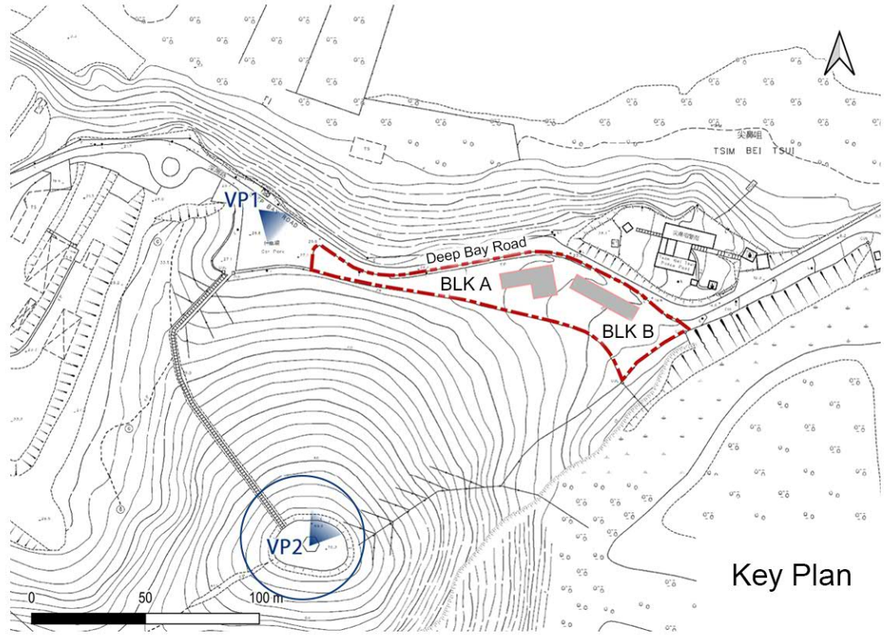
Proposed 'Government Use' (GBA Air Quality Laboratory and Meteorological Monitoring Supersite) in "Green Belt" Zone on Deep Bay Road, Tsim Bei Tsui, New Territories

Figure 4.4

Date: 8 December 2025

Existing Condition

Proposed Development



Key Plan

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Viewpoint 2 – Tong Ha Liu Lookout Pavilion

Proposed 'Government Use' (GBA Air Quality Laboratory and Meteorological Monitoring Supersite) in "Green Belt" Zone on Deep Bay Road, Tsim Bei Tsui, New Territories

Figure 4.5

Date: 8 December 2025

4.5 Traffic Arrangements

4.5.1 The Supersite is designed to function as an automatic monitoring station, with maintenance personnel visiting infrequently. There will only be limited visits by prior arrangement from academic institutes for knowledge sharing purposes. Thus, it is expected that the traffic generated by the Supersite would be minimal and insignificant.

4.5.2 The road section of Deep Bay Road (to the east of the public carpark) is prohibited for motor vehicles except with permit. Considering the limited usage of this road section by vehicles and pedestrians, there is no proposed road widening nor pedestrian footpath construction in conjunction with the Proposed Development, except the widened section of Deep Bay Road close to Block B as turn around / drop off area for EVA purpose (i.e. portion shown as light grey in the MLP extracted in **Figure 4.6** below; details refer to the MLP in **Appendix 1**).

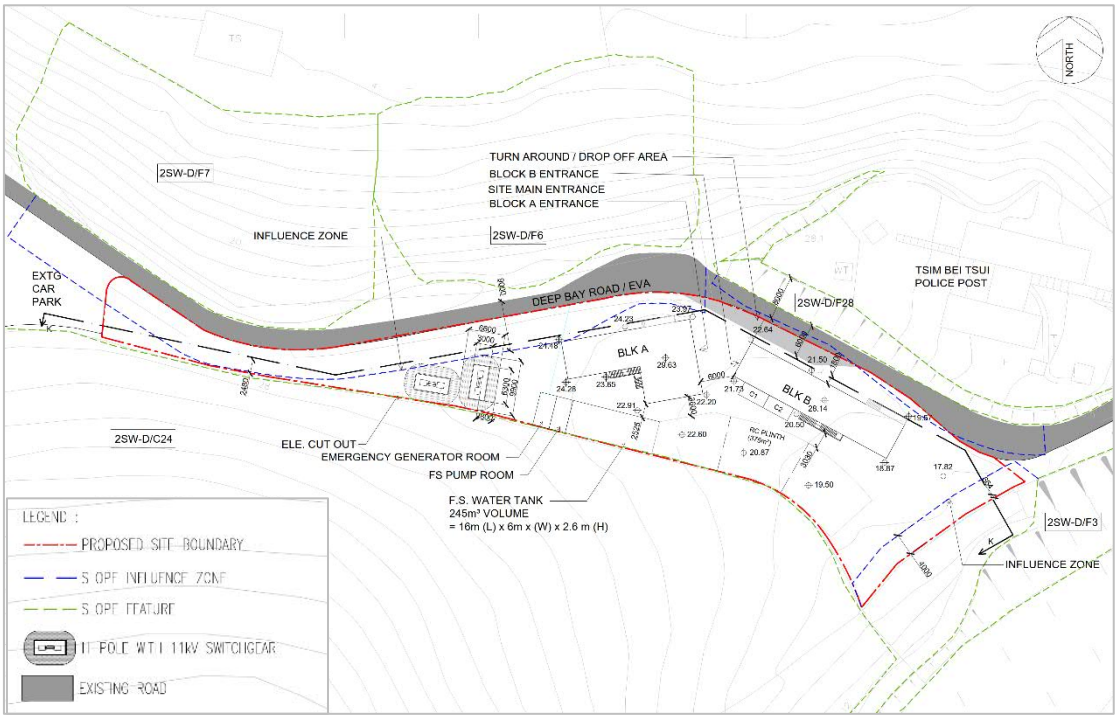


Figure 4.6 Extract of Master Layout Plan

4.6 Drainage Proposal

4.6.1 Drainage Proposal (in **Appendix 3**) has been prepared. Surface storm water at the Site will be collected and discharged through proposed surface channel to the existing catchpit in the slope crest. Surface runoff of the site will be discharged through the proposed 300mm U-channel within site, while

the surface storm water from nearby catchments is discharged through the existing U-channel along the site boundary, all towards the mangrove to the east of the Site. The allowable capacity of the downstream drainage system meets current drainage design capacity requirement for a 1 in 50 year flood for the Proposed Development.

4.7 Ecological Impact Assessment

4.7.1 An ecological impact assessment (EcoIA) (in **Appendix 4**) was conducted covering dry and wet seasons between November 2023 and October 2024. This EcoIA was submitted to AFCD for consideration as part of the Feasibility Study undertaken earlier by EPD. As revealed by the EcoIA, given that the habitat nature within the Site is anthropogenic with some degree of human disturbance, the impact significance for habitat loss is considered to be **Low to Moderate for plantation** and **Low for watercourse**. Although a nesting site of Collared Scops Owl was observed at plantation within the Site, which will be permanently removed due to the Proposed Development, it was identified to be inactive since May 2024. Considering the availability of trees in the vicinity for Collard Scops Owl to nest, direct impact on the species would be of **Low to Moderate significance**.

4.7.2 Suitable mitigation and precautionary measures are recommended in the EcoIA. Particularly related to the nesting of Collared Scops Owls, a pre-construction site check should be conducted before the development. Should any nesting behaviour of Collared Scops Owl be recorded, it should be reported to AFCD, and construction works near the nesting site should be temporarily suspended. Follow-up procedures shall be discussed and agreed with AFCD.

4.7.3 Other measures for minimisation of habitat loss and indirect disturbances to surrounding habitats and associated wildlife are also recommended in the EcoIA. On 28 April 2025, AFCD advised that they had no further comments on the EcoIA in support of the Feasibility Study. The EcoIA attached in this submission has only minor update on the project description of the EcoIA report accepted by AFCD.

4.8 Geotechnical Review Report

4.8.1 A Geotechnical Review Report (GRR) (in **Appendix 5**) was conducted (as part of the Fesasibility Study carred out by EPD earlier, with the latest revision

(Rev. 6) completed in October 2025) to identify all geotechnical factors that could impact or be impacted by the project . It is concluded that the existing registered slope features in close vicinity will not be impacted by the proposed development and no slope upgrading works is required for the proposed development. On 4 December 2025, GEO of CEDD advised that they had no further comments on the GRR in support of the Feasibility Study. The Addendum on the first page of Appendix 5 explained that there are only minor updates on the project description, development parameters and architectural drawings without any change to the evaluation of geotechnical impact in the GRR report accepted by GEO of CEDD.

5. PLANNING MERITS AND JUSTIFICATIONS

5.1 Need for Supersite for Accurate Air Quality and Meteorological Monitoring and Forecasting

5.1.1 At present, Hong Kong's monitoring network is limited in its capacity to support regional analysis. Current stations run by EPD and HKO mainly provide basic local air quality data, while greenhouse gas (GHGs) monitoring is restricted to CO_2 at Cape D'Aguilar Supersite Air Quality Monitoring Station (run by EPD) and King's Park Meteorological Station (run by HKO). The existing system is limited in capturing the spatial distribution of other major GHGs, such as CH_4 and N_2O, and regional pollutants like ozone (O_3) and its precursors.

5.1.2 The proposed Supersite will fill these gaps by consolidating advanced monitoring, forecasting, and analytical capabilities using the latest technology and equipment. Beyond monitoring, the Supersite will act as a regional scientific hub, supporting cross-boundary research collaboration. This positions Hong Kong as a significant contributor in the GBA on climate change response and air quality management, and demonstrates a clear global and wider public need for the project.

5.2 Suitable Location for the Supersite to Strengthen Collaboration within the GBA in Combating Climate Change

5.2.1 In the 2022 Policy Address, the Chief Executive announced that the Government would establish a Supersite for GBA air quality laboratory and meteorological monitoring in Hong Kong. This initiative aims to strengthen cooperation with Guangdong and Macao in addressing climate change, as well as in the joint prevention and control of regional air pollution.

5.2.2 The selected site location is considered suitable in support of this policy initiative and in meeting the strategic and technical requirements outlined in **Section 2.3**. These considerations include (i) its proximity to the GBA, (ii) the surrounding sparse population and activities, and (iii) being not in conflict with future development plans. The location at Tsim Bei Tsui minimises disturbance and interference while significantly contributing to regional collaboration on climate change response within the GBA.

5.3 Minimal Adverse Visual and Landscape Impact

5.3.1 Although the Supersite has various duties, the building footprint within the Site has been kept to a minimum. With a site coverage of only about 20%, most of the Site remains open-air, including landscaped areas. Considering the diverse equipment required for monitoring and forecasting, each with specific operational needs, the proposed GFA of about 616 m^2 is regarded as a minimised development scale.

5.3.2 In terms of building height, the proposed height of not more than 30mPD, with an additional 2m for rooftop installations, is considered minimal to accommodate the necessary equipment and monitoring systems. The solar tracker mounted on the rooftop, with an elevation of about 2m in height, is also required to balance between visual impact and data accuracy, to minimise interference by the nearby vegetation and terrain.

5.3.3 The visual appraisal from **Section 4.4** demonstrated negligible visual impacts arising from the Proposed Development. As the major open sky and natural vegetations are retained, the visual quality and character of the area are not adversely impacted by the Proposed Development. The Landscape Proposal (**Appendix 2** refers) further demonstrated efforts in terms of tree compensation and transition between the development and the adjacent natural environment, balancing between landscape impact and interference to data collection.

5.3.4 Due to the small development scale, building height, and consideration given to limiting visual and landscape impact, it is believed that the Proposed Development will remain compatible with the natural landscape and thus the overall visual impact is considered negligible.

5.4 No Adverse Drainage Impact

5.4.1 It is recommended in the Drainage Proposal (**Appendix 3** refers) that the surface runoff of the site will be discharged through the proposed 300mm U-channel within site, while the surface storm water from nearby catchments will be discharged through the existing U-channel along the site boundary, all towards the mangrove to the east of the Site. The proposed measures are sufficient to ensure that no drainage impact and flooding risk is caused to the surrounding area.

5.5 The Proposed Development Fully Complies with TPB PG No. 12C and Has No Adverse Ecological Impact

5.5.1 The Ecological Impact Assessment (in **Appendix 4**) reveals that an inactive nesting site of Collard Scops Owl within the Site was the major finding, and suitable precautionary measures have been recommended. Overall, since the habitat nature within the Site is anthropogenic with some degree of human disturbance, the impact significance for habitat loss is considered to be **Low to Moderate** for plantation and **Low** for watercourse. With the implementation of the proposed mitigation and precautionary measures, residual ecological impacts of the Proposed Development would be acceptable. No decline in both "area" and "function" of the wetland would be occurring during both construction and operation phases, thus the Project would comply with the "no-net-loss in wetland principle" in compliance with TPB PG No. 12C.

5.6 The Proposed Development Has No Geotechnical Impact

5.6.1 The GRR in **Appendix 5** concludes that the existing registered slope features in close vicinity will not be impacted by the proposed development and no slope upgrading works is required for the proposed development.

5.7 The Proposed Development Fully Complies with TPB PG No. 10

5.7.1 Since the Site is located within "GB" zone, the Proposed Development has paid due consideration to TPB PG No. 10 on application for development within the zone. The Proposed Development fully complies with the relevant guidelines as illustrated in **Table 5.1** below.

Table 5.1 Proposed Development in Compliance with TPB PG No. 10

Applicable Main Planning Criteria from TPB Guidelines No. 10		The Proposed Development
(a)	There is general presumption against development in "GB" zone	The development of the Supersite is for the wider public needs. The Supersite will address the limitations of Hong Kong's current air monitoring network and support the government's policy of collaboration in combating climate change within the GBA. The carefully thought-out landscape measures are effective in limiting significant

Applicable Main Planning Criteria from TPB Guidelines No. 10		The Proposed Development
		impact to the surrounding, seamlessly blending the Development Site and the surrounding natural environment.
(b)	An application for new development in a "GB" zone will only be considered in exceptional circumstances and must be justified with very strong planning grounds. The scale and intensity incl. the plot ratio, site coverage and building height should be compatible with the character of surrounding areas. With the exception of NTEH, a PR up to 0.4 for residential development may be permitted.	As the development is not for residential use, the development scale and intensity restrictions are not applicable. Nonetheless, the Proposed Development has a PR of about 0.2, still far lower than the recommended PR of 0.4.
(e)	Applications for G/IC uses and public utility installations must demonstrate that the proposed development is essential and that no alternative sites are available. The plot ratio of the development site may exceed 0.4 so as to minimise the land to be allocated for G/IC uses	Due to the site strategic and technical requirements of the Supersite, a sparsely populated area is required to minimise interference to data collection. To respond to the government policy of collaboration within the GBA, the location of the Supersite should be close to the heart of the GBA. As a result, the strategic location of Tsim Bei Tsui is determined to be the most suitable. As mentioned, the Proposed Development has a PR of about 0.2 and, therefore, does not exceed 0.4.
(g)	The design and layout of any proposed development should be compatible with the surrounding area. The development should not involve extensive clearance of existing natural vegetation, affect	The clearance of existing natural landscape for the development is unavoidable due to the technical requirements of the Supersite (Section 4.2 refers). It is emphasised that the existing overgrown trees within the Site pose a great interference to the monitoring

Applicable Main Planning Criteria from TPB Guidelines No. 10		The Proposed Development
	the existing natural landscape, or cause any adverse visual impact on the surrounding environment.	of air quality and have to be removed for accurate data collection. Despite this, new tree planting opportunities have been optimised, based on a compensation ratio of about 1:1.06. Landscaped areas of woodland mix, standard trees, shrubs and groundcover, as well as grasscrete pavings proposed in the Landscape Proposal help screen off the development and blend in with the surrounding natural environment. The visual appraisal also indicated negligible visual impact on the surroundings.
(h)	The vehicular access road and parking provision proposed should be appropriate to the scale of the development and comply with relevant standard	Two private car parking spaces for staff on a maintenance and needed basis are provided adjacent to Block B, while the existing Deep Bay Road will act as the EVA to the Supersite. Run-in/out to the Site is located at Deep Bay Road.
(i)	The proposed development should not overstrain the capacity of existing and planned infrastructure such as sewerage, roads and water supply. It should not adversely affect drainage or aggravate flooding in the area.	The Drainage Proposal demonstrated that the Proposed Development will not overstrain the drainage capacity of the area. The landscaped area and use of grasscrete within the Site retained infiltration, minimising additional runoff and flooding risk induced by the development.
(l)	The proposed development should not be susceptible to adverse environmental effects from pollution sources nearby such as traffic noise, unless adequate	PER is not required for the Proposed Supersite Development as advised by EPD.

Applicable Main Planning Criteria from TPB Guidelines No. 10		The Proposed Development
	mitigating measures are provided, and it should not itself be the source of pollution.	
(m)	Any proposed development on a slope or hillside should not adversely affect slope stability	The Proposed Development does not encroach onto any registered slope and their influence zone and will not adversely affect their stability. GRR (Appendix 5) has been conducted, confirming no slope upgrading works for the proposed development is needed.

6. SUMMARY AND CONCLUSION

6.1.1 This Planning Application is prepared and submitted on behalf of EPD, to seek approval from the TPB under section 16 of the Town Planning Ordinance for the Proposed 'Government Use' (GBA Air Quality Laboratory and Meteorological Monitoring Supersite) at the Site. The Site is currently zoned "GB" on the approved OZP.

6.1.2 To enhance collaboration within the GBA on the joint prevention and control of air pollution and the fight against climate change, the Supersite equipped with state-of-the-art international instruments for GBA air quality and meteorological monitoring in Tsim Bei Tsui is proposed, for monitoring and forecasting regional air pollution, extreme weather, and associated risks.

6.1.3 In the Proposed Supersite, two individual blocks are proposed along with outdoor ancillary facilities. The total development will result in an equivalent PR of about 0.2 and a BH of not more than 30mPD (at main roof level), with an additional 2m for rooftop monitoring devices. The Proposed Supersite is fully justified due to the following reasons:

- There is a need for Supersite for accurate air quality, meteorological monitoring, and forecasting.
- The Site is at a suitable location that responds to the government policy of strengthening collaboration within the GBA in combating climate change.
- The scale and building height of the proposed development are minimised and will lead to minimal adverse visual and landscape impact.
- The Proposed Development will not lead to adverse drainage, ecological or geotechnical impacts.
- The Proposed Development fully complies with Town Planning Board Guidelines No. 10 & No. 12C.

6.1.4 Based on the above, the TPB is sincerely requested to give favourable consideration of this S16 Planning Application from planning and technical points of view.

Appendix 1

Architectural Drawings

NORTH

2SW-D/F7

INFLUENCE ZONE

TURN AROUND / DROP OFF AREA

BLOCK B ENTRANCE

SITE MAIN ENTRANCE

BLOCK A ENTRANCE

2SW-D/F6

EXTG
CAR
PARK

DEEP BAY ROAD / EVA

2SW-D/F28

TSIM BEI TSUI
POLICE POST

BLK A

BLK B

RC PLINTH
(375m²)

2SW-D/C24

ELE. CUT OUT

EMERGENCY GENERATOR ROOM

FS PUMP ROOM

F.S. WATER TANK
245m³ VOLUME
= 16m (L) x 6m x (W) x 2.6 m (H)

2SW-D/F3

INFLUENCE ZONE

LEGEND :

- PROPOSED SITE BOUNDARY
- SLOPE INFLUENCE ZONE
- SLOPE FEATURE
- H-POLE WITH 11kV SWITCHGEAR
- EXISTING ROAD

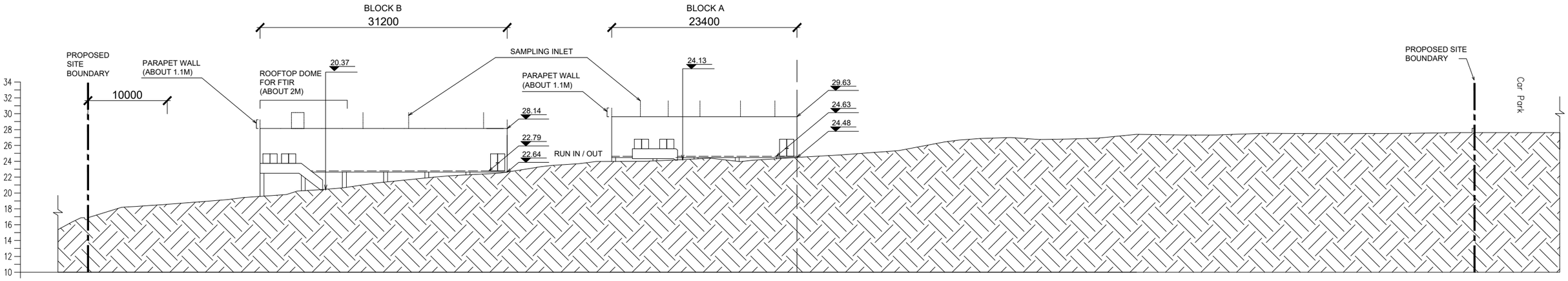
Proposed 'Government Use'
(GBA Air Quality Laboratory and Meteorological Monitoring Supersite)
on Deep Bay Road, Tsim Bei Tsui, New Territories

MASTER LAYOUT PLAN

1:500 (A3)

1

02 - 10 - 2025



REMARK : FOR INDICATION ONLY

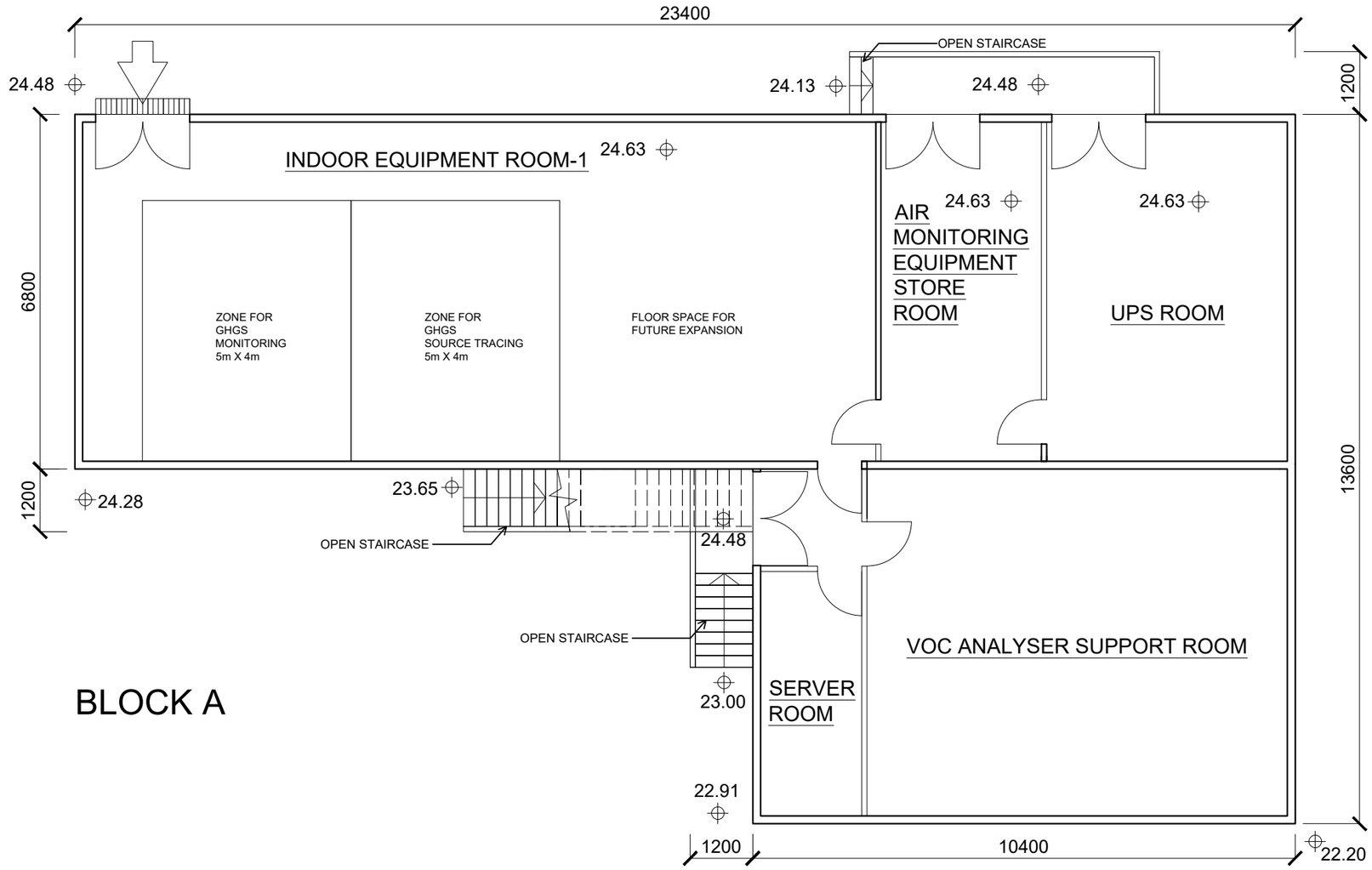
Proposed 'Government Use'
(GBA Air Quality Laboratory and Meteorological Monitoring Supersite)
on Deep Bay Road, Tsim Bei Tsui, New Territories

SCHEMATIC ELEVATION

1:500 (A3)

2

15 - 10 - 2025



BLOCK A

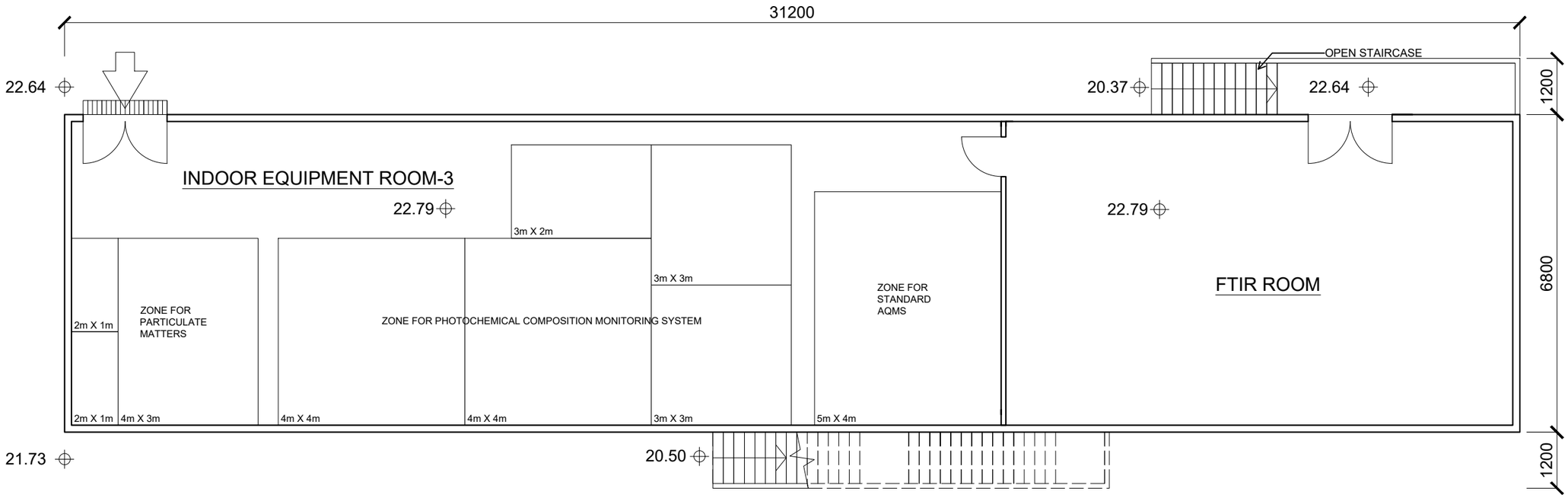
Proposed 'Government Use'
(GBA Air Quality Laboratory and Meteorological Monitoring Supersite)
on Deep Bay Road, Tsim Bei Tsui, New Territories

BLOCK LAYOUT PLAN (BLOCK A)

1:100 (A3)

3a

17 - 09 - 2025



BLOCK B

Proposed 'Government Use'
(GBA Air Quality Laboratory and Meteorological Monitoring Supersite)
on Deep Bay Road, Tsim Bei Tsui, New Territories

BLOCK LAYOUT PLAN (BLOCK B)
1:100 (A3)

3b
17 - 09 - 2025

Appendix 2

Landscape Proposal

PLANNING APPLICATION FOR

PROPOSED 'GOVERNMENT USE' (GBA AIR QUALITY LABORATORY AND METEOROLOGICAL MONITORING SUPERSITE) ON DEEP BAY ROAD, TSIM BEI TSUI, N.T.

Landscape Proposal

Revision A

by

Landes Limited

Date: 10 December 2025

CONTENTS

1.0 Introduction
2.0 The Site and Its Context
3.0 The Proposed Development
4.0 Existing Vegetation
5.0 Landscape Proposal
- 5.1 Landscape Design Concept
- 5.2 Soil Depth for Planting
- 5.3 Irrigation
- 5.4 Future Maintenance

6.0 Planting Proposal

APPENDICES

Appendix A Tree Survey Plan, Tree Assessment Schedule and Photographic Record of Existing Trees
Appendix B Landscape Master Plan and Landscape Details
Appendix C Planting Plans
Appendix D Maintenance Schedule of Soft Landscape Works

1.0 INTRODUCTION

1.1 The Greater Bay Area Quality Laboratory and Meteorological Monitoring Supersite (The Proposed Development) aims to provide regional air pollution and weather monitoring and forecasting services. Tsim Bei Tsui (TBT) is identified as the preferred area for siting the GBA Supersite as it is located near the centre of the Pearl River Estuary, with few nearby residents and no major pollution sources, marking it suitable for regional monitoring without interference from local pollutions. This proposal is prepared as part of the planning application for the Proposed Development.

1.2 This report describes the concepts and principles underlying the Landscape Proposal of the Proposed Development. It describes the proposed development and the associated landscape design. A more comprehensive package of proposals will be formulated at the detailed design stage of the Project.

1.3 This landscape proposal presents:

- The existing tree vegetation;
- The Landscape Master Plan; and
- Planting Proposal of the Proposed Development.

2.0 THE SITE CONTEXT

2.1 The site is located at the northeast corner of Tsim Bei Tsui. To the north and east of the site is Mai Po Inner Deep Bay Ramsar Site. The site is bounded to the north by Deep Bay Road, which serves as the main vehicular access.

2.2 The site is currently a roadside vegetated sloping area ranging from a level of approx. +**27.85**mPD in the west to **+17.48**mPD in the east. Existing trees are evenly distributed across the site, most of which are semi-mature and exhibit poor tree form and health conditions. No Old and Valuable Trees (OVTs) have been identified in accordance with DEVB TCW No. 5/2020 – Registration and Preservation of Old and Valuable Trees. **3** nos. of trees, i.e. ***Pterocarpus indicus*** protected under Cap. 586 were identified.

2.3 The landscape character of the site and its surroundings is mainly rural, comprising villages such as Sha Kiu Tsuen and Nam Sha Po, as well as agricultural fields, water ponds, and Mai Po Inner Deep Bay Ramsar Site.

3.0 THE PROPOSED DEVELOPMENT

3.1 The proposed development comprises two single-storey compartment units, ancillary facilities including an emergency generator room, FS pump room, water tank, outdoor equipment space, layby area, and planting areas.

3.2 The two individual compartment units and outdoor equipment space will be used to accommodate and operate advanced air monitoring equipment. In the outdoor area, a reinforced concrete plinth is proposed to serve as the outdoor equipment platform. This concrete plinth will provide a stable, solid foundation for anchoring equipment and will facilitate future additions of outdoor equipment. Additionally, there will be an electrical cut-out and two 200 kVA H-pole-mounted transformers (approx.. **2**m high) to reduce underground cable cabling works.

3.3 Vehicular access to the site is via Deep Bay Road at **+22.64mPD**. The site formation level follows the local topography to minimize the extent of site work. However, since the equipment for regional air pollution monitoring and forecasting is highly sensitive to air and light conditions, the existing mature trees near the equipment area should be cleared to prevent obstruction of light and potential VOC emissions, which could compromise data accuracy. Furthermore, due to the slender form of the site and its congested area, the remaining space outside the indoor and outdoor equipment areas will be used for temporary construction activities. Consequently, some vegetation will be affected by the site formation work, and a detailed tree assessment will be provided in Paragraph **4.0** below.

4.0 EXISTING VEGETATION

4.1 A tree survey was carried out on **24 February 2024** in accordance with LAO PN No. 6/2023. A total of **225**, including **9** dead trees were recorded within the Application Site Boundary. The tree survey schedule, tree survey plan and photographic record of existing trees are shown in **Appendix A** and are outlined below:

Table 1.0 Species Composition of Existing Trees

No.	Scientific Name	Chinese Name	Qty	Tree No.
1	***Acacia confusa***	台灣相思	10	T84, T161, T248, T250, T283, T285, T288, T308, T309, T310
2	***Acronychia pedunculata***	山油柑	1	T247
3	***Albizia lebbeck***	大葉合歡	9	T51, T53, T57, T273, T311, T312, T313, T315, T325
4	***Aporosa dioica***	銀柴	1	T327
5	***Bauhinia variegata***	宮粉羊蹄甲	1	T45
6	***Bauhinia x blakeana***	洋紫荊	1	T41
7	***Casuarina equisetifolia***	木麻黃	60	T14, T15, T16, T17, T18, T19, T21, T22, T24, T31, T33, T34, T35, T36, T37, T40, T42, T52, T55, T58, T59, T60, T61, T62, T63, T65, T67, T68, T69, T70, T71, T74, T75, T76, T81, T82, T83, T85, T87, T88, T89, T90, T91, T92, T93, T94, T85, T96, T97, T170, T171, T242, T243, T249, T252, T261, T316, T319, T320, T321
8	***Celtis sinensis***	朴樹	3	T20, T26, T73
9	***Cleistocalyx nervosum***	水翁	4	T72, T77, T80, T86
10	***Corymbia citriodora***	檸檬桉	1	T64
11	***Cratoxylum cochinchinense***	黃牛木	1	T268
12	***Ficus microcapa***	細葉榕	1	T54
13	***Ficus virens***	黃葛樹	1	T201
14	***Leucaena leucocephala***	銀合歡	23	T162, T163, T164, T165, T166, T167, T168, T169, T177, T186, T194, T195,

				T196, T197, T209, T210, T216, T219, T221, T230, T232, T240, T297
15	***Liquidambar formosana***	楓香	2	T13, T27
16	***Macaranga tanarius***	血桐	2	T181, T208
17	***Mallotus paniculatus***	白楸	5	T178, T179, T180, T183, T190
18	***Melaleuca cajuput Roxb. subsp.cumingiana***	白千層	81	T48, T50, T66, T202, T203, T204, T205, T206, T207, T212, T213, T214, T215, T217, T218, T220, T222, T223, T225, T226, T227, T228, T229, T231, T234, T235, T236, T237, T238, T239, T241, T244, T245, T246, T251, T253, T254, T255, T256, T257, T258, T259, T260, T263, T264, T265, T266, T267, T269, T270, T271, T272, T274, T275, T276, T277, T279, T280, T281, T282, T287, T294, T295, T296, T298, T299, T300, T301, T302, T303, T304, T305, T306, T314, T318, T322, T323, T324, T326, T328, T329
19	***Melia azedarach***	苦楝	1	T23
20	***Microcos nervosa***	破布葉	1	T233
21	***Peltophorum pterocarpum***	盾柱木	1	T49
22	***Pterocarpus indicus***	紫檀	3	T25, T29, T43
23	***Schefflera heptaphylla***	鵝掌柴	1	T200
24	***Sterculia lanceolata***	假蘋婆	2	T198, T199
	Dead Tree	死樹	9	T56, T211, T224, T262, T278, T284, T286, T289, T307
		Total:	**225**	

4.2 The tree species recorded are mostly common species found in Hong Kong. A total of **24** species were identified, with heights ranging from **2** m to **12** m, crown spreads from **1** m to **7** m, and DBH (Diameter at Breast Height) from **95** mm to **497** mm. No Registered Old and Valuable Trees (OVTs) were recorded in this tree survey. **3** nos. of trees, i.e. **T25, T29** and **T43 - *Pterocarpus indicus*** protected under Cap. 586 were identified.

4.3 The Site is dominated by ***Melaleuca cajuput Roxb. Subsp. cumingiana*** 白千層 (**81** nos.) and ***Casuarina equisetifolia*** 木麻黃 (**60** nos.) which are common roadside plantation species in Hong Kong.

Impact of the Proposed Development

4.4 The impact of the Proposed Development is generally caused by site formation works, construction of new building, the vehicular access, removal of existing vegetation for construction elements, and related construction activities and structural footings. The proposed building layout has been overlaid on the Tree Survey Plan in **Appendix A** to illustrate the impact on the existing trees.

Retention of Trees

4.5 In this project, since the equipment used for regional air pollution monitoring and forecasting is highly sensitive to air and light conditions, the existing mature trees near the equipment area should be removed to prevent light obstruction and VOC emissions that could compromise data accuracy.

4.6 Due to the narrow and congested nature of the site, the remaining space outside the indoor and outdoor equipment areas will be designated for temporary construction activities, including material storage and delivery. Consequently, none of the existing trees within the site will be retained in-situ.

Felling and Transplantation of Trees

4.7 For trees that will be in conflict with the proposed works shall be proposed to be transplanted if they fulfil all the criteria below:

a. Trees have high amenity value;
b. Trees with good form and health;
c. Suitable access;
d. Tree species able to be transplanted easily;
e. Trees have suitable size and;
f. Trees are young to semi-mature.

4.8 In this project, **225** existing trees (including **9** dead trees) within the Site Boundary are in direct conflict with the proposed works and cannot be retained in situ. None of the disturbed trees meet the criteria for transplantation.

4.9 **24** affected trees, namely **T84, T161, T248, T250, T283, T285, T288, T308, T309, T310**

– ***Acacia confusa***, **T247** – ***Acronychia pedunculata,*** T327 – ***Aporosa dioica,*** **T64 - *Corymbia citriodora,*** **T268 - *Cratoxylum cochinchinense,*** **T181, T208 - *Macaranga tanarius,*** **T178, T179, T180, T183, T190** - ***Mallotus paniculatus,*** **T23 - *Melia azedarach,*** **T233 - *Microcos nervosa*** and **T200 - *Schefflera heptaphylla*** are common hillside species in Hong Kong. As they are propagated from the adjacent hillsides, their root systems are very susceptible to environmental changes. This renders them a relatively low survival rate after transplantation. Hence, all of these trees are also proposed to be felled.

4.10 Another **166** disturbed trees, namely **T51, T53, T57, T273, T311, T312, T313, T315, T325** – ***Albizia lebbeck***, **T45** – ***Bauhinia variegata***, **T41** – ***Bauhinia x blakeana,*** **T14, T15, T16, T17, T18, T19, T21, T22, T24, T31, T33, T34, T35, T36, T37, T40, T42, T52, T55, T58, T59, T60, T61, T62, T63, T65, T67, T68, T69, T70, T71, T74, T75, T76, T81, T82, T83, T85, T87, T88, T89, T90, T91, T92, T93, T94, T85, T96, T97, T170, T171, T242, T243, T249, T252, T261, T316, T319, T320, T321 - *Casuarina equisetifolia***, **T20, T26, T73** - ***Celtis sinensis***, **T72, T77, T80, T86** - ***Cleistocalyx nervosum***, **T54** - ***Ficus microcapa***, **T201** - ***Ficus virens***, **T13, T27** - ***Liquidambar formosana***, **T48, T50, T66, T202, T203, T204, T205, T206, T207, T212, T213, T214, T215, T217, T218, T220, T222, T223, T225, T226, T227, T228, T229, T231, T234, T235, T236, T237, T238, T239, T241, T244, T245, T246, T251, T253, T254, T255, T256, T257, T258, T259, T260, T263, T264, T265, T266, T267, T269, T270, T271, T272, T274, T275, T276, T277, T279, T280, T281, T282, T287, T294, T295, T296, T298, T299, T300, T301, T302, T303, T304, T305, T306, T314, T318, T322, T323, T324, T326, T328, T329** - ***Melaleuca cajuput Roxb. subsp.cumingiana***, **T49** - ***Peltophorum pterocarpum***, and **T198, T199** - ***Sterculia lanceolata*** have exhibited either poor tree form or health conditions. Transplanting these trees would require significant deformation, which would likely result in irreversible damage to their form. Besides, all of them are growing on sloping area, it is not feasible to form a well-balanced and viable rootball for transplantation. Therefore, it is proposed to fell these trees and compensate by planting high-quality replacements.

4.11 **3** trees, i.e. **T25, T29, T43** - ***Pterocarpus indicus*** protected under Cap. 586 will also be affected by the Proposed Development. These mature trees, with heights ranging from 9m to 12m, should be removed to prevent light obstruction and VOC emissions that could compromise data accuracy. Besides, due to the narrow and congested nature of the site, tree nos. **T25** and **T29** will be disturbed by the construction activities, including material storage and delivery, while tree No. **T43** will be affected by the H-Pole with 11kV switchgear. There is a genuine need to remove these trees from their current location. In view of the current conditions of these trees, all of them exhibit

poor tree form and health conditions in general. Signs of health deterioration, such as wilted branches, leaning forms, and restricted roots caused by structures, are found on these trees. Therefore, none of them is recommended for transplantation. Although they are protected tree species, they are all cultivated, readily available from nurseries, and widely planted in Hong Kong's urban landscape. Hence, it is proposed to remove them and compensate with quality trees.

4.12 Apart from the above, **9** dead trees, (i.e. **T56, 211, T224, T262, T278, T284, T286, T289** and **T307**) and **23** undesirable species – ***Leucaena leucocephala***, (i.e. **T162, T163, T164, T165, T166, T167, T168, T169, T177, T186, T194, T195, T196, T197, T209, T210, T216, T219, T221, T230, T232, T240** and **T297**) are found within the Application Site. Its presence may pose potential danger to the occupants in future. It will be removed, for sake of public safety.

Table 2.0 Summary of Treatment to Existing Trees

Proposed Treatment to Existing Trees	**No. of Trees**
Number of Trees to be Retained	0
Number of Trees to be Felled	225 (including 23 undesirable species – ***Leucaena leucocephala***)
Number of Trees to be Transplanted	0
Total Number of Trees in Survey	**225**

5.0 LANDSCAPE PROPOSAL

5.0.1 The aim of the landscape proposals is to respond to site conditions, development layout and nature of the proposed development and to provide a quality landscape scheme. The main factors to be taken into consideration are:

- Responsive to the site context, both in terms of landscape character and visual amenity;
- Creation of a green setting by maximising the opportunity for soft landscape;
- Establishment of pleasant landscape areas which meet the varying needs of users; and
- Minimization of future maintenance requirements.

5.0.2 Landscape drawings showing the proposed landscape treatment for the Proposed Development, and their underlying principles have been attached in **Appendix B** for ease of reference.

- Hong Kong Planning Standards and Guidelines;
- Technical Guidelines on Landscape Treatment for Slopes (GEO Publication No. 1/2011);
- Design Manual: Barrier Free Access 2008 (Building Department);
- DEVB TC W No. 6/2015 - Maintenance of Vegetation and Hard Landscape Features;
- LAO Practice Note No. 6/2023 – Processing of Tree Preservation and Removal Proposals for Building Development in Private Projects – Compliance with Tree Preservation Clause under Lease;
- PlanD's PNPP No. 1/2019 – Processing and Compliance Checking of Landscape Submissions related to Planning Applications; and
- Guidance Notes for Application for Permission under Section 16 of the Town Planning Ordinance (Cap. 131).

5.1 Landscape Design Concept

5.1.1 The landscape concept mentioned below describe considerations, which has been considered as being general to the whole landscape design.

Minimisation of Extent of Site Formation Works

5.1.2 As the Site is gentle sloping lands with levels ranging from **27.08**mPD at west to **+17.48**mPD at east, the proposed site formation levels are carefully designed to follow the natural topography of the site, so as to minimize the extent of site formation work and the landscape impact. Consequently, this has greatly reduced the amount of the cutting/ filling required for the proposed development.

Integration of the Development with the Surrounding Context

5.1.3 Since the equipment is primarily located in the indoor areas of Block A and B, as well as on the concrete plinth in the outdoor area, it is highly sensitive to air and light conditions. Tall tree and shrub planting around the outdoor and indoor equipment is not proposed to prevent obstruction of light and potential VOC emissions, which could compromise data accuracy. To enhance the site's greenery, grasscrete with grass planting is proposed in most of the areas surrounding the equipment zones.

5.1.4 At locations further from the equipment, shrubs, groundcover, and woodland tree whips planting will be introduced to create a soft, natural interface with the surrounding environment. This design will help provide a seamless transition between the Proposed Development and the adjacent natural environment.

5.1.5 To improve the visual appeal of the roadside environment, rows of standard trees in evergreen nature are proposed for the western portion of the site. Besides, climbing plants will be planted on the metal fence (**2.5m** high) along Deep Bay Road. Please refer to Landscape Section, dwg. Nos. **LD101** to **LD103** in **Appendix B** for reference.

5.1.6 Concrete plinths, approx 300mm high from ground level, are proposed for outdoor equipment located to the south of the site. An earth tone paint color is recommended to blend harmoniously with the surrounding hillside environment.

5.2 Soil Depth for Planting

5.2.1 The requirement of soil depth is directly related to the planting design and its associated loading requirement upon structure. In general, the soil depth provided, with all drainage layers, water-proofing and protective screening exclusive is listed below:

Table 3.0 Planting Medium (Soil Depth)

Planting Type	**Soil Depth (Minimum)**
Tree/ Palm tree	1200mm
Shrub/ Climber	600mm
Groundcover/ Turf	300mm

5.3 Irrigation

5.3.1 The proposed irrigation system will be by tap water pipe for manual operation. Lockable water points will be provided at 40m centres covering the entire site. The proposed source of water supply is subject to final approval from the Water Services Department.

5.4 Future Maintenance

Hard Landscape Elements

5.4.1 Maintenance for hard landscape elements shall be carried out by the future operator of the Proposed Development with maintenance intention as follows:

I – Routine Maintenance (Daily – Weekly)
a. Rubbish and litter removal
b. Sweeping and cleaning
c. Damage inspection and repair for site furniture and light bulb replacement

II – Annual/ Long Term Maintenance
a. Repainting
b. Resurfacing of worn pavements
c. Replacing worn parts site furniture, lighting fixture and other facilities
d. Replacement of worn landscape furniture.

Soft Landscape Element

5.4.2 The softworks contractor will be responsible for maintenance of the planting during the establishment period allowed for in the construction contract, usually for the first year after the beginning of the scheme's operational phase. This will ensure that the soft

landscape measures are in healthy condition prior to the finished scheme being handed back to the future operator.

5.4.3 Ultimately the future operator will employ skilled maintenance staff to take care of all landscape areas within the Site.

5.6.4 The maintenance schedule for soft landscape works has been included in **Appendix D**. It is important to mention that tree risk assessment will be conducted at appropriate time to facilitate proper tree management and maintenance.

6.0 PLANTING PROPOSAL

6.1 In order to provide quality landscape for the Proposed Development, soft landscape works will be the major landscape element of the landscaping proposal and satisfy the following criteria:

- To screen the proposed building and reduce the visual impact to the nearby residents/ visitors;
- To meet the safety criteria required by the operator;
- To minimize future maintenance; and
- To be compatible with the hillside environment.

6.2 The proposed planting species list is shown as follows and details shall refer to the Planting Plans in **Appendix C.**

Table 5.0 Proposed Planting Schedule

Botanical Name	**Chinese Name**	**Size (mm)**	**Spacing (mm)**	**Native/ Exotic**
STANDARD TREES		**Height x Spread x DBH (mm)**		
Elaeocarpus chinensis	中華杜英	1750x1000x50	2500	Native
Sapium dicolor	山烏桕	1750x1000x50	2500	Native
WOODLAND TREE WHIPS		**Height x Spread x DBH (mm)**		
Elaeocarpus chinensis	中華杜英	1000x750x25	1500	Native
Ficus virens	黃葛樹	1000x750x25	1500	Native
Liquidambar formosana	楓香	1000x750x25	1500	Native
Polyspora axillaris	大頭茶	1000x750x25	1500	Native
Sapindus Saponaria	無患子	1000x750x25	1500	Native

Sapium sebiferum	烏桕	1000x750x25	1500	Native
SHRUBS		**Height x Spread (mm)**		
Ixora chinensis	龍船花	500x450	300	Native
Rhaphiolepis indica	石斑木	450x300	250	Native
Rhododendron simsii	紅杜鵑	300x250	200	Native
GROUNDCOVERS		**Height x Spread (mm)**		
Lantana montevidensis	小葉馬櫻丹	400x350	300	Native
Ligustrum sinense	山指甲	350x300	250	Native
Nephrolepis auriculata	腎蕨	350x300	250	Native
CLIMBING PLANT		**Height x Spread (mm)**		
Bauhinia glauca	羊蹄甲藤	1500x300	300	
Parthenocissus himalayana	爬牆虎	1500x300	300	
GRASS				
Cynodon dactylon	狗牙根	-	-	Native

6.3 In this study area, a total of **225** trees including **9** dead trees within the Application Site Boundary were recorded. **None** of the surveyed trees will be retained in-situ while all **225** trees inside the Site will be felled due to in conflict with the Proposed Development and the associated works.

6.4 In accordance with para. 42 of Guidance Notes of LAO PN No. 6/2023, the compensatory planting for removal of ***Leucaena leucocephala*** is not required, due to its aggressive and invasive growing habits. **34** standard trees with average DBH approx. **50** mm and **180** woodland tree whips with average DBH **25**mm are proposed to be planted to compensate the loss of **202** existing trees, excluding ***Leucaena leucocephala***. All new trees within the Application Site Boundary will all be maintained by the Applicant.

6.5 In view of the above, the tree compensation proposal can achieve a ratio not less than 1:1 in terms of quality and quantity as follows:

Quantity of loss of trees:	202 nos. (excluding 23 ***Leucaena leucocephala***)
Quantity of compensatory trees:	214 nos. (including 34 standard trees and 180 tree whips)
Quantity compensation ratio	approx. 1:06

Appendix A

Tree Survey Plan, Tree Assessment Schedule

and

Photographic Record of Existing Trees

LEGEND:

APPLICATION SITE BOUNDARY

T11 EXISTING TREES TO BE FELLED (WITHIN APPLICATION SITE)

+14.75 PROPOSED LEVEL

+14.00 EXSITING LEVEL

DEEP BAY ROAD / EVA

BLK A

BLK B

RC PLINTH (375m²)

TSIM BEI TSUI POLICE POST

Proposed Site

0 10 20 30 40M

PROJECT :

PROPOSED 'GOVERNMENT USE' (GBA AIR QUALITY LABORATORY AND METEORLOGICAL MONITORING SUPERSITE) ON DEEP BAY ROAD, TSIM BEI TSUI, N.T.

DRAWING TITLE :

TREE SURVEY PLAN

PROJECT No. C2520

DRAWING No. TS01

SCALE : 1:500

DATE OF ISSUE : AUG 2025

CAD FILENAME : C2520-TS01

REV	DESCRIPTION	DATE

DESIGN BY : TEL

DRAWN BY : CAD

CHECKED BY : TEL

APPROVED BY : TEL

NOTES :

1. DO NOT SCALE DRAWING. FIGURED DIMENSIONS ARE TO BE FOLLOWED.
2. COPYRIGHT OF THE DRAWING IS RETAINED BY THE AUTHORIZED PERSON.
3. ALL DIMENSIONS ARE TO BE CHECKED AT SITE BY THE MAIN CONTRACTOR.
4. READ THIS DWG. IN CONNECTION WITH GEN. ARCH. PLANS, STRUCT. PLANS, AND OTHER RELATED DWGS.

LanDes

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Tree Assessment Schedule at
Proposed 'Government Use' (Greater Bay Area Air Quality Laboratory and Meteorological Monitoring Supersite) in "Green Belt" Zone on Deep Bay Road, Tsim Bei Tsui
Prepared by Lee Kong Ho (AA (HKILA) No.: AA075) on 24/02/2024
To be read in conjunction with Tree Survey Plan, dwg. no. C2520-TS01

Tree	Species					Proposed Treatment	Remark[1]
No.	Scientific Name	Chinese Name	Height (m)	DBH[2] (mm)	Crown Spread (m)	(Retain/Transplant/Fell)	
T13	***Liquidambar formosana***	楓香	4	132	2	Fell	On slope; Restricted root
T14	***Casuarina equisetifolia***	木麻黃	3	103	3	Fell	Cavity; Codominant branches
T15	***Casuarina equisetifolia***	木麻黃	8	310	5	Fell	Leaning 15 degree
T16	***Casuarina equisetifolia***	木麻黃	2	278	1	Fell	Broken leader
T17	***Casuarina equisetifolia***	木麻黃	5	178	3	Fell	Leaning 15 degree
T18	***Casuarina equisetifolia***	木麻黃	5	146	3	Fell	Leaning 15 degree
T19	***Casuarina equisetifolia***	木麻黃	8	242	4	Fell	Leaning 20 degree
T20	***Celtis sinensis***	朴樹	3	146	3	Fell	Leaning 15 degree; Crooked
T21	***Casuarina equisetifolia***	木麻黃	6	288	4	Fell	Codominant trunks; Leaning 10 degree
T22	***Casuarina equisetifolia***	木麻黃	8	249	4	Fell	-
T23	***Melia azedarach***	苦楝	4	136	3	Fell	-
T24	***Casuarina cquisetifolia***	木麻黃	10	495	7	Fell	Restricted roots; Broken branch
T25	***Pterocarpus indicus***	紫檀	9	418	5	Fell	Protected under Cap.586, Leaning 15 degree, asymetrical form, wilted branches, root restricted by planter structures
T26	***Celtis sinensis***	朴樹	4	120	3	Fell	On slope
T27	***Liquidambar formosana***	楓香	4	130	2	Fell	On slope; Leaning 15 degree
T29	***Pterocarpus indicus***	紫檀	12	497	7	Fell	Protected under Cap. 586, Codominant trunks; Uprooted, root restricted by U-channel
T31	***Casuarina equisetifolia***	木麻黃	8	409	6	Fell	Codominant trunks; On slope;Restricted roots;
T33	***Casuarina equisetifolia***	木麻黃	5	160	3	Fell	On slope
T34	***Casuarina equisetifolia***	木麻黃	9	422	7	Fell	Codominant trunks; On slope
T35	***Casuarina equisetifolia***	木麻黃	8	272	5	Fell	On slope
T36	***Casuarina equisetifolia***	木麻黃	8	279	4	Fell	Codominant trunks On slope; Leaning 15 degree;Restricted roots
T37	***Casuarina equisetifolia***	木麻黃	11	479	7	Fell	On slope; Restricted roots;Codominant trunks
T40	***Casuarina equisetifolia***	木麻黃	5	115	3	Fell	Low live crown ratio
T41	***Bauhinia x blakeana***	洋紫荊	4	104	3	Fell	Climbers; Crooked
T42	***Casuarina equisetifolia***	木麻黃	9	272	5	Fell	On slope; Restricted roots
T43	***Pterocarpus indicus***	紫檀	10	452	7	Fell	Protected under Cap. 586, asymmetrical form, wilted branches, exposed root, root restricted by U-channel

Tree	Species					Proposed Treatment	Remark[1]
No.	Scientific Name	Chinese Name	Height (m)	DBH[2] (mm)	Crown Spread (m)	(Retain/Transplant/Fell)	
T45	***Bauhinia variegata***	宮粉羊蹄甲	4	168	3	Fell	Multi-stems; Low live crown ratio;Exposed dead wood
T48	***Melaleuca cajuputi Roxb. subsp. cumingiana***	白千層	10	292	5	Fell	Borer
T49	***Peltophorum pterocarpum***	盾柱木	9	338	6	Fell	Codominant trunks; Low live crown ratio
T50	***Melaleuca cajuputi Roxb. subsp. cumingiana***	白千層	9	233	4	Fell	Borer; Low live crown ratio
T51	***Albizia lebbeck***	大葉合歡	9	161	3	Fell	Leaning 25 degree; Crooked
T52	***Casuarina equisetifolia***	木麻黃	5	110	3	Fell	On slope
T53	***Albizia lebbeck***	大葉合歡	8	302	5	Fell	Codominant trunks; On slope
T54	***Ficus microcapa***	細葉榕	2.5	108	4	Fell	Codominant trunks; On slope Codominant trunks; On slope;
T55	***Casuarina equisetifolia***	木麻黃	7	183	4	Fell	Restricted roots
T56	***Dead Tree***	死樹	3	111	1	Fell	On slope; Leaning 25 degree; Low live crown ratio
T57	***Albizia lebbeck***	大葉合歡	5	232	3	Fell	Codominant trunks: On slope
T58	***Casuarina equisetifolia***	木麻黃	9	376	4	Fell	On slope; Bulge; Angle steel embraced; Restricted roots.
T59	***Casuarina equisetifolia***	木麻黃	8	212	4	Fell	On slope; Restricted roots
T60	***Casuarina equisetifolia***	木麻黃	8	199	3	Fell	Crooked: Low live crown ratio
T61	***Casuarina equisetifolia***	木麻黃	8	220	5	Fell	Crooked
T62	***Casuarina equisetifolia***	木麻黃	4	106	3	Fell	Leaning 25 degree; Codominat trunks
T63	***Casuarina equisetifolia***	木麻黃	8	251	3	Fell	-
T64	***Corymbia citriodora***	檸檬桉	10	190	3	Fell	Low live crown ratio
T65	***Casuarina equisetifolia***	木麻黃	4	105	2	Fell	Crooked
T66	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	9	224	3	Fell	Low live crown ratio
T67	***Casuarina equisetifolia***	木麻黃	6	202	5	Fell	Leaning 20 degree; Codominat trunks
T68	***Casuarina equisetifolia***	木麻黃	9	253	5	Fell	Angle steel embraced; Restricted roots
T69	***Casuarina equisetifolia***	木麻黃	8	244	4	Fell	Codominant trunks; Leaning 15 degree; Restricted roots
T70	***Casuarina equisetifolia***	木麻黃	10	287	5	Fell	Leaning 20 degree; Restricted roots
T71	***Casuarina equisetifolia***	木麻黃	9	256	4	Fell	Crossed branches; Restricted roots;Codominant trunks
T72	***Cleistocalyx nervosum***	水翁	5	233	5	Fell	Multi-stems; Leaning 15 degree
T73	***Celtis sinensis***	朴樹	5	126	3	Fell	Crooked
T74	***Casuarina equisetifolia***	木麻黃	2.5	150	2	Fell	On slope; Broken branch; Leaning30 degree
T75	***Casuarina equisetifolia***	木麻黃	7	415	4	Fell	On slope; Crooked; Leaning 15 degree; Restricted roots
T76	***Casuarina equisetifolia***	木麻黃	3	190	1	Fell	On slope; Restricted roots
T77	***Cleistocalyx nervosum***	水翁	7	200	3	Fell	On slope
T80	***Cleistocalyx nervosum***	水翁	4	141	4	Fell	On slope; Crooked; Croosed trunk
T81	***Casuarina equisetifolia***	木麻黃	6	178	3	Fell	On slope; Leaning 20 degree

Tree	Species					Proposed Treatment	Remark[1]
No.	Scientific Name	Chinese Name	Height (m)	DBH[2] (mm)	Crown Spread (m)	(Retain/Transplant/Fell)	
T82	***Casuarina equisetifolia***	木麻黃	9	224	5	Fell	On slope; Leaning 15 degree
T83	***Casuarina equisetifolia***	木麻黃	9	390	5	Fell	On slope
T84	***Acacia confusa***	台灣相思	5	245	3	Fell	n slope; Crooked/Crooked trunk;Leaning 15 degree; Codominant trunk
T85	***Casuarina equisetifolia***	木麻黃	5	248	3	Fell	On slope; Codominant trunks; low live crown ratio; Leaning 15 degree
T86	***Cleistocalyx nervosum***	水翁	6	230	4	Fell	On slope; Codominant trunks; Crooked; Leaning 15 degree
T87	***Casuarina equisetifolia***	木麻黃	5	258	4	Fell	On slope; Leaning 15 degree
T88	***Casuarina equisetifolia***	木麻黃	9	344	4	Fell	On slope; Codominant trunks
T89	***Casuarina equisetifolia***	木麻黃	7	149	3	Fell	On slope; Restricted roots
T90	***Casuarina equisetifolia***	木麻黃	10	320	3	Fell	On slope; Restricted roots
T91	***Casuarina equisetifolia***	木麻黃	8	202	3	Fell	On slope; Restricted roots
T92	***Casuarina equisetifolia***	木麻黃	10	472	5	Fell	On slope; Restricted roots
T93	***Casuarina equisetifolia***	木麻黃	9	490	4	Fell	On slope; Codominant trunks; Restricted roots; Imbalanced crown
T94	***Casuarina equisetifolia***	木麻策	4	135	3	Fell	On slope; Codominant trunks;Crooked
T95	***Casuarina equisetifolia***	木麻黃	9	242	3	Fell	On slope; Angle steel embraced; Restricted roots; Low live crown ratio
T96	***Casuarina equisetifolia***	木麻黃	10	226	4	Fell	On slope; Restricted roots
T97	***Casuarina equisetifolia***	木麻黃	10	398	4	Fell	On slope; Codominant branch; Restricted root
T161	***Acacia confusa***	台灣相思	8	158	3	Fell	Leaning 30 degree; Exposed Dead Wood, No foliage
T162	***Leucaena leucocephala***	銀合歡	7	95	3	Fell	-
T163	***Leucaena leucocephala***	銀合歡	4	158	2	Fell	Collapsed; Leaning 40 degree; Uproot
T164	***Leucaena leucocephala***	銀合歡	8	130	3	Fell	-
T165	***Leucaena leucocephala***	銀合歡	7	118	3	Fell	-
T166	***Leucaena leucocephala***	銀合歡	3	145	1	Fell	Leaning 25 degree
T167	***Leucaena leucocephala***	銀合歡	6	118	3	Fell	Leaning 30 degree
T168	***Leucaena leucocephala***	銀合歡	5	112	4	Fell	Leaning 30 degree
T169	***Leucaena leucocephala***	銀合歡	5	144	2	Fell	Codominant trunks; Exposed dead wood
T170	***Casuarina equisetifolia***	木麻黃	5	95	3	Fell	Crooked trunk; Low live crown ratio
T171	***Casuarina equisetifolia***	木麻黃	5	151	3	Fell	Leaning 30 degree; Uproot
T177	***Leucaena leucocephala***	銀合歡	4	105	2	Fell	Collapsed; Leaning 40 degree;Uproot
T178	***Mallotus paniculatus***	白楸	4	188	4	Fell	Codominant trunks; Termite

Tree	Species					Proposed Treatment	Remark[1]
No.	Scientific Name	Chinese Name	Height (m)	DBH[2] (mm)	Crown Spread (m)	(Retain/Transplant/Fell)	
T179	***Mallotus paniculatus***	白楸	4	117	3	Fell	Leaning 20 degree; Low live crown ratio
T180	***Mallotus paniculatus***	白楸	4	131	4	Fell	Leaning 20 degree
T181	***Macaranga tanarius***	血桐	4	181	4	Fell	Codominant trunks; Leaning 15 degree
T183	***Mallotus paniculatus***	白楸	4	109	3	Fell	Low live crown ratio; Codominant trunks
T186	***Leucaena leucocephala***	銀合歡	9	228	3	Fell	Uproot
T190	***Mallotus paniculatus***	白楸	4	118	3	Fell	Imbalanced crown
T194	***Leucaena leucocephala***	銀合歡	5	101	2	Fell	Leaning 15 degree
T195	***Leucaena leucocephala***	銀合歡	5	96	3	Fell	Leaning 30 degree; Uproot
T196	***Leucaena leucocephala***	銀合歡	4	105	3	Fell	Leaning 35 degree
T197	***Leucaena leucocephala***	銀合歡	4	101	2	Fell	Leaning 30 degree
T198	***Stercula lanceolata***	假蘋婆	4	139	3	Fell	Leaning 30 degree
T199	***Sterculia lanceolata***	假蘋婆	4	113	3	Fell	Leaning 30 degree
T200	***Schefflera heptaphylla***	鵝掌柴	4	112	3	Fell	Leaning 25 degree; Crooked trunk;Low live crown ratio
T201	***Ficus virens***	黃葛樹	3	125	3	Fell	Collapsed; Uproot
T202	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	9	202	3	Fell	Borer; Uproot
T203	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	7	248	2	Fell	Codominant trunks; Collapsed; Uproot
T204	***Melaleuca cajuput Roxb. subsp.cumingiana***	白千層	6	168	3	Fell	Borer; On slope; Low live crown ratio
T205	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	7	196	3	Fell	Borer; On slope; Low live crown ratio
T206	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	4	140	3	Fell	Borer; Low live crown ratio
T207	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	6	136	3	Fell	Borer; On slope
T208	***Macaranga tananus***	血桐	4	100	4	Fell	Low live crown ratio; Leaning 20 degree
T209	***Leucaena leucocephala***	銀合歡	5	154	5	Fell	-
T210	***Leucaena leucocephala***	銀合歡	5	118	6	Fell	Leaning 20 degree
T211	***Dead Tree***	死樹	5	140	4	Fell	No foliage; Exposed dead wood
T212	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	9	165	4	Fell	Borer
T213	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	9	178	4	Fell	Borer
T214	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	9	146	4	Fell	Borer

Tree	Species					Proposed Treatment	Remark[1]
No.	Scientific Name	Chinese Name	Height (m)	DBH[2] (mm)	Crown Spread (m)	(Retain/Transplant/Fell)	
T215	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	7	102	3	Fell	Borer; Leaning 25 degree
T216	***Leucaena leucocephala***	銀合歡	5	101	3	Fell	Leaning 30 degree; Uproot
T217	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	9	235	4	Fell	Borer
T218	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	8	116	3	Fell	Borer
T219	***Leucaena leucocephala***	銀合歡	5	100	2	Fell	Leaning 25 degree
T220	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	8	120	2	Fell	Borer
T221	***Leucaena leucocephala***	銀合歡	5	116	3	Fell	Leaning 20 degree
T222	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	9	144	4	Fell	Borer
T223	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	7	95	4	Fell	Borer
T224	***Dead Tree***	死樹	5	115	5	Fell	Leaning 15 degree; Exposed dead wood; No foliage
T225	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	8	143	3	Fell	Borer; Low live crown ratio
T226	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	8	119	3	Fell	Borer; Low live crown ratio
T227	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	8	158	5	Fell	Borer; On slope
T228	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	4	95	3	Fell	Codominant trunk; Included bark; On slope
T229	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	6	155	3	Fell	Uproot; Leaning 25 degree
T230	***Leucaena leucocephala***	銀合歡	7	165	5	Fell	Leaning 20 degree; On slope
T231	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	4	95	3	Fell	Borer; Low live crown ratio
T232	***Leucaena leucocephala***	銀合歡	5	134	4	Fell	Codominant trunks; Exposed dead wood
T233	***Microcos nervosa***	破布葉	5	133	3	Fell	Codominant trunks
T234	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	9	189	5	Fell	Borer; Low live crown ratio
T235	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	9	129	4	Fell	Borer; On slope
T236	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	9	151	3	Fell	Borer;, On slope
T237	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	10	142	5	Fell	Borer
T238	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	10	156	5	Fell	Borer
T239	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	7	130	4	Fell	Borer; Crooked trunk; Broken branch
T240	***Leucaena leucocephala***	銀合歡	4	120	3	Fell	Leaning 30 degree; Uproot
T241	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	9	216	5	Fell	Leaning 30 degree; Uproot

Tree	Species					Proposed Treatment	Remark[1]
No.	Scientific Name	Chinese Name	Height (m)	DBH[2] (mm)	Crown Spread (m)	(Retain/Transplant/Fell)	
T242	***Casuarina equisetifolia***	木麻黃	5	162	3	Fell	Leaning 35 degree; Low live crown ratio
T243	***Casuarina equisetifolia***	木麻黃	5	209	3	Fell	Angle steel embraced; Low live crown ratio
T244	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	8	214	3	Fell	Borer
T245	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	6	135	5	Fell	Borer; On slope
T246	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	6	146	3	Fell	Borer; Leaning 30 degree
T247	***Acronychia pedunculata***	山油柑	3	121	3	Fell	Low live crown ratio
T248	***Acacia confusa***	台灣相思	6	158	3	Fell	Leaning 35 degree; Uproot
T249	***Casuarina equisetifolia***	木麻黃	3	110	2	Fell	Leaning 35 degree; Uproot; Low live crown ratio
T250	***Acacia confusa***	台灣梱思	6	208	5	Fell	Leaning 35 degree
T251	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	5	109	3	Fell	Borer
T252	***Casuarina equisetifolia***	木麻黃	2	184	1	Fell	Broken leader
T253	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	6	118	3	Fell	Borer; Low live crown ratio; On slope
T254	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	6	168	3	Fell	Borer; Leaning 15 degree
T255	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	8	155	3	Fell	Crooked trunk
T256	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	9	272	3	Fell	Borer
T257	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	8	239	4	Fell	Borer; Crooked
T258	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	8	202	3	Fell	Borer
T259	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	8	198	3	Fell	-
T260	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	6	120	3	Fell	Leaning 15 degree
T261	***Casuarina equisetifolia***	木麻黃	3	106	2	Fell	Leaning 35 degree
T262	***Dead Tree***	死樹	2	96	1	Fell	On slope; Broken leader; No foliag
T263	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	3	126	2	Fell	On slope; Borer
T264	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	6	233	3	Fell	On slope; Borer; Leaning 15 degree
T265	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	6	170	3	Fell	Borer
T266	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	5	192	3	Fell	Leaning 15 degree
T267	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	5	165	3	Fell	Borer; Crooked trunk; Low live crown ratio
T268	***Cratoxylum cochinchinense***	黃牛木	3	96	2	Fell	Leaning 15 degree; Low live crown ratio
T269	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	6	152	3	Fell	Borer
T270	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	5	95	3	Fell	Codominant trunks; Crooked trunks
T271	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	7	215	3	Fell	Borer

Tree	Species					Proposed Treatment	Remark[1]
No.	Scientific Name	Chinese Name	Height (m)	DBH[2] (mm)	Crown Spread (m)	(Retain/Transplant/Fell)	
T272	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	5	114	3	Fell	Crooked trunk
T273	***Albizia lebbeck***	大葉合歡	6	206	3	Fell	Leaning 15 degree; Codominat trunks
T274	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	8	280	4	Fell	Borer
T275	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	5	140	3	Fell	Borer
T276	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	2	130	1	Fell	Broken leader; Angle steel embraced
T277	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	6	162	3	Fell	On slope
T278	***Dead Tree***	死樹	5	163	2	Fell	On slope; No foliage; Exposed dead wood
T279	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	6	129	3	Fell	On slope; Borer
T280	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	9	310	3	Fell	Borer
T281	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	6	158	3	Fell	Borer; Crooked trunk
T282	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	4	128	1	Fell	Borer; Broken leader; No foliage
T283	***Acacia confusa***	台灣相思	8	259	5	Fell	Leaning 30 degree; Crooked
T284	***Dead Tree***	死樹	2.5	130	1	Fell	Broken leader; Exposed dead wood
T285	***Acacia confusa***	台灣相思	8	209	3	Fell	Leaning 15 degree
T286	***Dead Tree***	死樹	2.5	132	1	Fell	Borer; Broken leader; No foliage
T287	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	6	148	3	Fell	Low live crown ratio
T288	***Acacia confusa***	台灣相思	7	351	6	Fell	Condominant trunks, Leaning 15 degree; Sap flow
T289	***Dead Tree***	死樹	4	100	3	Fell	No foliage; Exposed dead wood
T294	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	7	197	3	Fell	Borer; Codominat trunks; On slope
T295	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	6	112	3	Fell	Borer; On slope
T296	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	8	220	4	Fell	Borer; On slope
T297	***Leucaena leucocephala***	銀合歡	5	112	4	Fell	Leaning 25 degree; Crooked trunk
T298	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	8	126	3	Fell	Borer; On slope
T299	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	8	212	3	Fell	Borer; On slope
T300	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	5	159	3	Fell	Borer; On slope
T301	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	5	106	3	Fell	Borer; On slope
T302	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	7	132	3	Fell	Borer; On slope; Low live crown ratio; Leaning 15 degree
T303	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	5	102	3	Fell	Borer; On slope; Low live crown ratio
T304	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	9	284	5	Fell	Borer; On slope; Low live crown ratio
T305	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	6	216	3	Fell	Borer; On slope; Leaning 20 degree
T306	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	6	181	3	Fell	Borer; On slope; Codominat trunks
T307	***Dead Tree***	死樹	4	244	2	Fell	Uproot; Dead wood exposed
T308	***Acacia confusa***	台灣相思	4	169	3	Fell	Leaning 25 degree; Codominant trunks; Broken leader

Tree	Species					Proposed Treatment	Remark[1]
No.	Scientific Name	Chinese Name	Height (m)	DBH[2] (mm)	Crown Spread (m)	(Retain/Transplant/Fell)	
T309	***Acacia confusa***	台灣相思	8	388	6	Fell	Codominant trunks
T310	***Acacia confusa***	台灣相思	8	283	6	Fell	Bleeding; Codominant trunks; Crack
T311	***Albizia lebbeck***	大葉合歡	5	109	3	Fell	Leaning 15 degree; Low live crown ratio
T312	***Albizia lebbeck***	大葉合歡	4	100	3	Fell	-
T313	***Albizia lebbeck***	大葉合歡	5	95	3	Fell	Leaning 15 degree; Codominat trunks; On slope
T314	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	5	130	3	Fell	Leaning 35 degree; Low live crown ratio
T315	***Albizia lebbeck***	大葉合歡	4	95	3	Fell	Low live crown ratio; Leaning 15 degree
T316	***Casuarina equisetifolia***	木麻黃	4	100	3	Fell	Leaning 30 degree
T318	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	7	118	3	Fell	Borer
T319	***Casuarina equisetifolia***	木麻黃	9	256	6	Fell	Broken main trunk
T320	***Casuarina equisetifolia***	木麻黃	3	95	3	Fell	Leaning 40 degree; Uproot
T321	***Casuarina equisetifolia***	木麻黃	7	235	3	Fell	Leaning 25 degree; Crooked
T322	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	4	95	2	Fell	Leaning 15 degree; Borer
T323	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	4	120	3	Fell	Leaning 40 degree; Crooked; Borer
T324	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	8	236	4	Fell	Borer; Low live crown ratio; On slope
T325	***Albizia lebbeck***	大葉合歡	5	95	3	Fell	On slope
T326	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	8	105	3	Fell	Leaning 30 degree; On slope; Low live crown ratio
T327	***Aporosa dioica***	銀柴	4	100	3	Fell	Leaning 25 degree
T328	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	5	199	3	Fell	Borer; On slope
T329	***Melaleuca cajuputi Roxb. subsp.cumingiana***	白千層	8	220	3	Fell	Leaning 35 degree; Uproot

Summary Table

Tree to be Retained	0
Tree to be Transplanted	0
Tree to be Felled	225 (including 23 ***Leucaena leucocephala***)
Total Number of Existing Trees	225

[1] Please state whether the OVT, potentially registrable OVT, trees of rare or protected species, trees with ecological and historical significance, etc. within and/or adjacent to the site is likely to be affected by the proposed development.

[2] DBH of a tree refers to its diameter at breast height (i.e. measuprooted at 1.3m above ground level)

T13 (F)

T13 (F)

T13 (F)

T13 (F)

T14 (F)

T14 (F)

T14 (F)

T14 (F)

LEGEND :

(R) - Retain

(F) - Fell

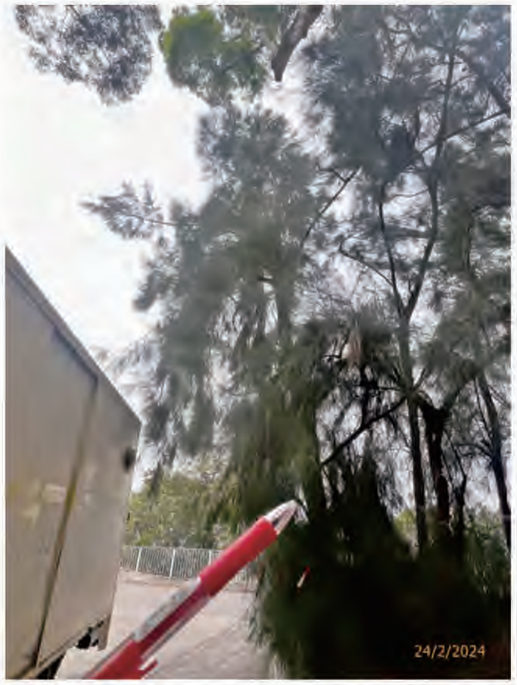
(T) - Transplant

Photographic Record of Existing Trees

PROPOSED 'GOVERNMENT USE' (GBA AIR QUALITY LABORATORY AND METEOROLOGICAL MONITORING SUPERSITE)ON DEEP BAY ROAD, TSIM BEI TSUI, N.T.

LanDes

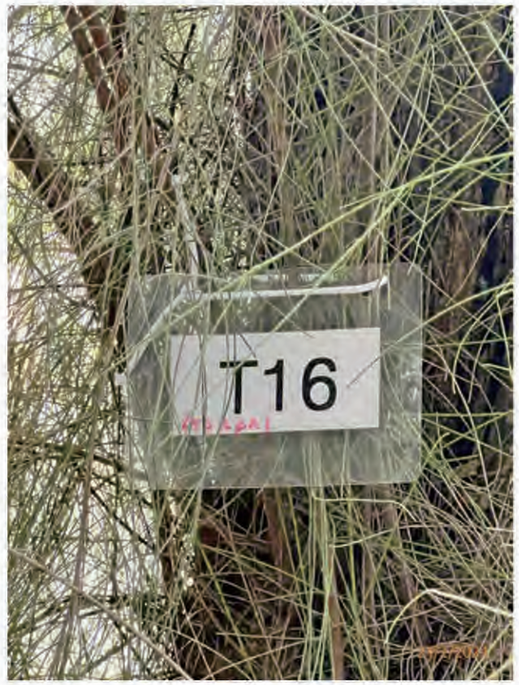
T15 (F)



T15 (F)

T15 (F)

T15 (F)



T16 (F)

T16 (F)

T16 (F)

T16 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T17 (F)

T17 (F)

T17 (F)

T17 (F)

T18 (F)

T18 (F)

T18 (F)

T18 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T19 (F)

T19 (F)

T19 (F)

T19 (F)

T20 (F)

T20 (F)

T20 (F)

T20 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T21 (F)

T21 (F)

T21 (F)

T21 (F)

T22 (F)

T22 (F)

T22 (F)

T22 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T23 (F)

T23 (F)

T23 (F)

T23 (F)

T24 (F)

T24 (F)

T24 (F)

T24 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T25 (F)

T25 (F)

T25 (F)

T25 (F)

T26 (F)

T26 (F)

T26 (F)

T26 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T27 (F)

T27 (F)

T27 (F)

T27 (F)

T29 (F)

T29 (F)

T29 (F)

T29 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T31 (F)

T31 (F)

T31 (F)

T31 (F)

T33 (F)

T33 (F)

T33 (F)

T33 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T34 (F)

T34 (F)

T34 (F)

T34 (F)

T35 (F)

T35 (F)

T35 (F)

T35 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T36 (F)

T36 (F)

T36 (F)

T36 (F)

T37 (F)

T37 (F)

T37 (F)

T37 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T40 (F)

T40 (F)

T40 (F)

T40 (F)

T41 (F)

T41 (F)

T41 (F)

T41 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T42 (F)

T42 (F)

T42 (F)

T42 (F)

T43 (F)

T43 (F)

T43 (F)

T43 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T45 (F)

T45 (F)

T45 (F)

T45 (F)

T48 (F)

T48 (F)

T48 (F)

T48 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T49 (F)

T49 (F)

T49 (F)

T49 (F)

T50 (F)

T50 (F)

T50 (F)

T50 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T51 (F)

T51 (F)

T51 (F)

T51 (F)

T52 (F)

T52 (F)

T52 (F)

T52 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T53 (F)

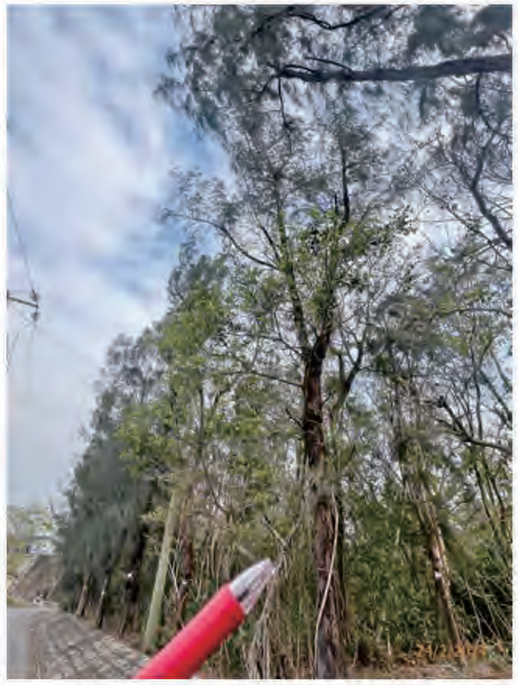
T53 (F)

T53 (F)

T53 (F)

T54 (F)

T54 (F)



T54 (F)

T54 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T55 (F)

T55 (F)

T55 (F)

T55 (F)

T56 (F)

T56 (F)

T56 (F)

T56 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T57 (F)

T57 (F)

T57 (F)

T57 (F)

T58 (F)

T58 (F)

T58 (F)

T58 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T59 (F)

T59 (F)

T59 (F)

T59 (F)

T60 (F)

T60 (F)

T60 (F)

T60 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T61 (F)

T61 (F)

T61 (F)

T61 (F)

T62 (F)

T62 (F)

T62 (F)

T62 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T63 (F)

T63 (F)

T63 (F)

T63 (F)

T64 (F)

T64 (F)

T64 (F)

T64 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T65 (F)

T65 (F)

T65 (F)

T65 (F)

T66 (F)

T66 (F)

T66 (F)

T66 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T67 (F)

T67 (F)

T67 (F)

T67 (F)

T68 (F)

T68 (F)

T68 (F)

T68 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T69 (F)

T69 (F)

T69 (F)

T69 (F)

T70 (F)

T70 (F)

T70 (F)

T70 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T71 (F)

T71 (F)

T71 (F)

T71 (F)

T72 (F)

T72 (F)

T72 (F)

T72 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T73 (F)

T73 (F)

T73 (F)

T73 (F)

T74 (F)

T74 (F)

T74 (F)

T74 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T75 (F)

T75 (F)

T75 (F)

T75 (F)

T76 (F)

T76 (F)

T76 (F)

T76 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T77 (F)

T77 (F)

T77 (F)

T77 (F)

T80 (F)

T80 (F)

T80 (F)

T80 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T81 (F)

T81 (F)

T81 (F)

T81 (F)

T82 (F)

T82 (F)

T82 (F)

T82 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T83 (F)

T83 (F)

T83 (F)

T83 (F)

T84 (F)

T84 (F)

T84 (F)

T84 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T85 (F)

T85 (F)

T85 (F)

T85 (F)

T86 (F)

T86 (F)

T86 (F)

T86 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T87 (F)

T87 (F)

T87 (F)

T87 (F)

T88 (F)

T88 (F)

T88 (F)

T88 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T89 (F)

T89 (F)

T89 (F)

T89 (F)

T90 (F)

T90 (F)

T90 (F)

T90 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T91 (F)

T91 (F)

T91 (F)

T91 (F)

T92 (F)

T92 (F)

T92 (F)

T92 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T93 (F)

T93 (F)

T93 (F)

T93 (F)

T94 (F)

T94 (F)

T94 (F)

T94 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T95 (F)

T95 (F)

T95 (F)

T95 (F)

T96 (F)

T96 (F)

T96 (F)

T96 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T97 (F)

T97 (F)

T97 (F)

T97 (F)

T161 (F)

T161 (F)

T161 (F)

T161 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T162 (F)

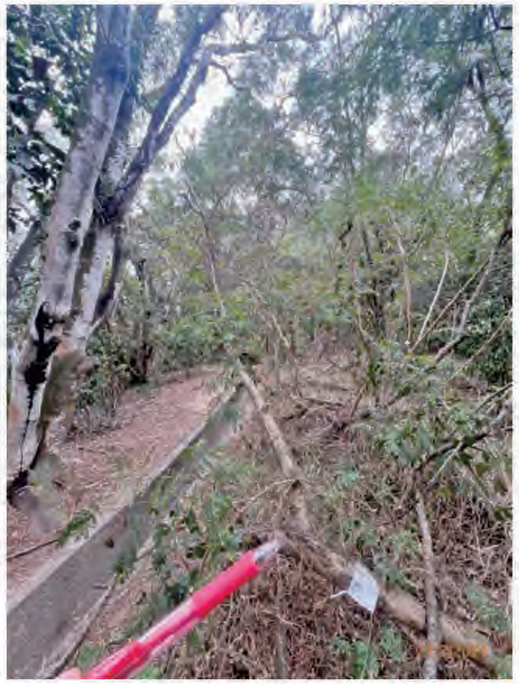
T162 (F)

T162 (F)

T162 (F)

T163 (F)

T163 (F)



T163 (F)

T163 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T164 (F)

T164 (F)

T164 (F)

T164 (F)

T165 (F)

T165 (F)

T165 (F)

T165 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T166 (F)

T166 (F)

T166 (F)

T166 (F)

T167 (F)

T167 (F)

T167 (F)

T167 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T168 (F)

T168 (F)

T168 (F)

T168 (F)

T169 (F)

T169 (F)

T169 (F)

T169 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T170 (F)

T170 (F)

T170 (F)

T170 (F)

T171 (F)

T171 (F)

T171 (F)

T171 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T177 (F)

T177 (F)

T177 (F)

T177 (F)

T178 (F)

T178 (F)

T178 (F)

T178 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T179 (F)

T179 (F)

T179 (F)

T179 (F)

T180 (F)

T180 (F)

T180 (F)

T180 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T181 (F)

T181 (F)

T181 (F)

T181 (F)

T183 (F)

T183 (F)

T183 (F)

T183 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T186 (F)

T186 (F)

T186 (F)

T186 (F)

T190 (F)

T190 (F)

T190 (F)

T190 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T194 (F)

T194 (F)

T194 (F)

T194 (F)

T195 (F)

T195 (F)

T195 (F)

T195 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T196 (F)

T196 (F)

T196 (F)

T196 (F)

T197 (F)

T197 (F)

T197 (F)

T197 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T198 (F)

T198 (F)

T198 (F)

T198 (F)

T199 (F)

T199 (F)

T199 (F)

T199 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T200 (F)

T200 (F)

T200 (F)

T200 (F)

T201 (F)

T201 (F)

T201 (F)

T201 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T202 (F)

T202 (F)

T202 (F)

T202 (F)

T203 (F)

T203 (F)

T203 (F)

T203 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T204 (F)

T204 (F)

T204 (F)

T204 (F)

T205 (F)

T205 (F)

T205 (F)

T205 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T206 (F)

T206 (F)

T206 (F)

T206 (F)

T207 (F)

T207 (F)

T207 (F)

T207 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T208 (F)

T208 (F)

T208 (F)

T208 (F)

T209 (F)

T209 (F)

T209 (F)

T209 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T210 (F)

T210 (F)

T210 (F)

T210 (F)

T211 (F)

T211 (F)

T211 (F)

T211 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T212 (F)

T212 (F)

T212 (F)

T212 (F)

T213 (F)

T213 (F)

T213 (F)

T213 (F)

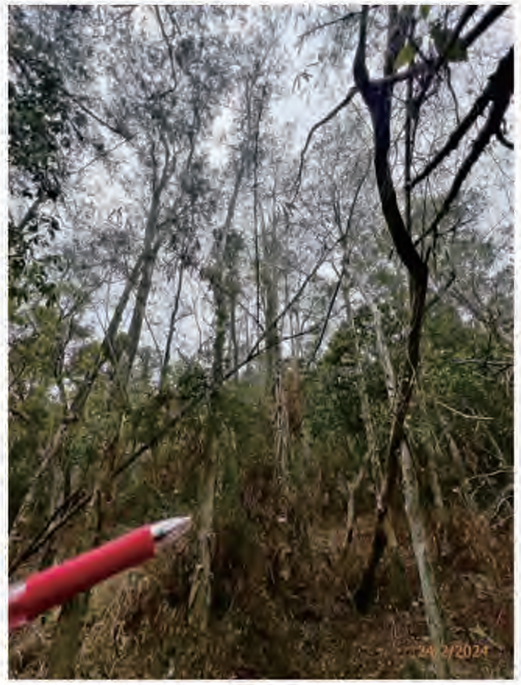
LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T214 (F)



T214 (F)

T214 (F)

T214 (F)

T215 (F)

T215 (F)

T215 (F)

T215 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T216 (F)

T216 (F)

T216 (F)

T216 (F)

T217 (F)

T217 (F)

T217 (F)

T217 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T218 (F)

T218 (F)

T218 (F)

T218 (F)

T219 (F)

T219 (F)

T219 (F)

T219 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T220 (F)

T220 (F)

T220 (F)

T220 (F)

T221 (F)

T221 (F)

T221 (F)

T221 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T222 (F)

T222 (F)

T222 (F)

T222 (F)

T223 (F)

T223 (F)

T223 (F)

T223 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

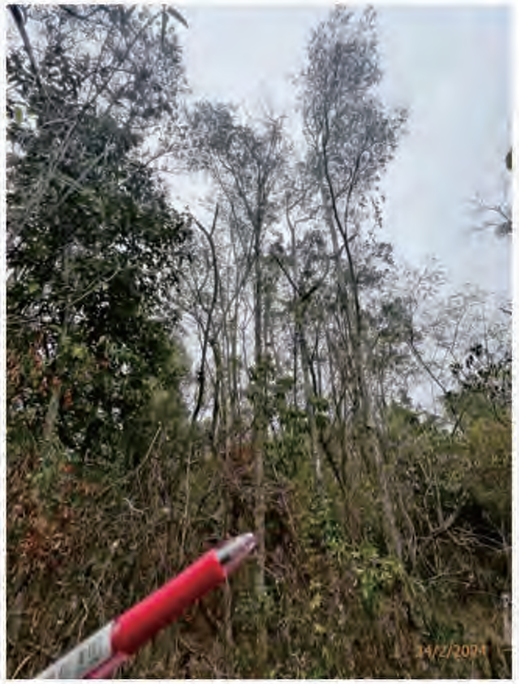
T224 (F)

T224 (F)

T224 (F)

T224 (F)

T225 (F)



T225 (F)

T225 (F)

T225 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T226 (F)

T226 (F)

T226 (F)

T226 (F)

T227 (F)

T227 (F)

T227 (F)

T227 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T228 (F)

T228 (F)

T228 (F)

T228 (F)

T229 (F)

T229 (F)

T229 (F)

T229 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T230 (F)

T230 (F)

T230 (F)

T230 (F)

T231 (F)

T231 (F)

T231 (F)

T231 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T232 (F)

T232 (F)

T232 (F)

T232 (F)

T233 (F)

T233 (F)

T233 (F)

T233 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T234 (F)

T234 (F)

T234 (F)

T234 (F)

T235 (F)

T235 (F)

T235 (F)

T235 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T236 (F)

T236 (F)

T236 (F)

T236 (F)

T237 (F)

T237 (F)

T237 (F)

T237 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T238 (F)

T238 (F)

T238 (F)

T238 (F)

T239 (F)

T239 (F)

T239 (F)

T239 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T240 (F)

T240 (F)

T240 (F)

T240 (F)

T241 (F)

T241 (F)

T241 (F)

T241 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T242 (F)

T242 (F)

T242 (F)

T242 (F)

T243 (F)

T243 (F)

T243 (F)

T243 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T244 (F)

T244 (F)

T244 (F)

T244 (F)

T245 (F)

T245 (F)

T245 (F)

T245 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T246 (F)

T246 (F)

T246 (F)

T246 (F)

T247 (F)

T247 (F)

T247 (F)

T247 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T248 (F)

T248 (F)

T248 (F)

T248 (F)

T249 (F)

T249 (F)

T249 (F)

T249 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T250 (F)

T250 (F)

T250 (F)

T250 (F)

T251 (F)

T251 (F)

T251 (F)

T251 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T252 (F)

T252 (F)

T252 (F)

T252 (F)

T253 (F)

T253 (F)

T253 (F)

T253 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T254 (F)

T254 (F)

T254 (F)

T254 (F)

T255 (F)

T255 (F)

T255 (F)

T255 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T256 (F)

T256 (F)

T256 (F)

T256 (F)

T257 (F)

T257 (F)

T257 (F)

T257 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T258 (F)

T258 (F)

T258 (F)

T258 (F)

T259 (F)

T259 (F)

T259 (F)

T259 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T260 (F)

T13 (F)

T13 (F)

T13 (F)

T261 (F)

T261 (F)

T261 (F)

T261 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T262 (F)

T262 (F)

T262 (F)

T262 (F)

T263 (F)

T263 (F)

T263 (F)

T263 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T264 (F)

T264 (F)

T264 (F)

T264 (F)

T265 (F)

T265 (F)

T265 (F)

T265 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T266 (F)

T266 (F)

T266 (F)

T266 (F)

T267 (F)

T267 (F)

T267 (F)

T267 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T268 (F)

T268 (F)

T268 (F)

T268 (F)

T269 (F)

T269 (F)

T269 (F)

T269 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T270 (F)

T270 (F)

T270 (F)

T270 (F)

T271 (F)

T271 (F)

T271 (F)

T271 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T272 (F)

T272 (F)

T272 (F)

T272 (F)

T273 (F)

T273 (F)

T273 (F)

T273 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T274 (F)

T274 (F)

T274 (F)

T274 (F)

T275 (F)

T275 (F)

T275 (F)

T275 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T276 (F)

T276 (F)

T276 (F)

T276 (F)

T277 (F)

T277 (F)

T277 (F)

T277 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T278 (F)

T278 (F)

T278 (F)

T278 (F)

T279 (F)

T279 (F)

T279 (F)

T279 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T280 (F)

T280 (F)

T280 (F)

T280 (F)

T281 (F)

T281 (F)

T281 (F)

T281 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T282 (F)

T282 (F)

T282 (F)

T282 (F)

T283 (F)

T283 (F)

T283 (F)

T283 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T284 (F)

T284 (F)

T284 (F)

T284 (F)

T285 (F)

T285 (F)

T285 (F)

T285 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T286 (F)

T286 (F)

T286 (F)

T286 (F)

T287 (F)

T287 (F)

T287 (F)

T287 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T288 (F)

T288 (F)

T288 (F)

T288 (F)

T289 (F)

T289 (F)

T289 (F)

T289 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T294 (F)

T294 (F)

T294 (F)

T294 (F)

T295 (F)

T295 (F)

T295 (F)

T295 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T296 (F)

T296 (F)

T296 (F)

T296 (F)

T297 (F)

T297 (F)

T297 (F)

T297 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T298 (F)

T298 (F)

T298 (F)

T298 (F)

T299 (F)

T299 (F)

T299 (F)

T299 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T300 (F)

T300 (F)

T300 (F)

T300 (F)

T301 (F)

T301 (F)

T301 (F)

T301 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T302 (F)

T302 (F)

T302 (F)

T302 (F)

T303 (F)

T303 (F)

T303 (F)

T303 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T304 (F)

T304 (F)

T304 (F)

T304 (F)

T305 (F)

T305 (F)

T305 (F)

T305 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T306 (F)

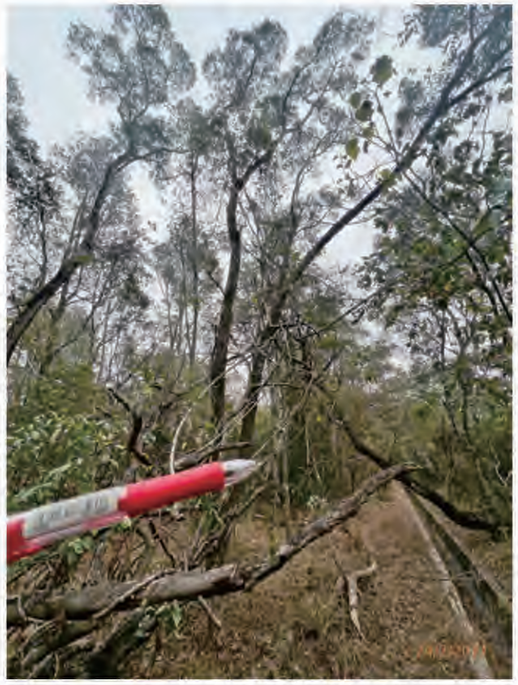
T306 (F)

T306 (F)

T306 (F)

T307 (F)

T307 (F)



T307 (F)

T307 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T308 (F)

T308 (F)

T308 (F)

T308 (F)

T309 (F)

T309 (F)

T309 (F)

T309 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T310 (F)

T310 (F)

T310 (F)

T310 (F)

T311 (F)

T311 (F)

T311 (F)

T311 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T312 (F)

T312 (F)

T312 (F)

T312 (F)

T313 (F)

T313 (F)

T313 (F)

T313 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T314 (F)

T314 (F)

T314 (F)

T314 (F)

T315 (F)

T315 (F)

T315 (F)

T315 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T316 (F)

T316 (F)

T316 (F)

T316 (F)

T318 (F)

T318 (F)

T318 (F)

T318 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T319 (F)

T319 (F)

T319 (F)

T319 (F)

T320 (F)

T320 (F)

T320 (F)

T320 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T321 (F)

T321 (F)

T321 (F)

T321 (F)

T322 (F)

T322 (F)

T322 (F)

T322 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T323 (F)

T323 (F)

T323 (F)

T323 (F)

T324 (F)

T324 (F)

T324 (F)

T324 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T325 (F)

T325 (F)

T325 (F)

T325 (F)

T326 (F)

T326 (F)

T326 (F)

T326 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T327 (F)

T327 (F)

T327 (F)

T327 (F)

T328 (F)

T328 (F)

T328 (F)

T328 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

T329 (F)

T329 (F)

T329 (F)

T329 (F)

LEGEND :

(R) - Retain

(F) - Fell

(T) - Transplant

Appendix B

Landscape Master Plan

And

Landscape Details

Roadside Trees

Woodland Tree Mix

Shrubs and Groundcover

Climbing Plants on Boundary Fence

Grasscrete Paver

KEY:

1. Carparks
2. Concrete Plinth for Instrument
3. F.S. Water Tank
4. F.S. Pump Room
5. Emergency Generator Room
6. Electricity Pole
7. Ele. Cut Out

LEGEND:

- APPLICATION SITE BOUNDARY
- PROPOSED STANDARD TREES
- PROPOSED SHRUBS AND GROUNDCOVER
- PROPOSED WOODLAND MIX
- PROPOSED GRASSCRETE PAVER
- PROPOSED CLIMBING PLANT
- CONCRETE PAVING
- METAL FENCE (2.5M HIGH)
- +14.75 PROPOSED LEVEL
- SITE ENTRANCE
- BUILDING ENTRANCE

Grasscrete Pavers is proposed around the indoor and outdoor equipment to prevent obstruction of light and potential VOC emissions but enhance the local greenery with Site.

DEEP BAY ROAD / EVA

TSIM BEI TSUI POLICE POST

BLK A +29.63

BLK B +28.14

C1 C2

RC PLINTH (375m²) +20.87

+22.60

+19.50

28.1

WT

28

+10

Standard Trees and Climbing plants on metal fence to improve the Visual Appeal of the Roadside Environment

An earth tone paint color is applied on the Concrete Plinths for outdoor equipment to blend harmoniously with the surrounding hillside environment.

Woodland Tree Mix, Shrubs and Groundcover to provide a Seamless Transition between the Development and the adjacent Natural Environment

0 10 20 30 40M

PROJECT :

PROPOSED 'GOVERNMENT USE' (GBA AIR QUALITY LABORATORY AND METEORLOGICAL MONITORING SUPERSITE) ON DEEP BAY ROAD, TSIM BEI TSUI, N.T.

DRAWING TITLE :

LANDSCAPE MASTER PLAN

PROJECT No. C2520

DRAWING No. LMP01

SCALE : 1:500

DATE OF ISSUE : AUG 2025

CAD FILENAME : C2520-LMP01

REV	DESCRIPTION	DATE

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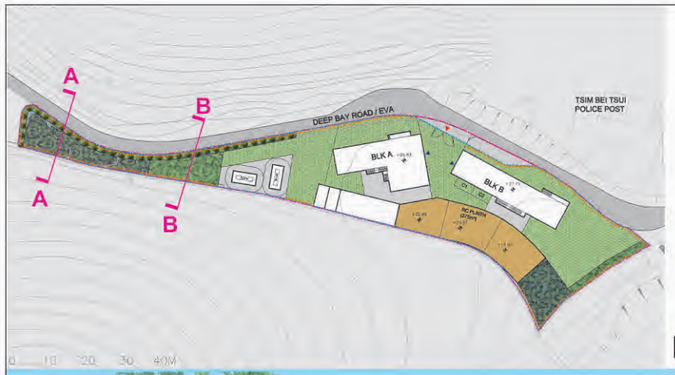
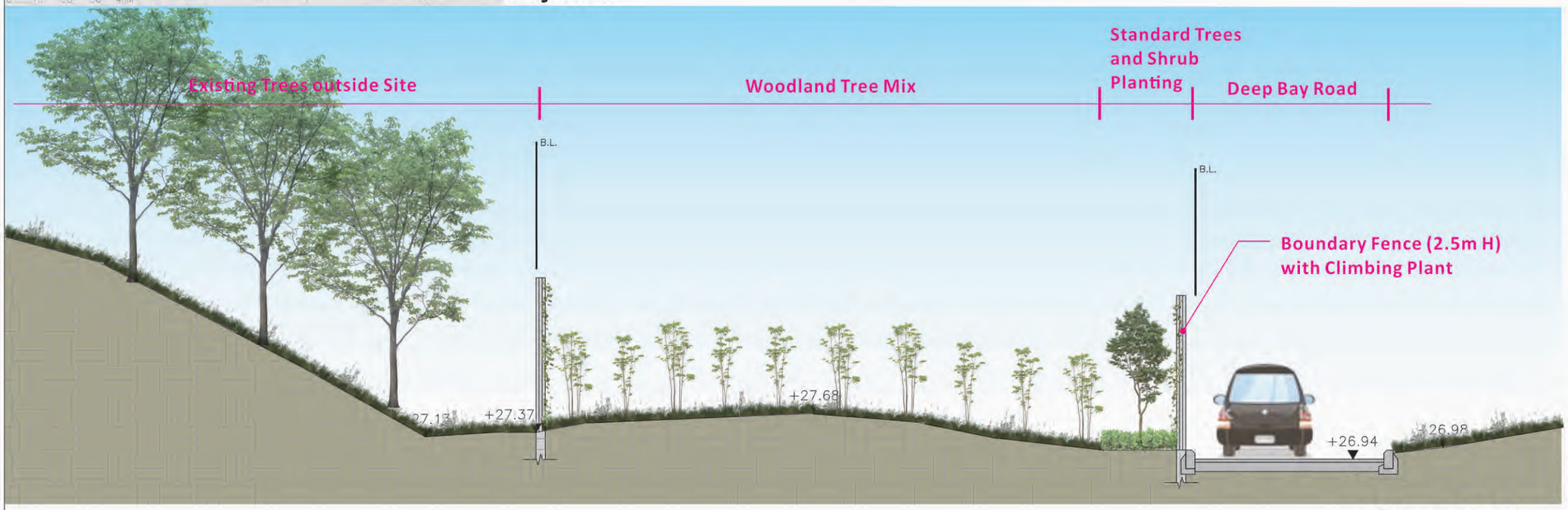
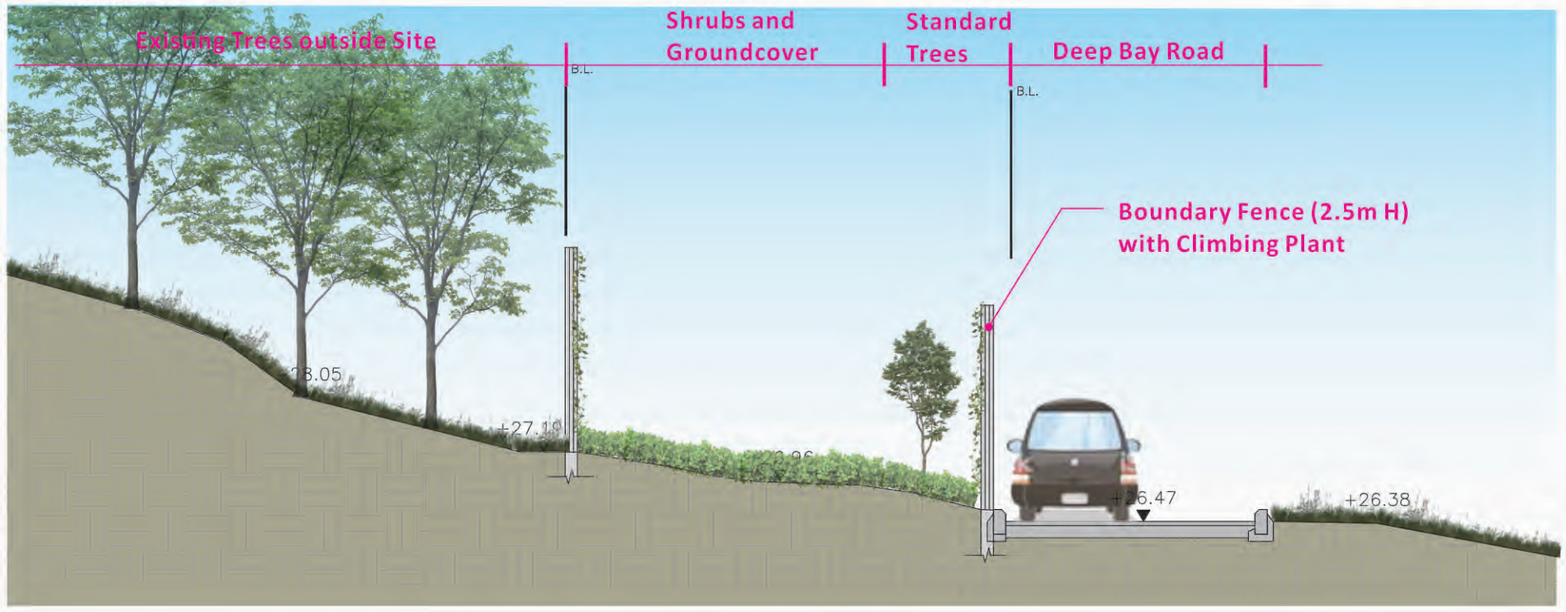


Key Plan



A SECTION
SCALE 1:75



B SECTION
SCALE 1:75

PROJECT :

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DRAWING TITLE :

LANDSCAPE SECTION

PROJECT No. C2520

DRAWING No. LD101

SCALE : 1:75

DATE OF ISSUE : AUG 2025

CAD FILENAME : C2520-LD101

REV	DESCRIPTION	DATE

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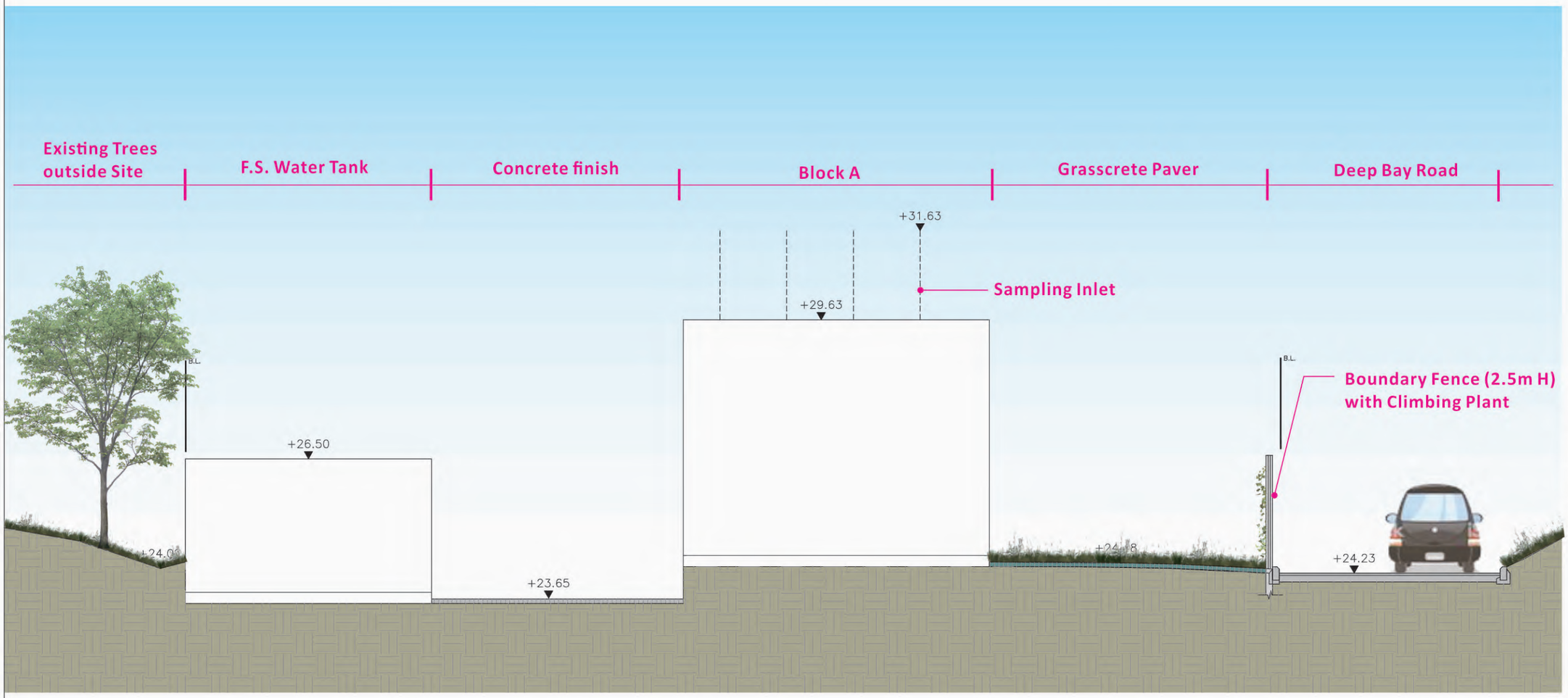
Key Plan



PROJECT :

PROPOSED 'GOVERNMENT USE' (GBA AIR QUALITY LABORATORY AND METEORLOGICAL MONITORING SUPERSITE) ON DEEP BAY ROAD, TSIM BEI TSUI, N.T.

DRAWING TITLE :

LANDSCAPE SECTION

PROJECT No. C2520

DRAWING No. LD102

SCALE : 1:100

DATE OF ISSUE : AUG 2025

CAD FILENAME : C2520-LD102

REV	DESCRIPTION	DATE

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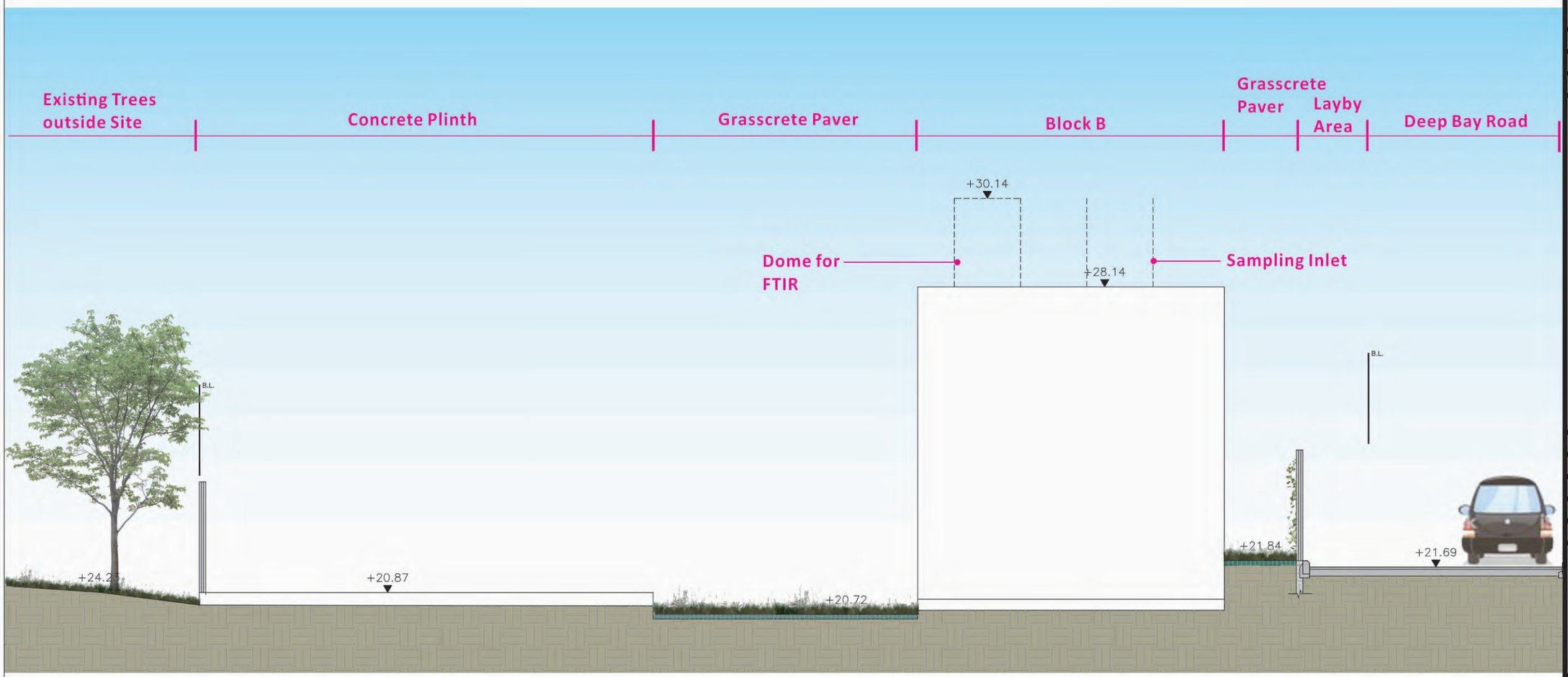
Key Plan



PROJECT :

PROPOSED 'GOVERNMENT USE' (GBA AIR QUALITY LABORATORY AND METEORLOGICAL MONITORING SUPERSITE) ON DEEP BAY ROAD, TSIM BEI TSUI, N.T.

DRAWING TITLE :

LANDSCAPE SECTION

PROJECT No. C2520

DRAWING No. LD103

SCALE : 1:100

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CAD FILENAME : C2520-LD103

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Appendix C

Planting Plans

Quantity	Code	Chinese Name	Botanical Name	Native/Exotic	Height (mm)	Spread (mm)	DBH (mm)	Spacing (mm)	Remark
STANDARD TREES									
16	EC	中華杜英	*Elaeocarpus chinensis*	Native	1750	1000	50	2500	Abundance of Foliage, Well-Formed, Full Spread Formed
18	SD	山烏桕	*Sapium dicolor*	Native	1750	1000	50	2500	Abundance of Foliage, Well-Formed, Full Spread Formed
WOODLAND TREE MIX									
30	EC	中華杜英	*Elaeocarpus chinensis*	Native	1000	750	25	1500	Abundance of Foliage, Well-Formed, Full Spread Formed
30	FV	黃葛樹	*Ficus virens*	Native	1000	750	25	1500	Abundance of Foliage, Well-Formed, Full Spread Formed
30	LF	楓香	*Liquidambar formosana*	Native	1000	750	25	1500	Abundance of Foliage, Well-Formed, Full Spread Formed
30	PA	大頭茶	*Polyspora axillaris*	Native	1000	750	25	1500	Abundance of Foliage, Well-Formed, Full Spread Formed
30	SSA	無患子	*Sapindus Saponaria*	Native	1000	750	25	1500	Abundance of Foliage, Well-Formed, Full Spread Formed
30	SSE	烏桕	*Sapium sebiferum*	Native	1000	750	25	1500	Abundance of Foliage, Well-Formed, Full Spread Formed
SHRUBS									
-	Ich	龍船花	*Ixora chinensis*	Native	500	450	-	300	Balanced Form, Abundance of Foliage
-	Rhi	石斑木	*Rhaphiolepis indica*	Native	450	300	-	250	Balanced Form, Abundance of Foliage
-	Rhs	紅杜鵑	*Rhododendron simsii*	Native	300	250	-	200	Balanced Form, Abundance of Foliage
GROUNDCOVERS									
-	Lam	小葉馬櫻丹	*Lantana montevidensis*	Native	400	350	-	300	Abundance of Foliage
-	Lis	山指甲	*Ligustrum sinense*	Native	350	300	-	250	Abundance of Foliage
-	Nau	腎蕨	*Nephrolepis auriculata*	Native	350	300	-	250	Abundance of Foliage
CLIMBING PLANT									
-	Bgl	羊蹄甲藤	*Bauhinia glauca*	Native	1500	300	-	300	at least 5 shoots per plant
-	Phi	爬牆虎	*Parthenocissus himalayana*	Exotic	1500	300	-	300	at least 5 shoots per plant
GRASS									
-	Cyd	狗牙根	*Cynodon dactylon*	Native	-	-	-		-

PROJECT :

PROPOSED 'GOVERNMENT USE' (GBA AIR QUALITY LABORATORY AND METEORLOGICAL MONITORING SUPERSITE) ON DEEP BAY ROAD, TSIM BEI TSUI, N.T.

DRAWING TITLE :

PLANTING SCHEDULE

PROJECT No. C2520

DRAWING No. PS01

SCALE : N.T.S.

DATE OF ISSUE : AUG 2025

CAD FILENAME : C2520-PS01

REV	DESCRIPTION	DATE

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LEGEND:

- APPLICATION SITE BOUNDARY
- PROPOSED STANDARD TREES
- PROPOSED SHRUBS AND GROUNDCOVER
- PROPOSED WOODLAND TREE MIX
- PROPOSED GRASSCRETE PAVER
- PROPOSED CLIMBING PLANT
- +14.75 PROPOSED LEVEL

TS

4

20

10 SD

8 EC

8 SD

8 EC

DEEP BAY ROAD / EVA

TSIM BEI TSUI POLICE POST

28.1 A

WT

H L

H L

E

BLK A +29.63

BLK B +28.14

C1

C2

+22.60

RC PLINTH (375m²) +20.87

+19.50

28

WOODLAND TREE MIX = 183.5 SQ.M

WOODLAND TREE MIX = 128.3 SQ.M.

40

12

0 10 20 30 40M

PROJECT :

PROPOSED 'GOVERNMENT USE' (GBA AIR QUALITY LABORATORY AND METEORLOGICAL MONITORING SUPERSITE) ON DEEP BAY ROAD, TSIM BEI TSUI, N.T.

DRAWING TITLE :

PLANTING PLAN

PROJECT No. C2520

DRAWING No. PT01

SCALE : 1:500

DATE OF ISSUE : AUG 2025

CAD FILENAME : C2520-PT01

REV	DESCRIPTION	DATE

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Appendix D

Maintenance Schedule

Of

Soft Landscape Works

OPERATIONS	SPRING			SUMMER			AUTUMN			WINTER			REMARKS
	March	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	
DISEASE CONTROL INSPECTION	O	O	O	O	O	O	O	O	O	O	O	O	Treatment immediately after detection
FERTILIZATION Applications	O						O						
GENERAL PLANT INSPECTION	O	O	O	O	O	O	O	O	O	O	O	O	Treatment immediately after detection
IRRIGATION Watering operation	D	D	D	D	D	D	D	D	D	D	D	D	Early morning / late afternoon, as appropriate
PROTECTION Inspection of fence, tree grates, guards, stakes & ties	O			O			O			O			Inspection also after heavy storms and adverse weather. Treatments immediately after detection
FIRMING UP of plants & supports	O			O			O			O			Inspection also after heavy storms and adverse weather. Firm-up operations immediately after detection
WEEDING Weeding operation & litter collection	O	O	O	O	O	O	O	O	O	O	O	O	Additional litter inspection & collection after heavy use
THINNING INSPECTION	O						O						Thinning operations in appropriate pruning season
MULCH Topping up	O						O						And following run off caused by rain / wind storm
PRUNING	O						O						As appropriate
FORKING OVER	O						O						As appropriate
TREE RISK ASSESSMENT	O												As appropriate

KEY:
D = once daily W = once weekly 2W = twice weekly
Bi-W = Bi-weekly O = once R = repeat if necessary

Appendix 3

Drainage Proposal

PROJECT NO. P2676

DRAINAGE PROPOSAL
FOR
PLANNING APPLICATION FOR
GREATER BAY AREA AIR QUALITY LABORATORY
AND METEOROLOGICAL MONITORING SUPERSITE
AT TSIM BEI TSUI

GREG WONG & ASSOCIATES LTD.

Prepared by:	Kelvin Au Yeung
Checked by:	Kevin Tang
Approved by:	Kevin Tang
Report No.:	2676G001
Revision:	1
Date:	Dec 2025

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2. Existing Drainage Condition....3
3. Proposed Drainage System....4
4. Changes to Drainage Characteristics and Potential Drainage Impacts that Might Arise....5
5. Proposed Drainage Impact Mitigation Measures and Further Drainage Impact Implications....6
6. Proposed Monitoring Requirements....7
7. Conclusion....8

Appendices

Appendix A Site Location Plan
Appendix B Master Layout Plan
Appendix C Topographical Survey
Appendix D Landscape Master Plan
Appendix E Drainage Catchment Index Plan
Appendix F Existing Stormwater Drainage Plan
Appendix G Proposed Stormwater Drainage Plan
Appendix H Hydraulic Design Check for Proposed Drainage System
Appendix I Photographic Record of Existing Drainage

1. Introduction

Greg Wong & Associates was commissioned to carry out a drainage proposal for planning application for Greater Bay Area Air Quality Laboratory and Meteorological Monitoring Supersite at Tsim Bei Tsui.

The project is to construct a Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite (the "Supersite") proposed by the Environmental Protection Department (EPD) jointly with the Hong Kong Observatory (HKO) to support and provide regional air pollution and meteorological monitoring and forecasting services.

The supersite is located at Deep Bay Road, Tsim Bei Tsui, facing Deep Bay at North. A. It is irregular in shape with an area of 3,080 square metres. The site is currently falls within "Green Belt" zone and an area shown as 'Road' under approved Lau Fau Shan and Tsim Bei Tsui OZP No. S/YL-LFS/11. The proposed development consists of two individual compartment units each a single storey has been proposed for the site. The location plan and master layout plan of the proposed development are enclosed in **Appendices A** and **B**. This Drainage Proposal is prepared for approval from authorities concerned.

2. Existing Drainage Condition

2.1 The Site

The total site covers approximately 3,080 square metre. The site falls within "Green Belt" zone and an area shown as 'Road'. The site is fully covered by trees and grass. The site is south to Deep Bay Road. The Tsim Bei Tsui Police Post is located at the north of the site. There is an existing channel along the south and west portion of site boundary and runs into Mangrove area at the southeast of the site. The drainage passing through Mangrove and runs into Deep Bay at the southeast of the site.

2.2 Existing Topography

The site is generally inclined and the site elevation is around+27.91mPD to +16.32mPD, with a slight gradient from west to east. The proposed development will involve excavation and backfilling, which will gently incline from west to east. According to site topographical survey carried out by Sam Mak & Associates Surveyors Limited on January 2024. The topographical survey plan is attached in **Appendix C**. The utilities information of DSD is investigated, no drain pipes and sewerage pipes are found in the vicinity of the site.

2.3 Catchment

The catchment and drainage system of the site was derived by map study and site reconnaissance. The catchment that shall affect the site shall include proposed site (A1), part of the register feature 2SW-D/C24 (A2) at the southwest of the site and part of the existing slope (A3, A4, A5, A6) at the southeast of the site. The estimated catchment area is around 18,365 square metre including the Site Area, feature 2SW-D/C24 and existing slope. The runoff from the catchment is currently discharged off site to Mangrove via the existing channel. The drainage catchment index plan is shown in **Appendix E**.

2.4 Drainage Routes

There are existing water channel along the southern and eastern boundary of the site, and the drainage routes leading to Mangrove are channelized and located outside the Site. Runoff from the site currently flows overland and enters the Mangrove through existing channel and catchpit. In the southern part of the site, there is existing u-channel with catchpit that collects surface runoff from register feature 2SW-D/C24 and discharges them into the Mangrove.

To the northern and western of the site, a series of wall and planter wall blocking the surface runoff from the Deep Bay Road and car park at west. In the southern part of the site, there is existing u-channel with catchpit that collects surface runoff from register feature 2SW-D/C24 and discharges them into the Mangrove. No additional runoff will be entered the existing site area. The catchment area A1, A2, A3, A4, A5 and A6 will eventually discharge to the along the existing slope through existing channel and enter the Mangrove. The Mangrove is connected to the Deep Bay through uncharted road through existing culvert. The remaining runoff from Deep Bay Road and car park are discharged along Deep Bay Road and no adverse effect will be induced to the existing development. The existing stormwater drainage plan is shown in **Appendix E**. The photographic record of the existing drainage is enclosed in **Appendix I**.

There are no flooding black spots in the vicinity of the site and the existing drainage facilities for our development are adequate for the existing runoff.

3. Proposed Drainage System

The level of the proposed development is backfilled and gently incline from west to east. Fence wall along the site boundary will be proposed to prevent external stormwater runoff into the site area. The existing channel and catchpit outside site boundary will be retained. The stormwater in the site will be collected by site drainage system and discharged through existing catchpit to existing 300mm stepped channel to the Mangrove. The stormwater at the register feature 2SW-D/C24 along site southern boundary will be collected separately along existing 450u-channel and discharged to the existing 470 u-channel to Mangrove. The landscape master plan is shown in **Appendix D**.

The proposed development will include internal drainage systems to collect all flows from the Site and convey them to the existing drainage discharge point. 300mm u-channels with 1 in 50 gradients are proposed within and along site boundary and hydraulic design checked with the new development is attached in **Appendix H**. An indicative proposed drainage arrangement for the Site is shown in **Appendix G**. The internal drainage will be subjected to detail design stage.

The Rational Method has been adopted for the check of the existing drainage system as outlined in the Stormwater Drainage Manual (SDM)(5th edition). 1 in 50 years storm return period has been adopted for the assessment, i.e. a Village Drainage including Internal Drainage System under a Polder Scheme. The rainfall is increased by 16.0% and the sea level increased by 0.47m as suggested by the SDM Corrigendum No. 1/2024 to cater for the climate changes in the end of 21st Century. The Mean Higher High Water (MHHW) Levels is taken as 2.32mPD. The runoff coefficient C was assumed to be 0.3, 0.35 and 0.85 for flat vegetated area, steep vegetated area and paved area respectively. 10% reduction in flow area is assumed for the deposition of sediment in stormwater channels and pipes. According to SDM Corrigendum No. 1/2024, the suggested Design Extreme Sea Levels is 4.78mPD in 1 in 200 years storm return period for Tsim Bei Tsui area which is lower than the proposed site area, therefore no adverse effect is induced.

The catchment runoff has been calculated using the "Rational Method", as outlined in the DSD SDM:

$$Q = 0.278CiA$$

where,

Q = peak runoff in m^3/s

C = runoff coefficient (dimensionless)

i = rainfall intensity in mm/hr

A = catchment area in km^2

After development, the Site will be partly paved (buildings and roads, etc.) and proposed grasscrete partly, for which a runoff coefficient of 0.85 has been adopted. The site will be partly vegetated with a runoff coefficient of 0.3 has been adopted. The runoff from the Site is expected to increase to $0.153m^3/s$ after development. As the Site is immediately adjacent to the Mangrove and Deep Bay, such an increase is relatively insignificant in comparison with the channel capacity. The hydraulic design check of the existing and proposed channel with the new development and proposed drainage plan are attached in **Appendix H** and **Appendix G**.

4. Changes to Drainage Characteristics and Potential Drainage Impacts that Might Arise

The total peak runoff rate of the site is increased due to the change of paving condition of the development. The proposed development will include internal drainage systems to collect all flows from the Site and convey them to the existing catchpit in the crest of the existing slope to the existing drainage.

The runoff from register slope 2SW-D/C24 (A2) will follow the original drainage path along the site boundary to Mangrove. As the runoff from site will be collected by the proposed site drainage, this drainage path only collects water from 2SW-D/C24. No works will be proposed outside site boundary, thus the capacity of the drainage path remains unchanged. The calculation in **Appendix H** shows that the hydraulic design checking for the existing and proposed development.

Overall, the proposed site drainage system and existing drainage path are able to cater for the runoff from the proposed development and surrounding areas, so no adverse drainage impacts are expected.

5. Proposed Drainage Impact Mitigation Measures and Further Drainage Impact Implications

5.1 Temporary Works

With the implementation of good site practice and appropriate pollution control measures to minimize impacts during construction, adverse water quality impacts are not anticipated. The following drainage impact mitigation measures for construction stage are proposed:

(a) Temporary surface channels with silt trap and proper discharge connection to public drainage shall be provided to collect surface runoff throughout construction stage;
(b) Temporary pump with sedimentation tank and proper discharge connection to public drainage shall be provided in throughout construction stage;
(c) Ponding should be avoided by grading the ground surface;
(d) Bare ground surface shall be compacted by roller in order to avoid loose soil being washed off into drains;
(e) Bare soil slopes shall be protected by hydroseeding or tarpaulin sheets to prevent erosion of slope surface;
(f) Temporary sand traps/ desilting ponds should be provided at locations where surface water gathers;
(g) Wastewater generated from building construction activities and site facilities should not be discharged into the stormwater drainage system;

In addition, according to the ETWB TC (Works) No. 5/2005, to avoid direct or indirect impact to the natural stream, precautionary mitigation measures proposed in the following:

(a) The proposed works site inside or in the proximity of natural rivers and streams should be temporarily isolated, such as by placing of sandbags or silt curtains with lead edge at bottom and properly supported props, to prevent adverse impacts on the stream water qualities. Other protective measures should also be taken to ensure that no pollution or siltation occurs to the water gathering grounds of the work site.
(b) The natural bottom and existing flow in the river should be preserved as much as possible to avoid disturbance to the river habitats. If temporary access track on riverbed is unavoidable, this should be kept to the minimum width and length. Temporary river crossings should be supported on stilts above the riverbed.
(c) Stockpiling of construction materials, if necessary, should be properly covered and located away from any natural stream/river.
(d) Construction debris and spoil should be covered up and/or properly disposed of as soon as possible to avoid being washed into nearby streams/rivers by rain.
(e) Construction effluent, site run-off and sewage should be properly collected and/or treated. Wastewater from a construction site should be managed with the following approach in descending order:
    i. Minimisation of wastewater generation;
    ii. Reuse and recycle;
    iii. Treatment.
(f) Proper locations for discharge outlets of wastewater treatment facilities well away from the natural streams/rivers should be identified.

(g) Removal of existing vegetation alongside the riverbanks should be avoided or minimised. When disturbance to vegetation is unavoidable, all disturbed areas should be hydroseeded or planted with suitable vegetation to blend in with the natural environment upon completion of works.
(h) Adequate lateral support may need to be erected in order to prevent soil/mud from slipping into the stream/river, but without unduly impeding the flow during heavy rain.
(i) Supervisory staff should be assigned to station on site to closely supervise and monitor the works.

The above requirements can be incorporated into drainage plans and implemented by the contractor under the supervision of the Authorized Person during construction. All these measures will safeguard proper functioning of the drainage system throughout the construction period.

5.2 Permanent Works

There will be no potential water quality impact from the proposed development during the operation phase. The best practices in ProPECC PN 5/93 “Drainage Plans subject to comments by the Environmental Protection Department” would be followed in operation phase as well. For the design of permanent works, the following measures are proposed:

(a) Drainage channels shall be provided for slope, if any, to prevent soil erosion through intercepting and conveying surface runoff to designated discharge points;
(b) Surface of exposed soil slope shall be hydroseeded or landscaped for protection against surface erosion, while surface of covered soil slope shall be shotcreted and

(c) Sufficient fall shall be provided to paved surfaces to prevent ponding.

The proposed permanent drainage system works entirely on gravity and requires minimal maintenance. Only regular CCTV inspection, desilting and repair of the pipework system (e.g. internal lining) will be required after the construction. Once expedient connection is found, the lot owner would rectify the expedient connection. Adequate maintenance of the proposed gravity drainage system will ensure the no adverse drainage impact will occur.

6. Proposed Monitoring Requirements

During construction, periodic site inspection by the Authorized Person or his representative shall be carried out to monitor that designed temporary drainage measures has been implemented by the contractor in accordance with the approved plans.

All the drainage facilities such as the existing open culvert, stepped channel, inlet, underground pipe, manholes, catchpits etc. within the subject site and the existing drainage facilities in the vicinity of the site should be inspected weekly and desilted regularly, particularly at the onset of and after each rainstorm to ensure these facilities are functioning properly at all times. Weekly inspection record of the drainage facilities would be submitted during construction. Any blockage on the drainage system found shall be cleared off immediately to remove flooding hazard.

All stormwater leaving the sites shall be collected by silt traps for sedimentation to occur before being discharged offsite. The silt traps shall be regularly cleared of sediments to

maintain its function. The discharge quality shall satisfy standards set by Environmental Protection Department. Channels or earth bunds or sand bag barriers should be provided on site to properly direct stormwater to such silt removal facilities. The existing channels around the site would intercept stormwater run-off around the site so that it will no wash across the site. No construction debris, silt and sediments or cementitious materials would be discharged to or deposited inside the public drains or sewers from the site.

Before construction work commencement, a pre-construction survey should be carried out to assess the baseline conditions of existing ground surface & drainage facilities that may be susceptible to damage or affected by the proposed works. The survey would identify, locate and verify conditions of the existing government sewers and stormwater drains to which our site drainage would be connected / discharged to. CCTV survey should be carried out to the existing nearby drains. The internal conditions of the existing nearby public drains should be monitored with CCTV surveys prior to commencement and upon completion of works. Extent of CCTV survey shall be agreed prior with DSD. Subsequent monitoring reports shall be submitted to DSD regularly.

7. Conclusion

7.1 The allowable capacity of the proposed drainage system meet current drainage design capacity requirement for a 1 in 50 year flood for the proposed development.

7.2 Surface storm water at the site will be collected by proposed internal drainage facilities 300mm u-channel with 1 in 50 gradients and discharged to the existing catchpit in the slope crest. Surface storm water from nearby catchments is discharged through the existing channel to Mangrove. The allowable capacity of the downstream drainage system meet current drainage design capacity requirement for a 1 in 50 year flood for the proposed development hence the proposed development will not affect the drainage system of the region.

7.3 To ensure existing drainage capacity will not be adversely affected in the construction stage, drainage impact mitigation measures proposed in Section 5 should be implemented and monitored closely throughout the construction period.

Appendix A

Site Location Plan

SITE LOCATION PLAN
后海湾
SITE
尖鼻咀地震站

Appendix B

Master Layout Plan

NORTH

2SW-D/F7

INFLUENCE ZONE

TURN AROUND / DROP OFF AREA

BLOCK B ENTRANCE

SITE MAIN ENTRANCE

BLOCK A ENTRANCE

2SW-D/F6

EXTG
CAR
PARK

DEEP BAY ROAD / EVA

2SW-D/F28

TSIM BEI TSUI
POLICE POST

BLK A

BLK B

RC PLINTH
(375m²)

2SW-D/C24

ELE. CUT OUT

EMERGENCY GENERATOR ROOM

FS PUMP ROOM

F.S. WATER TANK
245m³ VOLUME
= 16m (L) x 6m x (W) x 2.6 m (H)

2SW-D/F3

INFLUENCE ZONE

LEGEND :

- PROPOSED SITE BOUNDARY
- SLOPE INFLUENCE ZONE
- SLOPE FEATURE
- H-POLE WITH 11kV SWITCHGEAR
- EXISTING ROAD

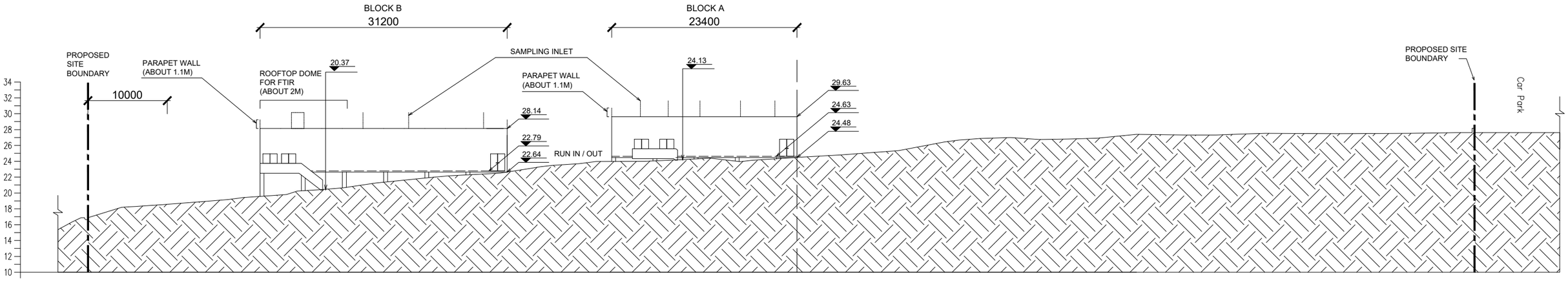
Proposed 'Government Use'
(GBA Air Quality Laboratory and Meteorological Monitoring Supersite)
on Deep Bay Road, Tsim Bei Tsui, New Territories

MASTER LAYOUT PLAN

1:500 (A3)

1

02 - 10 - 2025



REMARK : FOR INDICATION ONLY

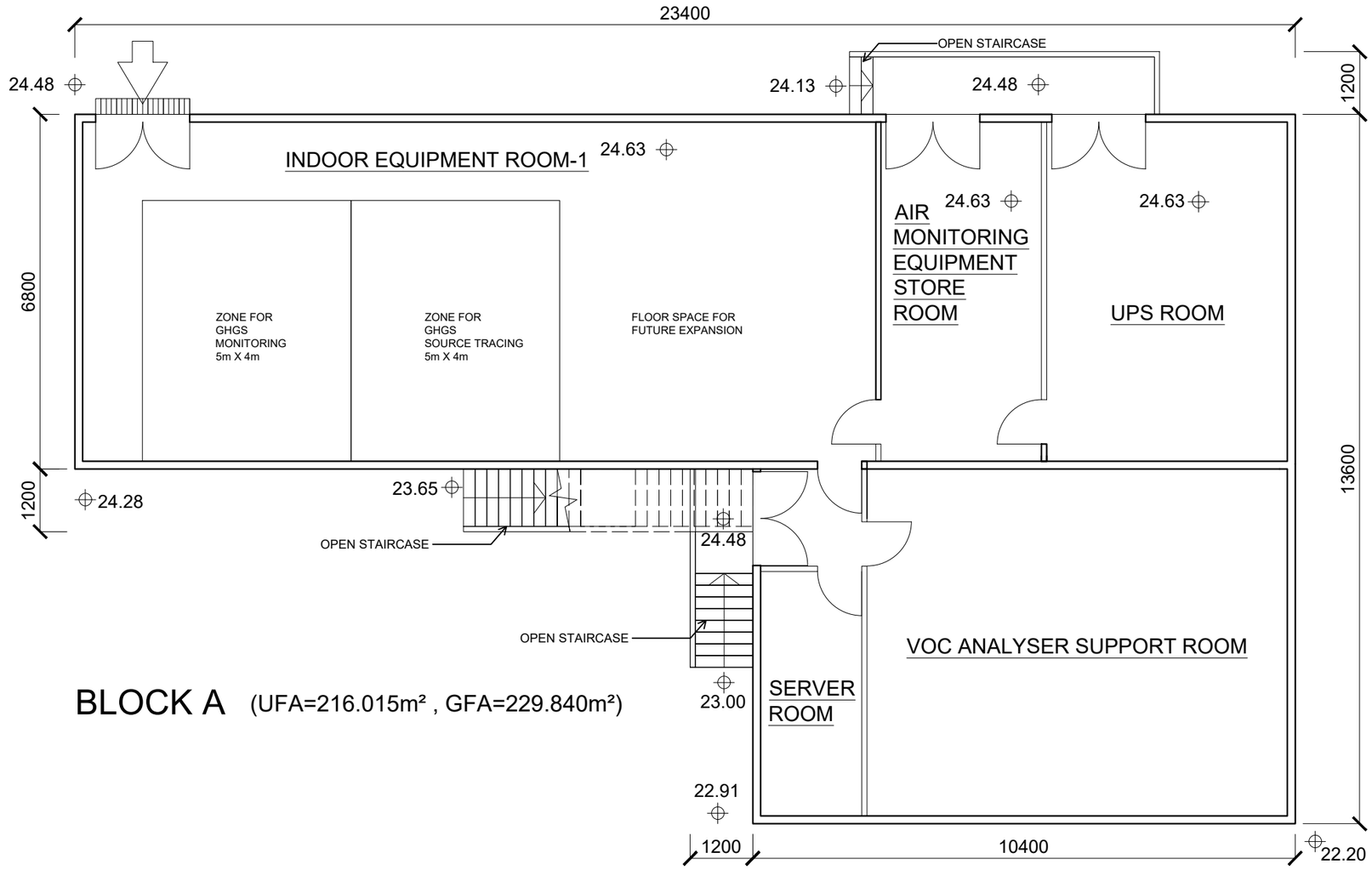
Proposed 'Government Use'
(GBA Air Quality Laboratory and Meteorological Monitoring Supersite)
on Deep Bay Road, Tsim Bei Tsui, New Territories

SCHEMATIC ELEVATION

1:500 (A3)

2

15 - 10 - 2025



BLOCK A (UFA=216.015m² , GFA=229.840m²)

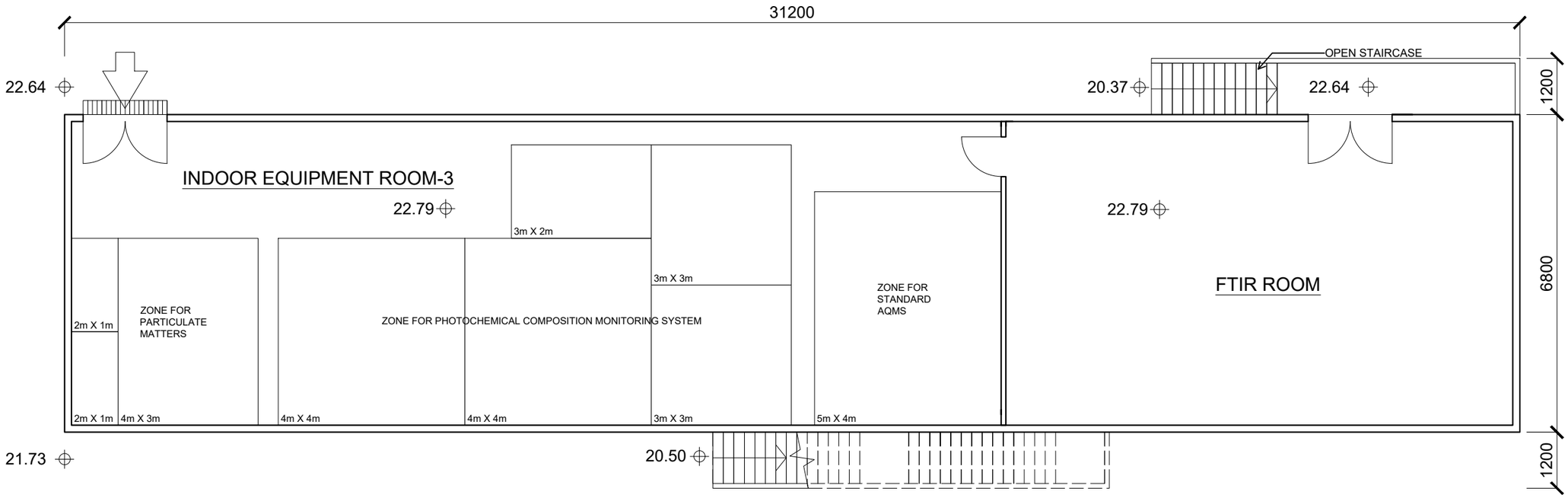
Proposed 'Government Use'
(GBA Air Quality Laboratory and Meteorological Monitoring Supersite)
on Deep Bay Road, Tsim Bei Tsui, New Territories

BLOCK LAYOUT PLAN (BLOCK A)

1:100 (A3)

3a

17 - 09 - 2025



BLOCK B (UFA=199.550m² , GFA=212.160m²)

Proposed 'Government Use'
(GBA Air Quality Laboratory and Meteorological Monitoring Supersite)
on Deep Bay Road, Tsim Bei Tsui, New Territories

BLOCK LAYOUT PLAN (BLOCK B)
1:100 (A3)

3b
17 - 09 - 2025

Appendix C
Topographical Survey

尖鼻咀
TSIM BEI

停車場
Car Park

尖鼻咀警崗
Tsim Bei Tsui Police Post

DEEP WATER BAY ROAD

838540N
838520N
838500N
838480N
838460N
838440N
838420N

819405E 819605E 819805E 820005E 820205E 820405E 820605E 820805E 821005E 821205E 821405E 821605E

A B C D E F G H I J

TS 4 20 40 60

N

CUL

LEGEND:

- ARTIFICIAL SLOPE
- CHANNEL WITH FLOW DIRECTION (0.80 WIDE OF CHANNEL)
- STEP CHANNEL WITH FLOW DIRECTION (0.80 WIDE OF STEP CHANNEL)
- BOUNDARY LINE & BOUNDARY POINT
- GATE
- PERMANENT BUILDING AND CANOPY
- TREE WITH TREE NO.
- INCLINED WALL
- GRAVE
- CONTOURS
- TS TEMPORARY STRUCTURE
- PB PILLAR BOX
- HR HAND RAILING
- HD HOARDING
- KL KERB LINE (BOTTOM)
- ST SLOPE TOP
- SB SLOPE BOTTOM
- FX FENCE
- BARRIERS
- BN BENCH
- E ELECTIC POLE
- SB SIGN BOARD
- SP SIGN POLE
- LP LAMP POST
- TP TELEPHONE POLE
- TL TRAFFIC LIGHT
- FH FIRE HYDRANT
- P.M PARKING METER
- BOLLARD AT ROAD
- GULLY
- GRATING
- VALVE FIRE
- VALVE GAS
- VW VALVE WATER WORKS
- MH MANHOLE
- ATC MANHOLE, ATC
- CATV MANHOLE, CABLE TV
- E&M MANHOLE, ELECTRIC & MECHANICAL SERVICES DEPARTMENT
- HKTC MANHOLE, PCCW-HKT TELEPHONE LIMITED
- DSD MANHOLE, DRAINAGE SERVICES DEPARTMENT
- PL MANHOLE, PUBLIC LIGHTING
- HCL MANHOLE, HUTCHISON COMMUNICATION LIMITED
- HGC MANHOLE, HUTCHISON GLOBAL CROSSING LIMITED BROADBAND
- CATCH PIT
- MF MANHOLE, FOUL WATER/SEWER
- MS MANHOLE, STORM WATER
- PCW MANHOLE, PACIFIC CENTURY CABLE & WIRELESS
- NWT MANHOLE, NEW WORLD TELEPHONE
- CLP MANHOLE, CLP POWER
- WHT MANHOLE, WHAFT T & T
- T&T MANHOLE, TOWNGAS TELECOM
- RX — TRAFFIC BARRIER
- * Lamp Pole number is referred to GeoInfo Map system (for client's reference only)
- PROPOSED SITE BOUNDARY

ABBREVIATION:

BD	BOULDER
BE	BERM
BS	BOUNDARY STONE
CA	CANOPY
CUL	CULVERT
CO	COLUMN
CONC	CONCRETE
DB	DISTRIBUTION BOX
END	END OF OBJECT
FB	FLOWER BED
FP	FOOTPATH
IL	INVERT LEVEL
NU	NULLAH
OH	OVERHANG
PF	PLATFORM
PO	POST
PZ	PIEZOMETER TUBE
RP	RAMP
RU	RUIN
SS	SHRINE
TS	TEMPORARY STRUCTURE
VB	VEHICLE BARRIERS
WE	WELL
WIP	WORK IN PROGRESS
WT	WATER TANK

NOTE
ALL SPOT LEVEL POSITIONS ARE THE DECIMAL POINT OR A CROSS

SCALE 1 : 200 (A0 SIZE)

metres 0 4 8 12 16 20 metres

HONG KONG METRIC GRID
PRINCIPAL DATUM HONG KONG
ALL UNITS IN METRES

DATE OF SURVEY: JANUARY 2024

REVISION	DATE	DESCRIPTION
INITIAL	24/02/2024	---

ARCHITECTURAL SERVICES DEPARTMENT

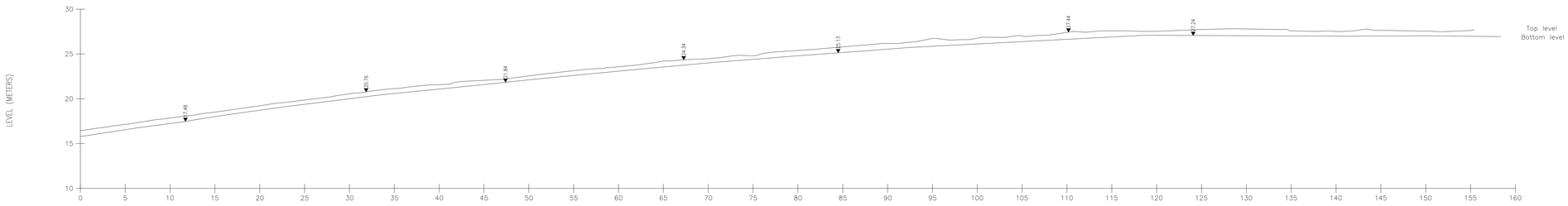
Topographical Survey
Guangdong–Hong Kong–Macao Greater Bay Area (GBA)
Air Quality Laboratory and Meteorological Monitoring Supersite

SAM MAK & ASSOCIATES SURVEYORS (HK) LTD.
CONSULTANTS IN LAND, ENGINEERING, MARINE & AERIAL SURVEYS
ROOM 901, MARINA HOUSE, NO.68 HING MAN STREET, SHAUKEIWAN, HONG KONG.
TEL : 28951918 FAX : 28901759 E-mail: hkoffice@sammak.com

PRELIMINARY
(24/02/2024)

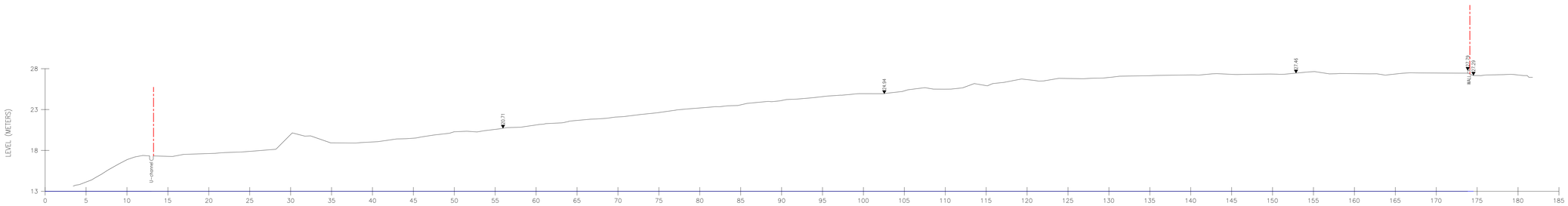
PLAN NO. 9594/01(SHEET 1 OF 3)

JESSICA PUI YEE LEUNG MHKIS RPS(LS)
REGISTERED PROFESSIONAL SURVEYOR



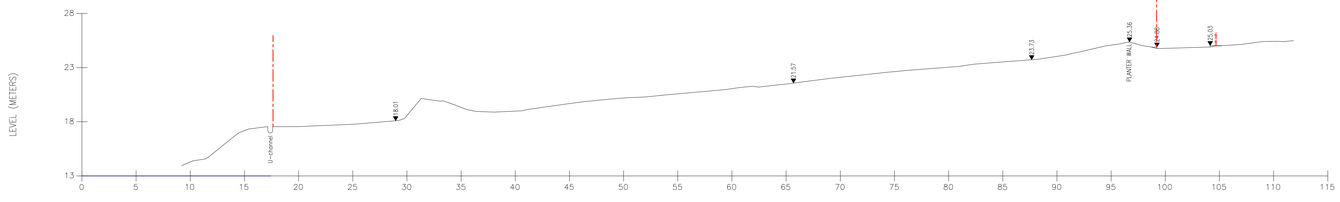
CHAINAGE (METERS)

SECTION A–A



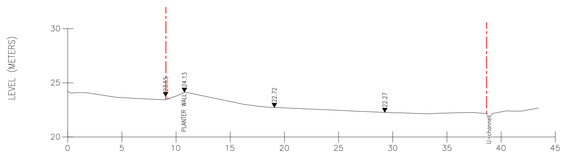
CHAINAGE (METERS)

SECTION B–B



CHAINAGE (METERS)

SECTION C–C



CHAINAGE (METERS)

SECTION D–D

LEGEND:

- ARTIFICIAL SLOPE
- CHANNEL WITH FLOW DIRECTION (UB) : WIDE OF CHANNEL
- STEP CHANNEL WITH FLOW DIRECTION (UB) : WIDE OF STEP CHANNEL
- BOUNDARY LINE & BOUNDARY POINT
- GATE
- PERMANENT BUILDING AND CANOPY
- TREE WITH TREE NO.
- INCLINED WALL (TOP) (BOTTOM)
- GRAVE
- CONTOURS
- TS TEMPORARY STRUCTURE
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- HD HOARDING
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- SB SLOPE BOTTOM
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- PROPOSED SITE BOUNDARY
- RX — TRAFFIC BARRIER

• Lamp Pole number is referred to GeoInfo Map system (for client's reference only)

ABBREVIATION:

BO	BOULDER
BS	BUSH
BRS	BOUNDARY STONE
CA	CANOPY
CUL	CULVERT
CO	COLUMN
CONC	CONCRETE
EB	ELECTRIC BOX
END	END OF OBJECT
FB	FLOWER BED
FP	FOOTPATH
IL	INVERT LEVEL
NU	NULLAH
OH	OVERHANG
PL	PLATFORM
PO	POND
PZ	PIEZOMETER TUBE
RET	RETAIN
RU	RUIN
SS	SHRINE
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SCALE 1 : 200 (A0 SIZE)

metres 0 4 8 12 16 20 metres

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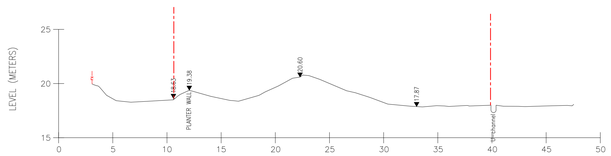
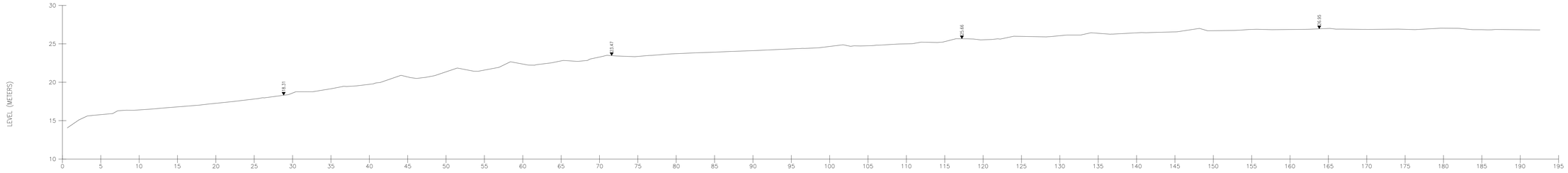
REGISTERED PROFESSIONAL SURVEYOR

PLAN NO. 9594/01 (SHEET 2 OF 3)



CHAINAGE (METERS)

SECTION E-E



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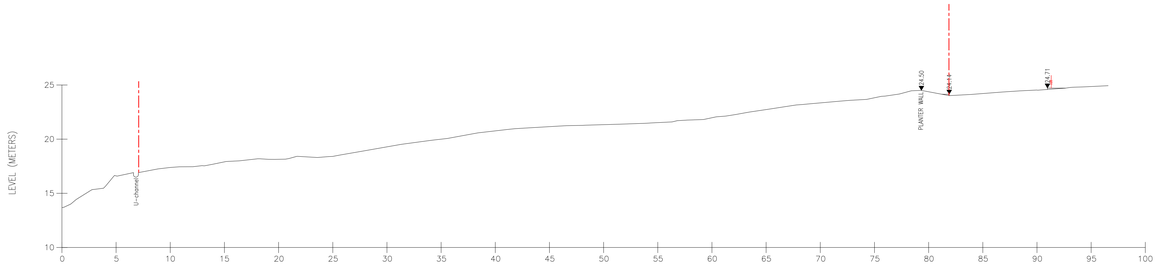

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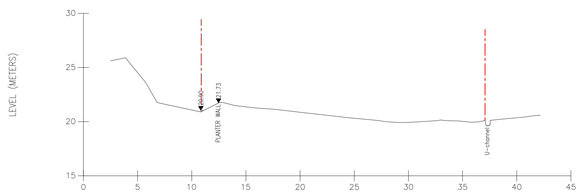
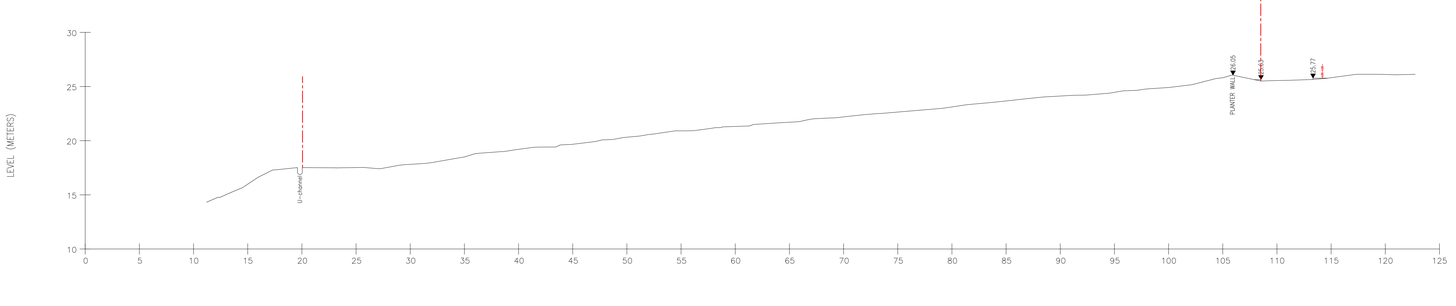
SECTION G-G



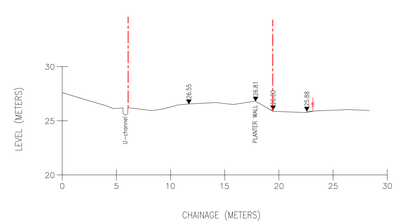
CHAINAGE (METERS)

SECTION H-H



CHAINAGE (METERS)

SECTION I-I



CHAINAGE (METERS)

SECTION J-J

LEGEND:

- ARTIFICIAL SLOPE
- CHANNEL WITH FLOW DIRECTION (0.80 WIDE OF CHANNEL)
- STEP CHANNEL WITH FLOW DIRECTION (0.80 WIDE OF STEP CHANNEL)
- BOUNDARY LINE & BOUNDARY POINT
- GATE
- PERMANENT BUILDING AND CANOPY
- TREE WITH TREE NO.
- INCLINED WALL (TOP) (BOTTOM)
- GRAVE
- CONTOURS
- TS TEMPORARY STRUCTURE
- PB PILLAR BOX
- HR HAND RAILING
- HD HOARDING
- KL KERB LINE (BOTTOM)
- ST SLOPE TOP
- SB SLOPE BOTTOM
- FX FENCE
- BARRIERS
- BR BENCH
- E ELECTIC POLE
- SB SIGN BOARD
- SP SIGN POLE
- LP LAMP POST
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- HGC MANHOLE, HUTCHISON GLOBAL CROSSING LIMITED BROADBAND
- CP CATCH PIT
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- PROPOSED SITE BOUNDARY
- RX TRAFFIC BARRIER

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ABBREVIATION:

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BE	BERM
BS	BOUNDARY STONE
CA	CANOPY
CUL	CULVERT
CO	COLUMN
CONC	CONCRETE
EB	ELECTRIC BOX
END	END OF OBJECT
FB	FLOWER BED
FP	FOOTPATH
IL	INVERT LEVEL
NU	NULLAH
OH	OVERHANG
PF	PLATFORM
PO	POST
PZ	PIEZOMETER TUBE
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RU	RUIN
SS	SHRINE
TS	TEMPORARY STRUCTURE
VB	VEHICLE BARRIERS
WE	WEIR
WIP	WORK IN PROGRESS
WT	WATER TANK

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SCALE 1 : 200 (A0 SIZE)

metres 0 4 8 12 16 20 metres

HONG KONG METRIC GRID
PRINCIPAL DATUM HONG KONG
ALL UNITS IN METRES

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SAM MAK & ASSOCIATES SURVEYORS (HK) LTD.
CONSULTANTS IN LAND, ENGINEERING, MARINE & AERIAL SURVEYS
ROOM 901, MARINA HOUSE, NO.68 HING MAN STREET, SHAUKEIWAN, HONG KONG.
TEL : 28951918 FAX : 28901759 E-mail: hkoffice@sammak.com

PRELIMINARY
(24/02/2024)

PLAN NO. 9594/01 (SHEET 3 OF 3)

JESSICA PUI YEE LEUNG MHKIS RPS(LS)
REGISTERED PROFESSIONAL SURVEYOR

Appendix D

Landscape Master Plan

Roadside Trees

Woodland Tree Mix

Shrubs and Groundcover

Climbing Plants on Boundary Fence

Grasscrete Paver

KEY:

1. Carparks
2. Concrete Plinth for Instrument
3. F.S. Water Tank
4. F.S. Pump Room
5. Emergency Generator Room
6. Electricity Pole
7. Ele. Cut Out

LEGEND:

- APPLICATION SITE BOUNDARY
- PROPOSED STANDARD TREES
- PROPOSED SHRUBS AND GROUNDCOVER
- PROPOSED WOODLAND MIX
- PROPOSED GRASSCRETE PAVER
- PROPOSED CLIMBING PLANT
- CONCRETE PAVING
- METAL FENCE (2.5M HIGH)
- +14.75 PROPOSED LEVEL
- SITE ENTRANCE
- BUILDING ENTRANCE

Grasscrete Pavers is proposed around the indoor and outdoor equipment to prevent obstruction of light and potential VOC emissions but enhance the local greenery with Site.

DEEP BAY ROAD / EVA

TSIM BEI TSUI POLICE POST

BLK A +29.63

BLK B +28.14

C1 C2

RC PLINTH (375m²) +20.87

+22.60

+19.50

28.1

WT

28

+10

Standard Trees and Climbing plants on metal fence to improve the Visual Appeal of the Roadside Environment

An earth tone paint color is applied on the Concrete Plinths for outdoor equipment to blend harmoniously with the surrounding hillside environment.

Woodland Tree Mix, Shrubs and Groundcover to provide a Seamless Transition between the Development and the adjacent Natural Environment

0 10 20 30 40M

PROJECT :

PROPOSED 'GOVERNMENT USE' (GBA AIR QUALITY LABORATORY AND METEORLOGICAL MONITORING SUPERSITE) ON DEEP BAY ROAD, TSIM BEI TSUI, N.T.

DRAWING TITLE :

LANDSCAPE MASTER PLAN

PROJECT No. C2520

DRAWING No. LMP01

SCALE : 1:500

DATE OF ISSUE : AUG 2025

CAD FILENAME : C2520-LMP01

REV	DESCRIPTION	DATE

DESIGN BY : TEL

DRAWN BY : CAD

CHECKED BY : TEL

APPROVED BY : TEL

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LanDes

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香港灣仔譚臣道5-11號
信邦商業大廈17樓A室
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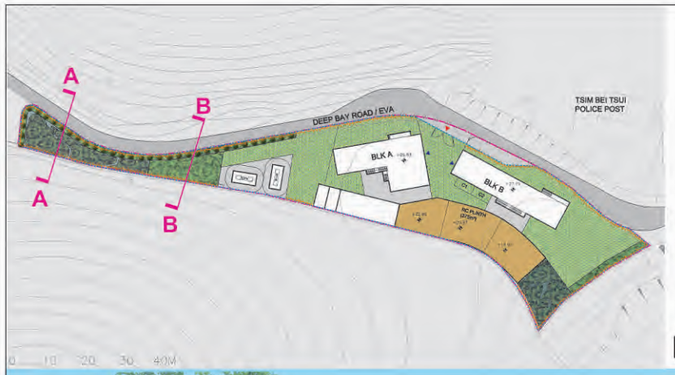
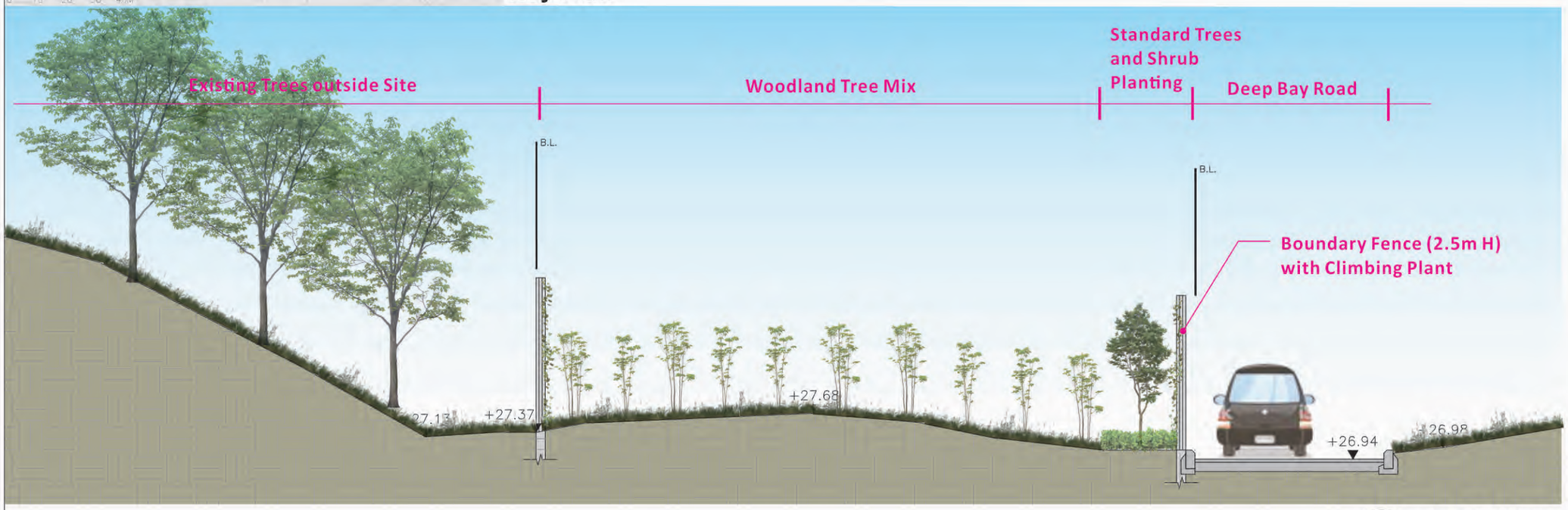
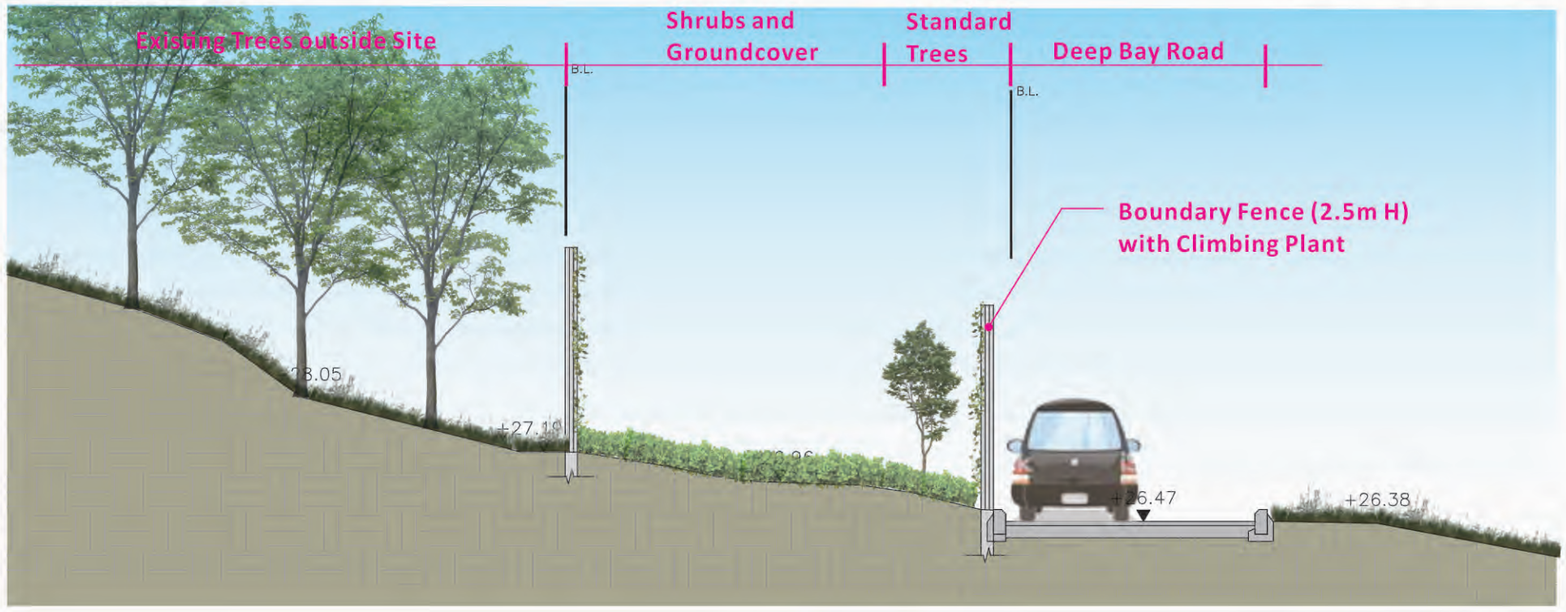


Key Plan



A SECTION
SCALE 1:75



B SECTION
SCALE 1:75

PROJECT :

PROPOSED 'GOVERNMENT USE' (GBA AIR QUALITY LABORATORY AND METEORLOGICAL MONITORING SUPERSITE) ON DEEP BAY ROAD, TSIM BEI TSUI, N.T.

DRAWING TITLE :

LANDSCAPE SECTION

PROJECT No. C2520

DRAWING No. LD101

SCALE : 1:75

DATE OF ISSUE : AUG 2025

CAD FILENAME : C2520-LD101

REV	DESCRIPTION	DATE

DESIGN BY : TEL

DRAWN BY : CAD

CHECKED BY : TEL

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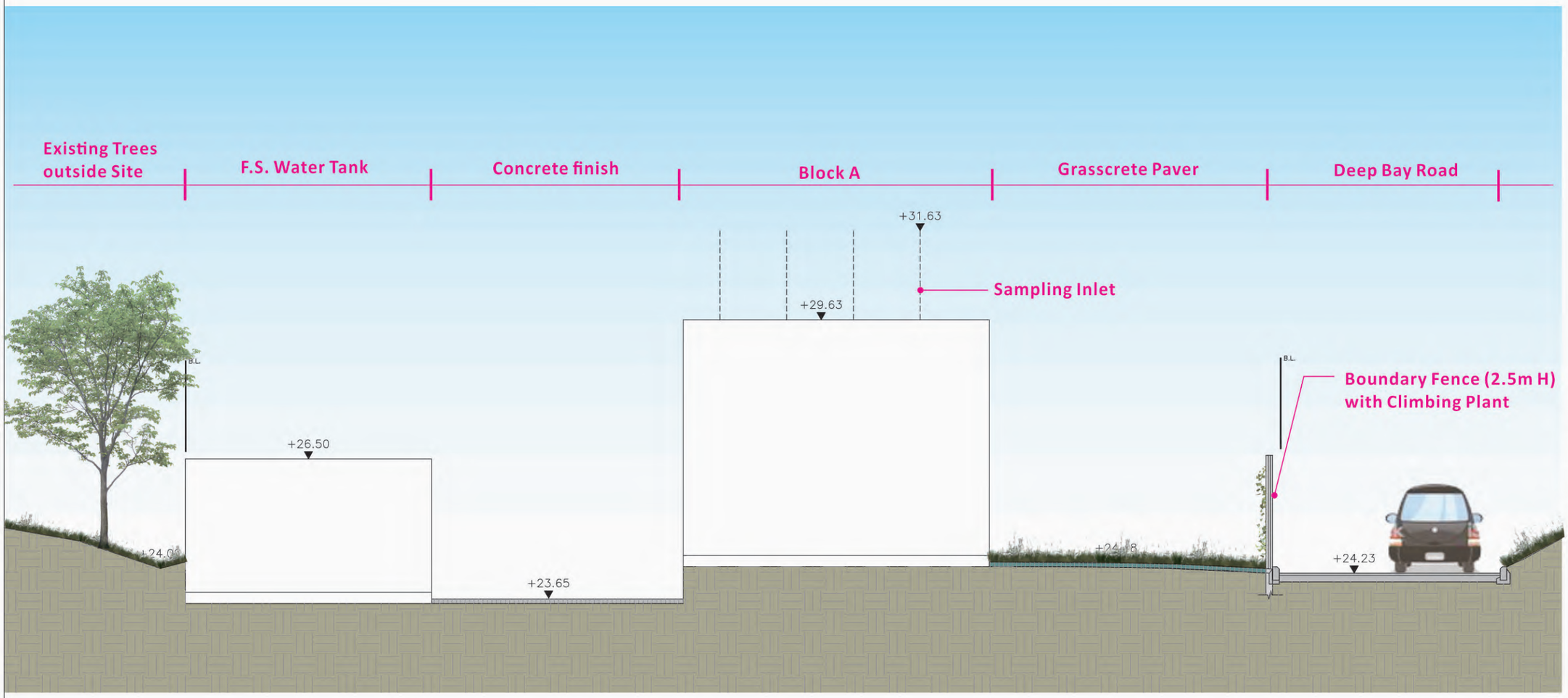
Key Plan



PROJECT :

PROPOSED 'GOVERNMENT USE' (GBA AIR QUALITY LABORATORY AND METEORLOGICAL MONITORING SUPERSITE) ON DEEP BAY ROAD, TSIM BEI TSUI, N.T.

DRAWING TITLE :

LANDSCAPE SECTION

PROJECT No. C2520

DRAWING No. LD102

SCALE : 1:100

DATE OF ISSUE : AUG 2025

CAD FILENAME : C2520-LD102

REV	DESCRIPTION	DATE

DESIGN BY : TEL

DRAWN BY : CAD

CHECKED BY : TEL

APPROVED BY : TEL

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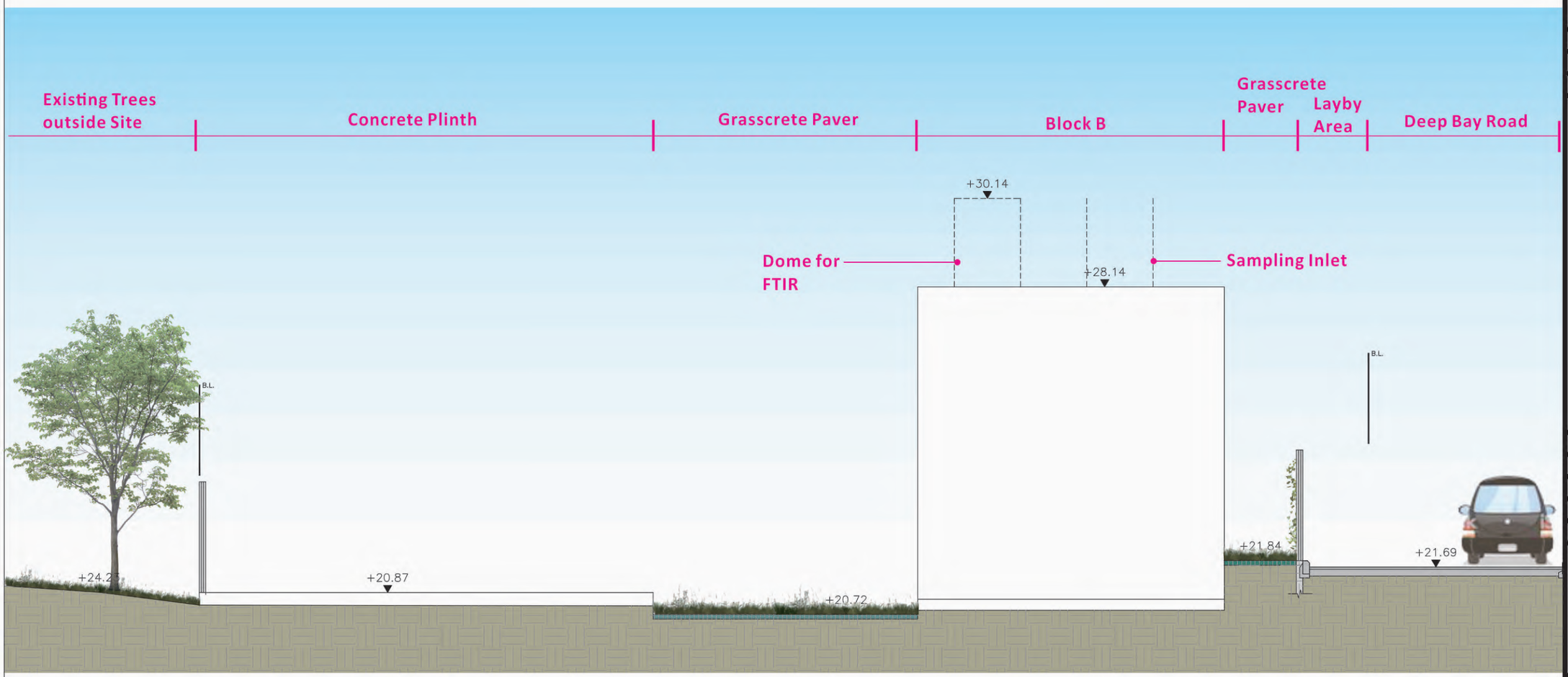
傳真: 2868 2203

Key Plan



PROJECT :

PROPOSED 'GOVERNMENT USE' (GBA AIR QUALITY LABORATORY AND METEORLOGICAL MONITORING SUPERSITE) ON DEEP BAY ROAD, TSIM BEI TSUI, N.T.

DRAWING TITLE :

LANDSCAPE SECTION

PROJECT No. C2520

DRAWING No. LD103

SCALE : 1:100

DATE OF ISSUE : AUG 2025

CAD FILENAME : C2520-LD103

REV	DESCRIPTION	DATE

DESIGN BY : TEL

DRAWN BY : CAD

CHECKED BY : TEL

APPROVED BY : TEL

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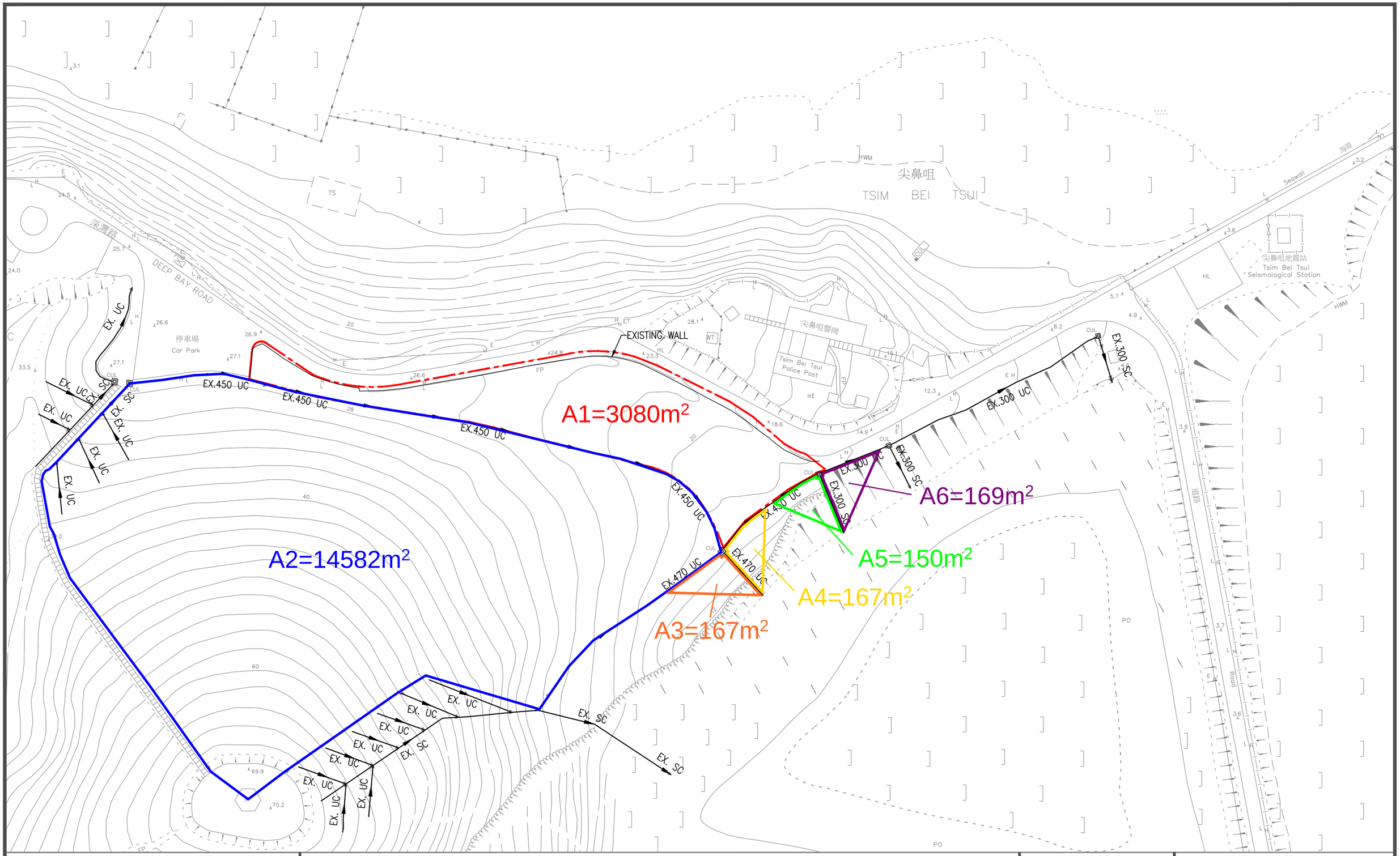
Appendix E

Drainage Catchment Index Plan



Greg Wong & Associates Ltd.
Consulting Engineers & Project Managers
黃澤恩顧問工程師事務所

PLANNING APPLICATION FOR GREATER BAY AREA AIR QUALITY LABORATORY AND METEOROLOGICAL MONITORING SUPERSITE AT TSIM BEI TSUI

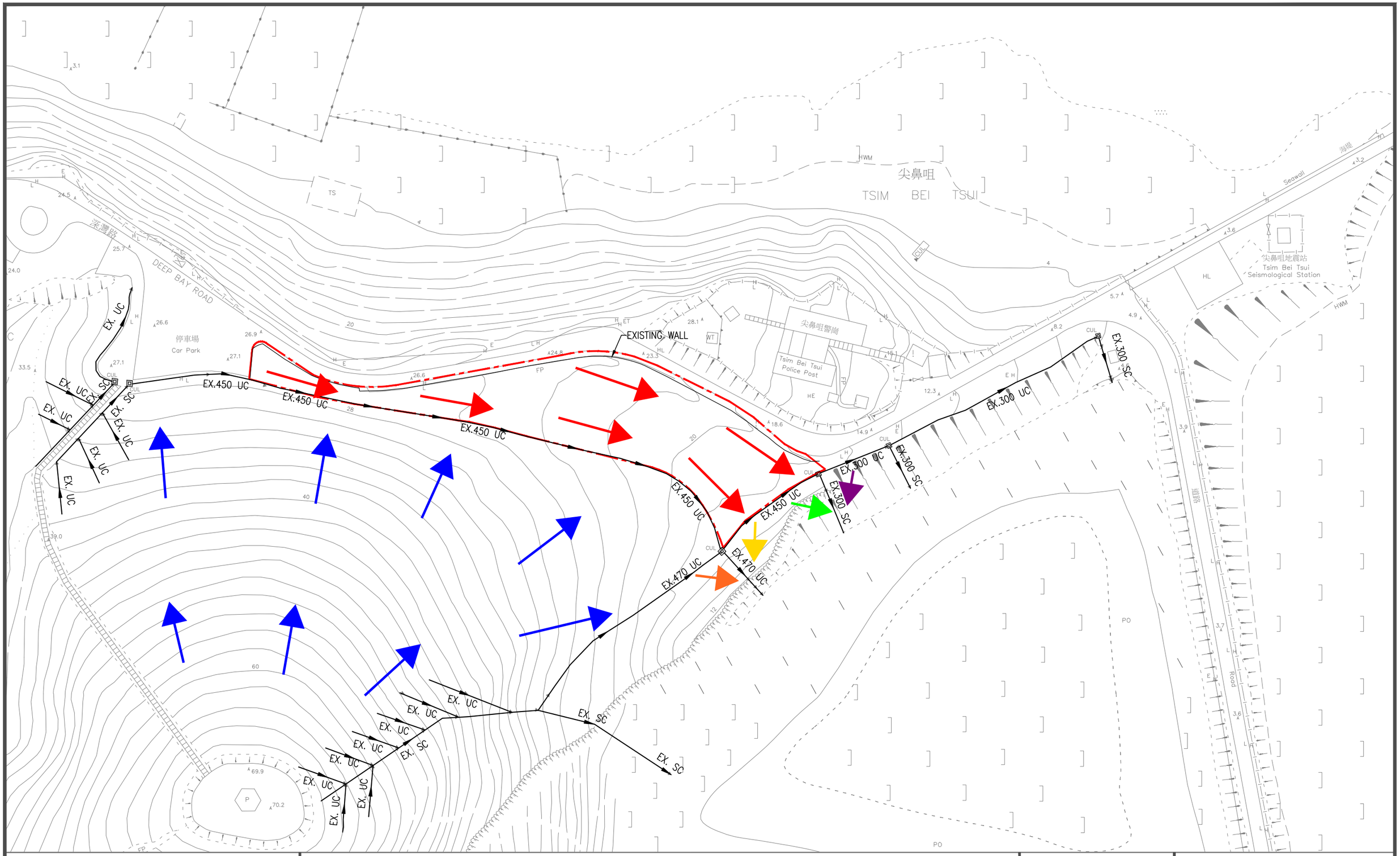
DRAINAGE CATCHMENTS INDEX PLAN

LEGEND:
- MANGROVE
- EX. 450 UC — EXISTING 450mm U-CHANNEL
- EX. 300 SC — EXISTING 300mm STEPPED CHANNEL
- PLANTATION
- SITE BOUNDARY
- EXISTING CATCHPIT

DESIGNED BY	K.A.Y.	JOB NO	P2676
CHECKED BY	K.T.	DRAWN BY	J.C.
DRAWING NO	DRAWING 1	SCALE	1:1000
		DATE	18-09-2025
		REV	–

Appendix F

Existing Stormwater Drainage Plan



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PLANNING APPLICATION FOR GREATER BAY AREA AIR QUALITY LABORATORY AND METEOROLOGICAL MONITORING SUPERSITE AT TSIM BEI TSUI

EXISTING STORMWATER DRAINAGE PLAN

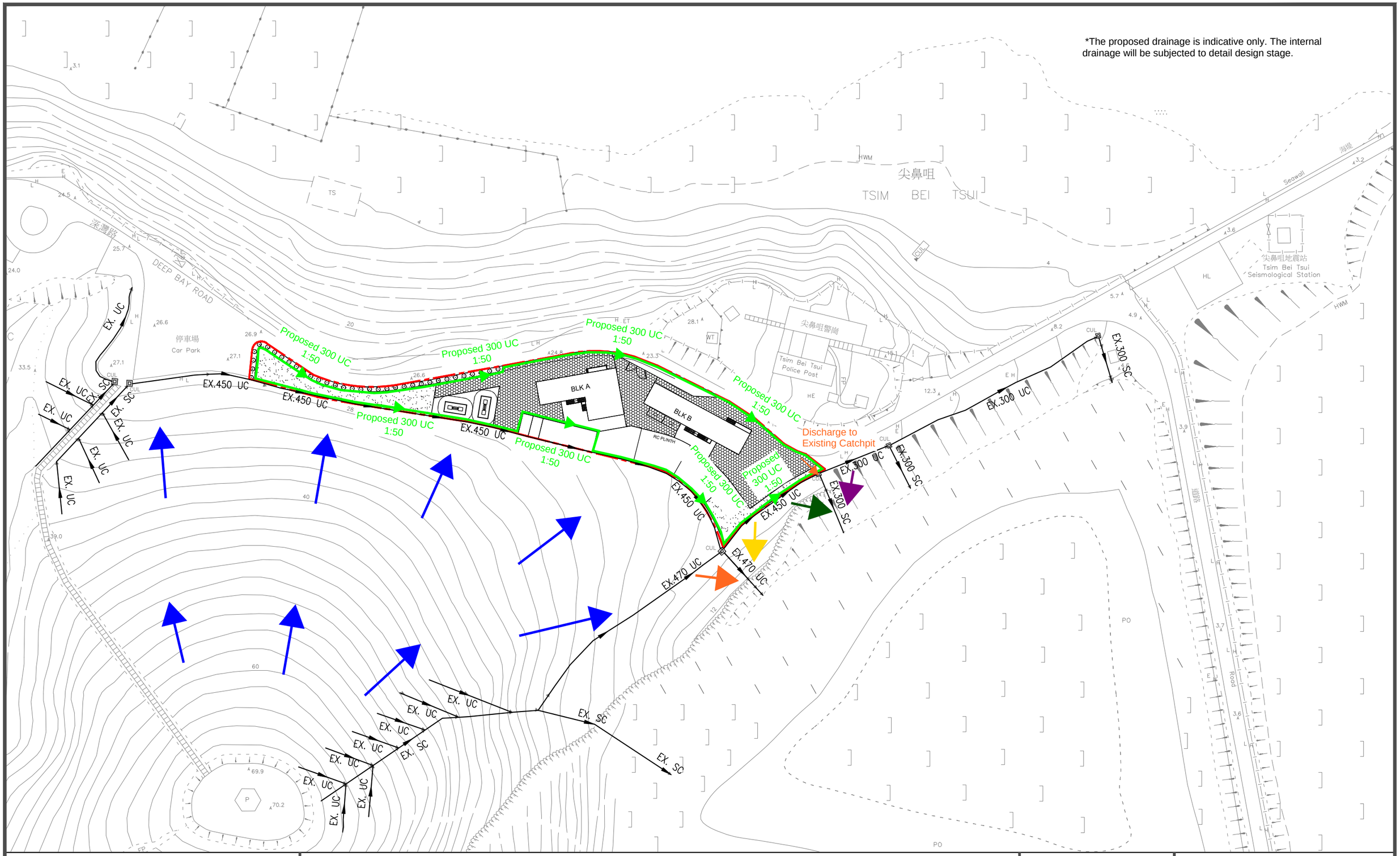
LEGEND:
- MANGROVE
- EX. 450 UC — EXISTING 450mm U-CHANNEL
- EX. 300 SC — EXISTING 300mm STEPPED CHANNEL
- EXISTING DRAINAGE ROUTES
- PLANTATION
- SITE BOUNDARY
- EXISTING CATCHPIT

DESIGNED BY	K.A.Y.
CHECKED BY	K.T.
DRAWING NO	DRAWING 2
JOB NO	P2676
DRAWN BY	J.C.
SCALE	1:1000
DATE	18-09-2025
REV	–

Appendix G

Proposed Stormwater Drainage Plan

*The proposed drainage is indicative only. The internal drainage will be subjected to detail design stage.



Greg Wong & Associates Ltd. Consulting Engineers & Project Managers 黃澤恩顧問工程師事務所	PLANNING APPLICATION FOR GREATER BAY AREA AIR QUALITY LABORATORY AND METEOROLOGICAL MONITORING SUPERSITE AT TSIM BEI TSUI	DESIGNED BY K.A.Y.	JOB NO P2676
		CHECKED BY K.T.	DRAWN BY J.C.
	PROPOSED STORMWATER DRAINAGE PLAN	DRAWING NO DRAWING 3	SCALE 1:1000
			DATE 18-09-2025
			REV –

LEGEND:

- MANGROVE
- EX. 450 UC — EXISTING 450mm U-CHANNEL
- EX. 300 SC — EXISTING 300mm STEPPED CHANNEL
- PROPOSED DRAINAGE ROUTES
- PLANTATION
- SITE BOUNDARY
- EXISTING CATCHPIT

Appendix H

Hydraulic Design Check for Proposed Drainage System

Drainage Design and Checking

Project No.:	P2676	Date:	22-Dec-25
Prepared by:	KAY	Checked by:	KT

Check for the Drainage Capactiy inside Area A1 (Existing)

Total catchment area, A1 (paved) = 0 m^2
Total catchment area, A1 (vegetated) = 3080 m^2

Use Rational Method from Geo-Manual

Q = kiA/3600 where,

Q = Maximum runoff (lit/sec)
k = Runoff coefficient
i = Design mean intensity of rainfall (mm/hr)
A = Total catchment area (m^2)

Assume k = 0.85 (paved)
Assume k = 0.30 (flat,vegetated)

Longest distance from summit to outlet (Ld) = 167.90 m

Average fall, H = 8.09 m per 100m

From Bransby-Williams Equation (Geo-Manual)

T_c = $0.14465 \times L_d / (H^{0.2} \times A^{0.1})$
= 7.16 min > 1.0 min
= 7.16 min

Assume a 1 in 10 year design rainfall return period for existing channel

Corrigendum No. 1/2022, Table 28 - Rainfall Incease 16.0% for End of 21st Centur

i = 208 mm/hr x 1.16 = 241.28 mm/hr
Q = kiA/60
= 3716 lit/min
= 0.062 m3/s

From Geo-Manual (Fig 8.7) 10% reduction in flow area for sedimentation reduction
For existing 450 UC with 1 in 100 gradient
Maximum capacity = 24000 x 0.9
= 21600 lit/min > 3716 o.k.
The corresponding velocity = 1.57 m/s < 4 o.k.

Existing Intensity A1

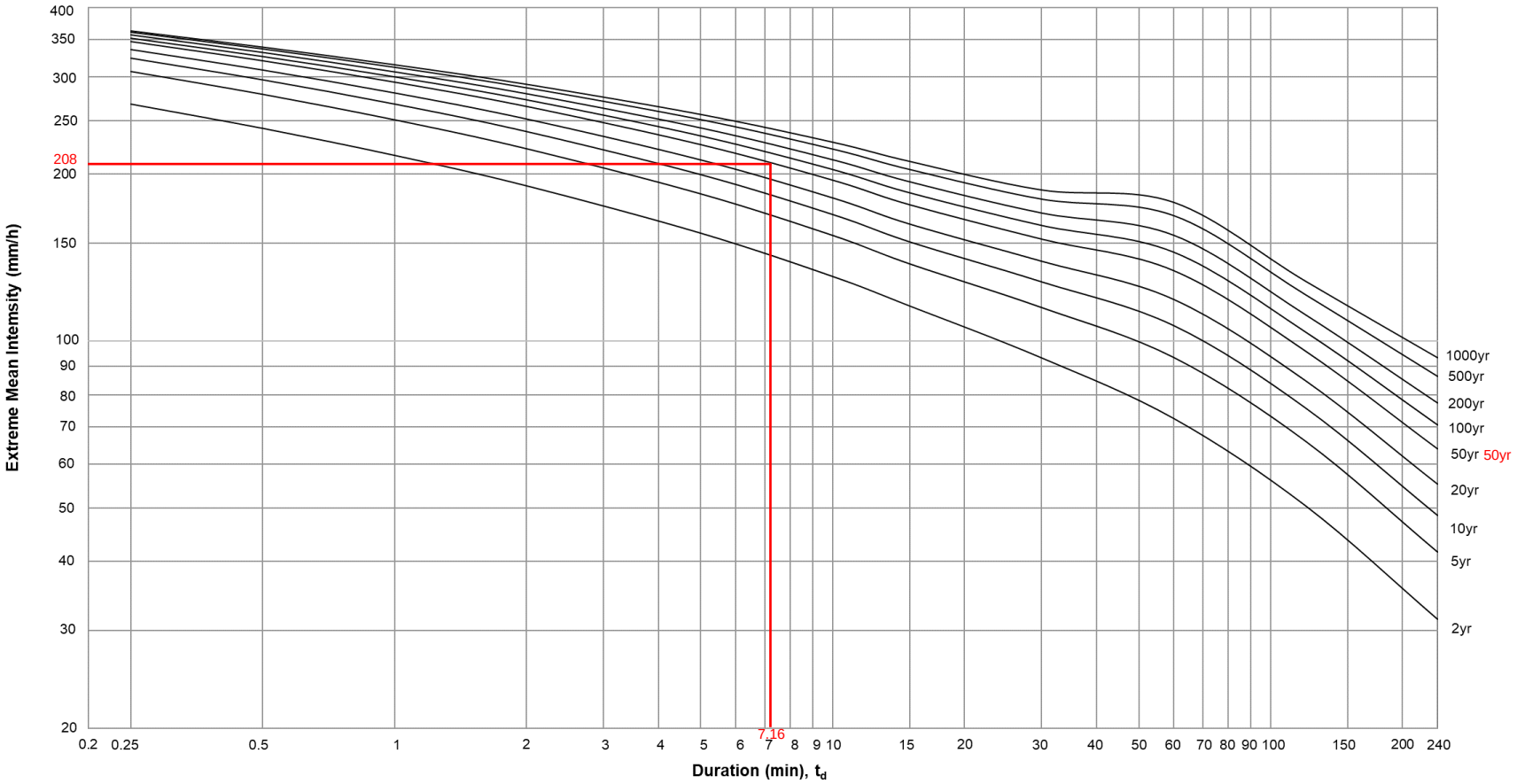


Figure 4a – Intensity-Duration-Frequency Curves of HKO Headquarters
(for durations not exceeding 4 hours)

Existing Catchment A1

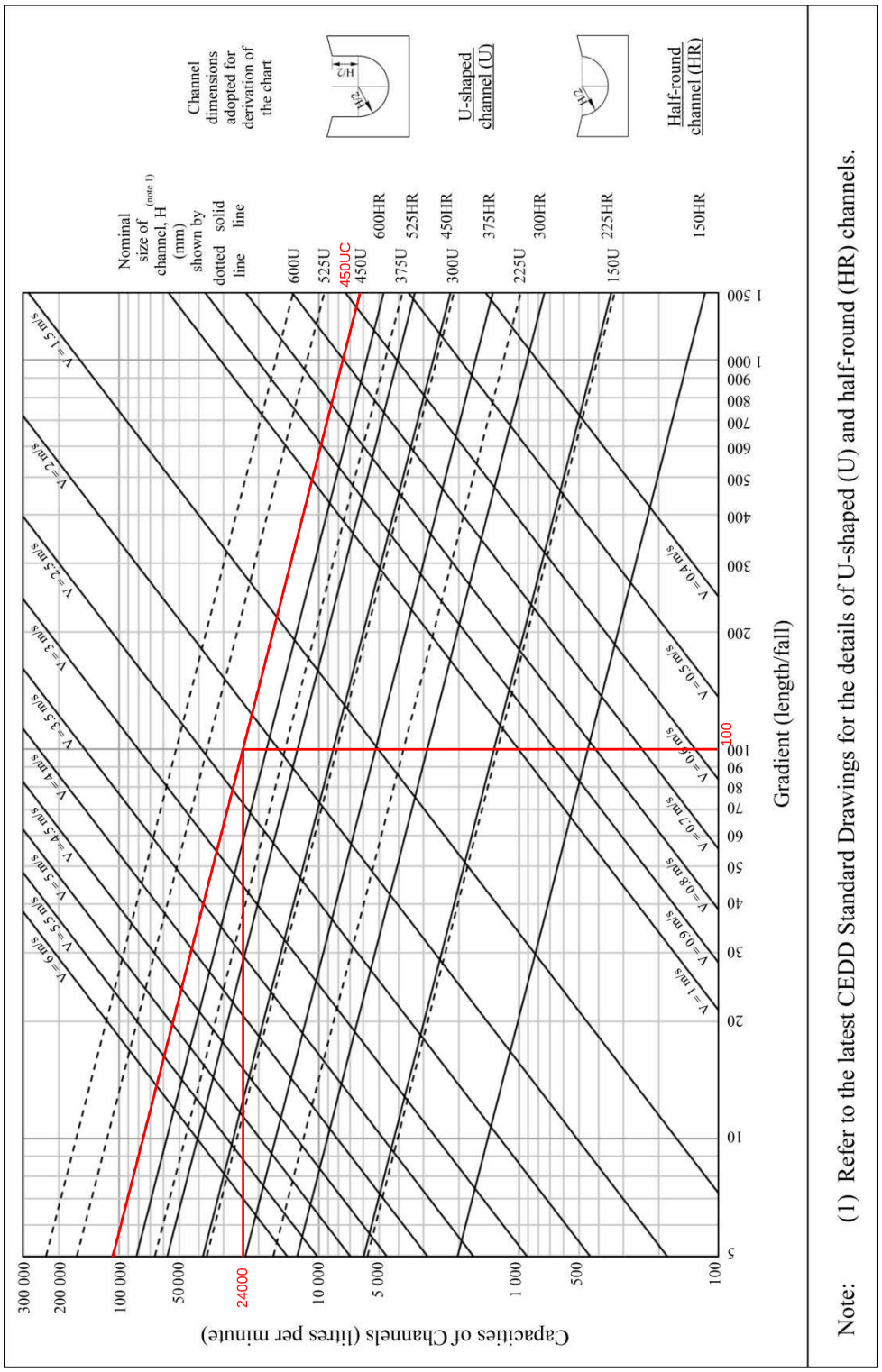


Figure 1 - Chart for the rapid design of U-shaped and half-round channels up to 600 mm

Note: (1) Refer to the latest CEDD Standard Drawings for the details of U-shaped (U) and half-round (HR) channels.

Drainage Design and Checking

Project No.:	P2676	Date:	22-Dec-25
Prepared by:	KAY	Checked by:	KT

Check for the Drainage Capactiy inside Area A1,A5,A6 (Existing)

Total catchment area, A1,A5,A6 (paved) = 0 m^2
Total catchment area, A1,A5,A6 (vegetated) = 3399 m^2

Use Rational Method from Geo-Manual

$Q = kiA/3600$ where,

Q = Maximum runoff (lit/sec)
k = Runoff coefficient
i = Design mean intensity of rainfall (mm/hr)
A = Total catchment area (m^2)

Assume k = 0.85 (paved)
Assume k = 0.35 (steep,vegetated)

Longest distance from summit to outlet (Ld) = 185.70 m

Average fall, H = 7.32 m per 100m

From Bransby-Williams Equation (Geo-Manual)

$T_c = 0.14465 \times L_d / (H^{0.2} \times A^{0.1})$
= 8.00 min > 1.0 min
= 8.00 min

Assume a 1 in 10 year design rainfall return period for existing channel

Corrigendum No. 1/2022, Table 28 - Rainfall Incease 16.0% for End of 21st Centur

i = 205 mm/hr x 1.16 = 237.80 mm/hr
Q = kiA/60
= 4715 lit/min
= 0.079 m3/s

From Geo-Manual (Fig 8.7) 10% reduction in flow area for sedimentation reduction
For existing 300 SC with 1 in 5 gradient
Maximum capacity = 37000 x 0.9
= 33300 lit/min > 4715 o.k.
The corresponding velocity = 4.53 m/s > 4 o.k.

Existing Intensity A1,A5,A6

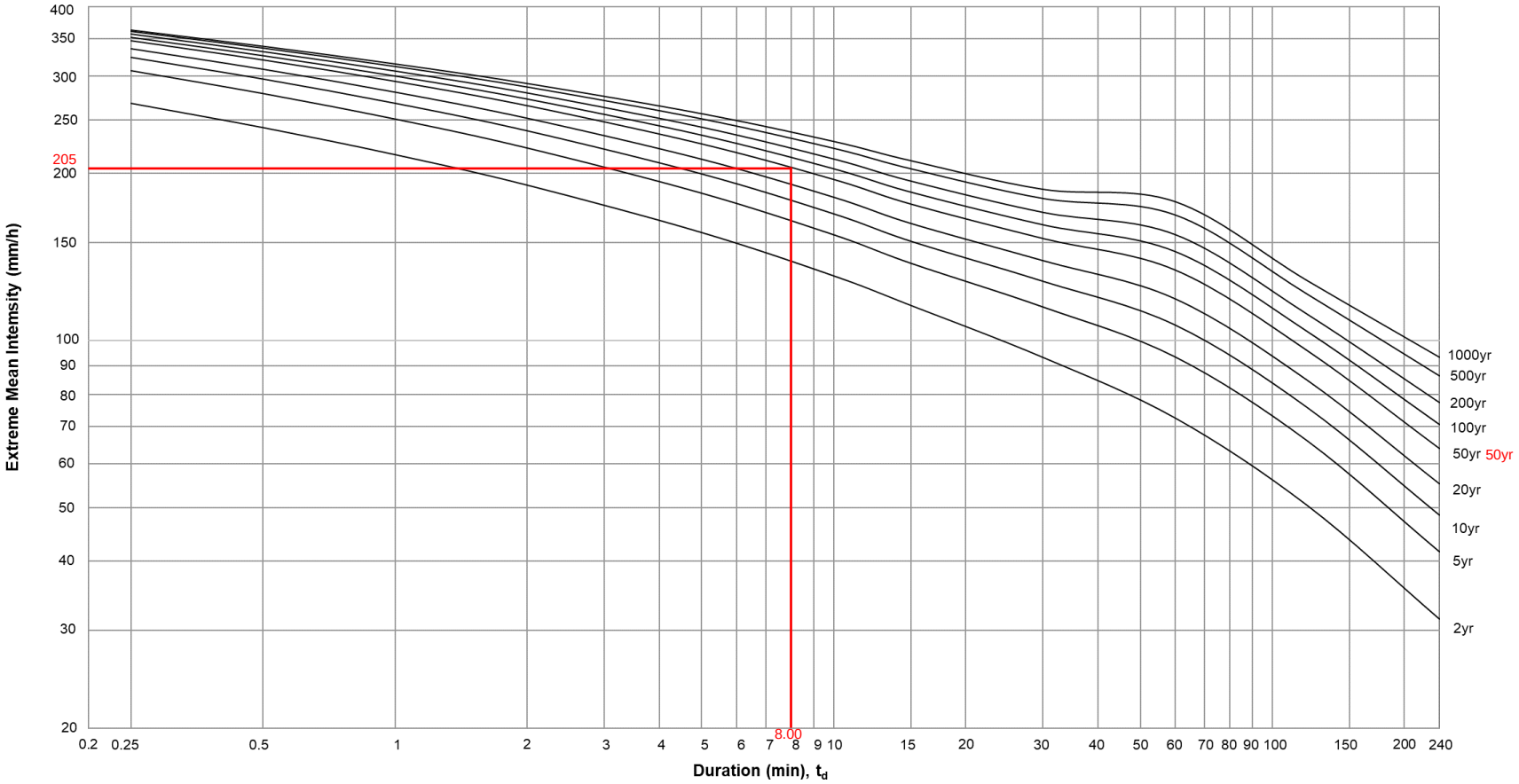


Figure 4a – Intensity-Duration-Frequency Curves of HKO Headquarters
(for durations not exceeding 4 hours)

Existing Catchment A1,A5,A6

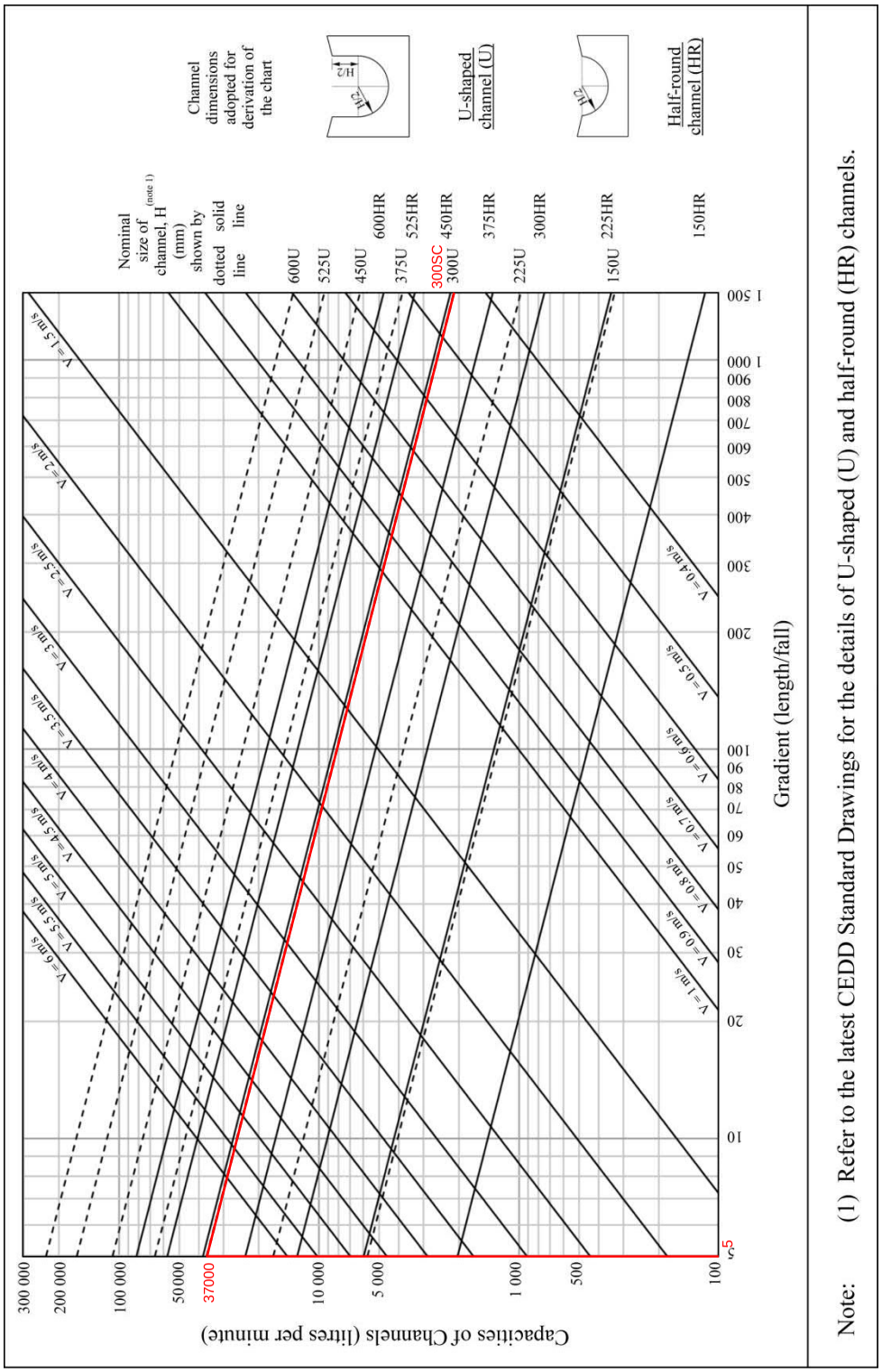


Figure 1 - Chart for the rapid design of U-shaped and half-round channels up to 600 mm

Note: (1) Refer to the latest CEDD Standard Drawings for the details of U-shaped (U) and half-round (HR) channels.

Drainage Design and Checking

Project No.:	P2676	Date:	22-Dec-25
Prepared by:	KAY	Checked by:	KT

Check for the Drainage Capactiy inside Area A1 (Proposed)

Total catchment area,	A1 (paved)	=	1377	m^2
Total catchment area,	A1 (vegetated)	=	600	m^2
Total catchment area,	A1 (grasscrete)	=	1103	m^2

Use Rational Method from Geo-Manual

$Q = kiA/3600$ where,

Q = Maximum runoff (lit/sec)
k = Runoff coefficient
i = Design mean intensity of rainfall (mm/hr)
A = Total catchment area (m^2)

Assume k = 0.85 (paved)
Assume k = 0.30 (flat,vegetated)

Longest distance from summit to outlet (Ld) = 167.90 m

Average fall, H = 8.09 m per 100m

From Bransby-Williams Equation (Geo-Manual)

$T_c = 0.14465 \times L_d / (H^{0.2} \times A^{0.1})$
= 7.16 min > 1.0 min
= 7.16 min

Assume a 1 in 10 year design rainfall return period for existing channel

Corrigendum No. 1/2022, Table 28 - Rainfall Incease 16.0% for End of 21st Centur

i = 208 mm/hr x 1.16 = 241.28 mm/hr
Q = kiA/60
= 9201 lit/min
= 0.153 m3/s

From Geo-Manual (Fig 8.7) 10% reduction in flow area for sedimentation reduction
For proposed 300 UC with 1 in 50 gradient
Maximum capacity = 12000 x 0.9
= 10800 lit/min > 9201 o.k.
The corresponding velocity = 2.53 m/s < 4 o.k.

Proposed Intensity A1

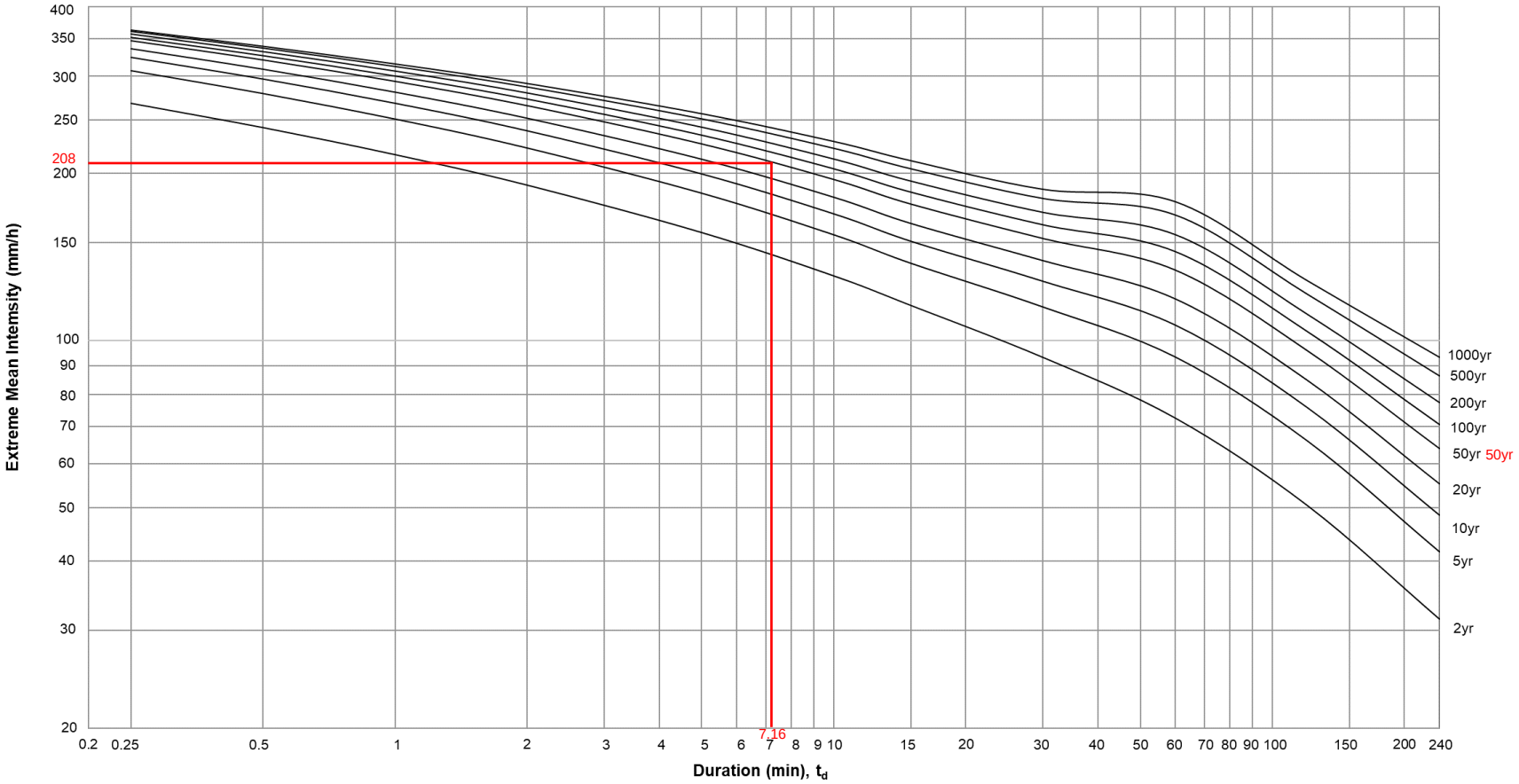


Figure 4a – Intensity-Duration-Frequency Curves of HKO Headquarters
(for durations not exceeding 4 hours)

Proposed Catchment A1

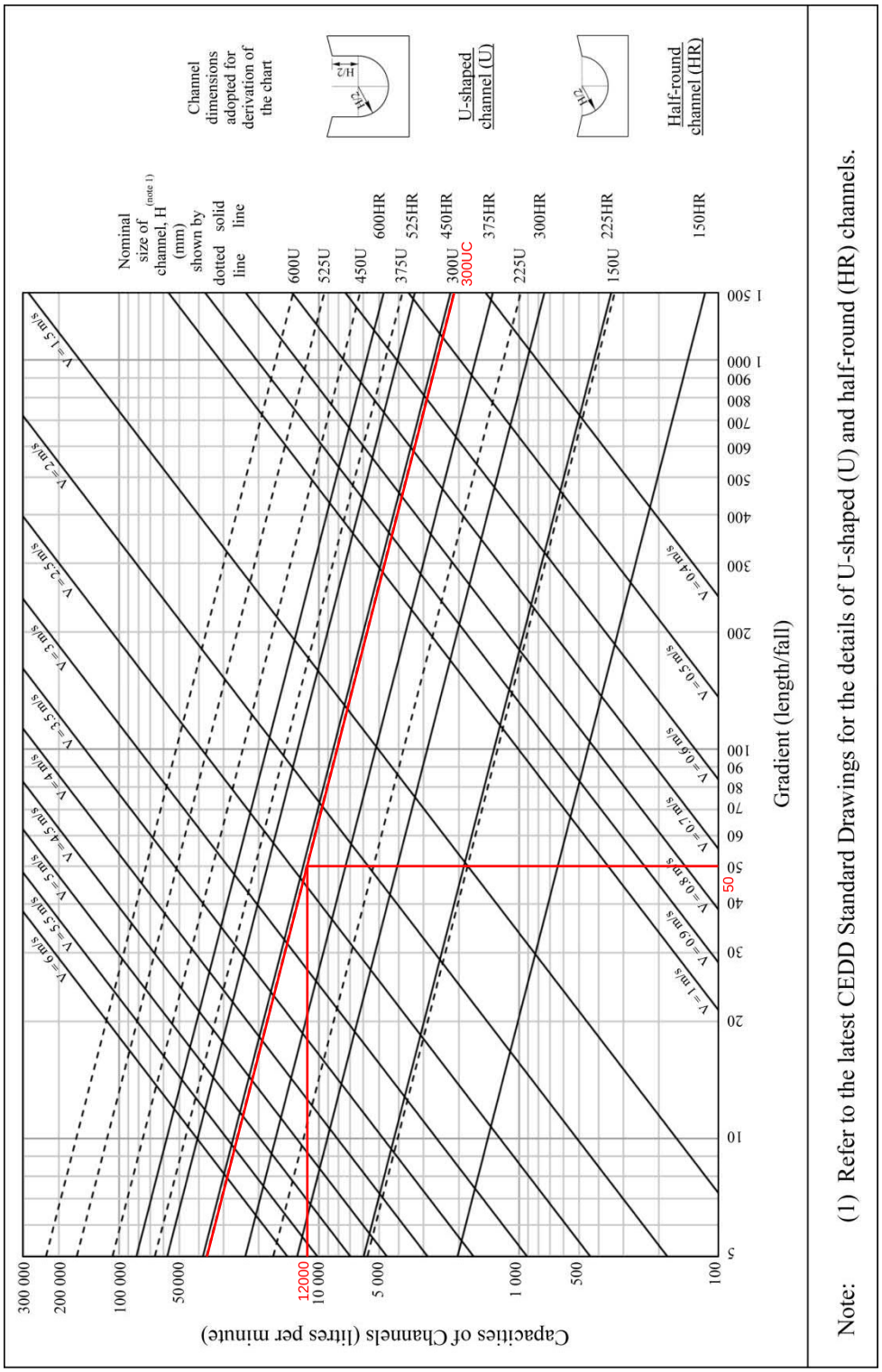


Figure 1 - Chart for the rapid design of U-shaped and half-round channels up to 600 mm

Note: (1) Refer to the latest CEDD Standard Drawings for the details of U-shaped (U) and half-round (HR) channels.

Drainage Design and Checking

Project No.:	P2676	Date:	22-Dec-25
Prepared by:	KAY	Checked by:	KT

Check for the Drainage Capactiy inside Area A1,A5,A6 (Proposed)

Total catchment area,	A1 (paved)	=	1377	m^2
Total catchment area,	A1,A5,A6 (vegetated)	=	919	m^2
Total catchment area,	A1 (grasscrete)	=	1103	m^2

Use Rational Method from Geo-Manual

$Q = kiA/3600$ where,

Q = Maximum runoff (lit/sec)
k = Runoff coefficient
i = Design mean intensity of rainfall (mm/hr)
A = Total catchment area (m^2)

Assume k = 0.85 (paved)
Assume k = 0.35 (steep,vegetated)

Longest distance from summit to outlet (Ld) = 185.70 m

Average fall, H = 7.32 m per 100m

From Bransby-Williams Equation (Geo-Manual)

$T_c = 0.14465 \times L_d / (H^{0.2} \times A^{0.1})$

= 8.00 min > 1.0 min

= 8.00 min

Assume a 1 in 10 year design rainfall return period for existing channel

Corrigendum No. 1/2022, Table 28 - Rainfall Incease 16.0% for End of 21st Centur

i = 205 mm/hr x 1.16 = 237.80 mm/hr

Q = kiA/60

= 9630 lit/min

= 0.160 m3/s

From Geo-Manual (Fig 8.7) 10% reduction in flow area for sedimentation reduction

For existing 300 SC with 1 in 5 gradient

Maximum capacity = 37000 x 0.9

= 33300 lit/min > 9630 o.k.

The corresponding velocity = 4.80 m/s > 4 o.k.

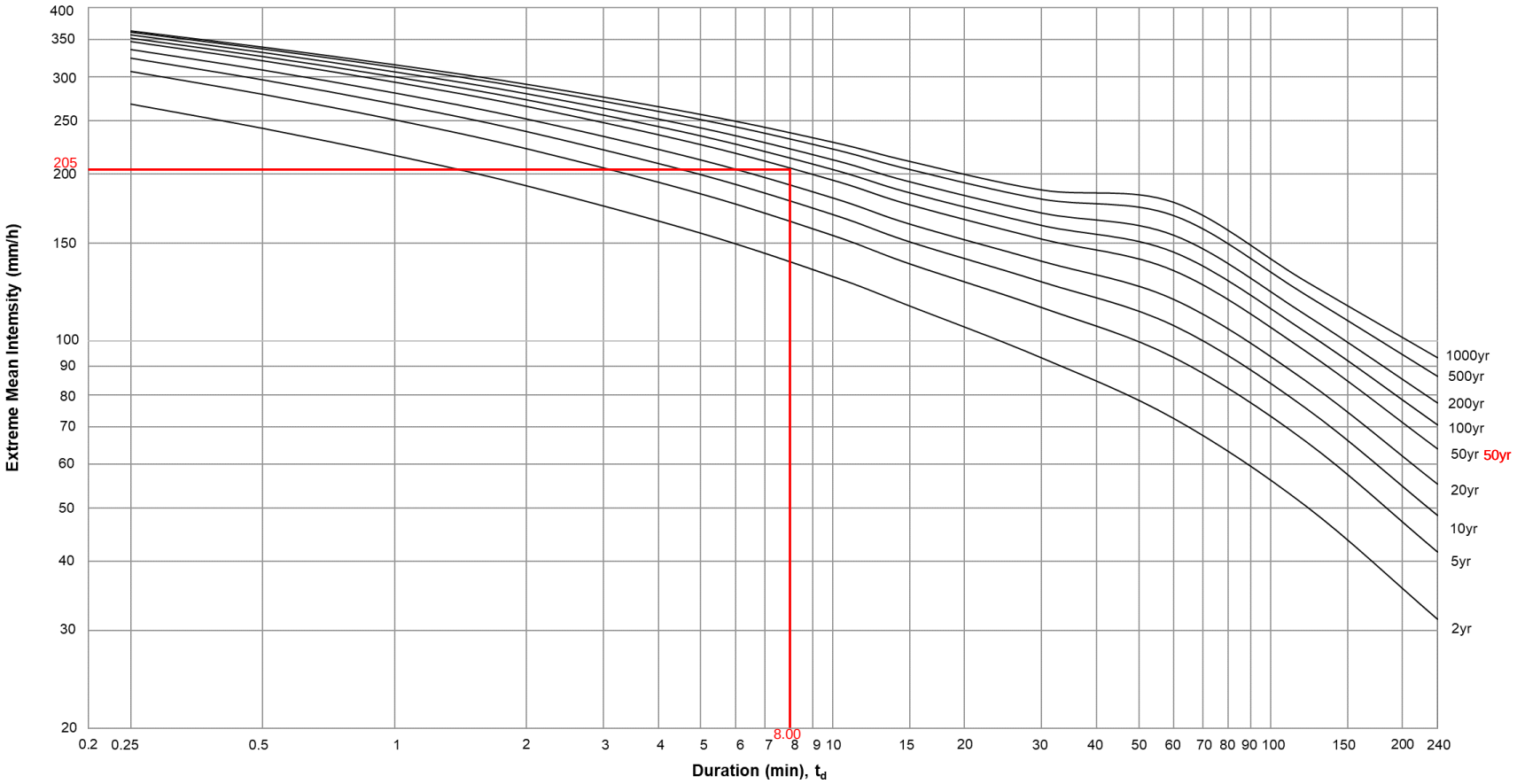


Figure 4a – Intensity-Duration-Frequency Curves of HKO Headquarters
(for durations not exceeding 4 hours)

Proposed Catchment A1,A5,A6

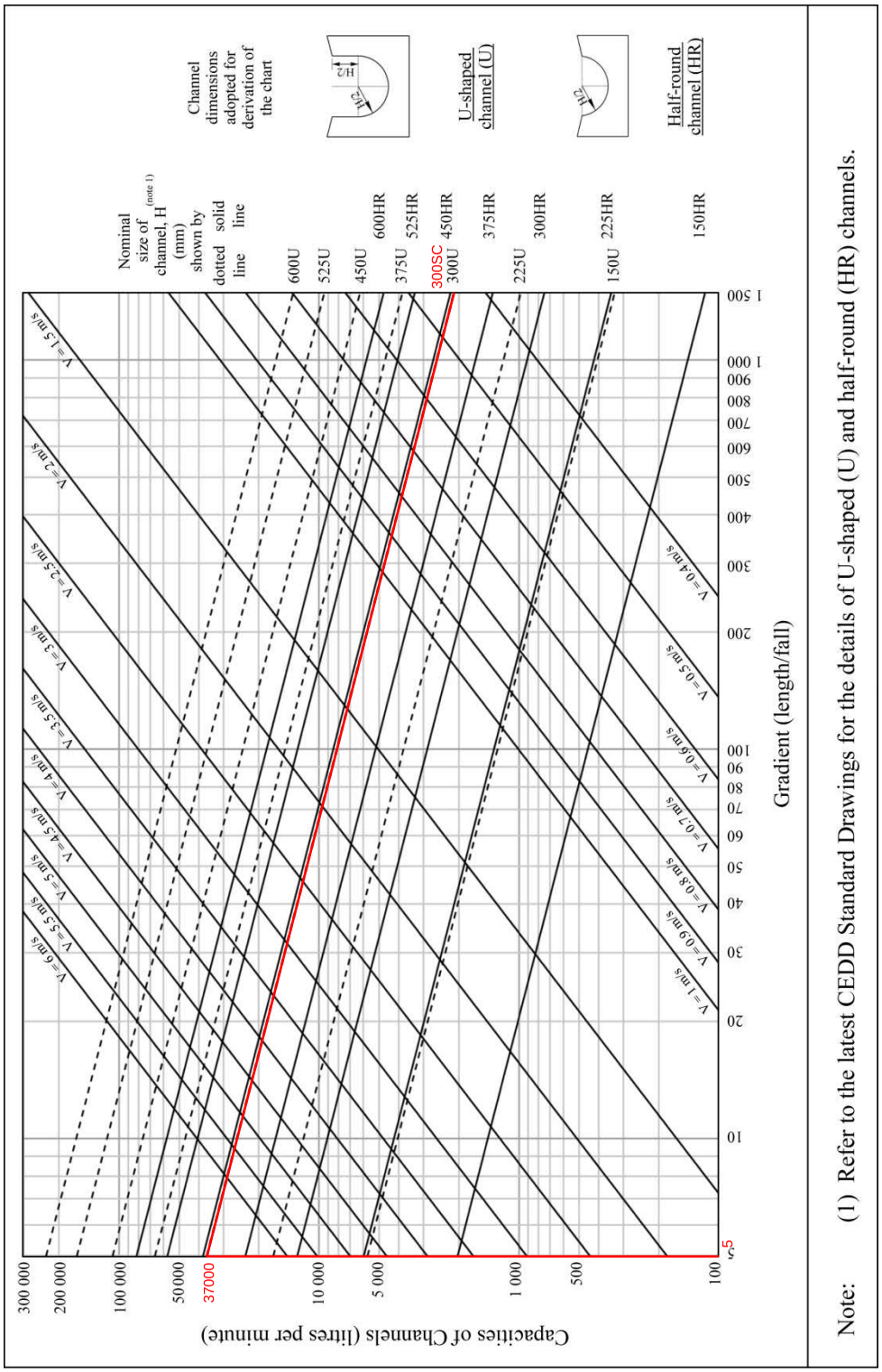


Figure 1 - Chart for the rapid design of U-shaped and half-round channels up to 600 mm

Note: (1) Refer to the latest CEDD Standard Drawings for the details of U-shaped (U) and half-round (HR) channels.

Drainage Design and Checking

Project No.:	P2676	Date:	22-Dec-25
Prepared by:	KAY	Checked by:	KT

Check for the Drainage Capactiy inside Area A2 (Existing)

Total catchment area, A2 (paved) = 0 m^2
Total catchment area, A2 (vegetated) = 14582 m^2

Use Rational Method from Geo-Manual

$Q = kiA/3600$ where,

Q = Maximum runoff (lit/sec)
k = Runoff coefficient
i = Design mean intensity of rainfall (mm/hr)
A = Total catchment area (m^2)

Assume k = 0.85 (paved)
Assume k = 0.35 (steep,vegetated)

Longest distance from summit to outlet (Ld) = 328.80 m

Average fall, H = 16.46 m per 100m

From Bransby-Williams Equation (Geo-Manual)

$T_c = 0.14465 \times L_d / (H^{0.2} \times A^{0.1})$
= 10.41 min > 1.0 min
= 10.41 min

Assume a 1 in 10 year design rainfall return period for existing channel

Corrigendum No. 1/2022, Table 28 - Rainfall Incease 16.0% for End of 21st Centur

i = 190 mm/hr x 1.16 = 220.40 mm/hr
Q = kiA/60
= 18748 lit/min
= 0.312 m3/s

From Geo-Manual (Fig 8.7) 10% reduction in flow area for sedimentation reduction
For existing 450 UC with 1 in 30 gradient
Maximum capacity = 44000 x 0.9
= 39600 lit/min > 18748 o.k.
The corresponding velocity = 3.65 m/s < 4 o.k.

Existing Intensity A2

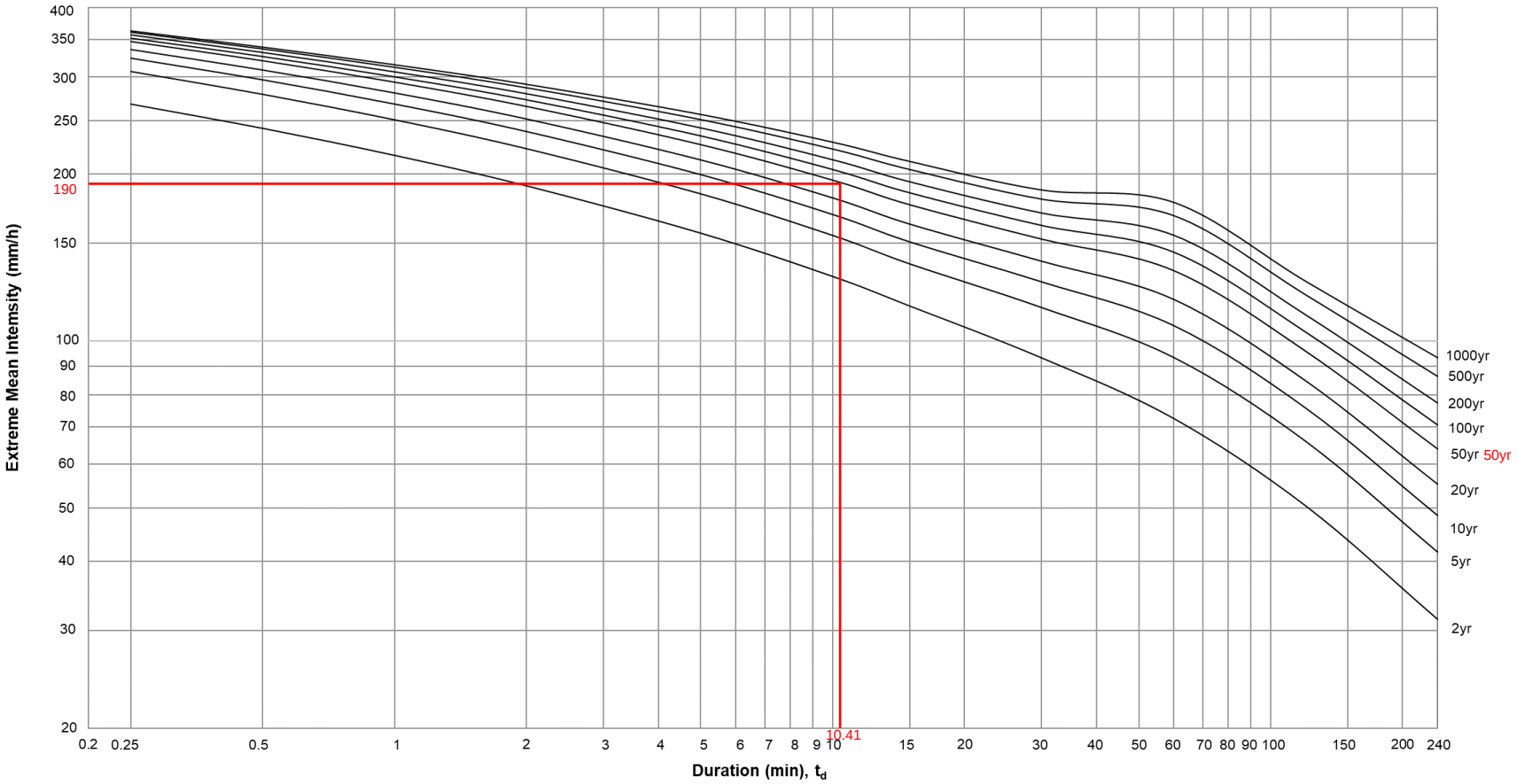


Figure 4a – Intensity-Duration-Frequency Curves of HKO Headquarters
(for durations not exceeding 4 hours)

Existing Catchment A2

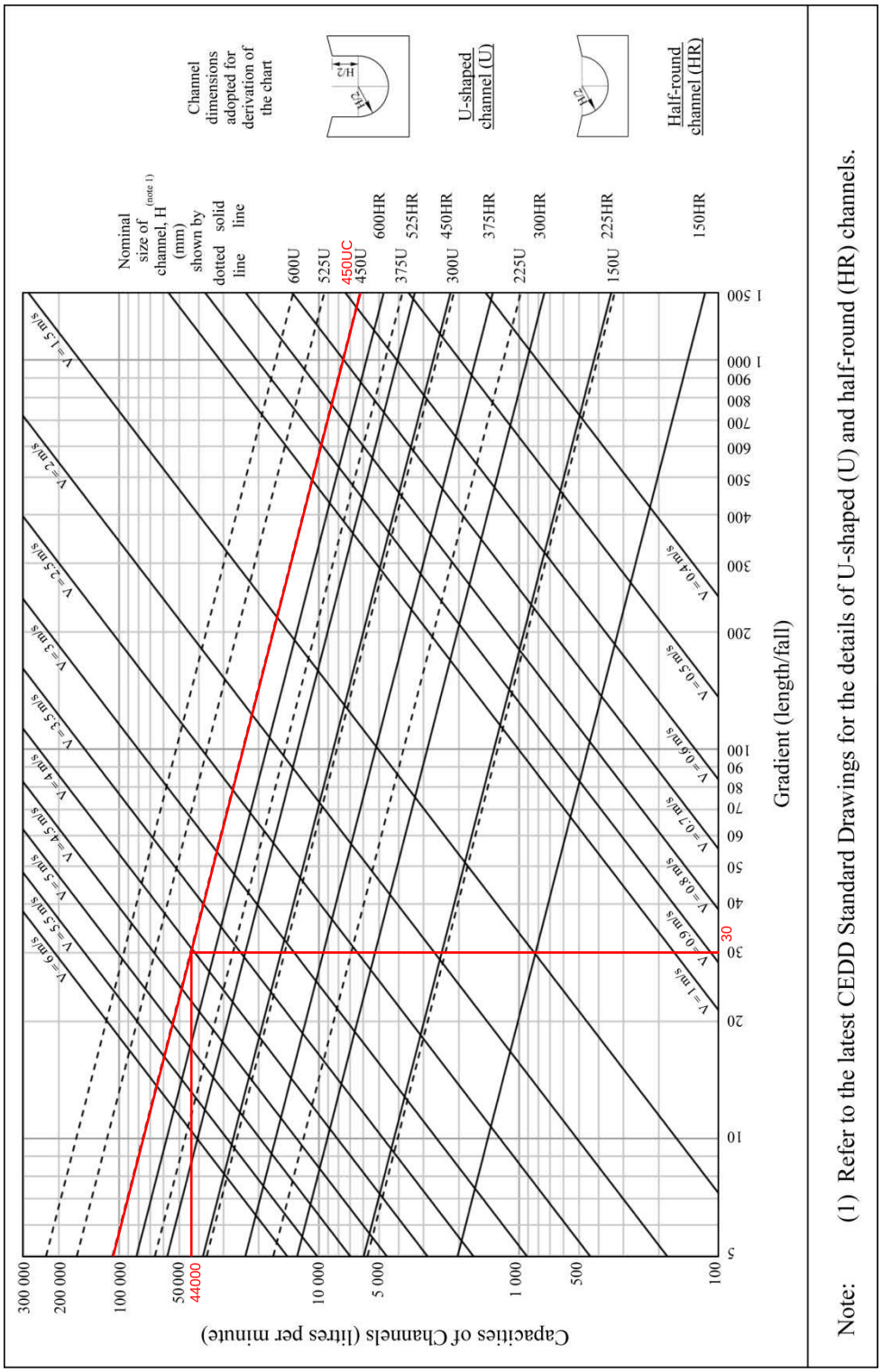


Figure 1 - Chart for the rapid design of U-shaped and half-round channels up to 600 mm

Note: (1) Refer to the latest CEDD Standard Drawings for the details of U-shaped (U) and half-round (HR) channels.

Drainage Design and Checking

Project No.:	P2676	Date:	22-Dec-25
Prepared by:	KAY	Checked by:	KT

Check for the Drainage Capactiy inside Area A2,A3,A4 (Existing)

Total catchment area, A2,A3,A4 (paved) = 0 m^2
Total catchment area, A2,A3,A4 (vegetated) = 14916 m^2

Use Rational Method from Geo-Manual

$Q = kiA/3600$ where,

Q = Maximum runoff (lit/sec)
k = Runoff coefficient
i = Design mean intensity of rainfall (mm/hr)
A = Total catchment area (m^2)

Assume k = 0.85 (paved)
Assume k = 0.35 (steep,vegetated)

Longest distance from summit to outlet (Ld) = 345.30 m

Average fall, H = 16.77 m per 100m

From Bransby-Williams Equation (Geo-Manual)

$T_c = 0.14465 \times L_d / (H^{0.2} \times A^{0.1})$
= 10.87 min > 1.0 min
= 10.87 min

Assume a 1 in 10 year design rainfall return period for existing channel

Corrigendum No. 1/2022, Table 28 - Rainfall Incease 16.0% for End of 21st Centur

i = 190 mm/hr x 1.16 = 220.40 mm/hr
Q = kiA/60
= 19177 lit/min
= 0.320 m3/s

From Geo-Manual (Fig 8.7) 10% reduction in flow area for sedimentation reduction
For existing 470 UC with 1 in 3 gradient
Maximum capacity = 140000 x 0.9
= 126000 lit/min > 19177 o.k.

Existing Intensity A2,A3,A4

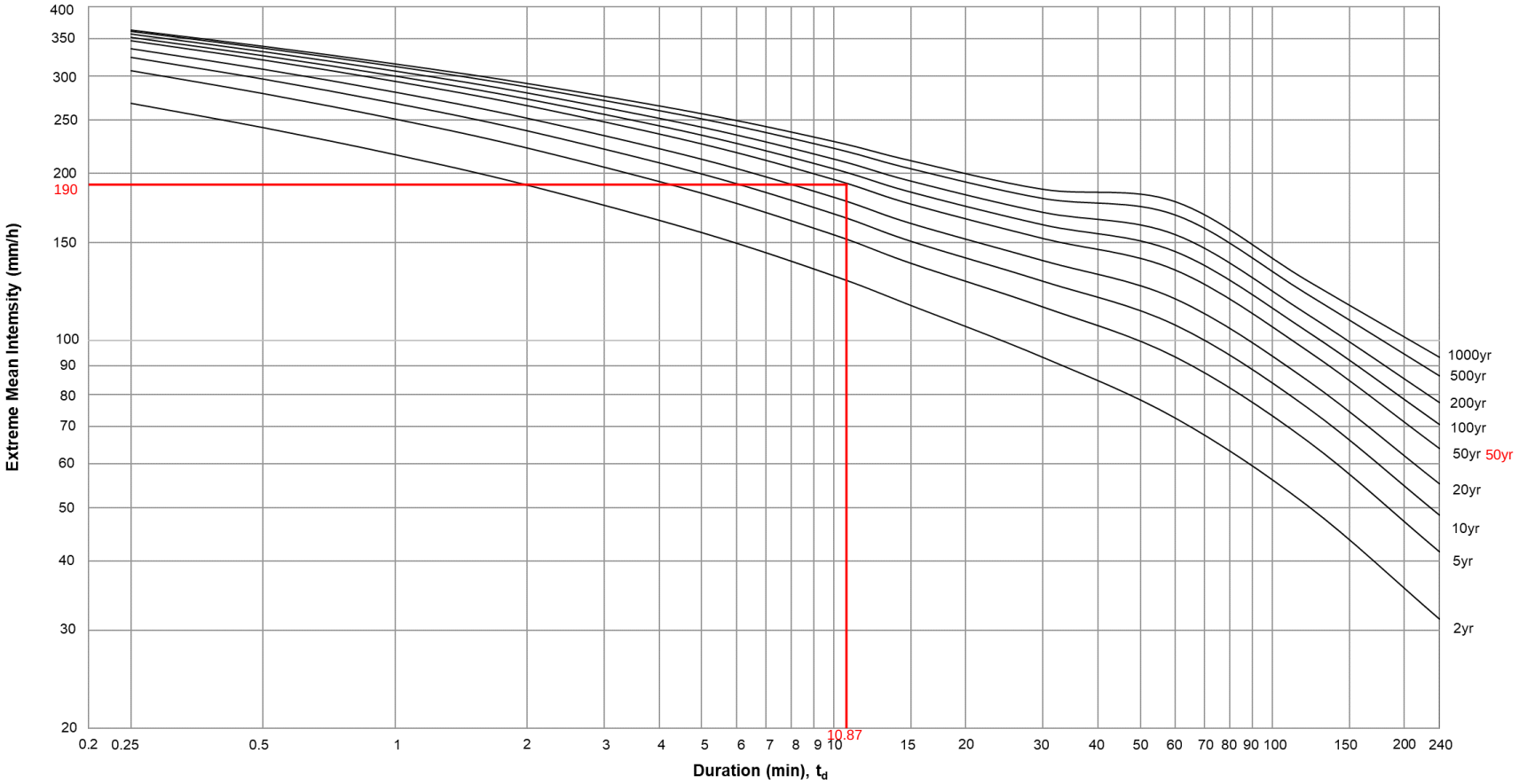


Figure 4a – Intensity-Duration-Frequency Curves of HKO Headquarters
(for durations not exceeding 4 hours)

Existing Catchment A2,A3,A4

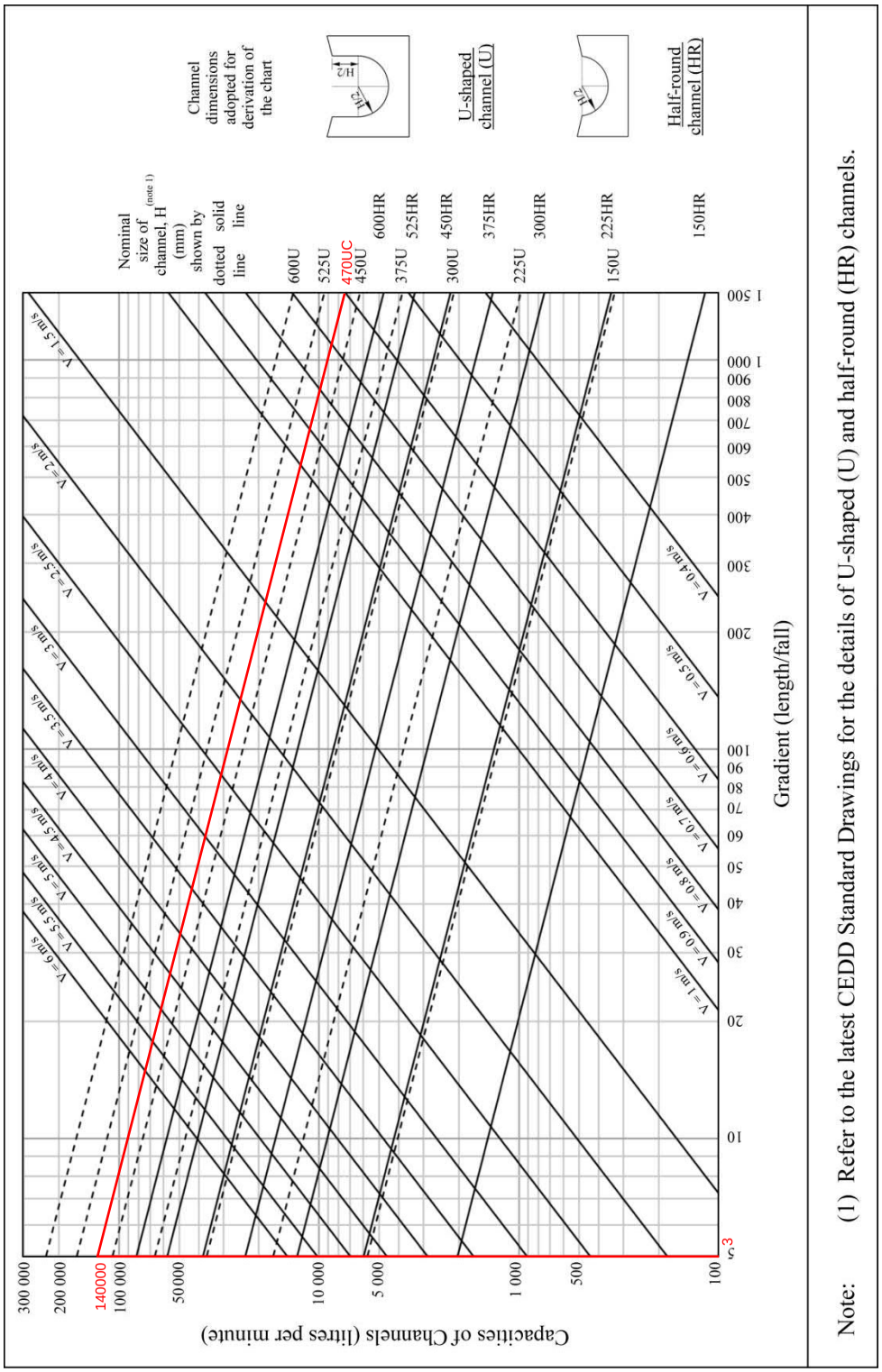


Figure 1 - Chart for the rapid design of U-shaped and half-round channels up to 600 mm

Note: (1) Refer to the latest CEDD Standard Drawings for the details of U-shaped (U) and half-round (HR) channels.

Appendix I

Photographic Record of Existing Drainage

尖鼻咀
TSIM BEI

停車場
Car Park

尖鼻咀警崗
Tsim Bei Tsui Police Post

DEEP WATER ROAD

N

1 2 3 4 5 6 7 8

LEGEND:

- ARTIFICIAL SLOPE
- CHANNEL WITH FLOW DIRECTION (0.80 WIDE OF CHANNEL)
- STEP CHANNEL WITH FLOW DIRECTION (0.80 WIDE OF STEP CHANNEL)
- BOUNDARY LINE & BOUNDARY POINT
- GATE
- PERMANENT BUILDING AND CANOPY
- TREE WITH TREE NO.
- INCLINED WALL
- GRAVE
- CONTOURS
- TS TEMPORARY STRUCTURE
- PB PILLAR BOX
- HR HAND RAILING
- HD HOARDING
- KL KERB LINE (BOTTOM)
- ST SLOPE TOP
- SB SLOPE BOTTOM
- FX FENCE
- BARRIERS
- BN BENCH
- ELECTIC POLE
- SB SIGN BOARD
- SP SIGN POLE
- LP LAMP POST
- TP TELEPHONE POLE
- TL TRAFFIC LIGHT
- FH FIRE HYDRANT
- PM PARKING METER
- BOLLARD AT ROAD
- GULLY
- GRATING
- VALVE FIRE
- VALVE GAS
- VALVE WATER WORKS
- MH MANHOLE
- ATC MANHOLE, ATC
- CATV MANHOLE, CABLE TV
- E&M MANHOLE, ELECTRIC & MECHANICAL SERVICES DEPARTMENT
- HKTC MANHOLE, PCCW-HKT TELEPHONE LIMITED
- DSD MANHOLE, DRAINAGE SERVICES DEPARTMENT
- PL MANHOLE, PUBLIC LIGHTING
- HCL MANHOLE, HUTCHISON COMMUNICATION LIMITED
- HGC MANHOLE, HUTCHISON GLOBAL CROSSING LIMITED BROADBAND
- CP CATCH PIT
- MF MANHOLE, FOUL WATER/SEWER
- MS MANHOLE, STORM WATER
- PCW MANHOLE, PACIFIC CENTURY CABLE & WIRELESS
- NWT MANHOLE, NEW WORLD TELEPHONE
- CLP MANHOLE, CLP POWER
- WHT MANHOLE, WHAFT T & T
- T&T MANHOLE, TOWNGAS TELECOM
- PROPOSED SITE BOUNDARY
- RX TRAFFIC BARRIER

* Lamp Pole number is referred to GeoInfo Map system (for client's reference only)

ABBREVIATION:

BD	BOULDER
BE	BERM
BS	BOUNDARY STONE
CA	CANOPY
CUL	CULVERT
CO	COLUMN
CONC	CONCRETE
EB	ELECTRIC BOX
END	END OF OBJECT
FD	FLOOR DRAIN
FP	FOOTPATH
IL	INVERT LEVEL
NU	NULLAH
OH	OVERHANG
PL	PLATFORM
PO	POND
RC	RAIN GAUGE/METER TUBE
RP	RAMP
RU	RUIN
SS	SHRINE
TS	TEMPORARY STRUCTURE
VB	VEHICLE BARRIERS
WE	WELL
WIP	WORK IN PROGRESS
WT	WATER TANK

NOTE
ALL SPOT LEVEL POSITIONS ARE THE DECIMAL POINT OR A CROSS

SCALE 1 : 200 (A0 SIZE)

metres 0 4 8 12 16 20 metres

HONG KONG METRIC GRID
PRINCIPAL DATUM HONG KONG
ALL UNITS IN METRES

DATE OF SURVEY: JANUARY 2024

REVISION	DATE	DESCRIPTION
INITIAL	24/02/2024	---

ARCHITECTURAL SERVICES DEPARTMENT

Topographical Survey
Guangdong–Hong Kong–Macao Greater Bay Area (GBA)
Air Quality Laboratory and Meteorological Monitoring Supersite

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PLAN NO. 9594/01(SHEET 1 OF 3)

PRELIMINARY
(24/02/2024)
JESSICA PUI YEE LEUNG MHKIS RPS(LS)
REGISTERED PROFESSIONAL SURVEYOR

1

2

3
不得擅進
NO UNAUTHORISED ENTRY

4

5

6
T113
T114
T115

7

8

Appendix 4

Ecological Impact Assessment

Quotation Ref.:23-03296 - Provision of Services for Conducting Ecological Impact Assessment for Planning a Supersite for Greater Bay Area Air Quality Laboratory and Meteorological Monitoring at Tsim Bei Tsui

Ecological Impact Assessment Report

PREPARED FOR

環境保護署
Environmental Protection Department

Environmental Protection Department

DATE
16 April 2025

REFERENCE
0712335

DOCUMENT DETAILS

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SIGNATURE PAGE

Quotation Ref.:23-03296 - Provision of Services for Conducting Ecological Impact Assessment for Planning a Supersite for Greater Bay Area Air Quality Laboratory and Meteorological Monitoring at Tsim Bei Tsui

Ecological Impact Assessment Report

0712335

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1. INTRODUCTION

1.1 PROJECT BACKGROUND

The Chief Executive announced a new policy in the 2022 Policy Address to strengthen regional cooperation in responding to climate change and air pollution control by establishing a supersite for Greater Bay Area (GBA) Air Quality Laboratory and Meteorology Monitoring (the "Supersite" or "the Project") in Hong Kong to provide regional air pollution and weather monitoring and forecasting services.

Tsim Bei Tsui (TBT) is identified as the preferred area for siting the GBA Supersite as it is located near the centre of the Pearl River Estuary, with few nearby residents and no major pollution sources, making it suitable for regional monitoring without interference from local pollutants. The Project Site is proposed to be in Tsim Bei Tsui at Deep Bay Road, opposite to the Tsim Bei Tsui Police Post. The proposed Project Site is shown in ***Figure 1.1***.

The Project Site is currently zoned as "Green Belt" ("GB") on the approved Lau Fau Shan & Tsim Bei Tsui Outline Zoning Plan (OZP) No. S/YL-LFS/11. According to the Schedule of Uses of the pertinent OZP, the proposed development of Supersite falls into the "Government Use (not elsewhere specified)" on Column 2, such that permission from the Town Planning Board (TPB) is required. Such application under Section 16 (s.16) of the Town Planning Ordinance to the TPB shall be arranged separately at later stage.

The site also falls in the Wetland Buffer Area (WBA) of the Deep Bay Area, an ecological impact assessment (EcoIA) would need to be submitted for obtaining planning permission from the TPB according to the TPB guidelines (TPB PG-No. 12C). The Assessment Area for the purpose of the ecological impact assessment includes areas within 500 m from the boundary of the Project as shown in ***Figure 1.1***.

A 12-month ecological survey was conducted for the Project, covering dry and wet seasons between November 2023 and October 2024. This Ecological Impact Assessment Report is prepared to assess the potential impacts associated with the construction and operation of the Project.

1.2 OBJECTIVE OF THE REPORT

The main objective of the report is to summarise the findings of the literature review, ecological field surveys and analysis of all data collected so as to provide ecological data for assessing the potential impact that would arise from the proposed works. The aim is to protect, maintain or rehabilitate the natural environment as far as possible and to facilitate mitigation measures to be drawn up to avoid or minimise impact, particularly to any ecologically important species and/or habitats.

1.3 STRUCTURE OF THE REPORT

Following this introductory section, the remainder of this Report is arranged as follows:

- *Section 2* Relevant Legislation and Assessment Criteria
- *Section 3* Literature Review

Legend

- Project Site
- 500m Assessment Area

南沙莆
Nam Sha Po

DEEP BAY ROAD

海堤 Seawall

化糞池

深灣路

DEEP BAY ROAD

尖鼻咀
Tsim Bei Tsui

碼頭
Jetty

尖鼻咀
有機農莊

施工中

墓地

墓地
Graves

墓地
Graves

10
20
30
50
50
50
10
20

N
Metres
0 100 200

Figure 1.1

Project Site and 500m Assessment Area

ERM

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Date: 11/11/2024

- *Section 4* Ecological Survey Methodology
- *Section 5* Survey Findings
- *Section 6* Evaluation of Habitat and Species
- *Section 7* Impact Identification and Evaluation
- *Section 8* Cumulative Impacts
- *Section 9* Mitigation and Precautionary Measures
- *Section 10* Residual Ecological Impacts
- *Section 11* Conclusion

2. RELEVANT LEGISLATION AND ASSESSMENT CRITERIA

The relevant legislation and associated guidelines applicable to this Report include the following:

- Forests and Countryside Ordinance (Cap. 96);
- Wild Animals Protection Ordinance (Cap. 170);
- Protection of Endangered Species of Animals and Plants Ordinance (Cap. 586);
- Country Parks Ordinance (Cap. 208);
- Town Planning Ordinance (Cap. 131);
- Environmental Impact Assessment Ordinance (Cap. 499) and the Technical Memorandum on Environmental Impact Assessment Process under the Environmental Impact Assessment Ordinance (EIAO-TM);
- Environmental Impact Assessment Ordinance (EIAO) Guidance Notes No. 6/2023, 7/2023, 10/2023 and 11/2023;
- Hong Kong Planning Standards and Guidelines Chapter 10 (HKPSG);
- United Nations Convention on Biodiversity (1992);
- The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES);
- The International Union for Conservation of Nature (IUCN) Red List of Threatened Species; and
- Peoples' Republic of China (PRC) Regulations and Guidelines.

3. LITERATURE REVIEW

A review of findings from relevant scientific papers, reports and previous environmental impact assessment (EIA) reports adjacent to the Assessment Area was conducted to identify any available ecological information. Based on recent aerial photos and relevant previous studies, habitats and species of conservation importance previously recorded were identified. General studies (if any), which may not necessarily focus on the Assessment Area, was also reviewed and relevant information was extracted from the report(s). While unpublished, additional baseline information from Agreement No. CE 31/2022 (CE) Land Use Review Study for Lau Fau Shan, Tsim Bei Tsui and Pak Nai Areas - Feasibility Study (Feasibility Study) overlapping with the Assessment Area was also referenced and included in the findings with permission obtained from the project proponent.

3.1 SITE OF CONSERVATION IMPORTANCE

The Assessment Area falls within the sites of conservation importance, including Mai Po Inner Deep Bay Ramsar Site, Sites of Special Scientific Interest (SSSIs), Wetland Conservation Area (WCA), Wetland Buffer Area (WBA) and Coastal Protection Area (CPA), as shown in ***Figure 3.1*** and detailed in following sections.

3.1.1 MAI PO INNER DEEP BAY RAMSAR SITE

Mai Po Inner Deep Bay has been designated as a Ramsar Site in 1995 under the Ramsar Convention. The Ramsar Site covers about 1500ha of wetland with a high diversity of habitats, including intertidal mudflats backed by mangal, tidal shrimp ponds (gei wais), fishponds and reedbeds. The mangal is the largest in Hong Kong while the reedbed is the largest in Hong Kong and Guangdong Province.

Management of the Mai Po Inner Deep Bay Ramsar Site is determined by a management plan maintained by Agriculture, Fisheries and Conservation Department. The management plan divided the Ramsar Site into several zones to determine the management actions for the area.

3.1.2 SITES OF SPECIAL SCIENTIFIC INTEREST (SSSI)

A total of three SSSIs, namely Tsim Bei Tsui SSSI, Inner Deep Bay SSSI, and Tsim Bei Tsui Egretry SSSI, fall within the Assessment Area. Their locations are shown in ***Figure 3.1***. Details of SSSIs are as presented below.

3.1.2.1 INNER DEEP BAY SSSI

Inner Deep Bay SSSI was designated in 1986 in recognition of the ecological importance of the mudflat as a feeding and resting ground for waterbirds. Approximately 50,000 waterbirds of about 300 species visit the mudflat every winter. Among these species over 20 are considered to be globally threatened, including one fifth of the global population of Black-faced Spoonbill. The mudflat and shallow waters also support of wide variety of organisms that are of economic value such as mangrove crabs (e.g. *Scylla paramamosain*) and shrimps (e.g. *Metapenaeus* sp.), as well as being the type locality of Sesarmine Crab *Perisesarma maipoensis* which is endemic to the site.

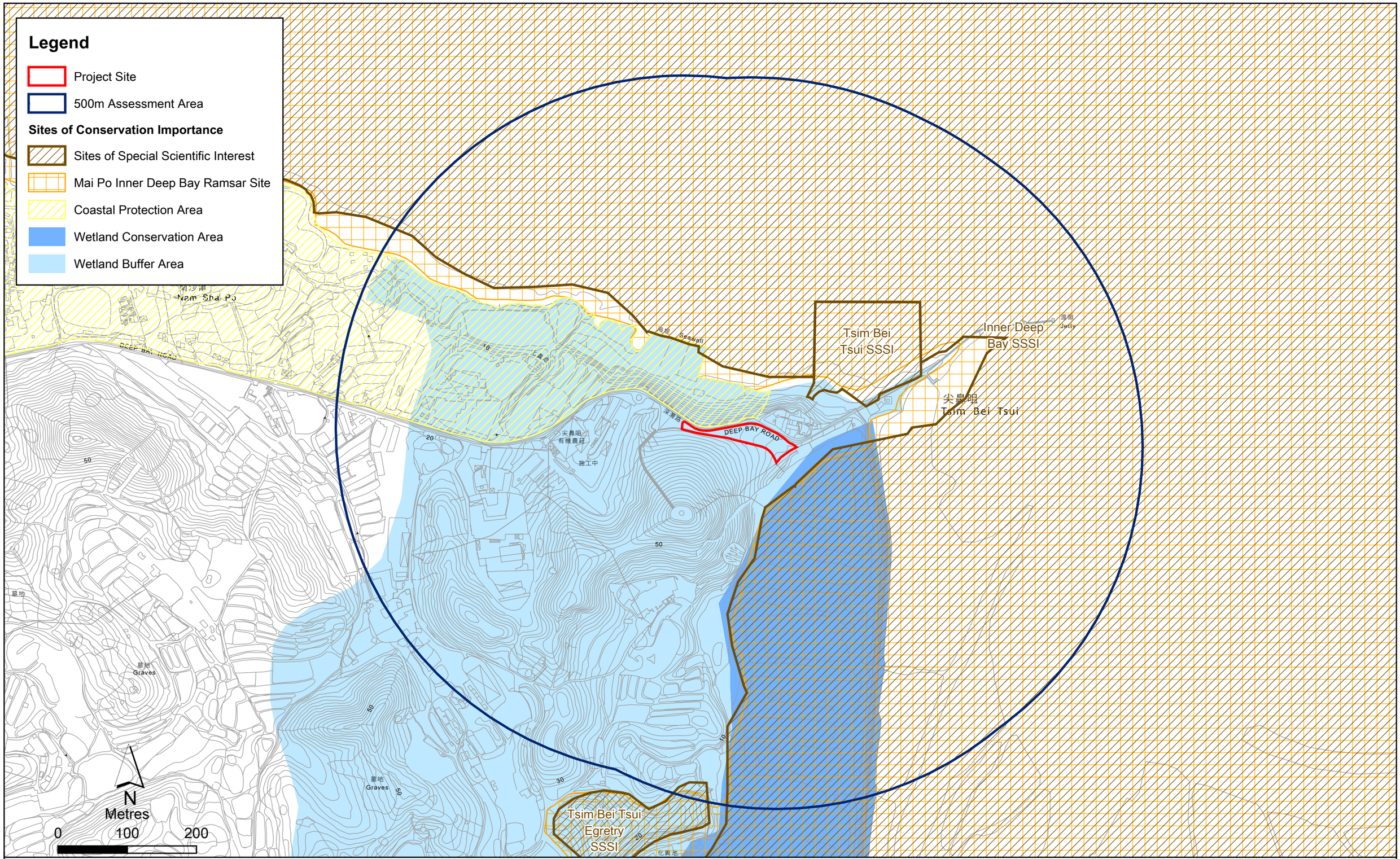

Figure 3.1

Sites of Conservation Importance

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Date: 19/2/2025

3.1.2.2 TSIM BEI TSUI SSSI

Tsim Bei Tsui SSSI was designated in 1985 to protect the mature mangrove community present at the site. Representative species present include *Bruguiera gymnorhiza*, the site is also the only known habitat for the large mangrove pulmonate snail, *Ellobium polita*.

3.1.2.3 TSIM BEI TSUI EGRETRY SSSI

Tsim Bei Tsui Egretry SSSI was designated in 1989 and used to support several hundred pairs of egrets and herons including Little Egret, Great Egret, Cattle Egret, Chinese Pond Heron and Black-crowned Night Heron. However, the egretry was not included in AFCD's list of active egretries in 2006 and has been abandoned since 1991[1].

3.1.3 WETLAND CONSERVATION AREA (WCA)

Fishponds continuous and adjoining to the Deep Bay Area are designated under TPB PG-No. 12C as the WCA, with the aim of protecting the integrity of the Deep Bay wetland ecosystem. Any development in the WCA should normally comply with the "No-Net-Loss in Wetland" principle. Other than permitted essential conservation or infrastructural works, no developments involving pond filling or other works detrimental to the ecological function of the wetland are allowed within the WCA.

3.1.4 WETLAND BUFFER AREA (WBA)

The WBA is also designated under TPB PG-No. 12C to include a buffer of about 500m on the landward side of the WCA. The planning intention is to protect the ecological integrity of wetlands within the WCA and prevent any development that would have a negative off-site disturbance impact on the WCA. Developments within the WBA are required to demonstrate that ecological impacts on the WCA will be minimized and any negative ecological impacts will be fully mitigated through positive measures.

3.1.5 COASTAL PROTECTION AREA (CPA)

CPA is distributed along the coastal area of the Tsim Bei Tsui. This zoning is intended to conserve, protect and retain the natural coastlines and the sensitive coastal natural environment, including attractive geological features, physical landform or area of high landscape, scenic or ecological value, with a minimum of built development. There is a general presumption against development in this zone. In general, only developments that are needed to support the conservation of the existing natural landscape or scenic quality of the area or are essential infrastructure projects with overriding public interest may be permitted. These coastal areas should be protected against land filling, land excavation or stream diversion and encroachment by developments, for which permission from Town Planning Board (TPB) is required.

[1] AFCD (2007). Review of Egretries in Hong Kong. AFCD Biodiversity Newsletter. Issue no. 14, March 2007.

3.2 PREVIOUSLY RECORDED SPECIES OF CONSERVATION IMPORTANCE

Relevant literature that contains baseline information on the terrestrial ecological resources of the Assessment Area is listed in ***Table 3-1*** below. A map showing their Assessment Areas, whenever defined, is provided in ***Figure 3.2***.

- Approved Mai Po & Fairview Park Outline Zoning Plan S/YL-MP/6
- TPB PG-No. 12C - Application for Developments within Deep Bay Area under Section 16 of the Town Planning Ordinance
- Protection of Wetlands in Hong Kong, AFCD *(*AFCD, 2000*)*[2]
- Hong Kong Biodiversity, an AFCD Biodiversity Newsletter (AFCD, 2007)[3]
- Mai Po Inner Deep Bay Ramsar Site Management Plan (AFCD, 2011)[4]
- Monthly Waterbird Monitoring Summer and Winter Report 2017-2022 (HKBWS, 2022)[5]
- The Avifauna of Hong Kong[6]
- A Field Guide to the Terrestrial Mammals of Hong Kong (AFCD, 2007)[7]
- *Pteroptyx maipo* Ballantyne, a new species of bent-winged firefly (Coleoptera: Lampyridae) from Hong Kong, and its relevance to firefly biology and conservation. (Ballantyne et. al., 2011)[8]
- A new species of firefly from Hong Kong – *Pteroptyx maipo* (Yiu, V, 2011)[9]
- A study of Rhagophthalmidae and Lampyridae in Hong Kong with descriptions of new species (Coleoptera) (Yiu, V, 2011)[10]
- Spraints demonstrate small population size and reliance on fishponds for Eurasian otter (*Lutra lutra*) in Hong Kong (McMillan et al., 2022)[11]
- Forgotten but not Gone: Rediscovery of Eurasian Otter *Lutra lutra* in Lantau, Hong Kong (Hui et al., 2024)[12]

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[2] AFCD (2000). Legislative Council Paper NO. CB(2) 397/00-01 (03) – Protection of Wetlands in Hong Kong. Information reviewed.
[3] AFCD (2007). Camera Trap Survey of Hong Kong Terrestrial Mammals in 2002-06. Issue no. 15, December 2007.
[4] AFCD (2011). Mai Po Inner Deep Bay Ramsar Site Management Plan.
[5] HKBWS (2024). Mai Po Inner Deep Bay Ramsar Site Waterbird Monitoring Programme 2017-2022.
[6] Carey et. al., (2001) The Avifauna of Hong Kong. Hong Kong Bird Watching Society, Hong Kong.
[7] Shek, C.T. (2007). A Field Guide to the Terrestrial Mammals of Hong Kong
[8] Ballantyne et. al. (2011). *Pteroptyx maipo* Ballantyne, a new species of bent-winged firefly (Coleoptera: Lampyridae) from Hong Kong, and its relevance to firefly biology and conservation. Zootaxa, 2931, 8-34
[9] Yiu, V. (2011). A new species of firefly from Hong Kong – *Pteroptyx maipo* Ballantyne, 2011. Insect News (Hong Kong Entomological Society Newsletter), 3, 2-7.
[10] Yiu, V. (2017). A study of Rhagophthalmidae and Lampyridae in Hong Kong with descriptions of new species (Coleoptera): Part 2. Lampyrid 4: 59-111
[11] McMillan, S. E., Wong, A. T. C., Tang, S. S. Y., Yau, E. Y. H., Gomersall, T., Wong, P. Y. H., …Bonebrake, T. C. (2022). Spraints Demonstrate Small Population Size and Reliance on Fishponds for Eurasian Otter (Lutra lutra) in Hong Kong. *Conservation Science and Practice*, *5*(1).
[12] Hui, M. K. Y., Leong, A. K. Y., Zhang, H., Yang, F., Yeung, H. Y., Lo, Y. F. P., Yang, J. H. (2024). Forgotten but not Gone: Rediscovery of Eurasian Otter Lutra lutra in Lantau, Hong Kong. *IUCN Otter Spec. Group Bull. 41(5)* 2024.

Legend

- Project Site
- 500m Assessment Area

Study Areas from Previous Studies

- CE-31/2022 Land Use Review Study for Lau Fau Shan, Tsim Bei Tsui and Pak Nai Areas - Feasibility Study (Potential Development Area)
- CE-31/2022 Land Use Review Study for Lau Fau Shan, Tsim Bei Tsui and Pak Nai Areas - Feasibility Study (500m from Potential Development Area)

N

Metres

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Figure 3.2

Previous Studies and their Study Areas

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Date: 11/11/2024

- Agreement No. CE 31/2022 (CE) Land Use Review Study for Lau Fau Shan, Tsim Bei Tsui and Pak Nai Areas - Feasibility Study (Feasibility Study)[13]

TABLE 3-1 PREVIOUS STUDIES RELEVANT TO THE ASSESSMENT AREA

Study	Survey Period	Flora and Fauna Groups Surveyed
AFCD, 2007[14]	2002 – 2006	Terrestrial Mammal
Agreement No. CE 31/2022 (CE)[15]	Apr 2023 – Mar 2024	Habitat and Vegetation, Terrestrial Fauna, Avifauna, Herpetofauna, Aquatic Fauna, Firefly
McMillan et al., 2022	2018 – 2019	Mammal
Yiu, V, 2011	N/A	Firefly
HKBWS, 2024a[16]	2018	Avifauna
HKBWS, 2024b[17]	Oct 2018 – Mar 2023	Avifauna

Based on the existing ecological baseline information, one (1) flora, eight (8) mammals, ninety-four (94) avifauna, six (6) butterflies, one (1) firefly, and three (3) intertidal species of conservation importance were previously recorded within the 500m Assessment Area. The species of conservation importance with known locations are shown on ***Figure 3.3.***

3.2.1 HABITAT AND VEGETATION

Based on a review of the recent aerial photos and the habitat maps prepared for several approved EIA studies, the identified major habitats are woodland, plantation, shrubland, seasonally wet grassland, watercourse, fishpond, mangrove, village area, developed area, and mudflat/ coastal water body.

3.2.2 FLORA SPECIES OF CONSERVATION IMPORTANCE RECORDED IN PREVIOUS STUDIES

One (1) flora species of conservation importance was previously recorded within the current Assessment Area. Details of the flora species of conservation importance are shown in ***Table 3-2***.

[13] Agreement No. CE 31/2022 (CE) Land Use Review Study for Lau Fau Shan, Tsim Bei Tsui and Pak Nai Areas - Feasibility Study (Feasibility Study)
[14] Shek, C.T., Chan, C.S.M., and Wan, Y.F. (2007) Camera Trap Survey of Hong Kong Terrestrial Mammals in 2002-06. *Hong Kong Biodiversity*, *15*, 1-11.
[15] Agreement No. CE 31/2022 (CE) Land Use Review Study for Lau Fau Shan, Tsim Bei Tsui and Pak Nai Areas - Feasibility Study (Feasibility Study)
[16] HKBWS (2024a). Hong Kong Bird Report 2018.
[17] HKBWS (2024b).Mai Po Inner Deep Bay Ramsar Site Waterbird Monitoring Programme 2018-2023.

Legend

- Project Site
- 500m Assessment Area

Species of Conservation Importance

Flora

- *Aquilaria sinensis*

Mammal

- Chinese Noctule
- Himalayan Leaf-nosed Bat
- Japanese Pipistrelle
- Least Horseshoe Bat
- Leopard Cat
- Small Indian Civet
- Core Area of OtterPopulation in Hong Kong

Avifauna

- Black-capped Kingfisher
- Chinese Hwamei
- Chinese Pond Heron
- Chinese Sparrowhawk
- Collared Crow
- Collared Scops Owl
- Common Greenshank
- Eastern Buzzard
- Great Egret
- Greater Coucal
- Little Egret
- Northern Goshawk
- Red-billed Starling
- White-throated Kingfisher
- Zitting Cisticola

Reptile

- Four-clawed Gecko

Butterfly

- Blackvein Sergeant
- Common Awl
- Common Cerulean
- Danaid Egg-fly
- Swallowtail
- Tiny Grass Blue

Firefly

- Maipo Bent-winged Firefly

Remarks:
Some species of conservation importance are not indicated in the figure due to lack of detailed information on the location within literature.

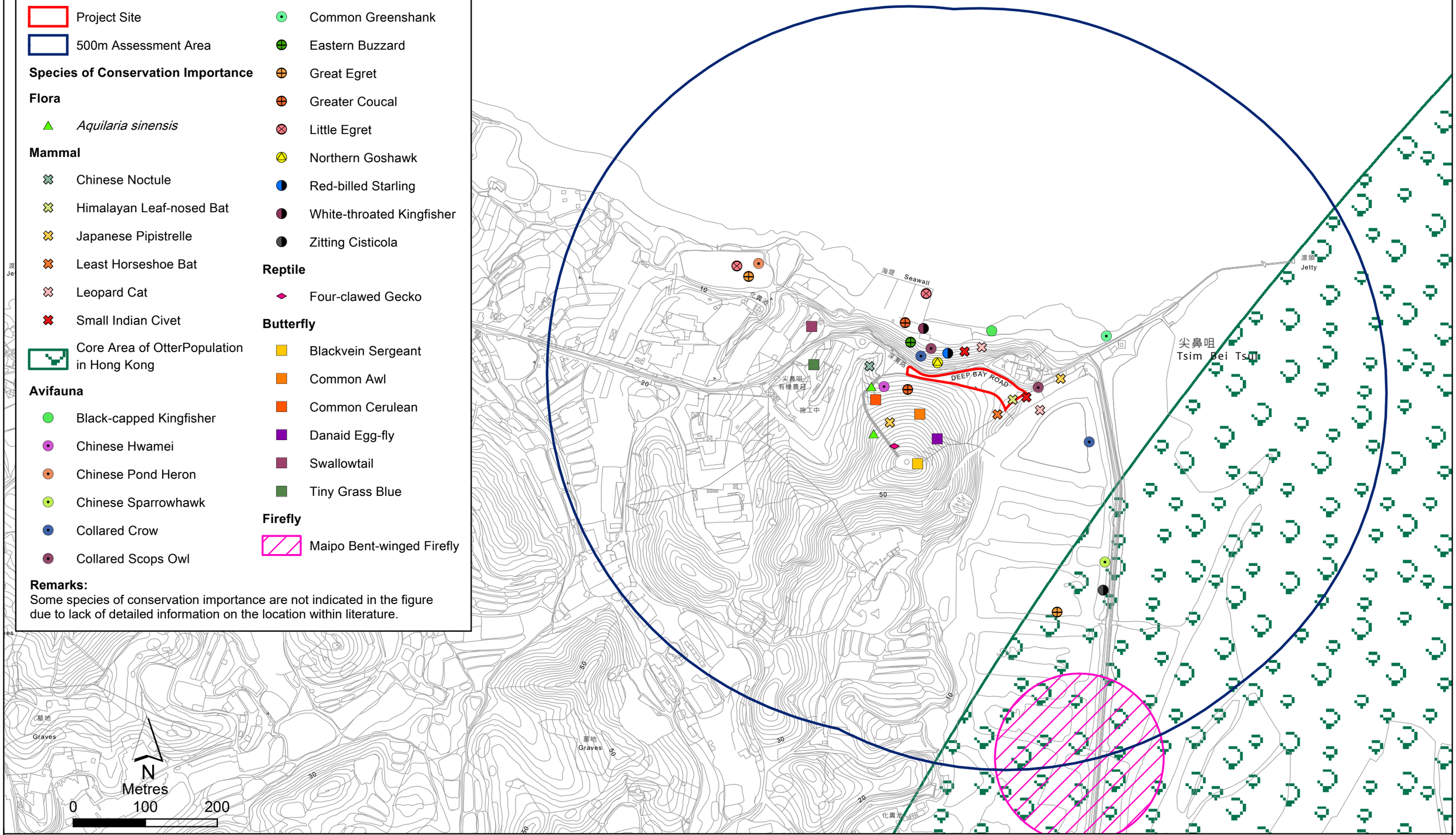

Figure 3.3

Species of Conservation Importance from Literature Review within the Study Area

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Date: 10/1/2025

TABLE 3-2 FLORA SPECIES OF CONSERVATION IMPORTANCE RECORDED WITHIN THE ASSESSMENT AREA

Common Name	Scientific Name	Chinese Name	Conservation/ Protection Status	Previous Studies
Incense Tree	*Aquilaria sinensis*	土沉香	• Protected under Cap. 586 • Wild plant under State protection (category II) (AFCD, 2003) • Recorded in China Plant Red Data Book and Illustration of Rare & endangered plant in Guangdong Province (AFCD, 2003) • Category 2 & 3 (AFCD, 2003) • RLCHP: EN • IUCN(VU) • CITES(II)	Agreement No. CE 31/2022 (CE)

Notes:
Conservation Status:
- AFCD (2003) Rare and Precious Plants of Hong Kong (Online Version). Agriculture, Fisheries and Conservation Department, HKSAR, Hong Kong. Available at: https://www.herbarium.gov.hk/en/publications/books/book2/index.html. Accessed on 2 November 2023.
- Cap. 586: Protection of Endangered Species of Animals and Plants Ordinance
- RLCHP – Red List of China's Higher Plants (2020). EN = Endangered
- IUCN – International Union for Conservation of Nature Red List of Threatened Species (2024). VU = Vulnerable
- CITES– Under Appendix (I), Appendix (II) or Appendix (III) of Convention on International Trade in Endangered Species of Wild Flora and Fauna

3.2.3 FAUNA SPECIES OF CONSERVATION IMPORTANCE RECORDED IN PREVIOUS STUDIE.S

3.2.3.1 TERRESTRIAL MAMMAL

Eight (8) mammal species of conservation importance were previously recorded within the current Assessment Area. Details of the mammal species of conservation importance are shown in ***Table 3-3***.

Eurasian Otter, a species with highly restricted distribution in Hong Kong, was recorded within the Assessment Area between 2018 - 2019. According to the recent study, otter signs (i.e. spraints, tracks, scratchings, resting sites) were recorded within the wetland habitat mosaic (i.e. mangrove, mudflat/coastal waters) within the Assessment Area around Tsim Bei Tsui. Besides its presence within the Assessment Area, it can also be found in multiple localities within the Inner Deep Bay Area including Pak Nai, Mong Tseng Wai, Tin Shui Wai Channel and Fung Lok Wai[18, 19]. The indicative core area of the otter population in Hong Kong[20] is presented in ***Figure 3.3***.

[18] McMillan, S. E., Wong, A. T. C., Tang, S. S. Y., Yau, E. Y. H., Gomersall, T., Wong, P. Y. H., …Bonebrake, T. C. (2022). Spraints Demonstrate Small Population Size and Reliance on Fishponds for Eurasian Otter (Lutra lutra) in Hong Kong. *Conservation Science and Practice*, *5*(1).

[19] Hui, M. K. Y., Leong, A. K. Y., Zhang, H., Yang, F., Yeung, H. Y., Lo, Y. F. P., Yang, J. H. (2024). *Op. cit*.

[20] McMillan, S. E., Wong, A. T. C., Tang, S. S. Y., Yau, E. Y. H., Gomersall, T., Wong, P. Y. H., …Bonebrake, T. C. (2022). *Op. cit*.

TABLE 3-3 MAMMAL SPECIES OF CONSERVATION IMPORTANCE PREVIOUSLY RECORDED WITHIN THE ASSESSMENT AREA

Common Name	Scientific Name	Chinese Name	Conservation/ Protection Status	Previous Studies
Least Horseshoe Bat	*Rhinolophus pusillus*	小菊頭蝠	Cap.170; Fellowes: PRC (RC)	Agreement No. CE 31/2022 (CE)
Himalayan Leaf-nosed Bat	*Hipposideros armiger*	大蹄蝠	Cap.170; Fellowes: (LC)	Agreement No. CE 31/2022 (CE)
Chinese Noctule	*Nyctalus plancyi*	中華山蝠	Cap.170; Fellowes: PRC (RC)	Agreement No. CE 31/2022 (CE)
Japanese Pipistrelle	*Pipistrellus abramus*	東亞家蝠	Cap.170, Fellowes: PRC (RC)	Agreement No. CE 31/2022 (CE)
Eurasian Otter	*Lutra lutra*	歐亞水獺	Cap.170; Cap.586; Fellowes: RC; RLCV(EN); CSMPS(II); IUCN(NT); GSS(LD); CITES(I)	McMillan et al., 2023
Small Indian Civet	*Viverricula indica*	小靈貓	Cap.170, Cap.586, RLCV(VU), CSMPS(II), CITES(III)	AFCD, 2007 Agreement No. CE 31/2022 (CE)
Small Asian Mongoose	*Herpestes javanicus*	紅頰獴	Cap.170; RLCV(VU); CITES(III)	AFCD, 2007
Leopard Cat	*Prionailurus bengalensis*	豹貓	Cap.170; Cap.586; RLCV(VU); CITES(II)	AFCD, 2007 Agreement No. CE 31/2022 (CE)

Notes:
Conservation Status:
- Cap. 170: Protected under Wild Animals Protection Ordinance
- Cap. 586: Protection of Endangered Species of Animals and Plants Ordinance
- Fellowes – Fellowes et al. (2002): LC = Local Concern. Letters in parentheses indicate that the assessment is on the basis of restrictedness in breeding and/or roosting sites rather than in general occurrence.
- RLCV – Red List of China's Vertebrate (2020): VU = Vulnerable
- CSMPS – China State Major Protection Status: Appendix II
- CITES – Under Appendix I, II or III of Convention on International Trade in Endangered Species of Wild Fauna and Flora

3.2.3.2 AVIFAUNA

Ninety-four (94) avifauna species of conservation importance were previously recorded within the Assessment Area. Details of the avifauna species of conservation importance are shown In ***Table 3-4***.

TABLE 3-4 AVIFAUNA SPECIES OF CONSERVATION IMPORTANCE PREVIOUSLY RECORDED WITHIN THE ASSESSMENT AREA

Common Name	Scientific Name	Chinese Name	Conservation Status	Previous Study
Greater White-fronted Goose	*Anser albifrons*	白額雁	CSMPS(II)	HKBWS 2024b
Baikal Teal	*Sibirionetta formosa*	花臉鴨	Cap.586; CITES(II)	HKBWS 2024b
Northern Shoveler	*Spatula clypeata*	琵嘴鴨	Fellowes: RC	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Falcated Duck	*Mareca falcata*	羅紋鴨	Fellowes: RC	HKBWS 2024b
Eurasian Wigeon	*Mareca penelope*	赤頸鴨	Fellowes: RC	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Mallard	*Anas platyrhynchos*	綠頭鴨	Fellowes: RC	HKBWS 2024b
Northern Pintail	*Anas acuta*	針尾鴨	Fellowes: RC	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Eurasian Teal	*Anas crecca*	綠翅鴨	Fellowes: RC	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Tufted Duck	*Aythya fuligula*	鳳頭潛鴨	Fellowes: LC	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Chinese Francolin	*Francolinus pintadeanus*	中華鷓鴣	RLCV(VU)	HKBWS, 2024a
Greater Coucal	*Centropus sinensis*	褐翅鴉鵑	CSMPS(II)	Agreement No. CE 31/2022 (CE)
Little Grebe	*Tachybaptus ruficollis*	小䴙䴘	Fellowes: LC	HKBWS 2024b
Great Crested Grebe	*Podiceps cristatus*	鳳頭䴙䴘	Fellowes: RC	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Black-winged Stilt	*Himantopus himantopus*	黑翅長腳鷸	Fellowes: RC	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Pied Avocet	*Recurvirostra avosetta*	反嘴鷸	Fellowes: RC	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Northern Lapwing	*Vanellus vanellus*	鳳頭麥雞	Fellowes: LC	HKBWS 2024b

Common Name	Scientific Name	Chinese Name	Conservation Status	Previous Study
Pacific Golden Plover	*Pluvialis fulva*	太平洋金斑鴴	Fellowes: LC	HKBWS 2024b
Grey Plover	*Pluvialis squatarola*	灰斑鴴	Fellowes: RC	Agreement No. CE 31/2022 (CE), HKBWS, 2024a, HKBWS 2024b
Little Ringed Plover	*Charadrius dubius*	金眶鴴	Fellowes: (LC)	HKBWS 2024b
Kentish Plover	*Charadrius alexandrinus*	環頸鴴	Fellowes: RC	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Lesser Sand Plover	*Charadrius mongolus*	蒙古沙鴴	Fellowes: LC	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Greater Sand Plover	*Charadrius leschenaultii*	鐵嘴沙鴴	Fellowes: RC	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Oriental Plover	*Charadrius veredus*	東方鴴	Fellowes: LC	HKBWS 2024b
Whimbrel	*Numenius phaeopus*	中杓鷸	Fellowes: LC	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Far Eastern Curlew	*Numenius madagascariensis*	紅腰杓鷸	Fellowes: LC; RLCV(VU); IUCN(EN)	HKBWS 2024b
Eurasian Curlew	*Numenius arquata*	白腰杓鷸	Fellowes: RC	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Black-tailed Godwit	*Limosa limosa*	黑尾塍鷸	Fellowes: RC	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Ruddy Turnstone	*Arenaria interpres*	翻石鷸	Fellowes: LC	HKBWS 2024b
Great Knot	*Calidris tenuirostris*	大濱鷸	Fellowes: LC; RLCV(EN); IUCN(EN)	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Red Knot	*Calidris canutus*	紅腹濱鷸	Fellowes: LC; RLCV(VU)	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Broad-billed Sandpiper	*Calidris falcinellus*	闊嘴鷸	Fellowes: LC	Agreement No. CE 31/2022 (CE), HKBWS 2024b

Common Name	Scientific Name	Chinese Name	Conservation Status	Previous Study
Sharp-tailed Sandpiper	*Calidris acuminata*	尖尾濱鷸	Fellowes: LC; IUCN(VU)	HKBWS 2024b
Curlew Sandpiper	*Calidris ferruginea*	彎嘴濱鷸	Fellowes: RC	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Temminck's Stint	*Calidris temminckii*	青腳濱鷸	Fellowes: LC	HKBWS 2024b
Long-toed Stint	*Calidris subminuta*	長趾濱鷸	Fellowes: LC	HKBWS 2024b
Spoon-billed Sandpiper	*Calidris pygmaea*	勺嘴鷸	Fellowes: GC; RLCV(CR); IUCN(CR)	HKBWS 2024b
Red-necked Stint	*Calidris ruficollis*	紅頸濱鷸	Fellowes: LC	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Sanderling	*Calidris alba*	三趾濱鷸	Fellowes: LC	HKBWS 2024b
Dunlin	*Calidris alpina*	黑腹濱鷸	Fellowes: RC	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Little Stint	*Calidris minuta*	小濱鷸	Fellowes: LC	HKBWS 2024b
Asian Dowitcher	*Limnodromus semipalmatus*	半蹼鷸	Fellowes: RC	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Swinhoe's Snipe	*Gallinago megala*	大沙錐	Fellowes: LC	HKBWS 2024b
Terek Sandpiper	*Xenus cinereus*	翹嘴鷸	Fellowes: RC	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Grey-tailed Tattler	*Tringa brevipes*	灰尾漂鷸	Fellowes: LC	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Common Redshank	*Tringa totanus*	紅腳鷸	Fellowes: RC	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Marsh Sandpiper	*Tringa stagnatilis*	澤鷸	Fellowes: RC	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Wood Sandpiper	*Tringa glareola*	林鷸	Fellowes: LC	HKBWS 2024b
Spotted Redshank	*Tringa erythropus*	鶴鷸	Fellowes: RC	HKBWS 2024b

Common Name	Scientific Name	Chinese Name	Conservation Status	Previous Study
Common Greenshank	*Tringa nebularia*	青腳鷸	Fellowes: RC	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Nordmann's Greenshank	*Tringa guttifer*	小青腳鷸	Cap.586; Fellowes: GC; RLCV(EN); CSMPS(II); IUCN(EN); CITES(I)	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Oriental Pratincole	*Glareola maldivarum*	普通燕鴴	Fellowes: LC	HKBWS 2024b
Black-headed Gull	*Chroicocephalus ridibundus*	紅嘴鷗	Fellowes: PRC	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Saunders's Gull	*Chroicocephalus saundersi*	黑嘴鷗	Fellowes: GC; RLCV(VU); IUCN(VU)	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Pallas's Gull	*Ichthyaetus ichthyaetus*	漁鷗	Fellowes: LC	HKBWS 2024b
Black-tailed Gull	*Larus crassirostris*	黑尾鷗	Fellowes: LC	HKBWS 2024b
Mew Gull	*Larus canus*	海鷗	Fellowes: LC	HKBWS 2024b
Lesser Black-backed Gull	*Larus fuscus*	烏灰銀鷗	Fellowes: LC	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Caspian Tern	*Hydroprogne caspia*	紅嘴巨鷗	Fellowes: RC	HKBWS 2024b
Little Tern	*Sternula albifrons*	白額燕鷗	Fellowes: LC	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Oriental Stork	*Ciconia boyciana*	東方白鸛	Fellowes: GC; RLCV(EN); IUCN(EN); CITES(I)	HKBWS 2024b
Great Cormorant	*Phalacrocorax carbo*	普通鸕鷀	Fellowes: PRC	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Eurasian Spoonbill	*Platalea leucorodia*	白琵鷺	Cap.586; Fellowes: LC; CSMPS(II); CITES(II)	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Black-faced Spoonbill	*Platalea minor*	黑臉琵鷺	Fellowes: PGC; RLCV(EN); CSMPS(II); IUCN(EN)	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Yellow Bittern	*Ixobrychus sinensis*	黃葦鳽	Fellowes: (LC)	HKBWS 2024b

Common Name	Scientific Name	Chinese Name	Conservation Status	Previous Study
Black-crowned Night Heron	*Nycticorax nycticorax*	夜鷺	Fellowes: (LC)	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Striated Heron	*Butorides striata*	綠鷺	Fellowes: (LC)	HKBWS 2024b
Chinese Pond Heron	*Ardeola bacchus*	池鷺	Fellowes: PRC (RC)	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Eastern Cattle Egret	*Bubulcus coromandus*	牛背鷺	Fellowes: (LC)	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Grey Heron	*Ardea cinerea*	蒼鷺	Fellowes: PRC	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Great Egret	*Ardea alba*	大白鷺	Fellowes: PRC (RC)	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Intermediate Egret	*Ardea intermedia*	中白鷺	Fellowes: RC	HKBWS 2024b
Little Egret	*Egretta garzetta*	小白鷺	Fellowes: PRC (RC)	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Chinese Egret	*Egretta eulophotes*	黃嘴白鷺	Fellowes: GC; RLCV(EN); CSMPS(II); IUCN(VU)	HKBWS 2024b
Western Osprey	*Pandion haliaetus*	鶚	Cap.586; Fellowes: RC; CSMPS(II); CITES(II)	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Crested Serpent Eagle	*Spilornis cheela*	蛇鵰	Cap.586; Fellowes: (LC); CSMPS(II); CITES(II)	HKBWS 2024b
Greater Spotted Eagle	*Clanga clanga*	烏鵰	Cap.586, Fellowes: GC, RLCV(EN), CSMPS(II), IUCN(VU), CITES(II)	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Eastern Imperial Eagle	*Aquila heliaca*	白肩鵰	Cap.586; Fellowes: GC; RLCV(EN); CSMPS(I); IUCN(VU); CITES(I)	HKBWS 2024b
Chinese Sparrowhawk	*Accipiter soloensis*	赤腹鷹	Cap.586; CSMPS(II); CITES(II)	Agreement No. CE 31/2022 (CE)
Besra	*Accipiter virgatus*	松雀鷹	Cap.586; CSMPS(II); CITES(II)	HKBWS 2024b
Northern Goshawk	*Accipiter gentilis*	蒼鷹	Cap.586; Fellowes: (RC); CSMPS(II); CITES(II)	Agreement No. CE 31/2022 (CE)

Common Name	Scientific Name	Chinese Name	Conservation Status	Previous Study
Eastern Marsh Harrier	*Circus spilonotus*	白腹鷐	Cap.586; Fellowes: (RC); CSMPS(II); CITES(II)	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Black Kite	*Milvus migrans*	黑鳶	Cap.586; Fellowes: (RC); CSMPS(II); CITES(II)	Agreement No. CE 31/2022 (CE), HKBWS 2024b
White-bellied Sea Eagle	*Haliaeetus leucogaster*	白腹海鵰	Cap.586; Fellowes: (RC); RLCV(VU); CSMPS(I); CITES(II)	HKBWS 2024b
Eastern Buzzard	*Buteo japonicus*	普通鵟	Cap.586; CSMPS(II); CITES(II)	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Collared Scops Owl	*Otus lettia*	領角鴞	Cap.586; CSMPS(II); CITES(II)	Agreement No. CE 31/2022 (CE)
White-throated Kingfisher	*Halcyon smyrnensis*	白胸翡翠	Fellowes: (LC)	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Black-capped Kingfisher	*Halcyon pileata*	藍翡翠	Fellowes: LC; IUCN(VU)	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Pied Kingfisher	*Ceryle rudis*	斑魚狗	Fellowes: (LC)	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Peregrine Falcon	*Falco peregrinus*	遊隼	Cap.586; Fellowes: (LC); CSMPS(II); CITES(I)	HKBWS 2024b
Collared Crow	*Corvus torquatus*	白頸鴉	Fellowes: LC, RLCV(NT), IUCN(VU)	Agreement No. CE 31/2022 (CE), HKBWS 2024b
Zitting cisticola	*Cisticola juncidis*	棕扇尾鶯	Fellowes: LC	Agreement No. CE 31/2022 (CE)
Chinese Hwamei	*Garrulax canorus*	畫眉	Cap.586; CITES(II)	Agreement No. CE 31/2022 (CE)
Red-billed Starling	*Spodiopsar sericeus*	絲光椋鳥	Fellowes: GC	Agreement No. CE 31/2022 (CE), HKBWS 2024a, HKBWS 2024b
White-cheeked Starling	*Spodiospar cineraceus*	灰椋鳥	Fellowes: PRC	HKBWS, 2024a

Notes:
Conservation Status:

- Cap. 170: Protected under Wild Animals Protection Ordinance, all birds in Hong Kong are protected under Cap. 170

- Cap. 586: Protection of Endangered Species of Animals and Plants Ordinance
- Fellowes – Fellowes et al. (2002): PGC = Potential Global Concern, GC = Global Concern, PRC = Potential Regional Concern, RC = Regional Concern, LC = Local Concern. Letters in parentheses indicate that the assessment is on the basis of restrictedness in breeding and/or roosting sites rather than in general occurrence.
- RLCV – Red List of China's Vertebrate (2020): VU = Vulnerable, EN = Endangered.
- CSMPS – China State Major Protection Status: Appendix II
- IUCN: International Union for Conservation of Nature Red List of Threatened Species (2024). VU = Vulnerable, EN = Endangered
- CITES – Under Appendix (I), Appendix (II) or Appendix (III) of Convention on International Trade in Endangered Species of Wild Flora and Fauna

3.2.3.3 HERPETOFAUNA

No herpetofauna species of conservation importance were previously recorded within the Assessment Area.

3.2.3.4 BUTTERFLY AND ODONATE

Six (6) butterfly species of conservation importance were previously recorded within the Assessment Area. Their protection and/or conservation status are presented in ***Table 3-5***. No odonate species of conservation importance was previously recorded within the Assessment Area.

TABLE 3-5 BUTTERFLY AND ODONATE SPECIES OF CONSERVATION IMPORTANCE RECORDED WITHIN THE ASSESSMENT AREA

Common Name	Scientific Name	Chinese Name	Conservation/ Protection Status	Previous Studies
Common Awl	*Hasora badra*	三斑趾弄蝶	Fellowes: LC, AFCD: Very Rare	Agreement No. CE 31/2022 (CE)
Common Cerulean	*Jamides celeno*	錫冷雅灰蝶	AFCD: Rare	Agreement No. CE 31/2022 (CE)
Tiny Grass Blue	*Zizula hylax*	長腹灰蝶	AFCD: Very Rare (Species of Conservation Concern)	Agreement No. CE 31/2022 (CE)
Black-vein Sergeant	*Athyma ranga*	離斑帶蛺蝶	Fellowes: LC	Agreement No. CE 31/2022 (CE)
Danaid Egg-fly	*Hypolimnas misippus*	金斑蛺蝶	Fellowes: LC	Agreement No. CE 31/2022 (CE)
Swallowtail	*Papilio xuthus*	柑橘鳳蝶	AFCD: Rare	Agreement No. CE 31/2022 (CE)

Note:
Distribution in Hong Kong:
- Chan, A., Cheung, J., Sze, P., Wong, A., Wong, E. and Yau, E. (2011). A Review of the Local Restrictedness of Hong Kong Butterflies. *Hong Kong Biodiversity 21*: 1-12.

Conservation Status:
- Cap. 170: Protected under Wild Animals Protection Ordinance
- Cap. 586: Protection of Endangered Species of Animals and Plants Ordinance
- International Union for Conservation of Nature Green Status of Species (2023). MD = Moderately Depleted
- CITES – Under Appendix (I), Appendix (II) or Appendix (III) of Convention on International Trade in Endangered Species of Wild Flora and Fauna

3.2.3.5 FRESHWATER AQUATIC ASSEMBLAGES

No freshwater invertebrate species of conservation importance were previously recorded within the Assessment Area.

3.2.3.6 FIREFLIES

Pteroptyx maipo was first recorded in Hong Kong Wetland Park in 2009[21] with a geographical extent from Hong Kong to mainland China[22], particularly within and nearby Mai Po Inner Deep Bay area, western Guangdong, and Hainan[23]. According to AFCD[24], *Pteroptyx maipo* is the only species that depends on mangrove ecosystems in Hong Kong. While the larvae feed on snails found on the tidal mudflats, the adults inhabit short vegetation in the vicinity. This species is found in various locations in Hong Kong, including the Mai Po Nature Reserve, Tin Shui Wai, near Tsim Bei Tsui, Hong Kong Wetland Park, Sheung Pak Nai, and at the mangrove around outlet of Kam Tin River near Nam Sang Wai[25]. The adult flight period of the *Pteroptyx maipo* is between March and October. During the adult flight period of *Pteroptyx maipo* (March–October), adults were generally observed to become active 20 minutes after sunset. Flashing males were most active during the first hour after sunset, often flying up from the mangrove vegetation. Around three hours after sunset, individuals would mostly settle on nearby vegetation, at which point the flashing activity largely ceased[26, 27]. *Pteroptyx maipo* was recorded within the Assessment Area near Tsim Bei Tsui in which their distribution is mainly within mangrove ecosystems and their fringes.

TABLE 3-6 FIREFLY SPECIES OF CONSERVATION IMPORTANCE RECORDED FROM PREVIOUS STUDIES

Common Name	Scientific Name	Chinese Name	Conservation/Protection Status	Previous Studies
-	*Pteroptyx maipo*	米埔屈翅螢	IUCN (EN)	Yiu, V. (2011, 2017), Ballantyne et. al., 2011

Notes:
- IUCN: International Union for Conservation of Nature Red List of Threatened Species (2024). EN = Endangered

[21] Biodiversity Information Hub. (n.d.). *Pteroptyx maipo*. Accessed on 18 February 2025. Retrieve from https://bih.gov.hk/en/fast-facts/species-named-after-hong-kong/index-id-23.html
[22] Yip, A. & Yiu, V. 2023. Pteroptyx maipo. The IUCN Red List of Threatened Species. Accessed on 18 February 2025. Retrieve from https://www.iucnredlist.org/species/214613742/214613992#assessment-information
[23] Biodiversity Information Hub. (n.d.). *Pteroptyx maipo*. Accessed on 18 February 2025. Retrieve from https://bih.gov.hk/en/fast-facts/species-named-after-hong-kong/index-id-23.html
[24] Cheng *et al.* 2020. Habitat Characteristics of Fireflies in Hong Kong. AFCD Newsletter Issue No. 26.
[25] Yiu, V. 2011. Op. cit.
[26] Yiu, V. 2011. Op. cit.
[27] Ballantyne et. al. (2011). Op. cit.

3.2.3.7 INTERTIDAL COMMUNITIES

Nursery grounds for two horseshoe crab species namely, *Carcinoscorpius rotundicauda* and *Tachypleus tridentatus* were identified in mudflats at Tsim Bei Tsui[28]. A seagrass species of conservation importance, namely *Halophila beccari,* was also recorded within the mudflats of Tsim Bei Tsui in a study[29]. Detailed conservation status of the horseshoe crab and seagrass recorded within the Assessment Area is presented in ***Table 3-7***.

TABLE 3-7 INTERTIDAL SPECIES OF CONSERVATION IMPORTANCE RECORDED FROM PREVIOUS STUDIES

Common Name	Scientific Name	Chinese Name	Conservation/ Protection Status	Previous Studies
Horseshoe Crab				
Horseshoe crab	*Carcinoscorpius rotundicauda*	圓尾鱟	• Grade II National Key Protected Species	Kwan (2016)[30]
Horseshoe crab	*Tachypleus tridentatus*	中華鱟	• Grade II National Key Protected Species • IUCN (EN)	Kwan (2016)[31]
Seagrass				
Beccari's Halophila	*Halophila beccarii*	貝克喜鹽草	• RLCHP: VU	Yip and Lai. (2006)[32]

Notes:
Conservation Status:
- RLCHP – Red List of China's Higher Plants (2020). VU = Vulnerable
- IUCN – International Union for Conservation of Nature Red List of Threatened Species (2024). EN = Endangered

3.2.4 EVALUATION & IDENTIFICATION OF INFORMATION GAP

With reference to the reviewed data, it is considered that the Project Site and its vicinity have been well covered for certain taxa groups (i.e. terrestrial mammal, avifauna and fireflies) and studied comprehensively in previous studies, especially in the Agreement No. CE 31/2022 (CE) Land Use Review Study for Lau Fau Shan, Tsim Bei Tsui and Pak Nai Areas - Feasibility Study (Feasibility Study).

To fill in the identified information gaps especially within the Project Site, an ecological survey of a duration of 12 months was conducted to verify and update the latest ecological conditions

[28] Kwan, V. 2016. Present population and habitat status of potentially threatened Asian horseshoe crabs *Tachypleus tridentatus* and *Carcinoscorpius rotundicauda* in Hong Kong: a proposal for marine protected areas.
[29] Yip, K L and Lai, C C. (2006). *Halophila minor* (Hydrocharitaceae), a new record with taxonomic notes of the *Halophila* from the Hong Kong Special Administrative Region, China. *Journal of Systematics and Evolution*, 44(4), 457.
[30] Kwan, V. 2016. *Op. cit.*
[31] Kwan, V. 2016. *Op. cit.*
[32] Yip, K L and Lai, C C. (2006). *Op. cit.*

of the habitats in the Assessment Area. The methodology for the ecological survey is presented in ***Section 4***.

4. ECOLOGICAL SURVEY METHODOLOGY

4.1 ECOLOGICAL BASELINE SURVEYS AND SURVEY SCHEDULE

The 12-month ecological survey was undertaken between November 2023 and October 2024 as presented in ***Table 4-1***, covering dry and wet seasons.. The key surveyors involved in this survey is presented in ***Table 4-2*** below.

TABLE 4-1 ECOLOGICAL SURVEY PROGRAMME

Survey Type	Survey Frequency	Survey time
Habitat and Vegetation	Half-yearly Once in dry season in December 2023 and once in wet season in June 2024	Daytime
Terrestrial Mammal	Monthly between November 2023 to October 2024	Daytime for diurnal species. Night-time for nocturnal species. Dusk for bats.
Avifauna	Monthly between November 2023 to October 2024	Early morning and dusk. Night-time for nocturnal species.
Herpetofauna	Monthly between November 2023 to October 2024	Daytime for diurnal species. Night-time for nocturnal species.
Butterfly and Odonate	Monthly between November 2023 to October 2024	Daytime
Fireflies	Monthly between November 2023 to October 2024	Dusk and night-time
Freshwater Community	Every two months; conducted in November 2023, January, March, May, July and September 2024	Daytime for diurnal species. Night-time for nocturnal species.
Intertidal Survey	Once in wet season in July 2024; once in dry season in January 2024; each survey separated by half-yearly interval	Ebbing tides

TABLE 4-2 KEY SURVEYORS INVOLVED IN THE ECOLOGICAL BASELINE SURVEY

Faunal/Floral Group under Study	Key Surveyor		
	Full Name	Relevant Experience	Year of Experience
Terrestrial Ecological Surveys			
Habitat and Vegetation, Terrestrial Mammal, Avifauna, Herpetofauna, Butterfly and Odonate, Aquatic Fauna	Mr. Mike Pang	Over 8 years of experiences in conducting a wide range of ecological surveys and impact assessment for main	8

Faunal/Floral Group under Study	Key Surveyor		
	Full Name	Relevant Experience	Year of Experience
		fauna groups and habitats	
	Mr. Yuihong Chiu	Over 4 years of experience in conducting ecological surveys for flora and fauna in different natural habitats for impact assessments and experience as an eco-tour guide	4
Marine Ecological Surveys			
Intertidal Communities	Mr. Raymond Chow	Over 11 years' post-qualification experience in biodiversity, marine ecology and fisheries studies	11

4.2 HABITAT & VEGETATION SURVEY

The preliminary maps showing habitats within the Assessment Area were prepared from satellite images and latest aerial photographs. Representative areas of each habitat type within the Assessment Area were then ground-truthed on foot, in order to ensure the habitat maps reflect current conditions and to distinguish between habitats that cannot always be reliably distinguished from satellite images. Habitats were characterized and defined with reference to size, vegetation type, flora species present, dominant species, species diversity and abundance, community structure, seasonality, and inter-dependence, as well as the presence of any feature of ecological importance. Representative color photos are taken for each habitat type and any important ecological features identified.

Habitat map of suitable scale (1:1000 to 1:5000) was prepared to show the types and locations of identified habitats within the Assessment Area in ***Figure 5.1***.

In parallel with the habitat mapping survey, the vegetation specialist recorded the flora species encountered, with the relative abundance of plant species in each habitat to be recorded. Special attention was paid to species that are rare, protected or of ecological importance. The location of any flora species of conservation importance found were recorded with handheld GPS with photographic records where possible. Habitat and vegetation survey were conducted during daytime at half-yearly interval covering dry and wet seasons.

4.3 WILDLFE SURVEY

4.3.1 TERRESTRIAL MAMMALS

Mammals survey have been carried out monthly through transects, as well as in areas that may be potentially utilized by terrestrial mammals during day, dusk and nighttime. As mammals (e.g. leopard cats) usually occur at low densities, in addition to direct observation, any signs of mammal activities, such as tracks, scats or burrows will be actively sought. Deployment of camera traps were in place, where secure and appropriate.

The mammal survey recorded bat species by direct observation and with a bat detector. All calls recorded were analyzed to permit, as far as possible, identification of species from call structure. In addition, particular attention was paid to possible bat roost sites to determine whether there are bats roosting/ breeding in the area.

4.3.2 AVIFAUNA

The presence and abundance of avifauna species at various habitats were recorded visually and aurally. The avifauna were surveyed monthly using transect method at the proposed survey extent (***Figure 4.1***) subject to the current site condition. Avifauna surveys (including day and night-time surveys) were carried out. Daytime avifauna surveys were carried out in the early morning at the period of peak bird activity. Night surveys were conducted nearly evening to record nocturnal avifauna. The location(s) of any avifauna species of conservation importance encountered were recorded, along with notable behavior (e.g. breeding behavior such as nesting and presence of recently fledged juveniles, roosting and feeding activities) and their major flightline as appropriate. All birds seen within 10m from either side of the survey transect were identified and counted.

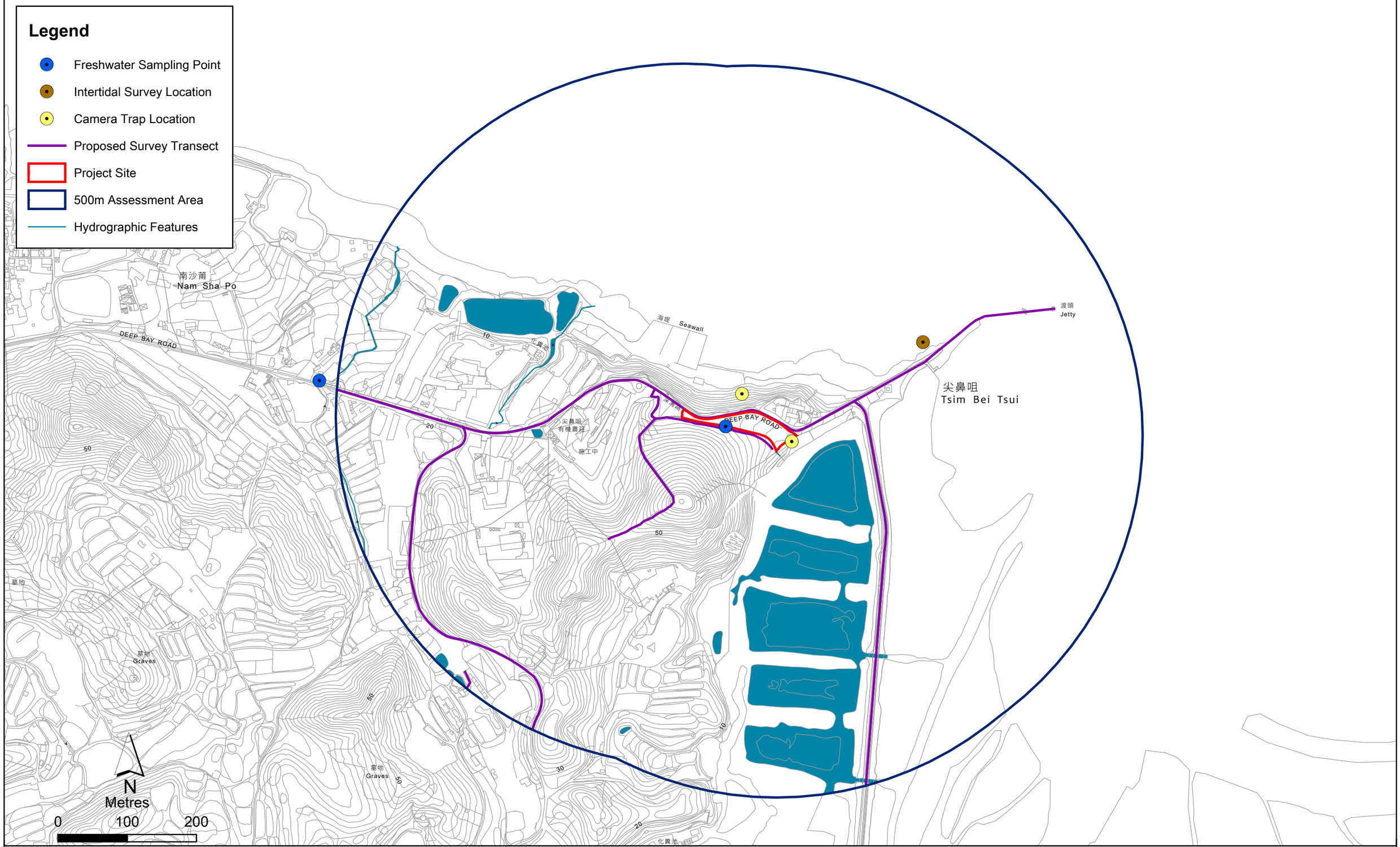

Figure 4.1

Survey Transect and Sampling Points

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Date: 18/3/2025

Legend

- Project Site
- 500m Assessment Area

Species of Conservation Importance

Flora

- *Aquilaria sinensis*

Mammal

- Japanese Pipistrelle
- Leopard Cat
- Small Indian Civet

Avifauna

- Black-capped Kingfisher
- Chinese Pond Heron
- Collared Crow
- Collared Scops Owl
- Common Greenshank
- Eastern Buzzard
- Great Egret
- Greater Coucal
- Grey Heron
- Little Egret
- Northern Goshawk
- Red-billed Starling
- Styan's Grasshopper Warbler
- White-throated Kingfisher

Odonate

- Coastal Glider
- Mangrove Skimmer

Firefly

- Maipo Bent-winged Firefly

Habitat

- Woodland (Young)
- Plantation
- Shrubland
- Seasonally Wet Grassland
- Mangrove
- Village Area
- Developed Area
- Mudflat/ Coastal Water Body
- Semi-natural Watercourse
- Channelized Watercourse
- Fish Pond

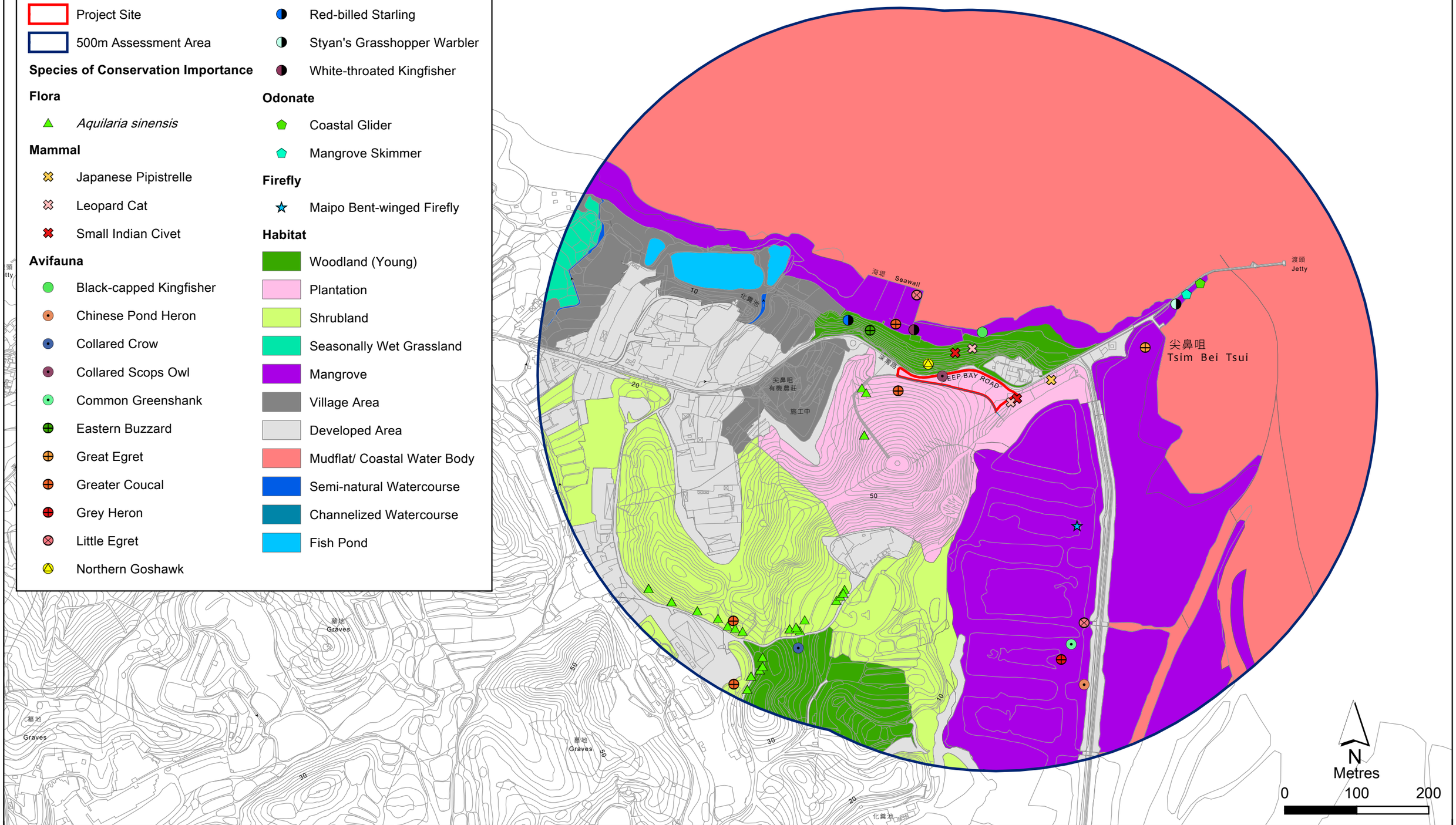

Figure 5.1

Habitat Map and Indicative Location of Species of Conservation Importance Recorded

ERM

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Date: 10/1/2025

Signs of breeding (e.g. nests, recently fledged juveniles) and roosting were also recorded, if any. Observations were made using binoculars (at least 8x) and photographic records has been taken, if possible. Bird species encountered outside transects but within the Assessment Area were recorded to produce a complete bird species list.

4.3.3 HERPETOFAUNA

Herpetofauna surveys were conducted monthly through direct observation and active searching, along survey transects and in potential hiding places such as among leaf litter, inside holes and under stones and logs within the Assessment Area. Daytime and night-time surveys were performed for diurnal species and nocturnal species. Auditory detection of species-specific calls were used to survey frogs and toads. During the surveys, all reptiles and amphibians sighted and heard were recorded.

4.3.4 BUTTERFLY AND ODONATE

Butterflies and odonates were surveyed monthly following the proposed transects during day time. All butterflies and odonates seen within 30m of each transect were counted and identified to species level where possible. Any butterflies and odonates encountered outside the transects were identified and counted in order to produce a complete species list. Particular attention was paid to food/ host plants for butterfly larvae and favored habitats for both groups, such as shrubland for butterflies and streams for odonates (both adults and larvae). The specimens were photographed and released immediately at the site of capture. Permission from AFCD was sought for the use of hand nets or any applications to capture animals in the surveys.

4.3.5 FIREFLY

Surveys for fireflies were conducted monthly through direct observation along the transects, with focus on the potential habitats such as mangrove and watercourses utilized by firefly. Surveys were commence immediately after sunset and last for approximately 2 hours. Surveys were conducted monthly throughout the year. All fireflies observed, including adults and larvae, were quantified and identified to species level as far as possible. It is noted that the adult flight period for *Pteroptyx maipo* is between March and October, particular attention was made to confirm records for said species during this time period [33, 34].

4.3.6 FRESHWATER COMMUNITY

Sizable streams and notable water bodies (e.g. ponds) were surveyed for aquatic fauna including freshwater/ brackish fish, invertebrates and macroinvertebrates. Aquatic surveys were performed every two months covering daytime for diurnal species and night-time for nocturnal species. The aquatic fauna survey was conducted through direct observation, active searching by hand nets and standard field sampling techniques, such as kick sampling using a D-framed net and trapping using fish traps where necessary at each Freshwater Sampling Point

[33] Yiu V (2020). Hong Kong Firefly Species. Accessed from <http://fireflies.hk/species/species/P_maipo.html>
[34] AFCD (2022). Hong Kong Biodiversity Information Hub. Accessed from <https://bih.gov.hk/en/fast-facts/species-named-after-hong-kong/index-id-23.html>

(***Figure 4.1***). Potential hiding places such as boulders and logs within the watercourse were turned over to locate any aquatic animals beneath. Permit from AFCD was attained before use of nets and traps to collect freshwater fauna in streams.

4.3.7 INTERTIDAL SURVEY

Surveys on intertidal communities was conducted at half-yearly interval covering wet and dry seasons (conducted in Jan 2024 and Jul 2024) at the selected Intertidal Survey Location (as indicated in ***Figure 4.1***), to establish an ecological profile of intertidal habitats within the Assessment Area.

The surveys were conducted during ebbing tide reaching tidal levels of <1.0 mCD. At the survey location, a qualitative or walk-through survey was conducted to identify species of intertidal flora and fauna and associated relative abundance. Direct observation and active searching were the major survey method. The effort spent in qualitative or walk-through survey, such as the number of surveyors involved, and the time spent were recorded and provided as appropriate. Representative photographs of intertidal habitat and flora / fauna species identified were taken. During active searching, particular attention was paid to potential habitats supporting horseshoe crab such as mangrove and mudflat.

5. SURVEY FINDINGS

5.1 HABITAT AND VEGETATION

Based on a review of the recent aerial photos and ground-truthing during the baseline survey, the identified major habitats are woodland (young), plantation, shrubland, seasonally wet grassland, watercourse, fishpond, mangrove, village area, developed area, and mudflat/ coastal water body (See ***Figure 5.1***). Photographic records of each habitat are presented in ***Annex 1***. Raw data of plant species recorded are presented in ***Annex 2***.

Among the identified habitats, mudflat/coastal water body and mangrove are dominant within the Assessment Area. Plantation is the only habitat recorded within the Project Site. Due to close vicinity to village area and developed area, habitats within Assessment Area are mostly isolated and subjected to some degree of human interference. Natural habitats such as woodland and shrubland are mainly present at the southwestern part of the Assessment Area.

TABLE 5-1 AREA OF EACH HABITAT IDENTIFIED IN THE ASSESSMENT AREA

Habitat	Approximate Size within Project Site (ha)	Approximate Size within Assessment Area (ha)	% of Assessment Area
Woodland (Young)	-	3.97	4.09%
Plantation	0.31	6.06	6.24%
Shrubland	-	10.42	10.73%
Seasonally Wet Grassland	-	0.53	0.54%
Semi-natural Watercourse	-	834 m (length)	-
Channelized Watercourse	-	150 m (length)	-
Fishpond	-	0.77	0.79%
Mangrove	-	18.61	19.15%
Village Area	-	3.92	4.04%
Developed Area	-	10.85	11.17%
Mudflat/Coastal Water Body	-	42.02	43.24%
Total	0.31	97.16	100%

5.1.1 WOODLAND (YOUNG)

Woodland (Young) within the Assessment Area is surrounded by village area, mangrove, and by the developed area which is closely linked to the plantation area where the Project Site sits. Approximately 3.97 ha of woodland was identified within the Assessment Area, accounting for ~4.09% of the Assessment Area. In general, two (2) isolated patches of woodland are present in the Assessment Area where one is observed across the developed area to the north side of the Project Site while another patch is located to the southern side of the Assessment Area.

The woodland patches present within the Assessment Area are all relatively young, this habitat has a semi-closed canopy and mainly consists of native tree species commonly found in rural areas. Tree species include *Celtis sinensis*, *Mallotus paniculatus*, and *Sterculia lanceolata*. The mid-storey of this habitat mainly consists of native tree and shrub species (e.g., *Aporosa dioica*, *Litsea rotundifolia var. oblongifolia*, *Macaranga tanarius var. tomentosa* and *Schefflera heptaphylla*) and the understory occupied by shrubs and climbers including *Desmos chinensis* and *Psychotria asiatica*, it is also occupied by common herbs and ferns such as *Dianella ensifolia*, and *Lindsaea ensifolia*.

A total of 78 flora species were recorded in this habitat. One (1) flora species of conservation importance, namely *Aquilaria sinensis,* was identified within the woodland area.

5.1.2 PLANTATION

Plantation within the Assessment Area is an isolated patch of land which fully covers the Project Site, suggesting a total of approximately 0.31 ha of plantation area within the Project Site. A total of approximately 6.06 ha of plantation was identified within the Assessment Area, accounting for ~6.24% of the Assessment Area.

Plants present within the habitat mainly consist of exotic species commonly used for landscaping. Common tree species recorded include *Acacia confusa*, *Casuarina equisetifolia* and *Melaleuca cajuputi cumingiana*.

A total of 63 flora species were recorded in this habitat. One (1) flora species of conservation importance, namely *Aquilaria sinensis,* was identified within the plantation area.

5.1.3 SHRUBLAND

Shrubland within the Assessment Area are primarily located in the southwest side, surrounding by various habitat types, including developed area, village area, plantation, mangrove, and woodland. Approximately 10.42 ha of shrubland was identified within the Assessment Area, accounting for ~10.73% of the Assessment Area.

This habitat consists of a mix of shrubs and small trees with plant heights usually being under 2m. Dominant shrub species include native species such as *Baeckea frutescens*, and *Croton crassifolius*, while some climbers were also recorded in high abundance such as *Cansjera rheedii*. *Polyspora axillaris* is a dominant tree species within the habitat,

while occasional tree species such as *Bridelia tomentosa*, *Rhus succedanea* and *Sapium discolor* are also sparsely distributed within the habitat. The dominant fern species covering hillside shrubland areas is *Dicranopteris pedata*.

A total of 66 flora species were recorded in this habitat. One (1) flora species of conservation importance, *Aquilaria sinensis,* was identified within the Assessment Area.

5.1.4 SEASONALLY WET GRASSLAND

Seasonally wet grassland within the Assessment Area is surrounded mainly by the village area and watercourse. Approximately 0.53 ha of seasonally wet grassland was identified within the Assessment Area, accounting for ~0.54% of the Assessment Area.

These habitats mainly developed from abandoned fishponds or potentially from abandoned wet agricultural land through natural succession. While aquatic plants such as *Callitriche palustris L. var. elegans*, *Coix lacryma-jobi* and *Commelina benghalensis* are present in these habitats. Due to the seasonal nature of the wet grassland, it is more likely to be overgrown and invaded by exotic weeds such as *Bidens alba*, *Ipomoea cairica* and *Mikania micrantha*.

A total of 28 flora species were recorded in this habitat. No species of conservation importance was observed within this habitat type.

5.1.5 WATERCOURSE

Watercourses within the Assessment Area covers two semi-natural watercourses and one channelized watercourse. One stream is located by the seasonally wet grassland on western side of the Assessment Area, another stream is located in between the village area adjacent to ponds, and a channelized watercourse is located at the southern edge of the Project Site. The total length of channelized watercourse and semi-natural watercourse are 150m and 834m, respectively.

A total of 10 flora species were recorded in semi-natural watercourse, while no flora species were recorded in the channelized watercourse. No flora species of conservation importance was observed within the habitat type.

5.1.6 FISHPOND

Three (3) fishponds are present within the Assessment Area. Approximately 0.77ha of fishpond was identified within the Assessment Area, accounting for ~0.79% of the Assessment Area.

A total of 9 flora species were recorded in this habitat. No flora species of conservation importance were recorded within this habitat.

5.1.7 MANGROVE

Mangrove's coverage in the Assessment Area is approximately 18.61 ha, which accounts for ~19.15% of the Assessment Area. Mangroves are generally located adjacent to mudflat/coastal water body. The vegetation structure of the mangroves within the Assessment Area are generally formed by the settlement of several species of mangrove

and mangrove associate, including *Kandelia obovata*, *Acanthus ilicifolius*, and *Hibiscus tiliaceus*. Exotic mangroves *Sonneratia caseolaris* are also scattered in the habitat.

A total of 14 flora species were recorded in this habitat. No flora species of conservation importance were observed within the habitat.

5.1.8 VILLAGE AREA

Village area within the Assessment Area is primarily present in northwestern side of Assessment Area, with a few parts dislinked by developed area and watercourses. Approximately 3.92 ha of village area was identified within the Assessment Area, accounting for ~4.04% of the Assessment Area.

Flora species recorded in this habitat are mainly ornamental or orchard species cultivated by villagers for gardening purposes. A total of 47 flora species were recorded in this habitat. Cultivated ornamental plants and fruit trees include *Bougainvillea spectabilis*, *Dimocarpus longan* and *Litchi chinensis*. Other cultivated plants included *Celtis sinensis*. Some common invasive herbaceous weeds such as *Bidens alba* and *Euphorbia hirta* were also identified along the village edge. No flora species of conservation importance were observed within the habitat.

5.1.9 DEVELOPED AREA

Developed area within the Assessment Area is approximately 10.85ha of village area was identified within the Assessment Area, accounting for ~11.17% of the Assessment Area. They mainly consist of brownfield sites occupied by storage facilities, scrapyards, livestock farms and waste grounds. This habitat is degraded in nature as a result of intensive human disturbance. Plants recorded in this habitat were mainly ornamental species such as *Bougainvillea spectabilis* and *Hibiscus rosa-sinensis*. Other self-colonised ruderal species include *Lantana camara*, *Leucaena leucocephala*, *Bidens alba* and *Wedelia trilobata*.

A total of 41 flora species were recorded in this habitat. No flora species of conservation importance were observed within the village area.

5.1.10 MUDFLAT/COASTAL WATER BODY

Extensive swathes of mudflat/coastal water body habitats are found along the coastal areas of the Assessment Area. The intertidal mudflats in the Assessment Area are functionally connected to the Inner Deep Bay Ramsar Site. Mudflat/Coastal Water Body within the Assessment Area is approximately 42.02 ha and accounts for ~ 43.24% of the Assessment Area.

A total of 5 flora species were recorded in this habitat. No flora species of conservation importance was recorded within mudflat/coastal water body.

5.2 FAUNA SPECIES OF CONSERVATION IMPORTANCE

Wildlife recorded during the ecological surveys are presented below. The photos of the recorded species of conservation importance are presented in ***Annex 3***. Full list of fauna

species recorded during the ecological surveys for the Project are presented in ***Annex 4 – 10***. The locations of species of conservation importance in the Assessment Area are shown in ***Figure 5.1***.

5.2.1 TERRESTRIAL MAMMALS

The surveys identified six (6) mammal species within the Assessment Area. A total of three (3) mammal species of conservation importance, namely Japanese Pipistrelle, Small Indian Civet and Leopard Cat, were recorded within the Assessment Area. Small Indian Civet and Leopard Cat were recorded along the edge of the Project Site, mammal tracks are also present within the area, suggesting potential usage across the Project Site. The list of mammal species recorded is provided in ***Annex 4***. Details of the terrestrial mammal species of conservation importance are shown in ***Table 5-2***.

TABLE 5-2 TERRESTRIAL MAMMAL SPECIES OF CONSERVATION IMPORTANCE RECORDED WITHIN THE ASSESSMENT AREA

Common Name	Scientific Name	Chinese Name	Conservation Status	Habitat
Terrestrial Mammal				
Japanese Pipistrelle	*Pipistrellus abramus*	東亞家蝠	Cap.170	Plantation
Small Indian Civet	*Viverricula indica*	小靈貓	Cap.170; RLCV(VU); CSMPS(II); CITES(III)	Woodland (Young), Plantation
Leopard Cat	*Prionailurus bengalensis*	豹貓	Cap.170; Cap.586; RLCV(VU); CITES(II)	Woodland (Young), Plantation

Note:
Conservation Status:
- Cap. 170: Protected under Wild Animals Protection Ordinance
- Fellowes – Fellowes et al. (2002): PRC = Potential Regional Concern, RC = Regional Concern, LC = Local Concern. Letters in parentheses indicate that the assessment is on the basis of restrictedness in breeding and/or roosting sites rather than in general occurrence.
- RLCV – Red List of China's Vertebrate (2020): VU = Vulnerable
- CITES – Under Appendix (II) of Convention on International Trade in Endangered Species of Wild Flora and Fauna

5.2.2 AVIFAUNA

The surveys identified one hundred and four (104) avifauna species within the Assessment Area. A total of sixty-two (62) avifauna species of conservation importance was recorded within the Assessment Area and are presented below in ***Table 5-3***. A species of conservation importance, Collared Scops Owl, was once spotted nesting within the Project Site in April 2024, as shown in ***Figure 5.1*** and ***Annex 3***, however, the nesting site was subsequently identified to be no longer active since May 2024.

It should be noted that some avifauna species recorded in-flight are in high mobility and avifauna species recorded at mudflat/coastal water body habitat around Tsim Bei Tsui are in high diversity and abundance, locating these species on map is infeasible and not representative. Thus, avifauna species of conservation importance recorded in the aforementioned habitats and in-flight are not shown on habitat map but listed under ***Table 5-3*** and ***Annex 5***. No major flightlines were observed during the survey between November 2023 and October 2024. The list of avifauna species recorded is provided in ***Annex 5***.

TABLE 5-3 AVIFAUNA SPECIES OF CONSERVATION IMPORTANCE RECORDED WITHIN THE ASSESSMENT AREA

Common Name	Scientific Name	Chinese Name	Conservation Status	Habitat
Avifauna				
Northern Shoveler	*Spatula clypeata*	琵嘴鴨	Fellowes: RC	Mudflat/Coastal Water Body
Eurasian Wigeon	*Mareca penelope*	赤頸鴨	Fellowes: RC	Mudflat/Coastal Water Body
Northern Pintail	*Anas acuta*	針尾鴨	Fellowes: RC	Mudflat/Coastal Water Body
Eurasian Teal	*Anas crecca*	綠翅鴨	Fellowes: RC	Mudflat/Coastal Water Body
Tufted Duck	*Aythya fuligula*	鳳頭潛鴨	Fellowes: LC	Mudflat/Coastal Water Body
Red-breasted Merganser	*Mergus serrator*	紅胸秋沙鴨	Fellowes: LC	Mudflat/Coastal Water Body
Greater Coucal	*Centropus sinensis*	褐翅鴉鵑	CSMPS(II)	Plantation, Shrubland, Mangrove
Great Crested Grebe	*Podiceps cristatus*	鳳頭鸊鷉	Fellowes: RC	Mudflat/Coastal Water Body
Black-winged Stilt	*Himantopus himantopus*	黑翅長腳鷸	Fellowes: RC	Mudflat/Coastal Water Body
Pied Avocet	*Recurvirostra avosetta*	反嘴鷸	Fellowes: RC	Mudflat/Coastal Water Body
Pacific Golden Plover	*Pluvialis fulva*	太平洋金斑鴴	Fellowes: LC	Mudflat/Coastal Water Body
Grey Plover	*Pluvialis squatarola*	灰斑鴴	Fellowes: RC	Mudflat/Coastal Water Body
Kentish Plover	*Charadrius alexandrinus*	環頸鴴	Fellowes: RC	Mudflat/Coastal Water Body
Lesser Sand Plover	*Charadrius mongolus*	蒙古沙鴴	Fellowes: LC	Mudflat/Coastal Water Body
Greater Sand Plover	*Charadrius leschenaultii*	鐵嘴沙鴴	Fellowes: RC	Mudflat/Coastal Water Body

Common Name	Scientific Name	Chinese Name	Conservation Status	Habitat
Whimbrel	*Numenius phaeopus*	中杓鷸	Fellowes: LC	Mudflat/Coastal Water Body
Eurasian Curlew	*Numenius arquata*	白腰杓鷸	Fellowes: RC	Mudflat/Coastal Water Body
Bar-tailed Godwit	*Limosa lapponica*	斑尾塍鷸	Fellowes: LC	Mudflat/Coastal Water Body
Black-tailed Godwit	*Limosa limosa*	黑尾塍鷸	Fellowes: RC	Mudflat/Coastal Water Body
Great Knot	*Calidris tenuirostris*	大濱鷸	Fellowes: LC; RLCV(EN); IUCN(EN)	Mudflat/Coastal Water Body
Red Knot	*Calidris canutus*	紅腹濱鷸	Fellowes: LC; RLCV(VU)	Mudflat/Coastal Water Body
Broad-billed Sandpiper	*Calidris falcinellus*	闊嘴鷸	Fellowes: LC	Mudflat/Coastal Water Body
Curlew Sandpiper	*Calidris ferruginea*	彎嘴濱鷸	Fellowes: RC	Mudflat/Coastal Water Body
Red-necked Stint	*Calidris ruficollis*	紅頸濱鷸	Fellowes: LC	Mudflat/Coastal Water Body
Dunlin	*Calidris alpina*	黑腹濱鷸	Fellowes: RC	Mudflat/Coastal Water Body
Terek Sandpiper	*Xenus cinereus*	翹嘴鷸	Fellowes: RC	Mudflat/Coastal Water Body
Grey-tailed Tattler	*Tringa brevipes*	灰尾漂鷸	Fellowes: LC	Mudflat/Coastal Water Body
Common Redshank	*Tringa totanus*	紅腳鷸	Fellowes: RC	Mudflat/Coastal Water Body
Marsh Sandpiper	*Tringa stagnatilis*	澤鷸	Fellowes: RC	Mudflat/Coastal Water Body
Common Greenshank	*Tringa nebularia*	青腳鷸	Fellowes: RC	Mudflat/Coastal Water Body, Mangrove
Nordmann's Greenshank	*Tringa guttifer*	小青腳鷸	Cap.586; Fellowes: GC; RLCV(EN); CSMPS(II); IUCN(EN); CITES(I)	Mudflat/Coastal Water Body
Black-headed Gull	*Chroicocephalus ridibundus*	紅嘴鷗	Fellowes: PRC	Mudflat/Coastal Water Body
Saunders's Gull	*Chroicocephalus saundersi*	黑嘴鷗	Fellowes: GC; RLCV(VU); IUCN(VU)	Mudflat/Coastal Water Body
Lesser Black-backed Gull	*Larus fuscus*	烏灰銀鷗	Fellowes: LC	Mudflat/Coastal Water Body
Little Tern	*Sternula albifrons*	白額燕鷗	Fellowes: LC	Mudflat/Coastal Water Body

Common Name	Scientific Name	Chinese Name	Conservation Status	Habitat
Great Cormorant	*Phalacrocorax carbo*	普通鸕鷀	Fellowes: PRC	Mudflat/Coastal Water Body, In flight
Eurasian Spoonbill	*Platalea leucorodia*	白琵鷺	Cap.586; Fellowes: LC; CSMPS(II); CITES(II)	Mudflat/Coastal Water Body
Black-faced Spoonbill	*Platalea minor*	黑臉琵鷺	Fellowes: PGC; RLCV(EN); CSMPS(II); IUCN(EN)	Mudflat/Coastal Water Body
Black-crowned Night Heron	*Nycticorax nycticorax*	夜鷺	Fellowes: (LC)	Mudflat/Coastal Water Body, Mangrove
Striated Heron	*Butorides striata*	綠鷺	Fellowes: (LC)	Mudflat/Coastal Water Body
Chinese Pond Heron	*Ardeola bacchus*	池鷺	Fellowes: PRC (RC)	Mangrove, Mudflat/Coastal Water Body
Eastern Cattle Egret	*Bubulcus coromandus*	牛背鷺	Fellowes: (LC)	Mudflat/Coastal Water Body
Grey Heron	*Ardea cinerea*	蒼鷺	Fellowes: PRC	Mangrove, Mudflat/Coastal Water Body
Great Egret	*Ardea alba*	大白鷺	Fellowes: PRC (RC)	Mangrove, Mudflat/Coastal Water Body
Intermediate Egret	*Ardea intermedia*	中白鷺	Fellowes: RC	Mudflat/Coastal Water Body
Little Egret	*Egretta garzetta*	小白鷺	Fellowes: PRC (RC)	Mangrove, Mudflat/Coastal Water Body
Western Osprey	*Pandion haliaetus*	鶚	Cap.586; Fellowes: RC; CSMPS(II); CITES(II)	Mudflat/Coastal Water Body
Crested Serpent Eagle	*Spilornis cheela*	蛇鵰	Cap.586; Fellowes: (LC); CSMPS(II); CITES(II)	In flight
Greater Spotted Eagle	*Clanga clanga*	烏鵰	Cap.586; Fellowes: GC; RLCV(EN); CSMPS(II); IUCN(VU); CITES(II)	Mudflat/Coastal Water Body
Northern Goshawk	*Accipiter gentilis*	蒼鷹	Cap.586; Fellowes: (RC); RLCV(NT); CSMPS(II); CITES(II)	Woodland (Young)

Common Name	Scientific Name	Chinese Name	Conservation Status	Habitat
Eastern Marsh Harrier	*Circus spilonotus*	白腹鷞	Cap.586; Fellowes: LC; CSMPS(II); CITES(II)	Mudflat/Coastal Water Body
Black Kite	*Milvus migrans*	黑鳶	Cap.586; Fellowes: (RC); CSMPS(II); CITES(II)	Mudflat/Coastal Water Body, In flight
Eastern Buzzard	*Buteo japonicus*	普通鵟	Cap.586; CSMPS(II); CITES(II)	Woodland (Young), Mudflat/Coastal Water Body
Collared Scops Owl	*Otus lettia*	領角鴞	Cap.586; CSMPS(II); CITES(II)	Plantation
White-throated Kingfisher	*Halcyon smyrnensis*	白胸翡翠	Fellowes: (LC)	Mangrove, Mudflat/Coastal Water Body
Black-capped Kingfisher	*Halcyon pileata*	藍翡翠	Fellowes: (LC); IUCN(VU)	Mangrove, Mudflat/Coastal Water Body
Pied Kingfisher	*Ceryle rudis*	斑魚狗	Fellowes: (LC)	Mudflat/Coastal Water Body, In flight
Common Kestrel	*Falco tinnunculus*	紅隼	Cap.586; CSMPS(II); CITES(II)	Mudflat/Coastal Water Body
Collared Crow	*Corvus torquatus*	白頸鴉	Fellowes: LC; IUCN(VU)	Woodland (Young), Mudflat/Coastal Water Body
Styan's Grasshopper Warbler	*Helopsaltes pleskei*	史氏蝗鶯	Fellowes: GC; RLCV(VU); IUCN(VU)	Mangrove
Red-billed Starling	*Spodiopsar sericeus*	絲光椋鳥	Fellowes: GC	Woodland (Young)
White-shouldered Starling	*Sturnia sinensis*	灰背椋鳥	Fellowes: (LC)	Mudflat/Coastal Water Body, In flight

Note:
Conservation Status:

- Cap. 170: All birds are protected under Wild Animals Protection Ordinance
- Cap. 586: Protection of Endangered Species of Animals and Plants Ordinance
- Fellowes – Fellowes et al. (2002): PRC = Potential Regional Concern, RC = Regional Concern, LC = Local Concern, GC = Global Concern. Letters in parentheses indicate that the assessment is on the basis of restrictedness in breeding and/or roosting sites rather than in general occurrence.
- RLCV – Red List of China's Vertebrate (2020): VU = Vulnerable, EN = Endangered
- CSMPS– China State Major Protection Status: Appendix (I) or Appendix (II)
- CITES – Under Appendix (I), Appendix (II) or Appendix (III) of Convention on International Trade in Endangered Species of Wild Flora and Fauna
- IUCN – International Union for Conservation of Nature Red List of Threatened Species (2024). EN = Endangered; VU = Vulnerable

5.2.3 HERPETOFAUNA

A total of five (5) amphibian species and five (5) reptile species were recorded within the Assessment Area. None of them are of conservation importance. The list of herpetofauna species recorded is provided in ***Annexes 6 – 7***.

5.2.4 BUTTERFLIES

A total of twenty (20) butterfly species were recorded within the Assessment Area. None of them are of conservation importance. The list of butterfly species recorded is provided in ***Annex 8***.

5.2.5 ODONATES

A total of six (6) odonate species were recorded within the Assessment Area, of which two (2) of them are of conservation importance. The list of odonate species recorded is provided in ***Annex 9***. Details of the odonate species of conservation importance are shown in ***Table 5-4***.

TABLE 5-4 ODONATE SPECIES OF CONSERVATION IMPORTANCE RECORDED WITHIN THE ASSESSMENT AREA

Common Name	Scientific Name	Chinese Name	Conservation Status	Habitat
Odonate				
Coastal Glider	*Macrodiplax cora*	高翔澖蜻	Fellows: LC	Mangrove
Mangrove Skimmer	*Orthetrum poecilops poecilops*	斑灰蜻	Fellowes: GC; Reels: CI; IUCN(VU)	Mangrove

Note:
Conservation Status:
- Fellowes – Fellowes et al. (2002): LC = Local Concern, GC= Global Concern.
- Reels. G. (2019): CI = Species of Conservation Importance
- IUCN – International Union for Conservation of Nature Red List of Threatened Species (2022). VU = Vulnerable.

5.2.6 FRESHWATER COMMUNITY

A total of two (2) freshwater/brackish fish species and three (3) freshwater invertebrate species were recorded within the Assessment Area. None of them are of conservation importance. The list of aquatic fauna species recorded is provided in ***Annex 10***.

5.2.7 FIREFLY

Only one (1) firefly species were recorded within the Assessment Area, which is of conservation importance. The list of firefly species recorded is provided in ***Annex 11***. Details of the firefly species of conservation importance are shown in ***Table 5-5***.

TABLE 5-5 FIREFLY SPECIES OF CONSERVATION IMPORTANCE RECORDED WITHIN THE ASSESSMENT AREA

Common Name	Scientific Name	Chinese Name	Conservation Status	Habitat
Firefly				
-	*Pteroptyx maipo*	米埔屈翅螢	IUCN (EN)	Mangrove

Notes:
- IUCN: International Union for Conservation of Nature Red List of Threatened Species (2024). EN = Endangered

5.2.8 INTERTIDAL COMMUNITY

A total of fifteen intertidal species were recorded within the Assessment Area. Overall, the majority of the species recorded in the survey are common, widespread and typical of intertidal habitats in Hong Kong. No horseshoe crab or seagrass species of conservation importance were recorded during the survey. The list of intertidal species recorded is provided in ***Annex 12***.

6. EVALUATION OF HABITATS AND SPECIES

The ecological importance evaluation of each terrestrial habitat type within the Assessment Area is presented in ***Table 6-1*** to ***Table 6-10***. The species of conservation importance identified within the Assessment Area during the surveys and literature review are evaluated in ***Table 6-11***, in accordance with the *EIAO TM Annex 8* criteria. The locations of these species of conservation importance, whenever available, are presented in ***Figure 5.1***. The evaluation is based upon the information of literature review and ecological surveys presented in ***Sections 3*** and ***5***.

6.1 ASSESSMENT AREA AND PROJECT SITE

Terrestrial habitats recorded within the Assessment Area included woodland (young), plantation, shrubland, seasonally wet grassland, watercourse, fishpond, mangrove, village area, developed area, and mudflat/coastal water body. Within the Project Site, only plantation was recorded, which shared similar conditions of same habitat within the Assessment Area. Therefore, ecological evaluation of each habitat type within the Assessment Area and Project Site are assessed together and presented in ***Table 6-1***Table 6-1 to ***Table 6-10***.

TABLE 6-1 ECOLOGICAL EVALUATION OF WOODLAND WITHIN THE ASSESSMENT AREA AND PROJECT SITE

Criteria	Woodland (Young)
Naturalness	Semi-natural, patches of young woodland consisting of a mixture of native tree, exotic and orchard species, due to close vicinity to village area, developed area and main roads it is subjected to human disturbances.
Size	Approximately 3.97ha (4.09%) within the Assessment Area
Diversity	Low to Moderate diversity of plant species and structural complexity Low to Moderate diversity of avifauna; low diversity of other fauna groups
Rarity	Total of six (6) species of conservation importance recorded including one (1) flora, two (2) mammal and four (4) avifauna species. Flora: *Aquilaria sinensis* Mammal: Small Indian Civet and Leopard Cat Avifauna: Northern Goshawk, Eastern Buzzard, Collared Crow, Red-billed Starling
Re-creatability	Young woodland is re-creatable. but the more mature the woodland, the longer time required for compensation/re-creation.
Fragmentation	Fragmented within the Assessment Area
Ecological Linkage	Functionally links to shrubland, mangrove in proximity
Potential Value	Moderate potential value to become a more mature woodland if given sufficient time and protection from disturbances such as hill fires and other development.
Nursery/ Breeding Ground	No significant nursery or breeding ground recorded

Criteria	Woodland (Young)
Age	Young woodlands ranging from 15 years to 30 years
Abundance/ Richness of Wildlife	Low to Moderate abundance and richness for avifauna; low for rest of fauna groups
Overall Ecological Value	**Low to Moderate**

TABLE 6-2 ECOLOGICAL EVALUATION OF PLANTATION WITHIN THE ASSESSMENT AREA

Criteria	Plantation
Naturalness	Semi-natural, comprising of landscaping or introduced afforestation species that were planted in the past, as well as naturally recruited plant species.
Size	Approx. 6.06ha (6.24%) within the Assessment Area and 0.3ha within the Project Site
Diversity	Low to Moderate diversity of plant species and structural complexity Low to Moderate diversity of avifauna; low diversity of other fauna groups
Rarity	Total of six (6) species of conservation importance recorded including one (1) flora, three (3) mammal and two (2) avifauna species. Flora: *Aquilaria sinensis* Mammal: Japanese Pipistrelle, Leopard Cat, Small Indian Civet Avifauna: Greater Coucal, Collared Scops Owl (recorded within the Project Site with nesting behaviour, but the nest was later on confirmed inactive).
Re-creatability	Readily re-creatable through afforestation schemes though it would take at least 15 years or more for recruitment of native flora species.
Fragmentation	One isolated patch within the Assessment Area.
Ecological Linkage	Functionally linked to adjacent shrubland and mangrove in close proximity. Weak ecological linkages to woodland that is separated through a narrow-developed area.
Potential Value	Potentially go through succession and transition towards woodland if given sufficient time and protection from natural and anthropogenic disturbances.
Nursery/ Breeding Ground	Nesting site of Collared Scops Owl recorded within the habitat.
Age	Ranging from 5 to 15 years
Abundance/ Richness of Wildlife	Low to Moderate abundance and richness for avifauna; low for rest of fauna groups

Criteria	Plantation
Overall Ecological Value	**Low to Moderate**

TABLE 6-3 ECOLOGICAL EVALUATION OF SHRUBLAND WITHIN THE ASSESSMENT AREA AND PROJECT SITE

Criteria	Shrubland
Naturalness	Semi-natural habitat, mainly covered by native shrub and grass species
Size	Approx. 10.42ha (10.73%) within the Assessment Area.
Diversity	Low to moderate diversity of plant species and Low structural complexity. Low diversity among all fauna groups.
Rarity	Total of two (2) species of conservation importance recorded including one (1) flora, and one (1) avifauna species. Flora: *Aquilaria sinensis* Avifauna: Greater Coucal.
Re-creatability	It takes approximately 5 years for shrubland to regenerate.
Fragmentation	Fragmented patches of shrubland, primarily separated by developed area, are present at southwest of Assessment Area.
Ecological Linkage	Functionally linked to woodland, plantation in close proximity.
Potential Value	Potential to become mature shrubland and then young mixed woodland if given sufficient time and protection from disturbance.
Nursery/ Breeding Ground	No significant nursery or breeding ground recorded.
Age	N/A
Abundance/ Richness of Wildlife	Low for all fauna groups
Overall Ecological Value	**Low to Moderate**

TABLE 6-4 ECOLOGICAL EVALUATION OF SEASONALLY WET GRASSLAND WITHIN THE ASSESSMENT AREA AND PROJECT SITE

Criteria	**Seasonally Wet Grassland**
Naturalness	Semi-natural habitat, mainly developed from abandoned fishponds or potentially from abandoned wet agricultural land through natural succession
Size	Approx. 0.53ha (0.54%) within the Assessment Area.
Diversity	Low diversity of plant species and structural complexity. Low fauna diversity.
Rarity	No species of conservation importance recorded.
Re-creatability	Able to be re-created under suitable hydrological conditions.
Fragmentation	A patch of seasonally wet grassland located at west of Assessment Area is not fragmented.
Ecological Linkage	Functionally linked to watercourse in close proximity.
Potential Value	Could potentially be further improved by active management practices such as weed control and management of water levels, ensuring connection with associated wetland habitats (i.e. marsh, watercourse and pond) for better recruitment of avifauna, odonate and aquatic fauna species.
Nursery/ Breeding Ground	No significant nursery or breeding ground recorded.
Age	N/A
Abundance/ Richness of Wildlife	Low for all fauna groups.
Overall Ecological Value	**Low**

TABLE 6-5 ECOLOGICAL EVALUATION OF WATERCOURSE WITHIN THE ASSESSMENT AREA AND PROJECT SITE

Criteria	**Watercourse**	
	Semi-natural Watercourse	**Channelized Watercourse**
Naturalness	Among all three watercourses, two are semi-natural and are across the village area and shrubland, suggesting low to moderate human disturbance.	Among all three watercourses, one is a channelized drain situated within the project site, waterflow is seasonal, with limited species recorded within.
Size	834m within the Assessment Area	150m within the Assessment Area
Diversity	Low floral diversity and moderate structural complexity Low diversity for all fauna groups	Low floral diversity and structural complexity Low diversity for all fauna groups
Rarity	No species of conservation importance was recorded within the habitat.	
Re-creatability	Difficult to be re-created	Re-creatable when suitable hydrological conditions are available
Fragmentation	As the watercourse sections are in close vicinity to village area and developed area, some are disturbed/blocked by minor concrete structures/piping which may impede movement of diadromous species.	Poor linkage between upstream and downstream areas
Ecological Linkage	Functionally linked to adjacent habitats (i.e. woodland, plantation, seasonally wet grassland, and mangrove)	Functionally linked to adjacent habitats (i.e. plantation)
Potential Value	Could be benefited from a minimization of anthropogenic influences (i.e. pollution, concrete structures) in the downstream areas	Low
Nursery/ Breeding Ground	Potential nursery ground and breeding grounds for amphibians, odonates and aquatic fauna	As the channelized watercourse is seasonal, it only provides limited opportunities as potential nursery ground and breeding grounds for amphibians, odonates and aquatic fauna
Age	N/A	
Abundance/ Richness of Wildlife	Low abundance and richness for all fauna groups	
Overall Ecological Value	**Low**	**Low**

TABLE 6-6 ECOLOGICAL EVALUATION OF FISHPOND WITHIN THE ASSESSMENT AREA AND PROJECT SITE

Criteria	Fishpond
Naturalness	Man-made habitat, consisting of both actively managed fishponds as well as abandoned ponds
Size	Approx. 0.77 ha (0.79%) within the Assessment Area
Diversity	Low floral diversity and structural complexity Low for all fauna groups
Rarity	No species of conservation importance recorded.
Re-creatability	Readily re-creatable
Fragmentation	Isolated ponds situated within village and developed area.
Ecological Linkage	Functionally linked to mangrove
Potential Value	Potential feeding ground of species of conservation importance. Could be further improved by active management practices such as weed control and management of water levels, ensuring connection with associated wetland habitats (i.e. seasonally wet grassland, watercourse and pond) for better recruitment of avifauna, odonate and aquatic fauna species
Nursery/ Breeding Ground	No significant nursery or breeding ground recorded.
Age	Not applicable
Abundance/ Richness of Wildlife	Low abundance and richness for all fauna groups
Overall Ecological Value	**Low to Moderate**

TABLE 6-7 ECOLOGICAL EVALUATION OF MANGROVE WITHIN THE ASSESSMENT AREA AND PROJECT SITE

Criteria	Mangrove
Naturalness	Natural habitat
Size	Approx. 18.61 ha (19.15%) within the Assessment Area.
Diversity	Low floral diversity and structural complexity Low to medium diversity of avifauna, low for other fauna groups
Rarity	Total of twelve (12) species of conservation importance recorded including nine (9) avifauna, two (2) odonate and one (1) firefly species.

Criteria	Mangrove
	Avifauna: Greater Coucal, Common Greenshank, Chinese Pond Heron, Grey Heron, Great Egret, Little Egret, White-throated Kingfisher, Black-capped Kingfisher and Styan's Grasshopper Warbler Odonate: Coastal Glider and Mangrove Skimmer Firefly: *Pteroptyx maipo*
Re-creatability	Difficult to be re-created
Fragmentation	Slightly fragmented and generally connected along with the coastal area within the Assessment Area
Ecological Linkage	Functionally linked to mudflat/coastal water body, woodland, plantation and fishpond
Potential Value	Moderate
Nursery/ Breeding Ground	Patches of mangroves in Tsim Bei Tsui are nursey and breeding grounds for *Pteroptyx maipo*. Mangroves in general are nursery and breeding grounds of other intertidal infauna and epifauna species
Age	N/A
Abundance/ Richness of Wildlife	Low to Moderate abundance and richness of avifauna, low abundance, and richness for other terrestrial fauna species
Overall Ecological Value	**High**

TABLE 6-8 ECOLOGICAL EVALUATION OF VILLAGE AREA WITHIN THE ASSESSMENT AREA AND PROJECT SITE

Criteria	Village Area
Naturalness	Man-made habitat with intensive human disturbances
Size	Approx. 3.92 ha (4.04%) within the Assessment Area.
Diversity	Low to Moderate diversity of plant species and low structural complexity Low for all fauna groups
Rarity	No species of conservation importance recorded.
Re-creatability	Readily re-creatable
Fragmentation	Fragmented and scattered within Assessment Area

Criteria	Village Area
Ecological Linkage	No linkage with adjacent habitats
Potential Value	Low potential value
Nursery/ Breeding Ground	No significant nursery or breeding ground recorded
Age	N/A
Abundance/ Richness of Wildlife	Low to for avifauna and very low for other fauna groups
Overall Ecological Value	**Low**

TABLE 6-9 ECOLOGICAL EVALUATION OF DEVELOPED AREA

Criteria	Developed Area
Naturalness	Man-made habitat with intensive human disturbances
Size	Approx. 10.85 ha (11.17%) within the Assessment Area
Diversity	Low diversity of plant species and low structural complexity Low for all fauna groups
Rarity	No species of conservation importance recorded in this habitat
Re-creatability	Readily re-creatable
Fragmentation	Fragmented and scattered within Assessment Area
Ecological Linkage	No linkage with adjacent habitats
Potential Value	Low potential value
Nursery/ Breeding Ground	No significant nursery or breeding ground recorded
Age	N/A
Abundance/ Richness of Wildlife	Low of all fauna groups
Overall Ecological Value	**Low**

TABLE 6-10 ECOLOGICAL EVALUATION OF MUDFLAT/ COASTAL WATER BODY WITHIN THE ASSESSMENT AREA AND PROJECT SITE

Criteria	Mudflat/Coastal Water Body
Naturalness	Natural habitat
Size	Approx. 42.02ha (43.24%) within the Assessment Area.
Diversity	Low floral diversity and structural complexity Moderate to high diversity of avifauna, low for other fauna groups
Rarity	No flora species of conservation importance was recorded A total of 56 avifauna species of conservation importance was recorded during the survey
Re-creatability	Difficult to be re-created
Fragmentation	Not fragmented
Ecological Linkage	Functionally linked to mangrove
Potential Value	High
Nursery/ Breeding Ground	Potential breeding ground for horseshoe crab and other intertidal infauna and epifauna species
Age	N/A
Abundance/ Richness of Wildlife	High abundance and richness for avifauna species, low for other terrestrial fauna species
Overall Ecological Value	**High**

6.2 SUMMARY OF SPECIES OF CONSERVATION IMPORTANCE

A list and evaluation of the species of ecological conservation importance recorded during the ecological baseline field surveys within the Assessment Area, according to the *EIAO-TM*, are given in ***Table 6-11***, in accordance with Annex 8 of EIAO-TM. The locations of these species of conservation importance, whenever available, are presented in ***Figure 5.1***.

TABLE 6-11 EVALUATION OF SPECIES OF CONSERVATION IMPORTANCE RECORDED WITHIN THE ASSESSMENT AREA

Common Name	Scientific Name	Protection Status	Distribution, Rarity and other Notes	Literature	Surveys	Presence within Project Site
Flora						
Incense Tree	*Aquilaria sinensis*	• Cap. 586; • Wild plant under State protection (category II) (AFCD, 2003); • Recorded in China Plant Red Data Book and Illustration of Rare & endangered plant in Guangdong Province (AFCD, 2003); • Category 2 & 3 (AFCD, 2003); • IUCN(VU); • RLCHP: EN; • CITES(II)	Common in Hong Kong	-	✓	-
Mammal						
Least Horseshoe Bat	*Rhinolophus pusillus*	• Cap.170; • Fellowes: PRC (RC)	Uncommon, widely distributed in urban and countryside areas throughout Hong Kong.	✓[7]	-	-
Himalayan Leaf-nosed Bat	*Hipposideros armiger*	• Cap.170; • Fellowes: (LC)	Very common. Widely distributed in urban and	✓[7]	-	✓

Common Name	Scientific Name	Protection Status	Distribution, Rarity and other Notes	Literature	Surveys	Presence within Project Site
			countryside areas throughout Hong Kong.			
Chinese Noctule	*Nyctalus plancyi*	• Cap.170; • Fellowes: PRC (RC)	Common, very widely distributed in urban and countryside areas throughout Hong Kong.	✓[7]	-	-
Japanese Pipistrelle	*Pipistrellus abramus*	• Cap.170	Very common, widely distributed throughout Hong Kong.	✓[7]	✓	-
Eurasian Otter	*Lutra lutra*	• Cap.170; • Cap.586; • Fellowes: RC; • RLCV(EN); • CSMPS(II); • IUCN(NT); • GSS(LD); • CITES(I)	Rare, Species of Conservation Concern, Restricted to Mai Po, Lok Ma Chau, Hoo Hok Wai, and nearby areas.	✓[2]	-	-
Small Indian Civet	*Viverricula indica*	• Cap.170; • RLCV(VU); • CSMPS(II); • CITES(III)	Very common, widely distributed in urban and countryside areas throughout Hong Kong.	✓[4, 7]	✓	✓

Common Name	Scientific Name	Protection Status	Distribution, Rarity and other Notes	Literature	Surveys	Presence within Project Site
Small Asian Mongoose	*Herpestes javanicus*	• Cap.170; • RLCV(VU); • CITES(III)	Uncommon, fairly widely distributed in countryside areas throughout Hong Kong.	✓[4]	-	-
Leopard Cat	*Prionailurus bengalensis*	• Cap.170; • Cap.586; • RLCV(VU); • CITES(II)	Uncommon, widely distributed in countryside areas throughout Hong Kong.	✓[4, 7]	✓	✓
Avifauna						
Greater White-fronted Goose	*Anser albifrons*	• CSMPS(II)	Vagrant. Found in Lok Ma Chau.	✓[6]	-	-
Baikal Teal	*Sibirionetta formosa*	• Cap.586; • CITES(II)	Scarce winter visitor. Found in Deep Bay area, Kowloon Park, Kam Tin.	✓[6]	-	-
Northern Shoveler	*Spatula clypeata*	• Fellowes: RC	Abundant winter visitor. Found in Deep Bay area.	✓[6, 7]	✓	-
Falcated Duck	*Mareca falcata*	• Fellowes: RC	Uncommon winter visitor. Found in Mai Po, Shuen Wan, Long Valley.	✓[6]	-	-

Common Name	Scientific Name	Protection Status	Distribution, Rarity and other Notes	Literature	Surveys	Presence within Project Site
Eurasian Wigeon	*Mareca penelope*	• Fellowes: RC	Winter visitor. Found in Deep Bay area, Tai Lam Chung.	✓[6, 7]	✓	-
Indian Spot-billed Duck	*Anas poecilorhyncha*	• Fellowes: RC	Rare visitor. Found in Deep Bay area.	✓[6]	-	-
Mallard	*Anas platyrhynchos*	• Fellowes: RC	Scarce winter visitor. Found in Deep Bay area, Tai Lam Chung, Hok Tau Reservoirs, Tolo Harbour, Nam Chung, Long Valley, Kam Tin.	✓[6]	-	-
Northern Pintail	*Anas acuta*	• Fellowes: RC	Abundant winter visitor. Found in Deep Bay area, Shuen Wan, Long Valley, Kam Tin.	✓[6, 7]	✓	-
Eurasian Teal	*Anas crecca*	• Fellowes: RC	Common winter visitor. Found in Deep Bay area, Shuen Wan, Tai Lam Chung Reservoir, Victoria Harbour, urban parks.	✓[6, 7]	✓	-

Common Name	Scientific Name	Protection Status	Distribution, Rarity and other Notes	Literature	Surveys	Presence within Project Site
Tufted Duck	*Aythya fuligula*	• Fellowes: LC	Rare winter visitor. Found in Mai Po.	✓[6, 7]	✓	-
Red-breasted Merganser	*Mergus serrator*	• Fellowes: LC	Rare winter visitor and scarce spring passage migrant. Found in Deep Bay area, Plover Cove Reservoir, Shing Mun Reservoir.	✓[7]	✓	-
Chinese Francolin	*Francolinus pintadeanus*	• RLCV(VU)	Common resident. Widely distributed in grassland throughout Hong Kong.	✓[5]	-	-
Greater Coucal	*Centropus sinensis*	• CSMPS (II)	Common resident. Widely distributed in Hong Kong.	✓[7]	✓	-
Little Grebe	*Tachybaptus ruficollis*	• Fellowes: LC	Common resident. Found in Deep Bay area.	✓[6]	-	-
Great Crested Grebe	*Podiceps cristatus*	• Fellowes: RC	Common winter visitor. Found in Tsim Bei Tsui, Starling Inlet.	✓[6, 7]	✓	-

Common Name	Scientific Name	Protection Status	Distribution, Rarity and other Notes	Literature	Surveys	Presence within Project Site
Black-winged Stilt	*Himantopus himantopus*	• Fellowes: RC	Common migrant and winter visitor. Found in Deep Bay area, Long Valley, Kam Tin.	✓[6, 7]	✓	-
Pied Avocet	*Recurvirostra avosetta*	• Fellowes: RC	Abundant winter visitor. Found in Deep Bay area.	✓[6, 7]	✓	-
Northern Lapwing	*Vanellus vanellus*	• Fellowes: LC	Scarce winter visitor. Found in Mai Po, Long Valley, Chek Lap Kok, Ho Chung, Tai Long Wan, Tai Po, Castle Peak coast.	✓[6]	-	-
Pacific Golden Plover	*Pluvialis fulva*	• Fellowes: LC	Common migrant and winter visitor. Found in Deep Bay area, Chek Lap Kok, Long Valley.	✓[6, 7]	✓	-
Grey Plover	*Pluvialis squatarola*	• Fellowes: RC	Abundant winter visitor and scarce migrant. Found in Deep Bay area.	✓[5, 6, 7]	✓	-
Little Ringed Plover	*Charadrius dubius*	• Fellowes: (LC)	Resident, common winter visitor and passage	✓[6]	-	-

Common Name	Scientific Name	Protection Status	Distribution, Rarity and other Notes	Literature	Surveys	Presence within Project Site
			migrant. Widely distributed in freshwater areas throughout Hong Kong.			
Kentish Plover	*Charadrius alexandrinus*	• Fellowes: RC	Abundant winter visitor and scarce migrant. Found in Deep Bay area, Chek Lap Kok, Shuen Wan, Sai Kung, Lantau Island.	✓[6, 7]	✓	-
Lesser Sand Plover	*Charadrius mongolus*	• Fellowes: LC	Uncommon passage migrant and scarce winter visitor. Found in Deep Bay area.	✓[6, 7]	✓	-
Greater Sand Plover	*Charadrius leschenaultii*	• Fellowes: RC	Abundant passage migrant. Found in Deep Bay area.	✓[6, 7]	✓	-
Oriental Plover	*Charadrius veredus*	• Fellowes: LC	Scarce passage migrant. Found in Deep Bay area, Kai Tak, Chek Lap Kok.	✓[6]	-	-
Whimbrel	*Numenius phaeopus*	• Fellowes: LC	Common passage migrant and scarce winter visitor.	✓[6, 7]	✓	-

Common Name	Scientific Name	Protection Status	Distribution, Rarity and other Notes	Literature	Surveys	Presence within Project Site
			Found in Deep Bay area, Sai Kung, Tung Ping Chau, Ninepins, Cape D'Aguilar, Pok Fu Lam.			
Far Eastern Curlew	*Numenius madagascariensis*	• Fellowes: LC; • RLCV(VU); • IUCN(EN)	Uncommon passage migrant. Found in Deep Bay area.	✓[6]	-	-
Eurasian Curlew	*Numenius arquata*	• Fellowes: RC	Abundant winter visitor. Found in Deep Bay area.	✓[6, 7]	✓	-
Bar-tailed Godwit	*Limosa lapponica*	• Fellowes: LC	Uncommon passage migrant. Found in Deep Bay area.	✓[6]	✓	-
Black-tailed Godwit	*Limosa limosa*	• Fellowes: RC	Abundant passage migrant and winter visitor. Found in Deep Bay area.	✓[6, 7]	✓	-
Ruddy Turnstone	*Arenaria interpres*	• Fellowes: LC	Passage migrant. Found in Deep Bay area, Starling Inlet, Sai Kung, Tai Long Wan.	✓[6]	-	-

Common Name	Scientific Name	Protection Status	Distribution, Rarity and other Notes	Literature	Surveys	Presence within Project Site
Great Knot	*Calidris tenuirostris*	• Fellowes: LC; • RLCV(EN); • IUCN(EN)	Common passage migrant and scarce winter visitor. Found in Deep Bay area.	✓[6, 7]	✓	-
Red Knot	*Calidris canutus*	• Fellowes: LC; • RLCV(VU)	Common passage migrant and scarce winter visitor. Found in Deep Bay area, Shuen Wan.	✓[6, 7]	✓	-
Broad-billed Sandpiper	*Calidris falcinellus*	• Fellowes: LC	Uncommon passage migrant. Found in Deep Bay area, Ho Chung, Shuen Wan.	✓[6, 7]	✓	-
Sharp-tailed Sandpiper	*Calidris acuminata*	• Fellowes: LC; • IUCN(VU)	Common passage migrant. Found in Deep Bay area, Shuen Wan, Sai Kung, Long Valley, Tai Po, Lam Tsuen.	✓[6]	-	-
Curlew Sandpiper	*Calidris ferruginea*	• Fellowes: RC	Abundant spring passage migrant. Found in Deep Bay area, Cape D'Aguilar.	✓[6, 7]	✓	-

Common Name	Scientific Name	Protection Status	Distribution, Rarity and other Notes	Literature	Surveys	Presence within Project Site
Temminck's Stint	*Calidris temminckii*	• Fellowes: LC	Uncommon winter visitor and migrant. Widely distributed in Deep Bay area fishponds.	✓[6]	-	-
Long-toed Stint	*Calidris subminuta*	• Fellowes: LC	Common passage migrant and scarce winter visitor. Found in Long Valley, Ma Tso Lung, Tsim Bei Tsui, Kam Tin, Pui O, Shuen Wan.	✓[6]	-	-
Spoon-billed Sandpiper	*Calidris pygmaea*	• Fellowes: GC; • RLCV(CR); • IUCN(CR)	Scarce spring migrant. Found in Deep Bay area.	✓[6]	-	-
Red-necked Stint	*Calidris ruficollis*	• Fellowes: LC	Abundant spring passage migrant. Found in Deep Bay area.	✓[6, 7]	✓	-
Sanderling	*Calidris alba*	• Fellowes: LC	Uncommon passage migrant. Found in Deep Bay area, Tai Long Wan, Sai Kung.	✓[6]	-	-

Common Name	Scientific Name	Protection Status	Distribution, Rarity and other Notes	Literature	Surveys	Presence within Project Site
Dunlin	*Calidris alpina*	• Fellowes: RC	Abundant winter visitor and scarce passage migrant. Found in Deep Bay area.	✓[6, 7]	✓	-
Little Stint	*Calidris minuta*	• Fellowes: LC	Uncommon spring passage migrant. Found in Mai Po, Tsim Bei Tsui.	✓[6]	-	-
Asian Dowitcher	*Limnodromus semipalmatus*	• Fellowes: RC	Common passage migrant. Found in Deep Bay area.	✓[6, 7]	-	-
Pintail/Swinhoe's Snipe	*Gallinago stenura/ G. megala*	• Fellowes: LC (*G. megala*)	*Gallinago stenura*: Common passage migrant. Found in Long Valley, Chau Tau, Ha Tsuen. *G. megala*: Uncommon passage migrant. Found in Long Valley.	✓[6]	-	-
Terek sandpiper	*Xenus cinereus*	• Fellowes: RC	Common passage migrant. Found in Deep Bay area, Sai Kung, Tung Ping Chau, Cape D'Aguilar.	✓[6, 7]	✓	-

Common Name	Scientific Name	Protection Status	Distribution, Rarity and other Notes	Literature	Surveys	Presence within Project Site
Grey-tailed Tattler	*Tringa brevipes*	• Fellowes: LC	Common passage migrant. Found in Deep Bay area.	✓[6, 7]	✓	-
Common Redshank	*Tringa totanus*	• Fellowes: RC	Abundant passage migrant and winter visitor. Found in Deep Bay area.	✓[6, 7]	✓	-
Marsh Sandpiper	*Tringa stagnatilis*	• Fellowes: RC	Abundant winter visitor and migrant. Found in Deep Bay area, Shuen Wan, Long Valley, Kam Tin, Sai Kung.	✓[6, 7]	✓	-
Wood Sandpiper	*Tringa glareola*	• Fellowes: LC	Common migrant and winter visitor. Widely distributed in wetland area throughout Hong Kong.	✓[6]	-	-
Spotted Redshank	*Tringa erythropus*	• Fellowes: RC	Common migrant and winter visitor. Widely distributed in wetland area throughout Hong Kong.	✓[6]	-	-

Common Name	Scientific Name	Protection Status	Distribution, Rarity and other Notes	Literature	Surveys	Presence within Project Site
Common Greenshank	*Tringa nebularia*	• Fellowes: RC	Abundant winter visitor and migrant. Found in Deep Bay area.	✓[6, 7]	✓	-
Nordmann's Greenshank	*Tringa guttifer*	• Cap.586; • Fellowes: GC; • RLCV(EN); • CSMPS(II); • IUCN(EN); • CITES(I)	Uncommon passage migrant and scarce winter visitor. Found in Deep Bay area.	✓[6, 7]	✓	-
Oriental Pratincole	*Glareola maldivarum*	• Fellowes: LC	Passage migrant. Found in Mai Po, Tsim Bei Tsui.	✓[6]	-	-
Black-headed Gull	*Chroicocephalus ridibundus*	• Fellowes: PRC	Abundant winter visitor. Found in Deep Bay area and coastal waters.	✓[6, 7]	✓	-
Saunders's Gull	*Chroicocephalus saundersi*	• Fellowes: GC; • RLCV(VU); • IUCN(VU)	Common winter visitor. Found in Deep Bay area, Chek Lap Kok.	✓[6, 7]	✓	-
Pallas's Gull	*Ichthyaetus ichthyaetus*	• Fellowes: LC	Scarce winter visitor and passage migrant. Found in Deep Bay area.	✓[6]	-	-

Common Name	Scientific Name	Protection Status	Distribution, Rarity and other Notes	Literature	Surveys	Presence within Project Site
Black-tailed Gull	*Larus crassirostris*	• Fellowes: LC	Common winter visitor and spring passage migrant. Found in Deep Bay area, Tolo Harbour, Starling Inlet, Lamma Island, Mirs Bay.	✓[6]	-	-
Mew Gull	*Larus canus*	• Fellowes: LC	Scarce winter visitor and spring migrant. Found in Deep Bay area.	✓[6]	-	-
Lesser Black-backed Gull	*Larus fuscus*	• Fellowes: LC	Common winter visitor and passage migrant. Found in Deep Bay area, Cape D'Aguilar.	✓[6, 7]	✓	-
Caspian Tern	*Hydroprogne caspia*	• Fellowes: RC	Common spring migrant. Found in Deep Bay area.	✓[6]	-	-
Little Tern	*Sternula albifrons*	• Fellowes: LC	Uncommon spring passage migrant. Found in Mai Po, Ting Kau, Tsuen Wan Ferry Pier.	✓[6, 7]	✓	-

Common Name	Scientific Name	Protection Status	Distribution, Rarity and other Notes	Literature	Surveys	Presence within Project Site
Oriental Stork	*Ciconia boyciana*	• Fellowes: GC; • RLCV(EN); • IUCN(EN); • CITES(I)	Rare winter visitor. Found in Deep Bay area.	✓[6]	-	-
Great Cormorant	*Phalacrocorax carbo*	• Fellowes: PRC	Common winter visitor. Widely distributed in coastal areas throughout Hong Kong.	✓[6, 7]	✓	-
Eurasian Spoonbill	*Platalea leucorodia*	• Cap.586; • Fellowes: LC; • CSMPS(II); • CITES(II)	Uncommon winter visitor. Found in Deep Bay area.	✓[6, 7]	✓	-
Black-faced Spoonbill	*Platalea minor*	• Fellowes: PGC; • RLCV(EN); • CSMPS(II); • IUCN(EN)	Common winter visitor. Found in Deep Bay area.	✓[6, 7]	✓	-
Yellow Bittern	*Ixobrychus sinensis*	• Fellowes: (LC)	Uncommon summer visitor and common passage migrant. Found in Deep Bay area, Chek Keng, Tai Long Wan.	✓[6]	-	-

Common Name	Scientific Name	Protection Status	Distribution, Rarity and other Notes	Literature	Surveys	Presence within Project Site
Black-crowned Night Heron	*Nycticorax nycticorax*	• Fellowes: (LC)	Common resident and migrant. Widely distributed in Hong Kong.	✓[6, 7]	✓	-
Striated Heron	*Butorides striata*	• Fellowes: (LC)	Common summer visitor. Widely distributed in Hong Kong.	✓[6]	✓	-
Chinese Pond Heron	*Ardeola bacchus*	• Fellowes: PRC (RC)	Common resident. Widely distributed in Hong Kong.	✓[6, 7]	✓	-
Eastern Cattle Egret	*Bubulcus coromandus*	• Fellowes: (LC)	Resident and common passage migrant. Widely distributed in Hong Kong.	✓[6, 7]	✓	-
Grey Heron	*Ardea cinerea*	• Fellowes: PRC	Common winter visitor. Found in Deep Bay area, Starling Inlet, Kowloon Park, Cape D'Aguilar.	✓[6, 7]	✓	-
Great Egret	*Ardea alba*	• Fellowes: PRC (RC)	Common resident, migrant and winter visitor. Widely distributed in Hong Kong	✓[6, 7]	✓	-

Common Name	Scientific Name	Protection Status	Distribution, Rarity and other Notes	Literature	Surveys	Presence within Project Site
Intermediate Egret	*Ardea intermedia*	• Fellowes: RC	Resident and passage migrant. Found in Deep Bay area, Tai Long Wan, Starling Inlet, Tai O, Cape D'Aguilar.	✓[6, 7]	✓	-
Little Egret	*Egretta garzetta*	• Fellowes: PRC (RC)	Common resident, migrant and winter visitor. Widely distributed in coastal area throughout Hong Kong.	✓[6, 7]	✓	-
Chinese Egret	*Egretta eulophotes*	• Fellowes: GC; • RLCV(EN); • CSMPS(II); • IUCN(VU)	Scarce spring passage migrant. Found in Mai Po, Lok Ma Chau, Nam Chung.	✓[6]	-	-
Western Osprey	*Pandion haliaetus*	• Cap.586; • Fellowes: RC; • CSMPS(II); • CITES(II)	Common winter visitor. Widely distributed in coastal areas throughout Hong Kong.	✓[6, 7]	✓	-
Crested Serpent Eagle	*Spilornis cheela*	• Cap.586; • Fellowes: (LC); • CSMPS(II); • CITES(II)	Common resident. Widely distributed in shrublands on hillsides throughout Hong Kong.	✓[6]	✓	-

Common Name	Scientific Name	Protection Status	Distribution, Rarity and other Notes	Literature	Surveys	Presence within Project Site
Greater Spotted Eagle	*Clanga clanga*	• Cap.586; • Fellowes: GC; • RLCV(EN); • CSMPS(II); • IUCN(VU); • CITES(II)	Common winter visitor. Found in Deep Bay area.	✓[6, 7]	✓	-
Eastern Imperial Eagle	*Aquila heliaca*	• Cap.586; • Fellowes: GC; • RLCV(EN); • CSMPS(I); • IUCN(VU); • CITES(I)	Common winter visitor. Found in Deep Bay area, Ma Tso Lung.	✓[6]	-	-
Chinese Sparrowhawk	*Accipiter soloensis*	• Cap.586; • CSMPS(II); • CITES(II)	Common passage migrant. Found in Tsim Bei Tsui, Kadoorie Farm & Botanic Garden, Tai Po Kau.	✓[7]	-	-
Besra	*Accipiter virgatus*	• Cap.586; • CSMPS(II); • CITES(II)	Common resident and migrant. Found in Tai Po Kau, Deep Bay area, Chek Lap Kok, Cheung Chau, Soko Islands.	✓[6]	-	-
Northern Goshawk	*Accipiter gentilis*	• Cap.586; • Fellowes: (RC); • CSMPS(II); • CITES(II)	Vagrant. Found in Mai Po.	✓[6, 7]	✓	-

Common Name	Scientific Name	Protection Status	Distribution, Rarity and other Notes	Literature	Surveys	Presence within Project Site
Eastern Marsh Harrier	*Circus spilonotus*	• Cap.586; • Fellowes: LC; • CSMPS(II); • CITES(II)	Common winter visitor and passage migrant. Found in Deep Bay area, Starling Inlet area, Kadoorie Farm & Botanic Garden, Mount Austin.	✓[6, 7]	✓	-
Black Kite	*Milvus migrans*	• Cap.586; • Fellowes: (RC); • CSMPS(II); • CITES(II)	Common resident and winter visitor. Widely distributed in Hong Kong.	✓[6, 7]	✓	-
White-bellied Sea Eagle	*Haliaeetus leucogaster*	• Cap.586; • Fellowes: (RC); • RLCV(VU); • CSMPS(I); • CITES(II)	Locally common resident. Widely distributed in coastal areas throughout Hong Kong.	✓[6]	-	-
Eastern Buzzard	*Buteo japonicus*	• Cap.586, • CSMPS(II); • CITES(II)	Common winter visitor. Widely distributed in Hong Kong.	✓[6, 7]	✓	-
Collared Scops Owl	*Otus lettia*	• Cap.586; • CSMPS(II); • CITES(II)	Common resident. Widely distributed in shrubland throughout Hong Kong	✓[6, 7]	✓	✓

Common Name	Scientific Name	Protection Status	Distribution, Rarity and other Notes	Literature	Surveys	Presence within Project Site
White-throated Kingfisher	*Halcyon smyrnensis*	• Fellowes: (LC)	Common resident. Widely distributed in coastal areas throughout Hong Kong.	✓[6, 7]	✓	-
Black-capped Kingfisher	*Halcyon pileata*	• Fellowes: (LC); • IUCN(VU)	Uncommon passage migrant and winter visitor. Widely distributed in coastal areas throughout Hong Kong.	✓[6, 7]	✓	-
Pied Kingfisher	*Ceryle rudis*	• Fellowes: (LC)	Common resident. Widely distributed in lakes and ponds throughout Hong Kong.	✓[6, 7]	✓	-
Common Kestrel	*Falco tinnunculus*	• Cap.586; • CSMPS(II); • CITES(II)	Common autumn migrant and winter visitor. Widely distributed in Hong Kong.	-	✓	-
Peregrine Falcon	*Falco peregrinus*	• Cap.586; • Fellowes: (LC); • CSMPS(II); • CITES(I)	Locally common resident and winter visitor. Widely distributed in Hong Kong.	✓[6]	-	-
Collared Crow	*Corvus torquatus*	• Fellowes: LC; • IUCN(VU)	Locally common resident. Found in Inner Deep Bay	✓[6, 7]	✓	-

Common Name	Scientific Name	Protection Status	Distribution, Rarity and other Notes	Literature	Surveys	Presence within Project Site
			area, Nam Chung, Kei Ling Ha, Tai Mei Tuk, Pok Fu Lam, Chek lap Kok, Shuen Wan, Lam Tsuen.			
Zitting cisticola	*Cisticola juncidis*	• Fellowes: LC	Common passage migrant and winter visitor. Widely distributed in grassland throughout Hong Kong	✓[7]	-	-
Chinese Hwamei	*Garrulax canorus*	• Cap.586; • CITES(II)	Common resident. Widely distributed in hillside shrubland throughout Hong Kong	✓[7]	-	-
Red-billed Starling	*Spodiopsar sericeus*	• Fellowes: GC	Abundant winter visitor. Widely distributed in Hong Kong	✓[5,6, 7]	✓	-
White-cheeked Starling	*Spodiopsar cineraceus*	• Fellowes: PRC	Locally common winter visitor. Found in Deep Bay area, Kam Tin, Long Valley	✓[5]	-	-

Common Name	Scientific Name	Protection Status	Distribution, Rarity and other Notes	Literature	Surveys	Presence within Project Site
Styan's Grasshopper Warbler	*Helopsaltes pleskei*	• Fellowes: GC; • RLCV(VU); • IUCN(VU)	Scarce passage migrant and winter visitor. Found in Ma Tso Lung, Mai Po	-	✓	-
White-shouldered Starling	*Sturnia sinensis*	• Fellowes: (LC)	Locally common passage migrant and uncommon winter visitor. Found in Kam Tin, Deep Bay area, Po Toi Island, Long Valley, Victoria Park, Ho Chung, Ma Tso Lung, Mui Wo, Lam Tsuen Valley	-	✓	-
Butterfly						
Common Awl	*Hasora badra*	• Fellowes: LC; • AFCD (2011): Very Rare	Wu Kau Tan, Lai Chi Wo, Hong Kong Wetland Park.	✓[7]	-	-
Common Cerulean	*Jamides celeno*	• AFCD (2011): Rare	Shek Pik, High Junk Peak, Shek Mun Kap, Fung Yuen, Pui O, Ma On Shan.	✓[7]	-	-
Tiny Grass Blue	*Zizula hylax*	• AFCD (2011): Very Rare (Species of Conservation Concern)	Lung Kwu Tan, Fung Yuen, Sha Lo Wan.	✓[7]	-	-

Common Name	Scientific Name	Protection Status	Distribution, Rarity and other Notes	Literature	Surveys	Presence within Project Site
Black-vein Sergeant	*Athyma ranga*	• Fellowes: LC	Shing Mun, Ngau Ngak Shan, Tai Mong Tsai, Tai Mo Shan, Tai Po Kau, Cloudy Hill.	✓[7]	-	-
Danaid Egg-fly	*Hypolimnas misippus*	• Fellowes: LC	Ngau Ngak Shan, Lung Kwu Tan, Hong Kong Wetland Park, Mount Parker, Cloudy Hill, Lin Ma Hang.	✓[7]	-	-
Swallowtail	*Papilio xuthus*	• AFCD (2011): Rare	Kap Lung, Ma On Shan, Tai Tam, Sha Lo Wan, Kat O, Lung Kwu Tan, Wu Kau Tang, Lung Kwu Chau.	✓[7]	-	-
Odonate						
Coastal Glider	*Macrodiplax cora*	• Fellows: LC	Frequents marshes and ponds with dense vegetation, especially adjacent to coastal areas	-	✓	-
Mangrove Skimmer	*Orthetrum poecilops poecilops*	• Fellowes: GC; • Reels: CI; • IUCN(VU)	Occurs where small freshwater streams	-	✓	-

Common Name	Scientific Name	Protection Status	Distribution, Rarity and other Notes	Literature	Surveys	Presence within Project Site
			cascade into tidal mangroves. Found mainly in the Northeast New Territories, including Double Island, Lai Chi Wo, Nam Chung, So Lo Pun, Yim Tso Ha, Yung Shue Au and Yung Shue O etc; also recorded in Tung Chung and Tai O			
Firefly						
-	*Pteroptyx maipo*	• IUCN(EN)	Endemic to South China, Mangrove-dependent, Distribution restricted to Deep Bay area locally[20, 21,22]	✓[7, 21]	✓	-
Horseshoe crab						
Horseshoe crab	*Carcinoscorpius rotundicauda*	• Grade II National Key Protected Species	Identified in mudflats at Sheung Pak Nai, Pak Nai and Ha Pak Nai[24]	✓[23]	-	-

Common Name	Scientific Name	Protection Status	Distribution, Rarity and other Notes	Literature	Surveys	Presence within Project Site
Horseshoe crab	*Tachypleus tridentatus*	• Grade II National Key Protected Species; • IUCN(EN)	Identified in mudflats at Sheung Pak Nai, Pak Nai and Tsim Bei Tsui[24]	✓[23]	-	-
Seagrass						
Beccari's Halophila	*Halophila beccarii*	• IUCN(VU); • RLCHP: VU	Identified in mudflats at Tsim Bei Tsui, Sheung Pak Nai and Ha Pak Nai	✓[24, 25]	-	-

Notes:
Literature Sources:

(1) Shek, C.T. (2004). Bats of Hong Kong: An introduction of Hong Kong bats with an illustrative identification key. Hong Kong Biodiversity, 7, 1-9.
(2) Shek, C.T. (2006). Mist Net Survey of Bats with Three New Bat Species Records for Hong Kong. Hong Kong Biodiversity, 11, 1-7.
(3) McMillan, S. E., Wong, A. T. C., Tang, S. S. Y., Yau, E. Y. H., Gomersall, T., Wong, P. Y. H., …Bonebrake, T. C. (2022). Spraints Demonstrate Small Population Size and Reliance on Fishponds for Eurasian Otter (Lutra lutra) in Hong Kong. Conservation Science and Practice, 5(1).
(4) Shek, C.T., Chan, C.S.M., and Wan, Y.F. (2007) Camera Trap Survey of Hong Kong Terrestrial Mammals in 2002-06. Hong Kong Biodiversity, 15, 1-11.
(5) HKBWS (2024a). Hong Kong Bird Report 2018.
(6) HKBWS (2024b). Mai Po Inner Deep Bay Ramsar Site Waterbird Monitoring Programme 2018-2023.
(7) Agreement No. CE 31/2022 (CE) Land Use Review Study for Lau Fau Shan, Tsim Bei Tsui and Pak Nai Areas - Feasibility Study (Feasibility Study)

References on Conservation Status, Distribution, Rarity and other Notes:

(8) AFCD (2003) *Rare and Precious Plants of Hong Kong (Online Version)*. Agriculture, Fisheries and Conservation Department, HKSAR, Hong Kong. Available at: https://www.herbarium.gov.hk/en/publications/books/book2/index.html. Accessed on April 2024.
Status in China: VU = Vulnerable.
Categories: 1 = Species endemic to Hong Kong; 2 = Species that are native to Hong Kong and of national importance; 3 = Species that are native to Hong Kong and of importance in Guangdong; 4 = Native species that have important scientific interests or potential value in various uses, or those having small populations or sparse distribution in Hong Kong.
(9) Cap. 96: Forestry Regulations, the subsidiary legislation of Forests and Countryside Ordinance (Cap. 96A)
(10) Cap. 586: Protection of Endangered Species of Animals and Plants Ordinance
(11) RLCHP – Red List of China's Higher Plants (2020). EN = Endangered
(12) IUCN – International Union for Conservation of Nature Red List of Threatened Species (2023). VU = Vulnerable, EN = Endangered, CR = Critically Endangered.
(13) CITES – Under Appendix (I), Appendix (II) or Appendix (III) of Convention on International Trade in Endangered Species of Wild Flora and Fauna
(14) Cap. 170: Protected under Wild Animals Protection Ordinance, all birds in Hong Kong are protected under Cap. 170

(15) Fellowes – Fellowes et al. (2002): PGC = Potential Global Concern, GC = Global Concern, PRC = Potential Regional Concern, RC = Regional Concern, LC = Local Concern. Letters in parentheses indicate that the assessment is on the basis of restrictedness in breeding and/or roosting sites rather than in general occurrence.
(16) RLCV – Red List of China's Vertebrate (2020): VU = Vulnerable, EN = Endangered.
(17) CSMPS – China State Major Protection Status: Appendix II
(18) AFCD refers to Chan et. al. (2011). A Review of the Local Restrictedness of Hong Kong Butterflies. Hong Kong Biodiversity 21: 1-12
(19) Reels – Reels. G. (2019): CI = Species of Conservation Importance
(20) Ballantyne et. Al. (2011). Pteroptyx maipo Ballantyne, a new species of bent-winged firefly (Coleoptera: Lampyridae) from Hong Kong, and its relevance to firefly biology and conservation. Zootaxa, 2931, 8-34.
(21) Yiu, V. (2011). A new species of firefly from Hong Kong – Pteroptyx maipo Ballantyne, 2011. Insect News (Hong Kong Entomological Society Newsletter), 3, 2-7.
(22) Yiu, V. (2017). A study of Rhagophthalmidae and Lampyridae in Hong Kong with descriptions of new species (Coleoptera): Part 2. Lampyrid 4: 59-111.
(23) Kwan, V. 2016. Present population and habitat status of potentially threatened Asian horseshoe crabs Tachypleus tridentatus and Carcinoscorpius rotundicauda in Hong Kong: a proposal for marine protected areas.
(24) Kwok, P.W., Yang, K.Y., Tong Y.F. and Lam C.P. (2005). Distribution of Seagrasses in Hong Kong. Hong Kong Biodiversity, 8, 12-14.
(25) Yip, K L and Lai, C C. (2006). Halophila minor (Hydrocharitaceae), a new record with taxonomic notes of the Halophila from the Hong Kong Special Administrative Region, China. Journal of Systematics and Evolution, 44(4)

7. IMPACT IDENTIFICATION AND EVALUATION

7.1 BRIEF PROJECT DESCRIPTION

The schematic design of the Project Site consists of two 1-storey blocks, Emergency Generator Room, FS Pump Room and FS Water Tank of ~616m^2 gross floor area in total. The two blocks accommodate FTIR Room, UPS Room, air monitoring equipment store room, VOC analyzer support room, a Server Room, etc.. There is outdoor equipment area on a reinforced concrete plinth to the south of the two blocks. Two pole-type transformers and electrical cut out will be set up to the west of Block A, while the two private car parking spaces are adjacent to Block B. Buildings structures would be one-storey with parapet and equipments installed on the rooftop. The channelized watercourse along the edge the Project Site will be excluded from the site boundary thus would not be directly impacted by the works. The preliminary layout plan of the Project is provided in ***Annex 13***.

The Project would typically operate unmanned on a 24 x 7 basis. The Project is not expected to produce noise, glare, and other emission during operation. Inspection and maintenance would be carried out during daytime on a need basis or at an expected frequency of not more than once a week.

Two (2) construction methods are proposed for the main building structure of the Project Site, namely in-situ construction and modular integrated construction (MiC) method. As the construction method is still being confirmed a conservative approach to ensure ecological impacts are adequately assessed is adopted. The following impact assessment is made under the assumption with the *in-situ* construction programme in which most structures will be built on site thus have a likelihood of a relatively higher level of on-site disturbances may occur.

7.2 IDENTIFICATION OF POTENTIAL ECOLOGICAL IMPACTS

The potential ecological impacts associated with the proposed Project during the construction and operational stage are predicted as follows.

- Potential ecological impacts during construction phase:
  - Impacts on recognized sites of conservation importance;
  - Habitat loss;
  - Potential direct impacts on flora and fauna species of conservation importance;
  - Indirect disturbances to the surrounding habitats and associated wildlife due to the construction works (e.g. increased human activities, noise and glare impacts); and
  - Indirect impacts (pollution) on mangrove or mudflat/coastal water body due to construction run-off.
- Potential ecological impacts during operational phase:
  - Habitat loss;

- Indirect disturbances to the surrounding habitats and associated wildlife due to operational activities; and
- Potential risk of bird collision due to aboveground buildings.

7.3 ASSESSMENT OF ECOLOGICAL IMPACTS

7.3.1 CONSTRUCTION PHASE

7.3.1.1 IMPACTS ON RECOGNISED SITES OF CONSERVATION IMPORTANCE

Several sites of conservation importance fell within close vicinity of Project Site, including wetland conservation area, Mai Po Inner Deep Bay Ramsar site, Mai Po Inner Deep Bay SSSI, and Tsim Bei Tsui SSSI. The Project Site lies within Wetland Buffer Area and Coastal Protection Area, thus the Project should comply with the "no-net-loss in wetland principle" under Town Planning Board Guideline PG. 12C. The principle of "no-net-loss" is defined that no decline in both "area" and "function" of the wetland should occur.

As habitat loss within these sites of conservation importance would be limited to plantation habitats, no wetlands (e.g. mangrove, fishpond) would be directly lost or impacted, thus the Project would comply with the "no-net-loss in wetland principle" in terms of "area" under Town Planning Board Guideline PG. 12C. The associated significance of impacts from habitat loss are discussed in ***Section 7.3.1.2***.

Indirect impacts induced by the Project would be anticipated to the wildlife inhabiting the sites, which included water pollution, noise, dust, waste generation, glare (particularly during nighttime) and visual disturbance to the ecologically important wetland and SSSIs nearby. The impact significance is **Low to Moderate** in the absence of mitigation measures.

Due consideration is also made on the potential impacts on the ecological "function" of the nearby wetlands due to indirect impact, especially as a source to provide abundant and accessible food and roosting grounds to avifauna and other species in accordance with the "no-net-loss in wetland principle".

Indirect disturbances to surrounding habitats and associated wildlife including those inhabiting the sites of conservation importance are assessed in ***Section 7.3.1.4***. The assessment on water pollution induced by potential construction site runoff will be discussed in ***Section 7.3.1.5***. The impact significance is anticipated to be **Low to Moderate** in the absence of mitigation measures.

With the aforementioned impacts adequately addressed it is expected that the loss in ecological "function" of affected wetland could be prevented or minimized, thus the Project would comply with the "no-net-loss in wetland principle" in terms of "function" under Town Planning Board Guideline PG. 12C.

7.3.1.2 HABITAT LOSS

Habitat loss arising from the proposed construction work for the supersite would be limited to the plantation within the Project Site as shown in ***Figure 5.1***. With rather

limited construction details, it is assumed that permanent clearance of vegetation within the Project Site would be in place.

Without reinstatement work in this area, it is assumed that permanent loss of ~0.31 ha of plantation will be anticipated. The plantation at the edge of habitat to be lost is of low to moderate ecological value which mainly consists of common landscaping or introduced afforestation species, though it is noted that mammal tracks of Small Indian Civet and Leopard Cat as well as a nesting site of Collared Scops Owl were recorded in the affected habitat, nevertheless, it is confirmed the nesting site is no longer active since May 2024. Further details on potential direct impacts on fauna species of conservation importance is discussed in ***Section 7.3.1.3***. No flora species of conservation importance will be affected by the Project.

The impact significance from the direct habitat loss caused by the Project is **Low to Moderate** for plantation. Assessment of potential direct impact on habitats within the Project Site in the absence of mitigation measures is detailed in ***Table 7-1*** below.

TABLE 7-1 POTENTIAL LOSS OF EXISTING HABITAT WITHIN THE PROJECT SITE

Criteria	Plantation
Habitat Quality	Low to Moderate
Species	Mammal: Small Indian Civet, Leopard Cat Avifauna: Collared Scops Owl with nesting behaviour
Size/Abundance	~0.31 ha, small in the context of Hong Kong Low to Moderate abundance and richness for avifauna, Low for other fauna species
Duration	Permanent loss of ~0.3 ha of plantation
Reversibility	Irreversible
Regional Significance	Low
Magnitude	Low
Overall Impact Severity	**Low to Moderate**

7.3.1.3 POTENTIAL DIRECT IMPACTS ON FLORA AND FAUNA SPECIES OF CONSERVATION IMPORTANCE

It should be noted that all of the identified individuals of flora species of conservation importance are located outside the Project Site. Therefore, no flora species of conservation importance is expected to be directly affected by the proposed works.

With reference to the literature review and the recent baseline survey, species of conservation importance recorded in close vicinity to the Project Site include Small Indian Civet, Leopard Cat and an inactive nesting site of Collared Scops Owl. For Small Indian Civet and Leopard Cat, as both species are of high mobility and that similar habitats are readily available adjacent to the Project Site, it is considered that they are

less susceptible to direct impacts induced by the proposed works, and hence the potential impact is of **Low** significance. Although a nesting site of Collared Scops Owl was observed within the Project Site, the nest is identified as inactive since May 2024. Collard Scops Owl might be affected in case of potential nest usage in plantation area within the Project Site where trees are expected to be felled, however, considering the Project Site is situated within a wider parcel of land with the same habitat and nearby young woodland, which are both suitable for Collared Scops Owl's usage, the loss of plantation is not expected to pose significant risk to Collard Scops Owl in the area and the potential impact is considered **Low to Moderate**. While a number of fauna species of conservation importance recorded in close vicinity to the Project Site based on previous studies and baseline survey including avifauna, mammal and butterfly species, these species are of mobility and not be susceptible to direct impact induced by the proposed works. Given that plantation is the primary habitat affected and that similar habitats are readily available in the vicinity of the Project Site, the affected area is considered to be of **Low to Moderate** significance to other potential fauna species of conservation importance in the vicinity.

7.3.1.4 INDIRECT DISTURBANCES TO SURROUNDING HABITATS AND ASSOCIATED WILDLIFE

The surrounding habitats adjacent to the Project Site could be indirectly impacted by the Project, due to construction-induced disturbances arising from the Project. Increased human activities (especially during the construction phase) would be the main source of disturbance accrued from the proposed works.

Noise, dust, waste generation, glare (particularly during night-time) and visual disturbance are predicted to occur during construction, which may arise from the construction activities at the Project Site. Habitats that are of particular concern include mangrove and mudflat/coastal water body.

Mangroves within the Assessment Area are considered to be of High ecological value. Based on previous studies, mangroves at Tsim Bei Tsui are breeding/nursery grounds for a firefly species of conservation importance namely, *Pteroptyx maipo*. As such the presence of artificial lighting at the construction site may result in a reduction in the density of its population in the area through disorientation from, and attraction to artificial light, and disruptive effects on their light-sensitive cycles thus affecting their breeding success. Though it is noted that due to the relative distance between the Project Site and mangrove habitat as well as the presence of existing lighting (i.e. lampposts along the border fence of Deep Bay Road) in close vicinity to mangrove suggesting a degree of tolerance of *Pteroptyx maipo* to artificial lighting, the overall impact of indirect disturbances on mangrove is considered to be of **Low to Moderate** significance.

Mudflat/Coastal Water Body within the Assessment Area are considered to be of high ecological value. Based on previous studies, a high abundance and diversity of avifauna species of conservation importance were recorded within the mudflats of Inner Deep Bay. Disturbances can result in a reduction of faunal population in the area through

disorientation from artificial light, and disruptive effects on the light-sensitive cycles of light sensitive/nocturnal species. This can affect migration, foraging/predation and breeding success of species. Potential disturbance by construction noise and increased human activities may also cause wildlife to avoid using areas adjacent to the Project Site, and thereby reduce wildlife density in the area. Though considering the relative distance between the Project Site and mudflat/coastal water body and that the fauna recorded in the Assessment Area were of some degree of tolerance to nuisance from existing nearby human activities due to close vicinity to village area and developed area, therefore, indirect disturbances induced by the construction works would not have significant impact to mudflat/coastal water body and associated wildlife. These potential impacts are thus expected to be **Low to Moderate**.

Woodland and plantation within the Assessment Area are evaluated as **Low to Moderate** ecological value. Based on the reviewed information and the survey findings, some mammal and avifauna species of conservation importance were recorded within the woodland and plantation habitats within the Assessment Area. Disturbances can result in a reduction of faunal population in the area through disorientation from artificial light, and disruptive effects on the light-sensitive cycles of light sensitive/nocturnal species, particularly due to close vicinity of species recorded from or within the Project Site. This can affect migration, foraging/predation and breeding success of species. Potential disturbance by construction noise and increased human activities may also cause wildlife to avoid using areas within or adjacent to the Project Site and thereby reducing wildlife density in the area. However, considering the species of conservation importance recorded within the area being highly mobile and possess some degree of tolerance to nuisance from existing nearby human activities, such as noise and light pollution from the Deep Bay Road, indirect disturbances induced by the construction works would not have unacceptable impact to the woodland and plantation habitats in the Assessment Area and the associated wildlife. These potential impacts are thus expected to be **Low to Moderate**.

While for other habitats, based on findings from the baseline ecological survey and literature review, fauna recorded in the vicinity of the Project Site are mobile and able to move to the other similar habitats, which are larger in size and with better habitat quality. Furthermore, the fauna recorded in the Assessment Area exhibited some degree of tolerance to nuisance from existing nearby human activities due to close vicinity to village area and developed area, therefore, indirect disturbances induced by the construction works would not have significant impact to surrounding habitats and associated wildlife. These potential impacts are thus expected to be **Low**.

In the absence of mitigation measures, the above-mentioned disturbance impacts on surrounding habitats and associated wildlife are evaluated in ***Table 7-2*** below.

TABLE 7-2 POTENTIAL DISTURBANCE TO NEARBY HABITATS WITHIN THE ASSESSMENT AREA

Habitat Type	**Woodland**	**Plantation**	**Shrubland**	**Seasonally Wet Grassland**	**Watercourse**	**Fishpond**	**Mangrove**	**Village Area**	**Developed Area**	**Mudflat/Coastal Water Body**
Habitat Quality	Low to Moderate	Low to Moderate	Low to Moderate	Low	Low	Low to Moderate	High	Low	Low	High
Species	Total of 6 species of conservation importance recorded during baseline survey including 1 flora, 2 mammal and 3 avifauna species	Total of 6 species of conservation importance recorded during baseline survey including 1 flora, 3 mammal and 2 avifauna species.	Total of 2 species of conservation importance recorded during baseline survey including 1 flora species and 1 avifauna species	No species of conservation importance recorded during baseline survey	No species of conservation importance recorded during baseline survey	No species of conservation importance recorded during baseline survey	Total of 12 species of conservation importance recorded during baseline survey, 9 avifauna and 2 odonate species and 1 firefly species Potential habitat for *Pteroptyx maipo* based on literature	No species of conservation importance recorded during baseline survey	No species of conservation importance recorded during baseline survey	Total of 56 species of conservation importance recorded during baseline survey, all are avifauna species
Size/Abundance	~3.97 ha Low to Moderate abundance and richness of avifauna; low diversity of other fauna groups	~6.06 ha Low to Moderate abundance and richness of avifauna; low diversity of other fauna groups	~10.42 ha Low abundance and richness for all fauna groups	~0.53 ha Low abundance and richness for all fauna groups	~984m Low abundance and richness for all fauna groups	~0.77 ha Low abundance and richness for all fauna groups	~18.61 ha Low to Moderate abundance and richness of avifauna, low for other fauna groups	~3.92 ha Low abundance and richness for all fauna groups	~10.85 ha Low abundance and richness for all fauna groups	~42.02 ha High abundance and richness of avifauna, low for other fauna groups
Duration	Last during working hours in construction phase									
Reversibility	Reversible, disturbance will be ceased once works stopped/ completed									
Regional Significance	Low	Low	Low	Low	Low	Low	Moderate to High	Low	Low	High
Magnitude	Low to Moderate	Low to Moderate	Low	Low	Low	Low	Low to Moderate	Low	Low	Low to Moderate
Overall Impact Severity	**Low to Moderate**	**Low to Moderate**	**Low**	**Low**	**Low**	**Low**	**Low to Moderate**	**Low**	**Low**	**Low to Moderate**

7.3.1.5 INDIRECT IMPACT (POLLUTION) ON MANGROVE OR MUDFLAT/COASTAL WATER BODY DUE TO CONSTRUCTION RUN-OFF

During construction phase, site runoff from the construction works may contain suspended solids and contaminants if uncontrolled. Potential sources of uncontrolled site runoff may include runoff and erosion of exposed bare soil, earth and stockpiles, fuel, oil, and lubricant from maintenance of construction mechanical equipment. Water pollution could be substantial if construction runoff is allowed to discharge without mitigation, in particular, if the runoff is discharged to the nearby mangrove and mudflat/coastal water body in downslope areas or through connected watercourses, which supports diverse range of avifauna of conservation importance as well as intertidal species communities which serves as an important food source for many wetland-dependent avifauna species. These polluted runoffs could result in physical and biological disruption of the area's ecosystem. Taking into account the small scale of the construction works and the Project Site are relatively far from the existing ecologically sensitive habitats (e.g. mangrove, in the absence of mitigation measures, the impact of potential water pollution caused by the Project is considered to be of **Low to Moderate** significance. The impacts discussed above would be ceased immediately upon completion of construction works.

7.3.2 OPERATIONAL PHASE

7.3.2.1 INDIRECT DISTURBANCES TO THE SURROUNDING HABITATS AND ASSOCIATED WILDLIFE

Disturbances from construction activities would be ceased upon completion of works. Although the Project would operate on a 24 x 7 basis, human activities on site would be infrequent and limited to inspection and maintenance carried out during daytime on a need basis or at an expected frequency of not more than once a week. In addition, no noise, glare, and other emission are anticipated during operation. Limited disturbance to adjacent habitats and associated wildlife would be anticipated. Moreover, the Project Site located at the edge of plantation near the road where human disturbance already exists, wildlife inhabiting nearby are expected to be tolerant to minor increase in disturbances from operational activities. Thus, level of disturbance is expected to be **Low**. It is expected that no decline in both "area" and "function" of the wetland would occur during the operational phase, thus the Project would comply with the "no-net-loss in wetland principle" under Town Planning Board Guideline PG. 12C.

7.3.2.2 POTENTIAL RISK OF BIRD COLLISION DUE TO ABOVEGROUND BUILDINGS

Aboveground structures would be present atop the Project Site. Since there is possibility of overlap between the flight height of avifauna, particularly migratory avifauna species and the facilities, there may be increase potential risk of bird collision. It is noted that the building structures would be one-storey with parapet and equipment installed on the rooftop. Based on existing observation, no major flightline was identified overlapping with the Project Site. The flightlines majorly adopted by birds (majorly waterbirds) were along the coastal area. As such the impacts related to increased potential risk of bird collision associated with project is considered to be **Low** during operational phase.

8. CUMULATIVE IMPACTS

No concurrent project, of which the construction programme would have overlapped with this Project, is identified within the Assessment Area to date, therefore, cumulative impact is not anticipated for this Project.

9. MITIGATION AND PRECUATIONARY MEASRUES

Based on the ecological impacts predicted in ***Section 7***, mitigation measures to avoid, minimise or compensate (if necessary) for the potential significant impacts are detailed below. In line with the EIAO-TM, ways to avoid impacts were identified and followed wherever possible during the planning and design stage (i.e. avoiding encroaching ecologically sensitive habitats within sites of conservation importance). If, despite taking all appropriate design measures of avoidance and minimisation, potential ecological impacts of greater than "**Low**" significance are still anticipated, further mitigation measures are considered necessary to reduce these impacts to an acceptable level. Moreover, to achieve a better ecological performance, precautionary measures are proposed under this project for certain potential ecological impacts that are not considered to be significant.

In order to minimise the potential disturbances arising the project, good site/ construction practice and housekeeping measures will be adopted. Mitigation measures and good construction practices are recommended below.

9.1 AVOIDANCE OF ECOLOGICALLY SENSITIVE HABITATS WITHIN SITES OF CONSERVATION IMPORTANCE

The Project Site is mainly situated within plantation of wetland buffer area and coastal protection area. Therefore, the Project site has avoided encroaching into ecologically sensitive habitats such as mangrove and mudflat/coastal water body within Mai Po Inner Deep Bay Ramsar Site, SSSIs, Wetland Conservation Area or other ecologically sensitive receivers.

9.2 MINIMISATION OF HABITAT LOSS

In general, replanting within the Project Site wherever possible would be implemented upon the completion of the construction works to reinstate the affected area to condition similar to original status, and such rehabilitation works should use native plants that occur in the adjacent plantation habitat as far as possible and have flowers/fruits attractive to wildlife. It is also suggested to minimize the extent of vegetation clearance and retain trees wherever possible. Further discussion on precautionary measures for the nesting site of Collared Scops Owl is detailed in ***Section 9.3***.

9.3 MEASURES ON PROTECTION OF FAUNA SPECIES OF CONSERVATION IMPORTANCE

As discussed in ***Section 7.3.1.3***, fauna species of conservation importance recorded within the Project Site include Small Indian Civet, Leopard Cat and Collared Scops Owl.

In view of the mobility of Small Indian Civet and Leopard Cat and the availability of similar quality habitats in the vicinity, no specific measures are necessary in view of the low potential impact.

On the other hand, for Collared Scops Owl, as a nesting site was recorded within the Project site, even though considered inactive since May 2024, to avoid potential direct impacts, a pre-construction site check should be conducted to confirm if there is any active nest of Collared Scops Owl for the trees to be directly impacted by the Project prior to the commencement of construction works.

Should any nesting behavior (i.e. incubation, parental care, presence of juveniles) of Collared Scops Owl be recorded, construction works near the vicinity of the nesting site should be temporarily suspended considering that bird nests or egg are protected under Cap. 170 Wild Animals Protection Ordinance. The record of active bird nest shall be reported to AFCD and the procedure on monitoring of nesting site and resumption of construction works shall be further discussed and agreed with AFCD.

9.4 MEASURES FOR INDIRECT DISTURBANCES TO SURROUNDING HABITATS AND ASSOCIATED WILDLIFE

The following construction phase mitigation measures are proposed to reduce predicted disturbance impacts and impact of water pollution to an acceptable level:

- The boundary of the Project Site will be clearly marked by temporary fence. The works area boundaries will be regularly checked to ensure that they are not breached and that no damage occurs to surrounding habitat;
- Regularly check the site boundaries to ensure that they are not breached and that no damage occurs to surrounding ecologically sensitive habitats (e.g. mangrove);
- Avoid any damage and disturbance, particularly those caused by filling and illegal dumping to the surrounding natural habitats;
- Prohibit and prevent open fires within the works area boundary during construction and provide temporary firefighting equipment in the work areas;
- Good site practice will be enforced and effective mitigation measures are required. Works site will be kept tidy at all times. Accumulation of construction waste and general refuse will not be allowed;
- Strong artificial lighting should not be used in the Project Site to minimize disturbance to fauna, especially fireflies. Lighting required for safety purpose should keep minimal and pointed inward. Lighting periods should be controlled during the adult flight period of *Pteroptyx maipo* (March –October) to minimize potential impacts on fireflies. Any unnecessary artificial light sources should be switched off before sunset between March and October. Clear signs should be erected on site to alert all site staff and workers about the requirements;
- Encouraging the usage of non-transparent or non-glaring materials to the best extent for the design and construction of the site it could help minimize the potential risks of bird collision;

- As a precautionary measure, construction activities under the Project during night-time from 19:00 to 07:00 will be avoided to minimize disturbance to wildlife;
- In addition to avoiding construction works during 19:00 to 07:00, noisy construction works will be ceased at least an hour before sunset, and commence construction works at least an hour after sunrise on the following day, referring to the time of sunrise and sunset from the Hong Kong Observatory;
- To further minimize noise impacts to wildlife in surrounding habitats, temporary noise barriers/screens will be implemented during construction;
- Adopt appropriate measures including controlled wastewater discharge to the nearby water bodies, in accordance with the guidelines stipulated in Environmental Protection Department (EPD)'s Practice Note for Professional Persons on Construction Site Drainage (ProPECC PN2/23) during the construction works to properly control site run-off and drainage and to minimise potential water quality impacts;
- In the event of rain or at any time when rainstorms are likely to happen, exposed surfaces within the works area should be covered by tarpaulin or by other means.

10. RESIDUAL ECOLOGICAL IMPACTS

Table 10-1 summarises the potential ecological impacts of the Project, the impacts that require mitigation, the mitigation measures to be carried out and the residual impacts after mitigation. With the implementation of proposed mitigation measures described in ***Section 9***, residual impacts of the Project would be reduced to **Low**.

TABLE 10-1 EVALUATION OF RESIDUAL IMPACTS AFTER IMPLEMENTATION OF MITIGATION MEASURES

Potential Impact	Predicted Significance of Impact in Absence of Mitigation Measures	Proposed Mitigation/Precautionary Measures	Residual Impact
Construction Phase			
Impacts on recognised sites of conservation importance	Low to Moderate	• Avoidance of ecologically sensitive habitats will be adopted and the Project Site would be limited to plantation habitats within Wetland Buffer Area and Coastal Protection Area. • Adoption mitigation measures for indirect disturbance to surrounding habitat and associated wildlife recommended in ***Section 9.4***.	Low
Habitat loss (Plantation)	Low to Moderate	• Minimization of vegetation clearance of plantation area, and adopt appropriate mitigation measures for nesting site of Collared Scops Owl, as discussed in ***Section 7.3.1.3***.	Low
Potential direct impacts on flora species of conservation importance	Negligible	• No flora species of conservation importance is expected to be directly affected by the proposed works	Negligible
Potential direct impacts on fauna species of conservation importance	Low to Moderate for fauna species of conservation importance	• Although nesting site of Collared Scops Owl is identified to be inactive, a pre-construction site check should be conducted to confirm if there is any active nest of Collared Scops Owl for the trees to be directly impacted by the Project prior to the commencement of construction works. If nesting activity of Collared Scops Owl is confirmed, procedures of a monitoring plan and conditions to resumption of construction works should be confirmed with AFCD. • Construction activities under the Project during night-time from 19:00 to 07:00 will be avoided to minimize disturbance to wildlife. • In addition to avoiding construction works during 19:00 to 07:00, noisy construction works will be ceased at least an hour before sunset, and commence construction works at least an hour after	Low

Potential Impact	Predicted Significance of Impact in Absence of Mitigation Measures	Proposed Mitigation/Precautionary Measures	Residual Impact
		sunrise on the following day, referring to the time of sunrise and sunset from the Hong Kong Observatory.	
Indirect disturbances to surrounding habitats and associated wildlife	Low to Moderate for mangrove, plantation, woodland, and mudflat/coastal water body; Low for other habitats	• The boundary of the Project Site will be clearly marked by temporary fence. The works area boundaries will be regularly checked to ensure that they are not breached and that no damage occurs to surrounding habitat; • Regularly check the site boundaries to ensure that they are not breached and that no damage occurs to surrounding ecologically sensitive habitats (e.g. mangrove); • Avoid any damage and disturbance, particularly those caused by filling and illegal dumping to the surrounding natural habitats; • Prohibit and prevent open fires within the works area boundary during construction and provide temporary firefighting equipment in the work areas; • Good site practice will be enforced and effective mitigation measures are required. Works site will be kept tidy at all times. Accumulation of construction waste and general refuse will not be allowed; • Strong artificial lighting should not be used in the Project Site to minimize disturbance to fauna, especially fireflies. Lighting required for safety purpose should keep minimal and pointed inward. Lighting periods should be controlled during the adult flight period of *Pteroptyx maipo* (March –October) to minimize potential impacts on fireflies. Any unnecessary artificial light sources should be switched off before sunset between March and October. Clear signs should be erected on site to alert all site staff and workers about the requirements; • Encouraging the usage of non-transparent or non-glaring materials to the best extent for the design and construction of the site it could help minimize the potential risks of bird collision; • As a precautionary measure, construction activities under the Project during night-time from 19:00 to 07:00 will be avoided to minimize disturbance to wildlife;	Low

Potential Impact	Predicted Significance of Impact in Absence of Mitigation Measures	Proposed Mitigation/Precautionary Measures	Residual Impact
		• In addition to avoiding construction works during 19:00 to 07:00, noisy construction works will be ceased at least an hour before sunset, and commence construction works at least an hour after sunrise on the following day, referring to the time of sunrise and sunset from the Hong Kong Observatory; • To further minimize noise impacts to wildlife in surrounding habitats, temporary noise barriers/screens will be implemented during construction.	
Indirect impact (pollution) on mangrove or mudflat/coastal water body due to construction run-off	Low to Moderate	• Adopt appropriate measures including controlled wastewater discharge to the nearby water bodies, in accordance with the guidelines stipulated in Environmental Protection Department (EPD)'s Practice Note for Professional Persons on Construction Site Drainage (ProPECC PN2/23) during the construction works to properly control site run-off and drainage and to minimise potential water quality impacts; • In the event of rain or at any time when rainstorms are likely to happen, exposed surfaces within the works area should be covered by tarpaulin or by other means.	Low
Operational Phase			
Indirect disturbances to surrounding habitats and associated wildlife	Low	• Implementation of good site practices to control environmental nuisance to air quality, noise and water quality.	Low
Potential risk of bird collision due to aboveground buildings	Low	• Implementation of good site practices such as the usage of non-transparent or non-glaring materials could help minimize the potential risks of bird collision.	Low

11. CONCLUSION

The key terrestrial ecological resources recorded within the Assessment Area comprised of woodland (young), plantation, shrubland, seasonally wet grassland, watercourse, fishpond, mangrove, village area, developed area and mudflat/coastal water body, where the Project Site will be restricted to plantation for the proposed works. Majority of the habitat to be directly affected are the plantation area that is semi-natural in nature mainly consisting of exotic landscaping/afforestation species. A nesting site of Collared Scops Owl was spotted at plantation within the Project Site (see ***Figure 5.1***), but the nesting site is later confirmed to be inactive. Based on the conservative assumption, the Project would result in a permanent loss of ~0.31 ha of plantation of **Low to Moderate** ecological value.

Given that the habitat nature within the Project Site is anthropogenic with some degree of human disturbance, the impact significance for habitat loss is considered to be **Low to Moderate** for plantation and **Low** for watercourse. Although a nesting site of Collared Scops Owl was observed at plantation within the Project Site, it was identified to be inactive since May 2024 and considering the availabilty of trees in the vicinity for Collard Scops Owl to nest, direct impact to the species would be of **Low to Moderate** significance. The impact significance of indirect impact to surrounding habitats and associated wildlife ranged from **Low** to **Low to Moderate**. Potential risk of bird collision due to aboveground buildings is of **Low to Moderate** significance. While the rest of the impacts to ecological resources would have **Low/negligible** impact significances as assessed. Due consideration has been made to avoid and minimize impacts to ecologically sensitive habitats such as mangrove and mudflat/coastal water body.

With the implementation of the proposed mitigation and precautionary measures, residual ecological impacts of the Project would be acceptable, no decline in both "area" and "function" of the wetland would occur during both construction and operation phase, thus the Project would comply with the "no-net-loss in wetland principle" under Town Planning Board Guideline PG. 12C.

ANNEXES

Woodland (Young)

Plantation

Shrubland

Seasonally Wet Grassland

Semi-natural Watercourse

Channelized Watercourse

Annex 1

Representative Photos of Habitats within the 500m Assessment Area

DATE: 15/5/2024

ERM

Fishpond

Mangrove

Village Area

Developed Area

Mudflat/Coastal Water Body

Annex 1

Representative Photos of Habitats within the 500m Assessment Area

DATE: 15/5/2024

ERM

Annex 2 Relative Abundance of Plant Species Recorded Within the Assessment Area

Item No.	Species Name	Chinese Name	Origin[1]	Growth Form	Distribution in Hong Kong[2]	Protection/Conservation Status[2]	Habitat[3] 500m Assessment Area										
							WL	PL	SL	SWG	VA	DA	SWC	CWC	PO	MG	MF
1	*Acacia confusa*	台灣相思	E	Tree	very common	-		++++	++								
2	*Acacia mangium*	大葉相思	E	Tree	very common	-		+++									
3	*Acanthus ilicifolius*	老鼠簕	N	Shrub	common	-										+++	+
4	*Acanthus ilicifolius var. xiamenensis*	廈門老鼠簕	N	Herb	common	-										++	
5	*Adenosma glutinosum*	毛麝香	N	Herb	very common	-			++								
6	*Adinandra millettii*	黃瑞木	N	Tree/Shrub	common	-	+	+									
7	*Ageratum houstonianum*	熊耳草	E	Herb	common	-			+								
8	*Aglaia odorata var. microphyllina*	小葉米仔蘭	E	Tree/Shrub	very common	-					++	++					
9	*Albizia lebbeck*	大葉合歡	E	Tree	very common	-						++					
10	*Aleurites moluccana*	石栗	E	Tree	common	-					++	++					
11	*Alocasia macrorrhizos*	海芋	N	Herb	very common	-	++			++	+	+	+++		++		
12	*Alternanthera paronychioides*	星星蝦鉗菜	E	Herb	common	-				++	+						
13	*Alysicarpus vaginalis*	鏈荚豆	N	Herb	very common	-					++	++					
14	*Antidesma ghaesembilla*	方葉五月茶	N	Tree	common	-			++								
15	*Aporosa dioica*	銀柴	N	Tree	very common	-	+++	++++									
16	*Aquilaria sinensis*	土沉香	N	Tree	common	Protected under the Protection of Endangered Species of Animals and Plants Ordinance (Cap. 586); China Plant Red Data Book: VU; Status in China: Wild plant under State protection (category II). Recorded in China Plant Red Data Book andIllustration of Rare & endangered plant in Guangdong Province. (AFCD, 2003); Category 2 & 3 (AFCD, 2003); RLCHP: EN; IUCN(VU); CITES(II)	++	+	++									
17	*Ardisia lindleyana*	山血丹	N	Shrub	common	-	+										
18	*Artocarpus heterophyllus*	菠蘿蜜	E	Tree	common	-					++						
19	*Asystasia micrantha*	小花十萬錯	E	Herb	cultivated or naturalised	-					++	+++					
20	*Atriplex maximowicziana*	海濱藜	N	Herb	-	-										++	+++
21	*Baeckea frutescens*	崗松	N	Tree/Shrub	very common	-			++++								
22	*Bambusa beecheyana*	吊絲球竹	E	Bamboo	-	-	++										
23	*Bauhinia championii*	缺葉藤	N	Climber	common	-	+										
24	*Berchemia floribunda*	多花勾兒茶	N	Climber	common	-		+++									
25	*Bidens alba*	白花鬼針草	E	Herb	very common	-		+++	++++	++++	++++	++++			+		
26	*Bischofia javanica*	秋楓	N	Tree	common	-	++										
27	*Blechnum orientale*	烏毛蕨	N	Herb	very common	-		+++	++								
28	*Bombax ceiba*	木棉	E	Tree	very common	-	++										
29	*Bougainvillea spectabilis*	簕杜鵑	E	Climber/Shrub	cultivated	-					+++	++					
30	*Brachiaria mutica*	巴拉草	E	Herb	common	-				++++					++		
31	*Bridelia tomentosa*	土蜜樹	N	Tree/Shrub	very common	-	++	++	+++		+++	+++					
32	*Brucea javanica*	鴉膽子	N	Tree/Shrub	common	-	++	++	+								
33	*Calliandra haematocephala*	朱纓花	E	Shrub	common	-					+						
34	*Callicarpa nudiflora*	裸花紫珠	N	Tree/Shrub	common	-		++									
35	*Canarium album*	白欖	E	Tree	restricted; in Fung Shui Woods; may have been introduced to Hong Kong but in some places appears truly wild	-	+										
36	*Cansjera rheedii*	山柑藤	N	Climber/Shrub	restricted	-			+++								
37	*Carica papaya*	番木瓜	E	Tree	common	-					++						
38	*Cassytha filiformis*	無根藤	N	Climber	very common	-	++	+									
39	*Cayratia corniculata*	角花烏蘞莓	N	Climber	very common	-					++	+++					
40	*Celtis sinensis*	朴樹	N	Tree	common	-	+++		++		++	+	+				
41	*Celtis timorensis*	假肉桂	N	Tree	restricted	-	+										
42	*Chenopodium acuminatum subsp. virgatum*	狹葉尖頭葉藜	N	Herb	common	-										++	+
43	*Chenopodium album*	藜	N	Herb	restricted	-				++							
44	*Cinnamomum burmannii*	陰香	N	Tree	very common	-	++										
45	*Cinnamomum camphora*	樟	N	Tree	common	-	++	++									
46	*Colocasia esculenta*	芋	N	Herb	common	-				+							
47	*Commelina benghalensis*	飯包草	N	Herb	restricted	-	+										
48	*Cratoxylum cochinchinense*	黃牛木	N	Tree/Shrub	very common	-			++								
49	*Croton crassifolius*	雞骨香	N	Shrub	very common	-			+++								
50	*Cuscuta campestris*	田野菟絲子	N	Herb	common	-			+++	+	+						
51	*Cyclosorus interruptus*	間斷毛蕨	N	Herb	very common	-				++							
52	*Cyclosorus parasiticus*	華南毛蕨	N	Herb	very common	-	++	++									
53	*Cyperus involucratus*	風車草	E	Herb	common	-				++							
54	*Dalbergia benthamii*	兩廣黃檀	N	Climber	common	-	+										
55	*Dalbergia hancei*	藤黃檀	N	Climber	common	-	+		++								
56	*Derris trifoliata*	魚藤	N	Climber/Shrub	common	-										++	
57	*Desmodium heterocarpon*	假地豆	N	Shrub	very common	-	++		++								

Annex 2 Relative Abundance of Plant Species Recorded Within the Assessment Area

Item No.	Species Name	Chinese Name	Origin[1]	Growth Form	Distribution in Hong Kong[2]	Protection/Conservation Status[2]	Habitat[3] 500m Assessment Area										
							WL	PL	SL	SWG	VA	DA	SWC	CWC	PO	MG	MF
58	*Desmodium reticulatum*	顯脈山綠豆	N	Shrub	restricted	-	++	+									
59	*Desmos chinensis*	假鷹爪	N	Climber/Shrub	common	-	+++	+++									
60	*Dianella ensifolia*	山菅蘭	N	Herb	very common	-	+++	+++	+++								
61	*Dicranopteris pedata*	芒萁	N	Herb	very common	-	+++	++	+++								
62	*Digitaria sanguinalis*	馬唐	N	Herb	common	-					+						
63	*Dimocarpus longan*	龍眼	E	Tree	restricted	RLCHP: VU; Wild plant under State protection (category II)[4]	+				++						
64	*Dioscorea bulbifera*	黃獨	N	Climber	common	-	++										
65	*Diploclisia glaucescens*	蒿白秤鉤風	N	Climber	common	-	+++										
66	*Diplospora dubia*	狗骨柴	N	Tree/Shrub	common	-	++										
67	*Drymaria cordata*	荷蓮豆	N	Herb	common	-				++	++						
68	*Duranta erecta*	假連翹	E	Climber/Shrub	common	-					+						
69	*Elephantopus scaber*	地膽草	N	Herb	common	-		+++									
70	*Eleusine indica*	牛筋草	N	Herb	very common	-					+						
71	*Embelia laeta*	酸藤子	N	Climber/Shrub	very common	-	++										
72	*Emilia sonchifolia*	一點紅	N	Herb	very common	-					++	+++	++				
73	*Eragrostis tenella*	鯽魚草	N	Herb	very common	-	++	++									
74	*Eriosema chinense*	雞頭薯	N	Herb	common	-		++	+								
75	*Eucalyptus citriodora*	檸檬桉	E	Tree	common	-		+++									
76	*Euphorbia hirta*	飛揚草	E	Herb	very common	-					+++	+++					
77	*Euphorbia thymifolia*	千根草	N	Herb	common	-					+++	+++					
78	*Eurya chinensis*	米碎花	N	Shrub	very common	-			+++								
79	*Excoecaria agallocha*	海漆	N	Tree	common	-										+++	
80	*Ficus hirta*	粗葉榕	N	Tree/Shrub	common	-		++	++								
81	*Ficus hispida*	對葉榕	N	Tree/Shrub	very common	-						++	+				
82	*Ficus microcarpa*	細葉榕	N	Tree	common	-	++				++	++					
83	*Ficus pumila*	薜荔	N	Climber	very common	-					++	++	++				
84	*Ficus variegata*	青果榕	N	Tree	common	-						+					
85	*Gahnia tristis*	黑莎草	N	Herb	very common	-		++									
86	*Glochidion eriocarpum*	毛果算盤子	N	Tree/Shrub	very common	-			++								
87	*Gnetum parvifolium*	小葉買麻藤	N	Climber	common	-		++	++								
88	*Gymnanthera oblonga*	海島藤	N	Climber	common	-										++	
89	*Hedyotis corymbosa*	傘房花耳草	N	Herb	very common	-			++								
90	*Hedyotis hedyotidea*	牛白藤	N	Climber/Shrub	very common	-	++										
91	*Hibiscus rosa-sinensis*	大紅花	E	Shrub	very common	-					+	++					
92	*Hibiscus tiliaceus*	黃槿	N	Tree	very common	-										+++	
93	*Homalium cochinchinense*	天料木	N	Tree/Shrub	common	-			++								
94	*Hypserpa nitida*	夜花藤	N	Climber	very common	-	++										
95	*Ilex asprella*	梅葉冬青	N	Shrub	very common	-	+++	+++									
96	*Imperata cylindrica var. major*	大白茅	N	Herb	common	-						++					
97	*Indocalamus sinicus*	水銀竹	N	Bamboo	very common	-		++									
98	*Ipomoea cairica*	五爪金龍	E	Herb	very common	-				+++	++	++			++		
99	*Ipomoea triloba*	三裂葉薯	E	Herb	very common	-						++					
100	*Kandelia obovata*	秋茄樹	N	Tree	common	-										++++	
101	*Kyllinga nemoralis*	單穗水蜈蚣	N	Herb	very common	-				+							
102	*Lantana camara*	馬纓丹	E	Shrub	very common	-	++	+			++	++					
103	*Lemmaphyllum microphyllum*	伏石蕨	N	Herb	common	-	++										
104	*Leucaena leucocephala*	銀合歡	E	Tree/Shrub	very common	-	++	+++		+++	++++	++++			++		
105	*Ligustrum sinense*	山指甲	E	Tree/Shrub	common	-	++				+++	+++					
106	*Lindernia anagallis*	長蕊母草	N	Herb	very common	-			++								
107	*Lindernia antipoda*	泥花草	N	Herb	common	-			++								
108	*Lindernia crustacea*	母草	N	Herb	common	-				++							
109	*Lindsaea ensifolia*	劍葉鱗始蕨	N	Herb	common	-	+++										
110	*Lindsaea heterophylla*	異葉鱗始蕨	N	Herb	common	-	++										
111	*Lindsaea orbiculata*	團葉鱗始蕨	N	Herb	very common	-	+++										
112	*Liquidambar formosana*	楓香	N	Tree	common	-		++									
113	*Liriope spicata*	山麥冬	N	Herb	very common	-	+++	+++									
114	*Litchi chinensis*	荔枝	E	Tree	restricted but widely planted	RLCHP: EN[4]	+				+						
115	*Litsea cubeba*	木薑子	N	Tree/Shrub	common	-		++	+								
116	*Litsea glutinosa*	潺槁	N	Tree	very common	-			++								
117	*Litsea rotundifolia var. oblongifolia*	豺皮樟	N	Tree/Shrub	very common	-	++	++	++								
118	*Lophostemon confertus*	紅膠木	E	Tree	very common	-		++++	+++								
119	*Ludwigia hyssopifolia*	草龍	N	Herb	very common	-				+					++		
120	*Ludwigia octovalvis*	毛草龍	N	Herb	very common	-				++							
121	*Lygodium japonicum*	海金沙	N	Climber/Herb	very common	-		+++	++	++							
122	*Macaranga tanarius var. tomentosa*	血桐	N	Tree	common	-	+++	++		++	+	+			++		
123	*Macroptilium lathyroides*	大翼豆	E	Herb	common	-			++		+						
124	*Mallotus paniculatus*	白楸	N	Tree/Shrub	very common	-	+++										
125	*Mallotus repandus*	石岩楓	N	Climber/Shrub	common	-	++		+								
126	*Melastoma dodecandrum*	地茶	N	Herb/Shrub	common	-	++	++	++								
127	*Melastoma malabathricum*	野牡丹	N	Shrub	common	-	++	++									

Annex 2 Relative Abundance of Plant Species Recorded Within the Assessment Area

Item No.	Species Name	Chinese Name	Origin[1]	Growth Form	Distribution in Hong Kong[2]	Protection/Conservation Status[2]	Habitat[3] 500m Assessment Area										
							WL	PL	SL	SWG	VA	DA	SWC	CWC	PO	MG	MF
128	*Melia azedarach*	苦楝	E	Tree	common	-	+++										
129	*Melicope pteleifolia*	三桠苦	N	Tree/Shrub	common	-	+	++									
130	*Melinis repens*	紅毛草	E	Herb	very common	-					+++	+++					
131	*Microcos nervosa*	破布葉	N	Tree/Shrub	very common	-	++	++									
132	*Microstegium ciliatum*	剛莠竹	N	Herb	very common	-	+++						++				
133	*Mikania micrantha*	薇甘菊	E	Climber/Herb	very common	-			++	+++	++++	++++	++		++++		
134	*Mimosa pudica*	含羞草	E	Herb	common	-			++								
135	*Miscanthus sinensis*	芒	N	Herb	very common	-			+++								
136	*Morinda parvifolia*	雞眼藤	N	Climber/Shrub	very common	-		++	++								
137	*Murraya paniculata*	九里香	E	Tree	common	-						++					
138	*Mussaenda pubescens*	玉葉金花	N	Climber/Shrub	very common	-	+++	++	++								
139	*Oxalis corniculata*	酢漿草	N	Herb	very common	-					+	+					
140	*Oxalis debilis subsp. Corymbosa*	紅花酢漿草	E	Herb	common	-					++	++					
141	*Oxyceros sinensis*	雞爪簕	N	Tree/Shrub	common	-	+										
142	*Paederia scandens*	雞矢藤	N	Herb	very common	-				++							
143	*Panicum maximum*	大黍	E	Herb	very common	-					++++	++++					
144	*Passiflora foetida*	龍珠果	E	Climber	very common	-			++								
145	*Pennisetum purpureum*	象草	E	Herb	common	-									++		
146	*Persicaria chinensis*	火炭母	N	Herb	very common	-				++							
147	*Phyllanthus cochinchinensis*	越南葉下珠	N	Shrub	very common	-		++									
148	*Phyllanthus emblica*	餘甘子	N	Tree/Shrub	very common	-	++	+++									
149	*Phyllanthus reticulatus*	小果葉下珠	N	Shrub	common	-	+++	+			+++	+++					
150	*Phyllanthus urinaria*	葉下珠	N	Herb	common	-		+									
151	*Phyllodium pulchellum*	排錢草	N	Shrub	very common	-			++								
152	*Pilea microphylla*	小葉冷水花	E	Herb	very common	-					++	++					
153	*Pinus elliottii*	濕地松	E	Tree	very common	-	+++	++									
154	*Piper hancei*	山蒟	N	Climber	common	-	+++										
155	*Plantago major*	車前草	N	Herb	common	-			+								
156	*Pluchea indica*	闊苞菊	N	Shrub	common	-										++	
157	*Plumeria rubra*	雞蛋花	E	Tree	very common	-					++						
158	*Polyspora axillaris*	大頭茶	N	Tree/Shrub	very common	-		+	+++								
159	*Portulaca oleracea*	馬齒莧	N	Herb	very common	-				+							
160	*Pouzolzia zeylanica*	霧水葛	N	Herb	common	-					++						
161	*Premna serratifolia*	傘序臭黃荊	N	Tree/Shrub	common	-										+++	
162	*Psychotria asiatica*	山大刀	N	Tree/Shrub	very common	-	+++	+++									
163	*Psychotria serpens*	蔓九節	N	Climber/Shrub	very common	-	++	+++									
164	*Pteridium aquilinum var. latiusculum*	蕨	N	Herb	fairly common	-		++									
165	*Pteris semipinnata*	半邊旗	N	Herb	very common	-	++										
166	*Pueraria lobata var. montana*	葛麻姆	N	Climber	common	-		++			++	+++	++				
167	*Rhaphiolepis indica*	石斑木	N	Tree/Shrub	very common	-	++	++	++								
168	*Rhapis excelsa*	棕竹	N	Shrub	common; principally on the outlying islands; also cultivated	-						++					
169	*Rhodomyrtus tomentosa*	桃金娘	N	Shrub	very common	-	++		++								
170	*Rhus hypoleuca*	白背鹽膚木	N	Tree/Shrub	common	-			++								
171	*Rhus succedanea*	野漆樹	N	Tree/Shrub	common	-	+	++	+++								
172	*Rhynchosia volubilis*	鹿藿	N	Climber	restricted	-			++								
173	*Rhynchospora rubra*	刺子莞	N	Herb	very common	-			++								
174	*Richardia scabra*	墨苜蓿	E	Herb	common	-			+								
175	*Rosa kwangtungensis*	廣東薔薇	N	Shrub	common	-			++								
176	*Roystonea regia*	大王椰子	E	Tree	very common	-						++					
177	*Rubus reflexus*	鏽毛莓	N	Climber/Shrub	very common	-	++	+	++								
178	*Sageretia thea*	雀梅藤	N	Climber/Shrub	very common	-		++									
179	*Salomonia cantoniensis*	齒果草	N	Herb	common	-			+								
180	*Sansevieria trifasciata*	虎尾蘭	E	Herb	very common	-					+						
181	*Sapium discolor*	山烏桕	N	Tree	very common	-		+	++								
182	*Schefflera heptaphylla*	鵝掌柴	N	Tree/Shrub	very common	-	+++	++									
183	*Sesbania cannabina*	田菁	E	Herb	common	-			++	++							
184	*Setaria palmifolia*	棕葉狗尾草	N	Herb	common	-			+								
185	*Sida rhombifolia*	白背黃花稔	N	Shrub	common	-					+	++					
186	*Sinobambusa tootsik*	唐竹	E	Bamboo	common	-	+++										
187	*Smilax china*	菝葜	N	Climber	very common	-	++	++	++								
188	*Smilax glabra*	土茯苓	N	Climber	very common	-	++										
189	*Solanum americanum*	少花龍葵	E	Herb	very common	-			+								
190	*Soliva anthemifolia*	裸柱菊	E	Herb	common	-				++							
191	*Sonneratia caseolaris*	海桑	E	Tree	very common	-										++	
192	*Sporobolus virginicus*	鹽地鼠尾粟	N	Herb	very common	-										+++	++
193	*Stachytarpheta jamaicensis*	假馬鞭	E	Herb/Shrub	common	-			++								
194	*Stellaria alsine*	雀舌草	N	Herb	common	-				++							
195	*Sterculia lanceolata*	假蘋婆	N	Tree	very common	-	+++						+				
196	*Strophanthus divaricatus*	羊角拗	N	Climber/Shrub	common	-	++	+++									
197	*Suaeda australis*	南方鹼蓬	N	Herb/Shrub	common	-										++	+++
198	*Syzygium jambos*	蒲桃	E	Tree	very common	-	++										
199	*Tadehagi triquetrum*	葫蘆茶	N	Shrub	very common	-			+								

Annex 2 Relative Abundance of Plant Species Recorded Within the Assessment Area

Item No.	Species Name	Chinese Name	Origin[1]	Growth Form	Distribution in Hong Kong[2]	Protection/Conservation Status[2]	Habitat[3] 500m Assessment Area										
							WL	PL	SL	SWG	VA	DA	SWC	CWC	PO	MG	MF
200	*Tetradium glabrifolium*	楝葉吳茱萸	N	Tree	common	-	++	++									
201	*Tinospora sinensis*	中華青牛膽	N	Climber	common	-	+++										
202	*Tridax procumbens*	羽芒菊	E	Herb	very common	-				++	++	+++					
203	*Typha angustifolia*	水燭	E	Herb	common	-											
204	*Urena procumbens*	梵天花	N	Shrub	common	-		+									
205	*Uvaria macrophylla*	紫玉盤	N	Climber/Shrub	common	-	++										
206	*Vitis balanseana*	小果葡萄	N	Climber	restricted	-			+								
207	*Vitis retordii*	綿毛葡萄	N	Climber	common	-			++								
208	*Wedelia trilobata*	三裂葉蟛蜞菊	E	Herb	common; also widely cultivated	-				+++		+++					
209	*Wikstroemia indica*	了哥王	N	Shrub	very common	-			++								
210	*Youngia japonica*	黃鵪菜	N	Herb	very common	-				++	++	+++	+				
211	*Zanthoxylum avicennae*	簕欓花椒	N	Tree	common	-		+	++								
					TOTAL		**78**	**63**	**66**	**28**	**47**	**41**	**10**	**0**	**9**	**14**	**5**

Notes:

1. Origin of plant species refers to AFCD (2012). Check List of Hong Kong Plants 2012. Agriculture, Fisheries and Conservation Department, HKSAR, Hong Kong.

2. Commonness follows:
   - Corlett, R., Xing, F., Sai-Chit, N., Chau, L., Wong, L. (2000) Hong Kong Vascular Plants: Distribution and Status. Memoirs of the Hong Kong Natural History Society. Hong Kong.
   - KFBG (2003) Flora of Hong Kong – Pteridophyta. Kadoorie Farm and Botanic Garden, Hong Kong
   - AFCD (2003) Rare and Precious Plants of Hong Kong. Agriculture, Fisheries and Conservation Department, HKSAR, Hong Kong.
   - AFCD (2007) Flora of Hong Kong Vol. 1. Edited by Hong Kong Herbarium, Agriculture, Fisheries and Conservation Department & South China Botanical Garden, Chinese Academy of Sciences
   - AFCD (2008) Flora of Hong Kong Vol. 2. Edited by Hong Kong Herbarium, Agriculture, Fisheries and Conservation Department & South China Botanical Garden Chinese Academy of Sciences
   - AFCD (2009) Flora of Hong Kong Vol. 3. Edited by Hong Kong Herbarium, Agriculture, Fisheries and Conservation Department & South China Botanical Garden Chinese Academy of Sciences
   - AFCD (2011) Flora of Hong Kong Vol. 3. Edited by Hong Kong Herbarium, Agriculture, Fisheries and Conservation Department & South China Botanical Garden Chinese Academy of Sciences

   Conservation status follows:
   - AFCD (2003) Rare and Precious Plants of Hong Kong (Online Version). Agriculture, Fisheries and Conservation Department, HKSAR, Hong Kong. Available at: https://www.herbarium.gov.hk/en/publications/books/book2/index.html. Accessed on 2 November 2023.
   - Cap. 96: Forestry Regulations, the subsidiary legislation of Forests and Countryside Ordinance (Cap. 96A).
   - Cap. 586: Protection of Endangered Species of Animals and Plants Ordinance
   - CPRDB: Fu and Jin (1992) China Plant Red Data Book. VU =Vulerable
   - RLCHP – Red List of China's Higher Plants (2020). VU = Vulnerable, EN = Endangered
   - IUCN: International Union for Conservation of Nature Red List of Threatened Species (2024). VU = Vulnerable.
   - CITES – Under Appendix (I), Appendix (II) or Appendix (III) of Convention on International Trade in Endangered Species of Wild Flora and Fauna.

3. Habitats: WL = Woodland (Young), PL = Plantation, SL = Shrubland, SWG = Seasonally Wet Grassland, VA = Village Area, DA = Developed Area, PO = Pond, SWC = Semi-natural Watercourse, CWC = Channelized Watercourse, MG = Mangrove, MF = Mudflat/Coastal Water Body
4. The recorded individual was cultivated or exotic species and thus not considered as species of conservation importance under this study
5. Relative abundance: +: Scarce, ++: Uncommon, +++: Common, ++++: Abundant

Aquilaria sinensis

Small Indian Civet

Leopard Cat

Collared Scops Owl (Nesting)

Annex 3

Representative Photos of Species of Conservation Importance Recorded

DATE: 11/11/2024

Annex 4 Presence of Mammal Species Recorded Within the Assessment Area

Item No.	Common Name	Scientific Name	Chinese Name	Conservation Status[1]	Commonness[2]	Habitat[3] 500m Study Area										
						WL	PL	SL	SWG	VA	DA	PO	SWC	CWC	MG	MF
1	Japanese Pipistrelle	*Pipistrellus abramus*	東亞家蝠	Cap.170	Widely distributed throughout Hong Kong.		✓									
2	Chestnut Spiny Rat	*Niviventer fulvescens*	針毛鼠	-	Widely distributed in countryside areas throughout Hong Kong.		✓									
3	Small Indian Civet	*Viverricula indica*	小靈貓	Cap.170; RLCV(VU); CSMPS(II); CITES(III)	Very widely distributed in countryside areas throughout Hong Kong, except for Lantau Island.	✓	✓									
4	Domestic Dog	*Canis lupus familiaris*	野狗	-	Widely distributed in urban and countryside areas throughout Hong Kong.	✓	✓									
5	Leopard Cat	*Prionailurus bengalensis*	豹貓	Cap.170; Cap.586; RLCV(VU); CITES(II)	Widely distributed in countryside areas throughout Hong Kong, except for Lantau Island.	✓	✓									
6	Domestic Cat	*Felis catus*	野貓	-	Widely distributed in urban and countryside areas throughout Hong Kong.	✓										
					TOTAL	**4**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Notes:

1. Conservation and Protection Status:
   a. Cap. 170 – Protected under Wild Animals Protection Ordinance
   b. Cap. 586: Protection of Endangered Species of Animals and Plants Ordinance
   c. RLCV – Red List of China's Vertebrates (2020): VU = Vulnerable
   d. CSMPS – China State Major Protection Status: Appendix I/II
   f. CITES – Under Appendix (I), Appendix (II) or Appendix (III) of Convention on International Trade in Endangered Species of Wild Flora and Fauna
2. Commonness as per AFCD database: Available at https://bih.gov.hk/en/home/index.html
3. Habitats: WL = Woodland (Young), PL = Plantation, SL = Shrubland, SWG = Seasonally Wet Grassland, VA = Village Area, DA = Developed Area, PO = Pond, SWC = Semi-natural Watercourse, CWC = Channelized Watercourse, MG = Mangrove, MF = Mudflat/Coastal Water Body
4. References:

AFCD. 2025. Hong Kong Biodiversity Information Hub. Accessed from <https://bih.gov.hk/en/home/index.html> in Jan 2025.
Fellowes *et al* . 2002. Wild animals to watch: Terrestrial and freshwater fauna of conservation concern in Hong Kong. Memoirs of the Hong Kong Natural History Society 25:123-159.
Ministry of Ecology and Environment of the People's Republic of China, and Chinese Academy of Sciences. 2023. Red List of China's Vertebrates.
Wang, S. 1998. China Red Data Book of Endangered Animals: Mammalia. Science Press. Beijing. China. 417pp.

Annex 5 Maximum Count of Bird Species Recorded Within the Assessment Area

Item No.	Common Name	Scientific Name	Chinese Name	Conservation Status[1]	Distribution in Hong Kong[2]	Habitat[3]											
						500m Study Area											
						WL	PL	SL	SWG	VA	DA	PO	SWC	CWC	MG	MF	IF
1	Garganey	*Spatula querquedula*	白眉鴨	-	Common passage migrant. Found in Deep Bay area, Long Valley, Kam Tin.											3	
2	Northern Shoveler	*Spatula clypeata*	琵嘴鴨	Fellowes: RC	Abundant winter visitor. Found in Deep Bay area.											26	
3	Eurasian Wigeon	*Mareca penelope*	赤頸鴨	Fellowes: RC	Winter visitor. Found in Deep Bay area, Tai Lam Chung.											378	
4	Northern Pintail	*Anas acuta*	針尾鴨	Fellowes: RC	Abundant winter visitor. Found in Deep Bay area, Shuen Wan, Long Valley, Kam Tin.											178	
5	Eurasian Teal	*Anas crecca*	綠翅鴨	Fellowes: RC	Common winter visitor. Found in Deep Bay area, Shuen Wan, Tai Lam Chung Reservoir, Victoria Harbour, urban parks.											118	
6	Tufted Duck	*Aythya fuligula*	鳳頭潛鴨	Fellowes: LC	Rare winter visitor. Found in Mai Po.											34	
7	Red-breasted Merganser	*Mergus serrator*	紅胸秋沙鴨	Fellowes: LC	Rare winter visitor and scarce spring passage migrant. Found in Deep Bay area, Plover Cove Reservoir, Shing Mun Reservoir.											1	
8	House Swift	*Apus nipalensis*	小白腰雨燕	-	Abundant spring migrant and common resident. Widely distributed in Hong Kong.		1									1	18
9	Greater Coucal	*Centropus sinensis*	褐翅鴉鵑	CSMPS(II)	Common resident. Widely distributed in Hong Kong.		1	1							4		
10	Asian Koel	*Eudynamys scolopaceus*	噪鵑	-	Common resident. WIdely distributed in Hong Kong.	1	1								1		
11	Plaintive Cuckoo	*Cacomantis merulinus*	八聲杜鵑	-	Passage migrant and common visitor. Widely distributed in open area throughout Hong Kong.		1										
12	Large Hawk-Cuckoo	*Hierococcyx sparverioides*	大鷹鵑	-	Locally common spring and summer visitor. Widely distributed in woodland throughout in Hong Kong.				1								
13	Indian Cuckoo	*Cuculus micropterus*	四聲杜鵑	-	Locally common spring and summer visitor. Widely distributed in Hong Kong.	1											
14	Spotted Dove	*Spilopelia chinensis*	珠頸斑鳩	-	Abundant resident. Widely distributed in Hong Kong.	16	6		9	5					2		
15	Common Emerald Dove	*Chalcophaps indica*	綠翅金鳩	-	Uncommon but widespread resident. Widely distributed in woodland throughout Hong Kong.	1											
16	Common Moorhen	*Gallinula chloropus*	黑水雞	-	Common winter visitor, resident and migrant. Found in Deep Bay area, Shuen Wan, Starling Inlet.										1	2	
17	White-breasted Waterhen	*Amaurornis phoenicurus*	白胸苦惡鳥	-	Common resident. Widely distributed in wetland throughout Hong Kong.		1		2	1					2	4	
18	Great Crested Grebe	*Podiceps cristatus*	鳳頭鸊鷉	Fellowes: RC	Common winter visitor. Found in Tsim Bei Tsui, Starling Inlet.											56	

Item No.	Common Name	Scientific Name	Chinese Name	Conservation Status[1]	Distribution in Hong Kong[2]	Habitat[3]											
						500m Study Area											
						WL	PL	SL	SWG	VA	DA	PO	SWC	CWC	MG	MF	IF
19	Black-winged Stilt	*Himantopus himantopus*	黑翅長腳鷸	Fellowes: RC	Common migrant and wintor visitor. Found in Deep Bay area, Long Valley, Kam Tin.											21	
20	Pied Avocet	*Recurvirostra avosetta*	反嘴鷸	Fellowes: RC	Abundant winter visitor. Found in Deep Bay area.											1479	
21	Pacific Golden Plover	*Pluvialis fulva*	太平洋金斑鴴	Fellowes: LC	Common migrant and winter visitor. Found in Deep Bay area, Chek Lap Kok, Long Valley.											42	
22	Grey Plover	*Pluvialis squatarola*	灰斑鴴	Fellowes: RC	Abundant winter visitor and scarce migrant. Found in Deep Bay area.											81	
23	Kentish Plover	*Charadrius alexandrinus*	環頸鴴	Fellowes: RC	Abundant winter visitor and scarce migrant. Found in Deep Bay area, Chek Lap Kok, Shuen Wan, Sai Kung, Lantau Island.											62	
24	Lesser Sand Plover	*Charadrius mongolus*	蒙古沙鴴	Fellowes: LC	Uncommon passage migrant and scarce winter visitor. Found in Deep Bay area.											236	
25	Greater Sand Plover	*Charadrius leschenaultii*	鐵嘴沙鴴	Fellowes: RC	Abundant passage migrant. Found in Deep Bay area.											34	
26	Whimbrel	*Numenius phaeopus*	中杓鷸	Fellowes: LC	Common passage migrant and scarce winter visitor. Found in Deep Bay area, Sai Kung, Tung Ping Chau, Ninepins, Cape D'Aguilar, Pok Fu Lam.											52	
27	Eurasian Curlew	*Numenius arquata*	白腰杓鷸	Fellowes: RC	Abundant winter visitor. Found in Deep Bay area.											40	
28	Bar-tailed Godwit	*Limosa lapponica*	斑尾塍鷸	Fellowes: LC	Uncommon passage migrant. Found in Deep Bay area.											9	
29	Black-tailed Godwit	*Limosa limosa*	黑尾塍鷸	Fellowes: RC	Abundant passage migrant and winter visitor. Found in Deep Bay area.											29	
30	Great Knot	*Calidris tenuirostris*	大濱鷸	Fellowes: LC; RLCV(EN); IUCN(EN)	Common passage migrant and scarce winter visitor. Found in Deep Bay area.											16	
31	Red Knot	*Calidris canutus*	紅腹濱鷸	Fellowes: LC; RLCV(VU)	Common passage migrant and scarce winter visitor. Found in Deep Bay area, Shuen Wan.											2	
32	Broad-billed Sandpiper	*Calidris falcinellus*	闊嘴鷸	Fellowes: LC	Uncommon passage migrant. Found in Deep Bay area, Ho Chung, Shuen Wan.											2	
33	Curlew Sandpiper	*Calidris ferruginea*	彎嘴濱鷸	Fellowes: RC	Abundant spring passage migrant. Found in Deep Bay area, Cape D'Aguilar.											423	
34	Red-necked Stint	*Calidris ruficollis*	紅頸濱鷸	Fellowes: LC	Abundant spring passage migrant. Found in Deep Bay area.											5	
35	Dunlin	*Calidris alpina*	黑腹濱鷸	Fellowes: RC	Abundant winter visitor and scarce passage migrant. Found in Deep Bay area.											244	
36	Terek Sandpiper	*Xenus cinereus*	翹嘴鷸	Fellowes: RC	Common passage migrant. Found in Deep Bay area, Sai Kung, Tung Ping Chau, Cape D'Aguilar.											13	
37	Common Sandpiper	*Actitis hypoleucos*	磯鷸	-	Common passage migrant and winter visitor. Widely distributed in wetland area throughout Hong Kong.											5	
38	Grey-tailed Tattler	*Tringa brevipes*	灰尾漂鷸	Fellowes: LC	Common passage migrant. Found in Deep Bay area.											9	

Item No.	Common Name	Scientific Name	Chinese Name	Conservation Status[1]	Distribution in Hong Kong[2]	Habitat[3]											
						500m Study Area											
						WL	PL	SL	SWG	VA	DA	PO	SWC	CWC	MG	MF	IF
39	Common Redshank	*Tringa totanus*	紅腳鷸	Fellowes: RC	Abundant passage migrant and winter visitor. Found in Deep Bay area.											281	
40	Marsh Sandpiper	*Tringa stagnatilis*	澤鷸	Fellowes: RC	Abundant winter visitor and migrant. Found in Deep Bay area, Shuen Wan, Long Valley, Kam Tin, Sai Kung.											72	
41	Common Greenshank	*Tringa nebularia*	青腳鷸	Fellowes: RC	Abundant winter visitor and migrant. Found in Deep Bay area.										50	51	
42	Nordmann's Greenshank	*Tringa guttifer*	小青腳鷸	Cap.586; Fellowes: GC; RLCV(EN); CSMPS(II); IUCN(EN); CITES(I)	Uncommon passage migrant and scarce winter visitor. Found in Deep Bay area.											1	
43	Black-headed Gull	*Chroicocephalus ridibundus*	紅嘴鷗	Fellowes: PRC	Abundant winter visitor. Found in Deep Bay area and costal waters.											734	
44	Saunders's Gull	*Chroicocephalus saundersi*	黑嘴鷗	Fellowes: GC; RLCV(VU); IUCN(VU)	Common winter visitor. Found in Deep Bay area, Chek Lap Kok.											1	
45	Vega Gull	*Larus vegae*	織女銀鷗	-	Scarce winter visitor. Found in Mai Po.											1	
46	Lesser Black-backed Gull	*Larus fuscus*	烏灰銀鷗	Fellowes: LC	Common winter visitor and passage migrant. Found in Deep Bay area, Cape D'Aguilar.											8	
47	Gull-billed Tern	*Gelochelidon nilotica*	鷗嘴噪鷗	-	Common passage migrant. Found in Deep Bay area, Tolo Harbour.											106	
48	Little Tern	*Sternula albifrons*	白額燕鷗	Fellowes: LC	Uncommon spring passage migrant. Found in Mai Po, Ting Kau, Tsuen Wan Ferry Pier.											2	
49	Whiskered Tern	*Chlidonias hybrida*	鬚浮鷗	-	Common passage migrant. Found in Deep Bay area, Shuen Wan, Tolo Harbour, Cape D'Aguilar, Cheung Chau.											2	
50	Great Cormorant	*Phalacrocorax carbo*	普通鸕鷀	Fellowes: PRC	Common winter visitor. Widely distributed in coastal areas throughout Hong Kong.											125	1
51	Eurasian Spoonbill	*Platalea leucorodia*	白琵鷺	Cap.586; Fellowes: LC; CSMPS(II); CITES(II)	Uncommon winter visitor. Found in Deep Bay area.											1	
52	Black-faced Spoonbill	*Platalea minor*	黑臉琵鷺	Fellowes: PGC; RLCV(EN); CSMPS(II); IUCN(EN)	Common winter visitor. Found in Deep Bay area.											31	
53	Black-crowned Night Heron	*Nycticorax nycticorax*	夜鷺	Fellowes: (LC)	Common resident and migrant. Widely distributed in Hong Kong.											9	
54	Striated Heron	*Butorides striata*	綠鷺	Fellowes: (LC)	Common summer visitor. Widely distributed in Hong Kong.											1	
55	Chinese Pond Heron	*Ardeola bacchus*	池鷺	Fellowes: PRC (RC)	Common resident. Widely distributed in Hong Kong.										1	17	
56	Eastern Cattle Egret	*Bubulcus coromandus*	牛背鷺	Fellowes: (LC)	Resident and common passage migrant. Widely distributed in Hong Kong.											1	
57	Grey Heron	*Ardea cinerea*	蒼鷺	Fellowes: PRC	Common winter visitor. Found in Deep Bay area, Starling Inlet, Kowloon Park, Cape D'Aguilar.										1	26	
58	Great Egret	*Ardea alba*	大白鷺	Fellowes: PRC (RC)	Common resident, migrant and winter visitor. Widely distributed in Hong Kong										87	137	

Item No.	Common Name	Scientific Name	Chinese Name	Conservation Status[1]	Distribution in Hong Kong[2]	Habitat[3]											
						500m Study Area											
						WL	PL	SL	SWG	VA	DA	PO	SWC	CWC	MG	MF	IF
59	Intermediate Egret	*Ardea intermedia*	中白鷺	Fellowes: RC	Resident and passage migrant. Found in Deep Bay area, Tai Long Wan, Starling Inlet, Tai O, Cape D'Aguilar.											46	
60	Little Egret	*Egretta garzetta*	小白鷺	Fellowes: PRC (RC)	Common resident, migrant and winter visitor. Widely distributed in coastal area throughout Hong										2	82	
61	Western Osprey	*Pandion haliaetus*	鶚	Cap.586; Fellowes: RC; CSMPS(II); CITES(II)	Common winter visitor. Widely distributed in coastal areas throughout Hong Kong.											1	
62	Crested Serpent Eagle	*Spilornis cheela*	蛇鵰	Cap.586; Fellowes: (LC); CSMPS(II); CITES(II)	Common resident. Widely distributed in shrublands on hillsides throughout Hong Kong.												1
63	Greater Spotted Eagle	*Clanga clanga*	烏鵰	Cap.586; Fellowes: GC; RLCV(EN); CSMPS(II); IUCN(VU); CITES(II)	Common winter visitor. Found in Deep Bay area.											1	
64	Northern Goshawk	*Accipiter gentilis*	蒼鷹	Cap.586; Fellowes: (RC); CSMPS(II); CITES(II)	Vagrant. Found in Mai Po.	1											
65	Eastern Marsh Harrier	*Circus spilonotus*	白腹鷐	Cap.586; Fellowes: LC; CSMPS(II); CITES(II)	Common winter visitor and passage migrant. Found in Deep Bay area, Starling Inlet area, Kadoorie Farm & Botanic Garden, Mount Austin.											1	
66	Black Kite	*Milvus migrans*	黑鳶	Cap.586; Fellowes: (RC); CSMPS(II); CITES(II)	Common resident and winter visitor. Widely distributed in Hong Kong.											10	1
67	Eastern Buzzard	*Buteo japonicus*	普通鵟	Cap.586; CSMPS(II); CITES(II)	Common winter visitor. Widely distributed in Hong Kong.	1										1	
68	Collared Scops Owl	*Otus lettia*	領角鴞	Cap.586; CSMPS(II); CITES(II)	Common resident. Widely distributed in shrubland throughout Hong Kong		1										
69	White-throated Kingfisher	*Halcyon smyrnensis*	白胸翡翠	Fellowes: (LC)	Common resident. Widely distributed in coastal areas throughout Hong Kong.										1	2	
70	Black-capped Kingfisher	*Halcyon pileata*	藍翡翠	Fellowes: (LC); IUCN(VU)	Uncommon passage migrant and winter visitor. Widely distributed in coastal areas throughout Hong Kong.										1	2	
71	Common Kingfisher	*Alcedo atthis*	普通翠鳥	-	Common passage migrant and winter visitor. Widely distributed in wetland habitat throughout Hong Kong.										1	2	
72	Pied Kingfisher	*Ceryle rudis*	斑魚狗	Fellowes: (LC)	Common resident. Widely distributed in lakes and ponds throughout Hong Kong.											2	1
73	Common Kestrel	*Falco tinnunculus*	紅隼	Cap.586; CSMPS(II); CITES(II)	Common autumn migrant and winter visitor. Widely distributed in Hong Kong.											1	

Item No.	Common Name	Scientific Name	Chinese Name	Conservation Status[1]	Distribution in Hong Kong[2]	Habitat[3]											
						500m Study Area											
						WL	PL	SL	SWG	VA	DA	PO	SWC	CWC	MG	MF	IF
74	Hair-crested Drongo	*Dicrurus hottentottus*	髮冠卷尾	-	Common migrant and winter visitor, and locally common resident. Widely distributed in wooded area throughout Hong Kong.	2									5		
75	black drongo	*Dicrurus macrocercus*	黑卷尾	-	Common autumn passage migrant and winter visitor. Widely distributed in open area throughout Hong Kong.	2			1								
76	Black-naped Monarch	*Hypothymis azurea*	黑枕王鶲	-	Uncommon winter visitor and migrant. Found in Mai Po, Shek Kong, Tung Ping Chau, Lung Fu Shan, Tai Po Kau.	1											
77	Red-billed Blue Magpie	*Urocissa erythroryncha*	紅嘴藍鵲	-	Common resident. Widely distributed in woodland edges throught Hong Kong.	1	2			2					1	2	
78	Collared Crow	*Corvus torquatus*	白頸鴉	Fellowes: LC; IUCN(VU)	Locally common resident. Found in Inner Deep Bay area, Nam Chung, Kei Ling Ha, Tai Mei Tuk, Pok Fu Lam, Chek lap Kok, Shuen Wan, Lam Tsuen.	2										9	
79	Large-billed Crow	*Corvus macrorhynchos*	大嘴烏鴉	-	Common resident. Widely distributed in Hong Kong.		2								1		1
80	Japanese Tit	*Parus minor*	遠東山雀	-	Common resident. Widely distributed in Hong Kong.		2								1		
81	Chinese Bulbul	*Pycnonotus sinensis*	白頭鵯	-	Abundant resident. Widely distributed in Hong Kong	2	2		1		1				6		
82	Red-whiskered Bulbul	*Pycnonotus jocosus*	紅耳鵯	-	Abundant resident. Widely distributed in Hong Kong	6	12		8	6	4				5		
83	Barn Swallow	*Hirundo rustica*	家燕	-	Abundant passage migrant and uncommon winter visitor. Widely distributed in Hong Kong.	7									1	12	24
84	Asian Stubtail	*Urosphena squameiceps*	鱗頭樹鶯	-	Common winter visitor. Widely distributed in woodland and shrubland throughout Hong Kong	1											

Item No.	Common Name	Scientific Name	Chinese Name	Conservation Status[1]	Distribution in Hong Kong[2]	Habitat[3]											
						500m Study Area											
						WL	PL	SL	SWG	VA	DA	PO	SWC	CWC	MG	MF	IF
85	Dusky Warbler	*Phylloscopus fuscatus*	褐柳鶯	-	Abundant winter visitor and migrant. Widely distributed in shrubland and waterside vegetation throughout Hong Kong	3		2							1	2	
86	Pale-legged Leaf Warbler	*Phylloscopus tenellipes*	淡腳柳鶯	-	Uncommon passage migrant. Widely distributed in woodland throughout Hong Kong											1	
87	Styan's Grasshopper Warbler	*Helopsaltes pleskei*	史氏蝗鶯	Fellowes: GC; RLCV(VU); IUCN(VU)	Scarce passage migrant and winter visitor. Found in Ma Tso Lung, Mai Po										1		
88	yellow-bellied prinia	*Prinia flaviventris*	黃腹鷦鶯	-	Common resident. Widely distributed in Hong Kong	1			4						1		
89	Common Tailorbird	*Orthotomus sutorius*	長尾縫葉鶯	-	Common resident. Widely distributed in Hong Kong		1			2					1		
90	Swinhoe's White-eye	*Zosterops simplex*	暗綠繡眼鳥	-	Abundant resident. Widely distributed in Hong Kong	5	10								9		
91	Masked Laughingthrush	*Pterorhinus perspicillatus*	黑臉噪鸝	-	Abundant resident. Widely distributed in shrubland throughout Hong Kong	6	2	4	3						4	2	
92	Crested Myna	*Acridotheres cristatellus*	八哥	-	Abundant resident. Widely distributed in Hong Kong	4									2		
93	Red-billed Starling	*Spodiopsar sericeus*	絲光椋鳥	Fellowes: GC	Abundant winter visitor. Widely distributed in Hong Kong	4											
94	Black-collared Starling	*Gracupica nigricollis*	黑領椋鳥	-	Common resident. Widely distributed in Hong Kong	1	3		3	2	5					2	
95	White-shouldered Starling	*Sturnia sinensis*	灰背椋鳥	Fellowes: (LC)	Locally common passage migrant and uncommon winter visitor. Found in Kam Tin, Deep Bay area,											2	1
96	Grey-backed Thrush	*Turdus hortulorum*	灰背鶇	-	Common winter visitor and migrant. Widely distributed in woodland throughout Hong Kong	2											
97	Oriental Magpie Robin	*Copsychus saularis*	鵲鴝	-	Abundant resident. Widely distributed in Hong Kong	2	1	1	1	2	1				7	2	
98	Siberian Rubythroat	*Calliope calliope*	紅喉歌鴝	-	Common winter visitor and passage migrant. Widely distributed in Hong Kong	1											
99	Fork-tailed Sunbird	*Aethopyga christinae*	叉尾太陽鳥	-	Common resident and winter visitor. Widely distributed in Hong Kong	1	2	1							2		
100	eurasian tree sparrow	*Passer montanus*	樹麻雀	-	Abundant resident. Widely distributed in Hong Kong					4							
101	scaly-breasted munia	*Lonchura punctulata*	斑文鳥	-	Abundant resident. Widely distributed in Hong Kong				2								
102	Eastern Yellow Wagtail	*Motacilla tschutschensis*	東黃鶺鴒	-	Common passage migrant and winter visitor. Widely distributed in agricultural fields and marsh edges						2						
103	White Wagtail	*Motacilla alba*	白鶺鴒	-	Resident, common passage migrant and winter visitor. Widely distributed in Hong Kong	1									2	2	
104	Black-faced Bunting	*Emberiza spodocephala*	灰頭鵐	-	Common winter visitor and passage migrant. Widely distributed in Hong Kong	1											

Item No.	Common Name	Scientific Name	Chinese Name	Conservation Status[1]	Distribution in Hong Kong[2]	Habitat[3]											
						500m Study Area											
						WL	PL	SL	SWG	VA	DA	PO	SWC	CWC	MG	MF	IF
					TOTAL	**28**	**18**	**5**	**11**	**8**	**5**	**0**	**0**	**0**	**30**	**73**	**8**

Notes:

1. Conservation and Protection Status:
   a. All birds in Hong Kong are protected under Cap. 170 – Protected under Wild Animals Protection Ordinance
   b. Cap. 586: Protection of Endangered Species of Animals and Plants Ordinance
   c. Fellowes – Fellowes et al. (2002): LC = Local Concern, PRC = Potential Regional Concern, RC = Regional Concern, PGC = Potential Global Concern, GC = Global Concern.
   Letters in parentheses indicate that the assessment is on the basis of restrictedness in breeding and/or roosting sites rather than in general occurrence.
   d. RLCV – Red List of China's Vertebrate (2020): VU = Vulnerable, EN = Endangered
   e. CSMPS – China State Major Protection Status: Appendix I/II
   f. CRDB – China Red Data Book (1998): VU = Vulnerable
   f. IUCN – International Union for Conservation of Nature Red List of Threatened Species (2024). VU = Vulnerable, EN = Endangered
   g. CITES – Under Appendix (I), Appendix (II) or Appendix (III) of Convention on International Trade in Endangered Species of Wild Flora and Fauna
2. Distribution as per AFCD database. Available at https://bih.gov.hk/en/home/index.html:
3. Habitats: WL = Woodland (Young), PL = Plantation, SL = Shrubland, SWG = Seasonally Wet Grassland, VA = Village Area, DA = Developed Area, PO = Pond, SWC = Semi-natural Watercourse, CWC = Channelized Watercourse, MG = Mangrove, MF = Mudflat/Coastal Water Body
4. References:

AFCD. 2025. Hong Kong Biodiversity Information Hub. Accessed from <https://bih.gov.hk/en/home/index.html> in Jan 2025.

Fellowes *et al* . 2002. Wild animals to watch: Terrestrial and freshwater fauna of conservation concern in Hong Kong. Memoirs of the Hong Kong Natural History Society 25:123-159.

Ministry of Ecology and Environment of the People's Republic of China, and Chinese Academy of Sciences. 2023. Red List of China's Vertebrates.

Zheng, G. M. and Wang, Q. S. (1998). China Red Data Book of Endangered Animals: Aves. Science Press, Beijing, pp 1–346.

IUCN. (2024). The IUCN Red List of Threatened Species (Version 2024-2). Accessed from <http://www.iucnredlist.org> in Jan 2025.

Annex 6 Relative Abundance of Amphibian Species Recorded Within Assessment Area

Item No.	Common Name	Scientific Name	Chinese Name	Conservation and Protection Status[1]	Rarity in Hong Kong[2]	Distribution in Hong Kong[3]	Habitat[4/5] 500m Study Area										
							WL	PL	SL	SWG	VA	DA	PO	SWC	CWC	MG	MF
1	Asian Common Toad	*Duttaphrynus melanostictus*	黑眶蟾蜍	-	Least Concern	Widely distributed in HK		++							++	+	
2	Asiatic Painted Frog	*Kaloula pulchra*	花狹口蛙	-	Least Concern	Widely distributed in HK		+							+	+	
3	Günther's Frog	*Sylvirana guentheri*	沼蛙	-	Least Concern	Widely distributed throughout										+	
4	Brown Tree Frog	*Polypedates megacephalus*	斑腿泛樹蛙	-	Least Concern	Widely distributed throughout Hong Kong		+								+	
5	Greenhouse Frog	*Eleutherodactylus planirostris*	溫室蟾	-	-	Widely distributed throughout Hong Kong		+++									
						TOTAL	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**4**	**0**

Notes:

1. Conservation and Protection Status:
2. Rarity as per AFCD. 2009. The Proposed Action Plan for the Conservation of Amphibians in Hong Kong (NCSC 4/09). Annex 1.
3. Distribution as per AFCD database. Available at https://bih.gov.hk/en/home/index.html
4. Habitats: WL = Woodland (Young), PL = Plantation, SL = Shrubland, SWG = Seasonally Wet Grassland, VA = Village Area, DA = Developed Area, PO = Pond, SWC = Semi-natural Watercourse, CWC = Channelized Watercourse, MG = Mangrove, MF = Mudflat/Coastal Water Body
5. Relative abundance: +: Scarce, ++: Uncommon, +++: Common, ++++: Abundant
6. References:

AFCD. 2025. Hong Kong Biodiversity Information Hub. Accessed from <https://bih.gov.hk/en/home/index.html> in Jan 2025.

AFCD. 2009. The Proposed Action Plan for the Conservation of Amphibians in Hong Kong (NCSC 4/09). Annex 1. Accessed from <http://www.epd.gov.hk/epd/textonly/english/boards/advisory_council/files/ncsc_paper04_2009.pdf> in Sep 2014

Fellowes *et al* . 2002. Wild animals to watch: Terrestrial and freshwater fauna of conservation concern in Hong Kong. Memoirs of the Hong Kong Natural History Society 25:123-159.

Ministry of Ecology and Environment of the People's Republic of China, and Chinese Academy of Sciences. 2023. Red List of China's Vertebrates.

IUCN. (2024). The IUCN Red List of Threatened Species (Version 2024-2). Accessed from <http://www.iucnredlist.org> in Jan 2025.

Annex 7 Maximum Count of Reptile Species Recorded Within the Assessment Area

Item No.	Common Name	Scientific Name	Chinese Name	Conservation and Protection Status[1]	Distribution in Hong Kong[2]	Habitat[3] 500m Study Area										
						WL	PL	SL	SWG	VA	DA	PO	SWC	CWC	MG	MF
1	Changeable Lizard	*Calotes versicolor*	變色樹蜥	-	Widely distributed throughout Hong Kong		1									
2	Long-tailed Skink	*Eutropis longicaudata*	長尾南蜥	-	Widely distributed throughout Hong Kong		1									
3	Slender Forest Skink	*Scincella modesta*	寧波滑蜥	-	Scattered in woodlands in the New Territories, Lantau Island and Hong Kong Island		1									
4	Bowring's Gecko	*Hemidactylus bowringii*	原尾蜥虎	-	Distributed throughout Hong Kong		2				2					
5	Bamboo Snake	*Cryptelytrops albolabris*	白唇竹葉青	-	Very common and widespread in Hong Kong		1				1					
					TOTAL	**0**	**5**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**

Notes:

1. Conservation and Protection Status:
2. Distribution as per AFCD database. Available at https://bih.gov.hk/en/home/index.html
3. Habitats: Habitats: WL = Woodland (Young), PL = Plantation, SL = Shrubland, SWG = Seasonally Wet Grassland, VA = Village Area, DA = Developed Area, PO = Pond, SWC = Semi-natural Watercourse, CWC = Channelized Watercourse, MG = Mangrove, MF = Mudflat/Coastal Water Body
4. References:

AFCD. 2025. Hong Kong Biodiversity Information Hub. Accessed from <https://bih.gov.hk/en/home/index.html> in Jan 2025.

Fellowes *et al* . 2002. Wild animals to watch: Terrestrial and freshwater fauna of conservation concern in Hong Kong. Memoirs of the Hong Kong Natural History Society 25:123-159.

Ministry of Ecology and Environment of the People's Republic of China, and Chinese Academy of Sciences. 2023. Red List of China's Vertebrates.

IUCN. (2024). The IUCN Red List of Threatened Species (Version 2024-2). Accessed from <http://www.iucnredlist.org> in Jan 2025.

Zhao, E. 1998. China Red Data Book of Endangered Animals: Amphibia and Reptilia. Science Press. Beijing. China. 330pp.

Annex 8 Maximum Count of Butterfly Species Recorded within the Assessment Area

Item No.	Common Name	Scientific Name	Chinese Name	Consevation/ Protection Status [1]	Rarity in Hong Kong [2]	Distribution in Hong Kong [2]	Habitat[3] 500m Study Area										
							WL	PL	SL	GL	SWG	VA	DA	PO	SWC	CWC	MG	MF
1	Formosan Swift	*Borbo cinnara*	秈弄蝶	-	Common	Widely distributed throughout Hong Kong.		1									1	
2	Water Snow Flat	*Tagiades litigiosus*	沾邊裙弄蝶	-	Common	Widely distributed throughout Hong Kong.		1										
3	Pale Grass Blue	*Zizeeria maha*	酢漿灰碟	-	Very Common	Widely distributed throughout Hong Kong.		1										
4	Blue-spotted Crow	*Euploea midamus*	藍點紫斑蝶	-	Very Common	Widely distributed throughout Hong Kong.		1										
5	Staff Sergeant	*Athyma selenophora*	新月帶蛺蝶	-	Common	Widely distributed throughout Hong Kong.		1										
6	Great Eggfly	*Hypolimnas bolina*	幻紫斑蛺蝶	-	Common	Widely distributed throughout Hong Kong.		1									1	
7	Southern Sullied Sailer	*Neptis clinia*	珂環蛺蝶	-	Common	Widely distributed throughout Hong Kong.		1										
8	Common Sailer	*Neptis hylas*	中環蛺蝶	-	Very Common	Widely distributed throughout Hong Kong.		1										
9	Five-dot Sergeant	*Parathyma sulpitia*	殘鍔線蛺蝶	-	Common	Widely distributed throughout Hong Kong.		2										
10	Common Palmfly	*Elymnias hypermnestra*	翠袖鋸眼蝶	-	Common	Widely distributed throughout Hong Kong.		1										
11	South China Bush Brown	*Mycalesis zonata*	平頂眉眼蝶	-	Common	Widely distributed throughout Hong Kong.		1										
12	Tailed Jay	*Graphium agamemnon*	統帥青鳳蝶	-	Common	Widely distributed throughout Hong Kong.		1										
13	Common Jay	*Graphium doson*	木蘭青鳳蝶	-	Common	Widely distributed throughout Hong Kong.											1	
14	Red Helen	*Papilio helenus*	玉斑鳳蝶	-	Very Common	Widely distributed throughout Hong Kong.		1										
15	Paris Peacock	*Papilio paris*	巴黎翠鳳蝶	-	Very Common	Widely distributed throughout Hong Kong.	1	1										
16	Common Mormon	*Papilio polytes*	玉帶鳳蝶	-	Very Common	Widely distributed throughout Hong Kong.		1										
17	Lemon Emigrant	*Catopsilia pomona*	遷粉蝶	-	Common	Widely distributed throughout Hong Kong.		1									1	
18	Common Grass Yellow	*Eurema hecabe*	寬邊黃粉蝶	-	Very Common	Widely distributed throughout Hong Kong.	1	1										
19	Painted Jezebel	*Delias hyparete*	優越斑粉蝶	-	Uncommon	Widely distributed throughout Hong Kong.		2										
20	Red-base Jezebel	*Delias pasithoe*	報喜斑粉蝶	-	Very Common	Widely distributed throughout Hong Kong.	10	14									2	
						TOTAL	**3**	**19**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**0**

Notes:

1. Conservation and Protection Status:
   a. Fellowes – Fellowes et al. (2002): LC = Local Concern.
   Letters in parentheses indicate that the assessment is on the basis of restrictedness in breeding and/or roosting sites rather than in general occurrence.
2. Distribution in Hong Kong refers to AFCD database:
Chan, A., Cheung, J., Sze, P., Wong, A., Wong, E. and Yau, E. 2011. A Review of the Local Restrictedness of Hong Kong Butterflies.
Hong Kong Biodiversity 21: 1-12
3. Habitats: WL = Woodland (Young), PL = Plantation, SL = Shrubland, SWG = Seasonally Wet Grassland, VA = Village Area, DA = Developed Area, PO = Pond, SWC = Semi-natural Watercourse, CWC = Channelized Watercourse, MG = Mangrove, MF = Mudflat/Coastal Water Body
4. References:

AFCD. 2025. Hong Kong Biodiversity Information Hub. Accessed from <https://bih.gov.hk/en/home/index.html> in Jan 2025.
Chan, A., Cheung, J., Sze, P., Wong, A., Wong, E. and Yau, E. 2011. A Review of the Local Restrictedness of Hong Kong Butterflies. Hong Kong Biodiversity 21: 1-12

Annex 9 Maximum Count of Odonate Species Recorded within the Assessment Area

Item No.	Common Name	Chinese Name	Scientific Name	Consevation/ Protection Status	Rarity in Hong Kong [1]	Distribution in Hong Kong [2]	Habitat[3] 500m Study Area										
							WL	PL	SL	SWG	VA	DA	PO	SWC	CWC	MG	MF
1	Coastal Glider	高翔澤蜻	*Macrodiplax cora*	Fellows: LC	Abundant	Frequents marshes and ponds with dense vegetation, especially adjacent to coastal areas										7	
2	Russet percher	網脈蜻	*Neurothemis fulvia*	-	Abundant	Found in marshes, cultivated areas, streams, tanks and irrigation feeders, sometimes even found in nearly dried out marshy areas. Widely distributed throughout Hong Kong										1	
3	Common Blue Skimmer	黑尾灰蜻	*Orthetrum glaucum*	-	Abundant	Widely distributed in streams, conduits, drainage channels, seepages and road gutters throughout Hong Kong		2									
4	Mangrove Skimmer	斑灰蜻	*Orthetrum poecilops poecilops*	Fellowes: GC; Reels: CI; IUCN(VU)	Abundant	Occurs where small freshwater streams cascade into tidal mangroves. Found mainly in the Northeast New Territories, including Double Island, Lai Chi Wo, Nam Chung, So Lo Pun, Yim Tso Ha, Yung Shue Au and Yung Shue O etc; also recorded in Tung Chung and Tai O										1	
5	Wandering Glider	黃蜻	*Pantala flavescens*	-	Abundant	Widely distributed all over Hong Kong		5								29	
6	Variegated Flutterer	斑麗翅蜻	*Rhyothemis variegata arria*	-	Abundant	Widely distributed in marshes, ponds and tanks throughout Hong Kong										24	
						TOTAL	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**0**

Notes:

1. Conservation and Protection Status:
   a. Fellowes – Fellowes et al. (2002): LC = Local Concern, GC = Global Concern
   b. Reels. G. (2019): CI = Species of Conservation Importance
   c. IUCN – International Union for Conservation of Nature Red List of Threatened Species (2024). VU = Vulnerable
2. Rarity as per AFCD. 2014.: Available at http://www.afcd.gov.hk/english/conservation/hkbiodiversity/database/search.asp?lang=en.
3. Distribution as per AFCD database. Available at https://bih.gov.hk/en/home/index.html
4. Habitats: WL = Woodland (Young), PL = Plantation, SL = Shrubland, SWG = Seasonally Wet Grassland, VA = Village Area, DA = Developed Area, PO = Pond, SWC = Semi-natural Watercourse, CWC = Channelized Watercourse, MG = Mangrove, MF = Mudflat/Coastal Water Body
5. References:

AFCD. 2025. Hong Kong Biodiversity Information Hub. Accessed from <https://bih.gov.hk/en/home/index.html> in Jan 2025.
IUCN. (2024). The IUCN Red List of Threatened Species (Version 2024-2). Accessed from <http://www.iucnredlist.org> in Jan 2025.

Annex 10 Relative Abundance of Aquatic Fauna Recorded within the Assessment Area

Item No.	Common Name	Scientific Name	Chinese Name	Conservation Status	Habitat[1] 500m Study Area										
					WL	FSW	PL	SL	SWG	VA	DA	PO	WC	MG	MF
Freshwater Fish															
1	Nile Tilapia	*Oreochromis niloticus*	尼羅口孵非鯽	-											+++
2	Bluespotted Mudskipper	*Boleophthalmus pectinirostris*	大彈塗魚	-											++++
Freshwater Invertebrates															
1	Diving Beetle	*Copelatus oblitus*	奧刻翅龍蝨	-									+++		
2	Mosquito Larva	*Culicidae sp.*	孑孓	-									++++		
3	Water Flea	*Diplostraca sp.*	水蚤	-									+++++		
				TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**2**

Notes:

1. Habitats: WL = Woodland (Young), PL = Plantation, SL = Shrubland, SWG = Seasonally Wet Grassland, VA = Village Area, DA = Developed Area, PO = Pond, SWC = Semi-natural Watercourse, CWC = Channelized Watercourse, MG = Mangrove, MF = Mudflat/Coastal Water Body
2. Relative abundance: +: Scarce (1-5), ++: Uncommon (6-20), +++: Common (20 - 50), ++++: Abundant (>50)
3. References:

AFCD. 2025. Hong Kong Biodiversity Information Hub. Accessed from <https://bih.gov.hk/en/home/index.html> in Jan 2025.

Annex 11 Maximum Count of Firefly Species Recorded within the Assessment Area

Item No.	Common Name	Scientific Name	Chinese Name	Conservation Status[1]	Habitat[3] 500m Study Area															
					WL	FSW	PL	SL	GL	M	SWG	WAG	DAG	VA	DA	PO	SWC	CWC	MG	MF
1	Maipo Bent-winged Firefly	*Pteroptyx maipo*	米埔屈翅螢	IUCN(EN)															17	
				TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**

Notes:

1. Conservation and Protection Status:
   a. Fellowes – Fellowes *et al.* (2002): PGC = Potential Global Concern, GC = Global Concern.
      Letters in parentheses indicate that the assessment is on the basis of restrictedness in breeding and/or roosting sites rather than in general occurrence.
   b. CRDB – China Red Data Book (1998): VU = Vulnerable
   c. IUCN – IUCN (2022): VU = Vulnerable

3. Habitats: WL = Woodland (Young), PL = Plantation, SL = Shrubland, SWG = Seasonally Wet Grassland, VA = Village Area, DA = Developed Area, PO = Pond, SWC = Semi-natural Watercourse, CWC = Channelized Watercourse, MG = Mangrove, MF = Mudflat/Coastal Water Body

4. References:

AFCD. 2025. Hong Kong Biodiversity Information Hub. Accessed from <https://bih.gov.hk/en/home/index.html> in Jan 2025.

Fellowes *et al* . 2002. Wild animals to watch: Terrestrial and freshwater fauna of conservation concern in Hong Kong. Memoirs of the Hong Kong Natural History Society 25:123-159.

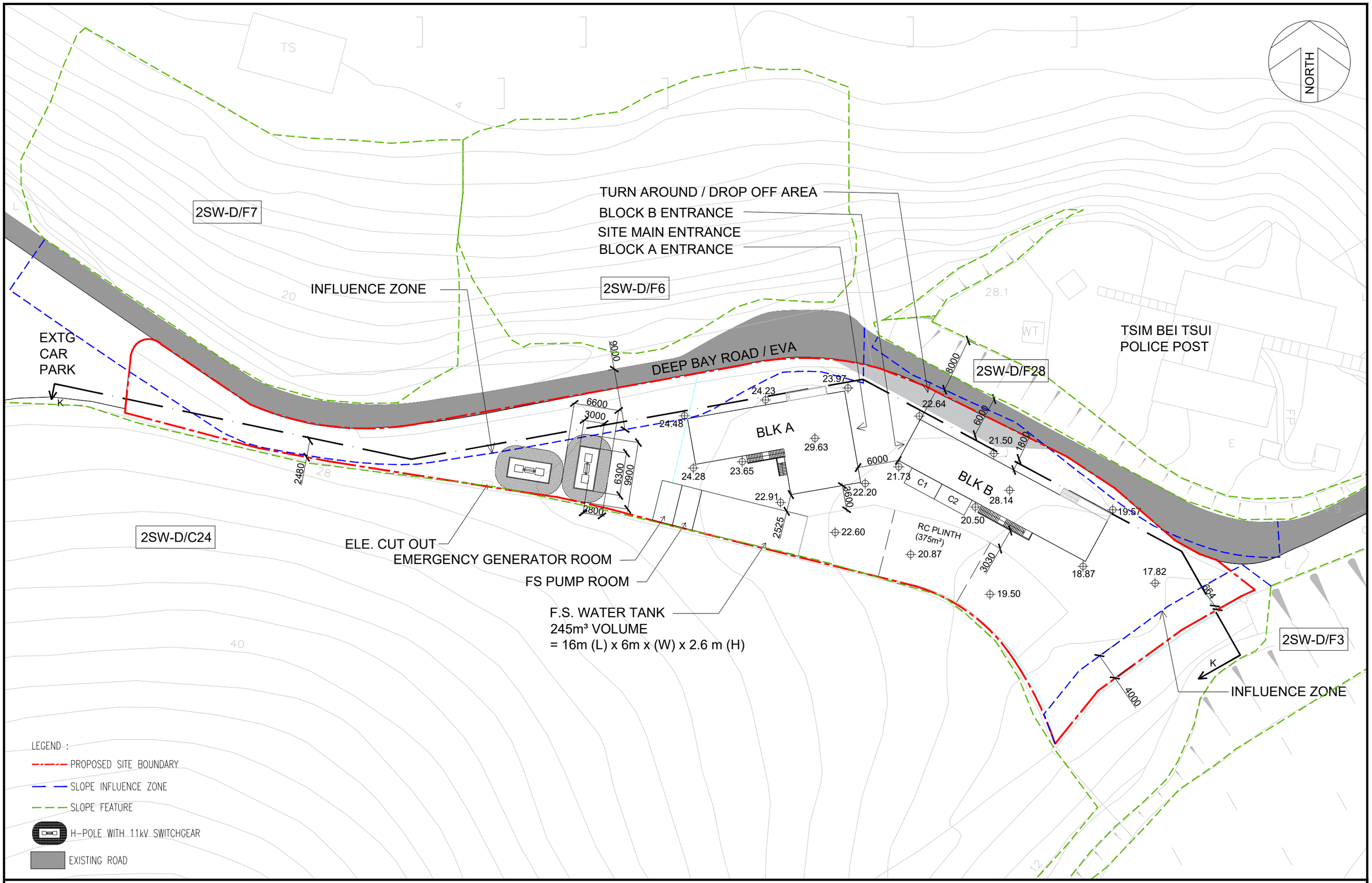
IUCN. (2024). The IUCN Red List of Threatened Species (Version 2024-2). Accessed from <http://www.iucnredlist.org> in Jan 2025.

Annex 12 Relative Abundance of Intertidal Species Recorded in Survey

Taxa Group	Scientific Name	Relative Abundance	
		Dry Season (Jan)	Wet Season (Jul)
Algae	*Hildenbrandia* sp.	+	
Barnacle	*Amphibalanus amphitrite*	+	++
Barnacle	*Microeuraphia withersi*	+	+
Bivalve	*Geloina erosa*	+	
Bivalve	*Saccostrea cucullata*		+
Crab	*Macrophthalmus spp.*	+++	+++
Crab	*Metopograpsus quadridentatus*		+
Crab	*Perisesarma bidens*	++	++
Crab	*Uca arcuata*		++
Crab	*Uca spp.*		+++
Crustaceans	*Ligia (Megaligia) exotica*		+++
Cyanobacteria	*Kyrtuthrix maculans*		+
Fish	*Boleophthalmus pectinirostris*	++	++
Fish	*Periophthalmus modestus*		+
Gastropod	*Ellobium aurisjudae*	+++	++
Number of species recorded		**8**	**13**

Notes:

1. Relative abundance: +: Scarce, ++: Uncommon, +++: Common



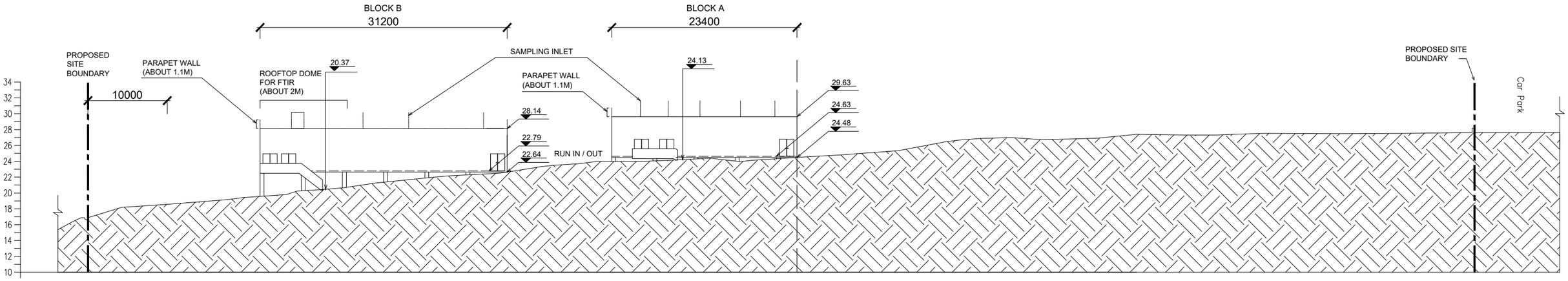
Proposed 'Government Use'
(GBA Air Quality Laboratory and Meteorological Monitoring Supersite)
on Deep Bay Road, Tsim Bei Tsui, New Territories

MASTER LAYOUT PLAN

1:500 (A3)

1

02 - 10 - 2025



REMARK : FOR INDICATION ONLY

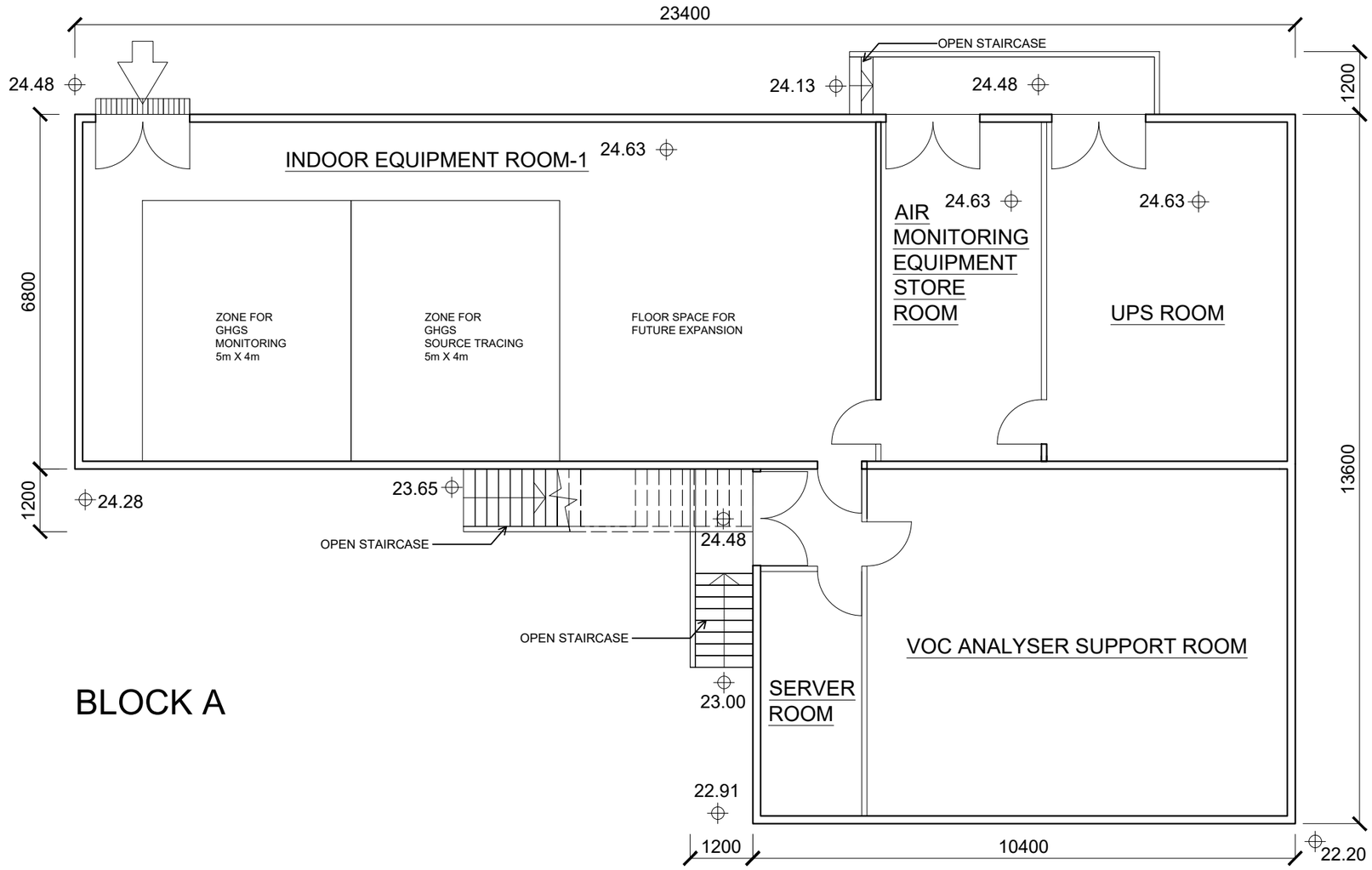
Proposed 'Government Use'
(GBA Air Quality Laboratory and Meteorological Monitoring Supersite)
on Deep Bay Road, Tsim Bei Tsui, New Territories

SCHEMATIC ELEVATION

1:500 (A3)

2

15 - 10 - 2025



BLOCK A

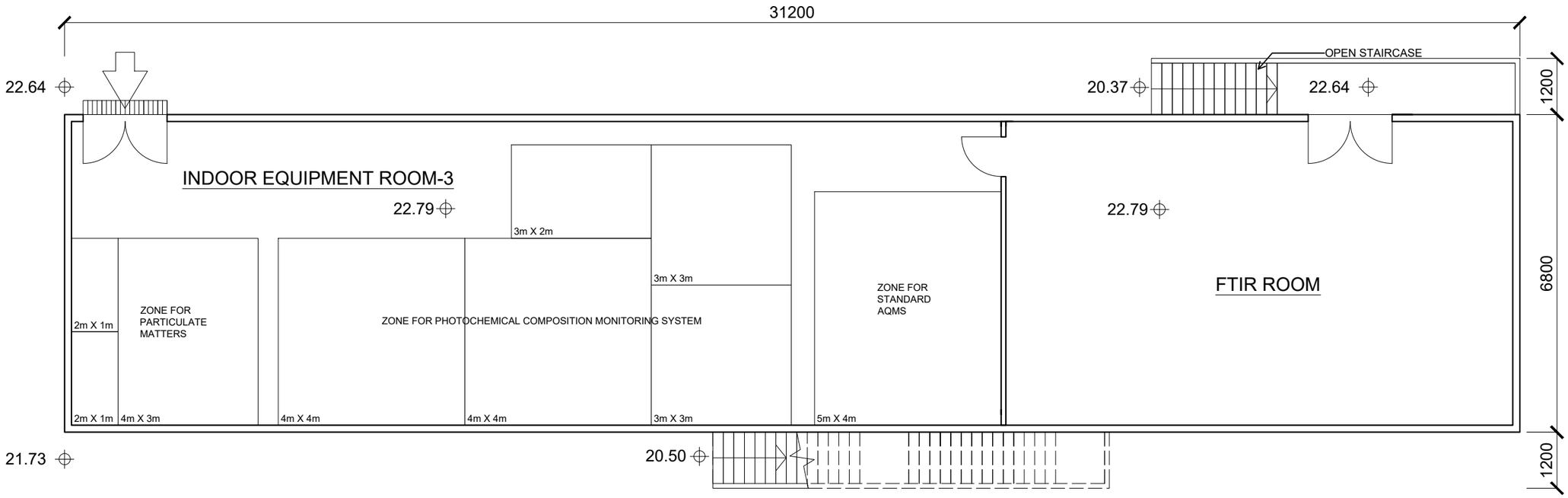
Proposed 'Government Use'
(GBA Air Quality Laboratory and Meteorological Monitoring Supersite)
on Deep Bay Road, Tsim Bei Tsui, New Territories

BLOCK LAYOUT PLAN (BLOCK A)

1:100 (A3)

3a

17 - 09 - 2025



BLOCK B

Proposed 'Government Use'
(GBA Air Quality Laboratory and Meteorological Monitoring Supersite)
on Deep Bay Road, Tsim Bei Tsui, New Territories

BLOCK LAYOUT PLAN (BLOCK B)
1:100 (A3)

3b
17 - 09 - 2025

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Appendix 5

Geotechnical Review Report

Addendum on Geotechnical Review Report

This Geotechnical Review Report (GRR) (Rev. 6) was submitted to GEO in November 2025. On 4 December 2025, Geotechnical Engineering Office of Civil Engineering and Development Department (GEO/CEDD) advised they had no further comments *(attached following this page)*. To serve the purpose of this S.16 Planning Application, the GRR (Rev. 6) is attached herewith the planning submission. Please note that while the development parameters and architectural drawings in this GRR (Rev. 6) would have minor deviation from those in the Supporting Planning Statement and Appendix 1 – Architectural Drawings under the S.16 Planning Application, it should not affect the overall conclusion and findings of the Geotechnical Review Report that the five existing registered slope features in close vicinity will not be impacted by the proposed development and no slope upgrading works is required for the proposed development.

For ease of information, the necessary updates requiring subsequent amendments to the GRR (Rev. 6) are listed below:

Section 1.3	Total Building Plan Area / GFA (m^2) of the two blocks shall be **460m^2** instead of 442m^2 (under "1.5 Wings" Scheme) (The S.16 Development Scheme is based on the "1.5 Wings" Scheme)
Section 4.3	The paragraph shall be amended to: The development site area has a total area of about **3,080m^2** on plan, of which building plan area of **Blocks** A and B are **both 230m^2** respectively. The latest proposed buildings, aligned approximately parallel to Deep Bay Road, **are** located at the eastern portion facing Tsim Bei Tsui Police Post. **The roof level is not more than +30mPD**. The proposed **buildings are** 1-storey building **structures** with an **at-grade** EVA of 6m wide, adjoining Deep Bay Road. The entrance of the development site is located at entry of the EVA, leading to Deep Bay Road, at west end of the proposed **Block B**.
Appendix G1A	For the latest architectural drawings, please refer to Appendix 1 of the Supporting Planning Statement.

MEMO

From CGE/MW, GEO, CEDD

Ref. in MW-30-2010-1-717

Tel .No. 2762 5693 Fax. No. 2194 0165

E-mail yllee@cedd.gov.hk

Date 25.10.2024

To SSE/101, ArchSD

(Attn.: Mr. Austin LEE)

Your Ref. ____ in ____

dated ____ Fax. No. 2290 2225

Total Pages 1 + Encl.

Programme No. 743ZX
Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite

Final Geotechnical Review Report (Revised)

I refer to the letter ref. D3846700/10/24104141 dated 17.10.2024, received on 18.10.2024, from your Consultants, Halcrow China Limited, enclosing the captioned report for our comment. The following comments represent the views of the Geotechnical Engineering Office:

2. The contents of RtC are noted. I have no further comments on the captioned report.

3. The Consultants are reminded to observe Paragraph 2 of our previous memo under the same reference number dated 9.9.2024 regarding the requirement for submission of a detailed geotechnical assessment and design for site formation works in accordance with ETWB TCW No. 29/2002. I reserve further geotechnical comments until the detailed geotechnical assessment and design becomes available.

4. The captioned report is returned herewith.

(Alex Y L LEE)
for Chief Geotechnical Engineer/Mainland West
Geotechnical Engineering Office
Civil Engineering and Development Department

c.c. Halcrow (Attn.: Mr. Russell Ong) – FAX: 2565 5561

RSL/N/AYLL/ayll

GEOTECHNICAL REVIEW REPORT - SITE A

FEASIBILITY STUDY AND DESIGN DEVELOPMENT ON
CONSTRUCTING A LOW-CARBON BUILDING STRUCTURE TO ACCOMMODATE ARTIFICIAL INTELLIGENCE ACCELERATORS

FOR
ENVIRONMENTAL PROTECTION DEPARTMENT

Rev. 6

30 October 2025

Prepared by C Arch Design Consultant Limited

Endorsed By

Ir Dr. Chan Wan To
Registered Geotechnical Engineer

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1. Introduction

1.1 Background

The Project is to construct a Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite (the "Supersite") proposed by the Environmental Protection Department (EPD) jointly with the Hong Kong Observatory (HKO) to support and provide regional air pollution and meteorological monitoring and forecastingservices.

The site will be situated at Deep Bay Road, Tsim Bei Tsui, with the project site plan detailed in **Appendix A**.

In August 2023, the Architectural Services Department ("ArchSD") performed an initial geotechnical evaluation ("PGA") based on an Architectural Sketch Plan, identifying multiple registered geotechnical aspects within or around the planned site that might impact or be affected by the project.

The PGA found the site to be geotechnically viable for development, requiring a geotechnical assessment (GA) to identify all geotechnical factors that could impact or be impacted by the project. This evaluation would also examine the consequence-to-life category, review the present stability of these elements, and assess whether upgrades or modifications are necessary to comply with GEO's current safety standards and requirements for the planned development.

On 24 January 2024, ArchSD engaged Halcrow China Limited to conduct Programme No. 743ZX, titled "Geotechnical Review for Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite", with the project commencing on the same date. On 17 October 2024, Halcrow China Limited submitted the Final Geotechnical Report (refer to letter ref. D3846700/10/24104141 dated 17.10.202). The corresponding memo issued by GEO can be referred to **Appendix B** for reference.

1.2 Scope of this Geotechnical Review Report (GRR) 1st Amendment

The scope of the Review Report (Revision 5) consists of the following:

a) Two options (namely 2 wings and 1.5 wings) of General Building Plan (GBP) and Master Layout plan proposed by C Arch Design Consultant Limited are presents in this GRR 1st Amendment submission; and
b) Carrying out geotechnical assessment for the proposed development based on the latest GBPs proposed by C Arch Design Consultant Limited.

The scope of this Review Report (Revision 6) consists of the following:

a) To review the geological profile based on the two newly completed trial pits which were proposed in report revision 5. The review assessment is presented in Section 7.

1.3 Summary of New GBP Amendment versus Old GBP

The proposed GBP have been changed substantially. The table below has shown the critical changes comparing to the old GBP presented in the previous GRR.

Major GBP Items	**Previous GBP**	**This GBP (2 Wings)**	**This GBP (1.5 Wings)**
Total Building Plan Area (m^2)	597 (One Single Block)	442 (Two Separate Blocks)	442 (Two Separate Blocks)
Building Height	3 - Storeys	Single Storey	Single Storey
Satellite Receiver and Corresponding Open Space and Access Road Sitting on Crest of Feature No. 2SW-D/F3	Proposed satellite receiver locates on crest of Feature No. 2SW-D/F3 (Eastern Side of the Site)	Omitted	Omitted

1.4 Summary of Slope Influence Zone

This table summarized the relationship between slope influence zone and the development. A slope influence zone layout plan is enclosed in **Appendix D** and shall read conjunction with **Figure 1** to **3** in Section **5.5.2**.

For the development of both 1.5 and 2 Wings, no building area would fall into all slope influence zone.

Slope Feature No.	**Width of Crest Influence Zone (m)**	**Width of Toe Influence Zone from Slope Crest (m)**	**This GBP - 2Wings Distance Between Building Line and Slope Crest (m)**	**This GBP - 1.5 Wings Distance Between Building Line and Slope Influence Zone (m)**	**Proposed Development falls into "Slope Influence Zone" (Y/N)**
2SW-D/F6	9	N/A	9	9	N
2SW-D/F7	8.5	N/A	9	9	N
2SW-D/C28	N/A	13.5	10	10	N
2SW-D/C24	Slope stability analysis is performed in this GRR, the F.O.S. is considered adequate. Therefore no slope upgrading work is required. (See Section 5.6.1)				
2SW-D/F3	4	N/A	16	16	N

Remark: N/A - Not Applicable

1.5 Summary of Proposed Slope Upgrading Works due to the Proposed Development (New GBP Amendment versus Old GBP)

Based on the discussion in Section 5 of this assessment report, the new proposed building area are falls outside all slope crest influence zones, or the current F.O.S. of slope stability meets current standard under the development (e.g Slope Feature No. 2SW-D/C24). No slope upgrading works is required under the proposed development and further GI is not needed. Please refer to the layout plan showing the proposed building area that will be fell outside "Crest Influence Zone" of all surrounding registered features in **Appendix D.**

Slope Feature No.	Previous GBP	This GBP (2 Wings)	This GBP (1.5 Wings)
2SW-D/F6	No Upgrading Works is Required	No Upgrading Works is Required	No Upgrading Works is Required
2SW-D/F7	No Upgrading Works is Required	No Upgrading Works is Required	No Upgrading Works is Required
2SW-D/C28	No Upgrading Works is Required	No Upgrading Works is Required	No Upgrading Works is Required
2SW-D/C24	No Upgrading Works is Required	No Upgrading Works is Required	No Upgrading Works is Required
2SW-D/F3	Substantial Slope Upgrading Works is Required.	No Upgrading Works is Required	No Upgrading Works is Required

2 The Site

The site is positioned at Deep Bay Road, Tsim Bei Tsui, with Deep Bay to its north. Deep Bay Road runs along the northern boundary from west to east. Adjacent to the western edge of the site is a public car park, while the Tsim Bei Tsui Police Post lies opposite the eastern section, across Deep Bay Road. The site extends approximately 160 meters along Deep Bay Road from west to east.

The larger eastern section of the site spans roughly 75 meters in length and 30 meters in width, with the terrain sloping downward at an angle of about 5 degrees toward the east. The smaller western portion, extending approximately 85 meters, narrows to around 5 meters at its end and remains relatively flat, sitting at an elevation of about +27mPD.

Several registered features are situated near or around the site. The southern boundary aligns with the base of Feature No. 2SW-D/C24, a cut slope reaching up to 40 meters in height with a mild maximum gradient of 20 degrees. From the western end to roughly the midpoint of the site, two adjacent registered features, 2SW-D/F7 and 2SW-D/F6, lie below, separated by Deep Bay Road. According to SIMAR records, these fill slopes have a 35-degree incline and a maximum height of 22 meters. At the eastern section of the site, Feature No. 2SW-D/C28, a cut slope 90 meters long with a maximum height of 6 meters and an average slope of 55 degrees, is positioned across Deep Bay Road. Additionally, another fill slope, Feature No. 2SW-D/F3, is located beneath the eastern end of the site, with a maximum height of 10 meters and an average gradient of 45 degrees.

Site Inspection

A site inspection on slope feature no. 2SW-D/C24 was conducted on 22nd April 2025, it is found that no sign of distress is observed. The photo records are enclosed in **Appendix J**.

3 DETAILED DESK STUDY

3.1 Review of Existing Information

3.1.1 General

The available geological and geotechnical information obtained from the Geotechnical Information Unit (GIU), Civil Engineering and Development Department (CEDD) has been collated to review.

These geotechnical information are chiefly derived from published geological resources (e.g., geological maps and memoirs), GI reports obtained from the GEO Geotechnical Information Unit, aerial photos, GEO's landslide inventories, registered features documented in the Slope Information System (SIS), and records of existing subsurface utilities.

3.1.2 Published Geology

The geology of the Site Area is mostly covered by the Hong Kong Geological Survey (HKGS) Sheet 2, 'Solid and Superficial Geology – San Tin', 1:20,000- scale HGM20 series Edition I (GEO, 1989). The solid, superficial, and structural geology of the Site Area are briefly described below:

Solid Geology

The 1:20,000 scale Geological Map Sheet 2 shows that the proposed site is mainly underlain by fine- to medium-grained granite (gfm) of Tsing Shan Granite.

A wide band of northeast-trending quartz vein is recorded within the Tsing Shan Granite and bounded by mylonitized granite on the southeast side and localised silicified granite on the northwest side.

Superficial Deposits

Debris flow deposits (Qd) covers the valleys within and in the vicinity the proposed site. A layer of alluvium (Qa) is recorded along the main valley to the southwest of the site. Significant beach deposits (Qb) is surrounding the coast along Deep Bay.

Structural Geology

According to the 1:20,000-scale Geological Map, a major northeast-trending thrust fault is recorded to the southeast of the proposed site, which are roughly running along the ridge line at Tsim Bei Tsui area. This thrust fault is displaced by a northeast-trending fault to the southwest of the site.

The geological map covering the site is presented in **Figure 1.**

A wide band of northeast-trending quartz vein is recorded within the Tsing Shan Granite and bounded by mylonitized granite on the southeast side and localized silicified granite on the northwest side.

Superficial Deposits

Debris flow deposits (Qd) covers the valleys within and in the vicinity the proposed site. A layer of alluvium (Qa) is recorded along the main valley to the southwest of the site. Significant beach deposits (Qb) is surrounding the coast along Deep Bay.

Structural Geology

As indicated on the 1:20,000-scale Geological Map, a significant northeast-oriented thrust fault is documented to the southeast of the proposed location. This fault generally follows the ridge line in the Tsim Bei Tsui area. Additionally, it is intersected by another northeast-oriented fault situated to the southwest of the site.

The geological map covering the site is presented in **Figure 1.**

3.1.3 Aerial Photograph Interpretation (API)

An Aerial Photograph Interpretation (API) has been carried out for the site. Please refer to previous GRR prepared by Halcrow China Limited for detailed information.

Refer to previous GRR, the planned site is situated at Tsim Bei Tsui, where six registered geotechnical features—Feature Nos. 2SW-D/C24, 2SW-D/C27, 2SW-D/C28, 2SW-D/F3, 2SW-D/F6, and 2SW-D/F7—located within or close to the site are significant and warrant attention. Feature Nos. 2SW-D/F6 and 2SW-D/F7, along with several unregistered cut slope features, were likely created in 1963 during the development of Deep Bay Road. Similarly, Feature No. 2SW-D/C28 emerged in the same year, tied to the construction of the Tsim Bei Tsui Police Post. In 1973, a roundabout was built to the west of the proposed site. Between 1981 and 1982, active borrow operations took place within or near the site, leading to the establishment of Feature Nos. 2SW-D/C24, 2SW-D/C27, and 2SW-D/F3 in 1983. Multiple surface drainage channels were also constructed within or around these slopes. In 2004, the platform adjacent to the site's western side was transformed into a car park. Since that time, no noticeable alterations have been observed at the proposed site.

3.1.4 Archival Ground Investigation Records

Information from prior Ground Investigation (GI) efforts pertinent to the proposed project was obtained from historical GI records stored in the Geotechnical Information Unit (GIU) within GEO. A site investigation report for the Tsim Bei Tsui Borrow Area, conducted under P.W.D. Contract 424/79 by Gammon (Hong Kong) Limited in 1981, was accessed. This earlier GI includes data from 9 boreholes, with their records detailed in **Appendix C**. Additionally, a location plan illustrating the positions of the previous GI in relation to the project site boundary is provided in **Appendix C**.

3.1.5 Previous GI Field and Laboratory Testing Records

Previous in-situ field tests of standard penetration test are shown in the previous retrieved GI borehole records, and no laboratory testing results have been retrieved from archival GI records.

3.1.6 Previous Ground Water Monitoring Records

Three previous boreholes of D1, D6 and D9 were installed with standpipe piezometer, and seven-day groundwater monitoring records are shown in the retrieved GI records. The monitoring records show that dry was monitored in all three standpipe piezometers with the lowest tip at +36.6mPD in D6, which are appended in **Appendix C**.

3.1.7 Landslide Incident Records

There are no existing landslides related data within the proposed site area.

3.1.8 Existing Registered Features

There are 5 nos. of registered features that could affect or be affected by the development in the vicinity of the project site, namely 2SW-D/C24, 2SW-D/C28, 2SW-D/F3, 2SW-D/F6 and 2SW-D/F7. Locations of the features and summary of their attribute data are presented in **Appendix E**.

3.1.9 Existing Utilities

Various utility undertakers including DSD, WSD, CLP, Town Gas, HKT, HGC and SmarTone were requested to provide information on their existing utilities/services located within or in the vicinity of the site. Except WSD pending reply, only utilities of CLP and HKT are identified in the vicinity of the site.

Records of the existing utilities checking are shown in **Appendix F**.

3.2 General Geology and Engineering Geology Issue

3.2.1 General

An evaluation of existing geological and geotechnical data has been conducted to pinpoint any potential geological or geotechnical limitations that could impact the project's viability, particularly highlighting areas requiring additional exploration to confirm feasibility.

Geological information relevant to the proposed development and its surrounding areas has been examined, including geological maps at scales of 1:20,000 and 1:100,000, along with their corresponding geological memoirs. Site conditions were assessed using this published geological and geotechnical data, supplemented by available ground investigation records.

The project site features a mostly level western section, while the eastern section slopes downward at a 5-degree angle to the east. Along Deep Bay Road, the existing ground elevation is approximately +27.0mPD in the western area. The underlying solid geology consists of fine- to medium-grained granite (gfm) belonging to the Tsing Shan Granite formation. A detailed interpretation of the site's geology was derived from an analysis of the ground investigation data provided in **Appendix C**.

The general geological plan of the site is shown in **Figure 1**.

3.2.2 Superficial Geology

The proposed site area is not within areas of superficial deposits.

3.2.3 Solid Geology

Weathered Rock Zone

Based on the available GI data, thickness of saprolite ranges from 19.0m to deeper than 36.6m within the site area. The following typical description on the weathered rocks (Grave V to IV saprolite) of different rock types encountered in the site area is presented as follow:

- Extremely weak, completely decomposed fine grained Granite comprising dense to very dense, Silty Sand with coarse gravels.
- Weak, completely to highly decomposed fine-grained Granite comprising dense to very dense, Silty Sandy coarse gravels.
- Weak, highly decomposed fine-grained Granite comprising very dense, Sandy silt with gravels.

Bedrock

Bedrock is considered as Category 1 (c) rock which is described in Table 2.1 of the Code of Practice for Foundation (Buildings Department, 2017) as "slightly to moderately decomposed, moderately strong rock of material weathering grade III or better, with a total core recovery of more than 85% of the grade and a minimum uniaxial compressive strength of the rock material (UCS) not less than 25MPa (equivalent to point load index strength PLI_{50} not less than 1 MPa)" with a presumed allowable bearing pressure of 5000kPa. Rock head is taken as the top of at least 5m of continuous Category 1 (c) rock.
One major category of bedrock is encountered within the site area. The rockhead level ranges between approximately +46mPD to +21mPD. General description and bedrock elevation of the rock is summarized below:

- Pegmatite is predominantly encountered beyond the site at south. Bedrock of Milky Quartz generally reached at moderately decomposed Pegmatite. The rockhead level was broadly encountered at +46mPD, with a plunge of bedrock elevation to +21mPD at south-east.

3.2.4 Structural Geology

The mapped faults shown on the 1:5,000, 1:20,000 and 1:100,000 Geological Maps are reviewed. According to the geological maps, a thrust fault is recorded to the southeast of the site area. The northeast-trending Lau Fau Shan Fault is presented.

Highly fractured quartz veins are encountered with increasing depth towards northwest which appears to follow the thrusting angle of the Lau Fau Shan Fault.

3.2.5 Hydrogeological Condition

The available ground monitoring records indicate dry conditions in the area down to a level of +36.6mPD. In view of the site area located at Tsim Bei Tsui, in average 60m away from Deep Bay, the groundwater level is considered to be at sea water level and linked to the tidal sea levels.

4 The Development

4.1 General

The Environmental Protection Department (EPD), in collaboration with the Hong Kong Observatory (HKO), has put forward a plan to establish a Guangdong-Hong Kong-Macao Greater Bay Area Air Quality Laboratory and Meteorological Monitoring Supersite. This facility aims to enhance regional air pollution monitoring, meteorological observation, and forecasting capabilities. The proposed site is for construction at Deep Bay Road in Tsim Bei Tsui.

4.2 General Building Plan (Design Option 1 (2 Wings))

The development site area has a total area of about 3,150m² on plan, of which building plan area of Block A and B are 230m^2 and 212m^2 respectively. The latest proposed building, aligned approximately parallel to Deep Bay Road, is located at eastern portion facing Tsim Bei Tsui Police Post. The upper roof level is at +27.29mPD. The proposed building is a 1-storey building structure with an on-grade EVA of 6m wide, adjoining Deep Bay Road, running along length of the building. The entrance of the development site is located at entry of the EVA, leading to Deep Bay Road, at west end of the proposed building.

The General Building Plan of the development is appended in **Appendix G1B** and **Figure A.**

4.3 General Building Plan (Design Option 2 (1.5 Wings))

The development site area has a total area of about 3,150m ² on plan, of which building plan area of Block A and B are 230m^2 and 212m^2 respectively. The latest proposed building, aligned approximately parallel to Deep Bay Road, is located at eastern portion facing Tsim Bei Tsui Police Post. The upper roof level is at +27.29mPD. The proposed building is a 1-storey building structure with an on-grade EVA of 6m wide, adjoining Deep Bay Road, running along length of the building. The entrance of the development site is located at entry of the EVA, leading to Deep Bay Road, at west end of the proposed building.

The General Building Plan of the development is appended in **Appendix G1A** and **Figure B.**

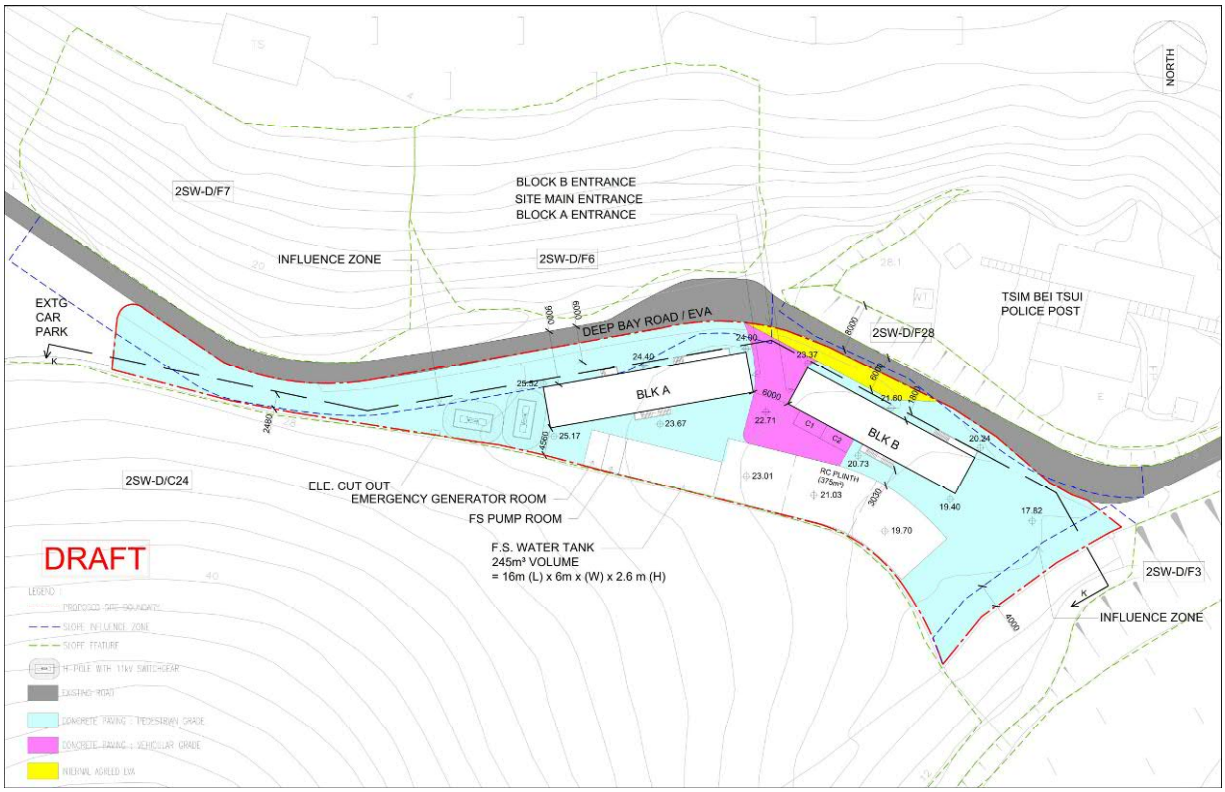


Figure A - Design Option 1 (2 Wings)

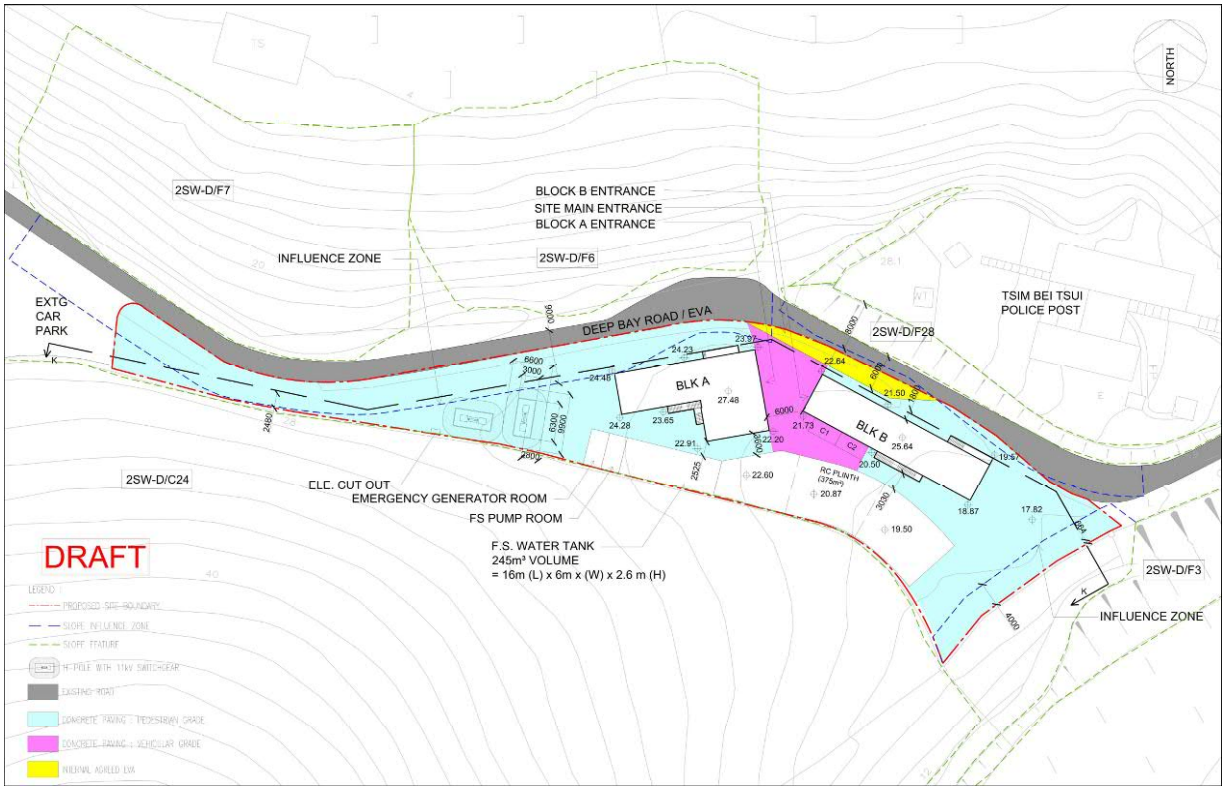


Figure B - Design Option 2 (1.5 Wings)

5 GEOTECHNICAL ASSESSMENT

5.1 Specific Ground Investigation (GI)

5.1.1 GI proposed in previous GRR

The planned Ground Investigation (GI) in previous GRR, including related on-site and laboratory testing, aim to achieve multiple goals: decreasing geotechnical uncertainties at the intended site, encompassing documented features that might impact or be impacted by surrounding development; lowering geotechnical hazards; and gathering comprehensive geotechnical details.

These GI activities and lab tests are designed to build upon existing GI records, facilitating the development of precise geological and hydrogeological condition and determining essential geotechnical characteristics, including the strength of soil and rock.

The GI works Phase 1 involves GI tasks within the designated project area and on Feature No. 2SW-D/C24, managed by the District Lands Office (DLO). A layout plan included in **Appendix H-1**.

Within the site boundaries, 10 vertical boreholes are proposed, with over half positioned inside or near the planned building perimeter. These boreholes will generally extend to a depth of 5 meters into grade III or higher-quality rock, except for four boreholes that will reach 7.5 meters as per ArchSD standards, ensuring a Total Core Recovery (TCR) of at least 85% and a minimum Unconfined Compressive Strength (UCS) of rock material of 25 MPa (or an equivalent Point Load Index strength, PLI50, of at least 1 MPa).

For Feature No. 2SW-D/C24, located at the base of which the site lies, an additional 10 boreholes are planned across the feature's height, with six positioned near the site boundary at the feature's toe. Four boreholes, distributed across the upper slope, will penetrate approximately 5 meters below the toe of the slope or 5 meters into grade III or better rock with a minimum TCR of 85%, whichever is shallower.

5.1.2 Existing Ground Investigation Works

At the time this Geotechnical Report (GR) was compiled, the fieldwork for Phase 1 of the Ground Investigation (GI) works—covering the site boundary and the lower slope of Feature No. 2SW-D/C24—had been completed except six boreholes namely BH04, BH8, BH12, BH13, BH14 and BH15 were planned to carry out in Phase 1a, however, having reviewed that sufficient GI were conducted in 1981 under P.W.D. contract 424/79, mainly on upper part of Feature No. 2SW-D/C24. In view of that, those planned boreholes BH04, BH8, BH12, BH13, BH14 and BH15 are considered unnecessary, and it is proposed to cancel in this GRR amendment. In order to verify the geotechnical sections presented in **Appendix I,** two trial pits on the upper part of Feature No. 2SW-D/C24 were caried out on Oct 2025. The as-built trial pit layout plan is appended in **Appendix H-1.**

From logs of the completed drillholes, sequence of soil materials revealed in site area is generally as follows, which are appended in **Appendix H-2**.

Topsoil / Fill

White, pink, yellowish brown, dark yellowish brown, greyish brown, dark greyish brown, light grey and light brownish grey, SILT/ fine to coarse SAND/ angular fine to coarse GRAVEL/ angular COBBLE.

Topsoil / fill material is overlying Colluvium / Residual Soil / CDG over the site area.

Colluvium

Dark yellowish brown and greyish brown, fine to coarse SAND with rootlets and decayed wood fragments.

A thin layer (about 1.5m) is underlain topsoil / fill material identified in drillhole DH05 with a SPT N-value of 19 blows.

Residual Soil

Yellowish brown and reddish yellow, SILT/ fine to coarse SAND.

Residual Soil was encountered in drillholes BH01, DH01 & DH02. In DH01, a relatively thick layer of 0.9m is overlying CDG with a SPT N-value of 15 blows.

Completely / Highly Decomposed Granite

Extremely weak to moderately weak, yellowish brown, reddish brown, light yellowish brown, light grey and pinkish grey, completely to highly decomposed fine to medium grained, brecciated and silicified GRANITE with cataclastic texture.

CDG layer ranges in thickness of 4m to 10m identified in drillholes BH01, BH02 and DH01 with an average SPT N-value of 40 blows.

HDG is Interbedding grade III rock over the site with a substantial 18m thick revealed in DH05.

Moderately Decomposed Granite

Moderately strong, white, pink, red, reddish brown, light reddish brown and brownish grey, moderately decomposed brecciated and silicified GRANITE/ FAULT BRECCIA with cataclastic texture.

Bed rock head of Moderately Decomposed Granite of rock Grade III with not less than 85% TCR is in general dipping in E-W direction (approximately from +3.64mPD to -5.45mPD) and further down to below -13mPD (more than 39m below ground) at western portion of the site. Moreover, the bed rock head is also dipping to the North, cliff descent to below -17mPD (more than 40m below ground), in approaching to north site boundary at major eastern portion of the site.

For Category 1(c) of grade III/II rock with not less than 85% TCR and 25MPa UCS / 1MPa PLI_{50}, the corresponding bed rock head will be lower depending on the availability of the rock cores and the results of the associated UCS / PLI tests conducted.

5.1.3 Laboratory Testing Report

Based on previous GRR, laboratory tests on soil samples taken in GI works of Phase 1 were conducted, which typically included particle size distribution (PSD) test, moisture content test, Atterberg limits test, determination of resistivity test, chemical tests, triaxial compression test and point load test. Extracted testing results from the report are in **Appendix H-3**.

Summaries of the laboratory test data are presented in the tables below.

Table 5.1 Summary Table of Moisture Content

Soil Stratum	Moisture Content (%)			
	No. of Tests	Min	Max	Avg.
CDG	2	15	15	15
HDG	1	6	6	6

Table 5.2 Summary Table of Liquid Limit, Plastic Limit and Plasticity Index

Soil Stratum	Liquid Limit (%)				Plastic Limit (%)				Plasticity Index (%)			
	No. of Tests	Min	Max	Avg.	No. of Tests	Min	Max	Avg.	No. of Tests	Min	Max	Avg.
CDG	2	33	34	33.5	2	19	22	20.5	2	12	14	13

Table 5.3 Summary Table of Soil Sulphate and Chloride Content

Soil Stratum	Water-Soluble Sulphate in Soil (%)				Water-Soluble Chloride in Soil (%)			
	No. of Tests	Min	Max	Avg.	No. of Tests	Min	Max	Avg.
CDG	2	<0.01	<0.01	<0.01	1	<0.01	<0.01	<0.01

Table 5.4 Summary Table of Soil Organic Content and pH Value

Soil Stratum	Organic Content (%)				pH			
	No. of Tests	Min	Max	Avg.	No. of Tests	Min	Max	Avg.
CDG	1	<0.1	<0.1	<0.1	1	4.3	4.3	4.3

Table 5.5 Summary Table of Determination of Resistivity Test

Soil Stratum	Soil Resistivity (Ω.m)				Resistivity Corrected to 20°C (Ω.m)			
	No. of Tests	Min	Max	Avg.	No. of Tests	Min	Max	Avg.
CDG	1	68.22	68.22	68.22	1	73.34	73.34	73.34
HDG	1	1048.24	1048.24	1048.24	1	1126.86	1126.86	1126.86

Table 5.6 Summary Table of Point Load Test

Rock Type	Point Load (Is50) (MPa)			
	No. of Tests	Min	Max	Avg.
MDG	7	2	7.4	5.2

5.2 Site Formation

As outlined in Section 4 and illustrated in the General Building Plan in **Appendix G**, the current ground elevation and profile align well with the necessary formation level for the proposed building project. Consequently, extensive earthworks, such as significant ground lowering or slope shaping to support the building structure, are not needed. It is expected that there will be no need to create new slopes or alter existing registered features.

5.3 Foundation

The proposed single-storey structure can be suitably supported by shallow foundation systems, such as footings, given the favourable geotechnical conditions across the site. Shallow foundations, including isolated, strip, raft, or combined configurations, are viable due to the competent bearing strata present.

The majority of the site is underlaid by Grade III HDG interbedded rock formations, characterized by high shear strength and estimated Standard Penetration Test (SPT) N-values indicative of robust load-bearing capacity. This geological profile ensures adequate support for the building's structural loads when footings are constructed directly on the in-situ soil.

At the eastern portion of the site, dense completely decomposed granite (CDG) soils dominate, exhibiting an average SPT N-value of 40 blows, further confirming the suitability of shallow foundations in this zone. The combination of these geotechnical properties eliminates the need for deep foundation solutions, making shallow footings a technically and economically appropriate choice for the development.

5.4 Existing Registered Features Surrounding Site

There are five existing registered features (namely 2SW-D/C24, 2SW-D/C28 and 2SW-D/F3, D/F6 & D/F7) that could affect or be affected by the development in the vicinity of the site. Feature No. 2SW-D/C27 that was identified to be potentially affecting or be affected in the previous PGA is confirmed not identified feature based on the building layout plan in **Appendix E**.

Re-assessment of Consequence-to-Life (CTL) Category in accordance with GEO TGN No. 15, and Economic Consequence Category as per PNAP APP-109 as well, for these features will be conducted in the following Section 5.5.2. Based on results of the Category re-assessing, potential features will be screened to assess slope stability under the building development in order to identify which features are affected and if any, to conduct preliminary stability assessment and recommend scheme of geotechnical works of detailed assessment of the identified features. Stability analysis of the features screened will be presented in the following Section 5.6.

5.5 Assessment of Existing Registered Features

This geotechnical assessment is to identify at an early stage any fundamental geotechnical constraints that could affect or be affected by the new proposed building work and to adequately assess the geotechnical feasibility of the project.

5.5.1 General

2SW-D/C24

This feature is a 215-meter long cut slope, with a maximum height of 40 meters and an average angle of 20 degrees. The Supersite development is to be situated at the north-eastern base of this slope, i.e. the toe of this slope. After the Supersite's development, the toe facility of the slope feature 2SW-D/C24 will change from the original, undeveloped open space to building structures. A critical case geological section 1-1 is chosen for slope stability analysis are presented in **Appendix I**. The stability analysis outcome is discussed in **Section 5.6.1**.

2SW-D/C28

This cut slope measures 90 meters in length, with a maximum height of 6 meters and an average gradient of 55 degrees. Deep Bay Road, a road with minimal traffic, runs along the base of the slope, while a lightly used open space is situated at the top. The project site is located on the opposite side of Deep Bay Road from the slope's base. The Consequence-to-life (CTL) and Economic Consequence categories for this feature will stay the same. Therefore, the development will not impact this feature.

2SW-D/F6

This fill slope is 57 meters long and 22 meters high, with a gradient of 35 degrees. The proposed development is approximately 9 meters away from the crest of the slope, in the southeast direction. Since the building structure is not directly behind the crest or within the crest influence zone, the additional load from the building/foundation will not destabilize the slope (as explained in Section 5.5.2). The Consequence-to-life (CTL) and Economic Consequence categories for this feature will remain the same. Therefore, the development will not impact this feature.

2SW-D/F7

This fill slope has a gradient of 35°, spans 80 meters in length, and reaches a height of 21 meters. It is situated beneath the access road at the western edge of the site. The development is not expected to change the Consequence-to-life (CTL) and Economic Consequence categories for this feature. This indicates that the development will have no impact on this feature.

2SW-D/F3

It is a 134m-long fill slope with an average inclination of 45° and a maximum height of 10m. Refer to the proposed building layout, the single storey building will be located 12m away from the crest influence zone. This indicates that the development will have no impact on this feature.

5.5.2 Required Factor of Safety of Slope Stability and Consequence-to-life

With reference to GEO Technical Guidance Note No. 15 (TGN 15), the consequence-to-life (CLT) of the slope features should be reviewed as the crest/toe facilities may change after the building works. PNAP APP-109 is also referred to for reviewing of Economic Consequence Category if Economic Consequence dominates.

For Feature No. 2SW-D/C24, since its toe facilities (i.e. the Supersite development) will change from open space to "lightly used buildings" (i.e. Blocks A & B and other ancillary facilities of the Supersite), the CTL will be raised from Category 2 to Category 1 after the building works.

For Feature Nos. 2SW-D/F6 and 2SW-D/F7, the expected influence zone, as defined in TGN 15, is about 9m (i.e. 0.4 times the slope height of 22m). Please refer to **Figure 1** below showing the relationship between proposed development (both 2 and 1.5 wings) and slope crest influence zone. Since the proposed building is located at least 9m away from the slope crest in South-East direction (not immediately behind crest of the feature), it falls outside the expected crest influence zone. Thus, the crest facility will remain as Cat 3 ("road/footpath with low traffic density" or "non-dangerous goods storage site"). The CTL/Economic Consequence and the required FOS will remain as Category 3/B and 1.2 respectively.

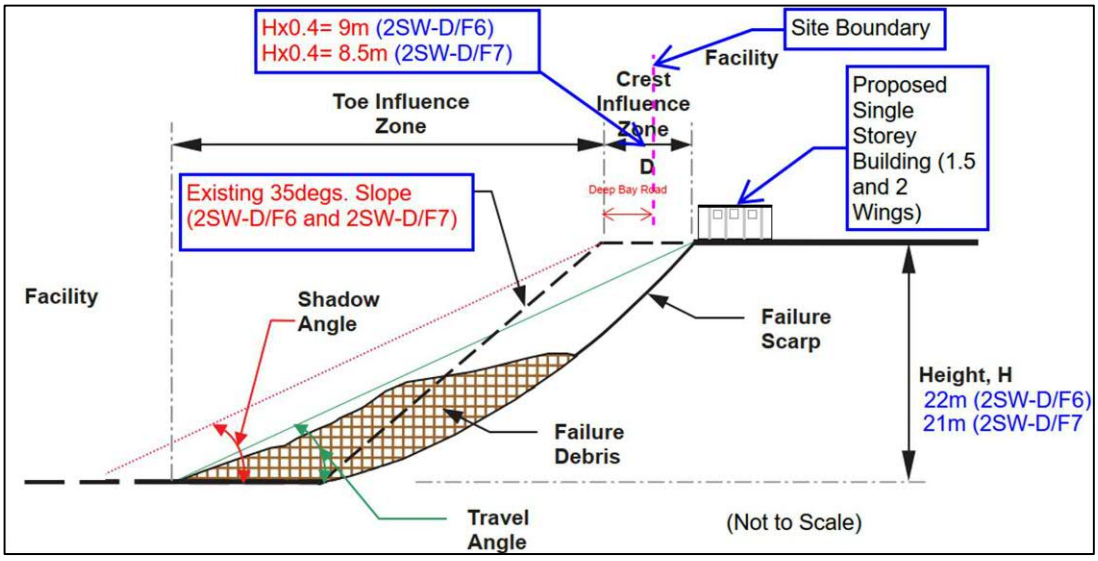


Figure 1 – Relationship between New Development (both 1.5 and 2 wings) and Crest Influence Zone (2SW-D/F6 and D/F7)

For Feature No. 2SW-D/F3, it is currently classified as a Category 3 feature and remains unchanged, since the crest facility (for both 1.5 and 2 wings) are still classified as the "road with low traffic density" and the CTL remains Category 3 after the development. The proposed single storey building structure will be 12m away from the crest influence zone, it will not affect or be affected by the slope feature. Please see below **Figure 2.1 (1.5 Wings)** and **Figure 2.2 (2 Wings)** showing the proposed fringe of building locate 12m from the crest influence zone of the concerned slope feature.

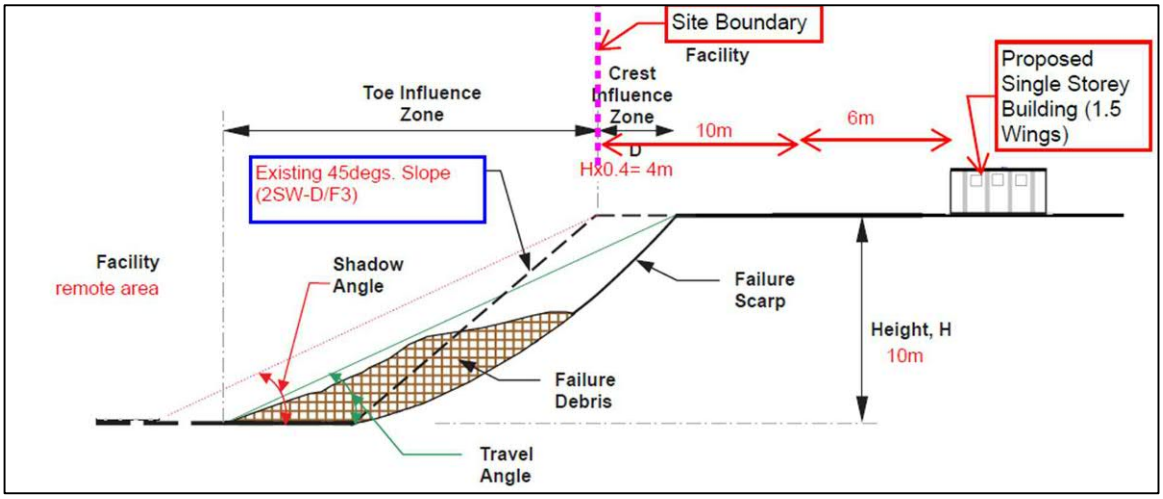


Figure 2.1 – Relationship between New Development (1.5 Wings) and Crest Influence Zone (2SW-D/F3)

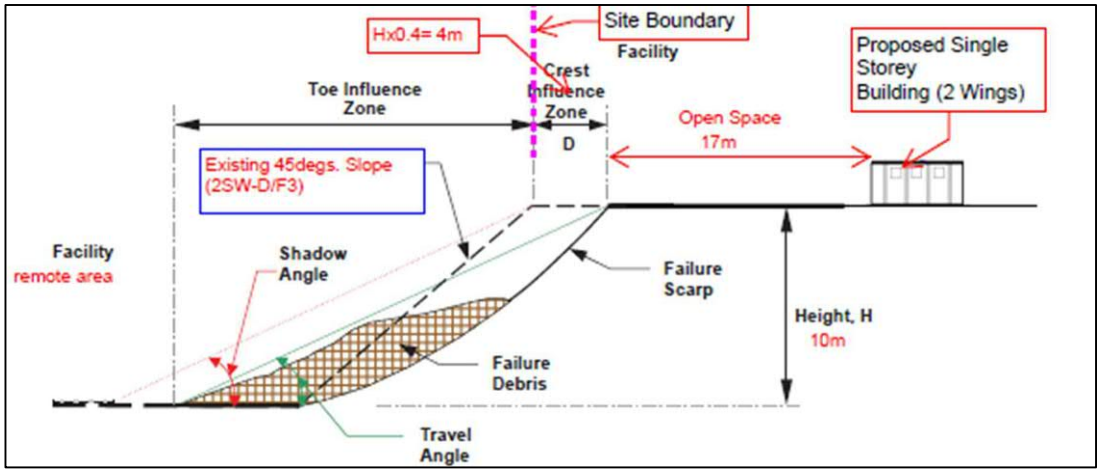


Figure 2.2 – Relationship between New Development (2 Wings) and Crest Influence Zone (2SW-D/F3)

For Feature No. 2SW-D/C28, its CTL is currently identified as Category 3 with the toe facility classified as the "road with low traffic density". With reference to Clause 5.2.2 in TGN 15, the travel angle for estimation of the possible extreme travel distance of landslide debris with volume less than 300 m^3

for cut slopes should be taken as 30°. Thus, as shown in **Figure 3 below**, the toe influence zone is as 8m away from the existing slope crest.

Since the proposed building is located at min. 5.5m away from the toe influence zone of the registered feature, the slope stability will not affect the proposed development.

The EVA is classified as Category 3 facility, the CTL of Feature No. 2SW- D/C28 remains Cat 3 in case Deep Bay Road forms part of the EVA.

In view of the above, the toe facility is still classified as the "road with low traffic density" and the CTL remains Category 3 after the development.

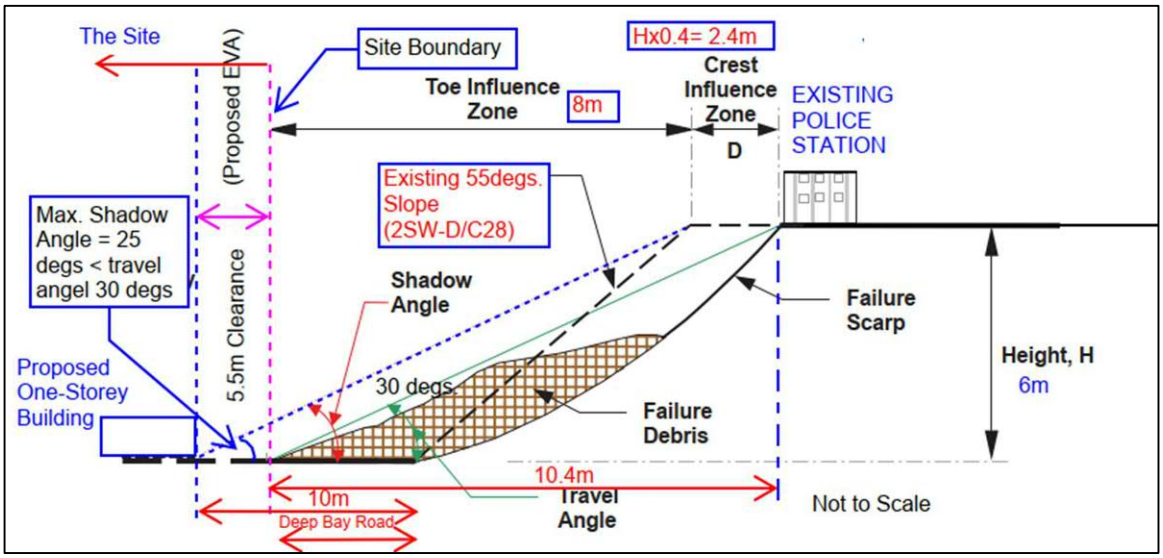


Figure 3 – Relationship between New Development and Crest Influence Zone (2SW-D/C28)

5.5.3 Ground Geological Model

The ground models for the study features are primarily derived from the existing GI reports from the previous GI works, and the available logs of the project- specific GI works completed so far as well. Reference is also made to the information collected in the desk study including the site history, API study, geological map, etc.

The site area is generally covered by the moderately decomposed granite (HDG) interbedding Grade III rock except the eastern end portion where CDG is overlain. According to the previous GI, bedrock of granite may be found about 20m below ground. It is verified from the so-far completed site-specific GI works that the bed rockhead is deeper than the expected and variable over the site area.

Feature Nos. 2SW-D/F6, D/F7 & D/F3 were formed in association with the construction of Deep Bay Road so the fill material is expected below the traffic road at the crest and on the slope surface and overlays the in-situ C/HDG layer. Feature No. 2SW-D/C24, as a borrow site previously, was formed by removing the top layer of soil so it is expected to be a CDG cut slope underlain by fresh granite.

Based on the latest ground investigation (Two additional trial pits) carried out in Oct 2025 on Feature No. 2SW-D/C24, it is revealed that the actual underlying geology is tally with the design assumption presented in the slope stability analyses and geological sections.

5.5.4 Soil Parameters

Soil samples were taken for CDG & HDG (2 Mazier samples for CDG and 1 for HDG) in the site-specific GI in Phase 1. The corresponding s'-t plot for CDG & HDG are shown in **Appendix H-4**. Thus, with reference to typical range in Table 7 of Geoguide 1, the following soil parameters are assumed for future detail design.

Soil Type	Unit Weight (kN/m^3)	c' (kPa)	ϕ'
Highly Decomposed Granite (HDG)	19	8	38
Completely Decomposed Granite (CDG)	19	5	35°
Colluvium/Residual Soil (COLL/RS)	19	3	33°
Fill	19	0	30°

To identify the features potentially affected by the development and recommend the corresponding upgrading works to improve of the slope stability, the lower bound values of the geotechnical parameters suggested in GEOGUIDE 1 are conservatively adopted for the soil types present in the analysis. If necessary, additional GI can be proposed in later stages.

5.5.5 Groundwater Conditions

Based on previous GRR, three piezometers were installed in existing drill holes at Feature No.2SW-D/C24 and monitored for one week during the GI works conducted in 1981. All the readings were taken as "NIL" in the monitoring period. From 7-day monitoring records of the completed drillholes of the project-specific GI works (4 drillholes with standpipe/piezometer installed in Phase 1), the highest ground water level measured in DH(04) is +3.81mPD, which is at a level near to the sea water level at Deep Bay.

For the purpose of slope analysis, a groundwater level rising from the feature toe to 1/3 of the feature height is adopted. Moreover, with the difference in permeability taken into consideration, a perched water level of 1m above the interface between the in-situ C/HDG and the overlaying fill / colluvium / residual soil is assumed

5.5.6 Surcharges

Assumed design surcharge for the development are as follows.

Proposed 1-storey building: 10kPa
Pedestrian: 5kPa
EVA: 33.1kPa

5.6 Stability Analysis of Existing Registered Features

5.6.1 General

As outlined earlier, the proposed building structure is not situated directly behind the features and is positioned well outside the crest influence zone of Feature Nos. 2SW-D/F6, 2SW-D/F3, and 2SW-D/F7. As a result, the CTL/Economic Consequence classification for these three slope features will remain unaltered. This suggests that the additional loads from the proposed structure will not directly compromise the stability of these slopes when utilizing a footing foundation. Likewise, for Feature No. 2SW-D/C28, the CTL/Economic Consequence rating (Cat. 3/Cat. C) will stay consistent since the building development falls beyond the toe influence zone. This slope is recognized as having no impact on the development, and thus, stability assessments are not required for these four features.

Feature No. 2SW-D/C24 is identified as being influenced by the building development, with its CTL shifting to Cat. 1 (toe facility of "lightly used buildings"). In this GRR amendment, a critical section 1-1 (for 2SW-D/C24) is selected for slope stability analysis for the proposed development using Building Department pre-accepted program "Slope/W". The geological section is develop based on available ground investigation works.

The minimum calculated factor of safety of the slope feature is found to be 1.621 which is considered meets the current standard and no slope upgrading works is required.

Regarding Feature No. 2SW-D/F3, the planned building area for both the 1.5-wing and 2-wing schemes is locate beyond the influence zone. Consequently, it is determined that the project will neither impact nor be impacted by this slope feature.

6 CONCLUSIONS AND RECOMMENDATIONS

Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite is proposed by EPD jointly with HKO to support and provide regional air pollution and meteorological monitoring and forecasting services. C Arch Design Consultant Limited was appointed to conduct a Geotechnical Review (1st Amendment) for the proposed building works according to the layout plan in **Appendix G**.

For building foundation of the proposed development, shallow footing foundation for the development of the building structure is preferred.

In the previous Preliminary Geotechnical Appraisal (PGA) dated August 2023, six features, namely 2SW-D/C24, 2SW-D/C27, 2SW-D/C28, 2SW-D/F3, 2SW-D/F6 and 2SW-D/F7, are identified for further study. As the building layout plan has been revised, Feature No.2SW-D/C27 is no longer in the vicinity of the development so it is not necessary for further study in this report.

Four existing registered slope features, identified as Nos. 2SW-D/F3, 2SW-D/C28, 2SW-D/F6, and 2SW-D/F7, have been evaluated and determined to neither influence nor be influenced by the proposed building development. The structure is not positioned directly behind Features Nos. 2SW-D/F6 and 2SW-D/F7 and does not extend into the influence zone of these slopes (defined as 0.4H beyond the slope crest). As a result, their CTL and Economic Consequence classifications remain unchanged, and no additional studies or remedial actions are anticipated for these four slopes.

One existing registered slope, Feature No. 2SW-D/C24, located near the project site and potentially impacted by the development, has undergone a geotechnical evaluation. The assessment models were primarily developed using data from a desk study, augmented by site-specific Ground Investigation (GI) results from Phase 1. Stability analysis outcomes indicate that Feature No. 2SW-D/C24 continues to meet current standards following the building development.

Based on the preliminary assessment presented in this GRR, no slope upgrading works is required for the proposed development. However, it is proposed to carry two trial pits to validate the geological model presented in this GRR. (The corresponding design review is presented in Section 7)

The building project does not necessitate significant site formation activities, as there will be no major alterations to the existing ground profile, nor will it involve slope cutting, filling, or other slope-related works.

In conclusion, no slope upgrading is deemed necessary for any of the registered slope features, as the planned layout of the new buildings is positioned entirely outside the “Slope Influence Zone” of all surrounding registered slopes.

7 Review the Stratum of Slope Feature No. 2SW-D/C24

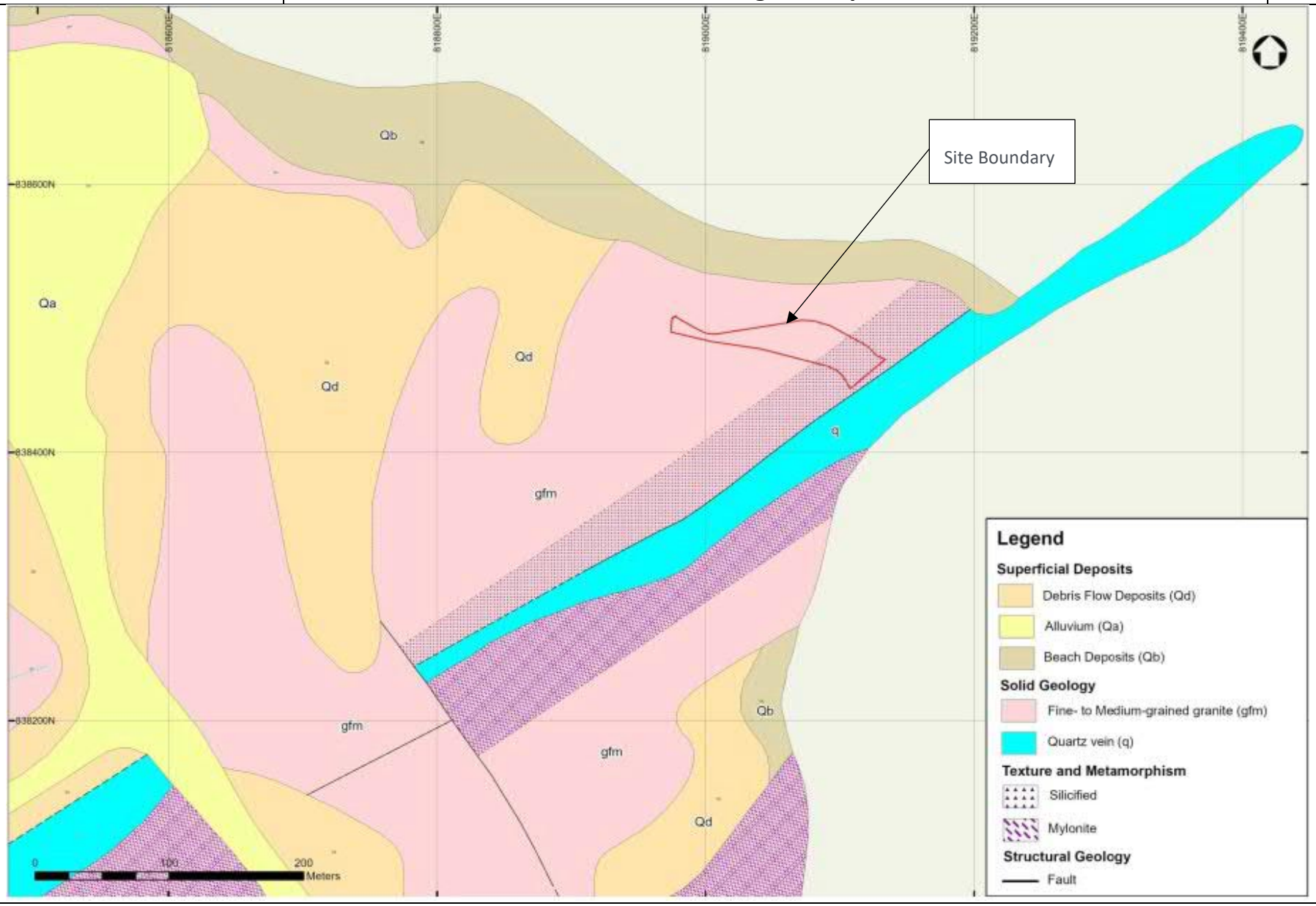
As mentioned in Section 5.1.2, two trial pits were proposed (refer to the plan in Appendix H-1), it was completed on 16 October 2025 by Fong On Construction Limited. The trial pits had revealed that the stratum on slope feature no. 2SW-D/C24 are underlying in-situ soils such as completely decomposed granite (CDG), and no fill material is found.

Based on the ground investigation, it is verified that the assumptions and slope stability assessment in the previous report “Revision 5” are still valid.

The logging report is presented in **Appendix K**.

Figures

Consultant:	Title:	Scale:
C Arch Design Consultant Limited	**Geological Map**	N.T.S



Appendix A

Project Site Plan

Consultant:	Title:	Scale:
C Arch Design Consultant Limited	**Project Site Plan**	N.T.S

Appendix B

GEO's Memo dated 9th September 2024

MEMO

From CGE/MW, GEO, CEDD

Ref. in MW-30-2010-1-717

Tel .No. 2762 5693 Fax. No. 2194 0165

E-mail yllee@cedd.gov.hk

Date 9.9.2024

To SSE/101, ArchSD

(Attn.: Mr. Austin LEE)

Your Ref. in

dated Fax. No. 2290 2225

Total Pages 2

Programme No. 743ZX
Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite

Geotechnical Review Report

I refer to the letter ref. D3846700/10/24103499 dated 28.8.2024, received on 30.8.2024, from your Consultants, Halcrow China Limited, enclosing the captioned report for our comment. The following comments represent the views of the Geotechnical Engineering Office:

2. Section 4.2, Section 5.2, Appendix G and Appendix I – It is noted that the General Building Plans for the development is a draft design idea. In this connection, our comments offered in this memo are on the basis of this draft building layout, and we presume that the detailed geotechnical assessment and design for site formation works will be finalized in separate deliverables in accordance with ETWB TCW No. 29/2002. I reserve further geotechnical comments until the detailed geotechnical assessment and design becomes available.

3. Section 5.1 - Please note that the GEO normally would not comment on the necessity/adequacy of GI and laboratory testing works to support the geotechnical studies and designs under the project, which is the responsibility of the Consultants. The Consultants should ensure that there is sufficient professional input from a qualified geotechnical engineer that the GI planning and site supervision are carried out in accordance with the relevant GEOGUIDEs and TGNs. The GI data and laboratory testing results will be reviewed independently in conjunction with future submissions (e.g. Geotechnical Design Submission) to be submitted to GEO in accordance with ETWB TC(W)No. 29/2002.

4. Section 5.3 – Please be advised that the GEO normally would not comment on foundation issue, except for sites located within the Scheduled Areas No. 2 and 4 and the Designated Area of Northshore Lantau.

5. Section 5.5.1 and 5.5.2 – For Feature No. 2SW-D/C28, it is noted that its failure would potentially affect the proposed EVA under this development. Hence, the Consultants should review its existing stability with supporting GI and laboratory testing results, and propose corresponding upgrading works, if necessary, in the future submissions.

6. Section 5.5.1, 5.5.2, Appendix G and Appendix I-1 – For Feature Nos. 2SW-D/F6 and 2SW-D/F7, it is noted that concrete plinths of 3m high were proposed to be located within the crest influence zones of these Features, which would potentially affect their stability. Meanwhile, Outdoor Equipment Area proposed under this development was located within their crest influence zones. Hence, the Consultants should critically review if the development would potentially affect or being affected by these Features.

7. Section 5.5.4 – Only limited soil samples were retrieved for CDG & HDG, while no laboratory testing was carried out for Fill and Colluvium/Residual Soil. It is premature to draw a conclusion on adopted geotechnical parameters for this project in this stage. These parameters should be further justified with supporting GI and laboratory testing results and the geotechnical interpretation of the results with drawings and details. The Consultants should review the soil parameters when more site specific GIs are become available, and I reserve further geotechnical comments on the geotechnical parameters.

8. Section 5.5.5 – The Consultants should further review the groundwater level in future submissions when the groundwater monitoring records of at least covering one wet season becomes available.

9. Section 5.6 and Section 7.2 – In connection with my comments in above paragraphs 5 to 8, the stability analysis of existing registered features, which potentially affect or being affected by the proposed works, and their corresponding upgrading works (not limited to SW Portion of Feature No. 2SW-D/F3 only), should be reviewed in conjunction with the reviewed geotechnical parameters and groundwater levels.

(Alex Y L LEE)
for Chief Geotechnical Engineer/Mainland West
Geotechnical Engineering Office
Civil Engineering and Development Department

c.c. Halcrow (Attn.: Mr. Russell Ong) FAX: 2565 5561

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Homantin, Kowloon

BY HAND

For the attention of Mr. LEE Yin Lam, Alex (GE/MW54)

17 October 2024

Our ref D3846700/10/L24104141
Your ref

Dear Sir

Programme No. 743ZX
Guangdong-Hong Kong-Macao Greater Bay Area (GBA)
Air Quality Laboratory and Meteorological Monitoring Supersite
Final Geotechnical Review Report (Revised)

Further to our letter dated 28 August 2024 ref. D384600/10/24103499 regarding the submission of the Geotechnical Review Report and GEO's memo ref. MW-30-2010-1-717 to ArchSD dated 9 September 2024, we hereby submit a copy of the final Geotechnical Review Report (revised) for your further comment.

Please note that this final Geotechnical Review Report (revised) supersedes the one submitted under the above-mentioned letter dated 28 August 2024.

If you have any queries regarding the above, please do not hesitate to contact the undersigned on 2738 9034 or our Martin Leung on 2738 9344.

Yours faithfully
For and on behalf of Halcrow China Limited

Russell Ong
Project Manager

RO/ro

Enc.

c.c. SSE/101, ArchSD Attn: Mr. Austin LEE (SE/115) w/e
CPM/103, ArchSD Attn: Mr Mark HO (PM/169) w/o

RO/ik

Halcrow China Ltd

R/38467/N/01 | 1

Issue 2

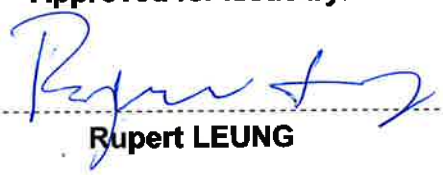
October 2024

Programme No. 743ZX

Geotechnical Review for Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite

Final Geotechnical Review Report

Approved for Issue by:



Rupert LEUNG

Position: Registered Geotechnical Engineer

Date: 15 October 2024

Architectural Services Department
Queensway Government Offices
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Hong Kong

Halcrow

Programme No. 743ZX

Geotechnical Review for Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite

Architectural Services Department

Final Geotechnical Review Report

R/38467/N/01 | 1

15 October 2024

ArchSD

Document history and status

Revision	Date	Description	By	Reviewed	Approved
0	23 Aug 2024	First Issue	ML	RO	RL
1	15 Oct 2024	Second Issue	ML	RO	RL

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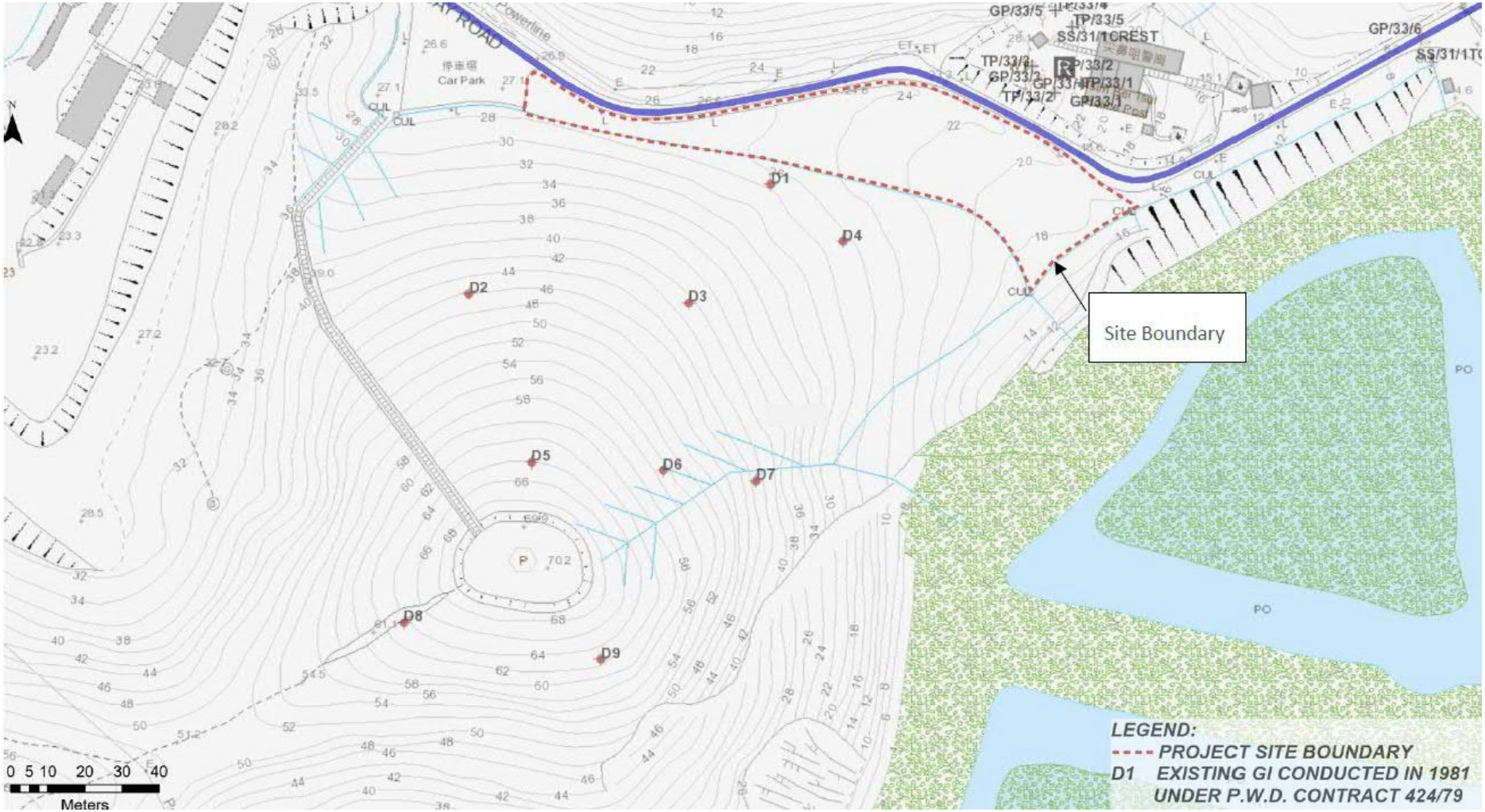
Appendix C

Previous GI Records

Consultant:	Title:	Scale:
C Arch Design Consultant Limited	**Existing Ground Investigation Plan**	N.T.S



3226

DATA BANK

2-SW-13
1:1000

2-SW-18B
1:1000

Site Investigation Report

Gammon (Hong Kong) Limited
CIVIL ENGINEERS & CONTRACTORS
33rd Floor, Hopewell Centre, 183 Queen's Road, East, Hong Kong.
Tel: 5-283941 Cables: GAMMONCO Telex: HX 73826

Gammon (Hong Kong) Limited
CIVIL ENGINEERS & CONTRACTORS

Site Investigation Report

Job No.364

P.W.D. Contract 424/79

W.O.Q7/2/5.111

Tsim Bei Tsui Borrow Area

Gammon (Hong Kong) Limited
Civil Engineers and Contractors
33rd Floor, Hopewell Centre,
183 Queen's Road East,
Hong Kong.

Client

Geotechnical Control Office
6th floor, Empire Centre,
Tsim Sha Tsui East,
Kowloon.

Gammon (Hong Kong) Limited
CIVIL ENGINEERS & CONTRACTORS

Site Investigation Report

Job No.364

P.W.D. Contract 424/79

W.O.Q7/2/5.111

Tsim Bei Tsui Borrow Area

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Section B - Piezometer Readings

Section C - Borehole Location Plan & Key Plan

* * * * * * *

Section A - Borehole Logs

Gammon (Hong Kong) Limited
CIVIL ENGINEERS & CONTRACTORS
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P.W.D. Contract 424/79
Client Office G.C.O.

~~Borehole~~/Drillhole No. D1

Job No & Location: W.O.Q 7/3/5.111 TSIM BEI TSUI BORROW AREA.

Sheet 1 of 3

Method: ROTARY. Ground Level: +48.0 m PD. Coords E. 19040.9 8

Machine: D59 Orientation: VERTICAL N. 38470.5 96

Hole dia.: 0.0m —140mm→ 19.0m —89m→ 22.9m —75.8mm→ 33.8m Date: from 24-9 to 2-10-81

Drilling progress	Casing depth size	Water Level	Water recovery %	Core recovery %	R.Q.D. %	Fracture index	Tests	Samples	Depth metres	Reduced Level	Legend	Description	Grade	Zone
24-9-81	PX	3.0m at 19:00 NIL at 8:00		70				1	0.0	+48.0		Brown, CLAYEY SILTY SAND, with quartz gravels.		
							N=46	2	2.0	+46.0		Brown & pink, very dense, CLAYEY SILT with quartz gravels,		
				35				3	4.0	+44.0		Yellow & pink, very dense, SANDY SILT with gravels, (C.W.G.)	V	
							N=52	4	4.5	+43.5				
				50				5	5.8			Pink & brown, very dense, SILTY SANDY QUARTZ GRAVELS. (C.W.G.)	V	
							N=45	6	6.0					
25-9-81				60				7	6.5					
							N=71	8	7.0					
				55				9	8.0					
	10.0m								8.5					
									9.0					
									10.0	+38.0				

Legend
Samples:
- Small disturbed
- Large disturbed
- U40 undisturbed
- U100 undisturbed
- Mazier
- Liner sample
- Water sample
- Water table
- Standard penetration test
- Permeability test

Remarks C.W.G : Completely Weathered GRANITE

GI 51

Gammon (Hong Kong) Limited
CIVIL ENGINEERS & CONTRACTORS
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P.W.D. Contract 424/79
Client Office G.C.O.

~~Borehole~~/Drillhole No. D1

Job No & Location: W.O.Q.7/2/5.III TSIM BEI TSUI BORROW AREA. Sheet 2 of 3

Method: ROTARY. Ground Level: +48.0m PD Coords E. 19040.9

Machine: D59 Orientation: VERTICAL. N. 38470.5

Hole dia.: 0.0m — 140mm — -19.0m — 89mm — -22.9m — 75.8mm — -33.8m Date: from 24-9 to 2-10-81

Drilling progress	Casing depth size	Water Level	Water recovery %	Core recovery %	R.Q.D. %	Fracture index	Tests	Samples	Depth metres	Reduced Level	Legend	Description	Grade	Zone
25	PX	5.0m at 19:00					N=59	10	10.0	+38.0				
26-9		8.0m at 8:00							10.5			Brown & pink. very dense. SILTY SANDY QUARTZ GRAVELS (C.W.G.)	V	
		4.0m at 19:00		83	0	∞		11	11.0					
		7.8m at 8:00		83	0	∞			11.4	+36.6				
				96	0	∞			12.0				III	
28-9-81				83	0	∞			12.4					
				85	0	∞			12.9				IV	
		3.5m at 19:00		61	0	∞			13.0			Greyish white & brown. fine grained very closely spaced joints. QUARTZ with brown. SANDY SILT. weak.		
		8.2m at 8:00		38	0	∞			13.6					
				35	0	∞			14.0					
29-9-81				31	0	∞			14.1					
				25	0	∞			14.9					
		4.0m at 19:00							15.0					
	19.0m NX								16.0				IV	
									17.0					
									18.0					
									19.0	+29.0		Milky QUARTZ. weak.	IV	
30-9		12.5m at 8:00		34	0	∞			19.9	+28.1				
	19.9m													

Legend

Samples:
- Small disturbed
- Large disturbed
- U40 undisturbed
- U100 undisturbed
- Mazier
- Liner sample
- Water sample
- Water table
- Standard penetration test
- Permeability test

Remarks C.W.G : Completely Weathered GRANITE

Mazier sample at 11.0 ~ 11.4 m could not be take due to gravels encounter

GI 51

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P.W.D. Contract 424/79
Client Office G.C.O.

~~Borehole~~/Drillhole No. D1

Job No & Location: W.O.Q 7/2/5.111. TSIM BEI TSUI BORROW AREA.

Sheet 3 of 3

Method: ROTARY. Ground Level: +48.0m PD. Coords E. 19040.9

Machine: D59 Orientation: VERTICAL. N. 38470.5

Hole dia.: 0.0m – 140mm – 19.0m – 89mm – 22.9m – 75.8mm – 23.8m Date: from 24-9 to 2-10-81

Drilling progress	Casing depth size	Water Level	Water recovery %	Core recovery %	R.Q.D. %	Fracture index	Tests	Samples	Depth metres	Reduced Level	Legend	Description	Grade	Zone
30-9	NX			13a	0	∞	N=200/190		19.9	+28.1				
		5.0m at 19:00		23	0	1.4			20.0					
1-10-81		13.0m at 8:00		66	43	1.8			20.2	+27.8		Reddish brown, very dense, SANDY SILT with quartz gravels. (H.W.G.)	IV	
		NIL at 19:00		100	27	∞			20.9					
				83	0	∞			21.0			Greyish white & brown. fine grained, very closely spaced joints. with brown iron stained. QUARTZ weak.		
2-10-81	22.9m	NIL at 8:00		83	0	∞			21.5				III	
		NIL at 19:00		94	0	∞			22.0					
									22.2					
									22.6					
									22.9					
									23.0					
									23.8	+24.2				
									24.0			Operation stopped at 23.8m as instruction given on Works Order.		
									25.0					
									26.0					
									27.0					
									28.0					
									29.0					

Legend

Samples:

- Small disturbed
- Large disturbed
- U40 undisturbed
- U100 undisturbed
- Mazier
- Liner sample
- Water sample
- Water table
- Standard penetration test
- Permeability test

Remarks HWG: HIGHLY WEATHERED GRANITE

A piezometer was installed at 11.4m

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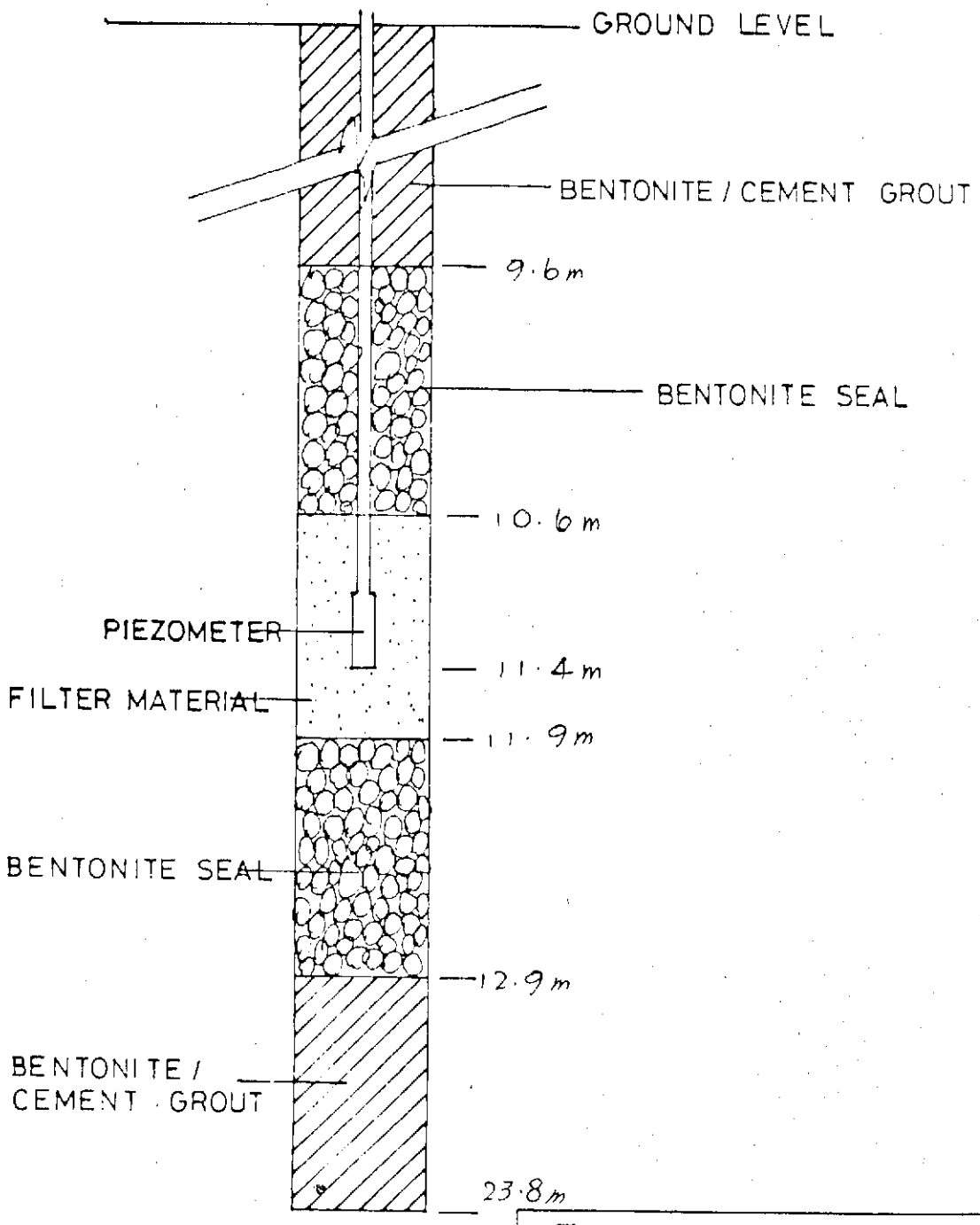
DETAIL OF STANDPIPE PIEZOMETER INSTALLATION

JOB NO. 364 W.O.Q 7/2/5.111
LOCATION TSIM BEI TSUI BORROW AREA
DATE 1-12-1981

HOLE NO. D1



Gammon (Hong Kong) Limited
Gammon House, 2nd Floor, 12 Harcourt Road, HONG KONG

SCALE	DATE	TENDER/JOB NO.	DRAWING NO.

Gammon (Hong Kong) Limited
CIVIL ENGINEERS & CONTRACTORS
Gammon House, 2nd Floor, 12 Harcourt Road, HONG KONG.
Tel: 5-265221 Cables: GAMMONCO Telex: HX73826

P.W.D. Contract 424/79
Client Office G. C. O

Borehole/Drillhole No. D/2

Job No & Location: REF. NO. 5-111 Tsim Bei Tsui Borrow Area

Sheet 1 of 3

Method: ROTARY Ground Level: +65.3 m PD Coords E. 18959.6

Machine: ACKER N10 D42 Orientation: VERTICAL N. 38441.1

Hole dia.: 0.0 — 140mm — 19.0m — 75.8mm — 24.0m Date: from 25.6 to 2.7.1981

Drilling progress	Casing depth size	Water Level	Water recovery %	Core recovery %	R.Q.D. %	Fracture index	Tests	Samples	Depth metres	Reduced Level	Legend	Description	Grade	Zone
									0.0	+65.3				
25-6-81	PX	NIL at 8:00		55				1	1.0	+64.3		Brown & pink. SILTY SAND. with QUARTZ GRAVELS.		
		0.8m at 19:00										Brown very dense. CLAYEY SILT with GRAVELS. (SLOPE WASH.)		
		NIL at 8:00		50			N=54	2	2.0	+63.3				
								3	3.0	+62.3		pink & brown CLAYEY SANDY SILT. (C. W. G.)	V	
												Light pink & yellow. dense. SILTY SAND. (C. W. G.)	V	
							N=34	4	4.0	+61.3				
				70				5	5.0	+60.3		Brown, yellow & pink. CLAYEY SILT with SAND. (C. W. G.)	V	
26-6-81												Light pink & yellow. very dense. SANDY SILT. (C. W. G.)	V	
				40			N=83	6	6.0	+59.3				
								7	7.0			Brown, very dense SANDY SILT with QUARTZ GRAVELS. (C. W. G.)	V	
							N=140/160	8	7.7	+57.6				
				30					8.0			QUARTZ GRAVELS.		
		2.5m at 19:00						9	9.0	+56.3				
27							N=140/160	10	9.7			Light pink & yellow. very dense. CLAYEY SAND with QUARTZ GRAVELS (C.W.G.)	V	
	10.0m								10.0	+55.3				

Legend

Samples:
- Small disturbed
- Large disturbed
- U40 undisturbed
- U100 undisturbed
- Mazier
- Liner sample
- Water sample
- Water table
- Standard penetration test
- Permeability test

Remarks

C.W.G. COMPLETELY WEATHERED GRANITE

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Gammon (Hong Kong) Limited
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Tel 5-265221 Cables: GAMMONCO Telex HX73826

P.W.D. Contract 424/79
Client Office G.C.O.

~~Borehole~~/Drillhole No. D 2

Job No & Location: REF. NO. 5.111 Tsim Bei Tsui Borrow Area

Sheet 2 of 3

Method: ROTARY Ground Level: +65.3 m PD Coords E. 18959.6

Machine: ACKER N10 D42 Orientation: VERTICAL N. 38441.1

Hole dia.: 0.0 – 140mm – 19.0m – 75.8mm – 24.0m Date: from 25.6 to 2.7.1981

Drilling progress	Casing depth size	Water Level	Water recovery %	Core recovery %	R.Q.D. %	Fracture index	Tests	Samples	Depth metres	Reduced Level	Legend	Description	Grade	Zone
27-6-81	PX	NIL at 8:00		40				11	10.0	+55.3		Yellow. CLAYEY SAND with QUARTZ GRAVELS. (C.W.G.)	V	
									11.0	+54.3				
												QUARTZ GRAVELS.		
							N=152/50	12	11.8	+53.5				
									12.0			Brown, SANDY CLAY with QUARTZ GRAVELS. (C.W.G.)	V	
								13	13.0	+52.3				
				60			N=169/160	14	13.7			pink, yellow, & white. very dense. SANDY SILT with GRAVELS. (H.W.G.)	IV	
									14.0					
		3.5m at 19:00						15	15.0					
29-6-81		12.5m at 8:00					N=189/100	16	15.6	+49.7				
									16.0			pink & yellow. CLAYEY SANDY QUARTZ GRAVELS. (H.W.G.)	IV	
		5.0m at 19:00						17	17.0					
		16.0m at 8:00					N=171/100	18	17.6					
30-6-81	19.0m								18.0					
				97	10	∞			19.0	+46.3	+++	Greyish white, fine to medium grained, very closely spaced joints with brown iron stains. MILKY QUARTZ (PEGMATITE) moderately strong.	III	
									20.0	+45.3	+++			

Legend

Samples:
- Small disturbed
- Large disturbed
- U40 undisturbed
- U100 undisturbed
- Mazier
- Liner sample
- Water sample
- Water table
- Standard penetration test
- Permeability test

Remarks Mazier samples at at 10.0~11.0 m & 16.0m~17.0m could not be take due to rock encounter.

C.W.G. COMPLETELY WEATHERED GRANITE

H.W.G HIGHLY WEATHERED GRANITE

Gammon (Hong Kong) Limited
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P.W.D. Contract 424/79
Client Office G.C.O.

Borehole/Drillhole No. D 2

Job No & Location: REF. NO. 5.111. Tsim Bei Tsui Borrow Area

Sheet 3 of 3

Method: ROTARY Ground Level: +65.3 m PD Coords E. 18959.6

Machine: ACKER N10 (D42) Orientation: VERTICAL N. 38441.1

Hole dia.: 0.0 — 140 mm — 19.0m — 75.8mm 24.0m Date: from 25.6 to 2.7.1981

Drilling progress	Casing depth size	Water Level	Water recovery %	Core recovery %	R.Q.D. %	Fracture index	Tests	Samples	Depth metres	Reduced Level	Legend	Description	Grade	Zone
30-6-81		10.5m at 19:00		100	19	∞			20.0	+45.3	+++	Greyish white. fine to medium grained. very closely spaced joints with brown iron stained. MILKY QUARTZ. (PEGMATITE) moderately strong to strong		
				100	0	∞			20.8		+++			
									21.0		+++			
				100	0	∞			21.3		+++			
									21.9		+++			
2-7-81		17.5m at 8:00		100	44	∞			22.0		+++			
									22.3		+++			
				97	0	∞			22.7		+++			
				100	20	∞			23.0		+++			
									23.3		+++			
		9.0m at 19:00		100	52	∞			24.0	+41.3	+++	Operation stopped at 24.0m as instruction given on Works Order.		
									25.0					
									26.0					
									27.0					
									28.0					

Legend

Samples:

- Small disturbed
- Large disturbed
- U40 undisturbed
- U100 undisturbed
- Mazier
- Liner sample
- Water sample
- Water table
- Standard penetration test
- Permeability test

Remarks

Gammon (Hong Kong) Limited
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33rd Floor, Hopewell Centre, 183 Queen's Road, East, Hong Kong
Tel: 5-283941 Cables: GAMMONCO Telex: HX 73826

P.W.D. Contract 424/79
Client Office G. C. O.

~~Borehole~~/Drillhole No. D3

Job No & Location: W.O.Q 7/2/5.111 TSIM BEI TSIM BORROW AREA

Sheet 1 of 4

Method: ROTARY Ground Level: + 59.7 m PD Coords E. 19018.8

Machine: D59 Orientation: VERTICAL N. 38438.7

Hole dia.: 0.0 m 140mm 30.9 m 75.9mm 32.0 m Date: from 21-8 to 2-9-81

Depth metres	Reduced Level	Legend	Description	Grade	Zone
0.0	+59.7				
			Yellowish brown. medium dense. SILTY SAND. with gravels. ⟨ C.W.G. ⟩	V	
2.5	+57.2		White & brownish yellow. QUARTZ COBBLES.		
4.0	+55.7		Brownish yellow. very dense. SILTY SAND with gravels & cobbles. ⟨ C.W.G. ⟩	V	
6.5	+53.2		White. QUARTZ GRAVELS.		
8.0	+51.7		Light reddish brown brownish yellow & white. very dense. SILTY SAND with gravels & cobbles. ⟨ C.W.G. ⟩	V	
10.5	+49.2				

Drilling progress: PX; 21-8-81; 22-8-81; 24-8-81; 10.5m

Water Level: NIL at 19:00; NIL at 8:00; 6.5m at 19:00; NIL at 8:00

Water recovery %

Core recovery %: 57; 85; 60; 44

R.Q.D. %

Fracture index

Tests: N=16; N=31; N=67; N=47; N=55

Samples: 1; 2; 3; 4; 5; 6; 7; 8; 9; 10

Legend
Samples:
- Small disturbed
- Large disturbed
- U40 undisturbed
- U100 undisturbed
- Mazier
- Liner sample
- Water sample
- Water table
- Standard penetration test
- Permeability test

Remarks Mazier sample at 1.0 ~ 2.0 m could not be take due to C.W.G: COMPLETELY WEATHERED GRANITE

GI 51

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P.W.D. Contract 424/79
Client Office G.C.O.

~~Borehole~~/Drillhole No. D3

Job No & Location: N.D.Q 7/2/5.III. TSIM BEI TSUI BORROW AREA.

Sheet 2 of 4

Method: ROTARY. Ground Level: +59.7m PD Coords E. 19018.8

Machine: D59 Orientation: VERTICAL. N. 38438.7

Hole dia.: 0.0m — 140mm — 30.9m — 75.9mm — 32.0m Date: from 21-8 to 2-9-81

Drilling progress	Casing depth size	Water Level	Water recovery %	Core recovery %	R.Q.D. %	Fracture index	Tests	Samples	Depth metres	Reduced Level	Legend	Description	Grade	Zone
24-8	PX	7.5m at 19:00						11	10.5	+49.2				
25-8-81		9.2m at 8:00					N=76	12	11.0			Brownish yellow. very dense. SILTY coarse SAND with quartz gravels & cobbles		
								13	11.8					
		8.7m at 19:00							12.0					
							N=66	14	12.5					
									13.0					
		8.5m at 8:00							13.9	+45.8				
26-8-81									14.0			Yellowish brown & light red. very dense. CLAYEY SILTY SAND with gravels. (C.W.G.)		
									14.5	+45.2				
		9.5m at :00						15	15.0					
							N=112	16	15.8					
		7.6m at 8:00							16.0					
27-8-81				55					16.5			White. light red & brown. QUARTZ COBBLES & GRAVELS.		
								17	17.0					
		9.8m at 19:00							17.8					
							N=94	18	18.0					
		8.8m at 8:00							18.5					
28-8-81				65					19.0					
								19	19.8	+39.7				
	20.0m								20.0					

Legend

Samples:

- Small disturbed
- Large disturbed
- U40 undisturbed
- U100 undisturbed
- Mazier
- Liner sample
- Water sample
- Water table
- Standard penetration test
- Permeability test

Remarks C.W.G. COMPLETELY WEATHERED GRANITE
MAZIER samples at 11.8m, 13.9m & 15.8m could not be taken

GI SI

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P.W.D. Contract 424/79
Client Office G.C.O.

~~Borehole~~/Drillhole No. D3

Job No & Location: W.O.Q 7/2/5.III TSIM BEI TSUI BORROW AREA

Sheet 3 of 4

Method: ROTARY. Ground Level: +59.7m PD Coords E. 19618.8

Machine: D59 Orientation: VERTICAL. N. 38438.7

Hole dia.: 0.0m — 140mm — 30.9m — 75.9mm — 32.0m Date: from 21-8 to 2-9-81

Drilling progress	Casing depth size	Water Level	Water recovery %	Core recovery %	R.Q.D. %	Fracture index	Tests	Samples	Depth metres	Reduced Level	Legend	Description	Grade	Zone
28-8-81	PX						N=200/150	20	20.0	+39.7				
									20.2					
									21.0					
				33								White, light brown & red. QUARTZ COBBLES & GRAVES. with some SILTY SAND soil layers.		
							N=100/75	21	21.9					
								22	22.0					
									22.2					
									23.0					
								23	23.8					
							N=200/75	24	24.0					
									24.2					
		9.3m at 19:00							25.0					
								25	25.4					
30-8-81		7.3m at 8:00					N=100/100	26	26.0					
									26.1					
									26.9	+32.8				
		8.5m at 19:00		82	27	8.2			27.0			White, light red & brown. fine grained. very closely to closely spaced joints. QUARTZ COBBLES & GRAVELS		
		9.5m at 8:00		84	0	∞			27.8					
31-8									28.0					
				25	0	∞			28.3					
		7.8m at 19:00		67	0	∞			28.7					
		9.0m at 8:00							29.0					
1-9				86	0	∞			29.7					
	30.0m			100	0	∞			30.0	+29.7				

Legend

Samples:

- Small disturbed
- Large disturbed
- U40 undisturbed
- U100 undisturbed
- Mazier
- Liner sample
- Water sample
- Water table
- Standard penetration test
- Permeability test

Remarks MAZIER samples at 23.8m & 25.4m could not be taken

GI 51

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Tel: 5-283941 Cables: GAMMONCO Telex: HX 73829

P.W.D. Contract 424/79
Client Office G.C.O.

~~Borehole~~/Drillhole No. D3

Job No & Location: W.O.Q 7/2/5.III TSIM BEI TSUI BORROW AREA.

Sheet 4 of 4

Method: ROTARY Ground Level: +59.7m PD Coords E. 19018.8

Machine: D59 Orientation: VERTICAL. N. 38438.7

Hole dia.: 0.0m — 140mm — 30.9m — 75.9mm — 32.0m Date: from 2-8 to 2-9-81

Drilling progress	Casing depth size	Water Level	Water recovery %	Core recovery %	R.Q.D. %	Fracture index	Tests	Samples	Depth metres	Reduced Level	Legend	Description	Grade	Zone
									30.0	+29.7				
1-9	PX	7.5m at 19:00		78	33	∞						White, light red & brown, fine grained, shattered to very closely spaced joints. QUARTZ COBBLES & GRAVELS.		
2-9-81	30.9m	10.5m at 8:00		94	0	∞			30.9 31.0 31.2 31.5 31.8					
		7.5m at 19:00		100	0	∞								
				100	0	∞				+27.7				
									32.0			Operation stopped at 32.0m as instruction given on Works Order.		
									33.0					
									34.0					
									35.0					
									36.0					
									37.0					
									38.0					
									39.0					
									40.0					

Legend

Samples:

- Small disturbed
- Large disturbed
- U40 undisturbed
- U100 undisturbed
- Mazier
- Liner sample
- Water sample
- Water strike
- Standard penetration test
- Permeability test

Remarks

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P.W.D. Contract 424/79
Client Office G.C.O.

~~Borehole~~/Drillhole No. D4

Job No & Location: W.O.Q 7/2/5.III TSIM BEI TSUI BORROW AREA
Sheet 1 of 3

Method: ROTARY. Ground Level: +46.8 m P.D Coords E. 19060.3
Machine: D59 Orientation: VERTICAL N. 38455.2
Hole dia.: 0.0m —140mm— 24.2m —85mm— 26.5m —75.8m— 28.5m Date: from 11-9 to 20-9-81

Drilling progress	Casing depth size	Water Level	Water recovery %	Core recovery %	R.Q.D. %	Fracture index	Tests	Samples	Depth metres	Reduced Level	Legend	Description	Grade	Zone
11-9-81	PX	NIL at 19:00		70			N=11	1 2	0.0	+46.8		Brown, medium dense, SILTY SAND with quartz gravels, ⟨C.W.G.⟩	V	
				50				3	5.0	+41.8				
				40			N=10	4 5						
12-9-81		NIL at 8:00		50			N=52	6 7	6.0			Yellow & brown, very dense, SILTY SANDY QUARTZ GRAVELS, ⟨C.W.G.⟩	V	
		6.5m at 19:00		70			N=85	8 9	9.7	+37.1				
	9.7m													

Legend
Samples:
- Small disturbed
- Large disturbed
- U40 undisturbed
- U100 undisturbed
- Mazier
- Liner sample
- Water sample
- Water table
- Standard penetration test
- Permeability test

Remarks C.W.G: COMPLETELY WEATHERED GRANITE

GI 51

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P.W.D. Contract 434/79
Client Office G.C.O.

~~Borehole~~/Drillhole No. D4

Job No & Location: W.O.Q 7/2/5.III TSIM BEI TSUI BORROW AREA
Sheet 2 of 3

Method: ROTARY Ground Level: +46.8 m PD Coords E. 19060.3
Machine: D59 Orientation: VERTICAL N. 38455.2
Hole dia.: 0.0 m — 140 mm — 24.2 m — 85 mm — 26.5 m — 75.8 mm — 28.5 m Date: from 11-9 to 20-9-81

Drilling progress	Casing depth size	Water Level	Water recovery %	Core recovery %	R.Q.D. %	Fracture index	Tests	Samples	Depth metres	Reduced Level	Legend	Description	Grade	Zone
15-9-81	PX	9.5m at 8:00					N=23	10	9.7	+37.1		Brown, yellow & pink, dense to very dense SANDY QUARTZ GRAVELS. (H.W.G ~ C.W.G.)	V / IV	
				40					10.0					
		7.1m at 19:00							10.5					
								11	11.0					
							N=39	12	12.0					
		9.5m at 8:00							12.5					
								13	13.0					
16-9-81									13.5					
							N=70	14	14.0					
				45					14.5					
								15	15.0					
									15.8					
							N=39	16	16.0					
									16.5					
									16.7	+30.1				
		6.5m at 19:00		35	0	∞			17.0			Greyish white & brown, fine grained, shattered to very closely spaced joints. QUARTZ moderately weak.	III / IV	
		10.5m at 8:00		87	0	∞			18.0					
17-9-81									18.5					
				46	0	∞			19.0					
									19.4					
				31	0	∞			20.0					
	20.8m								20.8	+26.0				

Legend
Samples:
- Small disturbed
- Large disturbed
- U40 undisturbed
- U100 undisturbed
- Mazier
- Liner sample
- Water sample
- Water table
- Standard penetration test
- Permeability test

Remarks C.W.G: COMPLETELY WEATHERED GRANITE
H.W.G: HIGHLY WEATHERED GRANITE
Mazier sample at 13.0 ~ 13.5 m could not be take due to gravels encounter.

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P.W.D. Contract 424/79
Client Office G.C.O.

~~Borehole~~/Drillhole No. D4

Job No & Location: W.O.Q 7/2/5.111 TSIM BEI TSUI BORROW AREA
Sheet 3 of 3

Method: ROTARY Ground Level: +46.8m PD Coords E. 19060.3
Machine: D59 Orientation: VERTICAL N. 38455.2
Hole dia.: 0.0m —140mm— 24.2m —85mm— 26.5m —75.8mm— 28.5m Date: from 11-9 to 20-9-81

Drilling progress	Casing depth size	Water Level	Water recovery %	Core recovery %	R.Q.D. %	Fracture index	Tests	Samples	Depth metres	Reduced Level	Legend	Description	Grade	Zone
17	PX	7.0m at 19:00		85	0	∞			20.8	+26.0				
18-9-81		10.3m at 8:00		37	0	∞			21.0					
									21.2				III/IV	
									22.0					
				41	0	∞			22.3					
									23.0					
				73	0	∞			23.3				III/IV	
				100	0	∞			23.9					
	24.2m NX	6.0m at 19:00							24.0					
		10.5m at 8:00		67	0	∞			24.2			Greyish white. and brown. fine grained. shattered to very closely spaced joints. QUARTZ moderately strong.		
19-9-81				90	0	∞			25.0				III	
				80	0	∞			25.1					
									25.4					
				88	0	∞			25.9					
	26.5m	7.8m at 19:00							26.0					
				83	0	∞			26.5					
		11.0m at 8:00		80	0	∞			26.9					
20-9-81									27.0					
				93	0	∞			27.3					
									28.0					
		7.0m at 19:00		90	0	∞			28.5	+18.3		Operation stopped at 28.5m as instruction given on Works Order.		
									29.0					

Legend
Samples:
- Small disturbed
- Large disturbed
- U40 undisturbed
- U100 undisturbed
- Mazier
- Liner sample
- Water sample
- Water table
- Standard penetration test
- Permeability test

Remarks

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Gammon (Hong Kong) Limited
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P.W.D. Contract 424/79.
Client Office G. C. O.

~~Borehole~~/Drillhole No. D5

Job No & Location: W.O.Q. 5111 Tsim Bei Tsui Borrow Area

Sheet 1 of 4

Method: ROTARY Ground Level: +74.6m PD Coords E. 18976.4

Machine: ACKER N10 D42 Orientation: VERTICAL N. 38395.8

Hole dia.: 0.0 m — 140mm — 33.4m — 75.8mm — 36.6m Date: from 4.7 to 22.7.81

Drilling progress	Casing depth size	Water Level	Water recovery %	Core recovery %	R.Q.D. %	Fracture index	Tests	Samples	Depth metres	Reduced Level	Legend	Description	Grade	Zone
4-7-81	PX	NIL at 8:00		100				1	0.0	+74.6		Brown, very stiff SANDY CLAY. (Slope Wash)		
		1.0m at 19:00					N=19	2	1.0					
		NIL at 8:00		40				3	2.0	+72.6		Brown SILTY SANDY QUARTZ GRAVELS. (C. W. G.)	V	
									3.0	+71.6		Greyish white, & yellow very dense. SANDY SILT. (H. W. G.)	IV	
				60			N=140	4	4.0	+70.6				
								5	5.0					
8.7.1981				50			N=107	6	6.0			Yellowish pink & brown. very dense. SILTY SAND with QUARTZ GRAVELS. (C. W. G.)	V	
								7	7.0					
				50			N=35	8	8.0					
								9	9.0					
	10.0m						N=55	10	10.0	+64.6				

Legend
Samples:
- Small disturbed
- Large disturbed
- U40 undisturbed
- U100 undisturbed
- Mazier
- Liner sample
- Water sample
- Standard penetration test
- Permeability test

Remarks
C.W.G. COMPLETELY WEATHERED GRANITE

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P.W.D. Contract 424/79
Client Office G.C.O.

~~Borehole~~/Drillhole No. D5

Sheet 2 of 4

Job No & Location: W.O. @ 7/P/5.111 Tsim Bei Tsui Borrow Area.

Method: ROTARY Ground Level: +74.6m PD Coords E. 18976.4

Machine: ACKER N10 D42 Orientation: VERTICAL N. 38395.8

Hole dia.: 0.0m – 140 mm – 32.4m – 75.8 mm – 36.6m Date: from 4.7 to 22.7.81

Drilling progress	Casing depth size	Water Level	Water recovery %	Core recovery %	R.Q.D. %	Fracture index	Tests	Samples	Depth metres	Reduced Level	Legend	Description	Grade	Zone
8-7-81	PX	NIL at 19:00						11	10.0 / 11.0	+64.6		Yellow, very dense SILTY SAND with Gravels (H.W.G./C.W.G.)	III/IV	
9-7-81		NIL at 8:00		60			N=99/160	12	11.9 / 12.0	+62.7				
								13	13.0					
				50			N=57	14	14.0			Yellowish brown & pink very dense SANDY SILT with QUARTZ GRAVELS (C.W.G.)	V	
								15	15.0					
				40			N=30	16	16.0					
		7.5m at 19:00						17	17.0					
15-7-81		NIL at 8:00					N=78/160	18	17.7 / 18.0				VI	
								19	19.0					
	20cm						N=209/160	20	19.7 / 20.0	+54.6				

Legend
Samples:
- Small disturbed
- Large disturbed
- U40 undisturbed
- U100 undisturbed
- Mazier
- Liner sample
- Water sample
- Standard penetration test
- Permeability test

Remarks MAZIER samples at 11.0m & 19.0m could not be taken

C.W.G. COMPLETELY WEATHERED GRANITE
H.W.G. HIGHLY WEATHERED GRANITE

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P.W.D. Contract 424/79
Client Office G. C. O.

~~Borehole~~/Drillhole No. DS

Job No & Location: N. 0. 8. 7/2/5.11 Tsim Bei Tsui Borrow Area.

Sheet 3 of 4

Method: ROTARY Ground Level: +74.6 m PD Coords E. 18976.4

Machine: ACKER N10 (D42) Orientation: VERTICAL N. 38395.8

Hole dia.: 0.0m – 140mm 32.4m 75.8mm 36.6m Date: from 4.7 to 22.7.81

Drilling progress	Casing depth size	Water Level	Water recovery %	Core recovery %	R.Q.D. %	Fracture index	Tests	Samples	Depth metres	Reduced Level	Legend	Description	Grade	Zone
15-7-81	PX	0.5m at 19:00					N=200/80	21	20.0	+54.6				
		NIL at 8:00						22	21.0					
									21.6					
									22.0					
								23	23.0					
16-7-81							N=205/80	24	23.6					
									24.0					
								25	25.0					
							N=200/150	26	25.7					
									26.0					
								27	27.0					
		0.8m at 19:00					N=200/150	28	27.6					
		NIL at 8:00							28.0					
								29	29.0					
17-7-81		0.5m at 19:00					N=200/150	30	29.6					
	30.0m								30.0	+44.6				

QUARTZ gravels with layers of Soil

(C.W.G.)

Legend
Samples:
- Small disturbed
- Large disturbed
- U40 undisturbed
- U100 undisturbed
- Mazier
- Liner sample
- Water sample
- Water table
- Standard penetration test
- Permeability test

Remarks MAZIER sample at 21.0m, 23.0m, 25.0m, 27.0m & 29.0m could not be taken
C.W.G. COMPLETELY WEATHERED GRANITE

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P.W.D. Contract 424/79
Client Office G.C.O.

Borehole/Drillhole No. DS

Job No & Location: W.O.Q. 7/2/5.111 Tsim Bei Tsui Borrow Area

Sheet 4 of 4

Method: ROTARY Ground Level: +74.6 m PD. Coords E. 18976.4

Machine: ACKER N10 D42 Orientation: VERTICAL N. 38395.8

Hole dia.: 0.0 m – 140mm – 32.4m 75.8 mm – 36.6m Date: from 4.7 to 22.7.1981

Drilling progress	Casing depth size	Water Level	Water recovery %	Core recovery %	R.Q.D. %	Fracture index	Tests	Samples	Depth metres	Reduced Level	Legend	Description	Grade	Zone
18-7	PX	0.2m at 8:00							30.0	+44.6		QUARTZ gravels with layers of Soil (C.W.G.)		
20-7-81	32.4m	1.0m at 19:00		100	0	∞			31.0					
		0.2m at 8:00		100	0	7.0			31.6	+43.0				
		1.0m at 19:00		B3	0	6.0			31.9					
				B1	0	∞			32.0					
21-7-81		NIL at 8:00		38	0	∞			32.2					
				98	0	∞			32.4					
				95	0	6			33.0			Milky QUARTZ GRAVELS.		
				95	0	∞			33.1					
		0.6m at 19:00		30	0	6			33.4					
22-7-81		NIL at 8:00		27	0	∞			33.8					
		0.5m at 19:00		9	0	∞			34.0					
									34.2					
									35.0					
									35.7					
									36.0					
									36.6	+38.0				
									37.0			Operation stopped at 36.6m as instruction given on Works Order.		
									38.0					

Legend

Samples:
- Small disturbed
- Large disturbed
- U40 undisturbed
- U100 undisturbed
- Mazier
- Liner sample
- Water sample
- Water table
- Standard penetration test
- Permeability test

Remarks

C.W.G. COMPLETELY WEATHERED GRANITE

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P.W.D. Contract 424/79
Client Office G. C. O.

Borehole/Drillhole No. DG

Job No & Location: W.O.Q.7/2/5.III TSIM BEI TSUI BORROW AREA

Sheet 1 of 4

Method: ROTARY Ground Level: +61.4 m P.D. Coords E. 19011.9

Machine: D59 Orientation: VERTICAL N. 38393.6

Hole dia.: 0.0 m — 140mm — 21.0 m — 89mm — 33.7 m — 75.8mm — 35.2 m Date: from 14-10 to 21-10-81

Drilling progress	Casing depth size	Water Level	Water recovery %	Core recovery %	R.Q.D. %	Fracture index	Tests	Samples	Depth metres	Reduced Level	Legend	Description	Grade	Zone
14-10-81	PX	2.5m at 19:00		55			N=30	1, 2	0.0	+61.4		Yellowish brown. dense. SANDY SILT. with quartz gravels. (C.W.G.)		V
				30				3	4.0	+57.4		Yellowish brown. & greyish white, very dense SILTY SAND with quartz gravels. (C.W.G.)		V
				30			N=72	4, 5	6.0					
				45				6	8.0	+53.4		Yellowish brown. & greyish white. very dense. SANDY SILTY QUARTZ GRAVELS. (C.W.G.)		V
15-10-81		NIL at 8:00		60			N=80	7, 8	10.0	+51.4				
	10.0m													

Legend
Samples:
- Small disturbed
- Large disturbed
- U40 undisturbed
- U100 undisturbed
- Mazier
- Liner sample
- Water sample
- Water table
- Standard penetration test
- Permeability test

Remarks C.W.G: COMPLETELY WEATHERED GRANITE

GI 51

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P.W.D. Contract 434/79
Client Office G.C.O.

Borehole/Drillhole No. D6

Job No & Location: W.O.Q 7/2/5.111 TSIM BEI TSUI BORROW AREA.

Sheet 2 of 4

Method: ROTARY Ground Level: +61.4 m PD. Coords E. 190 11.9

Machine: D59 Orientation: VERTICAL N. 38393.6

Hole dia.: 140mm 0.0m — 21.0m; 89mm 33.7m; 75.8mm 35.3m Date: from 14-10 to 21-10-81

Drilling progress	Casing depth size	Water Level	Water recovery %	Core recovery %	R.Q.D. %	Fracture index	Tests	Samples	Depth metres	Reduced Level	Legend	Description	Grade	Zone
15-10-81	PX	6.6m at 12:00 NIL at 13:00		50			N=110	9	10.0	+51.4				
							N=39	10	10.5					
				45				11	11.0					
								12	12.0			Yellowish brown & greyish white. very dense. SANDY SILTY QUARTZ GRAVELS. (C.W.G.)	V	
				42			N=101	13	13.0					
								14	14.0					
							N=104	15	14.5					
		12.2m at 19:00		50				16	15.0					
16-10-81		NIL at 8:00		34	0	8			16.0					
									16.5					
									17.0					
				26	0	8			17.6	+43.8		Milky QUARTZ. with layers of soil.	V	
	20.0m	13.3m at 12:00							18.0					
									18.8					
									19.0					
									19.7					
									20.0	+41.4				

Legend

Samples:

- Small disturbed
- Large disturbed
- U40 undisturbed
- U100 undisturbed
- Mazier
- Liner sample
- Water sample
- Water table
- Standard penetration test
- Permeability test

Remarks C.W.G: COMPLETELY WEATHERED GRANITE

G151

Gammon (Hong Kong) Limited
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P.W.D. Contract 424/79
Client Office G. C. O.

Borehole/Drillhole No. D6

Job No & Location: W.O.Q 7/2/5.111 TSIM BEI TSUI BORROW AREA. Sheet 3 of 4

Method: ROTARY Ground Level: +61.4 m P.D. Coords E. 19011.9

Machine: D59 Orientation: VERTICAL N. 38393.6

Hole dia.: 0.0m — 140mm — 21.0m — 89mm — 33.7m — 75.8mm — 35.2m Date: from 14-10 to 21-10-81

Drilling progress	Casing depth size	Water Level	Water recovery %	Core recovery %	R.Q.D. %	Fracture index	Tests	Samples	Depth metres	Reduced Level	Legend	Description	Grade	Zone
16-10	PX	NIL at 13:00					N=50/70		20.0	+41.4				
	21.0m NX	12.6m at 19:00						⊙17	20.2			Milky QUARTZ with layers of soil.	V	
17-10-81		NIL at 8:00					N=50/30	⊙18	21.0					
		16.8m at 12:00							21.3	+40.1				
		NIL at 13:00							22.0			Yellowish brown & greyish white. very dense. SANDY SILTY QUARTZ GRAVELS. (H.W.G.)	IV	
		21.4m at 19:00					N=200/150	⊙19	22.4					
		NIL at 8:00		32	0	8			23.0					
18-10-81		22.8m at 12:00		0					24.0	+37.2				
		NIL at 13:00					N=200/150	⊙20	24.2					
		22.0m at 19:00		21	0	8			25.0					
		NIL at 8:00		22	0	8			25.1			Milky QUARTZ with layers of soil.	IV	
									26.0					
				26	0	0			26.2					
19-10-81									27.0					
									27.9					
									28.0					
									29.0					
									29.3					
	29.8m			74	0	8			29.8	+31.6				

Legend
Samples:
- Small disturbed
- Large disturbed
- U40 undisturbed
- U100 undisturbed
- Mazier
- Liner sample
- Water sample
- Water table
- Standard penetration test
- Permeability test

Remarks HWG: HIGHLY WEATHERED GRANITE

Mazier sample at 21.8m could not be take due to gravels encounter.

GI 51

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CIVIL ENGINEERS & CONTRACTORS
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P.W.D. Contract 424/79 Borehole No. D6
Client Office G.C.O.

Job No & Location: W.O.Q.7/2/5.111 TSIM BEI TSUI BORROW AREA. Sheet 4 of 4

Method: ROTARY Ground Level: +61.4 m PD. Coords E. 19011.9

Machine: D59 Orientation: VERTICAL N. 38393.6

Hole dia.: 0.0 m — 140 mm — 21.0 m — 89 mm — 33.7 m — 75.8 mm — 35.2 m Date: from 14-10 to 21-10-81

Drilling progress	Casing depth size	Water Level	Water recovery %	Core recovery %	R.Q.D. %	Fracture index	Tests	Samples	Depth metres	Reduced Level	Legend	Description	Grade	Zone
										+31.6				
19-10-81	NX	NIL at 19:00		16	0	8			29.8					
				0					30.0					
									31.0					
									31.1					
									32.0			Milky QUARTZ. with layers of soil.		IV
									32.6					
20-10		NIL at 8:00		94	0	8			33.0					
	33.7m	NIL at 19:00		67	0	8			33.4					III/IV
									33.7					
21-10		NIL at 8:00		85	0	8			34.0					
									34.2					
				85	0	8			34.5					
				90	0	8			34.8					
		NIL at 19:00		88	0	8			35.0	+26.2				
									35.2			Operation stopped at 35.2m as instruction given on Works Order.		
									36.0					

Legend

Samples:

- Small disturbed
- Large disturbed
- U40 undisturbed
- U100 undisturbed
- Mazier
- Liner sample
- Water sample
- Water table
- Standard penetration test
- Permeability test

Remarks

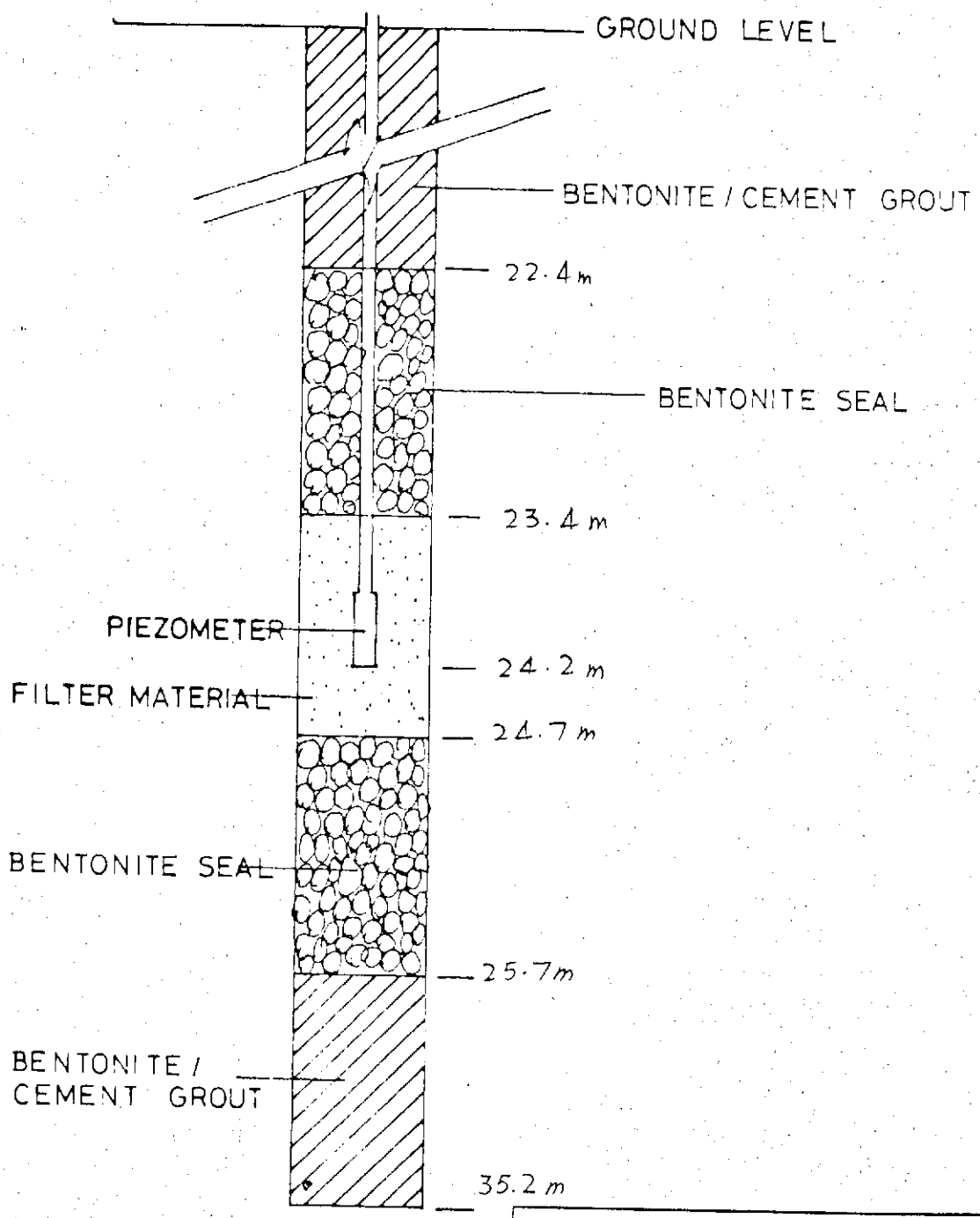
A piezometer was installed at 24.2m

GI 51

DETAIL OF STANDPIPE PIEZOMETER INSTALLATION

JOB NO. 364 W.O.Q 7/2/5.111
LOCATION TSIM BEI TSUI BORROW AREA
DATE 1-12-1981

HOLE NO. D6



Gammon (Hong Kong) Limited
Gammon House, 2nd Floor, 12 Harcourt Road, HONG KONG

SCALE	DATE	TENDER/JOB NO.	DRAWING NO.

Gammon (Hong Kong) Limited
CIVIL ENGINEERS & CONTRACTORS
35rd Floor, Hopewell Centre, 183 Queen's Road, East, Hong Kong.
Tel: 5 283041 Cables: GAMMONCO Telex: HX 73826

P.W.D. Contract 424/17 Borehole No. D7

Client Office G.C.O

Job No & Location: W.O.Q 7/2/5.III TSIM BEI TSUI BORROW AREA. Sheet 1 of 3

Method: ROTARY. Ground Level: +42.1 m PD Coords E. 19036.9 7

Machine: D59 Orientation: VERTICAL N. 38390.7 78

Hole dia.: 0.0m —140mm— 14.5m —89mm— >85m —75.8mm— 30.5m Date: from 30-10 to 8-11-81

Drilling progress	Casing depth size	Water Level	Water recovery %	Core recovery %	R.Q.D. %	Fracture index	Tests	Samples	Depth metres	Reduced Level	Legend	Description	Grade	Zone
30-10-81	PX	1.2m at 19:00 NIL at 8:00		50			N=8	1 2	0.0 1.0 2.0 2.5	+42.1		Yellowish brown. medium dense to dense. SANDY SILT with quartz gravels. (C.W.G.)	V	
				40				3	3.0					
							N=18	4	4.0 4.5					
				90				5	5.0 6.0					
31-10-81		4.2m at 12:00 NIL at 13:00					N=17	6	6.5					
				65				7	7.0 8.0					
							N=45	8	8.5					
	10.0m			50				9	9.0 10.0	+32.1				

Legend

Samples:

- Small disturbed
- Large disturbed
- U40 undisturbed
- U100 undisturbed
- Mazier
- Liner sample
- Water sample
- Water table
- Standard penetration test
- Permeability test

Remarks C.W. G : Completely Weathered GRANITE

G151

Gammon (Hong Kong) Limited
CIVIL ENGINEERS & CONTRACTORS
35th Floor, Hopewell Centre, 183 Queen's Road, East, Hong Kong.
Tel: 5-283841 Cables: GAMMONCO Telex: HX 73826

P.W.D. Contract 424/79
Client Office G. C. O

Borehole/Drillhole No. D7

Job No & Location: W.O.Q.7/2/5.111 TSIM BEI TSUI BORROW AREA

Sheet 2 of 3

Method: ROTARY Ground Level: +42.1 m P.D. Coords E. 19036.9

Machine: D59 Orientation: VERTICAL N. 38390.7

Hole dia.: 0.0m — 140mm — 14.5m — 89mm — 28.5m — 75.8mm — 30.5m Date: from 30-10 to 8-11-81

Drilling progress	Casing depth size	Water Level	Water recovery %	Core recovery %	R.Q.D. %	Fracture index	Tests	Samples	Depth metres	Reduced Level	Legend	Description	Grade	Zone
31-10-81	PX	10.1m at 19:00		80			N 58	10	10.0	+32.1		Yellowish brown. very dense. SANDY SILTY. QUARTZ GRAVELS (C.W.G.)	V	
								11	10.5					
1-11-81		10.1m at 8:00					N=13	12	11.0					
		10.3m at 12:00		55					12.0					
		10.3m at 13:00						13	12.5					
	14.5m NX	11.1m at 19:00					N=91	14	13.0					
		12.0m at 8:00							13.9 14.0					
2-11-81		12.0m at 12:00		80	0	∞			14.5					
		12.2m at 13:00		80	0	∞			14.9 15.0	+27.2		Greyish white. medium to coarse grained. closely spaced joints to shattered. QUARTZ. moderately strong.	III	
4-11-81		12.2m at 19:00		43	0	∞			15.9 16.0					
		12.2m at 8:00							17.0 17.2					
		12.0m at 19:00		72	0	∞			18.0 18.4					
5-11	20.0m	12.2m at 8:00							19.0 19.2	+22.9		Greyish white. very dense. SILTY SAND with gravels. (H.W.G.)	IV	
									20.0	+22.1				

Legend

Samples:
- Small disturbed
- Large disturbed
- U40 undisturbed
- U100 undisturbed
- Mazier
- Liner sample
- Water sample
- Water table
- Standard penetration test
- Permeability test

Remarks C.W. G.: Completely Weathered GRANITE

H.W.G.: HIGHLY WEATHERED GRANITE

GI 51

Gammon (Hong Kong) Limited
CIVIL ENGINEERS & CONTRACTORS
30rd Floor, Hopewell Centre, 183 Queen's Road, East, Hong Kong.
Tel: b-203841 Cables: GAMMONCO Telex: HX 73826

P.W.D. Contract 424/79
Client Office G. C. O.

Borehole No. D7

Job No & Location: W.O.Q 7/2/5.111 TSIM BEI TSUI BORROW AREA

Sheet 3 of 3

Method: ROTARY Ground Level: +42.1 m P.D. Coords E. 19036.9

Machine: D59 Orientation: VERTICAL N. 38390.7

Hole dia.: 0.0m — 140mm — 14.5m — 89mm — 28.5m — 75.8mm — 30.5m Date: from 30-10 to 8-11-81

Drilling progress	Casing depth size	Water Level	Water recovery %	Core recovery %	R.Q.D. %	Fracture index	Tests	Samples	Depth metres	Reduced Level	Legend	Description	Grade	Zone
5-11-81	NX	11.5m at 19:00					N=300/150	15	20.0	+22.1		Greyish white. very dense. SILTY SAND. with gravels. ⟨ H.W.G. ⟩	IV	
							N=250/150	16	20.3					
									21.0					
6-11-81		12.2m at 8:00					N=207/150	17	22.0	+19.8		Brown. & red. very dense. CLAYEY SILT. with some SAND. ⟨ H.W.G. ⟩	IV	
									22.3					
									23.0					
									24.0					
									24.3					
									25.0					
		11.5m at 19:00					N=200/80	18	26.0					
7-11-81		12.2m at 8:00							26.2	+15.9		Greyish white. brown. & red. very dense. SILTY SAND. ⟨ H.W.G. ⟩	IV	
									27.0					
									28.0					
									28.2					
	28.5m	12.0m at 19:00					N=200/150	19	28.5	+13.6				
8-11-81		12.2m at 8:00		99	30	80			29.0		+ + +	Greyish pink. medium to coarse grained, closely spaced joints PAGMANTITE strong pegmatite	II	
				80	0	∞			29.4		+ + +			
				87	0	100			29.7		+ + +			
				93	0	∞			29.9		+ + +			
		12.0m at 19:00		64	17				30.5	+11.6	+ + +			

Legend

Samples:
- Small disturbed
- Large disturbed
- U40 undisturbed
- U100 undisturbed
- Mazier
- Liner sample
- Water sample
- Water table
- Standard penetration test
- Permeability test

Remarks Operation stopped at 30.5 m. as instruction given on Works Order.

HWG: HIGHLY WEATHERED GRANITE

GI 51

Gammon (Hong Kong) Limited
CIVIL ENGINEERS & CONTRACTORS
33rd Floor, Hutchwell Centre, 183 Queen's Road East, Hong Kong
Tel: 6-253941 Cables: GAMMONCO Telex: HX 73626

P.W.D. Contract 424/79
Client Office G.C.O.

Borehole No. D8

Job No & Location: W.O.Q 7/2/5.111 TSIM BEI TSUI BORROW AREA

Sheet 1 of 4

Method: ROTARY Ground Level: +63.4m P.D. Coords E. 18942.0

Machine: 259 Orientation: VERTICAL N. 38352.6

Hole dia.: 0.0m — 140mm — 32.2m — 75.8mm — 35.0m Date: from 25-7 to 8-8-81

Drilling progress	Casing depth size	Water Level	Water recovery %	Core recovery %	R.Q.D. %	Fracture index	Tests	Samples	Depth metres	Reduced Level	Legend	Description	Grade	Zone
25-7-81	PX	2.7m at 9.8m		60			N=5	1	0.0	+63.4		Brown, light pink, loose SANDY SILT with gravels (C.W.G)	V	
							N=52	2	2.0	+61.4		Brown & light pink, medium dense to very dense SILTY SAND with quartz gravels (C.W.G.)		
				50				3	3.0					
								4	4.0					
								5	5.0					
							N=30	6	6.0					
								7	7.0					
							N=30	8	8.0					
				40										
								9	9.0					
	9.8m						N=100/80	10	9.8	+53.6				

Legend

Samples:

- Small disturbed
- Large disturbed
- U40 undisturbed
- U100 undisturbed
- Mazier
- Liner sample
- Water sample
- Water table
- Standard penetration test
- Permeability test

Remarks C.W.G: COMPLETELY WEATHERED GRANITE
MAZIER sample at 3.0m & 7.0m could not be taken

GI 51

Gammon (Hong Kong) Limited
CIVIL ENGINEERS & CONTRACTORS
33rd Floor, Hopewell Centre, 183 Queen's Road, East, Hong Kong.
Tel: 5-283041 Cables: GAMMONCO Telex: HX 73078

P.W.D. Contract 434/79 | Borehole/Drillhole No. D8
Client Office G.C.O.

Job No & Location: W.O.Q 7/2/5.III TSIM BEI TSUI BORROW AREA | Sheet 2 of 4
Method: ROTARY Ground Level: +63.4 m P.D. Coords E. 18942.0
Machine: D59 Orientation: VERTICAL N. 38352.6
Hole dia.: 0.0m —140mm— 32.2m —75.8mm— 35.0m Date: from 25-7 to 8-8-81

Drilling progress	Casing depth size	Water Level	Water recovery %	Core recovery %	R.Q.D. %	Fracture index	Tests	Samples	Depth metres	Reduced Level	Legend	Description	Grade	Zone
27-7-81	PX	6.0m at 8:00							9.8	+53.6				
								11	11.0		Q	Yellowish brown. & light pink. very dense. SILTY SAND with gravels. (C.W.G.)	V	
							N=139/150	12	11.9 12.0	+51.5				
		4.0m at 19:00						13	13.0			Light grey & white. QUARTZ COBBLES & GRAVELS.	IV	
28-7-81		11.9m at 8:00					N=38/76	14	13.6 14.0					
								15	15.0					
		11.5m at 19:00					N=42/10	16	15.6 16.0	+47.4				
		NIL at 8:00						17	17.0			Dark grey. & white. very dense. SILTY SAND (C.W.G.)	V	
5-8-81							N=52/76	18	17.6 18.0					
								19	19.0	+44.4		Light pinkish grey. very dense. SILTY SAND. with gravels. (C.W.G.)	V	
							N=48/100	20	19.7 20.0	+43.4				
	20.0m													

Legend
Samples:
- Small disturbed
- Large disturbed
- U40 undisturbed
- U100 undisturbed
- Mazier
- Liner sample
- Water sample
- Water table
- Standard penetration test
- Permeability test

Remarks C.W.G: COMPLETELY WEATHERED GRANITE
MAZIER samples at 11.0m, 13.0m, 15.0m, 17.0m & 19.0m could not be taken

G151

Gammon (Hong Kong) Limited
CIVIL ENGINEERS & CONTRACTORS
33rd Floor Hopewell Centre, 183 Queen's Road, East, Hong Kong
Tel: S 283941 Cables: GAMMONCO Telex: HX 73826

P.W.D. Contract 424/79
Client Office G.C.O.

Borehole/Drillhole No. D8

Job No & Location: W.O.Q 7/2/5111 TSIM BEI TSUI BORROW AREA. Sheet 3 of 4

Method: ROTARY Ground Level: +63.4m P.D. Coords E. 18942.0

Machine: D59 Orientation: VERTICAL N. 38352.6

Hole dia.: 0.0m — 140mm — 32.2m — 75.8mm — 35.0m Date: from 25-7 to 8-8-81

Drilling progress	Casing depth size	Water Level	Water recovery %	Core recovery %	R.Q.D. %	Fracture index	Tests	Samples	Depth metres	Reduced Level	Legend	Description	Grade	Zone
									20.0	+43.4				
5-8-81	PX						N=63/50	21	21.0			Light pinkish grey. very dense. SILTY SAND. with gravels. (C.W.G.)	V	
								22	21.6					
									22.0					
		12.8m at 19:00 NIL at 8:00					N=65/50	23	23.0					
								24	23.6					
									24.0					
								25	25.0	+38.4				
6-8-81							N=72/75	26	25.6					
									26.0			Light grey. light pink. very dense. SILTY SAND with gravels. (C.W.G.)	V	
								27	27.0					
							N=66/55	28	27.6					
									28.0					
		19.7m at 19:00 NIL at 8:00						29	29.0					
7-8	29.9m								29.9	+33.5				

Legend
Samples:
- Small disturbed
- Large disturbed
- U40 undisturbed
- U100 undisturbed
- Mazier
- Liner sample
- Water sample
- Water table
- Standard penetration test
- Permeability test

Remarks C.W.G: COMPLETELY WEATHERED GRANITE
MAZIER samples at 21.0m, 23.0m, 25.0m, 27.0m & 29.0m could not be taken

GI 51

Gammon (Hong Kong) Limited
CIVIL ENGINEERS & CONTRACTORS
33rd Floor, Hopewell Centre, 183 Queen's Road, East, Hong Kong
Tel: 5-283841 Cables: GAMMONCO Telex: HX 73826

P.W.D. Contract 424/79
Client Office G.C.O.

Borehole/Drillhole No. D8

Job No & Location: W.D.G 7/2/5111 TSIM BEI TSUI BORROW AREA

Sheet 4 of 4

Method: ROTARY Ground Level: +63.4 m P.D. Coords E. 18942.0

Machine: D59 Orientation: VERTICAL N. 38352.6

Hole dia.: 0.0m — 140mm — 32.2m — 75.8mm — 35.0m Date: from 25-7 to 8-8-81

Drilling progress	Casing depth size	Water Level	Water recovery %	Core recovery %	R.Q.D. %	Fracture index	Tests	Samples	Depth metres	Reduced Level	Legend	Description	Grade	Zone
7-8-81	PX			21	0	∞			29.9	+33.5				
	32.2m			17	0	∞			31.0			White. light red. fine grained. shattered to very closely spaced joints QUARTZ COBBLES & GRAVELS.	III/IV	
		20.1m at 19:00		18	0	∞			32.0					
				42	0	∞			32.2					
8-8-81		NIL at 8:00							33.0					
				98	0	∞			33.1					
		25.2m at 19:00		97	0	∞			33.5					
									33.6					
									34.0					
									34.4					
									35.0	+28.4		Operation stopped at 35.0m as instruction given on Works Order.		
									36.0					
									37.0					
									38.0					
									39.0					

Legend

Samples:

- Small disturbed
- Large disturbed
- U40 undisturbed
- U100 undisturbed
- Mazier
- Liner sample
- Water sample
- Water table
- Standard penetration test
- Permeability test

Remarks

GI 51

Gammon (Hong Kong) Limited
CIVIL ENGINEERS & CONTRACTORS
33rd Floor, Hopewell Centre, 183 Queen's Road, East, Hong Kong.
Tel.: 5-283941 Cables: GAMMONCO Telex: HX 73826

P.W.D. Contract 424/79
Client Office G.C.O.

Borehole/Drillhole No. D9

Job No & Location: W.O.Q 7/2/5.111 TSIM BEI TSUI BORROW AREA

Sheet 1 of 2

Method: ROTARY Ground Level: +62.6 m PD. Coords E. 18995.1

Machine: D59 Orientation: VERTICAL N. 38342.8

Hole dia.: 0.0m – 140 mm – 7.3m – 75.8 mm – 12.5m Date: from 25-11 to 29-11-81

Drilling progress	Casing depth size	Water Level	Water recovery %	Core recovery %	R.Q.D. %	Fracture index	Tests	Samples	Depth metres	Reduced Level	Legend	Description	Grade	Zone
25-11-81	PX	NIL at 8:00							0.0	+62.6				
		1.0m at 15:00		50				1	1.0					
		NIL at 13:00					N=68	2	2.0			Brown, very dense, SILTY SANDY QUARTZ GRAVELS. (C.W.G ~ H.W.G.)	V/IV	
		1.0m at 19:00		57				3	2.5					
		NIL at 8:00					N=363/150	4	3.0					
26-11-81									3.7					
									4.0					
									4.3					
									5.0					
							N=300/150	5	6.0					
								6	6.3					
				90				7	7.0					
	7.3m	NIL at 19:00		90	0	∞			7.3	+55.3				
	NX	NIL at 8:00		90	0	∞			7.9			Milky QUARTZ. with layers of soil.	III/IV	
27-11				80	0	∞			8.6					
		NIL at 19:00		57	0	∞			8.3					
28	9.8m	NIL at 8:00		90	0	∞			8.8					
									9.0					
									9.5					
									9.8	+52.8				

Legend

Samples:

- Small disturbed
- Large disturbed
- U40 undisturbed
- U100 undisturbed
- Mazier
- Liner sample
- Water sample
- Water table
- Standard penetration test
- Permeability test

Remarks HWG: HIGHLY WEATHERED GRANITE

C.W.G: COMPLETELY WEATHERED GRANITE

MAZIER sample at 6.0m could not be taken

GI 51

Gammon (Hong Kong) Limited
CIVIL ENGINEERS & CONTRACTORS
33rd Floor, Hopewell Centre, 183 Queen's Road, East, Hong Kong.
Tel: 5-289361 Cables: GAMMONCO Telex: HX 73826

P.W.D. Contract 424/79
Client Office G.C.O.

Borehole/Drillhole No. D9

Job No & Location: W.O.Q 7/2/5.III TSIM SEI TSUI BORROW AREA

Sheet 2 of 2

Method: ROTARY Ground Level: +62.6 m P.D. Coords E. 18995.1

Machine: D59 Orientation: VERTICAL N. 38342.8

Hole dia.: 0.0m 140mm 7.3m 75.8mm 12.5m Date: from 25-11 to 29-11-81

Drilling progress	Casing depth size	Water Level	Water recovery %	Core recovery %	R.Q.D. %	Fracture index	Tests	Samples	Depth metres	Reduced Level	Legend	Description	Grade	Zone
28-11-81	NX	NIL at 19:00		82	0	∞			9.8	+52.8				
				90	0	∞			10.0			Milky QUARTZ with layers of soil.		
29-11-81		NIL at 8:00		90	0	∞			10.5					
				85	0	∞			11.0					
	12.5m	NIL at 19:00		70	0	∞			11.5					
									11.8					
									12.0	+50.1				
									12.5			Operation stopped at 12.5 m as instruction given on Works Order.		
									13.0					
									14.0					
									15.0					
									16.0					
									17.0					
									18.0					
									19.0					
									20.0					

Legend

Samples:
- Small disturbed
- Large disturbed
- U40 undisturbed
- U100 undisturbed
- Mazier
- Liner sample
- Water sample
- Water table
- Standard penetration test
- Permeability test

Remarks

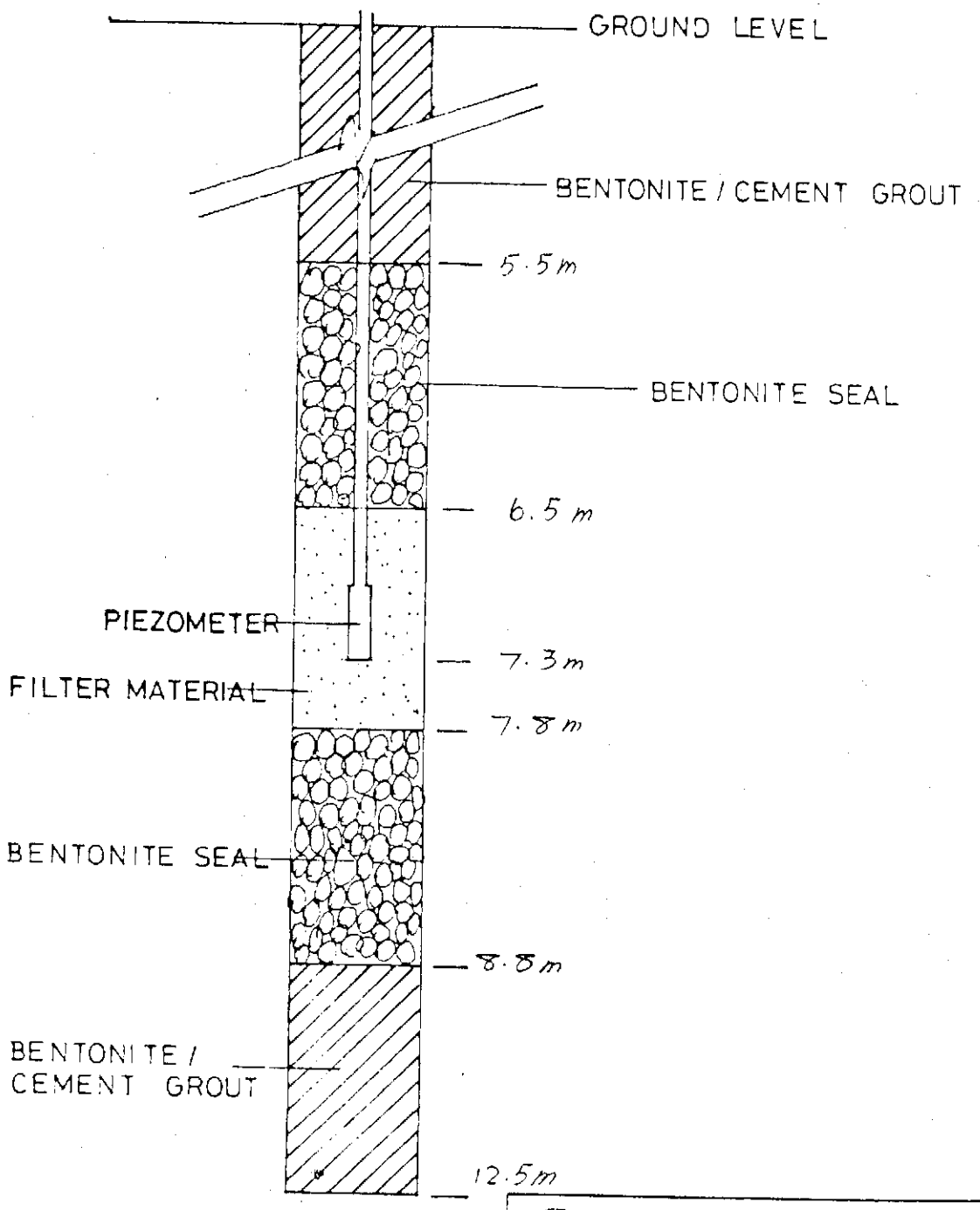
A piezometer was installed at 7.3 m

G151

DETAIL OF STANDPIPE PIEZOMETER INSTALLATION

JOB NO. 364 W.O.Q 7/2/5.111
LOCATION TSIM BEI TSUI BORROW AREA
DATE 30-11-1981

HOLE NO. D 9



Gammon (Hong Kong) Limited
Gammon House, 2nd Floor, 12 Harcourt Road, HONG KONG.

SCALE	DATE	TENDER/JOB NO.	DRAWING NO.

Section B - Piezometer Readings

Gammon (Hong Kong) Limited
CIVIL ENGINEERS & CONTRACTORS
33rd Floor, Hopewell Centre, 183 Queen's Road, East, Hong Kong.
Tel: 5 283941 Cable: GAMMONCO Telex: HX 73826

PIEZOMETER READINGS ON D-1

Sheet 1 of 1

Client/Consultant G. C. O.
Job No. 364 W.O.G 7/215.111
Location TSIM BEI TSUI BORROW AREA
Ex. Ground Level _____ m P.D
Coordinates N _____ E _____

DATE OF INSTALLATION 1-12-1981
DEPTH OF PIEZOMETER 11.4 m

DATE	READINGS (M)
2-12-1981	NIL
3-12-1981	NIL
4-12-1981	NIL
5-12-1981	NIL
7-12-1981	NIL
8-12-1981	NIL
9-12-1981	NIL

Gammon (Hong Kong) Limited
CIVIL ENGINEERS & CONTRACTORS
33rd Floor, Hopewell Centre, 183 Queen's Road, East, Hong Kong
Tel: 5-283941 Cables: GAMMONCO Telex: HX 73826

PIEZOMETER READINGS ON D6

Sheet 1 of 1

Client/Consultant G. C. O.
Job No. 364 W.O.Q. 7/2/5.111
Location TSIM BEI TSUI BORROW AREA
Ex. Ground Level _____ m P.D.
Coordinates N _____ E _____

DATE OF INSTALLATION 1-12-1981
DEPTH OF PIEZOMETER 24.2 m

DATE	READINGS (M)
2-12-1981	NIL
3-12-1981	NIL
4-12-1981	NIL
5-12-1981	NIL
7-12-1981	NIL
8-12-1981	NIL
9-12-1981	NIL

Gammon (Hong Kong) Limited
CIVIL ENGINEERS & CONTRACTORS
33rd Floor, Hopewell Centre, 183 Queen's Road, East, Hong Kong.
Tel: 5-283941 Cables: GAMMONCO Telex: HX 73826

PIEZOMETER READINGS ON D 9

Sheet 1 of 1

Client/Consultant G.C.O.
Job No. 364 W.O.Q. 7/215.111
Location TSIM BEI TSUI BORROW AREA
Ex. Ground Level _____ m PD
Coordinates N _____ E _____

DATE OF INSTALLATION 30 - 11 - 1981
DEPTH OF PIEZOMETER 7.3 m

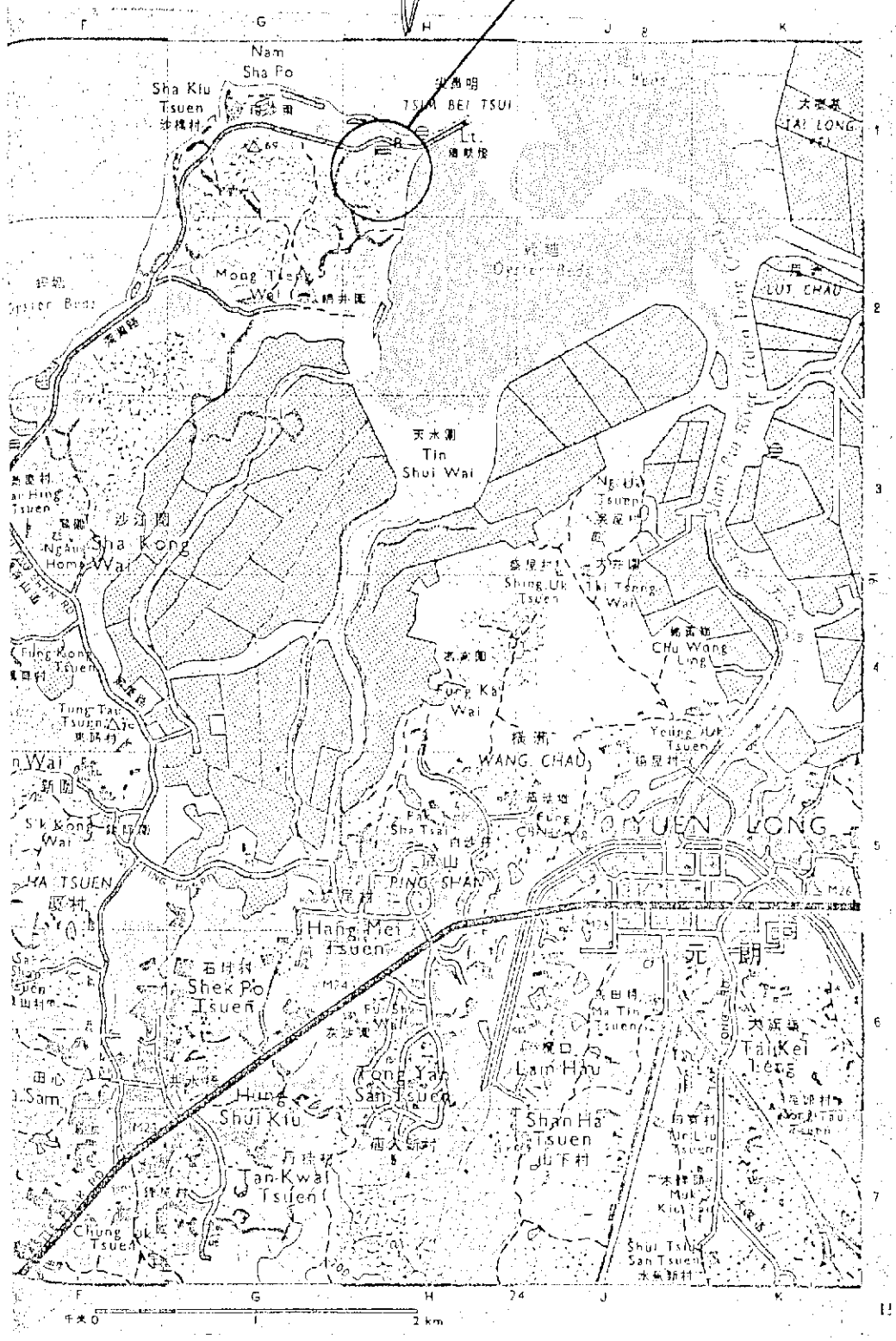
DATE	READINGS (M)
2 - 12 - 1981	NIL
3 - 12 - 1981	NIL
4 - 12 - 1981	NIL
5 - 12 - 1981	NIL
7 - 12 - 1981	NIL
8 - 12 - 1981	NIL
9 - 12 - 1981	NIL

Section C - Borehole Location Plan & Key Plan

Gammon (Hong Kong) Limited
CIVIL ENGINEERS & CONTRACTORS

D-SW-C 4/D

THE SITE



KEY PLAN

19 000 E

19 200 E

38 600 N

38 400 N

38 200 N

N

Tsim Bei Tsui Police Station

CUTTING SLOPE VARIES

CUTTING SLOPE 1:1.5

CUTTING SLOPE 1:1.75

CUTTING SLOPE 1:2

CUTTING SLOPE 1:1.5 (DOWN)

CUTTING SLOPE 1:1.5 (UP)

Appendix D

Slope Crest/Toe Influence Zone Layout Plan (1.5 and 2 Wings)

NORTH

2SW-D/F7

INFLUENCE ZONE

BLOCK B ENTRANCE
SITE MAIN ENTRANCE
BLOCK A ENTRANCE

2SW-D/F6

EXTG
CAR
PARK

DEEP BAY ROAD / EVA

TSIM BEI TSUI
POLICE POST

2SW-D/F28

BLK A

BLK B

RC PLINTH
(375m²)

2SW-D/C24

ELE. CUT OUT
EMERGENCY GENERATOR ROOM
FS PUMP ROOM

F.S. WATER TANK
245m³ VOLUME
= 16m (L) x 6m x (W) x 2.6 m (H)

2SW-D/F3

INFLUENCE ZONE

DRAFT

LEGEND :

- PROPOSED SITE BOUNDARY
- SLOPE INFLUENCE ZONE
- SLOPE FEATURE
- H-POLE WITH 11kV SWITCHGEAR
- EXISTING ROAD
- CONCRETE PAVING : PEDESTRIAN GRADE
- CONCRETE PAVING : VEHICULAR GRADE
- INTERNAL AGREED EVA

思 建 設 計 顧 問 有 限 公 司
C Arch Design Consultant Limited

EPD SUPERSITE TSIM BEI TSUI MASTER LAYOUT PLAN

1:500 (A3)

1

24 - 03 - 2025

NORTH

2SW-D/F7

BLOCK B ENTRANCE
SITE MAIN ENTRANCE
BLOCK A ENTRANCE

INFLUENCE ZONE

2SW-D/F6

EXTG
CAR
PARK

DEEP BAY ROAD / EVA

TSIM BEI TSUI
POLICE POST

2SW-D/F28

9000
6000
8000
24.00
24.40
23.37
25.52
BLK A
6000
6000
21.60
1800
2480
23.67
22.71
C1
C2
BLK B
20.24
4560
25.17
20.73
23.01
RC PLINTH
(375m²)
21.03
3030
19.40
17.82
19.70

2SW-D/C24

ELE. CUT OUT
EMERGENCY GENERATOR ROOM
FS PUMP ROOM

F.S. WATER TANK
245m³ VOLUME
= 16m (L) x 6m x (W) x 2.6 m (H)

2SW-D/F3

4000

INFLUENCE ZONE

DRAFT

LEGEND :

- PROPOSED SITE BOUNDARY
- SLOPE INFLUENCE ZONE
- SLOPE FEATURE
- H-POLE WITH 11kV SWITCHGEAR
- EXISTING ROAD
- CONCRETE PAVING : PEDESTRIAN GRADE
- CONCRETE PAVING : VEHICULAR GRADE
- INTERNAL AGREED EVA

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EPD SUPERSITE TSIM BEI TSUI MASTER LAYOUT PLAN (VERSION B)

1:500 (A3)

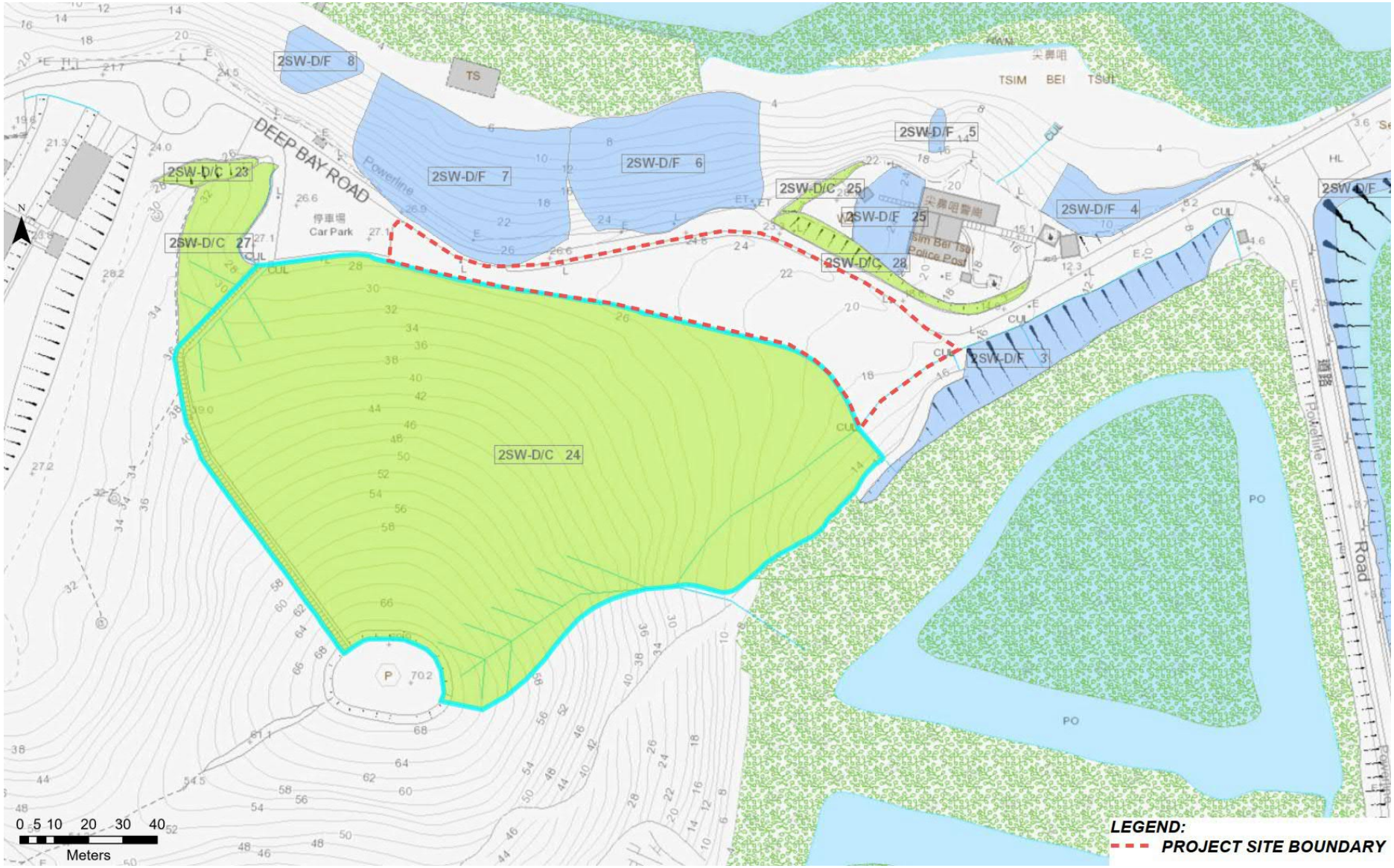
1A

24 - 03 - 2025

Appendix E

Summary of Background Information of Registered Features

Consultant:	Title:	Scale:
C Arch Design Consultant Limited	**Registered Feature Layout Plan**	N.T.S



Summary of Background Information of the Registered Features

Feature No.	CTL Category	Location	Toe Facility	Crest Facility	Maintenance Party	Max. Height (m)	Length (m)	Ave'g Angle (deg.)	Checking Status
2SW-D/C24	2	Deep Bay Road, Lau Fau Shan, Yuen Long	Open car park	Other non-crowed built-up facilities	LandsD	40	215	20	No checking records
2SW-D/F6	3	Deep Bay Road	Remote area or abandoned facilities	Road / footpath with low traffic density	HyD	22	57	35	Improved by Type 1 / Type2 Prescriptive Measures
2SW-D/F7	3	Deep Bay Road	Remote area or abandoned facilities	Road / footpath with low traffic density	HyD	21	80	35	No checking records
2SW-D/F3	3	Deep Bay Road	Remote area or abandoned facilities	Road / footpath with low traffic density	HyD	10	134	45	No checking records
2SW-D/C28	3	Tsim Bei Tsui Police Station, Yuen Long	Road / footpath with low traffic density	Lightly-used open area / facilities	HKPF / ASD	6	90	55	No checking records

Appendix F

Records of Existing Utilities

By Fax and Despatch

MEMO

From	Chief Engineer/Mainland North, DSD	*To*	Chief Project Manager 302, ArchSD
Ref.	(01167B) in MN 12/YL/16/0	*(Attn:*	Edith LEUNG
Tel. No.	2300 1444	*Email*	
Fax. No.	2770 4761	*Your Ref.*	( ) *in* ASD 103/8842/.D21EX/001
Email	ckkwan02@dsd.gov.hk	*dated*	4.8.2023 *Fax No.* 2290 2199
Date	24.8.2023	*Total Pages*	1

Establishing a Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite (Programme No.: 743ZX)
Request Drainage Information

I refer to your above memo dated 4.8.2023 regarding the captioned subject. Please note the followings:

(i) According to our record, there are no existing public drainage and sewerage system at the proposed location or vicinity area.

(ii) Currently, we do not have any on-going or planned works in the vicinity of the proposed location.

Should you have any queries, please feel free to contact our Mr. Victus KWAN at 2300 1235.

(Jessica C K KWAN)
for Chief Engineer/Mainland North
Drainage Services Department

YLC/ Victus H C KWAN

水 務 署
Water Supplies Department

總部 Headquarters
香港灣仔告士打道七號入境事務大樓 43樓
43/F, Immigration Tower, 7 Gloucester Road, Wan Chai, Hong Kong

本署檔號
Our ref. 5132779105 of 1244879596

來函檔號
Your ref.

電話
Tel. 2824 5000

傳真
Fax. 2802 7333

ARCHITECTURAL SERVICES DEPARTMENT
N/A
N/A
N/A
N/A

Dear Customer,

ESTABLISHING A GUANGDONG-HONG KONG-MACAO GREATER BAY AREA (GBA) AIR QUALITY LABORATORY & METERROROLOGICAL MONITORING SUPERSITE LAU FAU SHAN YUEN LONG, NEW TERRITORIES

Your matter is receiving our attention. A reply will be sent to you as soon as possible.

If you have any enquiries, please call our telephone hotline 28245000 quoting the above reference no.

Water Authority

(This is a computer generated letter and no signature is required,)

貴客戶：

本處正著手處理你的個案，並會盡快給你答覆。 如有查詢，請致電本署熱線 28245000，並引述上列檔號。

水務監督

（此乃電腦編印信件，毋須簽署。）

2023年8月7日

Urgent case no.

SPSM		Date	
		- 9 AUG 2023	
PSM		PO	
BSE		BSI	
GR		File	

CLP 中電

中華電力有限公司
CLP Power Hong Kong Limited

北區
North Region

香港新界上水嘉富坊 16 號
16 Ka Fu Close, Sheung Shui
New Territories, Hong Kong

電話 Tel (852) 2678 2156
傳真 Fax (852) 2678 2180
網址 Website www.clpgroup.com

14 Aug, 2023

Architectural Services Department
Queensway Government Offices,
66 Queensway , Hong Kong

Attention : Edith Leung

Our ref.: N-2023-1133
Your ref.: ASD 103/8842/D21/EX/001

Dear Sir/Madam,

Existing or Future Underground / Overhead Services

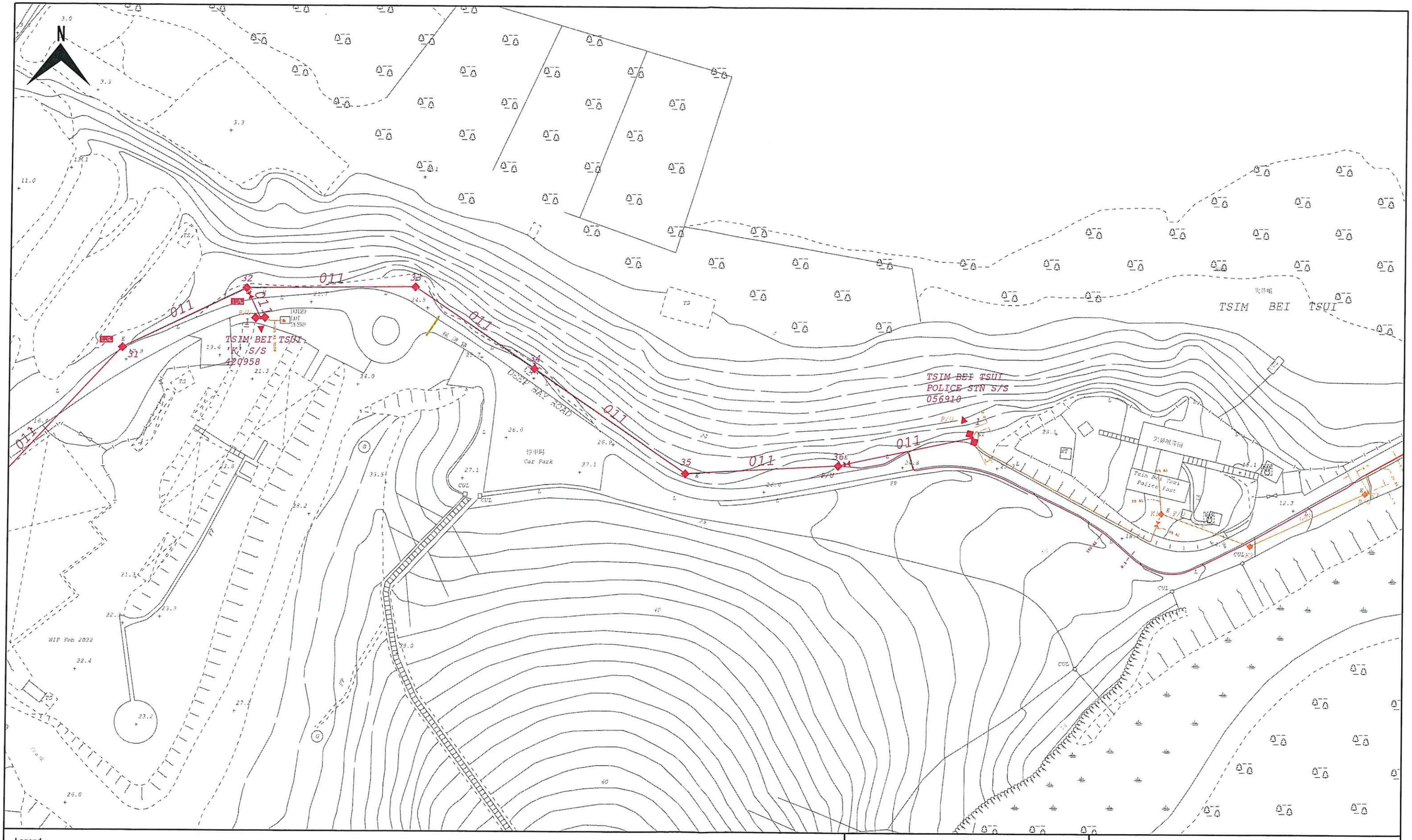
We refer to your letter dated 04 Aug, 2023 and enclose herewith our record sheet(s) showing the present location(s) of this Company's underground cables and / or overhead lines. The alignments of the cables and overhead lines could be altered in the future to meet the requirements of our power system.

You will find certain measurements, dimensions and distances marked on these record sheets. Although these figures are accurate to the best of our knowledge, information and belief, site conditions may have been altered since the measurements were taken. As such, CLP Power's record sheets are sent to you on the express condition that the locations of the underground cables and / or overhead lines and all measurements are our best approximation only, and should not be taken as accurate.

We request you, for the sake of safety, not to disturb any part of our equipment and not to construct manholes over and on top of our cable joints. No work or excavation shall be done in close proximity to any of our equipment without giving prior notice to us. We shall hold you responsible for any damage caused to our equipment.

You are advised to contact our Senior Engineer - Operations - Tuen Mun, WONG CHIU CHUN on telephone number 2678 3407 as soon as you are ready to commence work. To facilitate site co-ordination, please provide us with the name(s) of the responsible person(s), contact telephone number and tentative work commencement date.

2/.....



Legend

- 400kV CABLE/SUBMARINE CABLE/OHL
- THROUGH DUCT 400kV CABLE
- AS BUILT 400kV CABLE
- 400kV OVERHEAD LINE TOWER
- 132kV CABLE/SUBMARINE CABLE/OHL
- THROUGH DUCT 132kV CABLE
- AS BUILT 132kV CABLE
- 132kV OVERHEAD LINE TOWER
- 132kV TERMINAL OHL POLE
- 132kV DOUBLE OHL POLE
- 132kV SINGLE OHL POLE
- ABANDONED TRANSMISSION CABLE
- 33kV CABLE
- THROUGH DUCT 33kV CABLE
- AS BUILT 33kV CABLE
- 33kV SUBMARINE CABLE
- 033 33kV OVERHEAD LINE
- 33kV STEEL POLE
- 33kV WOOD POLE
- 11kV CABLE
- THROUGH DUCT 11kV CABLE
- AS BUILT / ABANDONED 11kV CABLE
- SUB SUBMARINE 11kV CABLE
- 011 11kV OVERHEAD LINE
- 11kV STEEL POLE
- 11kV WOOD POLE
- POLE MOUNT TRANSFORMER
- L.V. CABLE
- THROUGH DUCT L.V. CABLE
- AS BUILT / ABANDONED L.V. CABLE
- L.V. OVERHEAD LINE (1 PHASE)
- L.V. OVERHEAD LINE (3 PHASE)
- L.V. OVERHEAD LINE (ABC)
- P L.V. OVERHEAD LINE (PVC)
- W L.V. OVERHEAD LINE (Wall Mounted)
- L.V. STEEL POLE
- L.V. WOOD POLE
- L.V. PILLAR
- PILOT CABLE
- THROUGH DUCT PILOT CABLE
- AS BUILT / ABANDONED PILOT CABLE
- FIBRE OPTIC
- THROUGH DUCT FIBRE OPTIC
- AS BUILT FIBRE OPTIC
- TEMPERATURE SENSING CABLE (DTS)
- AERIAL EARTH WIRE (AEW)
- OVERHEAD LINE FIBRE OPTIC
- OVERHEAD LINE FIBRE OPTIC
- SHALLOW COVER INSTALLATION
- CLP 400/132/66kV SUBSTATION
- CLP 33kV SUBSTATION
- CLP 11kV SUBSTATION
- 400kV CABLE JOINT BAY
- 132kV CABLE JOINT BAY
- DUCT LINE

ALL LOCATIONS, MEASUREMENTS, DIMENSIONS AND DISTANCES ARE FOR CLP POWER INTERNAL USE ONLY. THEY SHOULD NOT BE SCALED AND ASSUMED ACCURATE. CLP POWER ACCEPTS NO RESPONSIBILITY IN THE EVENT OF ANY INACCURACY. EXTREME CARE MUST BE EXERCISED WHEN WORKING IN CLOSE PROXIMITY TO OUR EQUIPMENT. PLEASE CONTACT OUR REGIONAL OFFICE AS SOON AS YOU ARE READY TO COMMENCE WORK.

CLP 中電

MAP NO: CLP Facility Records Map
02SW18B
02SW13D

SCALE: 1:1000 **PRINTED ON:** 10-08-2023

Reference no. : N-2023-1133-001

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Information Classification: PROPRIETARY

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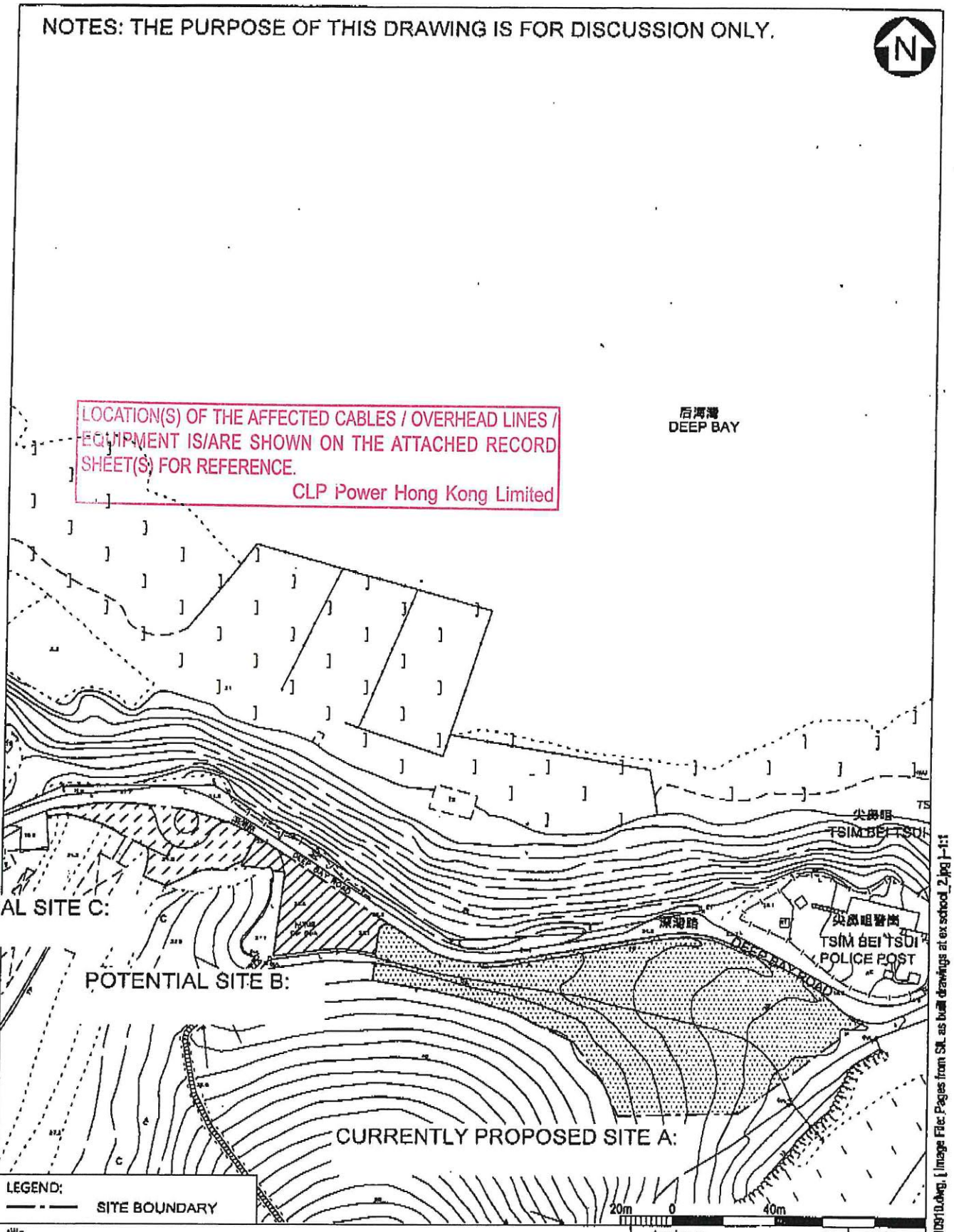

title

Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite

drawing no.

scale

1:2000

ARCHITECTURAL SERVICES DEPARTMENT

CAD Ref. - site location_20210910.dwg, [Image File: Pages from SIL as built drawings at ex school_2.jpg]--1:1

A4 210 x 297

香港中華煤氣有限公司
The Hong Kong and China Gas Company Limited

環保生活每一天
Go Green Every Day

14 August 2023

Your Ref.: ASD 103/8842/D21/EX/001
Our Ref.: UNE2023/01776/N

Architectural Services Department
Queensway Government Offices
66 Queensway
Hong Kong

Attn.: Ms. Edith Leung

Dear Sirs

Re: Establishing a Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite (Programme No. 743ZX)

We refer to your letter dated 04 August 2023 and write to advise that as far as our records show, there is no gas pipe within this site. However, there is the possibility that some gas pipes, particularly those laid long time ago or laid by other Registered Gas Contractors, may not appear in our records. In the case of some unknown pipes being exposed during your construction work or for the matters related to existing pipeline, you may contact Mr. Daniel Huang on telephone no. 2765 5610 or Mr. Jason Chan on 2963 1811 to arrange for a joint site inspection regarding the pipe location.

If your work involves construction of new manholes or performing operation in existing manholes, we recommend sealing off all the duct openings in new/existing manholes, to avoid accumulation of hazardous gas in manholes, which might create a dangerous explosive environment.

Yours faithfully

Eric F Tsang
Senior System Development Manager

ET/une
Encl Get All Safe Leaflet
~~Avoiding Danger from underground Gas Pipes and Electricity Cables Leaflet~~

Recycled paper

HKT

OUTSIDE PLANT SERVICES	
EXCH. AREA : LFS	
SURVEY MAP No. 02SW13D	
UU REF. No. ASD103/8842/D21/EX/001	
PREP. EMPC	SCALE 1:1000
CKD. Chim, Andrew WL	DATE 10/08/2023
DWG. No. HKT-20230810-0006-R-HKT	

NOTES :

1. EXCEPT FOR YOUR PROSPECTIVE CONTRACTORS/EMPLOYEES, THIS DRAWING MUST NOT BE RELEASED TO THIRD PARTY WITHOUT HK TELEPHONE'S WRITTEN APPROVAL.
2. THIS INFORMATION IS ACCURATE AT THE DATE BELOW, BUT FURTHER ALTERATIONS/AUGMENTATION MAY TAKE PLACE IN THE FUTURE.
3. THE FEATURES AND POSITION OF OUR PLANT INDICATED ON THIS DRAWING IS APPROXIMATELY ONLY. THERE ARE 1 *TELECOMMUNICATION LINES / CABLES WITHIN THE SPECIFIC AREA. THE COLOUR OF UPVC HKT DUCTS IS GREY AND THE DEPTH AT LEAST 900MM FOR CARRIAGEWAY AND 450MM FOR NON-CARRIAGEWAY. ACTUAL DEPTH AND POSITION OF PLAN MUST BE ESTABLISHED BEFORE COMMENCEMENT OF WORK AS VARIATIONS DEPTH AND LINE MAY OCCUR. ALL TELECOMMUNICATIONS LINES ARE DETECTABLE. FOR ANY QUERIES, PLEASE CONTACT THE PERSON AT THE RETURN LETTER TO THE MARK PLANT REQUEST.
4. REACH NETWORKS HONG KONG LIMITED'S PLANT INCLUDED.

*FOR EMERGENCY REQUEST, YOU MAY CALL 2888 9889 For DETAILS.

KEY OF PLANT	EXISTING	PROPOSED
MANHOLE	■	▨
JOINT BOX	■	▨
DUCT	———	- - - -
CABLE	.....	.....
POLE	○	○
CABINET	⊠	⊡
BURIED COUPLING	×	

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Appendix G

General Building Plan

Appendix G1A

General Building Plan
1.5 Wings Option

NORTH

2SW-D/F7

INFLUENCE ZONE

BLOCK B ENTRANCE
SITE MAIN ENTRANCE
BLOCK A ENTRANCE

2SW-D/F6

EXTG
CAR
PARK

DEEP BAY ROAD / EVA

TSIM BEI TSUI
POLICE POST

2SW-D/F28

BLK A

BLK B

RC PLINTH
(375m²)

2SW-D/C24

ELE. CUT OUT
EMERGENCY GENERATOR ROOM
FS PUMP ROOM

F.S. WATER TANK
245m³ VOLUME
= 16m (L) x 6m x (W) x 2.6 m (H)

2SW-D/F3

INFLUENCE ZONE

DRAFT

LEGEND :

- PROPOSED SITE BOUNDARY
- SLOPE INFLUENCE ZONE
- SLOPE FEATURE
- H-POLE WITH 11kV SWITCHGEAR
- EXISTING ROAD
- CONCRETE PAVING : PEDESTRIAN GRADE
- CONCRETE PAVING : VEHICULAR GRADE
- INTERNAL AGREED EVA

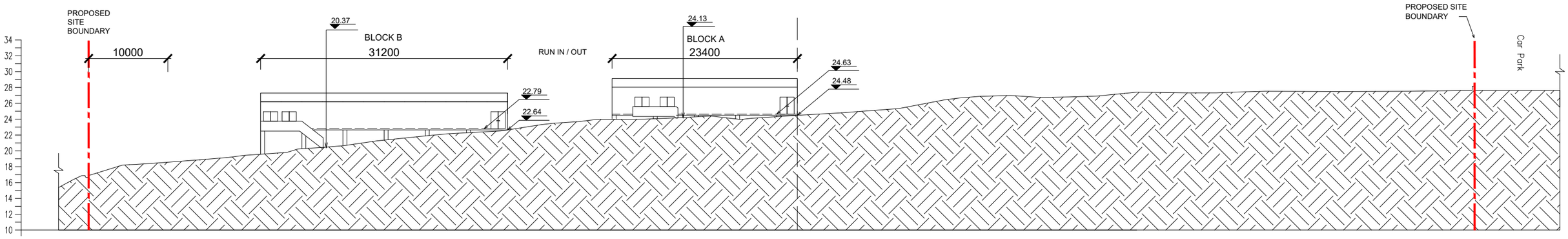
思 建 設 計 顧 問 有 限 公 司
C Arch Design Consultant Limited

EPD SUPERSITE TSIM BEI TSUI MASTER LAYOUT PLAN

1:500 (A3)

1

24 - 03 - 2025



SCHEMATIC ELEVATION K-K

REMARK : FOR INDICATION ONLY

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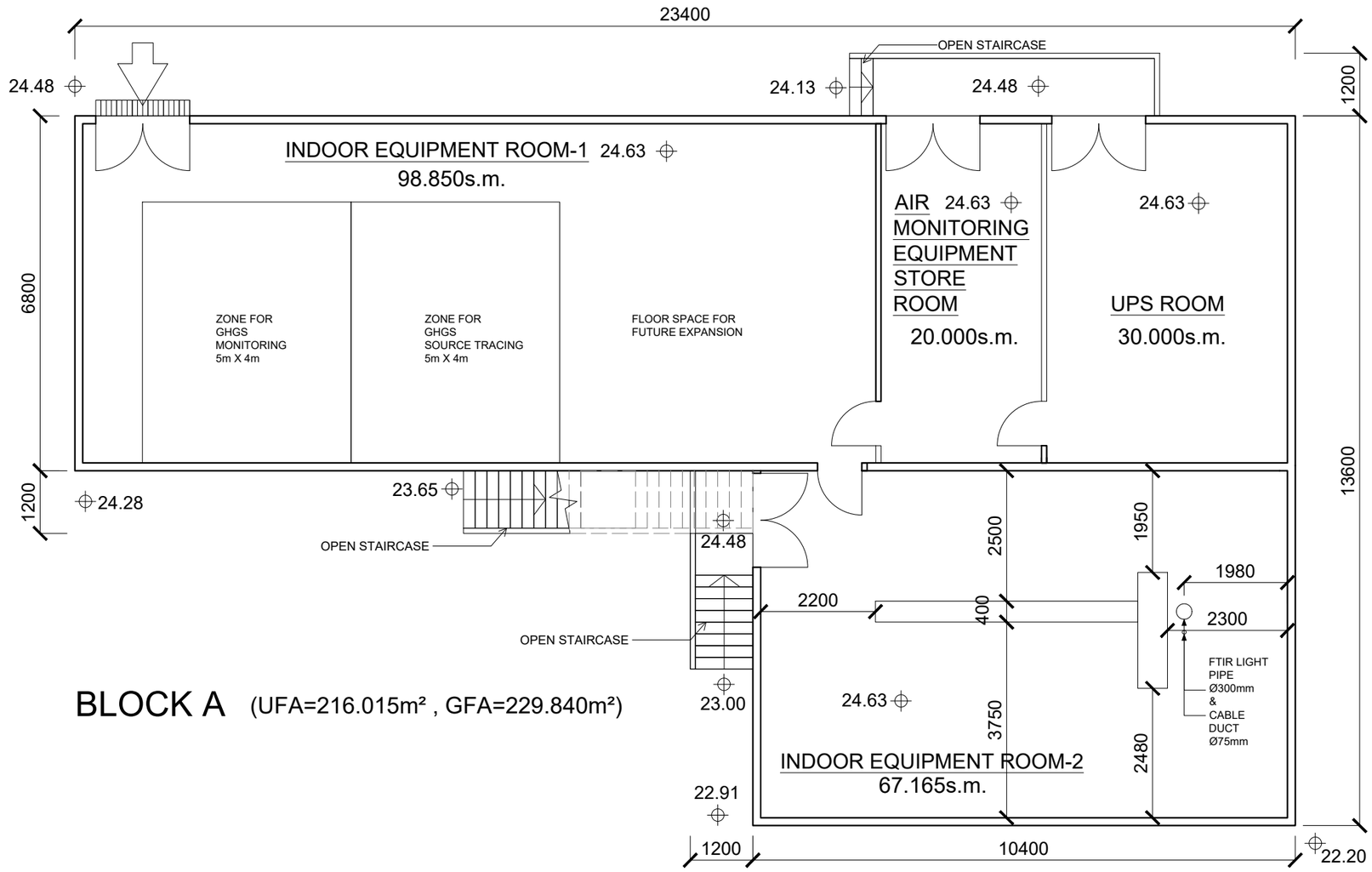
EPD SUPERSITE TSIM BEI TSUI SCHEMATIC SECTION K-K

1:500 (A3)

24 - 03 - 2025



BLOCK A (UFA=216.015m² , GFA=229.840m²)

	ROOM	REQ. UFA	PRO. UFA
BLK A	INDOOR EQUIPMENT ROOM-1	100.450	98.850 ↓
	INDOOR EQUIPMENT ROOM-2	65.000	67.165 ↑
	AIR MONITORING EQUIPMENT STORE ROOM	20.000	20.000
	UPS ROOM	30.000	30.000

DRAFT

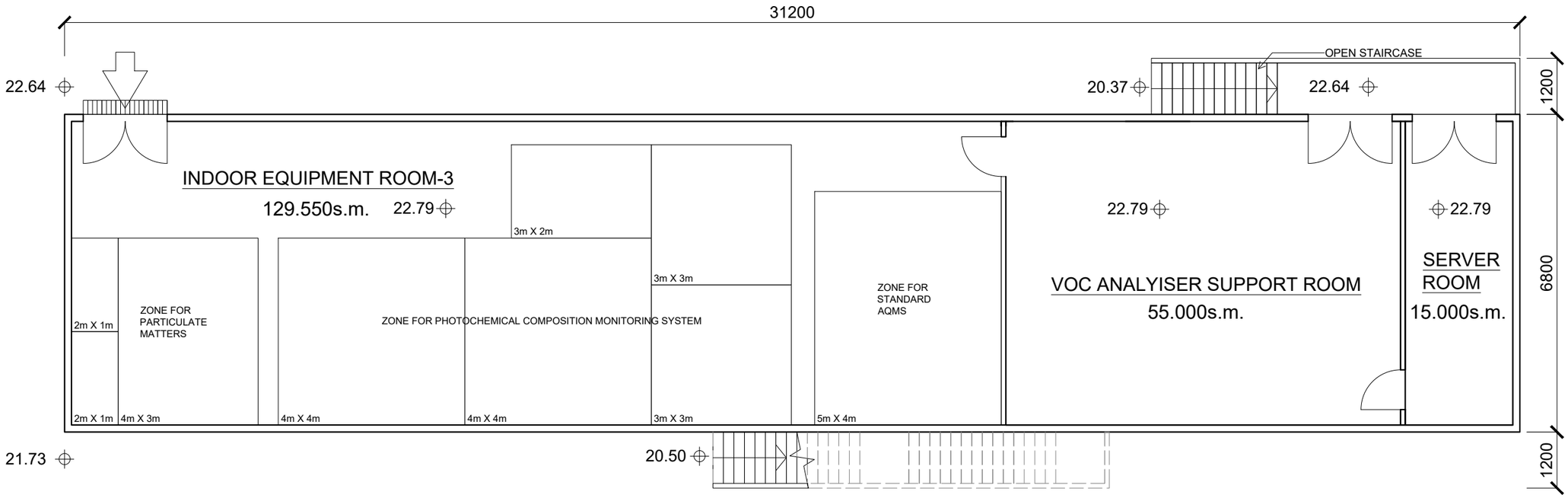
思建設計顧問有限公司
C Arch Design Consultant Limited

EPD SUPERSITE TSIM BEI TSUI LAYOUT PLAN (1)

1:100 (A3)

3a

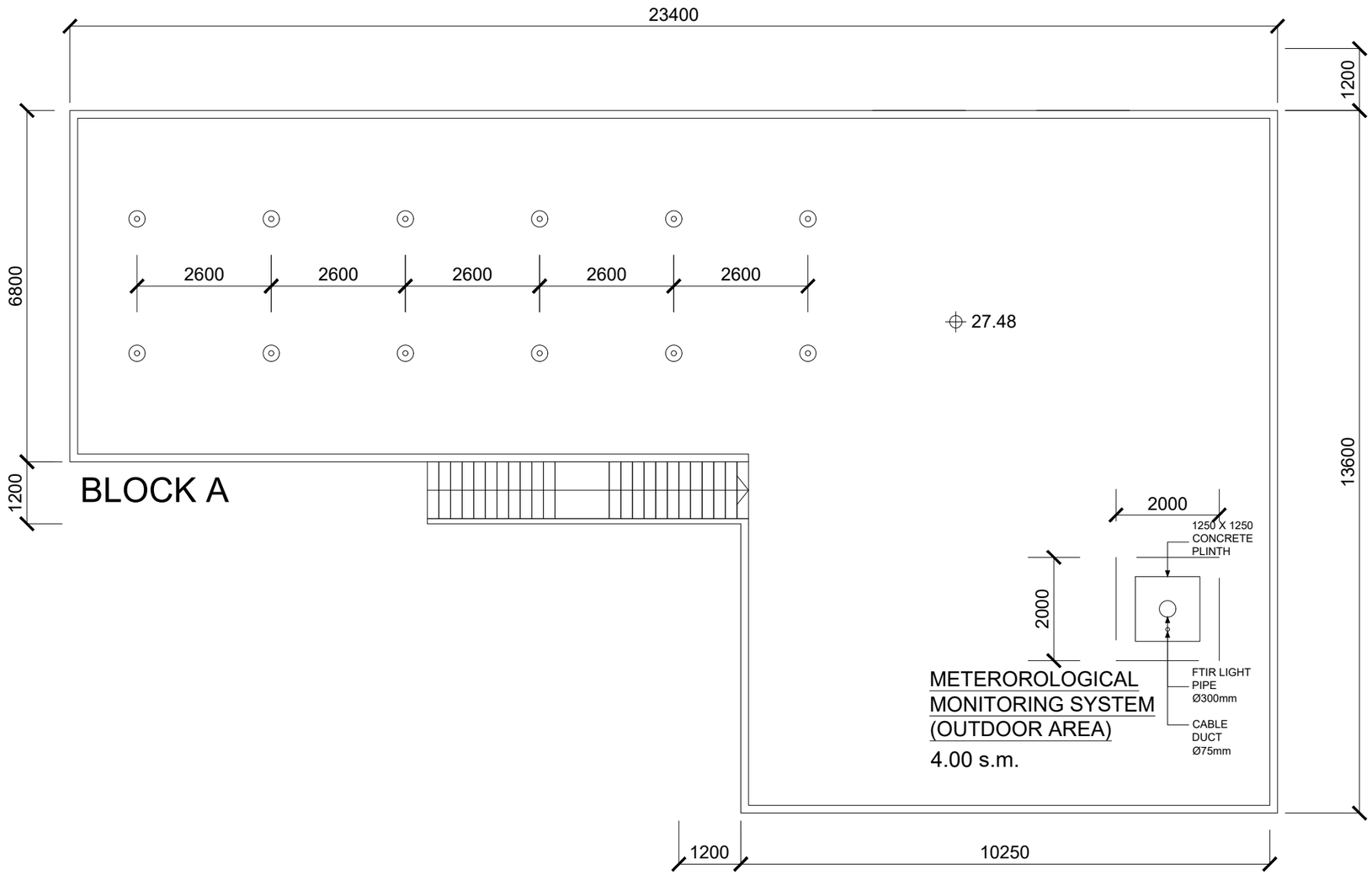
24 - 03 - 2025



BLOCK B (UFA=199.550m² , GFA=212.160m²)

	ROOM	REQ. UFA	PRO. UFA
BLK B	INDOOR EQUIPMENT ROOM-3	129.550	129.550
	VOC ANALYISER SUPPORT ROOM	55	55
	SERVER ROOM	15	15

DRAFT



DRAFT

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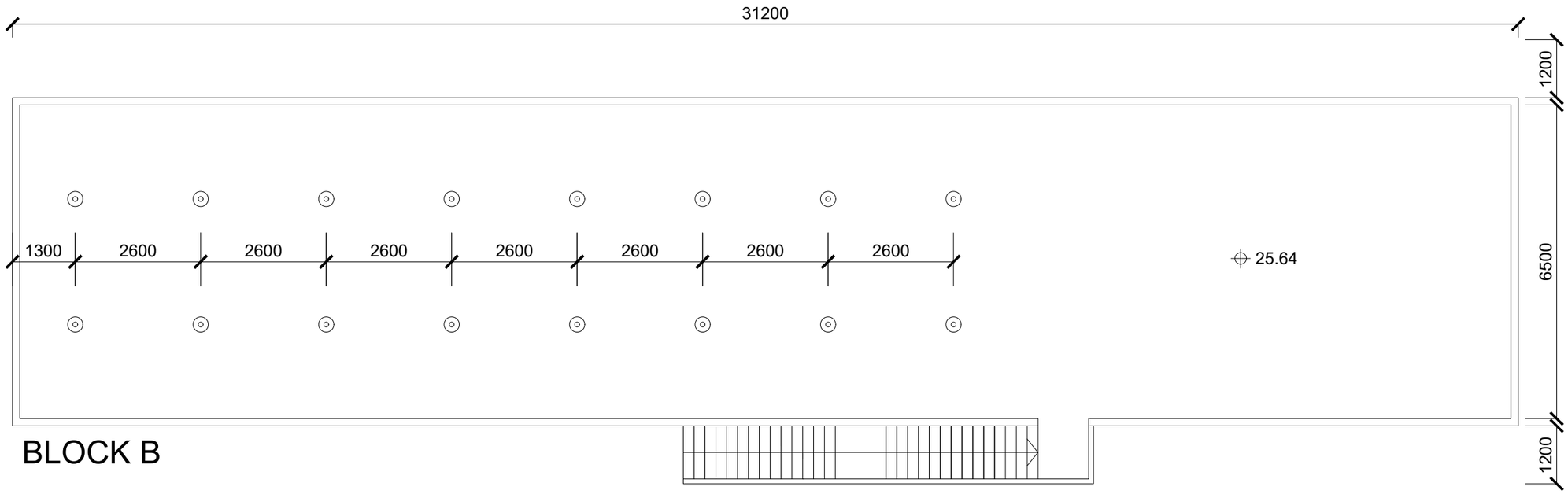
C Arch Design Consultant Limited

EPD SUPERSITE TSIM BEI TSUI ROOF PLAN (1)

1:100 (A3)

4a

24 - 03 - 2025



BLOCK B

DRAFT

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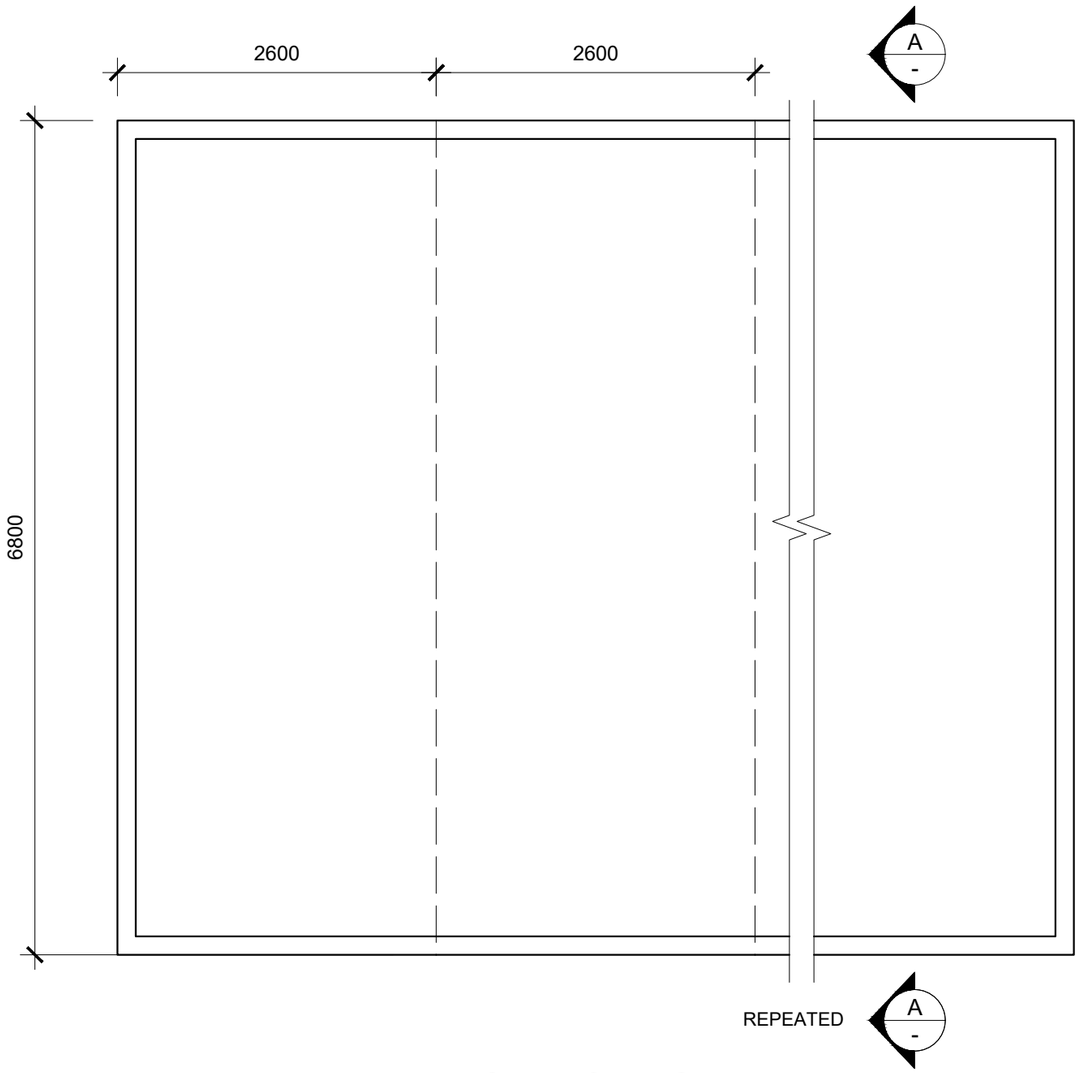
EPD SUPERSITE TSIM BEI TSUI ROOF PLAN (2)

1:100 (A3)

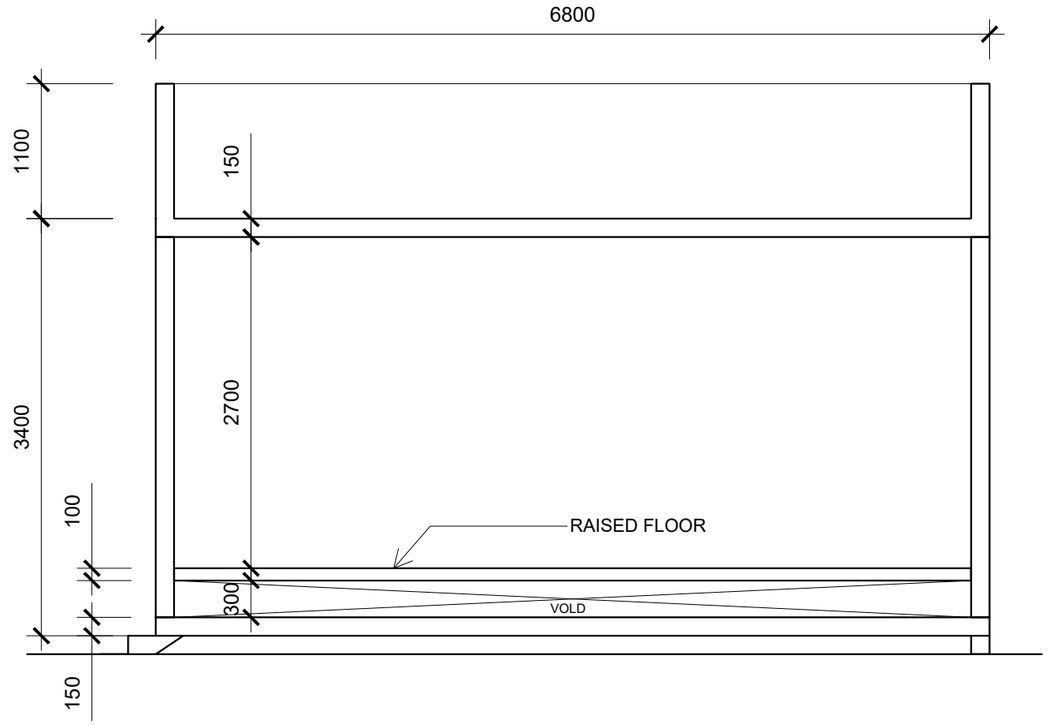
4b

24 - 03 - 2025



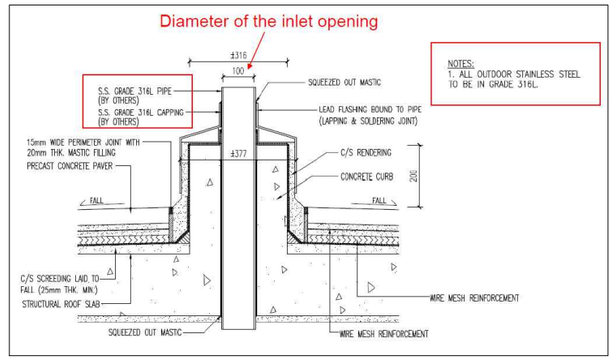
TYPICAL MIC LAYOUT

1:50



TYPICAL SECTION A-A

1:50



TYPICAL SLAB OPENING DETAIL

1:20

DRAFT

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C Arch Design Consultant Limited

EPD SUPERSITE TSIM BEI TSUI MIC LAYOUT & SECTION

SCALE AS SHOWN (A3)

Appendix G1B

General Building Plan
2 Wings Option

NORTH

2SW-D/F7

BLOCK B ENTRANCE
SITE MAIN ENTRANCE
BLOCK A ENTRANCE

INFLUENCE ZONE

2SW-D/F6

EXTG
CAR
PARK

DEEP BAY ROAD / EVA

TSIM BEI TSUI
POLICE POST

2SW-D/F28

9000
6000
8000
24.00
24.40
23.37
25.52
BLK A
6000
6000
21.60
1800
2480
23.67
22.71
C1
C2
BLK B
20.24
4560
25.17
20.73
23.01
RC PLINTH
(375m²)
21.03
3030
19.40
17.82
19.70

2SW-D/C24

ELE. CUT OUT
EMERGENCY GENERATOR ROOM
FS PUMP ROOM

F.S. WATER TANK
245m³ VOLUME
= 16m (L) x 6m x (W) x 2.6 m (H)

2SW-D/F3

4000

INFLUENCE ZONE

DRAFT

LEGEND :

- PROPOSED SITE BOUNDARY
- SLOPE INFLUENCE ZONE
- SLOPE FEATURE
- H-POLE WITH 11kV SWITCHGEAR
- EXISTING ROAD
- CONCRETE PAVING : PEDESTRIAN GRADE
- CONCRETE PAVING : VEHICULAR GRADE
- INTERNAL AGREED EVA

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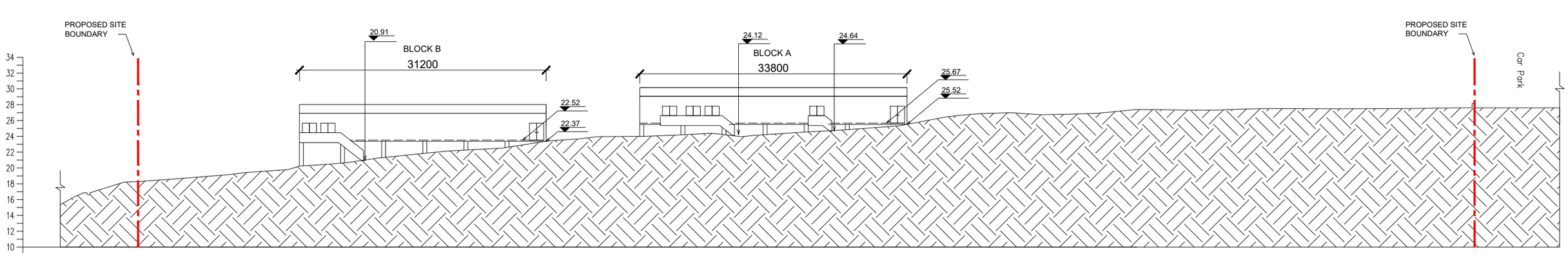
C Arch Design Consultant Limited

EPD SUPERSITE TSIM BEI TSUI MASTER LAYOUT PLAN (VERSION B)

1:500 (A3)

1A

24 - 03 - 2025



SCHEMATIC ELEVATION K-K

REMARK : FOR INDICATION ONLY

DRAFT

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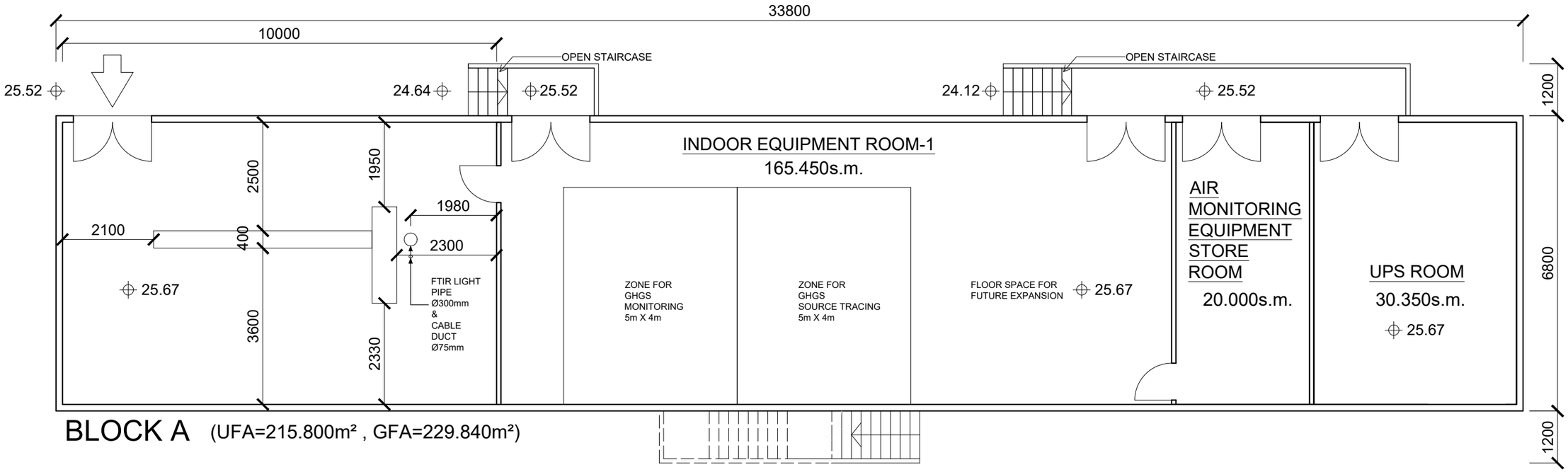
EPD SUPERSITE TSIM BEI TSUI SCHEMATIC SECTION K-K

1:500 (A3)

24 - 03 - 2025



	ROOM	REQ. UFA	PRO. UFA
BLK A	INDOOR EQUIPMENT ROOM-1	165.450	165.450
	AIR MONITORING EQUIPMENT STORE ROOM	20	20
	UPS ROOM	30	30.350
BLK B	INDOOR EQUIPMENT ROOM-2	129.550	129.550
	VOC ANALYISER SUPPORT ROOM	55	55
	SERVER ROOM	15	15

DRAFT

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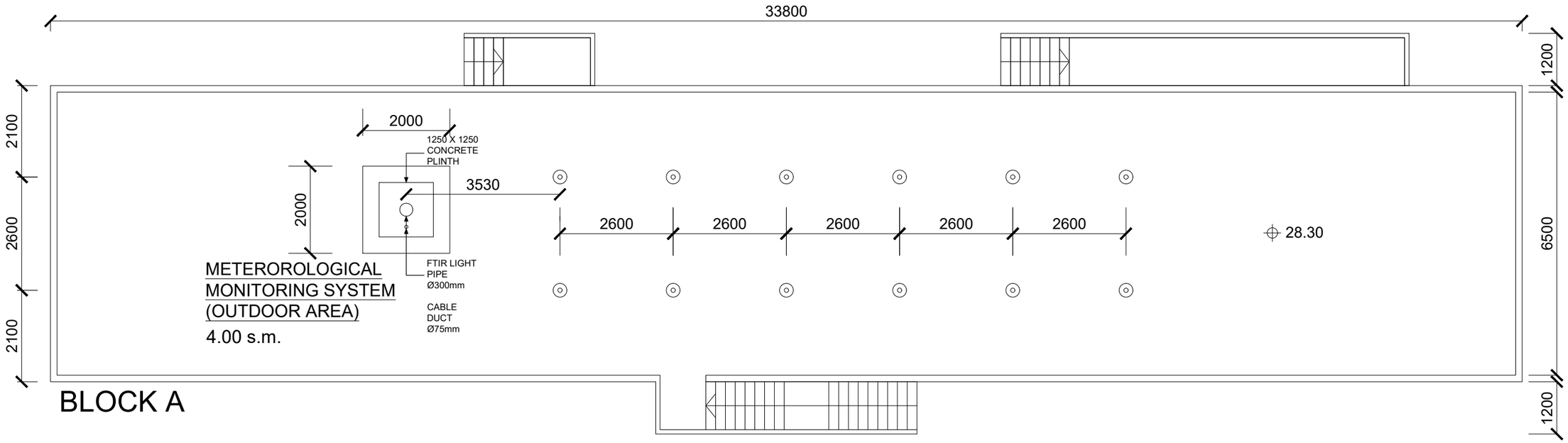
C Arch Design Consultant Limited

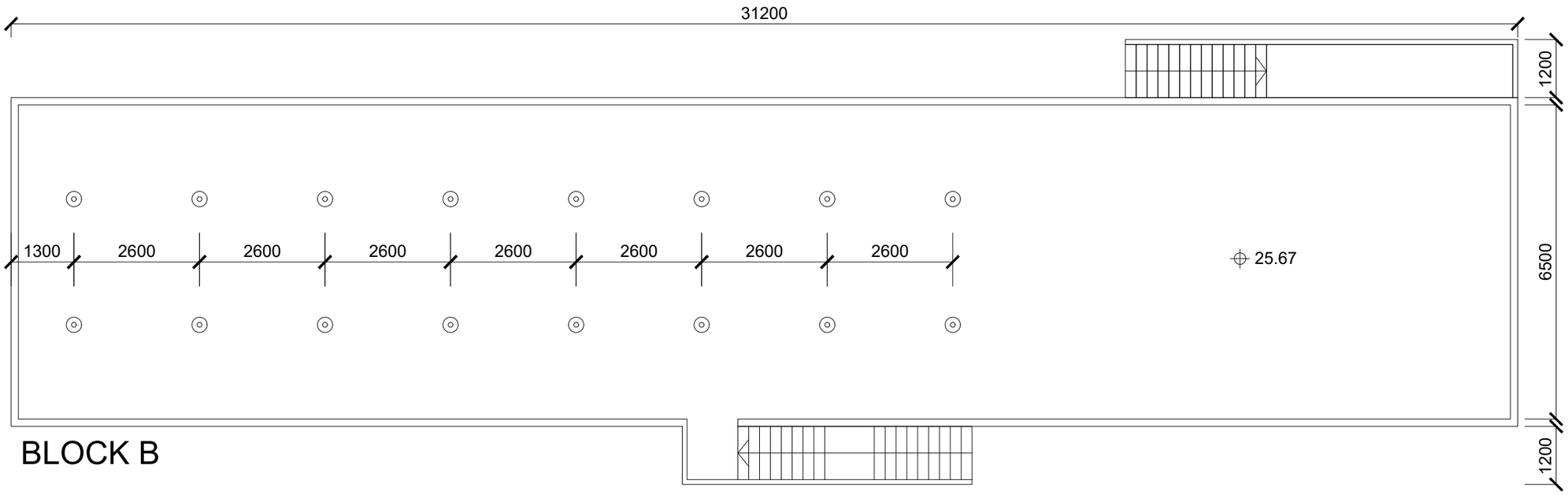
EPD SUPERSITE TSIM BEI TSUI LAYOUT PLAN

1:100 (A3)

3

24 - 03 - 2025





DRAFT

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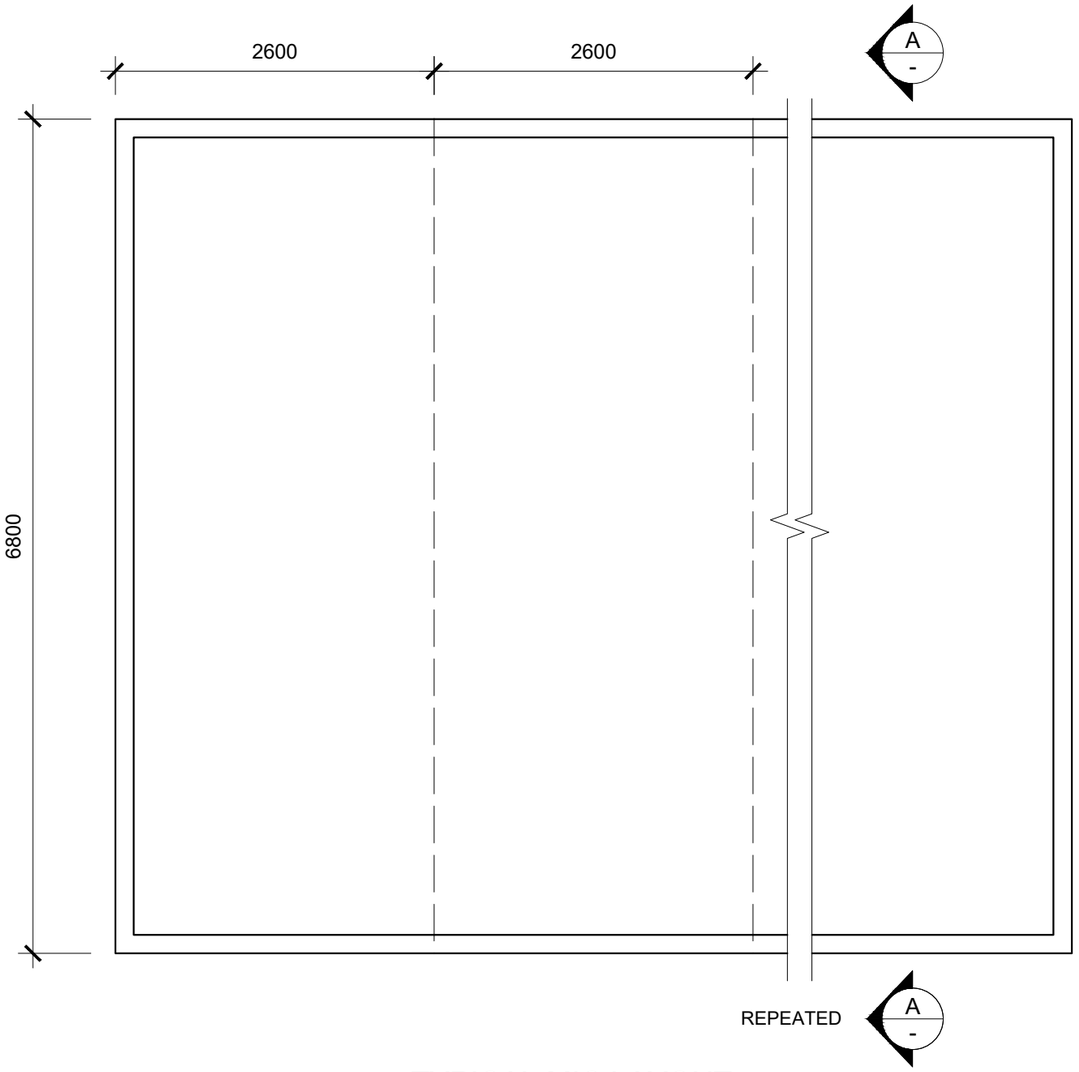
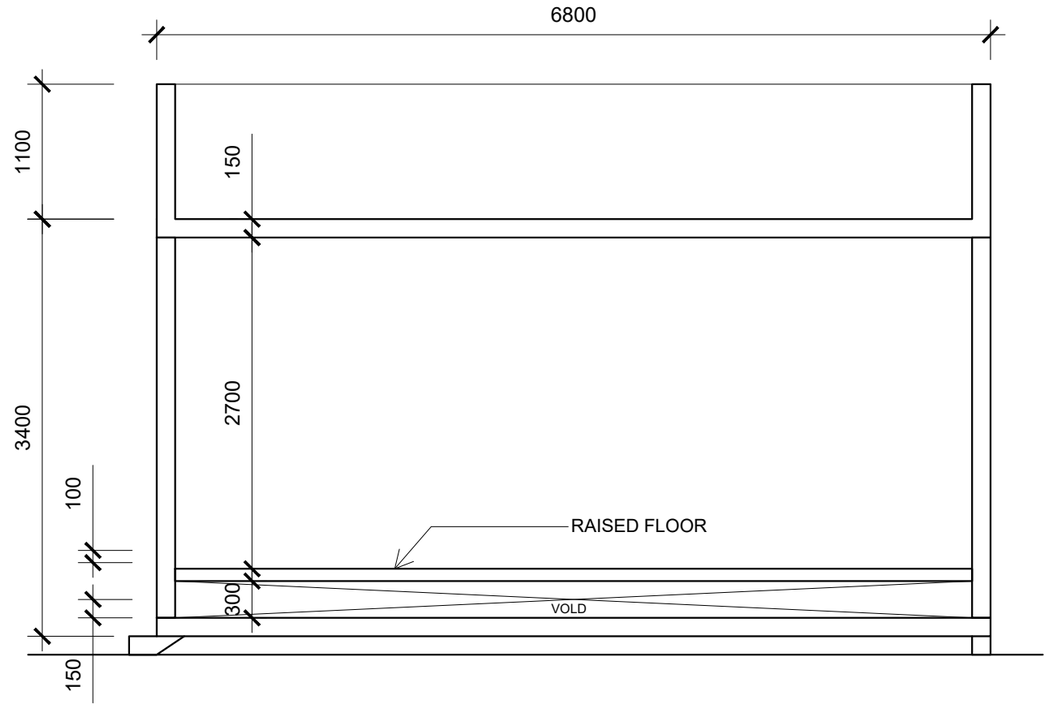
EPD SUPERSITE TSIM BEI TSUI ROOF PLAN
1:100 (A3)

4
24 - 03 - 2025



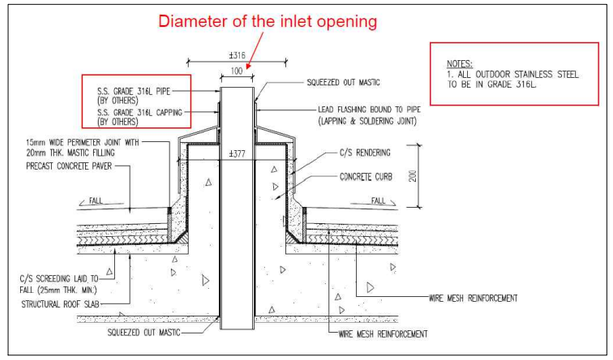
TYPICAL MIC LAYOUT

1:50



TYPICAL SECTION A-A

1:50



TYPICAL SLAB OPENING DETAIL

1:20

DRAFT

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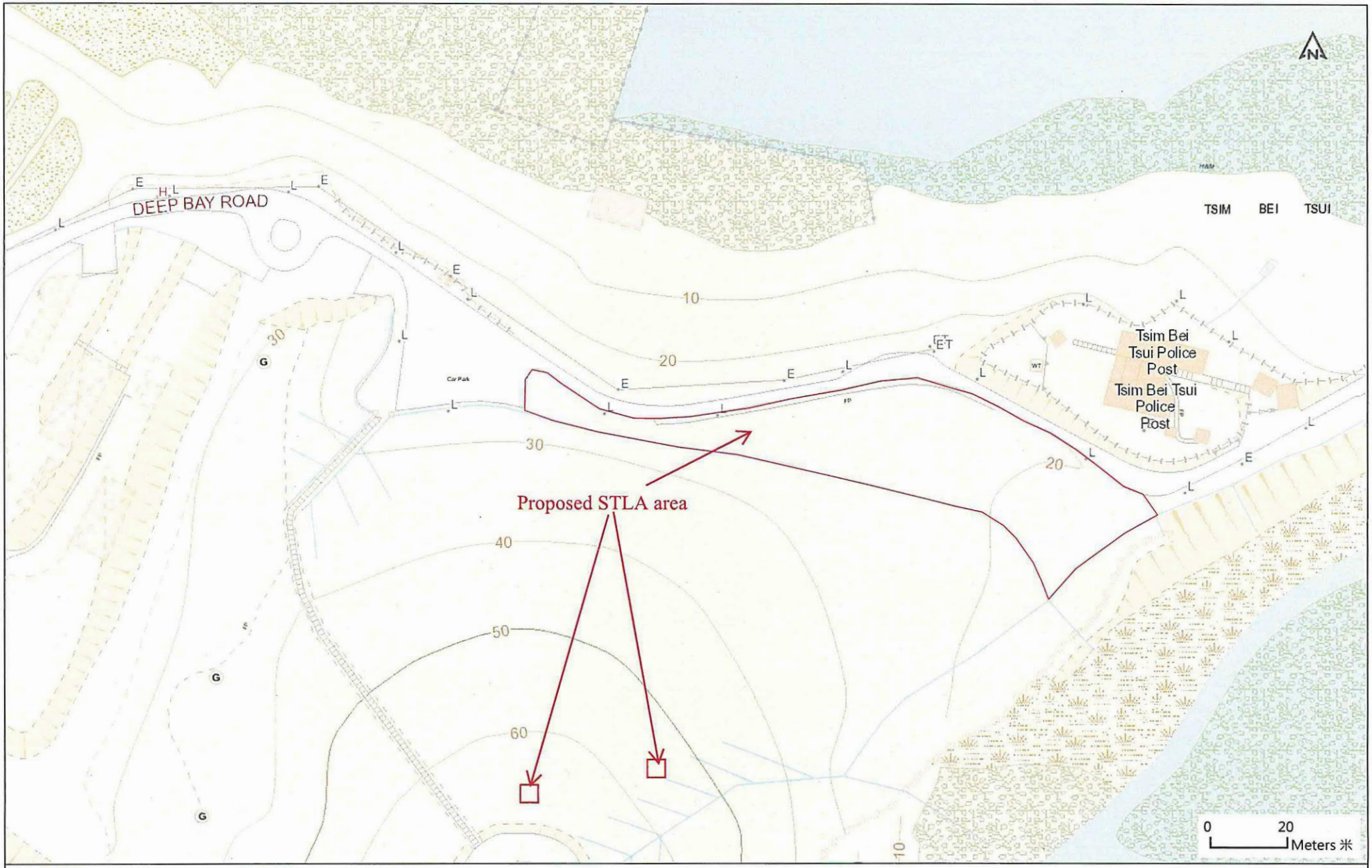
EPD SUPERSITE TSIM BEI TSUI MIC LAYOUT & SECTION

SCALE AS SHOWN (A3)

Appendix H-1

Plan of Proposed Ground Investigation Works



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Print Date
列印日期 : 25 / 07 / 2025

Appendix II

后海灣
（深圳灣）
DEEP BAY
(SHENZHEN BAY)

N

尖鼻咀
TSIM BEI TSUI

深灣路
DEEP BAY ROAD
停車場
Car Park
尖鼻咀警崗
Tsim Bei Tsui Police Post

BH01
BH02
BH03
BH04 (S/P)
BH05
BH06
BH07
BH09
BH10
BH11
DH01 (S/P)
DH02
DH03 (S/P)
DH05 (S/P)

SLOPE NO. 2SW-D/F 8
SLOPE NO. 2SW-D/F 5
SLOPE NO. 2SW-D/F 4
SLOPE NO. 2SW-D/C 23
SLOPE NO. 2SW-D/F 6
SLOPE NO. 2SW-D/F 7
SLOPE NO. 2SW-D/F 2
SLOPE NO. 2SW-D/C 24
SLOPE NO. 2SW-D/C 28
SLOPE NO. 2SW-D/F 3

N 838500
N 838400
E 818900
E 819000
E 819100

Investigation Station Nos.		Co-ordinates		Ground Levels	Remarks
		Easting	Northing	(mPD)	
1	BH01	819105.12	838478.67	+20.32	Top of Vertical Drillhole
2	BH02	819110.95	838455.27	+17.55	Top of Vertical Drillhole
3	BH03	819095.62	838482.28	+21.03	Top of Vertical Drillhole
4	BH05	819061.06	838477.23	+23.68	Top of Vertical Drillhole
5	BH06	819073.52	838464.64	+22.90	Top of Vertical Drillhole
6	BH07	819053.05	838485.68	+24.55	Top of Vertical Drillhole
7	BH09	819052.83	838447.40	+29.18	Top of Vertical Drillhole
8	BH10	819026.45	838485.96	+26.91	Top of Vertical Drillhole
9	BH11	819030.77	838476.41	+26.71	Top of Vertical Drillhole
10	DH01 (S/P)	819127.88	838461.79	+17.64	Top of Vertical Drillhole
11	DH02	819092.71	838472.68	+20.54	Top of Vertical Drillhole
12	DH03 (S/P)	819071.31	838489.25	+23.45	Top of Vertical Drillhole
13	DH04 (S/P)	819073.00	838443.36	+24.87	Top of Vertical Drillhole
14	DH05 (S/P)	819008.37	838485.07	+27.35	Top of Vertical Drillhole

NOTES

1.ALL LEVELS ARE IN METRES ABOVE PRINCIPAL DATUM.

LEGEND

BH01 VERTICAL DRILLHOLE

SITE BOUNDARY

PROJECT TITLE
PWP Item No. 743ZX - Guangdong-Hong Kong -Macao Greater Bay Area (GBA) A r Quality Laboratory and Meteorological Monitoring Supers te, Yuen Long

WORKS ORDER NO.
ASD 012935

CONTRACT NO.
TC K510

CONTRACT
Term Contact for Ground Investigation and Laboratory Testing for Which The Architectural Services Department is Responsible for The Whole Territory of Hong Kong

Investigation Station Location Plan

SCALE
1:1000(A3) OR AS SHOWN

JOB NO. J2105SF14

TYSAN FOUNDATION LIMITED
泰昇地基工程有限公司

Appendix H-2

GI Report (Phase 1)

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
(泰昇集團成員 A member of Tysan Group)

CONTRACT NO.: TC K510

TERM CONTRACT FOR GROUND INVESTIGATION AND LABORATORY TESTING FOR WHICH THE ARCHITECTURAL SERVICES DEPARTMENT IS RESPONSIBLE FOR THE WHOLE TERRITORY OF HONG KONG

WORKS ORDER NO.: ASD 012935

PWP ITEM NO. 743ZX - GUANGDONG-HONG KONG-MACAO GREATER BAY AREA (GBA) AIR QUALITY LABORATORY AND METEOROLOGICAL MONITORING SUPERSITE, YUEN LONG

FINAL FIELDWORK REPORT
(Ground Investigation Works)

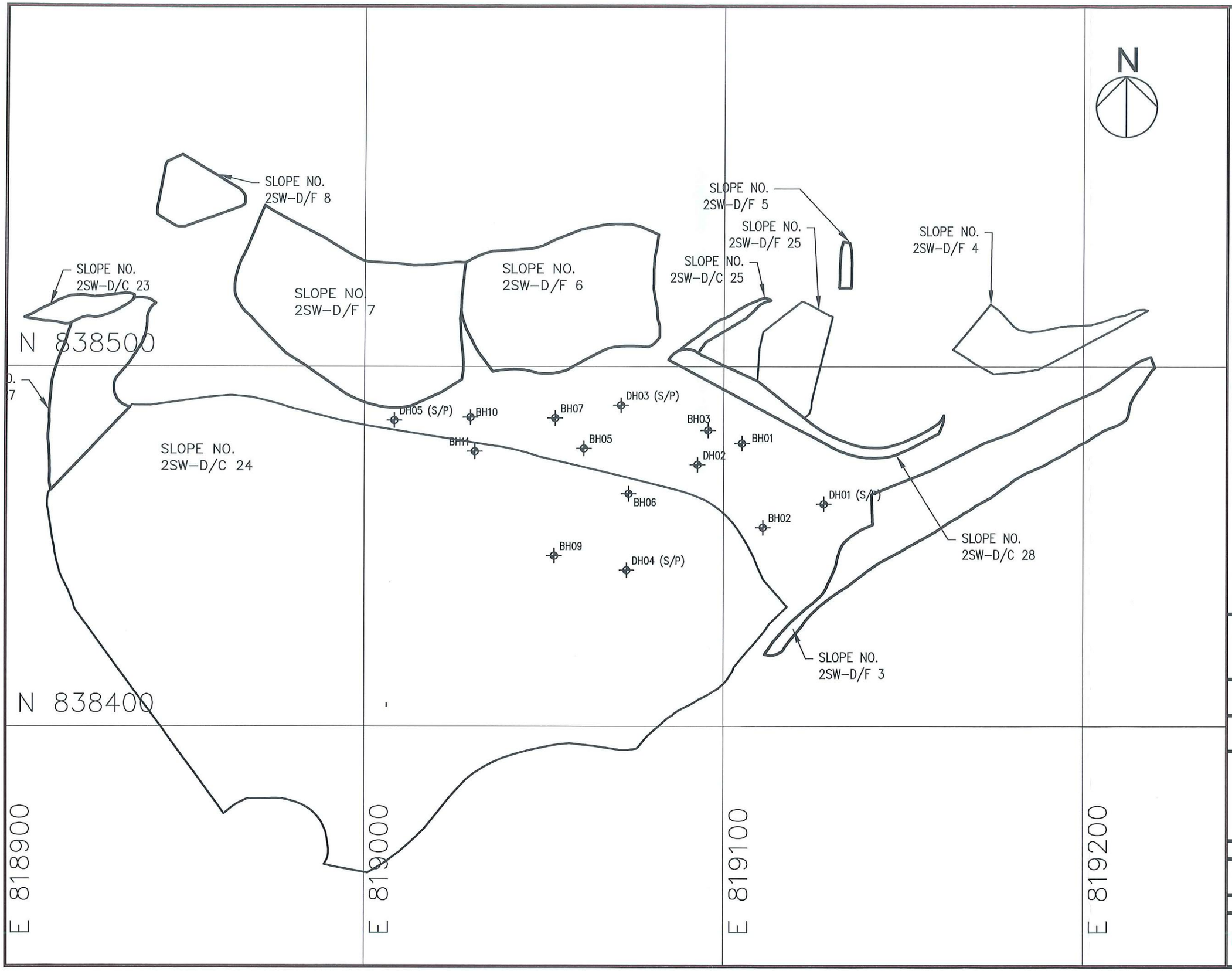
(REPORT NO.: J2105SF14/012935/GI/01)

This fieldwork report was certified as being accurate, correct and complete by the undersigned

Chong Kwun Ying, Ivan
Authorized Signatory
31 July 2024

CLIENT
Architectural Services Department

MAIN CONTRACTOR
Tysan Foundation Limited
20/F One Island South,
2 Heung Yip Road,
Wong Chuk Hang
Hong Kong



NOTES

1.ALL LEVELS ARE IN METRES ABOVE PRINCIPAL DATUM.

LEGEND

BH01 VERTICAL DRILLHOLE

SITE BOUNDARY

PROJECT TITLE

PWP Item No. 743ZX - Guangdong-Hong Kong -Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

WORKS ORDER NO.

ASD 012935

CONTRACT NO.

TC K510

CONTRACT

Term Contact for Ground Investigation and Laboratory Testing for Which The Architectural Services Department is Responsible for The Whole Territory of Hong Kong

Investigation Station Location Plan

SCALE

1:1000(A3) OR AS SHOWN

JOB NO. J2105SF14

TYSAN FOUNDATION LIMITED
泰昇地基工程有限公司

CONTRACT NO.: TC K510

TERM CONTRACT FOR GROUND INVESTIGATION AND LABORATORY TESTING FOR WHICH THE ARCHITECTURAL SERVICES DEPARTMENT IS RESPONSIBLE FOR THE WHOLE TERRITORY OF HONG KONG

WORKS ORDER NO.: ASD 012935

PWP ITEM NO. 743ZX - GUANGDONG-HONG KONG-MACAO GREATER BAY AREA (GBA) AIR QUALITY LABORATORY AND METEOROLOGICAL MONITORING SUPERSITE, YUEN LONG

TABLE 1 – INVESTIGATION STATIONS CO-ORDINATES AND LEVELS

Investigation Station Nos.		Co-ordinates		Ground Levels	Remarks
		Easting	Northing	(mPD)	
1	BH01	819105.12	838478.67	+20.32	Top of Vertical Drillhole
2	BH02	819110.95	838455.27	+17.55	Top of Vertical Drillhole
3	BH03	819095.62	838482.28	+21.03	Top of Vertical Drillhole
4	BH05	819061.06	838477.23	+23.68	Top of Vertical Drillhole
5	BH06	819073.52	838464.64	+22.90	Top of Vertical Drillhole
6	BH07	819053.05	838485.68	+24.55	Top of Vertical Drillhole
7	BH09	819052.83	838447.40	+29.18	Top of Vertical Drillhole
8	BH10	819026.45	838485.96	+26.91	Top of Vertical Drillhole
9	BH11	819030.77	838476.41	+26.71	Top of Vertical Drillhole
10	DH01 (S/P)	819127.88	838461.79	+17.64	Top of Vertical Drillhole
11	DH02	819092.71	838472.68	+20.54	Top of Vertical Drillhole
12	DH03 (S/P)	819071.31	838489.25	+23.45	Top of Vertical Drillhole
13	DH04 (S/P)	819073.00	838443.36	+24.87	Top of Vertical Drillhole
14	DH05 (S/P)	819008.37	838485.07	+27.35	Top of Vertical Drillhole

CONTRACT NO.: TC K510

TERM CONTRACT FOR GROUND INVESTIGATION AND LABORATORY TESTING FOR WHICH THE ARCHITECTURAL SERVICES DEPARTMENT IS RESPONSIBLE FOR THE WHOLE TERRITORY OF HONG KONG

WORKS ORDER NO.: ASD 012935

PWP ITEM NO. 743ZX - GUANGDONG-HONG KONG-MACAO GREATER BAY AREA (GBA) AIR QUALITY LABORATORY AND METEOROLOGICAL MONITORING SUPERSITE, YUEN LONG

TABLE 2 - SUMMARY OF DRILLHOLE RECORDS

Drillhole No.		Termination Depth	FILL/ TOPSOIL		Wash boring		COLLUVIUM		RESIDUAL SOIL		COMPLETELY TO HIGHLY DECOMPOSED GRANITE		VARIABLY DECOMPOSED GANITE/ MYLONITE/ FAULT GOUGE/ FAULT BRECCIA		MODERATELY DECOMPOSED GRANITE/ FAULT BRECCIA	
		m	Depth (m)	thickness (m)	Depth (m)	thickness (m)	Depth (m)	thickness (m)	Depth (m)	thickness (m)	Depth (m)	thickness (m)	Depth (m)	thickness (m)	Depth (m)	thickness (m)
1	BH01	43.85	- to -	-	- to -	-	- to -	-	0.00 to 0.40	0.40	0.40 to 13.15	12.75	13.15 to 37.10	23.95	37.10 to 43.85	6.75
2	BH02	34.15	0.00 to 1.00	1.00	1.00 to 2.00	1.00	- to -	-	- to -	-	2.00 to 15.15	13.15	15.15 to 24.50	9.35	24.50 to 34.15	9.65
3	BH03	48.81	0.00 to 0.25	0.25	- to -	-	- to -	-	- to -	-	- to -	-	0.25 to 43.67	43.42	43.67 to 48.81	5.14
4	BH05	29.39	0.00 to 0.45	0.45	0.45 to 2.00	1.55	- to -	-	- to -	-	2.00 to 4.30	2.30	4.30 to 24.33	20.03	24.33 to 29.39	5.06
5	BH06	31.15	0.00 to 1.00	1.00	1.00 to 2.00	1.00	- to -	-	- to -	-	2.00 to 4.60	2.60	4.60 to 30.14	25.54	30.14 to 31.15	1.01
6	BH07	39.35	0.00 to 0.80	0.80	0.80 to 2.00	1.20	- to -	-	- to -	-	2.00 to 4.20	2.20	4.20 to 22.54	18.34	22.54 to 39.35	16.81
7	BH09	30.21	- to -	-	- to -	-	0.00 to 0.45	0.45	- to -	-	- to -	-	0.45 to 30.21	29.76	- to -	-
8	BH10	39.35	0.00 to 0.50	0.50	- to -	-	- to -	-	- to -	-	- to -	-	0.50 to 39.35	38.85	- to -	-
9	BH11	30.56	0.00 to 0.40	0.40	0.40 to 2.00	1.60	- to -	-	- to -	-	2.00 to 3.50	1.50	3.50 to 30.56	27.06	- to -	-
10	DH01 (S/P)	21.77	0.00 to 0.50	0.50	0.50 to 2.00	1.50	- to -	-	2.00 to 2.90	0.90	2.90 to 6.90	4.00	6.90 to 11.80	4.90	11.80 to 21.77	9.97
11	DH02	40.00	- to -	-	- to -	-	- to -	-	0.00 to 0.50	0.50	- to -	-	0.50 to 40.00	39.50	- to -	-
9	DH03 (S/P)	49.08	0.00 to 0.20	0.20	- to -	-	- to -	-	- to -	-	0.20 to 0.35	0.15	0.35 to 40.28	39.93	40.28 to 49.08	8.80
10	DH04 (S/P)	30.00	0.00 to 0.20	0.20	- to -	-	- to -	-	- to -	-	- to -	-	0.20 to 30.00	29.80	- to -	-
11	DH05 (S/P)	36.07	0.00 to 2.00	2.00	- to -	-	2.00 to 2.90	0.90	- to -	-	2.90 to 3.00	0.10	3.00 to 36.07	33.07	- to -	-

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
（泰昇集團成員 A member of Tysan Group）

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. **BH01**

SHEET 1 of 5

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED	CO-ORDINATES	W.O. No. ASD 012935
MACHINE / No. MSK-23	E 819 105.12 N 838 478.67	DATE from 27/05/2024 to 18/06/2024
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +20.32 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No.	Type	Depth	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
27/05/2024	HW	Dry at 08:00									0.00	+20.32	0.00			
									A		0.35	+19.92	0.40		VI	Yellowish brown (10YR 5/4), silty medium to coarse SAND with much angular fine to medium gravel sized moderately strong granite and quartz. (RESIDUAL SOIL)
			80	92	0	0	NI			T2-101	0.40				V	
											0.90	+19.42	0.90			Moderately strong, white dappled yellowish brown, moderately decomposed silicified GRANITE. (Sandy fine to coarse GRAVEL)
																Weak, pale brown (10YR 8/3), highly decomposed silicified GRANITE. (Sandy fine to coarse GRAVEL)
								(5, 10, 18, 20, 28, 45) N=111	1		2.00					
									2		2.45					
			70								2.90				IV	
				95					3							
		Dry at 18:00														
27/05/2024											3.90					
28/05/2024		Dry at 08:00						(50/30mm 200/40mm) N=200/40 mm	4		4.00					
									5		4.07					
											4.50	+15.82	4.50			Weak, yellowish brown (10YR 5/4) and pale brown (10YR 8/3), highly decomposed brecciated and silicified GRANITE. (Sandy fine to coarse GRAVEL with much cobble)
				100	0	0				T2-101						
											5.40					
				100	0	0	NA			T2-101					IV	
											6.30					
				100	0	0				T2-101						
												+13.37	6.95			
							NI					+13.12	7.20		III	
			80								7.20					6.95-7.20m: Moderately strong, moderately decomposed.
				100	0	0				T2-101						
											8.10					
				100	0	0	NA			T2-101					IV	
											9.00					
				100	0	0				T2-101						
28/05/2024		Dry at 18:00								T2-101	9.90	+10.42 +10.32	9.90 10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Standard Penetration Test
- Permeability Test
- Packer Test
- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED
BARRY YIU

DATE
19/06/2024

CHECKED
MICHAEL XU

DATE
20/06/2024

REMARKS
1. Inspection pit excavated from 0.00m-0.40m.

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
(泰昇集團成員 A member of Tysan Group)

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. **BH01**

SHEET 2 of 5

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED	CO-ORDINATES	W.O. No. ASD 012935
MACHINE / No. MSK-23	E 819 105.12 N 838 478.67	DATE from 27/05/2024 to 18/06/2024
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +20.32 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
29/05/2024		Dry at 08:00		100	0	0	NI		T2-101 10.80	+10.32	10.00		III	9.90-10.80m: Moderately strong, moderately decomposed.
				100	0	0			T2-101 11.65	+9.52	10.80			
				100	0	0	NA		T2-101 12.50				IV	
				100	0	0			T2-101 13.35	+7.17	13.15			Moderately strong, white and yellowish brown, moderately decomposed brecciated and silicified GRANITE. Joints are very closely to closely spaced, smooth planar, extremely narrow to moderately narrow, iron oxide stained, dipping at 0°-10°, 20°-30°, 40°-50°, 70°-80° and subvertical. 13.15-28.50m: With cataclastic texture.
				100	0	0			T2-101 14.25					
				100	12	12	NI		T2-101 15.15					
			80	97	9	0			T2-101 16.60				III	
				100	18	0			T2-101 17.05					
				100	16	0	>20		T2-101 17.85					
		14.80m at 18:00		100	18	0			T2-101 18.80					
29/05/2024							20.0							
06/06/2024		15.10m at 08:00		100	25	11	NI		T2-101	+0.54	19.78			
		15.11m at					15.2							
							NA			+0.32	20.00		IV	

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Standard Penetration Test
- Permeability Test
- Packer Test
- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED BARRY YIU

DATE 19/06/2024

CHECKED MICHAEL XU

DATE 20/06/2024

REMARKS

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
(泰昇集團成員 A member of Tysan Group)

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. **BH01**

SHEET 3 of 5

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED	CO-ORDINATES	W.O. No. ASD 012935
MACHINE / No. MSK-23	E 819 105.12 N 838 478.67	DATE from 27/05/2024 to 18/06/2024
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +20.32 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
06/06/2024 18:00										+0.32	20.00			
07/06/2024		15.00m at 08:00		100	0	0	>20		20.10 T2-101	+0.22	20.10			19.78-20.10m: Moderately weak, highly decomposed. (Sandy fine to coarse GRAVEL with some cobble)
				100	0	0	NI		21.10 T2-101					
				100	0	0	>20		22.00 T2-101					
				100	17	12	13.6		22.95 T2-101				III	
			80	100	17	0	>20		23.90 T2-101					
				100	15	9	NI 14.3		25.10 T2-101					
				100	0	0	NA		26.30 T2-101	-5.98	26.30		IV	26.30-27.50m: Moderately weak, highly decomposed. (Sandy fine to coarse GRAVEL with some cobble)
07/06/2024		15.10m at 18:00							27.50 T2-101	-7.18	27.50		III	
08/06/2024		15.00m at 08:00		91	20	14	NI 6.7	I (50/40mm 200/40mm) N=200/40 mm	6 28.50 28.56	-8.18	28.50		V	Extremely weak, yellowish brown (10YR 5/6) dappled white, completely decomposed GRANITE. (Silty clayey fine to medium SAND with much fine to medium gravel)
			70							-9.68	30.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Standard Penetration Test
- Permeability Test
- Packer Test
- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED BARRY YIU

DATE 19/06/2024

CHECKED MICHAEL XU

DATE 20/06/2024

REMARKS

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
（泰昇集團成員 A member of Tysan Group）

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. **BH01**

SHEET 4 of 5

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED	CO-ORDINATES	W.O. No. ASD 012935
MACHINE / No. MSK-23	E 819 105.12 N 838 478.67	DATE from 27/05/2024 to 18/06/2024
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +20.32 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
										-9.68	30.00			
08/06/2024		15.00m at 18:00						(50/30mm 200/40mm) N=200/40 mm	7 30.50 30.57				V	As Sheet 3 of 5.
11/06/2024		15.00m at 08:00	70											
								(50/40mm 200/40mm) N=200/40 mm	8 32.50 32.58	-12.18	32.50		V	Extremely weak, pale brown (10YR 6/3), completely decomposed GRANITE. (Sandy fine to medium GRAVEL)
										-12.78	33.10		III	Very weak, yellowish brown (10YR 5/6) dappled red and grey, completely decomposed GRANITE. (Very stiff, sandy clayey SILT with some coarse gravel and cobble)
			80	100	20	20	4.5		33.10	-13.22	33.54		V	33.10-33.54m: Moderately strong, moderately decomposed brecciated and silicified GRANITE with cataclastic texture.
							NA		T2-101	-14.08	34.40			Extremely weak, pale brown (10YR 6/3), completely decomposed GRANITE. (Sandy fine to medium GRAVEL)
								(50/50mm 200/50mm) N=200/50 mm	9 34.40 34.50				V	
			70											
								(50/40mm 200/40mm) N=200/40 mm	10 36.40 36.48					
	37.10 HW								37.10	-16.78	37.10		III	Moderately strong, reddish brown dappled white and grey, moderately decomposed brecciated and silicified GRANITE. Joints are closely spaced, rough planar, extremely narrow to very narrow, iron and manganese oxides stained, dipping at 0°-10°, 20°-30° and 70°-80°. 37.10-38.30m: With cataclastic texture.
				100	67	56	NI		T2-101	-17.78	38.10			
							6.1			-17.98	38.30		IV	38.10-38.30m: Moderately weak, highly decomposed. (Sandy clayey COBBLE with some coarse gravel)
							NA		38.30					
			80	100	98	98	2.4		T2-101	-19.38	39.70		III	Moderately strong, reddish brown and brownish grey streaked white, moderately decomposed silicified GRANITE. Joints are closely to medium locally very closely spaced, rough and smooth planar, extremely narrow to very narrow, iron and manganese oxides stained, dipping at 0°-10°, 20°-30°, 40°-50°, 70°-80° and subvertical.
11/06/2024		15.10m at 18:00							39.70					
12/06/2024		15.10m at		100	61	34	12.7		T2-101	-19.68	40.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Standard Penetration Test
- Permeability Test
- Packer Test
- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED BARRY YIU

DATE 19/06/2024

CHECKED MICHAEL XU

DATE 20/06/2024

REMARKS

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
（泰昇集團成員 A member of Tysan Group）

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. **BH01**

SHEET 5 of 5

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED	CO-ORDINATES	W.O. No. ASD 012935
MACHINE / No. MSK-23	E 819 105.12 N 838 478.67	DATE from 27/05/2024 to 18/06/2024
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +20.32 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
		08:00		100	61	34	12.7		T2-101 40.50					38.30-43.85m: With cataclastic texture. 38.30-39.70m: Brecciated and silicified GRANITE.
							NI							
				100	77	17			T2-101 41.40					
			80				10.4						III	
				100	90	25			T2-101 42.40					
							16.7							
				100	43	43	4.3		T2-101 43.85					
							>20							
12/06/2024		15.20m at 18:00					11.1			-23.53	43.85			End of drillhole at 43.85m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Standard Penetration Test
- Permeability Test
- Packer Test
- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED BARRY YIU

DATE 19/06/2024

CHECKED MICHAEL XU

DATE 20/06/2024

REMARKS

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
（泰昇集團成員 A member of Tysan Group）

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. **BH02**

SHEET 1 of 4

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED	CO-ORDINATES	W.O. No. ASD 012935
MACHINE / No. DR-29	E 819 110.95 N 838 455.27	DATE from 12/04/2024 to 17/05/2024
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +17.55 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No.	Type	Depth	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
12/04/2024	SW	Dry at 08:00									0.00	+17.55	0.00			
12/04/2024									A		0.40	+17.10	0.45			Yellowish brown (10YR 5/6), silty medium to coarse SAND with much angular to subangular fine gravel of rock fragments. (FILL / TOPSOIL)
02/05/2024		Dry at 08:00	80	18							0.45					Light brownish grey (10YR 6/2), angular COBBLE with some coarse gravel of moderately strong granite fragments. (COLLUVIUM)
										T2-101	1.00	+16.55	1.00			Wash boring.
												+15.55	2.00			
								(3, 4, 6, 10, 10, 17) N=43	1		2.00					Extremely weak, yellowish brown (10YR 5/4), dappled pink and grey, completely decomposed fine to medium grained GRANITE. (Very stiff, sandy slightly clayey SILT with occasional fine gravel)
									2		2.45					
	3.00 SW / PW															
								(2, 4, 7, 8, 10, 19) N=44	3		4.00					
									4		4.45					
			70													
								(3, 3, 7, 10, 11, 18) N=46	5		6.00				V	
									6		6.45					
								(2, 4, 7, 10, 12, 18) N=47	7		8.00					
									8		8.45					
												+7.55	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Standard Penetration Test
- Permeability Test
- Packer Test
- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED
BARRY YIU

DATE
17/05/2024

CHECKED
MICHAEL XU

DATE
18/05/2024

REMARKS
1. Inspection pit excavated from 0.00m-0.45m.

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
(泰昇集團成員 A member of Tysan Group)

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. **BH02**

SHEET 2 of 4

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED	CO-ORDINATES	W.O. No. ASD 012935
MACHINE / No. DR-29	E 819 110.95 N 838 455.27	DATE from 12/04/2024 to 17/05/2024
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +17.55 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
								(2, 4, 6, 9, 10, 16) N=41	9 10.00 10 10.45				V	As Sheet 1 of 4.
	12.00 PW HW							(21, 29/25mm 200/10mm 200/10 mm	11 12.00 12.11 12.20	+5.55 +5.35	12.00 12.20		IV	Weak, yellowish brown (10YR 5/4), dappled pink, highly decomposed GRANITE. (Fine to medium GRAVEL)
02/05/2024		Dry at 18:00		92	0	0			T2-101					Moderately weak, yellowish brown (10YR 5/4) and reddish brown (2.5YR 5/3), highly decomposed brecciated and silicified GRANITE. (Sandy slightly silty COBBLE with some medium to coarse gravel and boulder)
03/05/2024		Dry at 08:00	80	100	0	0	NA		T2-101 12.80				IV	12.20-14.30m: With cataclastic texture.
				80	0	0			T2-101 14.05					
								(50/40mm 200/10mm) N=200/10 mm	12 14.30 14.35	+3.25	14.30		IV	Weak, yellowish brown (10YR 5/4), dappled pink, highly decomposed silicified GRANITE. (Medium to coarse GRAVEL)
			70							+2.40	15.15			
				83	0	0	NI		T2-101 15.45				III	Moderately strong, yellowish brown and reddish brown, moderately decomposed brecciated and silicified GRANITE. Rock is generally non-intact and recovered as cobble with much coarse gravel. 15.15-18.63m: With cataclastic texture.
				100	28	28	NA			+1.80	15.75		IV	
							NI		T2-101 16.25	+1.52	16.03			15.75-16.03m: Moderately weak, highly decomposed. (Sandy coarse GRAVEL with some cobble)
			80	87	6	0	5.9		T2-101				III	
							NI			+0.20	17.35			
							NR			+0.04	17.51		V	
							NI		17.51					17.35-17.51m: No recovery assumed to be completely decomposed GRANITE.
		15.00m at 18:00		100	50	41	7.7		T2-101				III	
03/05/2024							NI		18.63	-1.08	18.63			
06/05/2024		14.80m at 08:00						(30, 20/15mm 200/10mm 200/10 mm	13 18.70 18.80					Weak, yellowish brown (10YR 5/4), highly decomposed silicified GRANITE. (Fine to medium GRAVEL)
			70										IV	
										-2.45	20.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Standard Penetration Test
- Permeability Test
- Packer Test
- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED BARRY YIU

DATE 17/05/2024

CHECKED MICHAEL XU

DATE 18/05/2024

REMARKS

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
(泰昇集團成員 A member of Tysan Group)

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. **BH02**

SHEET 3 of 4

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED	CO-ORDINATES	W.O. No. ASD 012935
MACHINE / No. DR-29	E 819 110.95 N 838 455.27	DATE from 12/04/2024 to 17/05/2024
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +17.55 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
			70							-2.45	20.00		IV	As Sheet 2 of 4.
									20.70	-3.15	20.70		III	Moderately strong, light reddish brown and white, moderately decomposed silicified GRANITE. Joints are very closely to closely spaced, smooth planar, extremely narrow to narrow, iron oxide stained, dipping at 0°-10°, 20°-30°, 40°-50°, 70°-80° and subvertical. 20.70-23.70m: With cataclastic texture.
06/05/2024		15.20m at 18:00		100	0	0	>20		T2-101 21.29					
				100	22	0	15.4		T2-101 21.78					
07/05/2024		14.70m at 08:00	80	100	72	52	>20		T2-101 22.03					
				100	35	35	8.0		T2-101 22.40					
				100	42	0	>20		T2-101 22.90					
		15.10m at 18:00		100	47	0	15.0		T2-101 23.30					
07/05/2024									T2-101					
08/05/2024		14.90m at 08:00		55	0	0	NI		14 23.70	-6.15	23.70			
08/05/2024								(50/20mm 200/10mm) N=200/10 mm	23.73					
09/05/2024		14.80m at 08:00	70										IV	Weak, yellowish brown (10YR 5/4), highly decomposed silicified GRANITE. (Fine GRAVEL)
	24.50 HW								24.50	-6.95	24.50			
				94	7	0	>20		T2-101 25.35				III	Moderately strong, light reddish brown and white, moderately decomposed brecciated and silicified GRANITE. Joints are very closely to closely spaced, smooth planar, extremely narrow to narrow, iron and manganese oxides stained, dipping at 0°-10°, 20°-30°, 40°-50°, 70°-80° and subvertical. 24.50-31.50m: With cataclastic texture.
				100	72	27	9.2		T2-101 26.20					
				100	30	0	>20		T2-101 26.80					
		15.10m at 18:00		100	47	36	15.7		T2-101 27.25					
09/05/2024									T2-101					
10/05/2024		15.00m at 08:00	80	100	20	0	>20		T2-101 27.90					
		15.10m at 18:00		90	30	0	19.4		T2-101 28.20					
10/05/2024							NI		T2-101					
11/05/2024		15.00m at 08:00		87	60	43	11.6		T2-101 28.80					
				100	0	0	>20		T2-101 29.23					
		15.00m at 18:00		100	94	34	13.4		T2-101 29.94	-12.45	30.00			
11/05/2024														

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Standard Penetration Test
- Permeability Test
- Packer Test
- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED
BARRY YIU

DATE
17/05/2024

CHECKED
MICHAEL XU

DATE
18/05/2024

REMARKS

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
(泰昇集團成員 A member of Tysan Group)

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. **BH02**

SHEET 4 of 4

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED	CO-ORDINATES	W.O. No. ASD 012935
MACHINE / No. DR-29	E 819 110.95 N 838 455.27	DATE from 12/04/2024 to 17/05/2024
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +17.55 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
13/05/2024		14.90m at 08:00		100	74	17	13.4		T2-101 30.64					As Sheet 3 of 4.
		14.90m at 18:00		100	22	0			T2-101 31.10					
13/05/2024														
14/05/2024		15.20m at 08:00		100	30	0	>20		T2-101 31.40	-13.95	31.50			
				100	15	0			T2-101 32.01					
			80	96	85	51			T2-101 32.48				III	
							6.9							
				100	45	31			T2-101					
14/05/2024		15.20m at 18:00					>20							
16/05/2024									T2-101 33.72					
16/05/2024		15.20m at 08:00		93	0	0			34.15	-16.60	34.15			End of drillhole at 34.15m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Standard Penetration Test
- Permeability Test
- Packer Test
- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED
BARRY YIU

DATE
17/05/2024

CHECKED
MICHAEL XU

DATE
18/05/2024

REMARKS

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
（泰昇集團成員 A member of Tysan Group）

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. **BH03**

SHEET 1 of 5

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED	CO-ORDINATES	W.O. No. ASD 012935
MACHINE / No. MF-38	E 819 095.62 N 838 482.28	DATE from 12/04/2024 to 20/06/2024
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +21.03 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
12/04/2024 12/04/2024	HW	Dry at 08:00							0.00 A 0.20	+21.03 +20.78	0.00 0.25			Greyish brown (10YR 5/2), silty fine to medium SAND with much angular fine to coarse gravel sized rock fragments. (FILL / TOPSOIL)
04/06/2024		Dry at 08:00		80	0	0			0.25 T2-101					Moderately strong, light yellowish brown and white, moderately decomposed brecciated and silicified GRANITE. Rock is non-intact and recovered as cobble with some coarse gravel. 0.25-5.80m: With cataclastic texture.
				100	0	0			1.15 T2-101					
				100	0	0			2.10 T2-101					
			80	100	0	0	NI		3.04 T2-101				III	
				100	0	0			4.45 T2-101					
				100	0	0			5.30 T2-101					
04/06/2024		Dry at 18:00		100	0	0			5.80	+15.23	5.80			
07/06/2024		Dry at 08:00						(50/40mm 200/70mm) N=200/70 mm	1 5.91					Weak, white (10YR 8/1), highly decomposed silicified GRANITE. (Medium to coarse GRAVEL)
			70										IV	
								(50/50mm 200/70mm) N=200/70 mm	2 7.80 7.92					
									8.45	+12.58 +12.49	8.45 8.55			
			80	100	0	0	NI		T2-101				III	Moderately strong, light yellowish brown and white, moderately decomposed brecciated and silicified GRANITE. Rock is non-intact and recovered as cobble with some coarse gravel. 8.55-12.12m: With cataclastic texture.
									9.55 T2-101					
				100	17	0				+11.03	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Standard Penetration Test
- Permeability Test
- Packer Test
- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED
BARRY YIU

DATE
20/06/2024

CHECKED
MICHAEL XU

DATE
21/06/2024

REMARKS
1. Inspection pit excavated from 0.00m-0.25m.

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
(泰昇集團成員 A member of Tysan Group)

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. **BH03**

SHEET 2 of 5

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED	CO-ORDINATES	W.O. No. ASD 012935
MACHINE / No. MF-38	E 819 095.62 N 838 482.28	DATE from 12/04/2024 to 20/06/2024
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +21.03 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
									T2-101 10.36	+11.03	10.00			As Sheet 1 of 5.
07/06/2024		Dry at 18:00		100	17	0	NI		T2-101 10.82					
11/06/2024		Dry at 08:00		100	0	0	>20		T2-101 10.98					
			80	100	0	0	NI						III	
				100	28	10	13.1		T2-101 12.12	+8.91	12.12			
								(50/40mm 200/70mm) N=200/70 mm	3 12.23					Weak, white (10YR 8/1), highly decomposed silicified GRANITE. (Medium to coarse GRAVEL)
			70						12.67	+8.36	12.67		IV	
				100	17	0	NI		T2-101 13.25					Moderately strong, light reddish brown and white, moderately decomposed brecciated and silicified GRANITE. Joints are very closely to closely spaced, rough undulating and smooth planar, extremely narrow to moderately narrow, iron and manganese oxides stained, dipping at 0°-10°, 20°-30°, 40°-50°, 70°-80° and subvertical. 12.67-16.60m: With cataclastic texture.
				93	14	0	>20		T2-101 14.08					
			80	96	27	27	9.1		T2-101 15.20				III	
							15.6							
				95	9	0	NI		T2-101 15.85					
							>20	(50/40mm 200/60mm) N=200/60 mm	16.00					
				100	11	0	NI		T2-101 16.60	+4.43	16.60			
			70						4 16.70				IV	Weak, white (10YR 8/1), highly decomposed silicified GRANITE. (Fine to medium GRAVEL)
									17.05	+3.98	17.05			
				98	83	0	14.1		T2-101 17.89	+3.14	17.89			Moderately strong, light reddish brown and white, moderately decomposed brecciated and silicified GRANITE. Joints are very closely to closely spaced, rough undulating and smooth planar, extremely narrow to moderately narrow, iron and manganese oxides stained, dipping at 0°-10°, 20°-30°, 40°-50°, 70°-80° and subvertical. 17.05-20.75m: With cataclastic texture. 17.89-18.00m: FAULT BRECCIA.
				89	21	21	NI			+3.03	18.00			
			80				12.3		T2-101 18.45				III	
				100	53	29	>20							
							17.3		T2-101 19.78					
				100	23	0				+1.03	20.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Standard Penetration Test
- Permeability Test
- Packer Test
- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED BARRY YIU

DATE 20/06/2024

CHECKED MICHAEL XU

DATE 21/06/2024

REMARKS

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
（泰昇集團成員 A member of Tysan Group）

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. **BH03**

SHEET 3 of 5

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED	CO-ORDINATES	W.O. No. ASD 012935
MACHINE / No. MF-38	E 819 095.62 N 838 482.28	DATE from 12/04/2024 to 20/06/2024
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +21.03 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level (mPD) +1.03	Depth (m) 20.00	Legend	Grade	Description
							17.3			+0.80	20.23		III	As Sheet 2 of 5.
		14.90m at 18:00	80	100	23	0	NA		T2-101				IV	20.23-20.75m: Moderately weak, highly decomposed. (Sandy medium to coarse GRAVEL with some cobble)
11/06/2024								(50/40mm 200/70mm) N=200/70 mm	5 20.75 20.86	+0.28	20.75		IV	Weak, white (10YR 8/1), highly decomposed silicified GRANITE. (Fine to medium GRAVEL)
12/06/2024		15.30m at 08:00	70							-0.10	21.13			
							>20		21.31				III	Moderately strong, light reddish brown and white, streaked dark brown, moderately decomposed brecciated and silicified GRANITE. Joints are very closely to closely spaced, rough and smooth planar, extremely narrow to moderately narrow, iron and manganese oxides stained, dipping at 0°-10°, 20°-30°, 40°-50°, 70°-80° and subvertical. 21.13-28.55m: With cataclastic texture.
				100	41	23	13.7		T2-101	-1.27	22.30			
							NA		22.44				IV	
				100	14	0	>20		T2-101	-1.76	22.79			22.30-22.79m: Moderately weak, highly decomposed FAULT BRECCIA. (Sandy silty COBBLE with some coarse gravel)
									23.36					
				93	9	0	6.6		T2-101					
									24.43					
							>20			-3.67	24.70		III	
			80	100	80	39	NA		T2-101					24.70-26.35m: FAULT BRECCIA.
									25.75					
										-5.32	26.35			
				100	26	26	>20		T2-101	-5.63	26.66			
							NA			-5.94	26.97		IV	26.66-26.97m: Moderately weak, highly decomposed. (Sandy coarse GRAVEL with some cobble)
							>20		27.23				III	
				100	48	10	15.4		T2-101					
		14.90m at 18:00					>20							
12/06/2024							10.0	(50/30mm 200/60mm) N=200/60 mm	6 28.55 28.64	-7.52	28.55			
13/06/2024		15.50m at 08:00	70							-8.97	30.00		IV	Weak, white (10YR 8/1), highly decomposed silicified GRANITE. (Medium to coarse GRAVEL)

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Standard Penetration Test
- Permeability Test
- Packer Test
- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED
BARRY YIU

DATE
20/06/2024

CHECKED
MICHAEL XU

DATE
21/06/2024

REMARKS

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
(泰昇集團成員 A member of Tysan Group)

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. **BH03**

SHEET 4 of 5

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED	CO-ORDINATES	W.O. No. ASD 012935
MACHINE / No. MF-38	E 819 095.62 N 838 482.28	DATE from 12/04/2024 to 20/06/2024
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +21.03 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
										-8.97	30.00			
13/06/2024 14/06/2024		14.70m at 18:00 15.20m at 08:00	70					I (50/30mm 200/50mm) N=200/50 mm	7 ● 30.55 30.63				IV	As Sheet 3 of 5.
										-10.73	31.76			
14/06/2024		14.60m at 18:00		100	40	24	10.9 >20 12.1		T2-101 31.76 33.20					Moderately strong, light reddish brown and white, streaked dark brown, moderately decomposed brecciated and silicified GRANITE. Joints are very closely to closely spaced, rough and smooth planar, extremely narrow to moderately narrow, iron and manganese oxides stained, dipping at 0°-10°, 20°-30°, 40°-50°, 70°-80° and subvertical. 31.76-35.10m: With cataclastic texture.
15/06/2024		18.40m at 08:00	80	100	7	0	>20		T2-101 34.57				III	
				89	11	0	NI		T2-101 35.10	-14.07	35.10			
								I (50/40mm 200/60mm) N=200/60 mm	8 ● 35.10 35.20				IV	Weak, white (10YR 8/1), highly decomposed silicified GRANITE. (Medium to coarse GRAVEL)
15/06/2024		14.90m at 18:00	70							-14.77	35.80			
17/06/2024		20.60m at 08:00	80	100	0	0	NI		T2-101 35.80 36.38				III	Moderately strong, light reddish brown and white, streaked dark brown, moderately decomposed brecciated and silicified GRANITE. Rock is non-intact and recovered as cobble with some medium to coarse gravel. 35.80-36.60m: With cataclastic texture.
				100	59	59	13.6	I (50/30mm 200/60mm) N=200/60 mm	T2-101 36.60 9 ● 36.69	-15.57	36.60			
			70					I (50/30mm 200/70mm) N=200/70 mm	10 ● 38.60 38.70				IV	Weak, white (10YR 8/1), highly decomposed silicified GRANITE. (Medium to coarse GRAVEL)
										-18.23	39.26			
			80	100	100	85	4.3		T2-101 39.26	-18.50	39.53		III	Moderately strong, reddish brown dappled light grey, moderately decomposed brecciated and silicified GRANITE. Joints are medium spaced, smooth planar, extremely narrow, iron oxide stained, dipping at 0°-10°
										-18.97	40.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Standard Penetration Test
- Permeability Test
- Packer Test
- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED
BARRY YIU

DATE
20/06/2024

CHECKED
MICHAEL XU

DATE
21/06/2024

REMARKS

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
（泰昇集團成員 A member of Tysan Group）

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. **BH03**

SHEET 5 of 5

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED	CO-ORDINATES	W.O. No. ASD 012935
MACHINE / No. MF-38	E 819 095.62 N 838 482.28	DATE from 12/04/2024 to 20/06/2024
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +21.03 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
			80	100	100	85	4.3		T2-101 40.43 40.51	-18.97	40.00		III	and 20°-30°. 39.26-40.43m: With cataclastic texture.
								I (50/30mm 200/50mm) N=200/50 mm	11	-19.40	40.43			39.26-39.53m: FAULT BRECCIA. Weak, white (10YR 8/1), highly decomposed silicified GRANITE. (Fine to medium GRAVEL)
17/06/2024		21.60m at 18:00	70										IV	
19/06/2024		22.00m at 08:00						I (50/30mm 200/70mm) N=200/70 mm	12 42.43 42.53					
	43.67 HW								43.67	-22.64	43.67			
				100	100	85	5.4		T2-101				III	Moderately strong, red spotted and dappled white and light grey, moderately decomposed FAULT BRECCIA. Joints are closely spaced, rough and smooth planar, extremely narrow, iron and manganese oxides stained, dipping at 0°-10°, 20°-30° and 40°-50°.
							9.1		44.97					
			80	100	100	98	5.7		T2-101					
									46.41	-25.59	46.62			
				100	95	66	9.2		T2-101				III	Moderately strong, pink spotted and dappled white and light grey, moderately decomposed brecciated and silicified GRANITE. Joints are closely spaced, smooth planar, extremely narrow to very narrow, iron oxide stained, dipping at 0°-10°, 20°-30°, 30°-40°, 70°-80° and subvertical. 46.62-48.81m: With cataclastic texture.
									47.69					
19/06/2024		21.30m at 18:00		100	75	18	13.5		T2-101					
									48.81	-27.78	48.81			End of drillhole at 48.81m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Standard Penetration Test
- Permeability Test
- Packer Test
- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED
BARRY YIU

DATE
20/06/2024

CHECKED
MICHAEL XU

DATE
21/06/2024

REMARKS

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
（泰昇集團成員 A member of Tysan Group）

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. **BH05**

SHEET 1 of 3

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED	CO-ORDINATES	W.O. No. ASD 012935
MACHINE / No. DR-28	E 819 061.06 N 838 477.23	DATE from 11/04/2024 to 02/05/2024
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +23.68 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
11/04/2024	SW	Dry at 08:00							A 0.00–0.40	+23.68	0.00			
										+23.23	0.45			Yellowish brown (10YR 5/6) dappled weak, silty fine SAND with much angular fine to coarse gravel of granite and quartz fragments. (FILL / TOPSOIL)
									0.45					Wash boring.
11/04/2024	2.00 SW	Dry at 18:00						(50/10mm 200/30mm) N=200/30 mm	1 2.00–2.04	+21.68	2.00			
25/04/2024	PW	Dry at 08:00	70										IV	Weak, light reddish brown (5YR 6/3), highly decomposed silicified GRANITE. (Fine to medium GRAVEL)
	4.20 PW							(50/10mm 200/20mm) N=200/20 mm	2 4.00–4.03	+19.38	4.30			
	PW								4.30					Moderately strong, light reddish brown, moderately decomposed brecciated and silicified GRANITE. Rock is non-intact and recovered as COBBLE with some coarse gravel.
				71	0	0	NI		T2-101	+18.88	4.80		III	
							NR			+18.68	5.00		V	
				64	0	0	NI		5.00 T2-101	+17.98	5.70		III	4.30-9.00m: With cataclastic texture.
							NR			+17.58	6.10		V	4.80-5.00m: No recovery, assumed to be completely decomposed GRANITE.
							NI		6.10	+17.08	6.60		III	5.70-6.10m: No recovery, assumed to be completely decomposed GRANITE.
		2.00m at 18:00	80	45	0	0	NR		T2-101				V	6.60-7.20m: No recovery, assumed to be completely decomposed GRANITE.
25/04/2024									7.20	+16.48	7.20			
26/04/2024		Dry at 08:00		71	0	0	NI		T2-101	+15.63	8.05		III	
							NR		8.30	+15.38	8.30		V	8.05-8.30m: No recovery, assumed to be completely decomposed GRANITE.
		6.00m at 18:00		57	0	0	NI		T2-101	+14.98	8.70		III	
26/04/2024	9.00 PW						NR	(50/10mm 200/20mm) N=200/20 mm	3 9.00–9.03	+14.68	9.00		V	8.70-9.00m: No recovery, assumed to be completely decomposed GRANITE.
27/04/2024	HW	Dry at 08:00	70							+13.68	10.00		IV	Weak, light reddish brown (5YR 6/3), highly decomposed silicified GRANITE. (Fine to medium GRAVEL)

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Standard Penetration Test
- Permeability Test
- Packer Test
- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED BARRY YIU

DATE 07/05/2024

CHECKED MICHAEL XU

DATE 08/05/2024

REMARKS
1. Inspection pit excavated from 0.00m-0.45m.

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
(泰昇集團成員 A member of Tysan Group)

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. **BH05**

SHEET 2 of 3

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED	CO-ORDINATES	W.O. No. ASD 012935
MACHINE / No. DR-28	E 819 061.06 N 838 477.23	DATE from 11/04/2024 to 02/05/2024
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +23.68 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
										+13.68	10.00			As Sheet 1 of 3.
								(50/20mm 200/30mm) N=200/30 mm	4 11.00 11.05					
								(50/10mm 200/30mm) N=200/30 mm	5 13.00 13.04					
			70										IV	
								(50/20mm 200/30mm) N=200/30 mm	6 15.00 15.05					
								(50/10mm 200/20mm) N=200/20 mm	7 17.00 17.03 17.20	+6.48	17.20			Moderately strong, light reddish brown and white, moderately decomposed brecciated and silicified GRANITE. Rock is non-intact and recovered as cobble.
		7.00m at 18:00		66	0	0	NI		T2-101	+5.93	17.75		III	
27/04/2024							NR			+5.65	18.03		V	
29/04/2024		Dry at 08:00	80					(50/10mm 200/30mm) N=200/30 mm	8 18.03 18.07					17.20-18.03m: With cataclastic texture. 17.75-18.03m: No recovery, assumed to be completely decomposed GRANITE.
										+3.68	20.00		V	No sample retrieved, assumed to be completed decomposed GRANITE.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Standard Penetration Test
- Permeability Test
- Packer Test
- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED BARRY YIU

DATE 07/05/2024

CHECKED MICHAEL XU

DATE 08/05/2024

REMARKS

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
(泰昇集團成員 A member of Tysan Group)

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. **BH05**

SHEET 3 of 3

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED	CO-ORDINATES	W.O. No. ASD 012935
MACHINE / No. DR-28	E 819 061.06 N 838 477.23	DATE from 11/04/2024 to 02/05/2024
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +23.68 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
									9 ● 20.07	+3.68				
								(50/20mm 200/20mm) N=200/20 mm		+3.65	20.03			As Sheet 2 of 3.
			80										IV	Weak, light reddish brown (5YR 6/3), highly decomposed silicified GRANITE. (Fine to medium GRAVEL)
	21.32 HW									+2.36	21.32			
									21.32					Moderately strong, light reddish moderately decomposed brecciated and silicified GRANITE. Rock is non-intact and recovered as cobble with some coarse gravel.
				88	0	0	NI		T2-101 22.40				III	21.32-24.33m: With cataclastic texture.
				86	0	0			T2-101					
							NR		23.45	+0.38	23.30			
				80	0	0	NI		T2-101	+0.23	23.45		V	23.30-23.45m: No recovery, assumed to be completely decomposed GRANITE.
							NR		24.33	-0.47	24.15		III	
										-0.65	24.33		V	24.15-24.33m: No recovery, assumed to be completely decomposed GRANITE.
29/04/2024		6.00m at 18:00		100	78	46	10.0		T2-101 25.28					Moderately strong, light reddish brown dappled white and dark brown, moderately decomposed brecciated and silicified GRANITE. Joints are medium to closely locally very closely spaced, smooth planar, extremely narrow to narrow, iron oxide stained, dipping at 0°-10°, 20°-30°, 40°-50°, 70°-80° and subvertical.
30/04/2024		23.00m at 08:00	70	100	57	41	>20		T2-101	-2.21	25.89			24.33-29.39m: With cataclastic texture.
				100	100	100	3.4		26.21 T2-101					25.89-27.00m: FAULT BRECCIA.
									27.13	-3.32	27.00		III	
				100	100	100			T2-101					
									27.89	-4.21	27.89			
				100	100	100	3.3		T2-101 28.48					27.89-29.39m: FAULT BRECCIA.
30/04/2024		8.00m at 18:00		100	100	100			T2-101 29.39	-5.71	29.39			
														End of drillhole at 29.39m.

- ● Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- ▲ Water Sample
- Standard Penetration Test
- Permeability Test
- Packer Test
- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED BARRY YIU

DATE 07/05/2024

CHECKED MICHAEL XU

DATE 08/05/2024

REMARKS

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
(泰昇集團成員 A member of Tysan Group)

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. **BH06**

SHEET 1 of 4

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED	CO-ORDINATES	W.O. No. ASD 012935
MACHINE / No. DR-15	E 819 073.52 N 838 464.64	DATE from 26/04/2024 to 18/05/2024
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +22.90 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No.	Type	Depth	Reduced Level (mPD) +22.90	Depth (m) 0.00	Legend	Grade	Description
26/04/2024	SW	Dry at									0.00					
26/04/2024									A		0.25	+22.60	0.30			Dark yellowish brown (10YR 4/4) dappled light grey, silty fine to medium SAND with much angular fine to coarse gravel of granite and quartz fragments. (FILL / TOPSOIL)
07/05/2024		08:00 Dry at 08:00	70	21						T2-101	0.30					
07/05/2024											1.00	+21.90	1.00			White, angular COBBLE of silicified granite. (COLLUVIUM)
08/05/2024		Dry at 08:00														Wash boring.
								(50/20mm 200/20mm) N=200/20 mm	1		2.00	+20.90	2.00			
											2.03					Weak, light grey (5YR 7/1) and white (5YR 8/1), highly decomposed brecciated and silicified GRANITE. (Coarse GRAVEL)
	4.00 SW		80												IV	
	PW							(50/20mm 200/20mm) N=200/20 mm	2		4.00					
											4.04	+18.30	4.60			
08/05/2024		Dry at 18:00		95	0	0	>20			T2-101	4.60					Moderately strong, yellowish brown and white, moderately decomposed brecciated and silicified GRANITE. Joints are closely to very closely locally medium spaced, rough undulating, narrow to moderately narrow, iron oxide stained, dipping at 0°-10°, 20°-30°, 40°-50° and 70°-80°.
09/05/2024		Dry at 08:00		98	49	49	8.9			T2-101	5.00					
				95	6	0	>20			T2-101	6.00				III	4.60-10.80m: With cataclastic texture.
			70							T2-101	7.00					
				98	0	0				T2-101		+15.20	7.70			
							NA					+14.90	8.00		IV	7.70-8.00m: Moderately weak, highly decomposed. (Sandy medium to coarse GRAVEL with some cobble)
							>20				8.00	+14.50	8.40		III	
		Dry at 18:00		97	0	0	NA			T2-101		+14.00	8.90		IV	8.40-8.90m: Moderately weak, highly decomposed. (Sandy medium to coarse GRAVEL with some cobble)
09/05/2024											9.00					
10/05/2024		Dry at 08:00					4.0					+13.50	9.40		III	
				96	40	40	NA			T2-101		+12.90	10.00		IV	9.40-10.00m: Moderately weak, highly decomposed. (Sandy medium to coarse GRAVEL with some cobble)

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Standard Penetration Test
- Permeability Test
- Packer Test
- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED BARRY YIU

DATE 18/05/2024

CHECKED MICHAEL XU

DATE 20/05/2024

REMARKS
1. Inspection pit excavated from 0.00m-0.30m.

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
(泰昇集團成員 A member of Tysan Group)

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. **BH06**

SHEET 2 of 4

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED	CO-ORDINATES	W.O. No. ASD 012935
MACHINE / No. DR-15	E 819 073.52 N 838 464.64	DATE from 26/04/2024 to 18/05/2024
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +22.90 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
										+12.90	10.00			
			70	72	26	20	7.9		T2-101 10.00				III	As Sheet 1 of 4.
							>20			+12.32	10.58			
							NR	(50/20mm 200/10mm) N=200/10 mm	3 10.80	+12.10	10.80		V	10.58-10.80m: No recovery, assumed to be completely decomposed GRANITE.
			80						10.83				IV	Weak, white (5YR 8/1), highly decomposed brecciated and silicified GRANITE. (Coarse GRAVEL)
	11.55 PW								11.55	+11.35	11.55			
	HW			88	0	0			T2-101 11.85					Moderately strong, white and light reddish brown, moderately decomposed brecciated and silicified GRANITE. Rock is generally non-intact and recovered as cobble with much coarse gravel.
				93	0	0	NI		T2-101					11.55-18.90m: With cataclastic texture.
									12.90					
				95	0	0	10.0		T2-101					
10/05/2024		Dry at 18:00							13.90					
11/05/2024		Dry at 08:00		97	0	0	NI		T2-101					
									14.90					
			70	98	68	68	5.7		T2-101				III	
							>20		15.90					
				99	50	23	6.6		T2-101					
11/05/2024		Dry at 18:00							16.90					
14/05/2024		Dry at 08:00		95	53	13	>20		T2-101					
									17.90					
				95	0	0	NI		T2-101					
								(50/20mm 200/10mm) N=200/10 mm	4 18.90 18.93	+4.00	18.90			
													IV	Weak, white (5YR 8/1), highly decomposed silicified GRANITE. (Medium to coarse GRAVEL)
										+2.90	20.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Standard Penetration Test
- Permeability Test
- Packer Test
- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED BARRY YIU

DATE 18/05/2024

CHECKED MICHAEL XU

DATE 20/05/2024

REMARKS

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
(泰昇集團成員 A member of Tysan Group)

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. **BH06**

SHEET 3 of 4

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED	CO-ORDINATES	W.O. No. ASD 012935
MACHINE / No. DR-15	E 819 073.52 N 838 464.64	DATE from 26/04/2024 to 18/05/2024
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +22.90 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level (mPD) +2.90	Depth (m) 20.00	Legend	Grade	Description
14/05/2024	24.30 HW	Dry at 18:00						(50/20mm 200/30mm) N=200/30 mm	5 20.90 20.95				IV	As Sheet 2 of 4.
								(50/10mm 200/20mm) N=200/20 mm	6 22.90 22.93					
16/05/2024		Dry at 08:00		87	0	0	NI		24.30	-1.40	24.30			Moderately strong, white and light reddish brown, moderately decomposed brecciated and silicified GRANITE. Rock is generally non-intact and recovered as cobble with much coarse gravel.
									T2-101					
				92	92	79	4.8		24.99					24.30-30.14m: With cataclastic texture.
									T2-101					
									26.03				III	
				85	7	0	NI		T2-101					
							5.6							
			80						27.09					
				78	0	0	NI		T2-101					
							NR			-4.99	27.89			
									28.11	-5.21	28.11		V	27.89-28.11m: No recovery, assumed to be completely decomposed GRANITE.
							NI							
				97	56	48	6.5		T2-101				III	
									29.12					
							NI							
				93	27	12			T2-101	-6.72	29.62			
							NA			-6.89	29.79		IV	
							7.5						III	29.62-29.79m: Moderately weak, highly decomposed.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Standard Penetration Test
- Permeability Test
- Packer Test
- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED
BARRY YIU

DATE
18/05/2024

CHECKED
MICHAEL XU

DATE
20/05/2024

REMARKS

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
(泰昇集團成員 A member of Tysan Group)

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. **BH06**

SHEET 4 of 4

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED	CO-ORDINATES	W.O. No. ASD 012935
MACHINE / No. DR-15	E 819 073.52 N 838 464.64	DATE from 26/04/2024 to 18/05/2024
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +22.90 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
							7.5		T2-101 30.14	-7.24	30.14			(Sandy medium to coarse GRAVEL with some cobble)
16/05/2024		Dry at 18:00	80	94	81	55	NI 8.6		T2-101 31.15	-8.25	31.15		III	Moderately strong, white, moderately decomposed brecciated and silicified GRANITE. Joints are closely spaced, smooth planar, extremely narrow to very narrow, iron oxide stained, dipping at 10°-20° and 30°-40°.
														30.14-31.15m: With cataclastic texture.
														End of drillhole at 31.15m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Standard Penetration Test
- Permeability Test
- Packer Test
- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED
BARRY YIU

DATE
18/05/2024

CHECKED
MICHAEL XU

DATE
20/05/2024

REMARKS

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
(泰昇集團成員 A member of Tysan Group)

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. **BH07**

SHEET 1 of 4

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED	CO-ORDINATES	W.O. No. ASD 012935
MACHINE / No. DR-28	E 819 053.05 N 838 485.68	DATE from 05/04/2024 to 23/04/2024
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +24.55 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No.	Type	Depth	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
05/04/2024	SW	Dry at 08:00							A	INSPECTION PIT	0.00 0.45 0.50	+24.55	0.00			Yellowish brown (10YR 5/6) dappled white, silty fine SAND with much angular fine to coarse grave of granite and quartz fragments. (FILL / TOPSOIL)
05/04/2024									B		0.75 0.80	+23.75	0.80			
10/04/2024		Dry at 08:00														Wash boring.
			70					(6, 8, 10, 13, 18, 25) N=67	1 2		2.00 2.45	+22.55	2.00		IV	Very weak, light reddish brown (5YR 6/3), highly decomposed brecciated and silicified GRANITE. (Sandy fine to coarse GRAVEL)
10/04/2024	4.20	1.50m at 18:00						(50/20mm 200/60mm) N=200/60 mm	3		4.00 4.08 4.20	+20.35	4.20			
11/04/2024	SW	Dry at 08:00	80	56	0	0	NI					+19.90	4.65		III	Moderately strong, light reddish brown and white, moderately decomposed brecciated and silicified GRANITE. Rock is non-intact and recovered as cobble.
	PW						NR	T2-101				+19.55	5.00		V	
								(50/15mm 200/45mm) N=200/45 mm	4		5.00 5.04					4.20-5.00m: With cataclastic texture. 4.65-5.00m: No recovery assumed to be completely decomposed GRANITE.
			70												IV	Very weak, light reddish brown (5YR 6/3), highly decomposed brecciated and silicified GRANITE. (Fine to medium GRAVEL)
								(50/20mm 200/30mm) N=200/30 mm	5		7.00 7.05	+17.15	7.40			
			80	43	0	0	NI				7.40	+16.55	8.00		III	Moderately strong, light reddish brown and white, moderately decomposed brecciated and silicified GRANITE. Rock is non-intact and recovered as cobble.
		3.00m at 18:00					NR	T2-101				+15.75	8.80		V	8.00-8.80m: No recovery assumed to be completely decomposed GRANITE.
11/04/2024	9.00										8.80					
13/04/2024	PW	Dry at 08:00						(50/10mm 200/30mm) N=200/30 mm	6		9.00 9.04	+14.55	10.00		IV	Very weak, light reddish brown (5YR 6/3), highly decomposed brecciated and silicified GRANITE. (Fine to medium GRAVEL)
	HW		70													

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Standard Penetration Test
- Permeability Test
- Packer Test
- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED
BARRY YIU

DATE
23/04/2024

CHECKED
MICHAEL XU

DATE
24/04/2024

REMARKS
1. Inspection pit excavated from 0.00m-0.80m.

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
(泰昇集團成員 A member of Tysan Group)

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. **BH07**

SHEET 2 of 4

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED	CO-ORDINATES	W.O. No. ASD 012935
MACHINE / No. DR-28	E 819 053.05 N 838 485.68	DATE from 05/04/2024 to 23/04/2024
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +24.55 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
										+24.55	10.00			As Sheet 1 of 4.
			70					(50/20mm 200/30mm) N=200/30 mm	7 11.00 11.05				IV	
	13.40 HW							(50/20mm 200/20mm) N=200/20 mm	8 13.00 13.04	+11.15	13.40			
				83	0	0	NI		13.40 T2-101 14.00				III	Moderately strong, light reddish brown and white, moderately decomposed brecciated and silicified GRANITE. Rock is non-intact and recovered as cobble. 13.40-22.54m: With cataclastic texture.
				85	0	0	NI		T2-101	+9.70	14.85			
							NR		15.00	+9.55	15.00		V	14.85-15.00m: No recovery assumed to be completely decomposed GRANITE.
		3.50m at 18:00		75	0	0	NI		T2-101	+8.65	15.90		III	
13/04/2024							NR		16.20	+8.35	16.20		V	15.90-16.20m: No recovery assumed to be completely decomposed GRANITE.
15/04/2024		Dry at 08:00	80	98	0	0	NI		T2-101				III	
									17.52					
				57	0	0	NI		T2-101	+6.58	17.97			
							NR		18.31	+6.24	18.31		V	17.97-18.31m: No recovery assumed to be completely decomposed GRANITE.
				88	0	0	NI		T2-101				III	
							NR		19.33	+5.34 +5.22	19.21 19.33		V	19.21-19.33m: No recovery assumed to be completely decomposed GRANITE.
				70	0	0	NI		T2-101	+4.55	20.00		III	

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Standard Penetration Test
- Permeability Test
- Packer Test
- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED BARRY YIU

DATE 23/04/2024

CHECKED MICHAEL XU

DATE 24/04/2024

REMARKS

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
(泰昇集團成員 A member of Tysan Group)

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. **BH07**

SHEET 3 of 4

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED	CO-ORDINATES	W.O. No. ASD 012935
MACHINE / No. DR-28	E 819 053.05 N 838 485.68	DATE from 05/04/2024 to 23/04/2024
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +24.55 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
										+4.55	20.00			
							NI			+4.37	20.18		III	As Sheet 2 of 4.
				70	0	0	NR		T2-101 20.55	+4.00	20.55		V	20.18-20.55m: No recovery assumed to be completely decomposed GRANITE.
							NI		T2-101	+3.50	21.05		III	
		6.00m at 18:00		62	16	16								
15/04/2024							NR		21.36	+3.19	21.36		V	21.05-21.36m: No recovery assumed to be completely decomposed GRANITE.
16/04/2024		Dry at 08:00		100	0	0			T2-101 21.96				III	
				100	0	0	>20		T2-101 22.54	+2.01	22.54			
				100	50	50	5.0		T2-101 23.20					Moderately strong, light reddish brown dappled white and dark brown, moderately decomposed brecciated and silicified GRANITE. Joints are closely to very closely locally medium spaced, smooth planar, extremely narrow to narrow, iron oxide stained, dipping at 0°-10°, 10°-20°, 30°-40°, 40°-50° , 70°-80° and subvertical.
				100	26	0			T2-101 24.16					
			80	100	27	8	>20		T2-101 25.66					22.54-39.35m: With cataclastic texture.
		5.00m at 18:00		100	37	26	6.7		T2-101 26.48				III	
16/04/2024							NI							
18/04/2024		22.50m at 08:00		100	37	0	>20		T2-101 27.98					
				100	28	28	NI		T2-101 29.36					
		7.00m at 18:00					>20							
18/04/2024				100	61	61			T2-101 29.54					
19/04/2024		23.00m at 08:00		100	73	73	11.1			-5.45	30.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Standard Penetration Test
- Permeability Test
- Packer Test
- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED BARRY YIU

DATE 23/04/2024

CHECKED MICHAEL XU

DATE 24/04/2024

REMARKS

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
(泰昇集團成員 A member of Tysan Group)

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. **BH07**

SHEET 4 of 4

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED	CO-ORDINATES	W.O. No. ASD 012935
MACHINE / No. DR-28	E 819 053.05 N 838 485.68	DATE from 05/04/2024 to 23/04/2024
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +24.55 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
				100	73	73			T2-101 30.24					As Sheet 3 of 4.
				100	34	0	11.1		T2-101 31.07					
				100	72	54	>20		T2-101 32.52					
19/04/2024		6.00m at 18:00												
20/04/2024		22.80m at 08:00		100	100	76	3.0		T2-101 33.50					
				100	75	47	>20		T2-101 34.10					
				100	100	100			T2-101 34.38					
				100	100	100			T2-101 34.68					
			80	100	100	100	5.1		T2-101 35.12				III	
				100	100	100			T2-101 35.62					
20/04/2024		6.00m at 18:00		100	100	100	9.7		T2-101 35.83					
22/04/2024		23.00m at 08:00		100	100	0			T2-101 35.93					
				100	100	100	2.5		T2-101 36.33					
				100	38	0	>20		T2-101 36.83					
				100	41	26	9.5		T2-101 37.59					
				100	100	100			T2-101 37.94					
				100	100	100	3.4		T2-101 38.52					
22/04/2024		6.00m at 18:00		100	100	88			T2-101 39.35	-14.80	39.35			
														End of drillhole at 39.35m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Standard Penetration Test
- Permeability Test
- Packer Test
- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED BARRY YIU

DATE 23/04/2024

CHECKED MICHAEL XU

DATE 24/04/2024

REMARKS

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
(泰昇集團成員 A member of Tysan Group)

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. **BH09**

SHEET 1 of 4

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED	CO-ORDINATES	W.O. No. ASD 012935
MACHINE / No. ML-1	E 819 052.83 N 838 447.40	DATE from 18/05/2024 to 18/06/2024
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +29.18 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
18/05/2024	SW	Dry at 08:00							0.00	+29.18	0.00			Dark yellowish brown (10YR 4/4), silty medium to coarse SAND with much angular fine to coarse gravel sized moderately strong granite and quartz with some rootlets. (FILL / TOPSOIL)
18/05/2024									A 0.45	+28.68	0.50			
29/05/2024		Dry at 08:00	80	88	0	0	NI		0.50 T2-101 0.92	+28.26	0.92		III	Moderately strong, white dappled light yellowish brown, moderately decomposed brecciated and silicified GRANITE. Rock is non-intact and recovered as cobble. 0.50-0.92m: With cataclastic texture.
		Dry at 18:00	70					(35, 14/10mm 200/40mm 200/40 mm	1 2.00 2.125				IV	Weak, white (5YR 8/1), highly decomposed brecciated and silicified GRANITE. (Slightly sandy fine to medium GRAVEL)
29/05/2024														
30/05/2024	3.00 SW	Dry at 08:00												
	PW								3.05	+26.13	-3.05			
				100	17	17	NI		T2-101 4.53					Moderately strong, white dappled yellowish brown and reddish brown, moderately decomposed brecciated and silicified GRANITE. Rock is non-intact and recovered as cobble with some coarse gravel and occasional boulder. 3.05-7.19m: With cataclastic texture.
		Dry at 18:00	80	100	56	53	6.3		T2-101 5.42				III	
30/05/2024														
01/06/2024		Dry at 08:00		93	0	0	NI		T2-101 6.60					
		Dry at 18:00		88	0	0			T2-101 7.19					
01/06/2024								(50/55mm 200/34mm) N=200/34 mm	7.20 2 7.289	+21.99	7.19			
04/06/2024		Dry at 08:00	70										IV	Weak, white (5YR 8/1) and reddish yellow (5YR 7/6), highly decomposed brecciated and silicified GRANITE. (Silty sandy fine to medium GRAVEL)
04/06/2024		Dry at 18:00							8.90	+20.28	8.90			
05/06/2024		Dry at 08:00	80	91	0	0	NI		T2-101 9.72	+19.46	9.72		III	Moderately strong, white dappled yellowish brown, moderately decomposed brecciated and silicified GRANITE. Rock is non-intact and recovered as coarse gravel with much cobble.
			70					(50/62mm 200/47mm) N=200/47 mm	9.80 3 9.909	+19.18	10.00		IV	8.90-9.72m: With cataclastic texture.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Standard Penetration Test
- Permeability Test
- Packer Test
- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED BARRY YIU

DATE 19/06/2024

CHECKED MICHAEL XU

DATE 20/06/2024

REMARKS
1. Inspection pit excavated from 0.00m-0.50m.

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
(泰昇集團成員 A member of Tysan Group)

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. **BH09**

SHEET 2 of 4

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED	CO-ORDINATES	W.O. No. ASD 012935
MACHINE / No. ML-1	E 819 052.83 N 838 447.40	DATE from 18/05/2024 to 18/06/2024
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +29.18 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level (mPD) +19.18	Depth (m) 10.00	Legend	Grade	Description
05/06/2024		Dry at 18:00	70										IV	Weak, white (5YR 8/1) and reddish yellow (5YR 7/6), highly decomposed brecciated and silicified GRANITE. (Silty sandy fine to medium GRAVEL)
07/06/2024		Dry at 08:00								+17.98	11.20			
	12.20 PW		80	97	11	11	NI		T2-101 11.20 – 12.18				III	Moderately strong, white and yellowish brown, moderately decomposed brecciated and silicified GRANITE. Rock is non-intact and recovered as cobble with some coarse gravel. 11.20-12.18m: With cataclastic texture.
	HW							(50/40mm 200/23mm) N=200/23 mm	4 12.18 – 12.263	+17.00	12.18			Weak, white (5YR 8/1), highly decomposed brecciated and silicified GRANITE. (Medium to coarse GRAVEL)
			70					(50/38mm 200/22mm) N=200/22 mm	5 14.20 – 14.26				IV	
										+13.61	15.57			
			80	100	43	35	>20 7.0 >20		T2-101 15.57 – 16.80				III	Moderately strong, white dappled reddish brown, locally streaked black, moderately decomposed brecciated and silicified GRANITE. Joints are very closely to closely spaced, smooth planar, extremely narrow to narrow, iron and manganese oxides stained, dipping at 0°-10°, 20°-30°, 40°-50° and 70°-80°. 15.57-17.83m: With cataclastic texture.
										+12.11	17.07			
				100	12	12	8.3 >20 NA NI		T2-101 16.80 – 17.83	+11.99	17.19			17.07-17.19m: Moderately weak, highly decomposed. (Sandy clayey COBBLE with some coarse gravel)
								(50/45mm 200/26mm) N=200/26 mm	6 17.90 – 17.971	+11.35	17.83			Weak, white (5YR 8/1), highly decomposed brecciated and silicified GRANITE. (Medium to coarse GRAVEL)
			70										IV	
								(50/51mm	7 19.90	+9.18	20.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Standard Penetration Test
- Permeability Test
- Packer Test
- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED BARRY YIU

DATE 19/06/2024

CHECKED MICHAEL XU

DATE 20/06/2024

REMARKS

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
(泰昇集團成員 A member of Tysan Group)

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. **BH09**

SHEET 3 of 4

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED	CO-ORDINATES	W.O. No. ASD 012935
MACHINE / No. ML-1	E 819 052.83 N 838 447.40	DATE from 18/05/2024 to 18/06/2024
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +29.18 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
07/06/2024		Dry at 18:00						(50/29mm 200/29mm) N=200/29 mm	19.98					As Sheet 2 of 4.
11/06/2024		21.01m at 08:00						(50/34mm 200/21mm) N=200/21 mm	8 21.90 21.955					
			70					(50/55mm 200/27mm) N=200/27 mm	9 23.90 23.992				IV	
								(50/52mm 200/25mm) N=200/25 mm	10 25.90 25.977					
							NI		27.25	+1.93	27.25			Moderately strong, light reddish brown and white, moderately decomposed brecciated and silicified GRANITE. Joints are very closely to closely spaced, rough and smooth planar, extremely narrow to narrow, iron oxide stained, dipping at 0°-10°, 20°-30°, 40°-50°, 70°-80° and subvertical.
			80	100	32	25	7.7		T2-101				III	
		22.96m at 18:00					NI 12.5							27.25-28.92m: With cataclastic texture.
							>20		28.59					
				100	0	0			T2-101 28.92	+0.26	28.92			
11/06/2024								(50/43mm 200/28mm) N=200/28 mm	11 29.00 29.071					Weak, white (5YR 8/1), highly decomposed brecciated and silicified GRANITE. (Medium to coarse GRAVEL)
13/06/2024		23.17m at 08:00	70										IV	
		24.09m								-0.82	30.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Standard Penetration Test
- Permeability Test
- Packer Test
- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED BARRY YIU

DATE 19/06/2024

CHECKED MICHAEL XU

DATE 20/06/2024

REMARKS

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
(泰昇集團成員 A member of Tysan Group)

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. **BH09**

SHEET 4 of 4

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED	CO-ORDINATES	W.O. No. ASD 012935
MACHINE / No. ML-1	E 819 052.83 N 838 447.40	DATE from 18/05/2024 to 18/06/2024
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +29.18 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level (mPD) -0.82	Depth (m) 30.00	Legend	Grade	Description
13/06/2024	30.21 HW	at 18:00	70							-1.03	30.21		IV	As Sheet 3 of 4.
														End of drillhole at 30.21m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Standard Penetration Test
- Permeability Test
- Packer Test
- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED BARRY YIU

DATE 19/06/2024

CHECKED MICHAEL XU

DATE 20/06/2024

REMARKS

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
(泰昇集團成員 A member of Tysan Group)

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. **BH10**

SHEET 1 of 5

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED	CO-ORDINATES	W.O. No. ASD 012935
MACHINE / No. ML-1	E 819 026.45 N 838 485.96	DATE from 23/03/2024 to 09/05/2024
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +26.91 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
23/03/2024	SW	Dry at 08:00							0.00	+26.91	0.00			
23/03/2024									A 0.45	+26.41	0.50			Yellowish brown (10YR 5/6) dappled white, sandy silty angular to subangular fine to coarse GRAVEL sized granite and quartz with some rootlets. (FILL / TOPSOIL)
22/04/2024		Dry at 08:00	80	71	0	0	NI		0.50 T2-101				III	Moderately strong, light reddish brown and white, moderately decomposed brecciated and silicified GRANITE. Rock is non-intact and recovered as cobble with much coarse gravel.
										+25.36	1.55			
							NR						V	0.50-14.42m: With cataclastic texture.
									1.98	+24.93	1.98			
			70					(50/40mm 200/60mm) N=200/60 mm	2.00 1 2.05 2.10	+24.73	2.18		IV	1.55-1.98m: No recovery assumed to be completely decomposed GRANITE.
									2.18					
			80	33	0	0	NI		T2-101	+24.28	2.63		III	1.98-2.18m: Weak, highly decomposed. (Slightly silty sandy medium to coarse GRAVEL)
							NR						V	2.63-3.55m: No recovery assumed to be completely decomposed GRANITE.
									3.55	+23.36	3.55			
			70										IV	3.55-4.10m: Weak, highly decomposed. (Slightly silty sandy medium to coarse GRAVEL)
	4.10							(50/20mm 200/40mm) N=200/40 mm	4.00 2 4.01 4.06 4.10	+22.81	4.10			
	SW PW													
			60		0	0	NI		T2-101	+22.06	4.85		III	
22/04/2024		Dry at 18:00					NR						V	4.85-5.35m: No recovery assumed to be completely decomposed GRANITE.
23/04/2024		Dry at 08:00							5.35	+21.56	5.35			
			80	87	0	0	NI		T2-101	+20.26	6.65		III	
							NR		6.85	+20.06	6.85		V	
								(5, 7, 9, 12, 15, 18) N=54	7.00 3 4 7.45					6.65-6.85m: No recovery assumed to be completely decomposed GRANITE.
			70										IV	6.85-8.35m: Weak, highly decomposed. (Slightly silty sandy medium to coarse GRAVEL)
									8.35	+18.56	8.35			
			80	96	0	0	NI		T2-101				III	
				90	7	0			9.70 T2-101	+16.91	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Standard Penetration Test
- Permeability Test
- Packer Test
- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED
BARRY YIU

DATE
09/05/2024

CHECKED
MICHAEL XU

DATE
10/05/2024

REMARKS
1. Inspection pit excavated from 0.00m-0.50m.

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
(泰昇集團成員 A member of Tysan Group)

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. **BH10**

SHEET 2 of 5

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED	CO-ORDINATES	W.O. No. ASD 012935
MACHINE / No. ML-1	E 819 026.45 N 838 485.96	DATE from 23/03/2024 to 09/05/2024
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +26.91 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
			80	90	7	0	NI		T2-101 10.70	+26.91	0.00			As Sheet 1 of 5.
								(50/70mm 200/60mm) N=200/50 mm	5 10.83	+16.21	10.70		III	
23/04/2024		Dry at 18:00												10.70-12.80m: Weak, highly decomposed. (Slightly silty sandy medium to coarse GRAVEL)
24/04/2024		Dry at 08:00	70										IV	
									12.80	+14.11	12.80			
		Dry at 18:00		90	0	0			T2-101 13.60					
24/04/2024			80				NI						III	
25/04/2024		Dry at 08:00		98	21	0			T2-101 14.42	+12.49	14.42			
	14.50 PW								14.50					Extremely weak, light yellowish brown (10YR 6/4) dappled white, completely decomposed fine grained GRANITE. (Very stiff, sandy SILT with some fine to medium gravel)
	HW							(15, 30, 32, 37, 45, 59) N=173	6 7 14.95				V	
			70					(50/70mm 200/50mm) N=200/50 mm	8 16.62	+10.41	16.50		IV	Weak, white, highly decomposed silicified GRANITE with brecciated quartz vein. (Fine to coarse GRAVEL)
								(50/60mm 200/40mm) N=200/40 mm	9 18.60	+8.41 +8.31	18.50 18.60		IV	Extremely weak, light yellowish brown (10YR 6/4) dappled white, completely decomposed fine grained GRANITE. (Very stiff, sandy SILT with some fine to medium gravel)
			80	94	0	0	NI		T2-101 19.45				III	Moderately strong, light reddish brown and white, moderately decomposed brecciated and silicified GRANITE. Rock is non-intact and recovered as cobble with much coarse gravel.
				91	0	0			T2-101	+6.91	20.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
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- Piston Sample
- Water Sample
- Standard Penetration Test
- Permeability Test
- Packer Test
- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED BARRY YIU

DATE 09/05/2024

CHECKED MICHAEL XU

DATE 10/05/2024

REMARKS

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
（泰昇集團成員 A member of Tysan Group）

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. **BH10**

SHEET 3 of 5

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED	CO-ORDINATES	W.O. No. ASD 012935
MACHINE / No. ML-1	E 819 026.45 N 838 485.96	DATE from 23/03/2024 to 09/05/2024
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +26.91 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
										+6.91	20.00			
									20.11	+6.80	20.11			18.60-24.96m: With cataclastic texture.
25/04/2024		Dry at 18:00						(13, 29, 35, 44, 53, 61) N=193	20.50					20.11-22.35m: Very weak, highly decomposed. (Sandy medium to coarse GRAVEL)
26/04/2024		Dry at 08:00	70						10 20.95				IV	
									22.35	+4.56	22.35			
			80	90	16	0	NI		T2-101				III	
				100	15	0			23.12					
									T2-101					
									24.06	+2.85	24.06			
			70					(50/45mm 200/35mm) N=200/35 mm	12 24.50 24.58				IV	24.06-24.96m: Weak, highly decomposed. (Medium to coarse GRAVEL)
									24.96	+1.95	24.96			
				91	20	0	NI		T2-101					Moderately strong, light reddish brown, moderately decomposed brecciated and silicified GRANITE. Joints are very closely spaced, smooth planar, very narrow to narrow, iron oxide stained, dipping at 0°-10°, 20°-30°, 40°-50° and 70°-80°.
		23.50m at 18:00		100	22	14	>20		25.82					
26/04/2024									T2-101					24.96-28.66m: With cataclastic texture.
27/04/2024		23.00m at 08:00	80						26.70				III	
		24.50m at 18:00		92	9	0	NI		T2-101					
27/04/2024									27.68					
29/04/2024		23.80m at 08:00							T2-101					
		24.00m at 18:00		97	36	23	>20		28.66	-1.75	28.66			
29/04/2024								(50/30mm 200/20mm) N=200/20 mm	13 28.70 28.75					
30/04/2024		23.40m at 08:00	70										IV	Weak, white, highly decomposed brecciated and silicified GRANITE. (Medium to coarse GRAVEL)
										-3.09	30.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Standard Penetration Test
- Permeability Test
- Packer Test
- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED
BARRY YIU

DATE
09/05/2024

CHECKED
MICHAEL XU

DATE
10/05/2024

REMARKS

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
(泰昇集團成員 A member of Tysan Group)

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. **BH10**

SHEET 4 of 5

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED	CO-ORDINATES	W.O. No. ASD 012935
MACHINE / No. ML-1	E 819 026.45 N 838 485.96	DATE from 23/03/2024 to 09/05/2024
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +26.91 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
										-3.09	30.00			As Sheet 3 of 5.
								(50/25mm 200/15mm) N=200/15 mm	14 30.70 30.74					
30/04/2024		24.10m at 18:00	70										IV	
02/05/2024		25.00m at 08:00						(50/10mm 200/20mm) N=200/20 mm	15 32.70 32.73					
									34.03	-7.12	34.03			Moderately strong, light reddish brown, moderately decomposed brecciated and silicified GRANITE. Joints are very closely to closely spaced, smooth planar, very narrow to narrow, iron oxide stained, dipping at 0°-10°, 20°-30°, 40°-50° and 70°-80°.
02/05/2024		24.55m at 18:00		100	11	0	NI		T2-101					
03/05/2024		24.59m at 08:00		96	18	0	>20		35.23 T2-101					
			80						36.20				III	
				100	8	0			T2-101					
									37.43					
03/05/2024		23.58m at 18:00		100	75	51	12.7		T2-101					
06/05/2024		24.50m at 08:00							38.34					
				100	29	16	>20		T2-101					
		24.23m at 18:00					NA			-12.19	39.10		IV	
06/05/2024	39.35 HW		70					(50/30mm 200/20mm) N=200/20 mm	16 39.24 39.35	-12.33 -12.44	39.24 39.35		IV	39.10-39.24m: Moderately weak, highly decomposed. (Sandy silty medium to coarse GRAVEL)
														Weak, light reddish brown (5YR 6/3), highly decomposed brecciated and silicified GRANITE. (Fine

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Standard Penetration Test
- Permeability Test
- Packer Test
- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED BARRY YIU

DATE 09/05/2024

CHECKED MICHAEL XU

DATE 10/05/2024

REMARKS

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
（泰昇集團成員 A member of Tysan Group）

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. **BH10**

SHEET 5 of 5

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED	CO-ORDINATES	W.O. No. ASD 012935
MACHINE / No. ML-1	E 819 026.45 N 838 485.96	DATE from 23/03/2024 to 09/05/2024
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +26.91 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level (mPD) -13.09	Depth (m) 40.00	Legend	Grade	Description
														to medium GRAVEL) End of drillhole at 39.35m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Standard Penetration Test
- Permeability Test
- Packer Test
- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED BARRY YIU

DATE 09/05/2024

CHECKED MICHAEL XU

DATE 10/05/2024

REMARKS

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
（泰昇集團成員 A member of Tysan Group）

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. **BH11**

SHEET 1 of 4

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED	CO-ORDINATES	W.O. No. ASD 012935
MACHINE / No. ML-1	E 819 030.77 N 838 476.41	DATE from 26/04/2024 to 24/05/2024
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +26.71 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
26/04/2024	SW	Dry at 08:00							A 0.00–0.35	+26.71	0.00			Dark greyish brown (10YR 4/2), silty fine to medium SAND with much angular to subangular fine to medium gravel sized moderately strong granite and rootlets. (FILL / TOPSOIL)
26/04/2024										+26.31	0.40			Wash boring.
10/05/2024		Dry at 08:00	70					(39, 11/10mm 200/30mm 200/30 mm	1 2.00–2.115	+24.71	2.00		IV	Weak, white (5YR 8/1), highly decomposed brecciated and silicified GRANITE. (Slightly sandy fine to medium GRAVEL)
10/05/2024		Dry at 18:00								+23.21	3.50			
11/05/2024		Dry at 08:00	80	52	0	0	NI		T2-101 3.50–4.00	+22.95	3.76		III	Moderately strong, white, moderately decomposed brecciated and silicified GRANITE. Rock is non-intact and recovered as gravel with much cobble.
							NR	(50/70mm 200/60mm) N=200/60 mm	2 4.00–4.13	+22.71	4.00		V	3.50-4.00m: With cataclastic texture.
														3.76-4.00m: No recovery assumed to be completely decomposed GRANITE.
	6.00 SW		70										IV	Weak, very pale brown (10YR 7/3), highly decomposed brecciated and silicified GRANITE. (Slightly sandy fine to coarse GRAVEL)
	PW							(50/60mm 200/45mm) N=200/45 mm	3 6.00–6.115					
11/05/2024		Dry at 18:00												
13/05/2024		Dry at 08:00												
									T2-101 7.50–8.45	+19.21	7.50		IV	Moderately strong, white dappled yellowish brown and black, moderately decomposed brecciated and silicified GRANITE. Rock is non-intact and recovered as cobble with much fine to coarse gravel.
				95	0	0	NA			+18.46	8.25			7.50-8.25m: Moderately weak, highly decomposed. (Sandy silty fine to medium GRAVEL with some cobble)
							NI							
			80	96	54	36	6.5		T2-101 8.45–9.60	+17.71	9.00		III	7.50-12.63m: With cataclastic texture.
										+17.33	9.38			9.00-9.38m: FAULT BRECCIA.
				98	0	0	NI		T2-101 9.60	+16.71	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Standard Penetration Test
- Permeability Test
- Packer Test
- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED
BARRY YIU

DATE
24/05/2024

CHECKED
MICHAEL XU

DATE
25/05/2024

REMARKS
1. Inspection pit excavated from 0.00m-0.40m.

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
（泰昇集團成員 A member of Tysan Group）

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. **BH11**

SHEET 2 of 4

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED	CO-ORDINATES	W.O. No. ASD 012935
MACHINE / No. ML-1	E 819 030.77 N 838 476.41	DATE from 26/04/2024 to 24/05/2024
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +26.71 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level (mPD) +16.71	Depth (m) 10.00	Legend	Grade	Description
13/05/2024		Dry at 18:00		98	0	0			T2-101 10.77					As Sheet 1 of 4.
14/05/2024		Dry at 08:00	80	97	24	15	NI		T2-101 12.13				III	
14/05/2024		Dry at 18:00							T2-101 12.63					
16/05/2024		Dry at 08:00		84	0	0		(50/65mm 200/55mm) N=200/55 mm	4 12.70 12.82	+14.08	12.63			Weak, yellowish brown (10YR 7/3), highly decomposed brecciated and silicified GRANITE. (Fine to medium GRAVEL)
	14.70 PW HW		70					(50/60mm 200/45mm) N=200/45 mm	5 14.70 14.805				IV	
									15.40	+11.31	15.40			Moderately strong, white and yellowish brown, moderately decomposed brecciated and silicified GRANITE. Rock is non-intact and recovered as cobble with much cobble with much coarse gravel.
16/05/2024		Dry at 18:00		95	0	0			T2-101 16.19					15.40-17.24m: With cataclastic texture.
17/05/2024		Dry at 08:00	80	88	0	0	NI		T2-101 16.85				III	
17/05/2024		Dry at 18:00		97	72	28	13.8		T2-101 17.24	+9.47	17.24			
20/05/2024		Dry at 08:00						(50/60mm 200/45mm) N=200/45 mm	6 17.30 17.405					Weak, yellowish brown (10YR 7/3), highly decomposed brecciated and silicified GRANITE. (Fine to medium GRAVEL)
			70										IV	
								(50/55mm 200/35mm) N=200/35 mm	7 19.30 19.39	+6.71	20.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Standard Penetration Test
- Permeability Test
- Packer Test
- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED BARRY YIU

DATE 24/05/2024

CHECKED MICHAEL XU

DATE 25/05/2024

REMARKS

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
（泰昇集團成員 A member of Tysan Group）

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. **BH11**

SHEET 3 of 4

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED	CO-ORDINATES	W.O. No. ASD 012935
MACHINE / No. ML-1	E 819 030.77 N 838 476.41	DATE from 26/04/2024 to 24/05/2024
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +26.71 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level (mPD) +6.71	Depth (m) 20.00	Legend	Grade	Description
20/05/2024 21/05/2024		21.05m at 18:00 Dry at 08:00	70					I (50/50mm 200/30mm) N=200/30 mm	8 ● 21.30 21.38				IV	As Sheet 2 of 4.
										+4.98	21.73			
			80	100	64	12	11.8 >20	T2-101	21.73 22.70				III	Moderately strong, white dappled light reddish brown, moderately decomposed brecciated and silicified GRANITE. Joints are very closely spaced, rough and smooth planar, extremely narrow to very narrow, iron oxide stained, dipping at 10°-20°, 30°-40°, 70°-80° and subvertical.
21/05/2024		22.09m at 18:00		100	30	30	NI 5.9	T2-101	23.27					21.73-23.27m: With cataclastic texture.
22/05/2024		22.16m at 08:00						I (50/40mm 200/25mm) N=200/25 mm	9 ● 23.30 23.365	+3.44	23.27			
			70					I (50/35mm 200/22mm) N=200/22 mm	10 ● 25.30 25.357				IV	Weak, very pale brown (10YR 7/3), highly decomposed brecciated and silicified GRANITE. (Fine to medium GRAVEL)
										+0.79	25.92			
			80	96	41	9	NI 11.8	T2-101	25.92 27.32				III	Moderately strong, white dappled light reddish brown, moderately decomposed brecciated and silicified GRANITE. Rock is non-intact and recovered as cobble with occasional coarse gravel.
		21.54m at 18:00								-0.61	27.32			
22/05/2024 23/05/2024		21.45m at 08:00						I (50/55mm 200/26mm) N=200/26 mm	11 ● 27.40 27.481					Weak, very pale brown (10YR 7/3), highly decomposed brecciated and silicified GRANITE. (Medium to coarse GRAVEL)
			70					I (50/53mm 200/25mm) N=200/25 mm	12 ● 29.40 29.478				IV	
										-3.29	30.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Standard Penetration Test
- Permeability Test
- Packer Test
- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED BARRY YIU

DATE 24/05/2024

CHECKED MICHAEL XU

DATE 25/05/2024

REMARKS

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
(泰昇集團成員 A member of Tysan Group)

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. **BH11**

SHEET 4 of 4

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED	CO-ORDINATES	W.O. No. ASD 012935
MACHINE / No. ML-1	E 819 030.77 N 838 476.41	DATE from 26/04/2024 to 24/05/2024
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +26.71 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
										-3.29	30.00			
23/05/2024	30.56 HW	22.50m at 18:00	70							-3.85	30.56		IV	As Sheet 3 of 4.
														End of drillhole at 30.56m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Standard Penetration Test
- Permeability Test
- Packer Test
- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED BARRY YIU

DATE 24/05/2024

CHECKED MICHAEL XU

DATE 25/05/2024

REMARKS

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
（泰昇集團成員 A member of Tysan Group）

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. **DH01 (S/P)**

SHEET 1 of 3

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED	CO-ORDINATES	W.O. No. ASD 012935
MACHINE / No. DR-29	E 819 127.88 N 838 461.79	DATE from 12/04/2024 to 25/04/2024
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +17.64 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No.	Type	Depth	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
12/04/2024	SW	Dry at 08:00	80	60					A		0.00	+17.64	0.00			
										T2-101	0.30 0.35 0.50	+17.29 +17.14	0.35 0.50			Yellowish brown (10YR 5/4), dappled grey, silty SAND with some angular fine to medium gravel of granite and quartz fragments. (FILL / TOPSOIL) Yellowish brown (10YR 5/6), angular coarse GRAVEL with occasional cobble of granite and wood fragments. (FILL / TOPSOIL)
		Dry at 18:00														Wash boring.
12/04/2024 15/04/2024		Dry at 08:00														
								(2, 2, 2, 4, 4, 5) N=15	1 2		2.00 2.45	+15.64	2.00		VI	Firm, reddish yellow (5YR 6/8), slightly sandy SILT with occasional medium gravel of granite. (RESIDUAL SOIL)
	2.90 SW										2.90	+14.74	2.90			Extremely weak, pinkish grey (5YR 7/2), dappled grey, completely decomposed GRANITE. (Stiff, sandy SILT with some medium to coarse gravel)
	PW		70	100					3							
								(2, 3, 4, 4, 7, 8) N=23	4 5 6		3.90 4.00 4.45					
				100					7		4.90				V	
								(2, 4, 4, 6, 8, 12/3) N=141	8 9 10		5.90 6.00 6.45					
		Dry at 18:00		67	0	0	NI			T2-101	6.90	+10.74	6.90		III	Moderately strong, light yellowish brown, moderately decomposed brecciated and silicified GRANITE. Rock is non-intact and recovered as cobble with some gravel.
15/04/2024							NR					+10.34	7.30		V	
16/04/2024		Dry at 08:00	80				NI				7.50	+10.14	7.50		III	
				17	13	13	NR			T2-101		+10.04	7.60		V	6.90-8.10m: With cataclastic texture.
											8.10	+9.54	8.10			7.30-7.50m: No recovery assumed to be completely decomposed GRANITE.
			70					(2, 4, 7, 9, 15, 17) N=48	11 12		8.55				V	7.60-8.10m: No recovery assumed to be completely decomposed GRANITE.
							NI				9.00	+8.64	9.00		III	Extremely weak, pinkish grey (5YR 7/2), dappled grey, completely decomposed GRANITE. (Stiff, slightly sandy SILT)
			80	11	0	0	NR			T2-101		+8.54	9.10		V	Moderately strong, light yellowish brown, moderately decomposed brecciated and silicified GRANITE. Rock
										T2-101	9.90	+7.74 +7.64	9.90 10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Standard Penetration Test
- Permeability Test
- Packer Test
- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED
BARRY YIU

DATE
25/04/2024

CHECKED
MICHAEL XU

DATE
26/04/2024

REMARKS
1. Inspection pit excavated from 0.00m-0.35m.
2. A piezometer tip was installed at 11.75m depth.
3. A standpipe was installed to 6.90m depth.

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
(泰昇集團成員 A member of Tysan Group)

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. **DH01 (S/P)**

SHEET 2 of 3

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED	CO-ORDINATES	W.O. No. ASD 012935
MACHINE / No. DR-29	E 819 127.88 N 838 461.79	DATE from 12/04/2024 to 25/04/2024
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +17.64 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
							NI			+7.64	10.00		III	
										+7.52	10.12			is non-intact and recovered as cobble with some gravel.
		Dry at 18:00	80	22	12	12	NR		T2-101				V	9.00-10.90m: With cataclastic texture.
16/04/2024										+6.74	10.90			
17/04/2024		Dry at 08:00	70					I (17, 33/5mm 200/10mm 200/10 mm	13 10.90 10.99				IV	9.10-9.90m: No recovery assumed to be completely decomposed GRANITE. 10.12-10.90m: No recovery assumed to be completely decomposed GRANITE.
	11.80 PW									+5.84	11.80			
	HW			100	80	38	8.0		11.80 T2-101					Very weak, pinkish grey (5YR 7/2), highly decomposed GRANITE. (Sandy fine to medium GRAVEL)
									12.68					Moderately strong, light reddish brown, dappled white, moderately decomposed silicified GRANITE. Joints are closely to very closely locally medium spaced, smooth planar, extremely narrow, iron oxide stained, manganese oxides, dipping at 0°-10°, 10°-20°, 30°-40°, 50°-60° and 70°-80°.
				100	81	81	4.2		T2-101					
		Dry at 18:00					NI							
17/04/2024							8.0		13.63					
18/04/2024		Dry at		100	0	0	>20		T2-101					11.80-21.77m: With cataclastic texture.
18/04/2024									13.98					
19/04/2024	14.27	08:00 Dry		100	100	100	3.4		T2-101					
19/04/2024	HW								14.27					
20/04/2024		at 08:00 15.20m at 08:00 15.30m at 18:00		100	90	90	13.8		T2-101					
									14.85					
				100	100	100			T2-101					
									15.45					
20/04/2024				100	100	100	8.8		T2-101					
20/04/2024		15.30m at 18:00	80						15.62					
				100	42	25			T2-101				III	
							>20		16.57					
				100	63	0	13.9		T2-101					
									17.13					
				100	100	100			T2-101					
									17.64					
				100	100	42	6.9		T2-101					
									18.29					
				100	75	45	>20		T2-101					
							7.3		18.89					
				100	66	34	>20		T2-101					
							13.6		19.82					
				100	76	63			T2-101	-2.36	20.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Standard Penetration Test
- Permeability Test
- Packer Test
- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED
BARRY YIU

DATE
25/04/2024

CHECKED
MICHAEL XU

DATE
26/04/2024

REMARKS

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
(泰昇集團成員 A member of Tysan Group)

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. **DH01 (S/P)**

SHEET 3 of 3

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED	CO-ORDINATES	W.O. No. ASD 012935
MACHINE / No. DR-29	E 819 127.88 N 838 461.79	DATE from 12/04/2024 to 25/04/2024
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +17.64 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
				100	76	63	>20			-2.36	20.00			As Sheet 2 of 3.
			80	100	100	83	6.0		T2-101 20.57 T2-101 21.17				III	
				100	100	100			T2-101 21.77	-4.13	21.77			End of drillhole at 21.77m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Standard Penetration Test
- Permeability Test
- Packer Test
- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED BARRY YIU

DATE 25/04/2024

CHECKED MICHAEL XU

DATE 26/04/2024

REMARKS

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
(泰昇集團成員 A member of Tysan Group)

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. **DH02**

SHEET 1 of 5

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED	CO-ORDINATES	W.O. No. ASD 012935
MACHINE / No. DR-15	E 819 092.71 N 838 472.68	DATE from 12/04/2024 to 26/06/2024
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +20.54 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
12/04/2024	0.50 HW	Dry at 08:00							A 0.00 - 0.45	+20.54	0.50		VI	Yellowish brown (10YR 5/4), slightly silty fine to medium SAND with much angular fine to coarse gravel of moderately strong granite and quartz. (RESIDUAL SOIL)
12/04/2024										+20.04	0.50		III	Moderately strong, light yellowish brown and white locally streaked dark brown, moderately decomposed silicified GRANITE. Rock is generally non-intact and recovered as cobble with much medium to coarse gravel. 0.50-20.40m: With cataclastic texture.
17/06/2024		Dry at 08:00		100	0	0			T2-101 0.50					
				100	0	0			T2-101 1.30					
				100	0	0			T2-101 2.20					
				100	0	0			T2-101 3.10					
				100	0	0			T2-101 4.00					
17/06/2024		Dry at 18:00												
18/06/2024		Dry at 08:00		100	0	0			T2-101 4.90					
			80	100	0	0	NI		T2-101 5.80					
				100	0	0			T2-101 6.70					
				100	0	0			T2-101 7.60					
				100	0	0			T2-101 8.50					
				100	0	0			T2-101 9.40					
18/06/2024		Dry at 18:00												
19/06/2024		Dry at 08:00		100	0	0			T2-101	+10.54	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Standard Penetration Test
- Permeability Test
- Packer Test
- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED
BARRY YIU

DATE
26/06/2024

CHECKED
MICHAEL XU

DATE
27/06/2024

REMARKS
1. Inspection pit excavated from 0.00m-0.50m.

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
(泰昇集團成員 A member of Tysan Group)

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. **DH02**

SHEET 2 of 5

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED	CO-ORDINATES	W.O. No. ASD 012935
MACHINE / No. DR-15	E 819 092.71 N 838 472.68	DATE from 12/04/2024 to 26/06/2024
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +20.54 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level (mPD) +10.54	Depth (m) 10.00	Legend	Grade	Description
				100	0	0			T2-101 10.30					As Sheet 1 of 6.
19/06/2024		Dry at 18:00		100	0	0			T2-101 11.20					
20/06/2024		Dry at 08:00		100	0	0			T2-101 12.10					
				100	0	0			T2-101 13.00					
				100	0	0			T2-101 13.90					
				100	0	0	NI		T2-101 14.80					
			80	100	0	0			T2-101 15.70				III	
				100	0	0			T2-101 16.60					
				100	0	0			T2-101 17.50					
20/06/2024		Dry at 18:00												
21/06/2024		Dry at 08:00		100	89	43	11.4		T2-101 18.40	+2.59 +2.53 +2.34 +2.19	17.95 18.01 18.20 18.35			17.95-18.01m: FAULT BRECCIA. 18.20-18.35m: FAULT BRECCIA.
				100	9	0	NI		T2-101 19.30					
				100	8	0			T2-101	+0.54	20.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Standard Penetration Test
- Permeability Test
- Packer Test
- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED BARRY YIU

DATE 26/06/2024

CHECKED MICHAEL XU

DATE 27/06/2024

REMARKS

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
（泰昇集團成員 A member of Tysan Group）

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. **DH02**

SHEET 3 of 5

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED	CO-ORDINATES	W.O. No. ASD 012935
MACHINE / No. DR-15	E 819 092.71 N 838 472.68	DATE from 12/04/2024 to 26/06/2024
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +20.54 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level (mPD) +0.54	Depth (m) 20.00	Legend	Grade	Description
				100	8	0	NI		T2-101 20.20				III	As Sheet 1 of 6.
				100	74	63	7.6		T2-101	+0.14	20.40			Moderately strong, white streaked dark brown, moderately decomposed brecciated and silicified GRANITE. Joints are closely to medium locally very closely spaced, smooth planar, extremely narrow to moderately narrow, iron and manganese oxides stained, dipping at 0°-10°, 20°-30°, 40°-50°, 70°-80° and subvertical. 20.40-32.10m: With cataclastic texture.
				100	68	63	>20		21.10					
									T2-101					
									22.60					
				91	86	32	6.5		T2-101					
21/06/2024		19.80m at 18:00							23.75					
22/06/2024		19.70m at 08:00							T2-101					
				100	86	21			24.65					
			80	100	93	93	3.0		T2-101				III	
				98	74	67			25.40					
							NI		T2-101					
				100	27	14	11.6		26.30					
									T2-101					
									27.20					
		19.80m at 18:00		100	100	67	4.2		T2-101					
22/06/2024									28.15					
24/06/2024		19.80m at 08:00							T2-101					
				100	41	34	NI		29.05					
									T2-101					
				100	79	74	4.7			-9.46	30.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Standard Penetration Test
- Permeability Test
- Packer Test
- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED BARRY YIU

DATE 26/06/2024

CHECKED MICHAEL XU

DATE 27/06/2024

REMARKS

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
（泰昇集團成員 A member of Tysan Group）

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. **DH02**

SHEET 4 of 5

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED	CO-ORDINATES	W.O. No. ASD 012935
MACHINE / No. DR-15	E 819 092.71 N 838 472.68	DATE from 12/04/2024 to 26/06/2024
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +20.54 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
										-9.46	30.00			
				100	79	74			T2-101 30.45					As Sheet 3 of 6.
				100	11	11	NI		T2-101 31.85				III	
										-11.56	32.10			
				100	90	61	3.3		T2-101 33.20				III	Moderately weak, light grey spotted grey, dappled and streaked yellowish brown, moderately decomposed MYLONITE. Joints are closely to medium spaced, smooth planar and slickensided, extremely narrow to moderately narrow, iron oxide stained, dipping at 0°-10°, 20°-30° and 40°-50°.
				100	69	48	8.2		T2-101 34.50					
										-13.56	34.10			
		19.90m at 18:00	80	100	0	0	NA		T2-101 35.40				IV	34.10-35.12m: Weak, highly decomposed. (Sandy silty fine to coarse GRAVEL with some cobble)
24/06/2024							NI			-14.58	35.12		III	
25/06/2024		19.70m at 08:00								-14.86	35.40		IV	35.12-35.40m: QUARTZ VEIN.
				100	0	0	NA		T2-101 36.30	-15.13	35.67		IV	35.40-35.67m: Weak, highly decomposed. (Sandy silty fine to coarse GRAVEL with some cobble) Very weak, red spotted grey, completely decomposed FAULT GOUGE. (Sandy CLAY with some angular to subangular fine to coarse gravel and occasional cobble)
				100	0	0			T2-101 37.70	-16.66	37.20			
				100	15	15	NI		T2-101 39.00	-16.81	37.35		III	Moderately weak, red spotted and dappled light grey and black, moderately decomposed FAULT BRECCIA. Joints are closely spaced, rough undulating, extremely narrow to moderately narrow, iron and manganese oxides stained, dipping at 0°-10°, 20°-30° and 40°-50°. 37.35-39.52m: QUARTZ VEIN.
							NA							
		19.90m at 18:00		97	71	54	8.2		T2-101	-18.98	39.52			
25/06/2024										-19.24	39.78		IV	39.52-39.78m: Weak, highly decomposed. (Sandy
										-19.46	40.00		III	

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Standard Penetration Test
- Permeability Test
- Packer Test
- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED
BARRY YIU

DATE
26/06/2024

CHECKED
MICHAEL XU

DATE
27/06/2024

REMARKS

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
(泰昇集團成員 A member of Tysan Group)

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. **DH02**

SHEET 5 of 5

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED	CO-ORDINATES	W.O. No. ASD 012935
MACHINE / No. DR-15	E 819 092.71 N 838 472.68	DATE from 12/04/2024 to 26/06/2024
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +20.54 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
									40.00	-19.46	40.00			silty COBBLE with some coarse gravel) End of drillhole at 40.00m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Standard Penetration Test
- Permeability Test
- Packer Test
- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED
BARRY YIU

DATE
26/06/2024

CHECKED
MICHAEL XU

DATE
27/06/2024

REMARKS

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
(泰昇集團成員 A member of Tysan Group)

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. **DH03 (S/P)**

SHEET 1 of 5

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED	CO-ORDINATES	W.O. No. ASD 012935
MACHINE / No. MSK-23	E 819 071.31 N 838 489.25	DATE from 12/04/2024 to 21/05/2024
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +23.45 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No.	Type	Depth	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
12/04/2024	SW	Dry at									0.00	+23.45	0.00			
12/04/2024											0.30	+23.25	0.20		IV	Greyish brown (10YR 5/2), sandy fine to coarse GRAVEL of rock fragments. (FILL / TOPSOIL)
06/05/2024		08:00 Dry at 08:00	70	68	0	0	NI		A		0.35	+23.10	0.35		III	Weak, light reddish brown (5YR 6/3) and yellowish brown (10YR 5/6), highly decomposed brecciated and silicified GRANITE. (Sandy fine to coarse GRAVEL)
							NR			T2-101		+22.45	1.00		V	Moderately strong, yellowish brown and light reddish brown, moderately decomposed brecciated and silicified GRANITE. Rock is non-intact and recovered as cobble with occasional coarse gravel.
				86	0	0	NI				1.30	+22.15	1.30		III	0.35-7.80m: With cataclastic texture.
							NR			T2-101		+21.20	2.25		V	1.00-1.30m: No recovery, assumed to be completely decomposed GRANITE.
				86	0	0	NI				2.40	+21.05	2.40		III	2.25-2.40m: No recovery, assumed to be completely decomposed GRANITE.
06/05/2024	3.50 SW	Dry at 18:00					NR			T2-101		+20.12	3.33		V	
07/05/2024	PW	Dry at 08:00		95	0	0					3.50	+19.95	3.50			3.33-3.50m: No recovery, assumed to be completely decomposed GRANITE.
				82	0	0	NI			T2-101	4.50				III	
			80								5.60					
				86	0	0				T2-101		+16.90	6.55			
07/05/2024		Dry at 18:00					NR				6.70	+16.75	6.70		V	
08/05/2024		Dry at 08:00		86	0	0	NI			T2-101		+15.80	7.65		III	6.55-6.70m: No recovery, assumed to be completely decomposed GRANITE.
							NR				7.80	+15.65	7.80		V	
								I (50/30mm 200/50mm) N=200/50 mm	1		8.00 8.08					7.65-7.80m: No recovery, assumed to be completely decomposed GRANITE.
				0					2		8.90				IV	Weak, white (5YR 8/1), highly decomposed brecciated and silicified GRANITE. (Medium to coarse GRAVEL with occasional cobble)
	10.00 PW							(50/40mm	3		9.90	+13.45	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Standard Penetration Test
- Permeability Test
- Packer Test
- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED
BARRY YIU

DATE
22/05/2024

CHECKED
MICHAEL XU

DATE
23/05/2024

REMARKS
1. Inspection pit excavated from 0.00m-0.35m.
2. A standpipe was installed to 25.00m depth.

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
（泰昇集團成員 A member of Tysan Group）

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. **DH03 (S/P)**

SHEET 2 of 5

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED	CO-ORDINATES	W.O. No. ASD 012935
MACHINE / No. MSK-23	E 819 071.31 N 838 489.25	DATE from 12/04/2024 to 21/05/2024
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +23.45 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No.	Type	Depth	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
	HW							(200/70mm) N=200/70 mm	4		10.00 10.11					As Sheet 1 of 5.
				0					5		10.90					
								(50/30mm 200/70mm) N=200/70 mm	6 7		11.90 12.00 12.10				IV	
				0					8		12.90					
								(50/40mm 200/70mm) N=200/70 mm	9 10		13.90 14.00 14.11					
									11		14.90 15.00	+8.45	15.00			
08/05/2024		Dry at 18:00	80	86	0	0	NI		T2-101						III	Moderately strong, light reddish brown and white, moderately decomposed brecciated and silicified GRANITE. Rock is generally non-intact and recovered as cobble with some medium to coarse gravel. 15.00-20.85m: With cataclastic texture.
							NR					+7.50 +7.35	15.95 16.10		V	
09/05/2024		Dry at 08:00		96	10	0	NI		T2-101		16.10					15.95-16.10m: No recovery, assumed to be completely decomposed GRANITE.
				100	37	37	10.0		T2-101		17.10				III	
				96	0	0	NI		T2-101		18.25					
				100	49	41	12.0		T2-101		19.00					
				93	0	0	NA		T2-101		19.85	+3.45	20.00			

- Small Disturbed Sample
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- Water Sample
- Standard Penetration Test
- Permeability Test
- Packer Test
- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED
BARRY YIU

DATE
22/05/2024

CHECKED
MICHAEL XU

DATE
23/05/2024

REMARKS

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
(泰昇集團成員 A member of Tysan Group)

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. **DH03 (S/P)**

SHEET 3 of 5

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED	CO-ORDINATES	W.O. No. ASD 012935
MACHINE / No. MSK-23	E 819 071.31 N 838 489.25	DATE from 12/04/2024 to 21/05/2024
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +23.45 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
09/05/2024		Dry at 18:00	80	93	0	0	NA		T2-101 20.55				III	As Sheet 2 of 5.
10/05/2024		Dry at 08:00		88	17	0	NI		T2-101 20.85	+2.60	20.85			
								(50/50mm 200/70mm) N=200/70 mm	12 21.05 21.17				IV	Weak, white (5YR 8/1), highly decomposed brecciated and silicified GRANITE. (Medium to coarse GRAVEL)
								(50/20mm 200/50mm) N=200/50 mm	13 23.05 23.15	+0.30	23.15			
10/05/2024		22.20m at 18:00	70	87	9	0	NI		T2-101 23.60	-0.15	23.60		III	Moderately strong, white and light yellowish brown, moderately decomposed brecciated and silicified GRANITE. Rock is non-intact and recovered as cobble.
11/05/2024		21.00m at 08:00		93	0	0	NA		T2-101 23.90	-0.45	23.90		IV	
								(50/30mm 200/70mm) N=200/70 mm	14 24.10 24.20				IV	23.15-23.90m: With cataclastic texture. 23.60-23.90m: Moderately weak, highly decomposed. (Sandy COBBLE with much medium to coarse gravel)
									25.13	-1.68	25.13			Weak, white (5YR 8/1), highly decomposed brecciated and silicified GRANITE. (Medium to coarse GRAVEL)
	26.00 HW			92	33	33	NI		T2-101 26.00				III	Moderately strong, white and light reddish brown, moderately decomposed brecciated and silicified GRANITE. Joints are closely to very closely locally medium spaced, rough planar and rough undulating, extremely narrow to moderately narrow, iron oxide stained, dipping at 0°-10°, 20°-30°, 40°-50°, 70°-80° and subvertical.
11/05/2024		23.10m at 18:00		95	0	0			T2-101 27.00					25.13-40.28m: With cataclastic texture.
13/05/2024		21.20m at 08:00	80	97	53	0	>20		T2-101 27.76					
							NI							
				96	19	0	>20		T2-101	-5.06	28.51			
							NA			-5.18	28.63		IV	
				100	20	8	15.6		28.82 T2-101				III	28.51-28.63m: Moderately weak, highly decomposed. (Sandy medium to coarse GRAVEL with some cobble)
										-6.55	30.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
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- Standard Penetration Test
- Permeability Test
- Packer Test
- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED
BARRY YIU

DATE
22/05/2024

CHECKED
MICHAEL XU

DATE
23/05/2024

REMARKS

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
(泰昇集團成員 A member of Tysan Group)

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. **DH03 (S/P)**

SHEET 4 of 5

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED	CO-ORDINATES	W.O. No. ASD 012935
MACHINE / No. MSK-23	E 819 071.31 N 838 489.25	DATE from 12/04/2024 to 21/05/2024
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +23.45 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level (mPD) -6.55	Depth (m) 30.00	Legend	Grade	Description
				100	20	8	15.6		T2-101					As Sheet 3 of 5.
							NI		30.30					
				100	82	43	15.4		T2-101				III	
							4.8							
				96	11	0	15.6		31.80 T2-101					
							>20			-9.48	32.93			
							NA			-9.75	33.20		IV	32.93-33.20m: Moderately weak, highly decomposed. (Sandy medium to coarse GRAVEL with some cobble)
				100	82	22	>20		33.20 T2-101					
							6.3						III	
13/05/2024		21.40m at 18:00												
14/05/2024		21.20m at 08:00	80	100	77	24	15.6		34.56 T2-101					
							5.3							
							14.3			-12.46	35.91			
							NA		36.05				IV	35.91-36.56m: Moderately weak, highly decomposed. (Sandy medium to coarse GRAVEL with some cobble)
				95	18	0			T2-101	-13.11	36.56			
							18.2			-13.55	37.00		III	
							NA		37.00	-13.97	37.42		IV	37.00-37.42m: Moderately weak, highly decomposed. (Sandy medium to coarse GRAVEL with some cobble)
				100	0	0	>20		T2-101					
							NI		38.32					
				100	77	43	9.2		T2-101				III	
										-16.26	39.71			
				96	34	0	NA		39.77 T2-101				IV	

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Standard Penetration Test
- Permeability Test
- Packer Test
- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED
BARRY YIU

DATE
22/05/2024

CHECKED
MICHAEL XU

DATE
23/05/2024

REMARKS

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
（泰昇集團成員 A member of Tysan Group）

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. **DH03 (S/P)**

SHEET 5 of 5

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED	CO-ORDINATES	W.O. No. ASD 012935
MACHINE / No. MSK-23	E 819 071.31 N 838 489.25	DATE from 12/04/2024 to 21/05/2024
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +23.45 mP.D.

Drilling Progress	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Samples No. Type Depth	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
						NA		-16.55	40.00			
								-16.83	40.28		IV	39.71-40.28m: Moderately weak, highly decomposed. (Sandy medium to coarse GRAVEL with some cobble)
14/05/2024	21.00m at 18:00		96	34	0	15.6	T2-101 40.78					Moderately strong, white and light reddish brown, moderately decomposed brecciated and silicified GRANITE. Joints are closely to very closely locally medium spaced, smooth to rough planar, extremely narrow to very narrow, iron oxide stained, dipping at 0°-10°, 20°-30°, 40°-50°, 70°-80° and subvertical.
16/05/2024	20.93m at 08:00					NI						
			100	40	30	7.4	T2-101 42.22					40.28-49.08m: With cataclastic texture.
						>20						
			98	15	0		T2-101 43.60					
		80				12.4						
			100	77	29		T2-101 45.10				III	
						>20						
			100	89	43	9.6	T2-101 46.60					
	21.00m at 18:00					14.3						
16/05/2024			100	95	39	7.4	T2-101 47.58					
17/05/2024	21.00m at 08:00											
			100	97	92	2.7	T2-101 49.08					
17/05/2024	21.20m at 18:00					8.0		-25.63	49.08			End of drillhole at 49.08m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Standard Penetration Test
- Permeability Test
- Packer Test
- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED
BARRY YIU

DATE
22/05/2024

CHECKED
MICHAEL XU

DATE
23/05/2024

REMARKS

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
（泰昇集團成員 A member of Tysan Group）

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. **DH04 (S/P)**

SHEET 1 of 4

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED	CO-ORDINATES	W.O. No. ASD 012935
MACHINE / No. DR-15	E 819 073.00 N 838 443.36	DATE from 18/05/2024 to 27/05/2024
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +24.87 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No.	Type	Depth	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
18/05/2024 18/05/2024	PW	Dry at 08:00									0.00	+24.87	0.00			
20/05/2024									A		0.15	+24.67	0.20			Dark greyish brown (10YR 4/2), silty fine to medium SAND with much angular to subangular fine to coarse gravel sized moderately strong granite and rootlets. (FILL / TOPSOIL)
				88	19	13	NI				0.20					Moderately strong, white and light reddish brown, dappled yellowish brown, moderately decomposed silicified GRANITE. Rock is generally non-intact and recovered as cobble with much coarse gravel.
									T2-101		1.05					
				94	82	82	4.5		T2-101							0.20-10.50m: With cataclastic texture.
											2.05				III	
				93	19	0	NI		T2-101							
											3.05					
				85	0	0			T2-101							
												+20.97	3.90			
							NR					+20.82	4.05		V	
							7.1				4.05					3.90-4.05m: No recovery assumed to be completely decomposed GRANITE.
				95	18	12	NI		T2-101						III	
			80								5.05					
							8.8									
		2.00m at 18:00		96	57	44			T2-101			+19.25	5.62		IV	
20/05/2024							NA					+18.82	6.05			5.62-6.05m: Moderately weak, highly decomposed. (Sandy medium to coarse GRAVEL with some cobble)
21/05/2024		Dry at 08:00					>20				6.05					
				95	55	0			T2-101							
							10.9				7.10				III	
				86	39	23	4.0		T2-101							
							NI					+16.82	8.05			
							NR					+16.67	8.20		V	
											8.20					8.05-8.20m: No recovery assumed to be completely decomposed GRANITE.
				88	0	0			T2-101							
							NI								III	
											9.29					
				86	15	15			T2-101							
												+14.87	10.00			

- Small Disturbed Sample
- Large Disturbed Sample
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- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Standard Penetration Test
- Permeability Test
- Packer Test
- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED
BARRY YIU

DATE
27/05/2024

CHECKED
MICHAEL XU

DATE
28/05/2024

REMARKS
1. Inspection pit excavated from 0.00m-0.20m.
2. A standpipe was installed to 29.50m depth.

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
(泰昇集團成員 A member of Tysan Group)

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. **DH04 (S/P)**

SHEET 2 of 4

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED	CO-ORDINATES	W.O. No. ASD 012935
MACHINE / No. DR-15	E 819 073.00 N 838 443.36	DATE from 18/05/2024 to 27/05/2024
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +24.87 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
										+14.87	10.00			
		4.92m at 18:00	80	66	15	15	NR		T2-101	+14.72	10.15		III	As Sheet 1 of 4.
21/05/2024								(50/20mm 200/10mm) N=200/10 mm	1 10.50 10.53	+14.37	10.50		V	10.15-10.50m: No recovery assumed to be completely decomposed GRANITE.
22/05/2024		Dry at 08:00												Weak, yellowish brown (10YR 5/4) dappled white, highly decomposed silicified GRANITE. (Coarse GRAVEL with occasional cobble)
	11.40 PW			0					11.40					
	HW							(50/20mm 200/20mm) N=200/20 mm	2 12.40 3 12.50 12.54					
			70										IV	
				0					13.40					
								(50/10mm 200/10mm) N=200/10 mm	4 14.40 5 14.50 14.52					
		9.82m at 18:00		0					15.40					
22/05/2024									6 15.69	+9.08	15.79			
23/05/2024		Dry at 08:00							15.79					Moderately strong, white dappled yellowish brown, moderately decomposed silicified GRANITE. Joints are closely to medium spaced, rough planar and undulating, very narrow to moderately narrow, iron oxide stained, dipping at 0°-10°, 20°-30°, 50°-60° and subvertical.
				96	96	81	6.5		T2-101				III	
									16.79	+8.00	16.87			
				100	16	0	NA		T2-101	+7.80	17.07		IV	15.79-19.40m: With cataclastic texture.
							NI		17.29					
			80				3.4						III	16.87-17.07m: Moderately weak, highly decomposed. (Sandy medium to coarse GRAVEL with some cobble)
				92	21	21	>20		T2-101					
							NA			+6.64	18.23		IV	
									18.70	+6.27	18.60			18.23-18.60m: Moderately weak, highly decomposed. (Sandy medium to coarse GRAVEL with some cobble)
				79	0	0	NI		T2-101				III	
							NR	(50/10mm 200/10mm) N=200/10 mm	7 19.40 19.42	+5.62	19.25		V	
			70							+5.47	19.40		IV	19.25-19.40m: No recovery assumed to be completely decomposed GRANITE.
										+4.87	20.00			Weak, very pale brown (10YR 7/3), highly

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- Water Sample
- Standard Penetration Test
- Permeability Test
- Packer Test
- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED BARRY YIU

DATE 27/05/2024

CHECKED MICHAEL XU

DATE 28/05/2024

REMARKS

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
（泰昇集團成員 A member of Tysan Group）

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. **DH04 (S/P)**

SHEET 3 of 4

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED	CO-ORDINATES	W.O. No. ASD 012935
MACHINE / No. DR-15	E 819 073.00 N 838 443.36	DATE from 18/05/2024 to 27/05/2024
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +24.87 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level (mPD) +4.87	Depth (m) 20.00	Legend	Grade	Description
23/05/2024		14.90m at 18:00						(50/20mm 200/10mm) N=200/10 mm	8 21.40 21.43					decomposed silicified GRANITE. (Fine to medium GRAVEL)
24/05/2024		16.00m at 08:00												
								(50/10mm 200/10mm) N=200/10 mm	9 23.40 23.42					
			70										IV	
								(50/20mm 200/20mm) N=200/20 mm	10 25.40 25.44					
								(50/20mm 200/20mm) N=200/20 mm	11 27.40 27.43					
								(50/10mm 200/10mm) N=200/10 mm	12 29.40 29.42					
24/05/2024	30.00 HW	22.99m at 18:00								-5.13	30.00			

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- Water Sample
- Standard Penetration Test
- Permeability Test
- Packer Test
- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED BARRY YIU

DATE 27/05/2024

CHECKED MICHAEL XU

DATE 28/05/2024

REMARKS

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
(泰昇集團成員 A member of Tysan Group)

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. **DH04 (S/P)**

SHEET 4 of 4

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED	CO-ORDINATES	W.O. No. ASD 012935
MACHINE / No. DR-15	E 819 073.00 N 838 443.36	DATE from 18/05/2024 to 27/05/2024
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +24.87 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level (mPD) -5.13	Depth (m) 30.00	Legend	Grade	Description
														End of drillhole at 30.00m.

- Small Disturbed Sample
- Large Disturbed Sample
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- U100 Undisturbed Sample
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- Water Sample
- Standard Penetration Test
- Permeability Test
- Packer Test
- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED
BARRY YIU

DATE
27/05/2024

CHECKED
MICHAEL XU

DATE
28/05/2024

REMARKS

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
(泰昇集團成員 A member of Tysan Group)

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. DH05 (S/P)

SHEET 1 of 4

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED

MACHINE / No. ML-1

FLUSHING MEDIUM WATER

CO-ORDINATES
E 819 008.37
N 838 485.07

ORIENTATION Vertical

W.O. No. ASD 012935

DATE from 23/03/2024 to 17/04/2024

GROUND LEVEL +27.35 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No.	Type	Depth	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
23/03/2024	SW	Dry at 08:00									0.00	+27.35	0.00			Soft, pink(5YR 7/4), sandy SILT with some angular fine to coarse gravel of quartz fragments. (FILL / TOPSOIL)
23/03/2024									A		0.45	+26.85	0.50			
08/04/2024		Dry at 08:00									0.50					Firm, dark yellowish brown (10YR 4/4), sandy SILT with some angular fine to coarse gravel of quartz fragments and rootlets. (FILL) / (COLLUVIUM)
									B		0.75	+26.55	0.80			
			80	25	0	0				T2-101	0.80					Light grey (7/1), dappled yellowish brown, angular COBBLE of quartz and silicified granite fragments. (FILL) / (COLLUVIUM)
											2.00	+25.35	2.00			
			70					(2, 3, 5, 4, 5, 5) N=19	1							Medium dense, greyish brown (10YR 5/2), dappled black, silty fine SAND with some quartz and decayed wood fragments. (COLLUVIUM)
									2		2.45					
08/04/2024	3.00 SW	Dry at 18:00							3		2.80	+24.45	2.90			
09/04/2024	PW	Dry at 08:00									3.00	+24.35	3.00		IV	Moderately weak, white (5YR 8/1), dappled pink, highly decomposed brecciated and silicified GRANITE. (Medium to coarse GRAVEL)
				85	10	10	NI								III	Moderately weak, white, dappled pink, moderately decomposed brecciated and silicified GRANITE. Rock is non-intact and recovered as cobble with some gravel.
							NR					+23.25	4.10		V	
			80	68	8	0				T2-101	4.30	+23.05	4.30			3.00-4.30m: With cataclastic texture.
							NI								III	4.10-4.30m: No recovery assumed to be completely decomposed GRANITE.
				60	6	0				T2-101	5.10					
										T2-101						
09/04/2024		Dry at 18:00						(50/30mm 200/40mm) N=200/40 mm	4		6.00	+21.35	6.00			
10/04/2024		Dry at 08:00									6.09				IV	Weak, very pale brown (10YR 8/2), highly decomposed brecciated and silicified GRANITE. (Slightly sandy fine to coarse GRAVEL)
			70	0							6.90	+20.45	6.90		IV	Moderately weak, pinkish grey (5YR 7/2), highly decomposed brecciated and silicified GRANITE. (COBBLE with some medium to coarse gravel)
								(50/30mm 200/40mm) N=200/40 mm	5		7.80	+19.35	8.00			
									6		6.00	+19.20	8.15		IV	Weak, very pale brown (10YR 8/2), highly decomposed brecciated and silicified GRANITE. (Slightly sandy fine to coarse GRAVEL)
			80	78	0	0	NI				8.07				III	Moderately weak, white, dappled pink, moderately decomposed brecciated and silicified GRANITE. Rock is non-intact and recovered as cobble with some gravel.
										T2-101	8.15					
							NR					+18.00	9.35		V	8.15-14.00m: With cataclastic texture.
										T2-101	9.68	+17.67	9.68			
				71	0	0	NI					+17.35	10.00		III	9.35-9.68m: No recovery assumed to be completely

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- Standard Penetration Test
- Permeability Test
- Packer Test
- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED
BARRY YIU

DATE
17/04/2024

CHECKED
MICHAEL XU

DATE
18/04/2024

REMARKS
1. Inspection pit excavated from 0.00m-0.80m.
2. A piezometer tip was installed at 31.50m depth.
3. A standpipe was installed to 2.90m depth.

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
(泰昇集團成員 A member of Tysan Group)

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. **DH05 (S/P)**

SHEET 2 of 4

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED	CO-ORDINATES	W.O. No. ASD 012935
MACHINE / No. ML-1	E 819 008.37 N 838 485.07	DATE from 23/03/2024 to 17/04/2024
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +27.35 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
										+17.35	10.00			decomposed GRANITE.
		Dry at 18:00		71	0	0	NI		T2-101	+16.87	10.48		III	
10/04/2024							NR		10.80	+16.55	10.80		V	10.48-10.80m: No recovery assumed to be completely decomposed GRANITE.
11/04/2024		Dry at 08:00												
				63	0	0	NI		T2-101	+15.79	11.56		III	
							NR		12.00	+15.35	12.00		V	11.56-12.00m: No recovery assumed to be completely decomposed GRANITE.
			80											
				71	0	0	NI		T2-101	+14.50	12.85		III	
	13.20 PW						NR		13.20	+14.15	13.20		V	12.85-13.20m: No recovery assumed to be completely decomposed GRANITE.
	HW													
				62	0	0	NI		T2-101	+13.65	13.70		III	
							NR			+13.35	14.00		V	13.70-14.00m: No recovery assumed to be completely decomposed GRANITE.
								(50/60mm 200/50mm) N=200/50 mm	7 14.00 14.11					Weak, very pale brown (10YR 8/2), highly decomposed brecciated and silicified GRANITE. (Slightly sandy fine to coarse GRAVEL)
										+12.45	14.90			
				0					14.90					14.90-16.00m: With much cobble.
11/04/2024		Dry at 18:00						(50/70mm 200/55mm) N=200/55 mm	8 15.90 16.00	+11.35	16.00			
12/04/2024		Dry at 08:00							9 16.125					
			70							+10.45	16.90		IV	
				0					16.90					16.90-18.00m: With much cobble.
								(50/40mm 200/30mm) N=200/30 mm	10 17.90 18.00	+9.35	18.00			
									11 18.07					
										+8.45	18.90			
				0					18.90					18.90-20.00m: With much cobble.
								(50/35mm	12 19.90	+7.35	20.00			

- Small Disturbed Sample
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- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED BARRY YIU

DATE 17/04/2024

CHECKED MICHAEL XU

DATE 18/04/2024

REMARKS

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
(泰昇集團成員 A member of Tysan Group)

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. **DH05 (S/P)**

SHEET 3 of 4

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED	CO-ORDINATES	W.O. No. ASD 012935
MACHINE / No. ML-1	E 819 008.37 N 838 485.07	DATE from 23/03/2024 to 17/04/2024
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +27.35 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No.	Type	Depth	Reduced Level (mPD) +7.35	Depth (m) 20.00	Legend	Grade	Description
								(200/45mm) N=200/45 mm	13	●	20.00 20.08					As Sheet 2 of 4.
12/04/2024		Dry at 18:00						(50/30mm 200/40mm) N=200/40 mm	14	●	22.00 22.02 22.07					
13/04/2024		Dry at 08:00														
			70					(50/20mm 200/30mm) N=200/30 mm	15	●	24.00 24.05				IV	
								(50/30mm 200/35mm) N=200/35 mm	16	●	26.00 26.015 26.065					
								(50/20mm 200/30mm) N=200/30 mm	17	●	28.00 28.05					
								(50/25mm				-2.65	30.00			

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Standard Penetration Test
- Permeability Test
- Packer Test
- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED
BARRY YIU

DATE
17/04/2024

CHECKED
MICHAEL XU

DATE
18/04/2024

REMARKS

泰昇地基工程有限公司
TYSAN FOUNDATION LIMITED
(泰昇集團成員 A member of Tysan Group)

DRILLHOLE RECORD

CONTRACT No. TC K510

DRILLHOLE No. **DH05 (S/P)**

SHEET 4 of 4

PROJECT PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long

METHOD ROTARY CORED	CO-ORDINATES	W.O. No. ASD 012935
MACHINE / No. ML-1	E 819 008.37 N 838 485.07	DATE from 23/03/2024 to 17/04/2024
FLUSHING MEDIUM WATER	ORIENTATION Vertical	GROUND LEVEL +27.35 mP.D.

Drilling Progress	Casing depth/size	Water level (m) Shift start/ end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples No. Type Depth	Reduced Level (mPD)	Depth (m)	Legend	Grade	Description
13/04/2024	32.05 HW	24.80m at 18:00	70					200/30mm) N=200/30 mm	18 30.00 30.005 30.055	-2.65	30.00		IV	As Sheet 2 of 4.
								(50/20mm 200/30mm) N=200/30 mm	19 32.00	-4.70	32.05			
15/04/2024		25.00m at 08:00		87	19	19	NI		32.05 T2-101 32.85					Moderately strong, white, dappled pink and grey, moderately decomposed brecciated and silicified GRANITE. Rock is generally non-intact and recovered as cobble with much coarse gravel. 32.05-36.07m: With cataclastic texture.
							6.7							
				87	0	0	NI		T2-101 33.94				III	
			80											
		25.00m at 18:00		78	0	0			T2-101	-7.54	34.89			
15/04/2024							NR		35.19	-7.84	35.19		V	
16/04/2024		25.10m at 08:00		91	13	13	NI		T2-101				III	34.89-35.19m: No recovery assumed to be completely decomposed GRANITE.
16/04/2024									36.07	-8.72	36.07			
														End of drillhole at 36.07m.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- Piston Sample
- Water Sample
- Standard Penetration Test
- Permeability Test
- Packer Test
- Borehole Televiewer Survey
- Pressuremeter Test
- Standpipe Tip
- Piezometer Tip
- In-situ Vane Shear Test

LOGGED BARRY YIU

DATE 17/04/2024

CHECKED MICHAEL XU

DATE 18/04/2024

REMARKS

TYSAN FOUNDATION LIMITED

Hole No.	:	DH01 (S/P)	
Piezometer ID.	:	P	
Standpipe ID.	:	S	
Contract No. :	TC K510	Works Order No. :	ASD 012935
Date of installation	:	25/4/2024	
Project :	PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long	Supervised by	: Janson Zhang
Co-ordinates :	E 819127.88 N 838461.79	Ground Level :	+17.64 mPD
Date checked	:	26/4/2024	
Response Zone of Piezometer	: +6.69 mPD to +5.39 mPD	Piezometer (P) Tip Level :	+5.89 mPD
Checked by	:	Michael Xu	
Response Zone of Standpipe	: +16.14 mPD to +10.24 mPD	Standpipe (S) Tip Level :	+10.74 mPD
Dip Meter ID	:	TSMT-46	
Remarks :			

STANDPIPE / PIEZOMETER INSTALLATION DETAILS AND GROUNDWATER MONITORING RECORDS

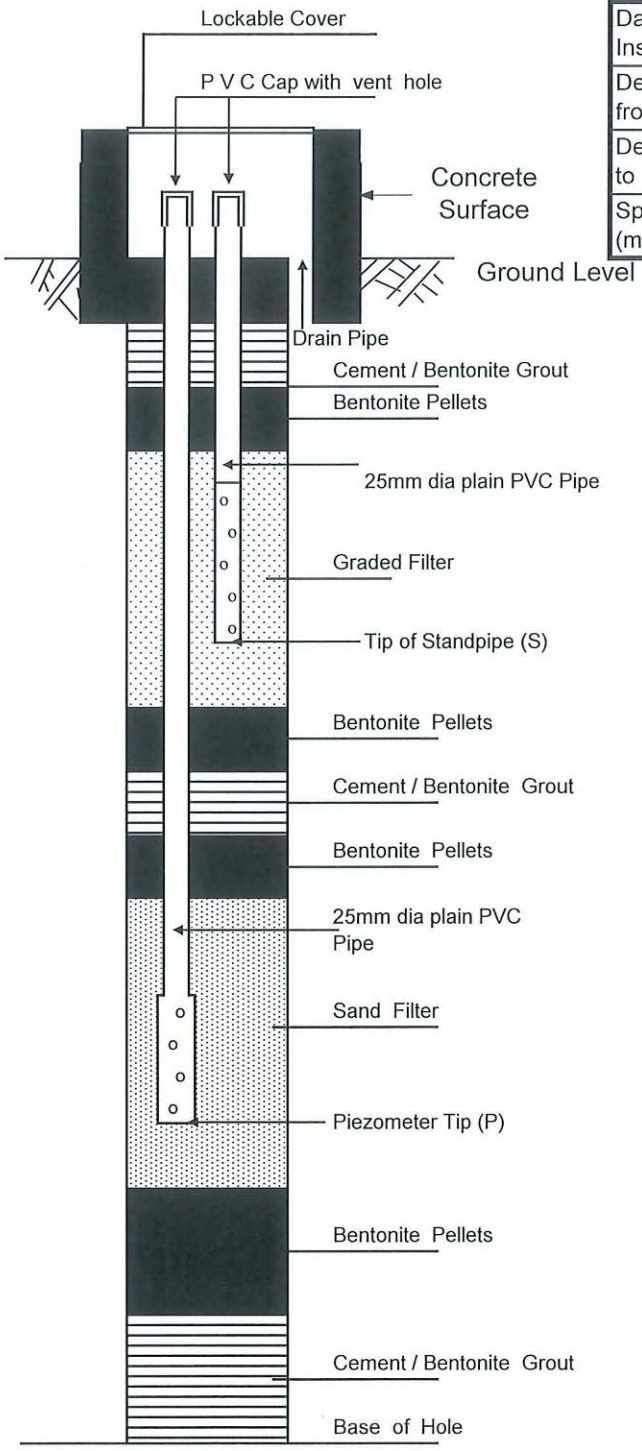
STANDPIPE

Date	Depth of G.W.L. (m)
29/4/2024	DRY
30/4/2024	DRY
2/5/2024	DRY
3/5/2024	DRY
4/5/2024	DRY
6/5/2024	DRY
7/5/2024	DRY

PIEZOMETER

Date	Depth of G.W.L. (m)
29/4/2024	DRY
30/4/2024	DRY
2/5/2024	DRY
3/5/2024	DRY
4/5/2024	DRY
6/5/2024	DRY
7/5/2024	DRY

Reduced Level (mPD)	Depth (m)
+17.66	-0.02
+17.64	0.00
+17.34	0.30
+17.14	0.50
+16.14	1.50
+10.74	6.90
+10.24	7.40
+9.24	8.40
+7.69	9.95
+6.69	10.95
+5.89	11.75
+5.39	12.25
+4.39	13.25
-4.13	21.77



(Not to Scale)

BUCKETS (IF ANY)	
Date Installed :	NA
Depth (m) from :	NA
Depth (m) to :	NA
Spacing (m) :	NA

TYSAN FOUNDATION LIMITED

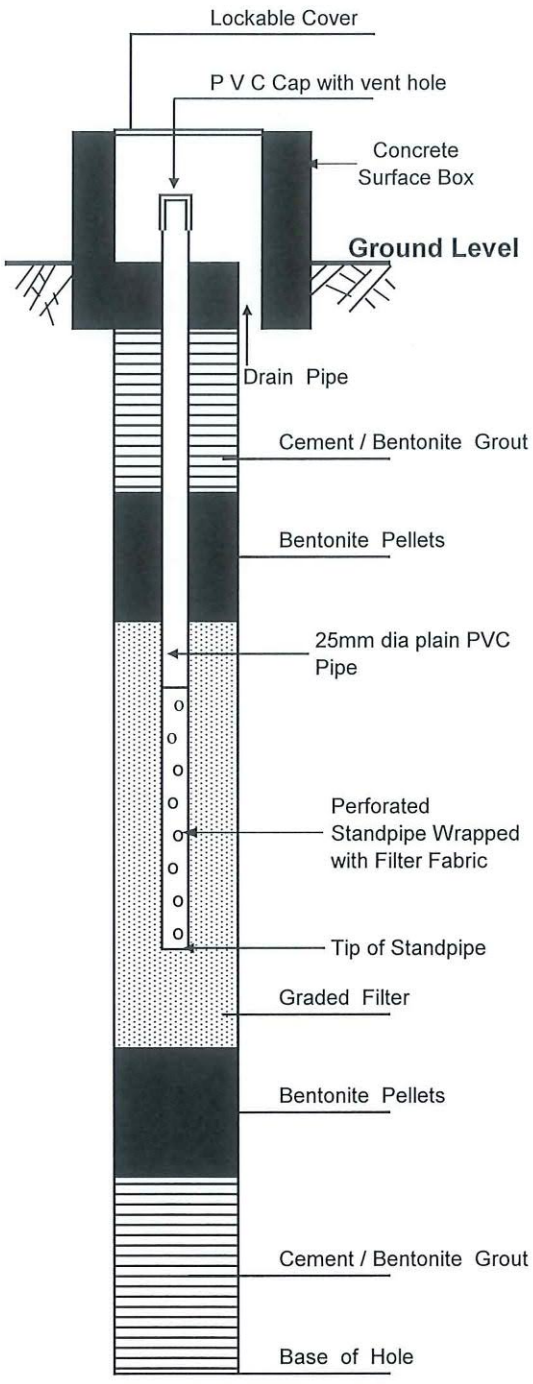
Hole No. : DH03 (S/P)			
Standpipe ID. : S			
Date installed : 21/5/2024			
Contract No. : TC K510	Works Order No. : ASD 012935	Supervised by : Janson Zhang	
Project : PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long		Date checked : 22/5/2024	
Co-ordinates : E 819071.31 N 838489.25	Ground Level : +23.45 mPD	Checked by : Michael Xu	
Response Zone : +21.95 mPD to -2.05 mPD	Standpipe Tip Level : -1.55 mPD	Dip Meter ID : TSMT-31	
Remarks :			

STANDPIPE INSTALLATION DETAILS AND GROUNDWATER MONITORING RECORDS

Date	Depth of G.W.L. (m)
24/5/2024	20.98
25/5/2024	20.97
27/5/2024	20.95
28/5/2024	20.97
29/5/2024	20.95
30/5/2024	20.94
31/5/2024	20.93

Reduced Level (mPD)	Depth (m)
+23.48	-0.03
+23.45	0.00
+23.15	0.30
+22.95	0.50
+21.95	1.50
-1.55	25.00
-2.05	25.50
-3.05	26.50
-25.63	49.08

BUCKETS (IF ANY)	
Date Installed :	NA
Depth (m) from :	NA
Depth (m) to :	NA
Spacing (m) :	NA



(Not to Scale)

TYSAN FOUNDATION LIMITED

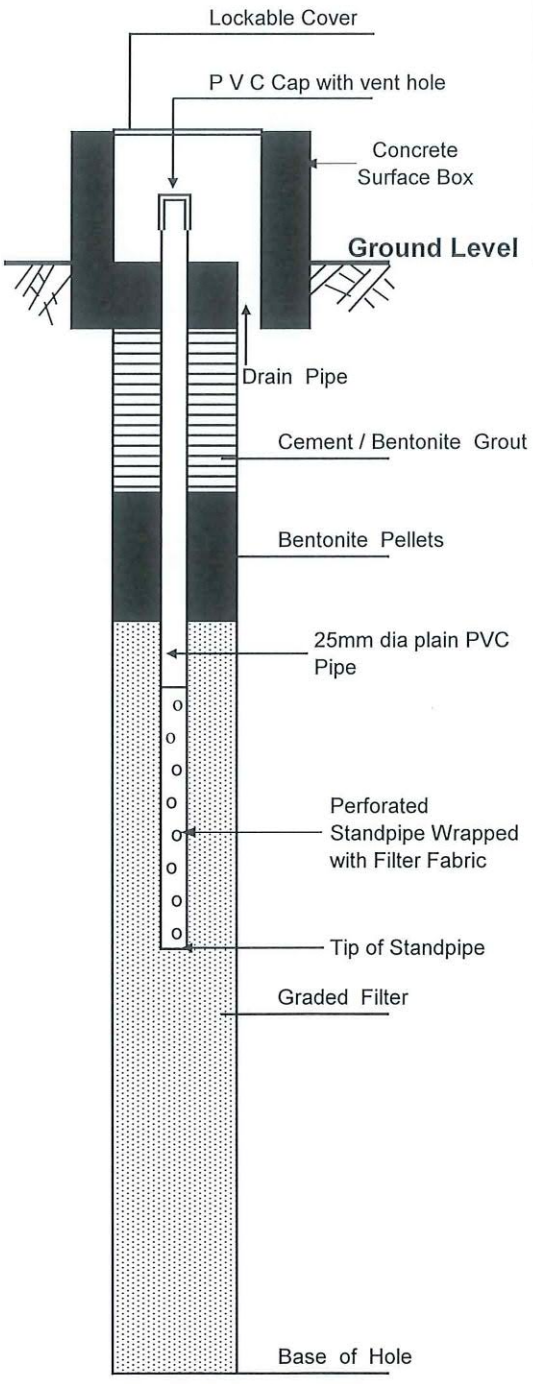
Hole No.	:	DH04 (S/P)	
Standpipe ID.	:	S	
Date installed	:	27/5/2024	
Contract No. : TC K510	Works Order No. : ASD 012935	Supervised by	: Janson Zhang
Project : PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long		Date checked	: 28/5/2024
Co-ordinates : E 819073.00 N 838443.36	Ground Level : +24.87 mPD	Checked by	: Michael Xu
Response Zone : +23.37 mPD to -5.13 mPD	Standpipe Tip Level : -4.63 mPD	Dip Meter ID	: TSMT-31
Remarks :			

STANDPIPE INSTALLATION DETAILS AND GROUNDWATER MONITORING RECORDS

Date	Depth of G.W.L. (m)
28/5/2024	21.06
29/5/2024	21.08
30/5/2024	21.09
31/5/2024	21.10
1/6/2024	21.08
3/6/2024	21.07
4/6/2024	21.08

Reduced Level (mPD)	Depth (m)
+24.94	-0.07
+24.87	0.00
+24.57	0.30
+24.37	0.50
+23.37	1.50
-4.63	29.50
-5.13	30.00

BUCKETS (IF ANY)	
Date Installed :	NA
Depth (m) from :	NA
Depth (m) to :	NA
Spacing (m) :	NA



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TYSAN FOUNDATION LIMITED

Hole No.	:	DH05 (S/P)	
Piezometer ID.	:	P	
Standpipe ID.	:	S	
Contract No. :	TC K510	Works Order No. : ASD 012935	Date of installation : 17/4/2024
Project :	PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen Long		Supervised by : Janson Zhang
Co-ordinates :	E 819008.37 N 838485.07	Ground Level : +27.35 mPD	Date checked : 18/4/2024
Response Zone of Piezometer :	-3.35 mPD to -4.65 mPD	Piezometer (P) Tip Level : -4.15 mPD	Checked by : Michael Xu
Response Zone of Standpipe :	+25.85 mPD to +23.95 mPD	Standpipe (S) Tip Level : +24.45 mPD	Dip Meter ID : TSMT-46
Remarks :			

STANDPIPE / PIEZOMETER INSTALLATION DETAILS AND GROUNDWATER MONITORING RECORDS

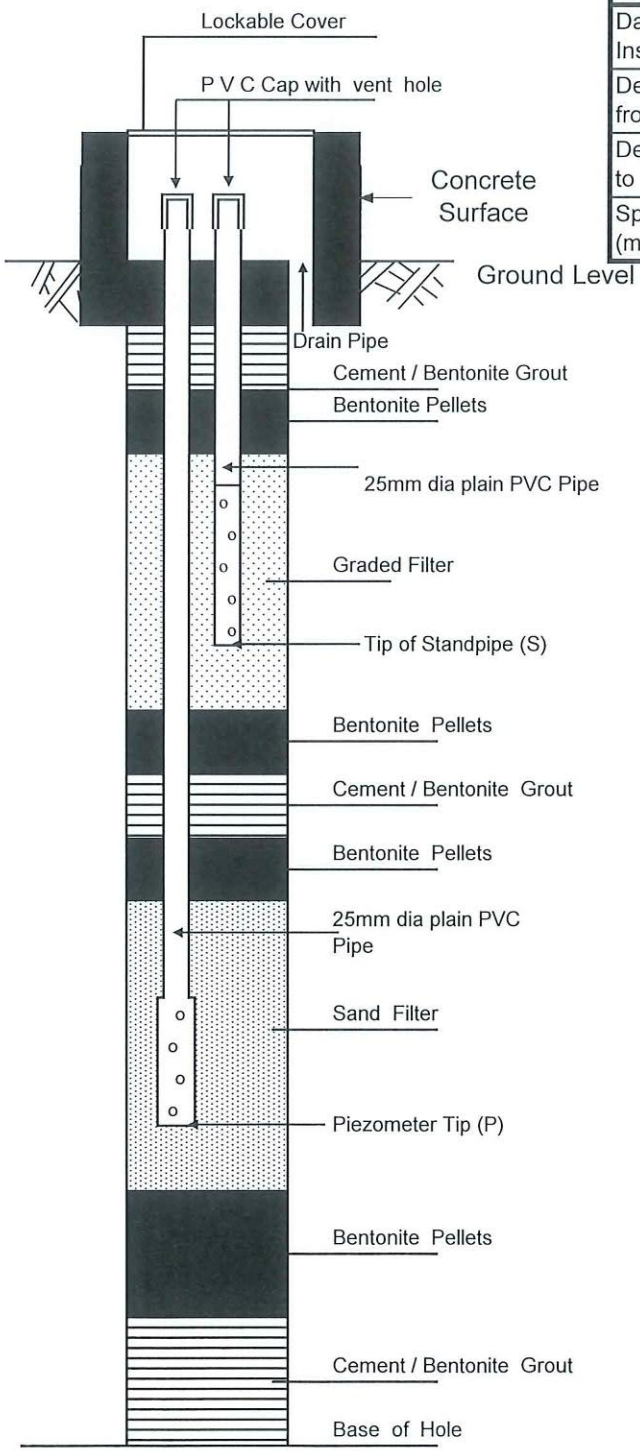
STANDPIPE

Date	Depth of G.W.L. (m)
24/4/2024	DRY
25/4/2024	DRY
26/4/2024	DRY
27/4/2024	DRY
29/4/2024	DRY
30/4/2024	DRY
2/5/2024	DRY

PIEZOMETER

Date	Depth of G.W.L. (m)
24/4/2024	25.12
25/4/2024	25.09
26/4/2024	25.04
27/4/2024	25.10
29/4/2024	25.15
30/4/2024	25.08
2/5/2024	25.04

Reduced Level (mPD)	Depth (m)
+27.42	-0.07
+27.35	0.00
+27.05	0.30
+26.85	0.50
+25.85	1.50
+24.45	2.90
+23.95	3.40
+22.95	4.40
-2.35	29.70
-3.35	30.70
-4.15	31.50
-4.65	32.00
-5.65	33.00
-8.72	36.07



BUCKETS (IF ANY)	
Date Installed :	NA
Depth (m) from :	NA
Depth (m) to :	NA
Spacing (m) :	NA

(Not to Scale)

Appendix H-3

Laboratory Testing Report (Phase 1)

Soils & Materials Eng. Co., Ltd.

Contract No. TC K510

Term Contract for Ground Investigation and Laboratory Testing for Which the Architectural Services Department is responsible for the whole territory of Hong Kong

PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meterological Monitoring Supersite, Yuen Long

LABORATORY TESTING

VOLUME 1 OF 1

FINAL LABORATORY TESTING REPORT

綜合試驗有限公司
SOILS & MATERIALS ENGINEERING CO., LTD.
香港新界葵涌永基路22-24號好爸爸創科大廈
Good Ba Ba Hitech Building, Nos. 22-24 Wing Kei Road, Kwai Chung, New Territories, Hong Kong
Tel: (852) 2873 6860 Fax: (852) 2555 7533 E-mail: smec@cigismec.com Website: www.cigismec.com

SMECLab

Summary of Test Results
On Soil Classification and Compaction Tests

Report No.: 24SR060809
Page: 1 of 42
Date of Issue: 05/07/2024

Our job no.:	24SR060809	W.O.no.:	ASD 012935
Contract no.:	TC K510		
Project title:	Term Contract for Ground Investigation and Laboratory Testing for which the Architectural Services Department is responsible for the whole territory of Hong Kong		
Project location:	PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meterological Monitoring Supersite, Yuen Long		
Customer:	Architectural Services Department		
Contractor:	Tysan Foundation Limite		
Project engineer:	-		
Project MEMO:	-		
Ground investigation ref.:	-		
Date of summary:	05/07/2024		
AGS issue no.	4	Date sample received:	08/06/2024
Date test(s) commenced:	29/06/2024	Date test(s) completed:	05/07/2024

Drillhole/Trial pit no.			DH01(S/P)	DH01(S/P)	-	-	-
Customer sample no.			-	-	-	-	-
Lab sample no.			1	2	-	-	-
Sample depth		m	2.90 - 3.90	4.90 - 5.90	-	-	-
Sample type			Mazier	Mazier	-	-	-
Sample recovery		%	-	-	-	-	-
Sample mass		kg	-	-	-	-	-
Soil geological origin			CDG	CDG	-	-	-
Soil description by lab			Reddish yellow, slightly gravelly, slightly sandy, clayey SILT	Reddish yellow, slightly gravelly, sandy, clayey SILT	-	-	-
Natural moisture content		%	15	15	-	-	-
Comparative moisture content(45/105°C)		%	-	-	-	-	-
Bulk density		Mg/m³	-	-	-	-	-
Dry density		Mg/m³	-	-	-	-	-
Particle density(SG)		Mg/m³	-	-	-	-	-
Atterberg limits	Liquid limit	%	34	33	-	-	-
	Plastic limit	%	22	19	-	-	-
	Plasticity index		12	14	-	-	-
	Liquidity index		-0.18	0.24	-	-	-
	Passing 425 μm sieve	%	74	68	-	-	-
Particle Size	Cobble	%	0	0	-	-	-
	Gravel	%	9	6	-	-	-
	Sand	%	34	48	-	-	-
	Silt	%	49	35	-	-	-
	Clay	%	8	11	-	-	-
Compaction	Optimum M.C.	%	-	-	-	-	-
	Max. dry density	Mg/m³	-	-	-	-	-
Field density	Wet density	Mg/m³	-	-	-	-	-
	Dry density	Mg/m³	-	-	-	-	-
	Relative dry density	%	-	-	-	-	-
Lab vane shear	Peak	kPa	-	-	-	-	-
	Remoulded	kPa	-	-	-	-	-
Pocket penetrometer shear		kPa	-	-	-	-	-
Lab CBR test	Accepted	%	-	-	-	-	-
Lab permeability test		m/sec.	-	-	-	-	-
Remarks			-				

The test ref. no.: Summary_1 **Page: 1 of 1**

Form No.:SRRP 000-1/Issue 2/Rev. C/01/11/2007

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Checked by: Lau Kam Yin (Supervisor)

Approved signatory: Yeung Chi San (Manager)

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SMECLab

Summary of Test Results
On Soil Consolidation and Shear Strength Tests

Our job no.:	24SR060809	W.O.no.:	ASD 012935
Contract no.:	TC K510		
Project title:	Term Contract for Ground Investigation and Laboratory Testing for which the Architectural Services Department is responsible for the whole territory of Hong Kong		
Project location:	PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meterological Monitoring Supersite, Yuen Long		
Customer:	Architectural Services Department		
Contractor:	Tysan Foundation Limite		
Project engineer:	-		
Project MEMO:	-		
Ground investigation ref.:	-		
Date of summary:	05/07/2024		
AGS issue no.	4	Date sample received:	08/06/2024
Date test(s) commenced:	29/06/2024	Date test(s) completed:	05/07/2024

Drillhole/Trial pit no.							DH01(S/P)	DH01(S/P)	-	-	-	
Customer sample no.							-	-	-	-	-	
Lab sample no.							1	2	-	-	-	
Sample depth						m	2.90 - 3.90	4.90 - 5.90	-	-	-	
Sample type							Mazier	Mazier	-	-	-	
Sample recovery						%	-	-	-	-	-	
Sample mass						kg	-	-	-	-	-	
Soil geological origin							CDG	CDG	-	-	-	
Soil description by lab							Reddish yellow, slightly gravelly, slightly sandy, clayey SILT	Reddish yellow, slightly gravelly, sandy, clayey SILT	-	-	-	
Triaxial compression test	Effective stress parameters	Type of test					CUM	CUM	-	-	-	
		Effective cell pressure(1/2/3)				kPa	30 / 60 / 120	50 / 100 / 200	-	-	-	
		Specimen/Stage	1	s'		kPa	60.3	85.0	-	-	-	
				t		kPa	37.5	44.7	-	-	-	
			2	s'		kPa	132.5	163.0	-	-	-	
				t		kPa	76.9	81.4	-	-	-	
			3	s'		kPa	245.1	301.5	-	-	-	
				t		kPa	140.5	140.2	-	-	-	
				c'		kPa	-	-	-	-	-	
				ϕ'		degree	-	-	-	-	-	
	Total stress parameters	Type of test				kPa	-	-	-	-	-	
		Total cell pressure(1/2/3)				kPa	-	-	-	-	-	
		Specimen/Stage	1	s_u		kPa	-	-	-	-	-	
				t_u		kPa	-	-	-	-	-	
			2	s_u		kPa	-	-	-	-	-	
				t_u		kPa	-	-	-	-	-	
			3	s_u		kPa	-	-	-	-	-	
				t_u		kPa	-	-	-	-	-	
				c'		kPa	-	-	-	-	-	
				ϕ'		kPa	-	-	-	-	-	
Consolidation test		Defined stress range				kPa	-	-	-	-	-	
		e					-	-	-	-	-	
		Stage					-	-	-	-	-	
		t_{50} log time Cv or C_R				m^2/Year	-	-	-	-	-	
		t_{90} Sq.root time Cv or C_R				m^2/Year	-	-	-	-	-	
		m_v					-	-	-	-	-	
		Csec					-	-	-	-	-	
Direct shear test	Specimen/Stage	Type of test					-	-	-	-	-	
		Shear peak value	1	Shear τ		kPa	-	-	-	-	-	
				Normal σ		kPa	-	-	-	-	-	
			2	Shear τ		kPa	-	-	-	-	-	
				Normal σ		kPa	-	-	-	-	-	
			3	Shear τ		kPa	-	-	-	-	-	
				Normal σ		kPa	-	-	-	-	-	
		Residual value	1	Shear τ		kPa	-	-	-	-	-	
				Normal σ		kPa	-	-	-	-	-	
			2	Shear τ		kPa	-	-	-	-	-	
				Normal σ		kPa	-	-	-	-	-	
			3	Shear τ		kPa	-	-	-	-	-	
				Normal σ		kPa	-	-	-	-	-	
		c' or c				kPa	-	-	-	-	-	
		ϕ' or ϕ				degree	-	-	-	-	-	
		C_R' or C_R				kPa	-	-	-	-	-	
		ϕ'_R or ϕ_R				degree	-	-	-	-	-	
Remarks							-					

The test ref. no.: Summary_2 **Page: 1 of 1**

Form No :SRRP 000-2/Issue 2/Rev. C/01/11/2007

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Checked by: Lau Kam Yin (Supervisor)

Approved signatory: Yeung Chi San (Manager)

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Tel: (852) 2873 6860 Fax: (852) 2555 7533 E-mail: smec@cigismec.com Website: www.cigismec.com

SMECLab

Test Report

On Summary of Chemical Test Results of Soil and Ground Water

Our job no.: 24SR060809 W.O.no.: ASD 012935
Contract no.: TC K510
Project title: Term Contract for Ground Investigation and Laboratory Testing for which the Architectural Services Department is responsible for the whole territory of Hong Kong
Project location: PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meterological Monitoring Supersite, Yuen Long
Customer: Architectural Services Department
Contractor: Tysan Foundation Limite
Project engineer: -
Project MEMO: -
Ground investigation ref.:-

Test Results

Drillhole no.	Customer sample no.	Sample depth from m	Sample depth to m	Type	Sample passing 2mm(%)	pH value soil	pH value water	Sulphate content as SO_3 total sol. %	Sulphate content as SO_3 water sol. %	Sulphate content as SO_3 water g/l	Chloride acid sol. %	Chloride water sol. %	Chloride water mg/l	Organic matter content %	Carbonate %	Loi %
DH01(S/P)	-	4.90	5.90	Mazier	84	4.3@25°C	-	<0.01	<0.01	-	-	<0.01	-	<0.1	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Remarks: -

Checked by: Tam Chi Keong (Supervisor) Approved signatory: Tang Yau Yik (Manager)

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SMECLab

Summary of Electro-chemical Test Results on Soils

Our job no.	24SR060809	W.O.no.:	ASD 012935
Contract no.:	TC K510		
Project title:	Term Contract for Ground Investigation and Laboratory Testing for which the Architectural Services Department is responsible for the whole territory of Hong Kong		
Project location:	PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meterological Monitoring Supersite, Yuen Long		
Customer:	Architectural Services Department		
Contractor:	Tysan Foundation Limite		
Project engineer			
Ground investigation ref.:			
Date of summary:			
Date of sample received:	05/06/2024		
Date of test commenced:	29/06/2024	Date of test completed:	05/07/2024

Drillhole / Trial pit no.		DH01(S/P)					
Customer sample no.							
Lab sample no.		1					
Sample depth	m	2.90-3.90					
Sample type		Mazier					
Sample recovery	%						
Sample mass	kg						
Soil geological origin		CDG					
Soil description by lab		Reddish yellow, slightly gravelly, slightly sandy, clayey SILT					
Soil resistivity	Ω.m	68.22					
Resistivity corrected to 20°C	r_{20} Ω.m	73.34					
Moisture content	%	16.30					
Redox potential	mV						
Sampling/Testing location :							
Remarks							

The test ref. No.: Summary_3 **Page: 1 of 1**

Form No. SRRP 000-1/Issue 2/ Rev.C/01/11/2007

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SMECLab

Summary of Test Results
On Rock Testing

Our job no.:	24SR060809	W.O.no.:	ASD 012935
Contract no.:	TC K510		
Project title:	Term Contract for Ground Investigation and Laboratory Testing for which the Architectural Services Department is responsible for the whole territory of Hong Kong		
Project location:	PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meterological Monitoring Supersite, Yuen Long		
Customer:	Architectural Services Department		
Contractor:	Tysan Foundation Limite		
Project engineer:			
Project MEMO:			
Ground investigation ref.:			
Date of summary:	05/07/2024		
AGS issue no.	4	Date sample received:	08/06/2024
Date test(s) commenced:	29/06/2024	Date test(s) completed:	05/07/2024

Drillhole/Trial pit no.			BH02	BH05	BH07	DH01(S/P)	DH03(S/P)
Customer sample no.			-	-	-	-	-
Lab sample no.			3	4	5	6	7
Sample depth		m	32.12	26.00	32.70	12.63	46.98
Sample type			Rock	Rock	Rock	Rock	Rock
Sample recovery		%	-	-	-	-	-
Sample mass		kg	-	-	-	-	-
Sample description			-	-	-	-	-
			-	-	-	-	-
			-	-	-	-	-
			-	-	-	-	-
Uncorrected point load(I_s)		MPa	5.1	4.2	5.9	4.4	1.6
Corrected point load index(I_s 50)		MPa	6.4	5.3	7.4	5.5	2.0
Point load test type			d	d	d	d	d
Uniaxial compressive strength		MPa	-	-	-	-	-
Elastic modulus (sec/tan/avg)		GPa	-	-	-	-	-
Poisson's ratio (sec/tan/avg)			-	-	-	-	-
Tensile strength		MPa	-	-	-	-	-
Slake durability		%	-	-	-	-	-
Porosity		%	-	-	-	-	-
Moisture content		%	-	-	-	-	-
Bulk density		Mg/m³	-	-	-	-	-
Dry density		Mg/m³	-	-	-	-	-
Soundness test		%	-	-	-	-	-
Shore hardness			-	-	-	-	-
Velocity of sound in rock	Type of test		-	-	-	-	-
	P - wave velocity	m/s	-	-	-	-	-
	S - wave velocity	m/s	-	-	-	-	-
	Elastic modulus	GPa	-	-	-	-	-
	Shear modulus	GPa	-	-	-	-	-
Shear box test on rock	Type of test		-	-	-	-	-
Specimen/Stage	1	Shear τ_P / Normal σ_P kPa	-	-	-	-	-
	2	Shear τ_P / Normal σ_P kPa	-	-	-	-	-
	3	Shear τ_P / Normal σ_P kPa	-	-	-	-	-
	4	Shear τ_P / Normal σ_P kPa	-	-	-	-	-
	5	Shear τ_P / Normal σ_P kPa	-	-	-	-	-
	6	Shear τ_P / Normal σ_P kPa	-	-	-	-	-
	Φ_P / C_P	Deg / kPa	-	-	-	-	-
	1	Shear τ_R / Normal σ_R kPa	-	-	-	-	-
	2	Shear τ_R / Normal σ_R kPa	-	-	-	-	-
	3	Shear τ_R / Normal σ_R kPa	-	-	-	-	-
	4	Shear τ_R / Normal σ_R kPa	-	-	-	-	-
	5	Shear τ_R / Normal σ_R kPa	-	-	-	-	-
	6	Shear τ_R / Normal σ_R kPa	-	-	-	-	-
	Φ_R / C_R	Deg / kPa	-	-	-	-	-
Remark			-				

The test ref. no.: Summary_3
Page: 1 of 1

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SMECLab

Summary of Test Results
On Soil Classification and Compaction Tests

Report No.:	24SR062718
Page:	1 of 22
Date of Issue:	15/07/2024

Our job no.:	24SR062718	W.O.no.:	ASD 012935
Contract no.:	TC K510		
Project title:	Term Contract for Ground Investigation and Laboratory Testing for which the Architectural Services Department is responsible for the whole territory of Hong Kong		
Project location:	PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meterological Monitoring Supersite, Yuen Long		
Customer:	Architectural Services Department		
Contractor:	Tysan Foundation Limite		
Project engineer:	-		
Project MEMO:	-		
Ground investigation ref.:	-		
Date of summary:	15/07/2024		
AGS issue no.	4	Date sample received:	27/06/2024
Date test(s) commenced:	08/07/2024	Date test(s) completed:	15/07/2024

Drillhole/Trial pit no.			BH01	-	-	-	-
Customer sample no.			-	-	-	-	-
Lab sample no.			1	-	-	-	-
Sample depth		m	2.90 - 3.90	-	-	-	-
Sample type			Mazier	-	-	-	-
Sample recovery		%	-	-	-	-	-
Sample mass		kg	-	-	-	-	-
Soil geological origin			HDG	-	-	-	-
Soil description by lab			Orangish yellow, silty/clayey, very gravelly SAND	-	-	-	-
Natural moisture content		%	6.0	-	-	-	-
Comparative moisture content(45/105°C)		%	-	-	-	-	-
Bulk density		Mg/m³	-	-	-	-	-
Dry density		Mg/m³	-	-	-	-	-
Particle density(SG)		Mg/m³	-	-	-	-	-
Atterberg limits	Liquid limit	%	#	-	-	-	-
	Plastic limit	%	-	-	-	-	-
	Plasticity index		-	-	-	-	-
	Liquidity index		-	-	-	-	-
	Passing 425 μm sieve	%	-	-	-	-	-
Particle Size	Cobble	%	0	-	-	-	-
	Gravel	%	26	-	-	-	-
	Sand	%	65	-	-	-	-
	Silt	%	9#	-	-	-	-
	Clay	%		-	-	-	-
Compaction	Optimum M.C.	%	-	-	-	-	-
	Max. dry density	Mg/m³	-	-	-	-	-
Field density	Wet density	Mg/m³	-	-	-	-	-
	Dry density	Mg/m³	-	-	-	-	-
	Relative dry density	%	-	-	-	-	-
Lab vane shear	Peak	kPa	-	-	-	-	-
	Remoulded	kPa	-	-	-	-	-
Pocket penetrometer shear		kPa	-	-	-	-	-
Lab CBR test	Accepted	%	-	-	-	-	-
Lab permeability test		m/sec.	-	-	-	-	-
Remarks			#The sample contains less than 10% and 15% by weight of particles finer than 63μm, the Hydrometer and Atterberg Limits test will not be performed respectively.				

The test ref. no.: Summary_1 **Page: 1 of 1**

Form No.:SRRP 000-1/Issue 2/Rev. C/01/11/2007

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SMECLab

Summary of Test Results
On Soil Consolidation and Shear Strength Tests

Our job no.:	24SR062718	W.O.no.:	ASD 012935
Contract no.:	TC K510		
Project title:	Term Contract for Ground Investigation and Laboratory Testing for which the Architectural Services Department is responsible for the whole territory of Hong Kong		
Project location:	PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meterological Monitoring Supersite, Yuen Long		
Customer:	Architectural Services Department		
Contractor:	Tysan Foundation Limite		
Project engineer:	-		
Project MEMO:	-		
Ground investigation ref.:	-		
Date of summary:	15/07/2024		
AGS issue no.	4	Date sample received:	27/06/2024
Date test(s) commenced:	08/07/2024	Date test(s) completed:	15/07/2024

Drillhole/Trial pit no.							BH01	-	-	-	-	
Customer sample no.							-	-	-	-	-	
Lab sample no.							1	-	-	-	-	
Sample depth						m	2.90 - 3.90	-	-	-	-	
Sample type							Mazier	-	-	-	-	
Sample recovery						%	-	-	-	-	-	
Sample mass						kg	-	-	-	-	-	
Soil geological origin							HDG	-	-	-	-	
Soil description by lab							Orangish yellow, silty/clayey, very gravelly SAND	-	-	-	-	
Triaxial compression test	Effective stress parameters	Type of test					CUM	-	-	-	-	
		Effective cell pressure(1/2/3)				kPa	30 / 60 / 120	-	-	-	-	
		Specimen/Stage	1		s'	kPa	226.3	-	-	-	-	
					t	kPa	153.2	-	-	-	-	
			2		s'	kPa	324.7	-	-	-	-	
					t	kPa	215.6	-	-	-	-	
			3		s'	kPa	505.2	-	-	-	-	
					t	kPa	331.7	-	-	-	-	
					c'	kPa	-	-	-	-	-	
					ϕ'	degree	-	-	-	-	-	
	Total stress parameters	Type of test				kPa	-	-	-	-	-	
		Total cell pressure(1/2/3)				kPa	-	-	-	-	-	
		Specimen/Stage	1		s_u	kPa	-	-	-	-	-	
					t_u	kPa	-	-	-	-	-	
			2		s_u	kPa	-	-	-	-	-	
					t_u	kPa	-	-	-	-	-	
			3		s_u	kPa	-	-	-	-	-	
					t_u	kPa	-	-	-	-	-	
					c'	kPa	-	-	-	-	-	
					ϕ'	kPa	-	-	-	-	-	
Consolidation test		Defined stress range				kPa	-	-	-	-	-	
		e					-	-	-	-	-	
		Stage					-	-	-	-	-	
		t_{50} log time Cv or C_R				m^2/Year	-	-	-	-	-	
		t_{90} Sq.root time Cv or C_R				m^2/Year	-	-	-	-	-	
		m_v					-	-	-	-	-	
		Csec					-	-	-	-	-	
Direct shear test		Type of test					-	-	-	-	-	
	Specimen/Stage	Shear peak value	1		Shear τ	kPa	-	-	-	-	-	
					Normal σ	kPa	-	-	-	-	-	
			2		Shear τ	kPa	-	-	-	-	-	
					Normal σ	kPa	-	-	-	-	-	
			3		Shear τ	kPa	-	-	-	-	-	
					Normal σ	kPa	-	-	-	-	-	
		Residual value	1		Shear τ	kPa	-	-	-	-	-	
					Normal σ	kPa	-	-	-	-	-	
			2		Shear τ	kPa	-	-	-	-	-	
					Normal σ	kPa	-	-	-	-	-	
			3		Shear τ	kPa	-	-	-	-	-	
					Normal σ	kPa	-	-	-	-	-	
		c' or c				kPa	-	-	-	-	-	
		ϕ' or ϕ				degree	-	-	-	-	-	
		c_R' or c_R				kPa	-	-	-	-	-	
		ϕ'_R or ϕ_R				degree	-	-	-	-	-	
Remarks							-					

The test ref. no.: Summary_2 **Page: 1 of 1**

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SMECLab

Summary of Electro-chemical Test Results on Soils

Report No.:	24SR062718
Page:	3 of 22
Date of Issue:	15/07/2024

Our job no.	24SR062718	W.O.no.:	ASD 012935
Contract no.:	TC K510		
Project title:	Term Contract for Ground Investigation and Laboratory Testing for which the Architectural Services Department is responsible for the whole territory of Hong Kong		
Project location:	PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meterological Monitoring Supersite, Yuen Long		
Customer:	Architectural Services Department		
Contractor:	Tysan Foundation Limite		
Project engineer			
Ground investigation ref.:			
Date of summary:	15/07/2024		
Date of sample received:	27/06/2024		
Date of test commenced:	08/07/2024	Date of test completed:	15/07/2024

Drillhole / Trial pit no.		BH01					
Customer sample no.							
Lab sample no.		1					
Sample depth	m	2.90-3.90					
Sample type		Mazier					
Sample recovery	%						
Sample mass	kg						
Soil geological origin		HDG					
Soil description by lab		Orangish yellow, silty/clayey, very gravelly SAND					
Soil resistivity	Ω.m	1048.24					
Resistivity corrected to 20°C	r_{20} Ω.m	1126.86					
Moisture content	%	8.9					
Redox potential	mV						
Sampling/Testing location :							
Remarks							

The test ref. No.: Summary _3 **Page: 1 of 1**

Form No. SRRP 000-1/Issue 2/ Rev.C/01/11/2007

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SMECLab

Summary of Test Results
On Rock Testing

Our job no.:	24SR062718	W.O.no.:	ASD 012935
Contract no.:	TC K510		
Project title:	Term Contract for Ground Investigation and Laboratory Testing for which the Architectural Services Department is responsible for the whole territory of Hong Kong		
Project location:	PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meterological Monitoring Supersite, Yuen Long		
Customer:	Architectural Services Department		
Contractor:	Tysan Foundation Limite		
Project engineer:			
Project MEMO:			
Ground investigation ref.:			
Date of summary:	15/07/2024		
AGS issue no.	4	Date sample received:	27/06/2024
Date test(s) commenced:	08/07/2024	Date test(s) completed:	15/07/2024

Drillhole/Trial pit no.				BH01	BH03	-	-	-
Customer sample no.				-	-	-	-	-
Lab sample no.				2	3	-	-	-
Sample depth			m	38.50	44.52	-	-	-
Sample type				Rock	Rock	-	-	-
Sample recovery			%	-	-	-	-	-
Sample mass			kg	-	-	-	-	-
Sample description				-	-	-	-	-
				-	-	-	-	-
				-	-	-	-	-
				-	-	-	-	-
Uncorrected point load(I_s)			MPa	3.8	4.1	-	-	-
Corrected point load index(I_s 50)			MPa	4.8	5.0	-	-	-
Point load test type				d	d	-	-	-
Uniaxial compressive strength			MPa	-	-	-	-	-
Elastic modulus (sec/tan/avg)			GPa	-	-	-	-	-
Poisson's ratio (sec/tan/avg)				-	-	-	-	-
Tensile strength			MPa	-	-	-	-	-
Slake durability			%	-	-	-	-	-
Porosity			%	-	-	-	-	-
Moisture content			%	-	-	-	-	-
Bulk density			Mg/m³	-	-	-	-	-
Dry density			Mg/m³	-	-	-	-	-
Soundness test			%	-	-	-	-	-
Shore hardness				-	-	-	-	-
Velocity of sound in rock	Type of test			-	-	-	-	-
	P - wave velocity		m/s	-	-	-	-	-
	S - wave velocity		m/s	-	-	-	-	-
	Elastic modulus		GPa	-	-	-	-	-
	Shear modulus		GPa	-	-	-	-	-
Shear box test on rock	Type of test			-	-	-	-	-
Specimen/Stage	1	Shear τ_P / Normal σ_P	kPa	-	-	-	-	-
	2	Shear τ_P / Normal σ_P	kPa	-	-	-	-	-
	3	Shear τ_P / Normal σ_P	kPa	-	-	-	-	-
	4	Shear τ_P / Normal σ_P	kPa	-	-	-	-	-
	5	Shear τ_P / Normal σ_P	kPa	-	-	-	-	-
	6	Shear τ_P / Normal σ_P	kPa	-	-	-	-	-
	Φ_P / C_P		Deg / kPa	-	-	-	-	-
	1	Shear τ_R / Normal σ_R	kPa	-	-	-	-	-
	2	Shear τ_R / Normal σ_R	kPa	-	-	-	-	-
	3	Shear τ_R / Normal σ_R	kPa	-	-	-	-	-
	4	Shear τ_R / Normal σ_R	kPa	-	-	-	-	-
	5	Shear τ_R / Normal σ_R	kPa	-	-	-	-	-
	6	Shear τ_R / Normal σ_R	kPa	-	-	-	-	-
	Φ_R / C_R		Deg / kPa	-	-	-	-	-
Remark				-				

The test ref. no.: Summary_3
Page: 1 of 1

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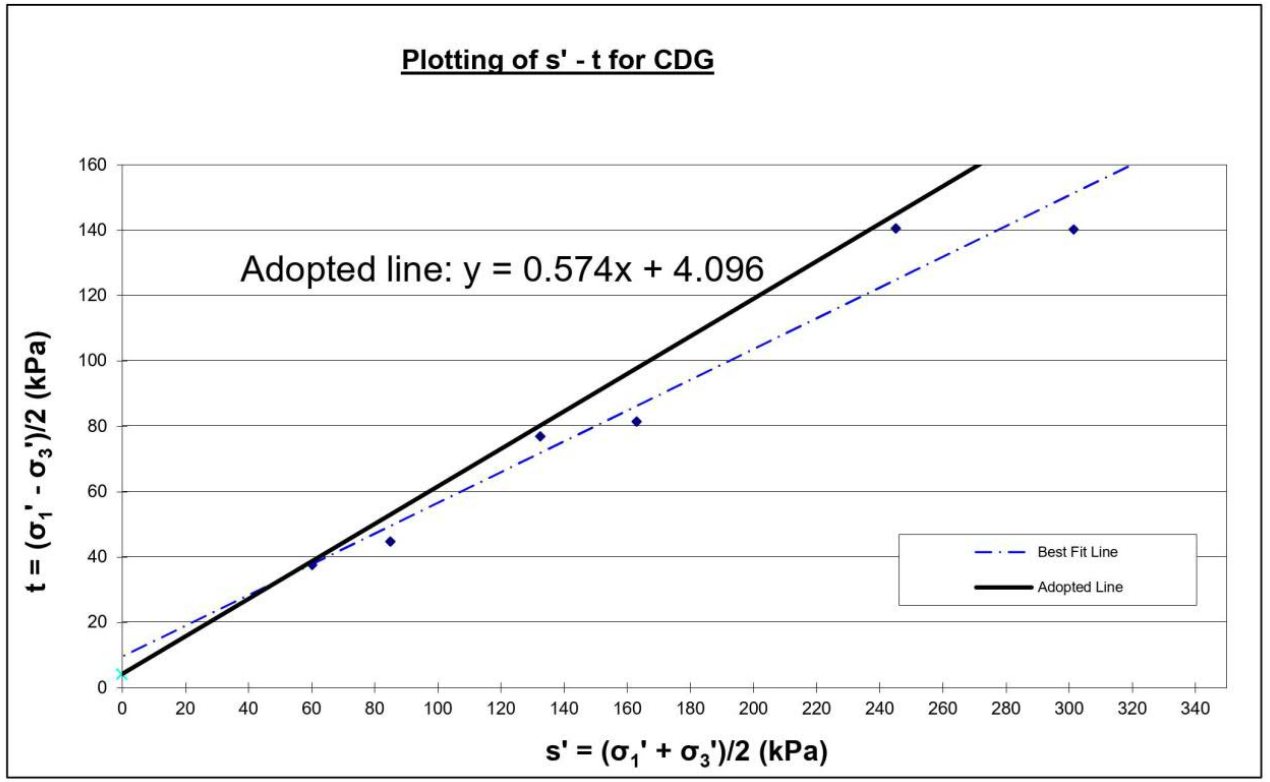
Appendix H-4

s'-t Plot for CDG & HDG

Consultant:	Title:	Scale:
C Arch Design Consultant Limited	**s' – t Plot for CDG**	N.T.S

Triaxial Compression Test Result Summary

Soil Type	CDG					
BH No.	**Soil Type**	**Sample No.**	**Sample Depth (mbgl)**	**Stage**	**s' (kPa)**	**t (kPa)**
DH01	CDG	1	2.9-3.9	CUM	60.3	37.5
DH01	CDG	1	2.9-3.9	CUM	132.5	76.9
DH01	CDG	1	2.9-3.9	CUM	245.1	140.5
DH01	CDG	2	4.9-5.9	CUM	85	44.7
DH01	CDG	2	4.9-5.9	CUM	163	81.4
DH01	CDG	2	4.9-5.9	CUM	301.5	140.2



Best Fit Line

y = 0.4705x + 9.4361

Hence,
ϕ' = arcsin(0.4705)
= 28.1°
And, c' = 9.4361/cos28.1°
= 10.7 kPa

Adopted Line

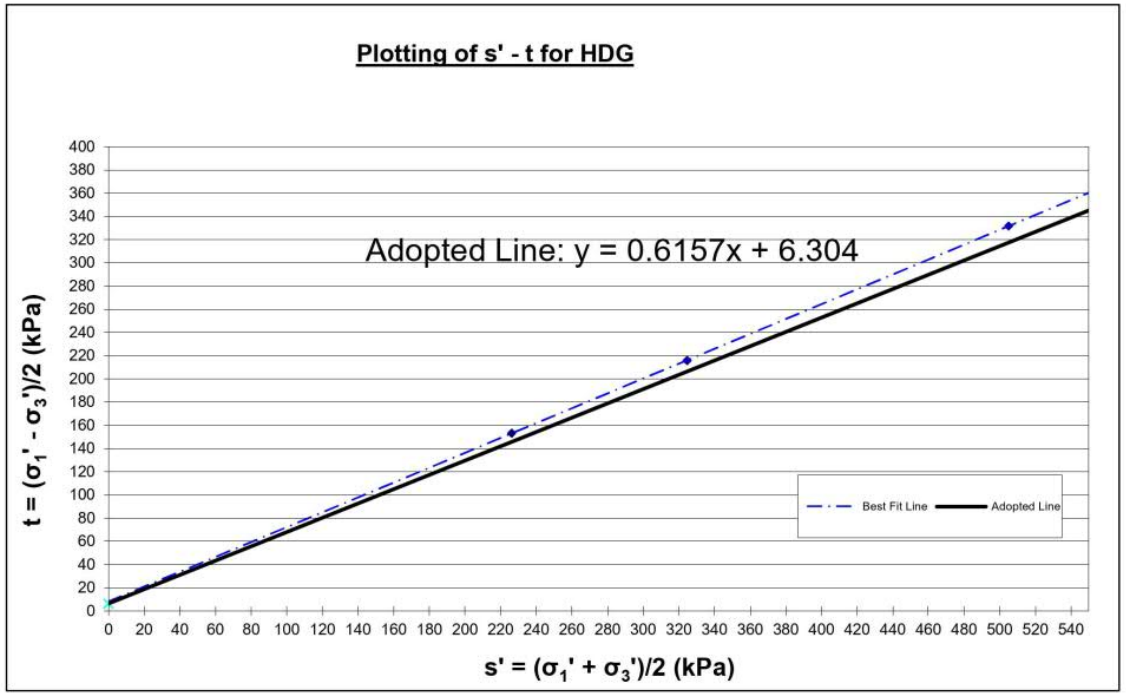
y = 0.574x + 4.096

Hence,
ϕ' = arcsin(0.574)
= **35.0°**
And, c' = 4.096/cos35°
= **5 kPa**

Consultant:	Title:	Scale:
C Arch Design Consultant Limited	**s' – t Plot for HDG**	N.T.S

Triaxial Compression Test Result Summary

Soil Type	HDG					
BH No.	**Soil Type**	**Sample No.**	**Sample Depth (mbgl)**	**Stage**	**s' (kPa)**	**t (kPa)**
BH01	HDG	1	2.9-3.9	CUM	226.3	153.2
BH01	HDG	1	2.9-3.9	CUM	324.7	215.6
BH01	HDG	1	2.9-3.9	CUM	505.2	331.7



Best Fit Line

y = 0.6404x + 8.033

Hence,
ϕ' = arcsin(0.6404)
= 39.8°
And, c' = 8.033/cos39.8°
= 10.5 kPa

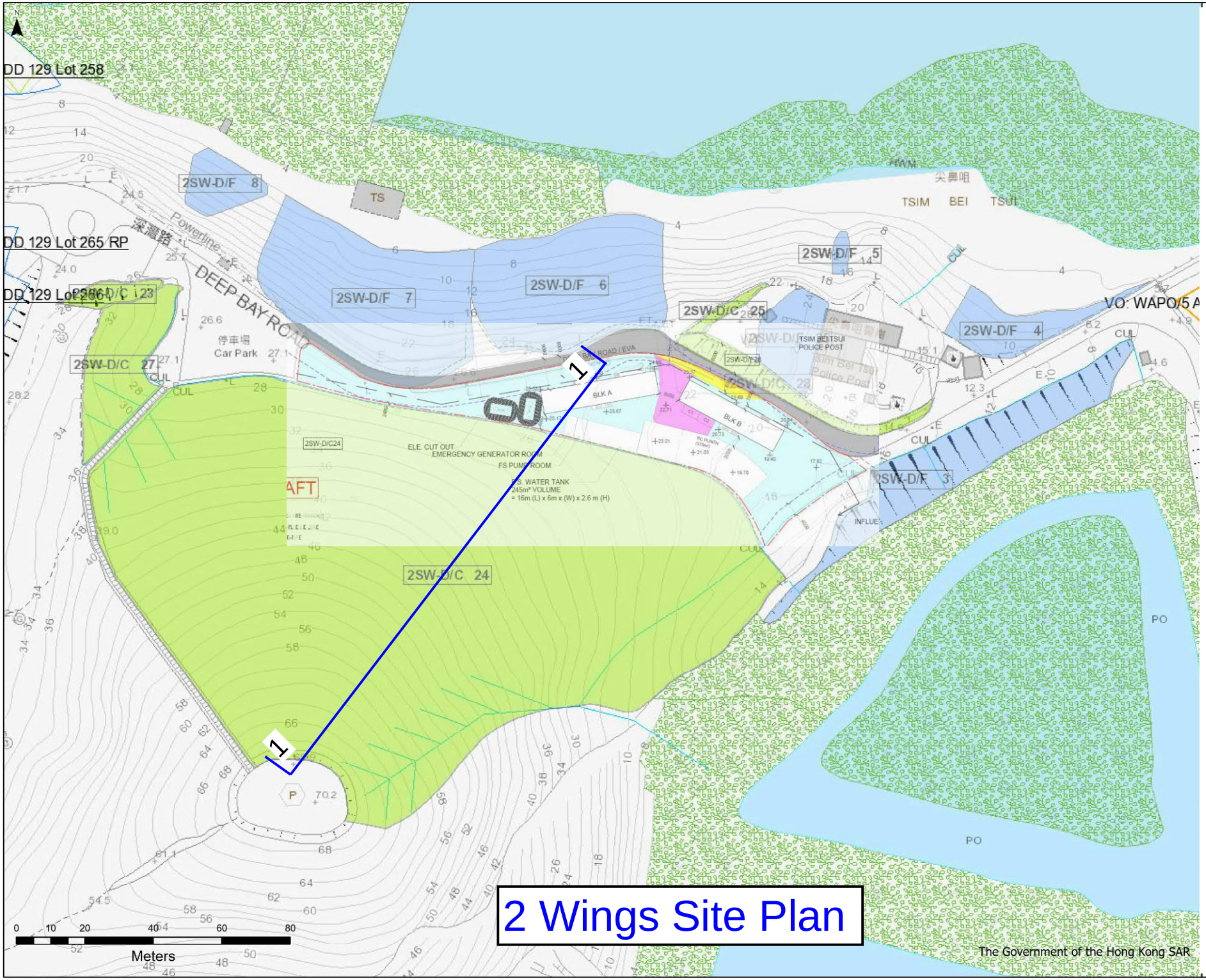
Adopted Line

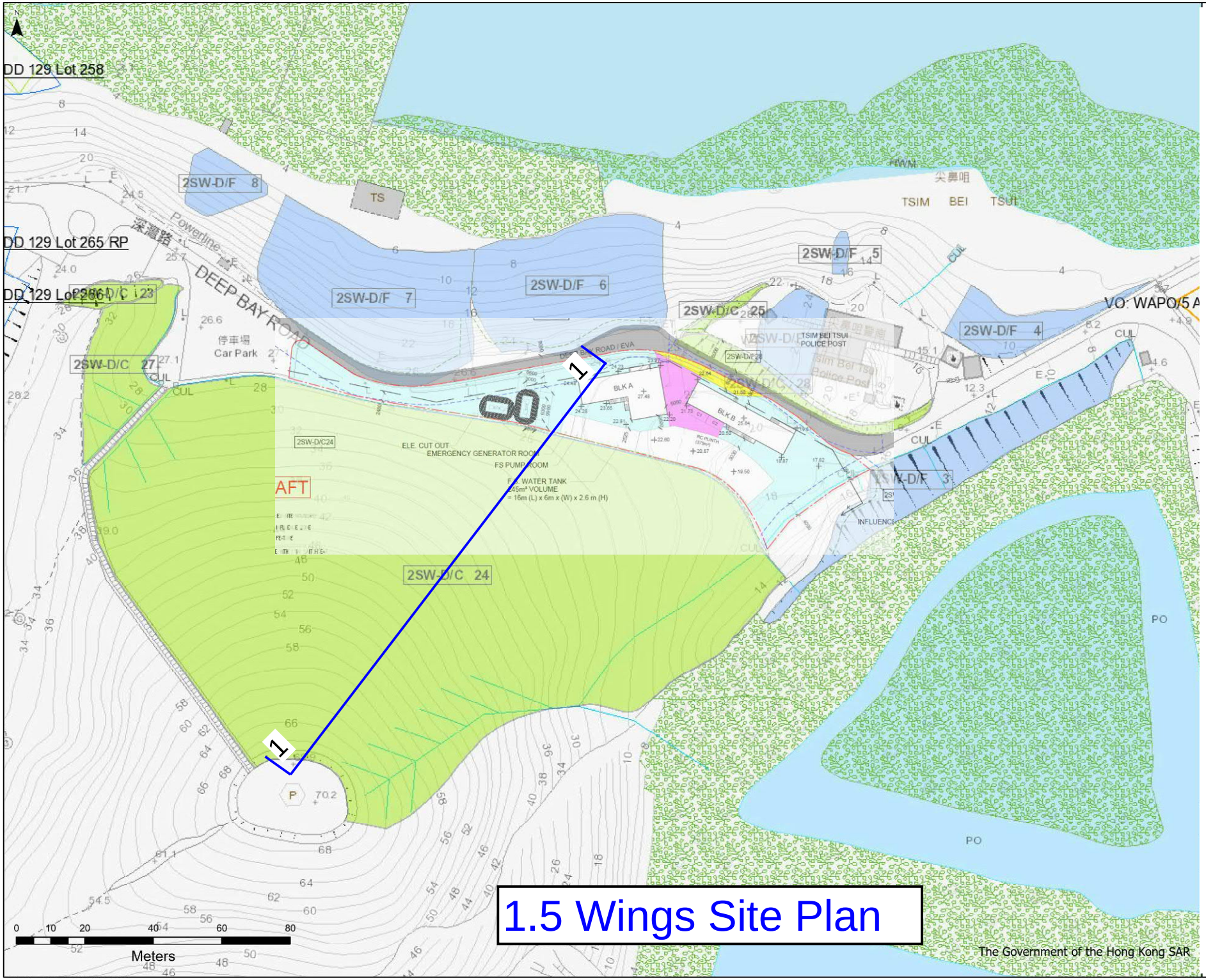
y = 0.6157x + 6.304

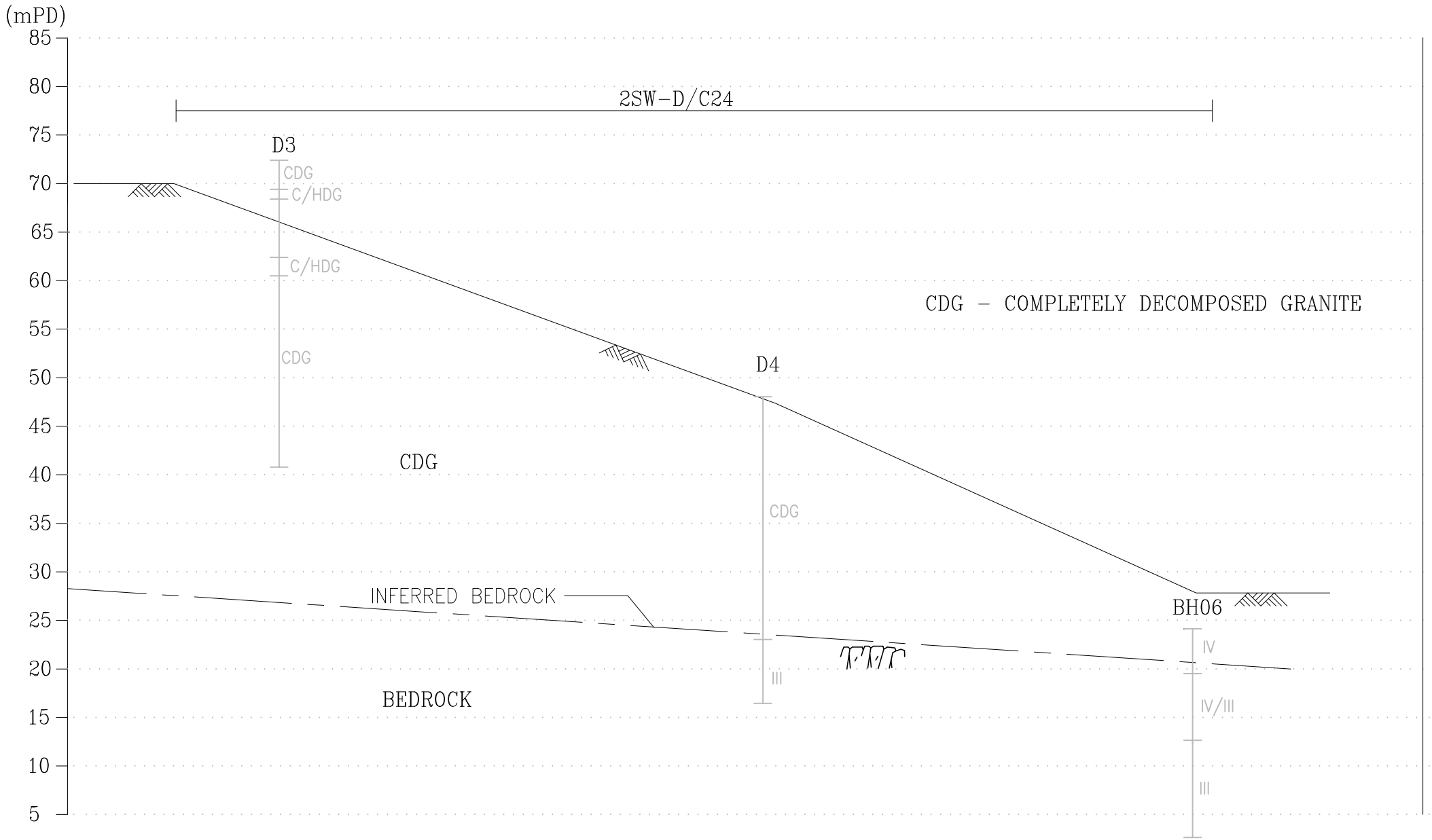
Hence,
ϕ' = arcsin(0.6157)
= **38.0°**
And, c' = 6.304/cos38°
= **8 kPa**

Appendix I

Slope Stability Analysis

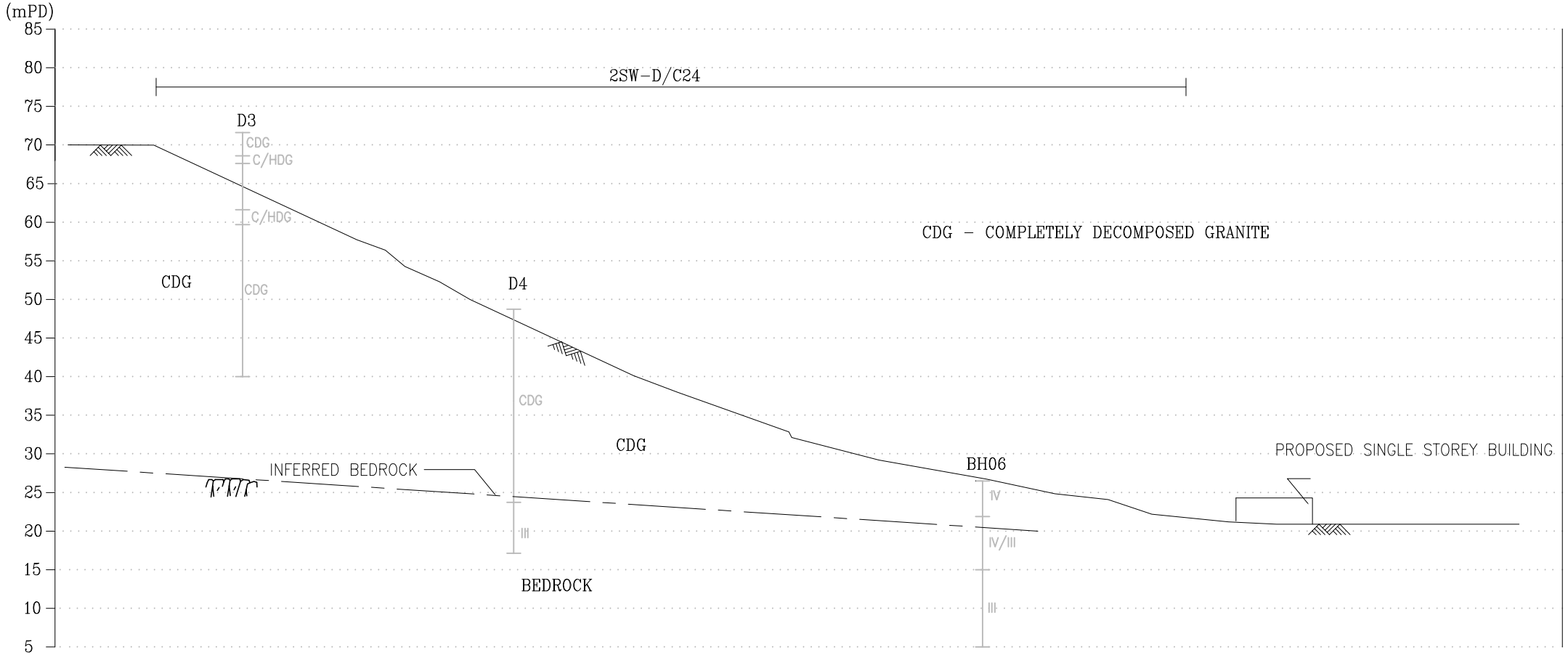

DD 129 Lot 258
DD 129 Lot 265 RP
DD 129 Lot 266
2SW-D/F 8
2SW-D/F 7
2SW-D/F 6
2SW-D/F 5
2SW-D/F 4
2SW-D/F 3
2SW-D/C 27
2SW-D/C 25
2SW-D/C 24
2SW-D/C24
TS
DEEP BAY ROAD
Powerline
深灣路
停車場
Car Park
TSIM BEI TSUI POLICE POST
ELE. CUT OUT
EMERGENCY GENERATOR ROOM
FS PUMP ROOM
W. WATER TANK
245m³ VOLUME
= 16m (L) x 6m x (W) x 2.6 m (H)
BLK A
BLK B
AFT
P
70.2
PO
HWM
尖鼻咀
TSIM BEI TSUI
VO: WAPO/5 A
1
1
0 10 20 40 60 80
Meters
2 Wings Site Plan
The Government of the Hong Kong SAR


DD 129 Lot 258
DD 129 Lot 265 RP
DD 129 Lot 266
2SW-D/F 8
2SW-D/F 7
2SW-D/F 6
2SW-D/F 5
2SW-D/F 4
2SW-D/C 27
2SW-D/C 25
2SW-D/C 24
DEEP BAY ROAD
Powerline
深灣路
停車場
Car Park
TS
TSIM BEI TSUI POLICE POST
ELE. CUT OUT
EMERGENCY GENERATOR ROOM
FS PUMP ROOM
FS WATER TANK
345m³ VOLUME
= 16m (L) x 6m x (W) x 2.6 m (H)
BLK A
BLK B
AFT
INFLUENCE
PO
HWM
尖鼻咀
TSIM BEI TSUI
VO: WAPO/5 A
1
1
P
70.2
0 10 20 40 60 80
Meters
1.5 Wings Site Plan
The Government of the Hong Kong SAR



GEOLOGICAL SECTION 1-1 (CRITICAL SECTION)

1:500



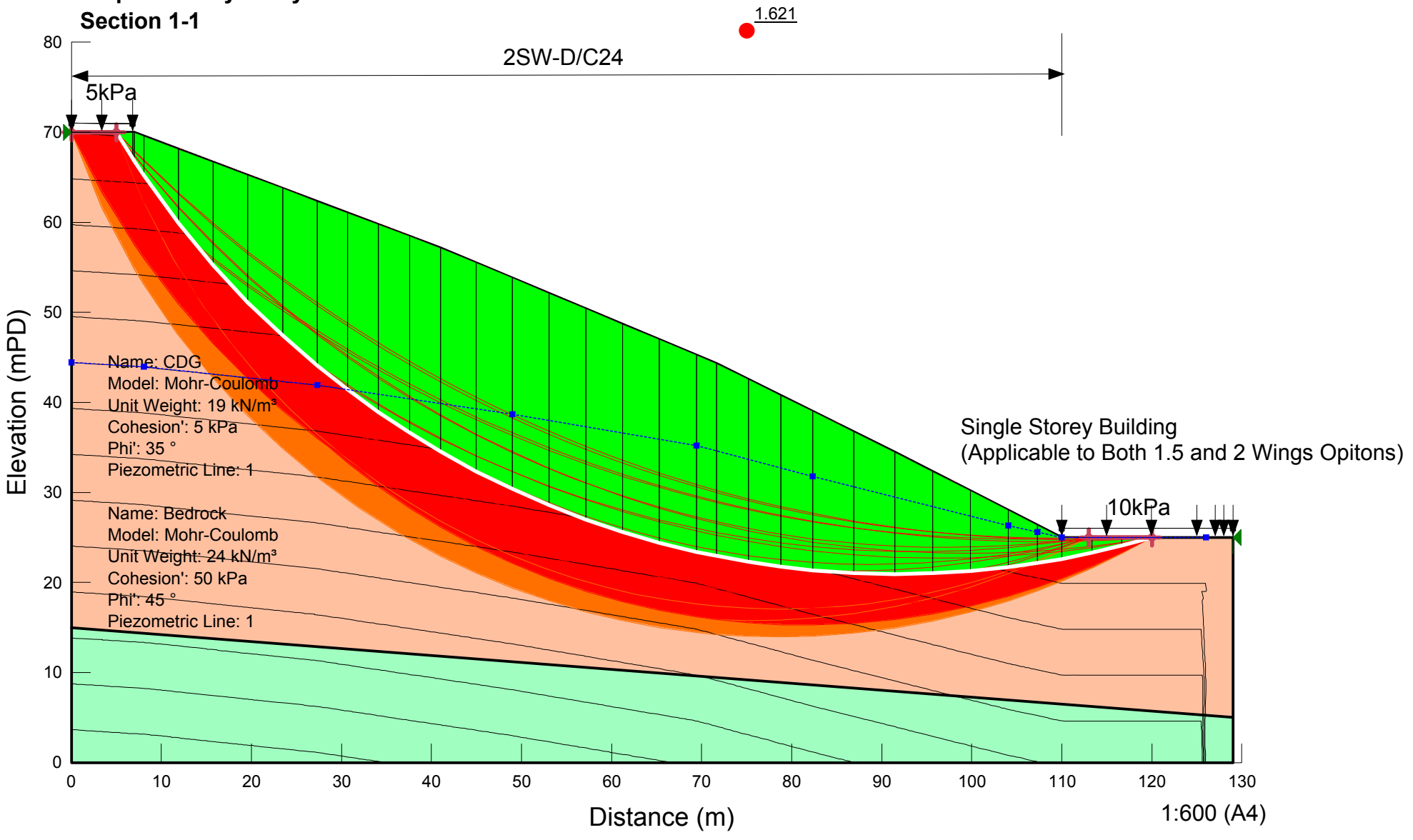
GEOLOGICAL SECTION 2-2

1:500

Project:
Feasibility Study and Design Development on Constructing a Low-Carbon Buildings Structures to Accommodate Artificial Intelligence Accelerators

Slope Stability Analysis

Section 1-1



SLOPE/W Analysis

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File Information

File Version: 8.15
Created By: Michael T
Last Edited By: Michael T
Revision Number: 22
Date: 3/24/2025
Time: 2:52:32 PM
Tool Version: 8.15.1.11236
File Name: C24 (Section 1-1).gsz
Directory: C:\Users\Michael\Desktop\
Last Solved Date: 3/24/2025
Last Solved Time: 2:53:58 PM

Project Settings

Length(L) Units: Meters
Time(t) Units: Seconds
Force(F) Units: Kilonewtons
Pressure(p) Units: kPa
Strength Units: kPa
Unit Weight of Water: 9.807 kN/m³
View: 2D
Element Thickness: 1

Analysis Settings

SLOPE/W Analysis

Kind: SLOPE/W
Method: Morgenstern-Price
Settings
- Side Function
  - Interslice force function option: Half-Sine
- PWP Conditions Source: Piezometric Line
- Apply Phreatic Correction: No
- Use Staged Rapid Drawdown: No

Slip Surface
- Direction of movement: Left to Right
- Use Passive Mode: No
- Slip Surface Option: Entry and Exit
- Critical slip surfaces saved: 10
- Resisting Side Maximum Convex Angle: 1 °
- Driving Side Maximum Convex Angle: 5 °

Optimize Critical Slip Surface Location: No
Tension Crack
Tension Crack Option: (none)
F of S Distribution
F of S Calculation Option: Constant
Advanced
Number of Slices: 30
F of S Tolerance: 0.001
Minimum Slip Surface Depth: 0.1 m
Search Method: Root Finder
Tolerable difference between starting and converged F of S: 3
Maximum iterations to calculate converged lambda: 20
Max Absolute Lambda: 2

Materials

CDG

Model: Mohr-Coulomb
Unit Weight: 19 kN/m³
Cohesion': 5 kPa
Phi': 35 °
Phi-B: 0 °
Pore Water Pressure
Piezometric Line: 1

Bedrock

Model: Mohr-Coulomb
Unit Weight: 24 kN/m³
Cohesion': 50 kPa
Phi': 45 °
Phi-B: 0 °
Pore Water Pressure
Piezometric Line: 1

Slip Surface Entry and Exit

Left Projection: Range
Left-Zone Left Coordinate: (0, 70) m
Left-Zone Right Coordinate: (5, 70) m
Left-Zone Increment: 1
Right Projection: Range
Right-Zone Left Coordinate: (113, 25) m
Right-Zone Right Coordinate: (120, 25) m
Right-Zone Increment: 1
Radius Increments: 10

Slip Surface Limits

Left Coordinate: (0, 70) m
Right Coordinate: (129, 25) m

Piezometric Lines

Piezometric Line 1

Coordinates

	X (m)	Y (m)
Coordinate 1	0	44.432
Coordinate 2	8.072	43.928
Coordinate 3	27.296	41.912
Coordinate 4	48.968	38.672
Coordinate 5	69.416	35.216
Coordinate 6	82.33333	31.75
Coordinate 7	104.04167	26.29167
Coordinate 8	107.31586	25.58731
Coordinate 9	110	25
Coordinate 10	126	25

Surcharge Loads

Surcharge Load 1

Surcharge (Unit Weight): 5 kN/m³
Direction: Vertical

Coordinates

	X (m)	Y (m)
	0	71
	6.79658	70.9789

Surcharge Load 2

Surcharge (Unit Weight): 10 kN/m³
Direction: Vertical

Coordinates

	X (m)	Y (m)
	110	26
	129	26

Points

	X (m)	Y (m)
Point 1	0	70
Point 2	7	70
Point 3	110	25
Point 4	126	25
Point 5	129	25
Point 6	129	5
Point 7	0	15
Point 8	0	0
Point 9	129	0
Point 10	71.648	44.3456
Point 11	41	57.18033
Point 12	91.4336	34.496

Regions

	Material	Points	Area (m²)
Region 1	CDG	1,2,11,10,12,3,4,5,6,7	4,725.1
Region 2	Bedrock	7,8,9,6	1,290

Current Slip Surface

Slip Surface: 39
F of S: 1.621
Volume: 1,749.9755 m³
Weight: 33,249.535 kN
Resisting Moment: 1,886,776.5 kN-m
Activating Moment: 1,164,077.4 kN-m
Resisting Force: 16,679.67 kN
Activating Force: 10,294.813 kN
F of S Rank (Analysis): 1 of 44 slip surfaces
F of S Rank (Query): 1 of 20 slip surfaces
Exit: (120, 25) m
Entry: (5, 70) m
Radius: 101.00138 m
Center: (91.626381, 121.93408) m

Slip Slices

	X (m)	Y (m)	PWP (kPa)	Base Normal Stress (kPa)	Frictional Strength (kPa)	Cohesive Strength (kPa)
Slice 1	5.89829	68.557264	-240.20816	15.955956	11.172481	5
Slice 2	6.89829	66.957774	-225.1343	31.183473	21.834903	5
Slice 3	7.536	65.995276	-216.08556	39.845557	27.90016	5
Slice 4	9.9944	62.547046	-184.57407	68.90616	48.248613	5
Slice 5	13.8392	57.580854	-139.82481	110.9091	77.659386	5
Slice 6	17.684	53.189397	-100.71197	147.74755	103.45395	5
Slice 7	21.5288	49.267217	-66.201339	180.73386	126.55121	5
Slice 8	25.3736	45.741183	-35.575711	210.84012	147.63184	5
Slice 9	28.977476	42.739406	-10.579692	237.19996	166.0892	5
Slice 10	32.382461	40.160572	9.7186717	261.82738	176.52842	5
Slice 11	35.829476	37.769315	28.115848	285.9861	180.56269	5
Slice 12	39.276492	35.581864	44.514291	308.07699	184.54859	5
Slice 13	42.992	33.442224	60.050203	328.62419	188.05753	5
Slice 14	46.976	31.365381	74.576607	347.57331	191.15435	5
Slice 15	51.0128	29.485029	86.707329	364.65141	194.61854	5
Slice 16	55.1024	27.793406	96.51847	379.77371	198.33746	5
Slice 17	59.192	26.306537	104.3216	392.42071	201.72917	5
Slice 18	63.2816	25.014976	110.20934	402.13382	204.40772	5
Slice 19	67.3712	23.910985	114.25758	408.29002	205.88373	5
Slice 20	70.532	23.166661	115.23119	410.57213	206.79995	5
Slice 21	73.428888	22.602054	113.14533	407.02692	205.77811	5
Slice 22	76.990665	22.014941	109.53058	396.81546	201.15904	5

Slice 23	80.552442	21.55761	104.64306	381.65946	193.96897	5
Slice 24	84.608397	21.20263	97.828045	357.572	181.87468	5
Slice 25	89.158533	20.988507	88.707937	322.12123	163.43774	5
Slice 26	93.534945	20.972611	78.072182	278.90109	140.62192	5
Slice 27	97.737635	21.139741	66.06987	229.28557	114.28486	5
Slice 28	101.94033	21.482905	52.341187	173.47924	84.821776	5
Slice 29	105.67877	21.928702	39.333797	119.79272	56.337944	5
Slice 30	108.65793	22.388359	28.492238	74.90225	32.49664	5
Slice 31	111.66667	22.955429	20.051111	58.246222	26.744504	5
Slice 32	115	23.689401	12.853049	41.263381	19.893129	5
Slice 33	118.33333	24.542961	4.4821861	22.32738	12.49534	5

Appendix J

Inspection Record of Slope Feature No. 2SW-D/C24

Plate 1	Plate 2
Plate 3	Plate 4
Plate 5	Plate 6

Inspection Date: 22nd April 2025 **Observation:** No sign of distress is observed on slope feature no. 2SW-D/C24

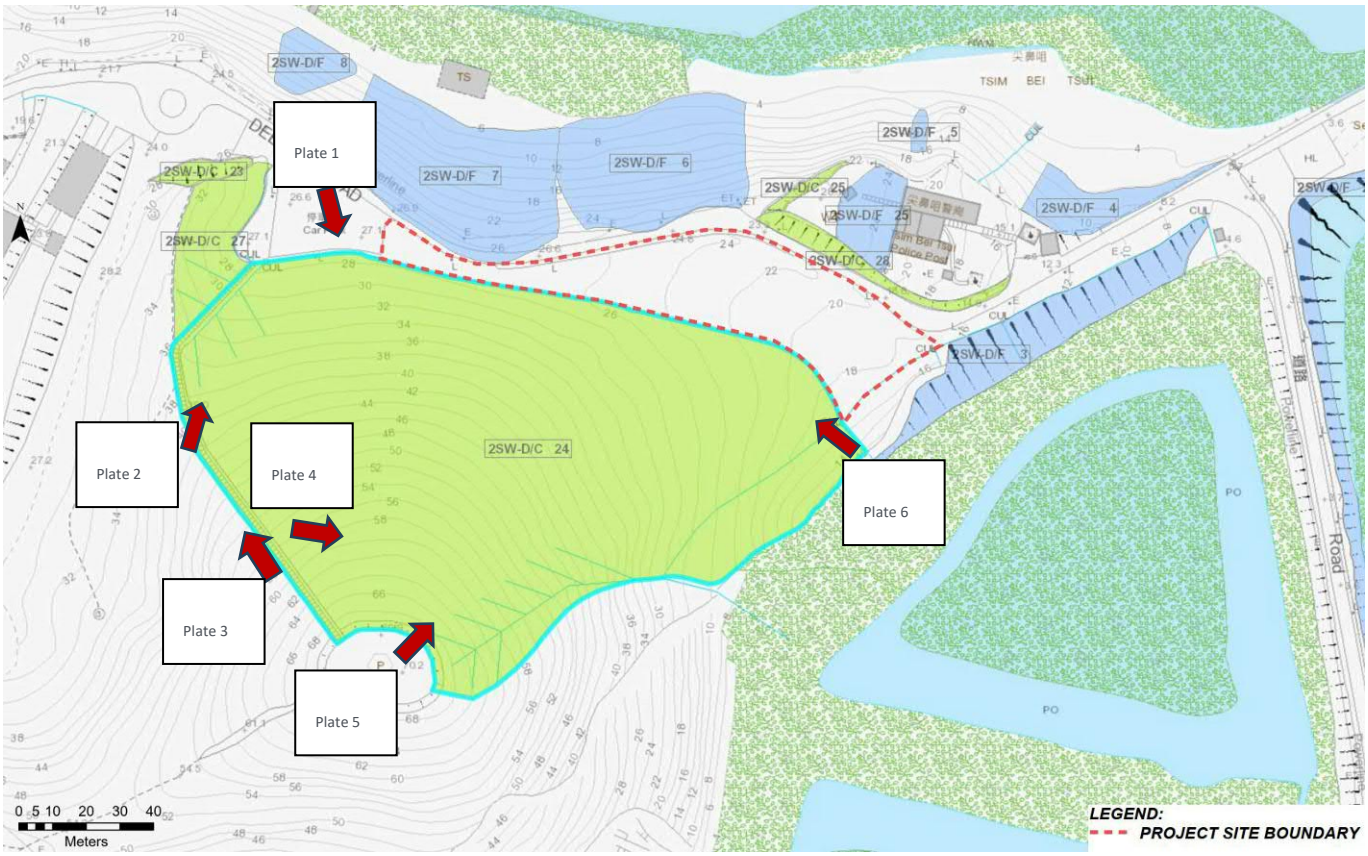
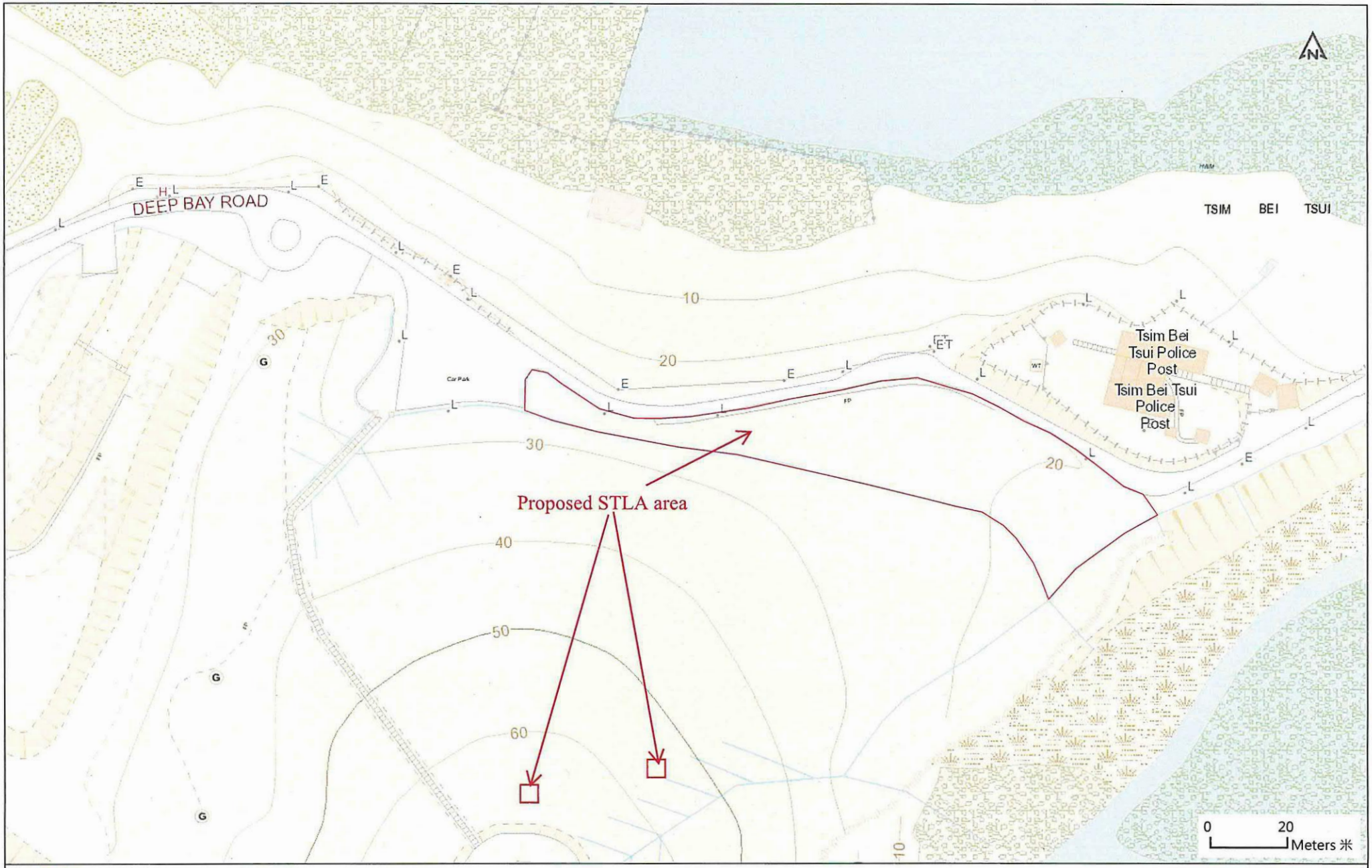


Plate 1
Plate 2
Plate 3
Plate 4
Plate 5
Plate 6
2SW-D/F 8
2SW-D/F 7
2SW-D/F 6
2SW-D/F 5
2SW-D/F 4
2SW-D/F 3
2SW-D/C 23
2SW-D/C 27
2SW-D/C 24
2SW-D/C 25
2SW-D/F 25
2SW-D/C 28
TS
TSIM BEI TSUI
Tsim Bei Tsui Police Post
PO
Road
0 5 10 20 30 40
Meters
LEGEND:
PROJECT SITE BOUNDARY

Photo Plan

Appendix K

Trial Pit Records for Geological Review and Verification



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Print Date
列印日期 : 25 / 07 / 2025

Appendix II

FONG ON
Construction Limited

CONTRACT NO. :

PROJECT :
Trial Pit Works for Feasibility Study and Design Development on Constructing a Low-carbon Building Structure to Accommodate Artificial Intelligence Accelerators for Environmental Protection Department
W.O. No. :

LOGGED BY : **Henry Yip**
DATE : **15/10/2025**

CHECKED BY: **H K HCENG**
DATE : **16/10/2025**

CO-ORDINATES :
E **818976.89**
N **838402.47**

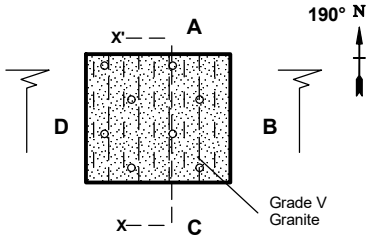
GROUND LEVEL :
+66.80 m.P.D.
EXCAVATION DATE :
09/10/2025 to **09/10/2025**
BACKFILL DATE :
to

TRIAL PIT NO. :
TP1

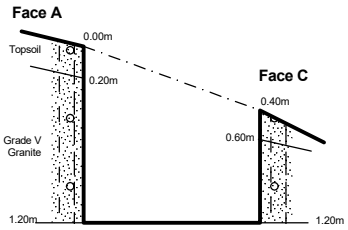
TRIAL PIT RECORD

Samples & Tests	Depth (m)	Sketch (Face A : 1.20 m / Face B : 1.20 m / Face C : 1.20 m / Face D : 1.20 m)	Depth (m)	Legend (Face D)	Weathering Grade	Description
	0 – 0.20		0 – 0.20		V	Loose, dark yellowish brown, silty fine to coarse SAND with some angular fine to coarse gravel sized rock fragments and with some rootlets (TOP SOIL)
	0.20 – 1.20		0.20 – 1.20			Extremely weak to very weak, brown, mottled grey and white, completely decomposed coarse grained GRANITE. (Silty fine to coarse SAND with some angular fine to coarse gravel sized quartz and rock fragments)
	1.20 – 1.00		1.20 – 1.00			End of trial pit at 1.00m (Averrage)

PLAN



SECTION (X-X')



SYMBOL

- Small Disturbed Sample
- Large Disturbed Sample
- Undisturbed Sample Hori. (**U100**)
- Undisturbed Sample Vert. (**U100**)
- Block Sample
- Insitu Density Test
- Water Sample
- Schmidt Hammer Test
- Seepage

REMARKS

1. **Groundwater not encountered.**
2. **Average depth: 1.00m.**

TRIAL PIT NO.
TP1

FONG ON
Construction Limited

CONTRACT NO. :

PROJECT :
Trial Pit Works for Feasibility Study and Design Development on Constructing a Low-carbon Building Structure to Accommodate Artificial Intelligence Accelerators for Environmental Protection Department
W.O. No. :

LOGGED BY : **Henry Yip**
DATE : **15/10/2025**

CHECKED BY: **H K HCENG**
DATE : **16/10/2025**

CO-ORDINATES :
E **819009.24**
N **838403.59**

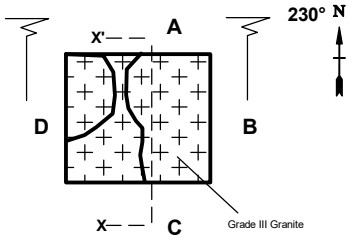
GROUND LEVEL :
+56.10 m.P.D.
EXCAVATION DATE :
09/10/2025 to **09/10/2025**
BACKFILL DATE :
to

TRIAL PIT NO. :
TP2

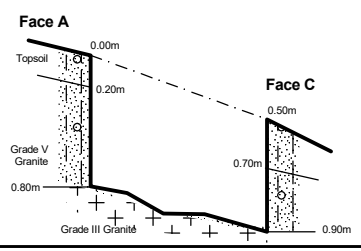
TRIAL PIT RECORD

Samples & Tests	Depth (m)	Sketch	Depth (m)	Legend (Face D)	Weathering Grade	Description
	0	Face A : 1.20 m / Face B : 1.20 m / Face C : 1.20 m / Face D : 1.20 m	0			
	0.20	Grade III Granite	0.20		V	Loose, dark yellowish brown, silty fine to coarse SAND with some angular fine to coarse gravel sized rock fragments and with some rootlets. (TOP SOIL)
			0.30			Extremely weak to very weak, brown to brownish pink, mottled grey and white, completely decomposed coarse grained GRANITE. (Silty fine to coarse SAND with some angular fine to coarse gravel and cobble sized quartz and rock fragments)
	0.80		0.80		III	Below 0.80m: Moderately weak to moderately strong, brownish pink to reddish brown mottled grey, black and white, moderately decomposed coarse grained GRANITE.
	1		1			End of trial pit at 0.60m (Averrage)
	2		2			
	3		3			
	4		4			
	5		5			

PLAN



SECTION (X-X')



SYMBOL

- Small Disturbed Sample
- Large Disturbed Sample
- Undisturbed Sample Hori. (**U100**)
- Undisturbed Sample Vert. (**U100**)
- Block Sample
- Insitu Density Test
- Water Sample
- Schmidt Hammer Test
- Seepage

REMARKS

1. **Groundwater not encountered.**
2. **Average depth: 0.80m.**

TRIAL PIT NO.
TP2

PLANNING LIMITED
規劃顧問有限公司

UNIT K, 16/F, MG TOWER
133 HOI BUN ROAD, KWUN TONG
KOWLOON, HONG KONG
九龍觀塘海濱道133號
萬兆豐中心16樓K室
電話TEL (852) 3426 8451
傳真FAX (852) 3426 9737
電郵EMAIL kta@ktaplanning.com

By Email (tpbpd@pland.gov.hk)

Our Ref: S3171/GBASS_TBT/25/003Lg

31 December 2025

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

Dear Sir / Madam,

Proposed 'Government Use' (GBA Air Quality Laboratory and Meteorological Monitoring Supersite and Associated Filling of Land) in "Green Belt" Zone and Area shown as 'Road', Government Land in D.D.129, Deep Bay Road, Tsim Bei Tsui, Yuen Long, New Territories (Section 16 Planning Application No. A/YL-LFS/592) - Supplementary Information -

---

We refer to the captioned S16 Application submitted to the Town Planning Board ("TPB") on 24 December 2025 and the email enquiry from Tuen Mun and Yuen Long West District Planning Office dated 31 December 2025.

For clarification purpose, please find attached the replacement page of the Application Form (with revised proposed use, area and depth of filling) (Pg. 7, 10 & 14), replacement pages of Planning Statement (with the full phrases of the abbreviations) (Pgs. 4 & 14), revised Master Layout Plan (with revised legend) as well as revised Block Layout Plans (with abbreviations). Please also find attached an additional Plan showing the extent of filling within the Site.

Please note that the proposed extent of land filling is indicative only. It is proposed to apply pad footing foundation design beneath the elevated structural support of the two blocks, such that the total area of land filling / paving would be reduced.

Should you have any queries in relation to the attached, please do not hesitate to contact the undersigned at [redacted].

Our Ref: S3171/GBASS_TBT/25/003Lg
Date: 31 December 2025

PLANNING LIMITED
規劃顧問有限公司

Yours faithfully
For and on behalf of
KTA PLANNING LIMITED

Camille LAM

Encl.

cc. TMYLW DPO – Mr Wilfred Chu (by email)
the Applicant

KT/PL/CL/vy

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

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

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

(v) For Type (v) application 供第(v)類申請

(a) Proposed use(s)/development 擬議用途/發展	Proposed 'Government Use' (GBA Air Quality Laboratory and Meterological Monitoring Supersite and Associated Filling of Land) (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	616 sq.m 平方米	☑About 約
Proposed plot ratio 擬議地積比率	0.2	☑About 約
Proposed site coverage 擬議上蓋面積	20 %	☑About 約
Proposed no. of blocks 擬議座數	5 *	
Proposed no. of storeys of each block 每座建築物的擬議層數	1 storeys 層 ☐ include 包括 ….. storeys of basements 層地庫 ☐ exclude 不包括 ….. storeys of basements 層地庫	
Proposed building height of each block 每座建築物的擬議高度	Not more than 30 mPD 米(主水平基準上) …… m 米	☐About 約 ☐About 約

* incl. Block A, Block B, Emergency Generator Room, FS Pump Room and FS Water Tank

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

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

Does the development proposal involve alteration of existing building? 擬議發展計劃是否包括現有建築物的改動?	Yes 是	☐ Please provide details 請提供詳情 …… …… …… …… ……
	No 否	☑
Does the development proposal involve the operation on the right? 擬議發展是否涉及右列的工程? (Note: where Type (ii) application is the subject of application, please skip this section. 註：如申請涉及第(ii)類申請，請跳至下一條問題。)	Yes 是	☑ (Please indicate on site plan the boundary of concerned land/pond(s), and particulars of stream diversion, the extent of filling of land/pond(s) and/or excavation of land) (請用地盤平面圖顯示有關土地／池塘界線，以及河道改道、填塘、填土及／或挖土的細節及/或範圍) ☐ Diversion of stream 河道改道 ☐ Filling of pond 填塘 Area of filling 填塘面積 …… sq.m 平方米 ☐About 約 Depth of filling 填塘深度 …… m 米 ☐About 約 ☑ Filling of land 填土 Area of filling 填土面積 ….1,400…… sq.m 平方米 ☑About 約 Depth of filling 填土厚度 ……0.1 to 2…… m 米 ☑About 約 ☐ Excavation of land 挖土 Area of excavation 挖土面積…… sq.m 平方米 ☐About 約 Depth of excavation 挖土深度 ……m 米 ☐About 約
	No 否	☐
Would the development proposal cause any adverse impacts? 擬議發展計劃會否造成不良影響？	On environment 對環境	Yes 會 ☐ No 不會 ☑
	On traffic 對交通	Yes 會 ☐ No 不會 ☑
	On water supply 對供水	Yes 會 ☐ No 不會 ☑
	On drainage 對排水	Yes 會 ☐ No 不會 ☑
	On slopes 對斜坡	Yes 會 ☐ No 不會 ☑
	Affected by slopes 受斜坡影響	Yes 會 ☐ No 不會 ☑
	Landscape Impact 構成景觀影響	Yes 會 ☐ No 不會 ☑
	Tree Felling 砍伐樹木	Yes 會 ☐ No 不會 ☑
	Visual Impact 構成視覺影響	Yes 會 ☐ No 不會 ☑
	Others (Please Specify) 其他 (請列明)	Yes 會 ☐ No 不會 ☐
	_____ _____	
	Please state measure(s) to minimise the impact(s). For tree felling, please state the number, diameter at breast height and species of the affected trees (if possible) 請註明盡量減少影響的措施。如涉及砍伐樹木，請說明受影響樹木的數目、及胸高度的樹幹直徑及品種(倘可)	
	Please refer to the Supporting Planning Statement and Landscape Proposal …… …… …… ……	

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	Government Land in D.D. 129, Deep Bay Road, Tsim Bei Tsui, Yuen Long, New Territories
Site area 地盤面積	3,080 sq. m 平方米 ☑ About 約 (includes Government land of 包括政府土地 3,080 sq. m 平方米 ☑ About 約)
Plan 圖則	Approved Lau Fau Shan and Tsim Bei Tsui Outline Zoning Plan No. S/YL-LFS/11
Zoning 地帶	"Green Belt" zone and Area shown as 'Road'
Applied use/ development 申請用途/發展	Proposed 'Government Use' (GBA Air Quality Laboratory and Meterological Monitoring Supersite and Associated Filling of Land)

(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	N/A ☐ About 約 ☐ Not more than 不多於	N/A ☐About 約 ☐Not more than 不多於
	Non-domestic 非住用	616 ☑ About 約 ☐ Not more than 不多於	0.2 ☑About 約 ☐Not more than 不多於
(ii) No. of blocks 幢數	Domestic 住用		
	Non-domestic 非住用	5 *	
	Composite 綜合用途		

* incl. Block A, Block B, Emergency Generator Room, FS Pump Room and FS Water Tank

significant pollution sources. The nearest villages, Sha Kiu Tsuen and Mong Tseng Wai, are over 900m to the south the Site, helping to avoid interference with regional monitoring work.

2.3.3 Secondly, the selected site should be **closer to the GBA** (**Figure 2.1** refers). Tsim Bei Tsui, situated right at the east of the Pearl River Estuary, is considered suitable for assessing air quality and meteorological data in the GBA. This allows for effective monitoring of air transport routes under different weather conditions, providing comprehensive and representative data on regional air pollution and meteorology.

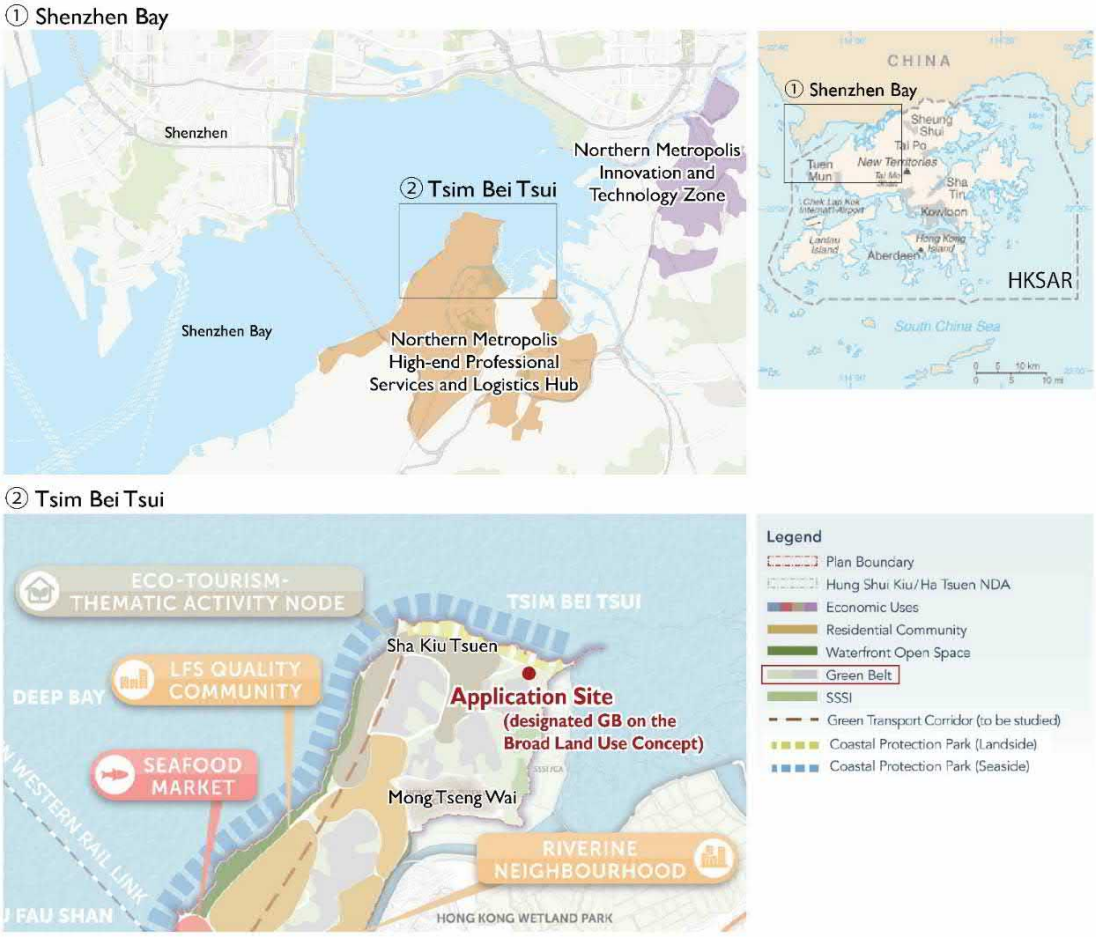


Figure 2.1 Location of the Proposed Supersite in relation to the GBA and the Northern Metropolis (NM)

Table 4.1 Key Development Parameters

	Total
Site Area	About 3,080m^2
Plot Ratio	About 0.2
Site Coverage	About 20%
No. of Blocks	5, incl. Blocks A & B, Emergency Generator Room, FS Pump Room and FS Water Tank
No. of Storeys	1
Total GFA	**Total: About 616m^2** Incl. Blocks A & B (230m^2 each): About 460m^2 Supporting Facilities, incl. Emergency Generator Room, FS Pump Room and FS Water Tank, etc. About 156m^2
Maximum Building Height	Main Roof level not more than +30mPD Notes: ▪ excluding rooftop monitoring devices and meteorological monitoring system ▪ total height of the blocks: about 5m (Block A) & about 5.35m (Block B) ▪ ground level of Blocks A & B: +24.63mPD and +22.79mPD respectively
Proposed Uses	Block A: ▪ G/F: Air Monitoring Equipment, Store, Uninterruptible Power Supply (UPS) Room, Server Room, VOC Analyser Support Room, Zone for Greenhouse Gases (GHGS) Monitoring and Tracing, etc. ▪ R/F: Monitoring devices and meteorological monitoring system Block B: ▪ G/F: FTIR Room, Zone for Photochemical Composition Monitoring System, Zone for Particulate Matters, Zone for Standard Air Quality Monitoring Station (AQMS), etc. ▪ R/F: Monitoring devices incl. FTIR device with solar tracker enclosed by a dome and sampling inlets

NORTH

2SW-D/F7

TURN AROUND / DROP OFF AREA
BLOCK B ENTRANCE
SITE MAIN ENTRANCE
BLOCK A ENTRANCE

INFLUENCE ZONE

2SW-D/F6

EXTG
CAR
PARK

DEEP BAY ROAD / EVA

TSIM BEI TSUI
POLICE POST

2SW-D/F28

BLK A

BLK B

RC PLINTH
(375m²)

2SW-D/C24

ELE. CUT OUT
EMERGENCY GENERATOR ROOM
FS PUMP ROOM

F.S. WATER TANK
245m³ VOLUME
= 16m (L) x 6m x (W) x 2.6 m (H)

2SW-D/F3

INFLUENCE ZONE

LEGEND :

- PROPOSED SITE BOUNDARY
- SLOPE INFLUENCE ZONE
- SLOPE FEATURE
- H-POLE WITH 11kV SWITCHGEAR
- EXISTING ROAD
- RUN IN/OUT
- C1 CAR PARKING SPACE (2.5m x 5m)

Abbreviations:
FS: Fire Services
RC: Reinforced Concrete

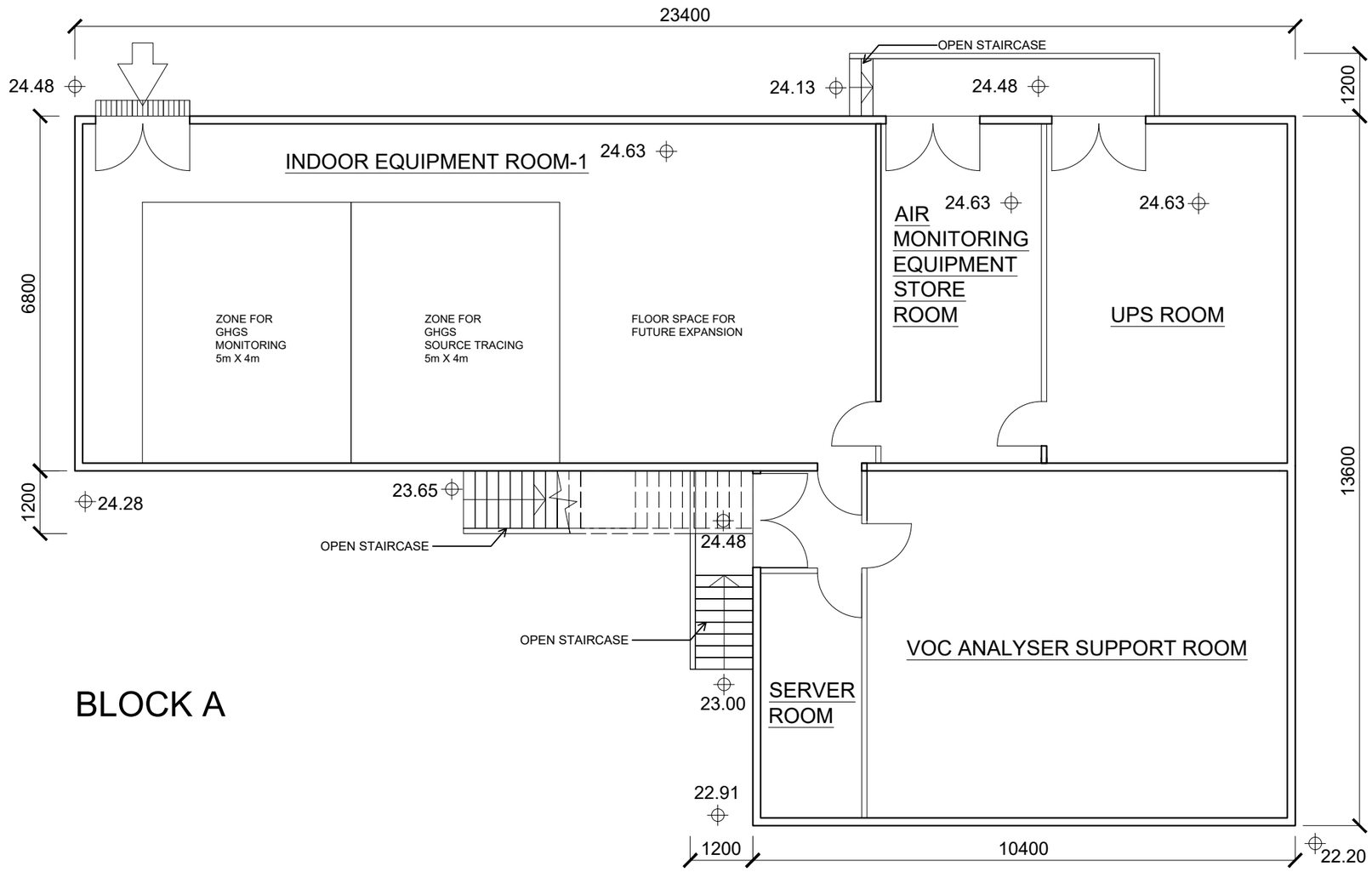
Proposed 'Government Use'
(GBA Air Quality Laboratory and Meteorological Monitoring Supersite)
on Deep Bay Road, Tsim Bei Tsui, New Territories

MASTER LAYOUT PLAN

1:500 (A3)

1

02 - 10 - 2025



BLOCK A

Abbreviations:

AQMS:	Air Quality Monitoring Station
FTIR:	Fourier Transform Infrared
GHGS:	Greenhouse Gases
UPS:	Uninterruptible Power Supply
VOC:	Volatile Organic Compounds

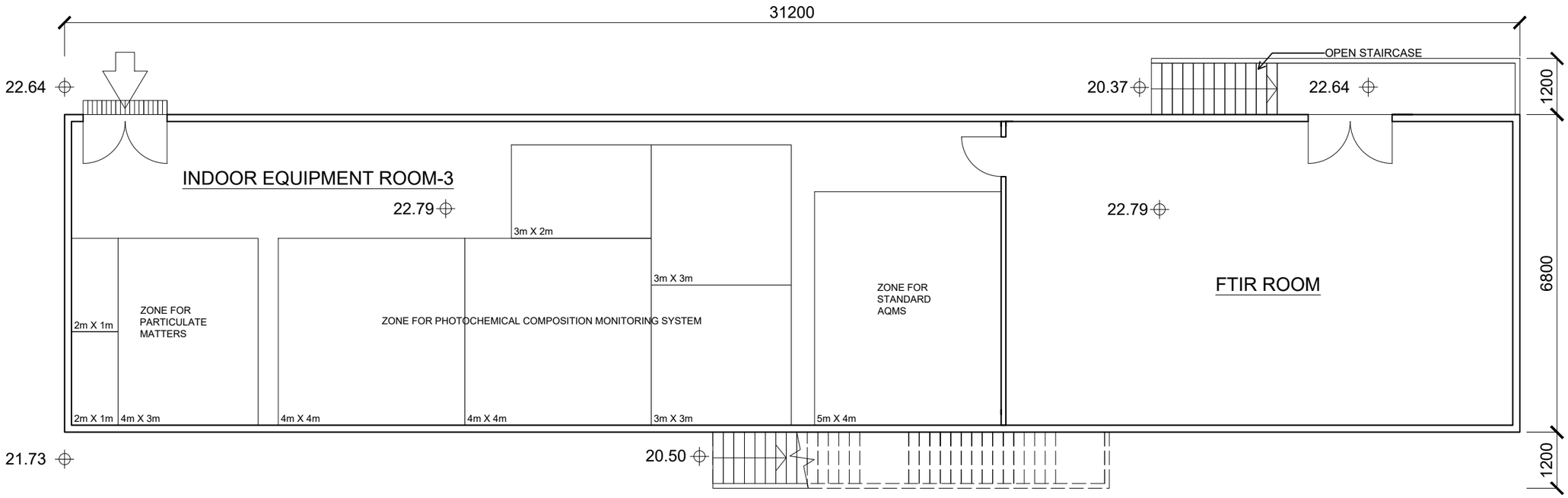
Proposed 'Government Use'
(GBA Air Quality Laboratory and Meteorological Monitoring Supersite)
on Deep Bay Road, Tsim Bei Tsui, New Territories

BLOCK LAYOUT PLAN (BLOCK A)

1:100 (A3)

3a

17 - 09 - 2025



BLOCK B

Abbreviations:

AQMS:	Air Quality Monitoring Station
FTIR:	Fourier Transform Infrared
GHGS:	Greenhouse Gases
UPS:	Uninterruptible Power Supply
VOC:	Volatile Organic Compounds

Proposed 'Government Use'
(GBA Air Quality Laboratory and Meteorological Monitoring Supersite)
on Deep Bay Road, Tsim Bei Tsui, New Territories

BLOCK LAYOUT PLAN (BLOCK B)

1:100 (A3)

3b

17 - 09 - 2025

Roadside Trees

Woodland Tree Mix

Shrubs and Groundcover

Climbing Plants on Boundary Fence

Grasscrete Paver

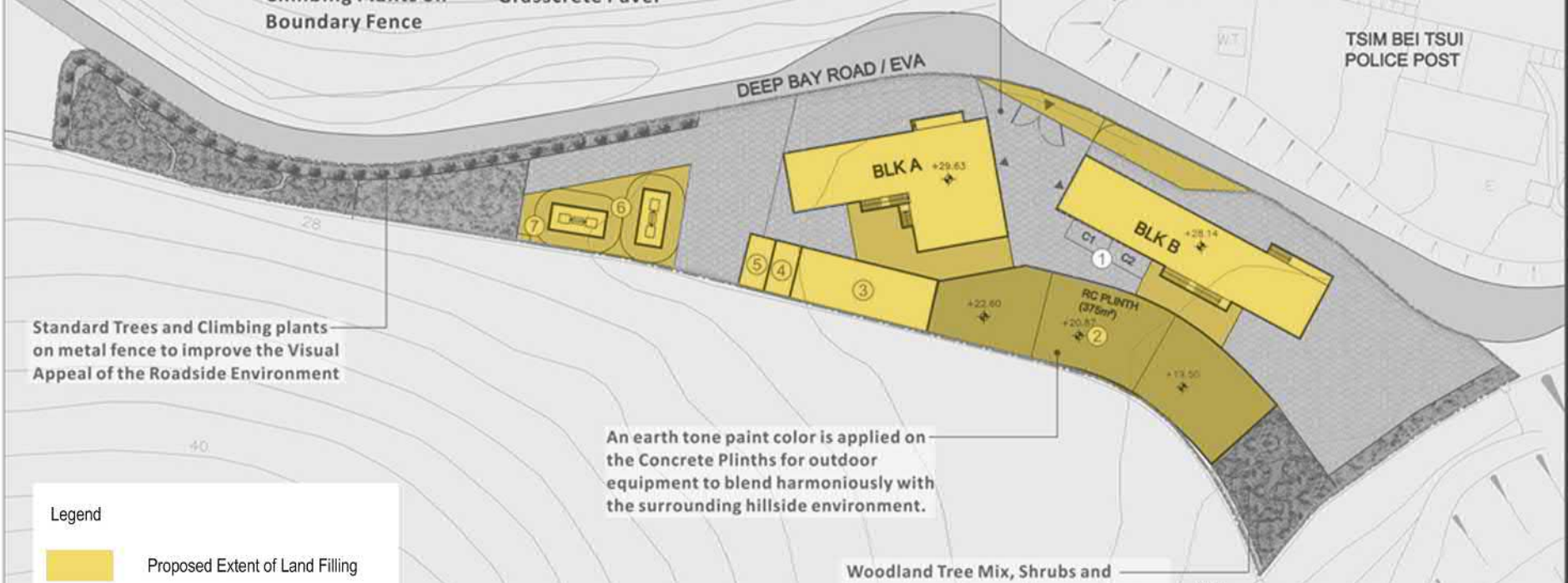
KEY:

1. Carparks
2. Concrete Plinth for Instrument
3. F.S. Water Tank
4. F.S. Pump Room
5. Emergency Generator Room
6. Electricity Pole
7. Ele. Cut Out

LEGEND:

- APPLICATION SITE BOUNDARY
- PROPOSED STANDARD TREES
- PROPOSED SHRUBS AND GROUNDCOVER
- PROPOSED WOODLAND MIX
- PROPOSED GRASSCRETE PAVER
- PROPOSED CLIMBING PLANT
- CONCRETE PAVING
- METAL FENCE (2.5M HIGH)
- +14.75 PROPOSED LEVEL
- SITE ENTRANCE
- BUILDING ENTRANCE

Grasscrete Pavers is proposed around the indoor and outdoor equipment to prevent obstruction of light and potential VOC emissions but enhance the local greenery with Site.



Standard Trees and Climbing plants on metal fence to improve the Visual Appeal of the Roadside Environment

An earth tone paint color is applied on the Concrete Plinths for outdoor equipment to blend harmoniously with the surrounding hillside environment.

Woodland Tree Mix, Shrubs and Groundcover to provide a Seamless Transition between the Development and the adjacent Natural Environment

Legend

Proposed Extent of Land Filling

0 10 20 30 40M

Plan of Extent of Land Filling

Note:
The proposed extent of land filling is indicative only. It is proposed to apply pad footing foundation design beneath the elevated structural support of the two blocks, such that the total area of land filling / paving would be reduced.

PROJECT :
PROPOSED "GOVERNMENT USE" (GBA AIR QUALITY LABORATORY AND METEOROLOGICAL MONITORING SUPERSITE) ON DEEP BAY ROAD, TSIM BEI TSUI, N.T.

DRAWING TITLE :
LANDSCAPE MASTER PLAN

PROJECT No. C2520

DRAWING No. LMP01

SCALE : 1:500

DATE OF ISSUE : AUG 2025

CAD FILENAME : C2520-LMP01

REV	DESCRIPTION	DATE

DESIGN BY : TEL
DRAWN BY : CAD
CHECKED BY : TEL
APPROVED BY : TEL

NOTES :
1. DO NOT SCALE DRAWING. FIGURED DIMENSIONS ARE TO BE FOLLOWED.
2. COPYRIGHT OF THE DRAWING IS RETAINED BY THE AUTHORIZED PERSON.
3. ALL DIMENSIONS ARE TO BE CHECKED AT SITE BY THE MAIN CONTRACTOR.
4. READ THIS DWG. IN CONNECTION WITH GEN. ARCH. PLANS, STRUCT. PLANS, AND OTHER RELATED DWGS.

LanDes
LANDES LIMITED
景藝設計有限公司
FLAT A, 17/F,
SHUN PONT COMMERCIAL BUILDING,
5-11 THOMSON ROAD, HONG KONG
TEL: 2868 0980 FAX: 2868 2203
香港灣仔譚臣道5-11號
信邦商業大廈17樓A室
電話: 2868 0980
傳真: 2868 2203

Wilfred Ka Hing CHU/PLAND

寄件者: Wilfred Ka Hing CHU/PLAND
寄件日期: 2026年01月14日星期三 17:46
收件者: tpbpd/PLAND
副本: Belva Yuen King TONG/PLAND; Ada Siu Man CHAN/PLAND
主旨: Fw: Departmental Comment on Planning Application No. A/YL-LFS/592

FI for A/YL-LFS/592

From: Camille Lam [redacted]
Sent: Wednesday, January 14, 2026 4:12 PM
To: Wilfred Ka Hing CHU/PLAND <wkhchu@pland.gov.hk>
Cc: Pauline Lam [redacted]; Josephine CM LAM/EPD [redacted]; Belva Yuen King TONG/PLAND <byktong@pland.gov.hk>
Subject: RE: Departmental Comment on Planning Application No. A/YL-LFS/592

Dear Wilfred,

In response to EPD's comment, please be clarified that there will be no staff stationed at the Supersite and hence there will not be any sewerage and waste implications.

Rgds,

Camille Lam

Principal Town Planner

KTA Planning Limited
Address Unit K, 16/F, MG Tower, 133 Hoi Bun Road, Kwun Tong
[redacted]

PLANNING LIMITED
規劃顧問有限公司

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九龍觀塘海濱道133號
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電話TEL (852) 3426 8451
傳真FAX (852) 3426 9737
電郵EMAIL kta@ktaplanning.com

By Email (tpbpd@pland.gov.hk)

Our Ref: S3171/GBASS_TBT/25/005Lg

30 January 2026

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

Dear Sir / Madam,

Proposed 'Government Use' (GBA Air Quality Laboratory and Meteorological Monitoring Supersite and Associated Filling of Land) in "Green Belt" Zone and Area shown as 'Road', Government Land in D.D.129, Deep Bay Road, Tsim Bei Tsui, Yuen Long, New Territories (Section 16 Planning Application No. A/YL-LFS/592) - Further Information No. 2 -

We refer to the captioned S16 Application received by the Town Planning Board ("TPB") on 31 December 2025 and the departmental comments received on 23 and 26 January 2026.

To address the departmental comments, attached please find the response-to-comment table for consideration.

Should you have any queries in relation to the attached, please do not hesitate to contact the undersigned at [redacted].

Yours faithfully
For and on behalf of
KTA PLANNING LIMITED

Camille LAM

Encl.

cc. TMYLW DPO – Mr Wilfred Chu (by email)
the Applicant

KT/PL/CL/vy

FS 579819

Proposed 'Government Use' (GBA Air Quality Laboratory and Meteorological Monitoring Supersite) and Filling of Land in "Green Belt" Zone and Area shown as 'Road' on Deep Bay Road, Tsim Bei Tsui, New Territories
(S.16 Planning Application No. A/YL-KFS/592)
Comments Forwarded from Tuen Mun and Yuen Long West District Planning Office

Comments	Responses
Comments from Water Supplies Department (received on 23 January 2026) **Contact person: Mr. Billy WONG; Tel. No.: 2152 5779**	
No objection to the application. Other Comments: 1. Existing water mains will be affected as shown on the plan. The cost of any necessary diversion shall be borne by the proposed development	Noted.
2. In case it is not feasible to divert the affected water mains, a waterworks reserve within 1.5 metres from the center line of the water main shall be provided to WSD. No structure shall be built or materials stored within this waterworks reserve. Free access shall be made available at all times for staff of the Director of Water Supplies or their contractor to carry out construction,	Noted. The Applicant, EPD, will, through liaison with WSD at the next stage of detailed design, explore the opportunities of diverting the concerned water mains likely along Deep Bay Road, in area shown as 'Road' on the Lau Fau Shan and Tsim Bei Tsui OZP.
3. No trees or shrubs with penetrating roots may be planted within the Waterworks Reserve or in the vicinity of the water main shown on the plan.	Noted.
4. Government shall not be liable to any damage whatsoever and howsoever caused arising from burst or leakage of the public water mains within and in close vicinity of the site.	Noted.

Comments	Responses
Comments from Planning Department (received on 26 January 2026) **Contact person: Mr. Wilfred CHU; Tel. No.: 2158 6290**	
1. Please clarify on whether the widened section of Deep Bay Road for turnaround/drop-off area for EVA would form a part of public road or would be maintained by the applicant.	The Applicant intends that the turnaround/drop-off area for EVA will be maintained by the Applicant and will be served as a turnaround facility in case of trespassing.
2. In relation of Town Planning Board Guidelines No. 10, please provide more information on the site selection process and clarify on whether no alternative sites are available.	For the site selection process, the following criteria have been taken into account: i. The site must be located closer to the centre of the GBA, so as to allow for effective capturing the impacts on Pearl River Delta's air quality being affected by the winds in all seasons; ii. The site must be located in a sparsely populated area without major pollution sources nearby; iii. The site must not be located within any major planned development; iv. Falling within Government land; v. Area for buildings and equipment must be not less than 1,000m^2, subject to the site context; vi. Accessible via vehicular access; vii. Generally flat and without geotechnical impact; and viii. The site must not be in ecologically sensitive area. Based on the above considerations, the Applicant had previously undergone a site search exercise and identified three sites out of around 10 sites, which were considered suitable for further study: (1) A vacant school site in Mong Tseng Tsuen, Yuen Long (2) A vacant site to the northeast of Mong Tseng Tsuen, Yuen Long (3) The Subject Site at Tsim Bei Tsui, Yuen Long

Comments	Responses
	When (1) was being considered, there were rather strong local objections as it was considered close to the local residents. For (2), upon further investigation of the site context, the ground and soil were found to be unstable and thus considered not suitable for setting up the proposed Supersite. At the end, (3) the Subject Site was considered the most suitable as it is located away from residential settlements / local residents, and most importantly, the Subject Site can fulfill all the criteria as mentioned above.

Compiled by: KTA

Date: 30 January 2026
File Ref.: 20260130_S3171_FI2_RtC

PLANNING LIMITED
規劃顧問有限公司

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電郵EMAIL kta@ktaplanning.com

By Email (tpbpd@pland.gov.hk)

Our Ref: S3171/GBASS_TBT/25/006Lg

6 February 2026

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

Dear Sir / Madam,

Proposed 'Government Use' (GBA Air Quality Laboratory and Meteorological Monitoring Supersite and Associated Filling of Land) in "Green Belt" Zone and Area shown as 'Road', Government Land in D.D.129, Deep Bay Road, Tsim Bei Tsui, Yuen Long, New Territories (Section 16 Planning Application No. A/YL-LFS/592) - Further Information No. 3 -

We refer to the captioned S16 Application received by the Town Planning Board ("TPB") on 31 December 2025 and the departmental comment from Tuen Mun and Yuen Long West District Planning Office received on 5 February 2026.

To address the departmental comment, attached please find the response-to-comment table with attachment for consideration.

Should you have any queries in relation to the attached, please do not hesitate to contact the undersigned at [redacted].

Yours faithfully
For and on behalf of
KTA PLANNING LIMITED

Camille LAM

Encl.

cc. TMYLW DPO – Mr Wilfred Chu (by email)
the Applicant

KT/PL/CL/vy

FS 579819

Proposed 'Government Use' (GBA Air Quality Laboratory and Meteorological Monitoring Supersite) and Filling of Land in "Green Belt" Zone and Area shown as 'Road' on Deep Bay Road, Tsim Bei Tsui, New Territories
(S.16 Planning Application No. A/YL-KFS/592)
Comments Forwarded from Tuen Mun and Yuen Long West District Planning Office

Comments	Responses
Comments from Planning Department (received on 5 February 2026) **Contact person: Mr. Wilfred CHU; Tel. No.: 2158 6290**	
1. Please provide the area covered by the proposed grasscrete paver and clarify further on how it would be implemented and whether it involves any filling of land.	The area covered by the proposed grasscrete paver is about 1,103m^2. Grasscrete paver is a permeable concrete paving system with cellular and voided structure that allows for vegetation (like grass) or crushed stone to fill the openings, creating a load-bearing surface that combines the strength of concrete with the aesthetics and environmental benefits (i.e. the drainage aspect with reduced runoff) of natural ground cover, used for driveways, car parks, and erosion control. According to Appendix D of BD APP-152 – Sustainable Building Design Guidelines as attached, grasscrete paver is counted as a kind of greening features, instead of hard paved areas. As it is considered as a paving system, it does not involve any filling of land.

Attached: Appendix D of BD APP-152 – Sustainable Building Design Guidelines

Compiled by: KTA

Date: 6 February 2026
File Ref.: 20260206_S3171_FI3_RtC

Appendix D
(PNAP APP-152)

Site Coverage of Greenery

1. All *greenery areas* should be measured horizontally based on the soil[1] areas as shown on the plan in the following scenarios (see Figure D1):

   (i) greenery areas are uncovered;

   (ii) greenery areas in the form of projecting planters[2] are shadowed vertically by parts of the building or other projecting features, and the clear height of the building or projecting features above the covered area is not less than 8 times the horizontal width of the covered area;

   (iii) greenery areas in the form of projecting planters[2] are shadowed vertically by other projecting planters, and both planters comply with the requirements stipulated in paragraph 9 of PNAP APP-19; or

   (iv) greenery areas in the *primary zone* are shadowed vertically by buildings (including overhangs), and when measured from the 45° projected line taken from the edge of the building, they fall within the area; and they are accessible to the public, visitors or occupiers from the adjoining open areas.

2. A multiplying factor of 2 is applicable in computing the greenery area of a green buffer complying with the requirements stipulated in Appendix C1 of PNAP APP-151, irrespective of whether the specific standard of enhanced greenery provision is adopted.

3. The summation of following greening features may be accepted to contribute not more than 30% of the total required *greenery areas* of the overall provision as specified in Table 2 of this PNAP subject to its location and application of a reduction factor where applicable.

---

1 For reference, the recommended minimum soil depths for trees, shrubs, grass/ground covers are 1.2m, 0.6m and 0.3m respectively.

2 Greenery areas in the *primary zone* should be fronting or visible to the public from a street/a public pedestrian way/public open space. Greenery areas above the *primary zone* should be visible to the public, visitors or occupiers.

Greening Features	Location	Reduction Factor in Computing the *Greenery Areas*
Covered greenery areas[3] accessible to public, occupiers or visitors from adjoining open space	*Primary zone* (measured from 45° projected line taken from the edge of building)	50%
Water features[4]	*Primary zone* or uncovered communal roof	50%
Grass paving	Except carparking spaces or loading / unloading areas	50%
Planters on an inaccessible roof	Primary zone	50%
Vertical greening[2]	No restriction	Nil
Landscape-treated Greening on slopes / retaining structures[5] with gradient steeper than 45°	No restriction	Nil

4. Irrigation points/automatic irrigation system and drainage system should be provided at *greenery areas* to facilitate future maintenance. In addition, where greenery is provided on the roof, the roof should be of impervious construction and the design dead load on the roof should also take into account the anticipated loads of the soil, plants, trees, etc.

5. Greenery in removable pots/planters that are not permanently fixed or built into the development should not be counted as greenery area.

6. Covered greenery above the *primary zone* such as in covered communal podium garden or sky garden should not be counted as *greenery area,* except for the scenarios in paragraph 1 above.

---

3 When selecting planting design and species for covered greenery, reference should be made to "Proper Planting Practice – Provide Sufficient Growing Space between Trees and Adjacent Buildings / Structures" issued by Greening, Landscape and Tree Management Section of DEVB (www.greening.gov.hk).

4 Water features should be measured by the horizontal water surface area. Swimming pool and jacuzzi are not considered as water features. Filtration plant room for water feature may be exempted from GFA but subject to compliance with the pre-requisites and the overall GFA cap on GFA concessions stipulated in PNAP APP-151.

5 Greening on slopes/retaining structures should be measured by the projected elevational area of the soil where the greenery will grow. Greening on slopes/retaining structures with gradient equal or less than 45° will be measured horizontally based on the soil area as shown on the plan.

7. *Vertical greening* should be measured by the elevational area of the vegetated panel/modular planter or panel, or the vertical frame (for climbing and/or weeping plants) where the greenery will grow. For *greenery areas* provided by climbing or weeping plants, those part of the vertical frames with a height more than 7.5m are not accountable. The horizontal area of soil in planters under the vertical frame/modular planter/panel already counted for vertical greening as aforesaid should be excluded from the *greenery area* calculation. Self-clinging climbing plants on hard surfaced walls should be measured horizontally based on the soil areas as shown on the plan (not counted as vertical greening).

8. All *greenery areas* for the purpose of this PNAP should be designated as common parts of the building. Access for maintenance and replacement of the plants should be provided from common parts of the building. As for the planters on the inaccessible flat roofs, communal access paths should still be provided from the common areas for maintenance of the planters.

9. Tree planting can provide localized thermal relief in urban environment. Provision of tree cluster is encouraged. Reference could be made to the requirements stipulated in Appendix C1 of PNAP APP-151, irrespective of whether the specific standard of enhanced greenery provision is adopted.

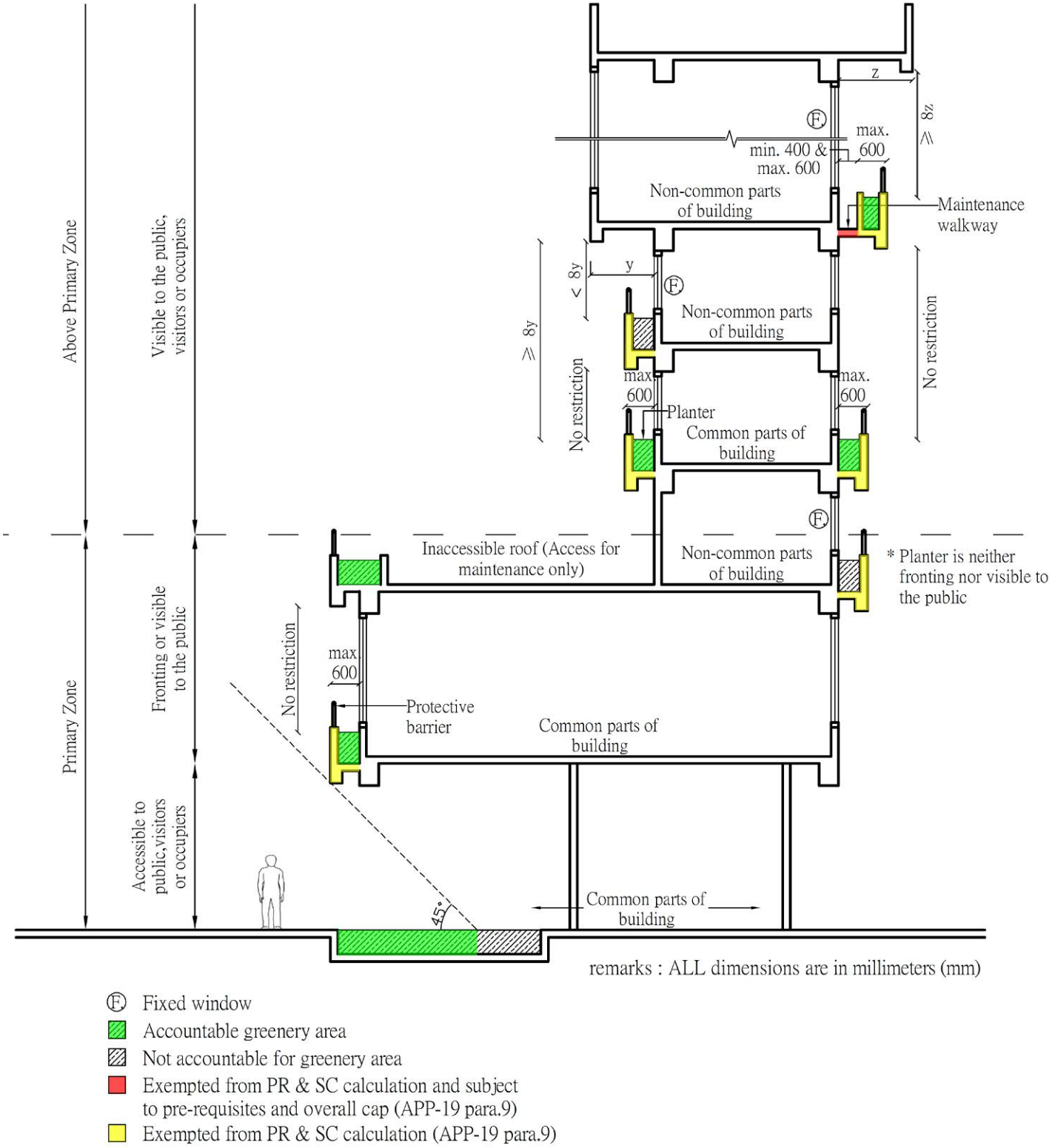
10. When granting modifications under section 42 of the Building Ordinance for GFA concessions applied under PNAP APP-151, the Building Authority (BA) may impose, but not limited to, the following conditions: -

    (a) The *greenery areas* should not be used for any other purposes without the prior consent of the BA.

    (b) The restriction on the use as stated in item (a) above and the *greenery areas* to be designated as common parts should be incorporated into the Deed of Mutual Covenant (DMC) with details of their size (in area), locations and the common access thereto clearly indicated on a plan(s). Where no DMC is to be in force, such restriction and designation should be incorporated into the Sales and Purchase Agreement, Assignment or Tenancy Agreement.

    (c) The letter of undertaking for complying with the requirements as stated in items (a) and (b) above, submitted by the developer or owner in support of the application for GFA concessions should be registered in the Land Registry before applying for the occupation permit.

Measurement of Greenery Area



Typical Section (not to scale)

Fig. D1 Greenery as per paragraph 1 of this Appendix

(Rev. 9/2023)

PLANNING LIMITED
規劃顧問有限公司

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電郵EMAIL kta@ktaplanning.com

By Email (tpbpd@pland.gov.hk)

Our Ref: S3171/GBASS_TBT/25/007Lg

11 February 2026

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

Dear Sir / Madam,

Proposed 'Government Use' (GBA Air Quality Laboratory and Meteorological Monitoring Supersite and Associated Filling of Land) in "Green Belt" Zone and Area shown as 'Road', Government Land in D.D.129, Deep Bay Road, Tsim Bei Tsui, Yuen Long, New Territories (Section 16 Planning Application No. A/YL-LFS/592) - Further Information No. 4 -

---

We refer to the captioned S16 Application received by the Town Planning Board ("TPB") on 31 December 2025 and the departmental comments from Drainage Services Department (DSD) received on 5 February 2026.

To address the departmental comments, attached please find the response-to-comment table with the revised Drainage Proposal for consideration.

Should you have any queries in relation to the attached, please do not hesitate to contact the undersigned at [redacted].

Yours faithfully
For and on behalf of
KTA PLANNING LIMITED

Camille LAM

Encl.

cc. TMYLW DPO – Mr Wilfred Chu (by email)
the Applicant

KT/PL/CL/vy

Proposed 'Government Use' (GBA Air Quality Laboratory and Meteorological Monitoring Supersite) and Filling of Land in "Green Belt" Zone and Area shown as 'Road' on Deep Bay Road, Tsim Bei Tsui, New Territories
(S.16 Planning Application No. A/YL-LFS/592)
Comments Forwarded from Tuen Mun and Yuen Long West District Planning Office

Comments	Responses
Comments from Drainage Services Department (received on 5 February 2026) **Contact person: Mr. Terence TANG; Tel. No.: 3965 8927**	
I have the following comments on the submitted drainage proposal: (a) The applicant should address the comment at this planning stage. Consideration should be given to provide catchpit at the turning points of the u-channel.	Indicative catchpit is proposed at the turning points of the u-channel. The internal drainage layout and detail will be subjected to detail design stage.
(b) The applicant should address the comment at this planning stage. The cover and invert levels of the proposed u-channels and catchpits should be shown on the drainage plan.	The cover and invert levels of the proposed catchpits are indicated on the proposed stormwater drainage plan in Appendix G of the Drainage Proposal. The proposed u-channels will be proposed with a minimum 1:100 fall according to the adjacent catchpit level.
(c) All proposed fencing/ wall, size/ provision of existing and proposed drains should be shown on cross sections.	The design sections indicating proposed fence wall, proposed ramp, existing and proposed drains are included in Appendix G of the Drainage Proposal.
(d) The development should neither obstruct overland flow nor adversely affect existing natural streams, village drains, ditches and the adjacent areas, etc.	Noted. The proposed development will not be adversely affected the drainage in close proximity.
Despite of the above, I have no objection in principle to the proposed development from the public drainage point of view. For any change of existing ground level and associated works proposed by the applicant that could affect adjacent land and cause other impacts and/or other issues to public, please consider to require the applicant to submit technical assessment(s) in other aspect(s) and seek comment from relevant departments as necessary. Should the Town Planning Board consider that the application is acceptable from the planning point of view, conditions	Noted with thanks.

Comments	Responses
should be stipulated in the approval letter requiring the applicant (i) the submission of a drainage proposal and (ii) the implementation and maintenance of the drainage proposal for the development to the satisfaction of the Director of Drainage Services or of the Town Planning Board.	

Encl.: Revised Drainage Proposal

Compiled by: KTA

Date: 10 February 2026
File Ref.: 20260210_S3171_FI4_RtC

PROJECT NO. P2676

DRAINAGE PROPOSAL
FOR
PLANNING APPLICATION FOR
GREATER BAY AREA AIR QUALITY LABORATORY
AND METEOROLOGICAL MONITORING SUPERSITE
AT TSIM BEI TSUI

GREG WONG & ASSOCIATES LTD.

Prepared by:	Kelvin Au Yeung
Checked by:	Kevin Tang
Approved by:	Kevin Tang
Report No.:	2676G001
Revision:	2
Date:	Feb 2026

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Appendices

Appendix A Site Location Plan
Appendix B Master Layout Plan
Appendix C Topographical Survey
Appendix D Landscape Master Plan
Appendix E Drainage Catchment Index Plan
Appendix F Existing Stormwater Drainage Plan
Appendix G Proposed Stormwater Drainage Plan
Appendix H Hydraulic Design Check for Proposed Drainage System
Appendix I Photographic Record of Existing Drainage

1. Introduction

Greg Wong & Associates was commissioned to carry out a drainage proposal for planning application for Greater Bay Area Air Quality Laboratory and Meteorological Monitoring Supersite at Tsim Bei Tsui.

The project is to construct a Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite (the "Supersite") proposed by the Environmental Protection Department (EPD) jointly with the Hong Kong Observatory (HKO) to support and provide regional air pollution and meteorological monitoring and forecasting services.

The supersite is located at Deep Bay Road, Tsim Bei Tsui, facing Deep Bay at North. A. It is irregular in shape with an area of 3,080 square metres. The site is currently falls within "Green Belt" zone and an area shown as 'Road' under approved Lau Fau Shan and Tsim Bei Tsui OZP No. S/YL-LFS/11. The proposed development consists of two individual compartment units each a single storey has been proposed for the site. The location plan and master layout plan of the proposed development are enclosed in **Appendices A** and **B**. This Drainage Proposal is prepared for approval from authorities concerned.

2. Existing Drainage Condition

2.1 The Site

The total site covers approximately 3,080 square metre. The site falls within "Green Belt" zone and an area shown as 'Road'. The site is fully covered by trees and grass. The site is south to Deep Bay Road. The Tsim Bei Tsui Police Post is located at the north of the site. There is an existing channel along the south and west portion of site boundary and runs into Mangrove area at the southeast of the site. The drainage passing through Mangrove and runs into Deep Bay at the southeast of the site.

2.2 Existing Topography

The site is generally inclined and the site elevation is around +27.91mPD to +16.32mPD, with a slight gradient from west to east. The proposed development will involve excavation and backfilling, which will gently incline from west to east. According to site topographical survey carried out by Sam Mak & Associates Surveyors Limited on January 2024. The topographical survey plan is attached in **Appendix C**. The utilities information of DSD is investigated, no drain pipes and sewerage pipes are found in the vicinity of the site.

2.3 Catchment

The catchment and drainage system of the site was derived by map study and site reconnaissance. The catchment that shall affect the site shall include proposed site (A1), part of the register feature 2SW-D/C24 (A2) at the southwest of the site and part of the existing slope (A3, A4, A5, A6) at the southeast of the site. The estimated catchment area is around 18,365 square metre including the Site Area, feature 2SW-D/C24 and existing slope. The runoff from the catchment is currently discharged off site to Mangrove via the existing channel. The drainage catchment index plan is shown in **Appendix E**.

2.4 Drainage Routes

There are existing water channel along the southern and eastern boundary of the site, and the drainage routes leading to Mangrove are channelized and located outside the Site. Runoff from the site currently flows overland and enters the Mangrove through existing channel and catchpit. In the southern part of the site, there is existing u-channel with catchpit that collects surface runoff from register feature 2SW-D/C24 and discharges them into the Mangrove.

To the northern and western of the site, a series of wall and planter wall blocking the surface runoff from the Deep Bay Road and car park at west. In the southern part of the site, there is existing u-channel with catchpit that collects surface runoff from register feature 2SW-D/C24 and discharges them into the Mangrove. No additional runoff will be entered the existing site area. The catchment area A1, A2, A3, A4, A5 and A6 will eventually discharge to the along the existing slope through existing channel and enter the Mangrove. The Mangrove is connected to the Deep Bay through uncharted road through existing culvert. The remaining runoff from Deep Bay Road and car park are discharged along Deep Bay Road and no adverse effect will be induced to the existing development. The existing stormwater drainage plan is shown in **Appendix E**. The photographic record of the existing drainage is enclosed in **Appendix I**.

There are no flooding black spots in the vicinity of the site and the existing drainage facilities for our development are adequate for the existing runoff.

3. Proposed Drainage System

The level of the proposed development is backfilled and gently incline from west to east. Fence wall or ramp along the site boundary with will be proposed to prevent external stormwater runoff into the site area. The existing channel and catchpit outside site boundary will be retained. The stormwater in the site will be collected by site drainage system and discharged through existing catchpit to existing 300mm stepped channel to the Mangrove. The stormwater at the register feature 2SW-D/C24 along site southern boundary will be collected separately along existing 450 u-channel and discharged to the existing 470 u-channel to Mangrove. The landscape master plan is shown in **Appendix D**.

The proposed development will include internal drainage systems to collect all flows from the Site and convey them to the existing drainage discharge point. 300mm u-channels with a minimum 1 in 100 gradients and catchpit are proposed within and along site boundary and hydraulic design checked with the new development is attached in **Appendix H**. An indicative proposed drainage arrangement for the Site is shown in **Appendix G**. The internal drainage will be subjected to detail design stage.

The Rational Method has been adopted for the check of the existing drainage system as outlined in the Stormwater Drainage Manual (SDM)(5th edition). 1 in 50 years storm return period has been adopted for the assessment, i.e. a Village Drainage including Internal Drainage System under a Polder Scheme. The rainfall is increased by 16.0% and the sea level increased by 0.47m as suggested by the SDM Corrigendum No. 1/2024 to cater for the climate changes in the end of 21st Century. The Mean Higher High Water (MHHW) Levels is taken as 2.32mPD. The runoff coefficient C was assumed to be 0.3, 0.35 and 0.85 for flat vegetated area, steep vegetated area and paved area respectively. 10% reduction in flow area is assumed for the deposition of sediment in stormwater channels and pipes. According to SDM Corrigendum No. 1/2024, the suggested Design Extreme Sea Levels is 4.78mPD in 1 in 200 years storm return period for Tsim Bei Tsui area which is lower than the proposed site area, therefore no adverse effect is induced.

The catchment runoff has been calculated using the "Rational Method", as outlined in the DSD SDM:

$$Q = 0.278CiA$$

where,

Q = peak runoff in m^3/s

C = runoff coefficient (dimensionless)

i = rainfall intensity in mm/hr

A = catchment area in km^2

After development, the Site will be partly paved (buildings and roads, etc.) and proposed grasscrete partly, for which a runoff coefficient of 0.85 has been adopted. The site will be partly vegetated with a runoff coefficient of 0.3 has been adopted. The runoff from the Site is expected to increase to $0.153m^3/s$ after development. As the Site is immediately adjacent to the Mangrove and Deep Bay, such an increase is relatively insignificant in comparison with the channel capacity. The hydraulic design check of the existing and proposed channel with the new development and proposed drainage plan are attached in **Appendix H** and **Appendix G**.

4. Changes to Drainage Characteristics and Potential Drainage Impacts that Might Arise

The total peak runoff rate of the site is increased due to the change of paving condition of the development. The proposed development will include internal drainage systems to collect all flows from the Site and convey them to the existing catchpit in the crest of the existing slope to the existing drainage.

The runoff from register slope 2SW-D/C24 (A2) will follow the original drainage path along the site boundary to Mangrove. As the runoff from site will be collected by the proposed site drainage, this drainage path only collects water from 2SW-D/C24. No works will be proposed outside site boundary, thus the capacity of the drainage path remains unchanged. The calculation in **Appendix H** shows that the hydraulic design checking for the existing and proposed development.

Overall, the proposed site drainage system and existing drainage path are able to cater for the runoff from the proposed development and surrounding areas, so no adverse drainage impacts are expected.

5. Proposed Drainage Impact Mitigation Measures and Further Drainage Impact Implications

5.1 Temporary Works

With the implementation of good site practice and appropriate pollution control measures to minimize impacts during construction, adverse water quality impacts are not anticipated. The following drainage impact mitigation measures for construction stage are proposed:

(a) Temporary surface channels with silt trap and proper discharge connection to public drainage shall be provided to collect surface runoff throughout construction stage;
(b) Temporary pump with sedimentation tank and proper discharge connection to public drainage shall be provided in throughout construction stage;
(c) Ponding should be avoided by grading the ground surface;
(d) Bare ground surface shall be compacted by roller in order to avoid loose soil being washed off into drains;
(e) Bare soil slopes shall be protected by hydroseeding or tarpaulin sheets to prevent erosion of slope surface;
(f) Temporary sand traps/ desilting ponds should be provided at locations where surface water gathers;
(g) Wastewater generated from building construction activities and site facilities should not be discharged into the stormwater drainage system;

In addition, according to the ETWB TC (Works) No. 5/2005, to avoid direct or indirect impact to the natural stream, precautionary mitigation measures proposed in the following:

(a) The proposed works site inside or in the proximity of natural rivers and streams should be temporarily isolated, such as by placing of sandbags or silt curtains with lead edge at bottom and properly supported props, to prevent adverse impacts on the stream water qualities. Other protective measures should also be taken to ensure that no pollution or siltation occurs to the water gathering grounds of the work site.
(b) The natural bottom and existing flow in the river should be preserved as much as possible to avoid disturbance to the river habitats. If temporary access track on riverbed is unavoidable, this should be kept to the minimum width and length. Temporary river crossings should be supported on stilts above the riverbed.
(c) Stockpiling of construction materials, if necessary, should be properly covered and located away from any natural stream/river.
(d) Construction debris and spoil should be covered up and/or properly disposed of as soon as possible to avoid being washed into nearby streams/rivers by rain.
(e) Construction effluent, site run-off and sewage should be properly collected and/or treated. Wastewater from a construction site should be managed with the following approach in descending order:
    i. Minimisation of wastewater generation;
    ii. Reuse and recycle;
    iii. Treatment.
(f) Proper locations for discharge outlets of wastewater treatment facilities well away from the natural streams/rivers should be identified.

(g) Removal of existing vegetation alongside the riverbanks should be avoided or minimised. When disturbance to vegetation is unavoidable, all disturbed areas should be hydroseeded or planted with suitable vegetation to blend in with the natural environment upon completion of works.
(h) Adequate lateral support may need to be erected in order to prevent soil/mud from slipping into the stream/river, but without unduly impeding the flow during heavy rain.
(i) Supervisory staff should be assigned to station on site to closely supervise and monitor the works.

The above requirements can be incorporated into drainage plans and implemented by the contractor under the supervision of the Authorized Person during construction. All these measures will safeguard proper functioning of the drainage system throughout the construction period.

5.2 Permanent Works

There will be no potential water quality impact from the proposed development during the operation phase. The best practices in ProPECC PN 5/93 “Drainage Plans subject to comments by the Environmental Protection Department” would be followed in operation phase as well. For the design of permanent works, the following measures are proposed:

(a) Drainage channels shall be provided for slope, if any, to prevent soil erosion through intercepting and conveying surface runoff to designated discharge points;
(b) Surface of exposed soil slope shall be hydroseeded or landscaped for protection against surface erosion, while surface of covered soil slope shall be shotcreted and

(c) Sufficient fall shall be provided to paved surfaces to prevent ponding.

The proposed permanent drainage system works entirely on gravity and requires minimal maintenance. Only regular CCTV inspection, desilting and repair of the pipework system (e.g. internal lining) will be required after the construction. Once expedient connection is found, the lot owner would rectify the expedient connection. Adequate maintenance of the proposed gravity drainage system will ensure the no adverse drainage impact will occur.

6. Proposed Monitoring Requirements

During construction, periodic site inspection by the Authorized Person or his representative shall be carried out to monitor that designed temporary drainage measures has been implemented by the contractor in accordance with the approved plans.

All the drainage facilities such as the existing open culvert, stepped channel, inlet, underground pipe, manholes, catchpits etc. within the subject site and the existing drainage facilities in the vicinity of the site should be inspected weekly and desilted regularly, particularly at the onset of and after each rainstorm to ensure these facilities are functioning properly at all times. Weekly inspection record of the drainage facilities would be submitted during construction. Any blockage on the drainage system found shall be cleared off immediately to remove flooding hazard.

All stormwater leaving the sites shall be collected by silt traps for sedimentation to occur before being discharged offsite. The silt traps shall be regularly cleared of sediments to

maintain its function. The discharge quality shall satisfy standards set by Environmental Protection Department. Channels or earth bunds or sand bag barriers should be provided on site to properly direct stormwater to such silt removal facilities. The existing channels around the site would intercept stormwater run-off around the site so that it will no wash across the site. No construction debris, silt and sediments or cementitious materials would be discharged to or deposited inside the public drains or sewers from the site.

Before construction work commencement, a pre-construction survey should be carried out to assess the baseline conditions of existing ground surface & drainage facilities that may be susceptible to damage or affected by the proposed works. The survey would identify, locate and verify conditions of the existing government sewers and stormwater drains to which our site drainage would be connected / discharged to. CCTV survey should be carried out to the existing nearby drains. The internal conditions of the existing nearby public drains should be monitored with CCTV surveys prior to commencement and upon completion of works. Extent of CCTV survey shall be agreed prior with DSD. Subsequent monitoring reports shall be submitted to DSD regularly.

7. Conclusion

7.1 The allowable capacity of the proposed drainage system meet current drainage design capacity requirement for a 1 in 50 year flood for the proposed development.

7.2 Fence wall or ramp along the site boundary will be proposed to prevent external stormwater runoff into the site area.

7.3 Surface storm water at the site will be collected by proposed internal drainage facilities 300mm u-channel with a minimum 1 in 100 gradients and catchpit, to be discharged to the existing catchpit in the slope crest. Surface storm water from nearby catchments is discharged through the existing channel to Mangrove. The allowable capacity of the downstream drainage system meet current drainage design capacity requirement for a 1 in 50 year flood for the proposed development hence the proposed development will not affect the drainage system of the region.

7.4 To ensure existing drainage capacity will not be adversely affected in the construction stage, drainage impact mitigation measures proposed in Section 5 should be implemented and monitored closely throughout the construction period.

Appendix A

Site Location Plan

SITE LOCATION PLAN
后海湾
SITE
尖鼻咀地震站

Appendix B

Master Layout Plan

NORTH

2SW-D/F7

INFLUENCE ZONE

TURN AROUND / DROP OFF AREA

BLOCK B ENTRANCE

SITE MAIN ENTRANCE

BLOCK A ENTRANCE

2SW-D/F6

EXTG
CAR
PARK

DEEP BAY ROAD / EVA

2SW-D/F28

TSIM BEI TSUI
POLICE POST

BLK A

BLK B

RC PLINTH
(375m²)

2SW-D/C24

ELE. CUT OUT

EMERGENCY GENERATOR ROOM

FS PUMP ROOM

F.S. WATER TANK
245m³ VOLUME
= 16m (L) x 6m x (W) x 2.6 m (H)

2SW-D/F3

INFLUENCE ZONE

LEGEND :

- PROPOSED SITE BOUNDARY
- SLOPE INFLUENCE ZONE
- SLOPE FEATURE
- H-POLE WITH 11kV SWITCHGEAR
- EXISTING ROAD

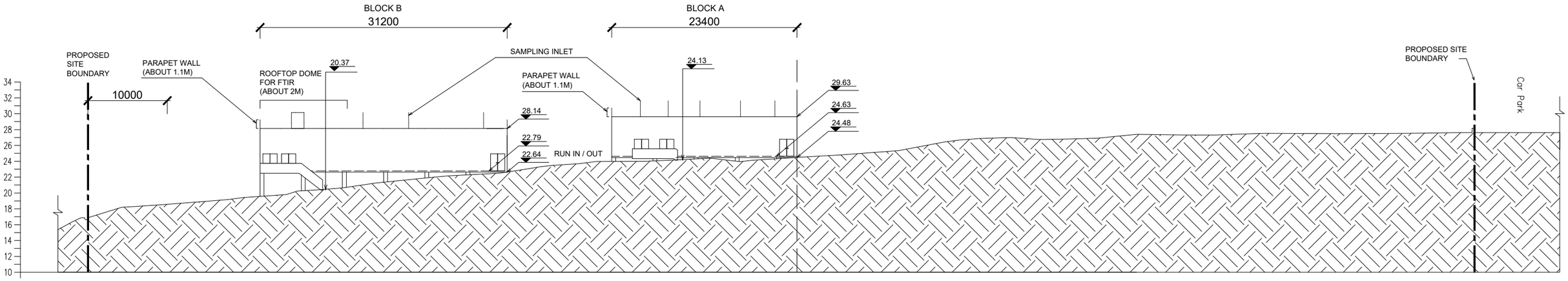
Proposed 'Government Use'
(GBA Air Quality Laboratory and Meteorological Monitoring Supersite)
on Deep Bay Road, Tsim Bei Tsui, New Territories

MASTER LAYOUT PLAN

1:500 (A3)

1

02 - 10 - 2025



REMARK : FOR INDICATION ONLY

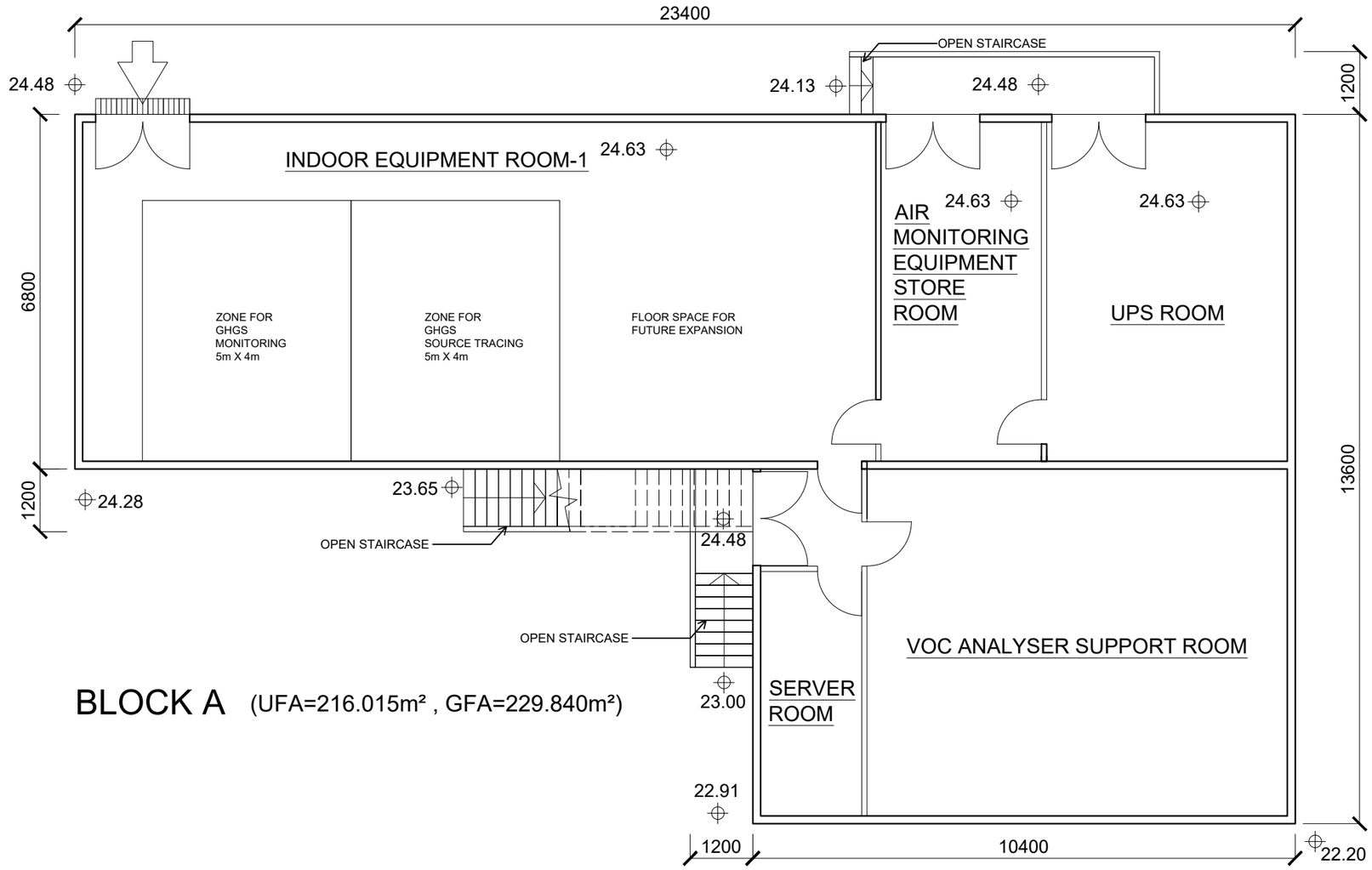
Proposed 'Government Use'
(GBA Air Quality Laboratory and Meteorological Monitoring Supersite)
on Deep Bay Road, Tsim Bei Tsui, New Territories

SCHEMATIC ELEVATION

1:500 (A3)

2

15 - 10 - 2025



BLOCK A (UFA=216.015m² , GFA=229.840m²)

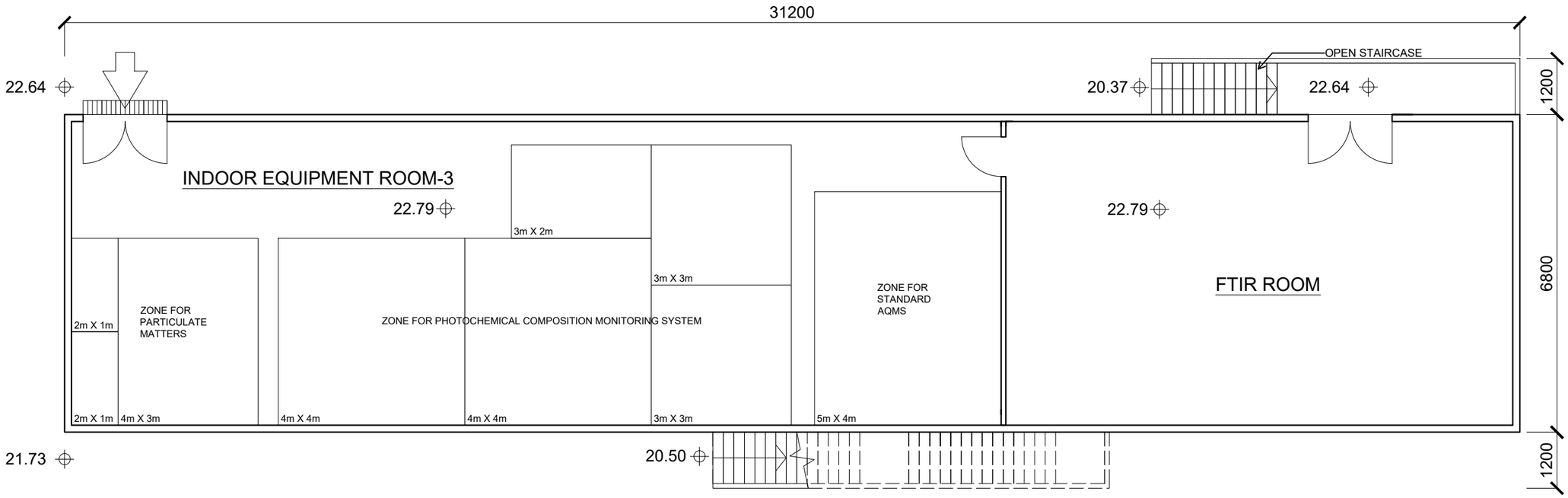
Proposed 'Government Use'
(GBA Air Quality Laboratory and Meteorological Monitoring Supersite)
on Deep Bay Road, Tsim Bei Tsui, New Territories

BLOCK LAYOUT PLAN (BLOCK A)

1:100 (A3)

3a

17 - 09 - 2025



BLOCK B (UFA=199.550m² , GFA=212.160m²)

Proposed 'Government Use'
(GBA Air Quality Laboratory and Meteorological Monitoring Supersite)
on Deep Bay Road, Tsim Bei Tsui, New Territories

BLOCK LAYOUT PLAN (BLOCK B)
1:100 (A3)

3b
17 - 09 - 2025

Appendix C
Topographical Survey

尖鼻咀
TSIM BEI

停車場
Car Park

尖鼻咀警崗
Tsim Bei Tsui Police Post

DEEP WATER BAY ROAD

838540N
838520N
838500N
838480N
838460N
838440N
838420N

819405E 819605E 819805E 820005E 820205E 820405E 820605E 820805E 821005E 821205E 821405E 821605E

A B C D E F G H I J

TS 4 20 40 60

N

CUL

LEGEND:

- ARTIFICIAL SLOPE
- CHANNEL WITH FLOW DIRECTION (0.80 WIDE OF CHANNEL)
- STEP CHANNEL WITH FLOW DIRECTION (0.80 WIDE OF STEP CHANNEL)
- BOUNDARY LINE & BOUNDARY POINT
- GATE
- PERMANENT BUILDING AND CANOPY
- TREE WITH TREE NO.
- INCLINED WALL
- GRAVE
- CONTOURS
- TS TEMPORARY STRUCTURE
- PB PILLAR BOX
- HR HAND RAILING
- HD HOARDING
- KL KERB LINE (BOTTOM)
- ST SLOPE TOP
- SB SLOPE BOTTOM
- FX FENCE
- BARRIERS
- BN BENCH
- E ELECTIC POLE
- SB SIGN BOARD
- SP SIGN POLE
- LP LAMP POST
- TP TELEPHONE POLE
- TL TRAFFIC LIGHT
- FH FIRE HYDRANT
- P.M PARKING METER
- BOLLARD AT ROAD
- GULLY
- GRATING
- VALVE FIRE
- VALVE GAS
- VW VALVE WATER WORKS
- MH MANHOLE
- ATC MANHOLE, ATC
- CATV MANHOLE, CABLE TV
- E&M MANHOLE, ELECTRIC & MECHANICAL SERVICES DEPARTMENT
- HKTC MANHOLE, PCCW-HKT TELEPHONE LIMITED
- DSD MANHOLE, DRAINAGE SERVICES DEPARTMENT
- PL MANHOLE, PUBLIC LIGHTING
- HCL MANHOLE, HUTCHISON COMMUNICATION LIMITED
- HGC MANHOLE, HUTCHISON GLOBAL CROSSING LIMITED BROADBAND
- CATCH PIT
- MF MANHOLE, FOUL WATER/SEWER
- MS MANHOLE, STORM WATER
- PCW MANHOLE, PACIFIC CENTURY CABLE & WIRELESS
- NWT MANHOLE, NEW WORLD TELEPHONE
- CLP MANHOLE, CLP POWER
- WHT MANHOLE, WHAFT T & T
- T&T MANHOLE, TOWNGAS TELECOM
- RX — TRAFFIC BARRIER
- * Lamp Pole number is referred to GeoInfo Map system (for client's reference only)
- PROPOSED SITE BOUNDARY

ABBREVIATION:

BD	BOULDER
BE	BERM
BS	BOUNDARY STONE
CA	CANOPY
CUL	CULVERT
CO	COLUMN
CONC	CONCRETE
DB	DISTRIBUTION BOX
END	END OF OBJECT
FB	FLOWER BED
FP	FOOTPATH
IL	INVERT LEVEL
NU	NULLAH
OH	OVERHANG
PF	PLATFORM
PO	POST
PZ	PIEZOMETER TUBE
RP	RAMP
RU	RUIN
SS	SHRINE
TS	TEMPORARY STRUCTURE
VB	VEHICLE BARRIERS
WE	WELL
WIP	WORK IN PROGRESS
WT	WATER TANK

NOTE
ALL SPOT LEVEL POSITIONS ARE THE DECIMAL POINT OR A CROSS

SCALE 1 : 200 (A0 SIZE)

metres 0 4 8 12 16 20 metres

HONG KONG METRIC GRID
PRINCIPAL DATUM HONG KONG
ALL UNITS IN METRES

DATE OF SURVEY: JANUARY 2024

REVISION	DATE	DESCRIPTION
INITIAL	24/02/2024	---

ARCHITECTURAL SERVICES DEPARTMENT

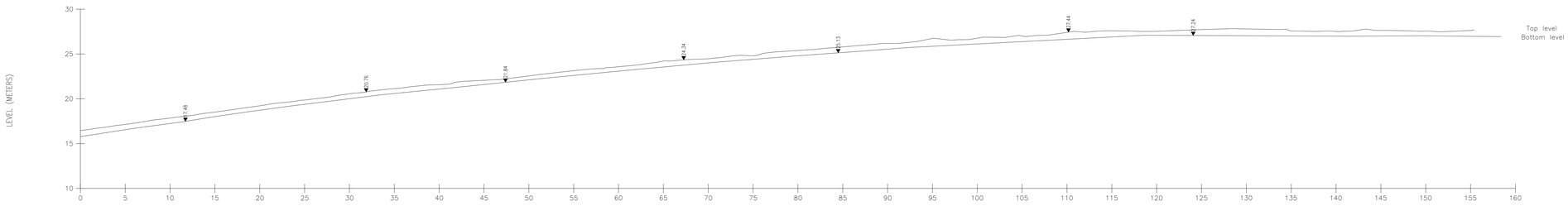
Topographical Survey
Guangdong–Hong Kong–Macao Greater Bay Area (GBA)
Air Quality Laboratory and Meteorological Monitoring Supersite

SAM MAK & ASSOCIATES SURVEYORS (HK) LTD.
CONSULTANTS IN LAND, ENGINEERING, MARINE & AERIAL SURVEYS
ROOM 901, MARINA HOUSE, NO.68 HING MAN STREET, SHAUKEIWAN, HONG KONG.
TEL : 28951918 FAX : 28901759 E-mail: hkoffice@sammak.com

PRELIMINARY
(24/02/2024)

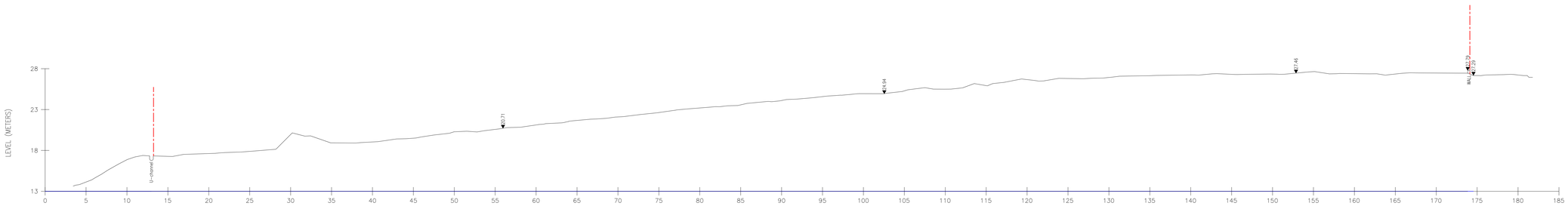
PLAN NO. 9594/01(SHEET 1 OF 3)

JESSICA PUI YEE LEUNG MHKIS RPS(LS)
REGISTERED PROFESSIONAL SURVEYOR



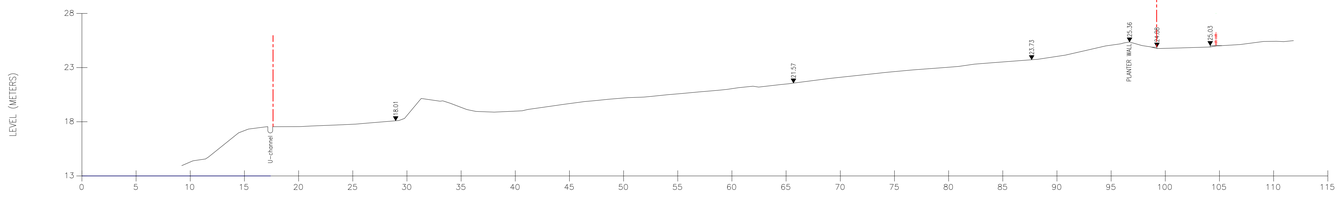
CHAINAGE (METERS)

SECTION A–A



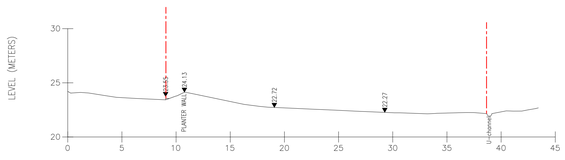
CHAINAGE (METERS)

SECTION B–B



CHAINAGE (METERS)

SECTION C–C



CHAINAGE (METERS)

SECTION D–D

LEGEND:

- ARTIFICIAL SLOPE
- CHANNEL WITH FLOW DIRECTION (UB) : WIDE OF CHANNEL
- STEP CHANNEL WITH FLOW DIRECTION (UB) : WIDE OF STEP CHANNEL
- BOUNDARY LINE & BOUNDARY POINT
- GATE
- PERMANENT BUILDING AND CANOPY
- TREE WITH TREE NO.
- INCLINED WALL (TOP) (BOTTOM)
- GRAVE
- CONTOURS
- TS TEMPORARY STRUCTURE
- PB PILLAR BOX
- HR HAND RAILING
- HD HOARDING
- KL KERB LINE (BOTTOM)
- ST SLOPE TOP
- SB SLOPE BOTTOM
- FX FENCE
- BARRIERS
- BN BENCH
- ELECTIC POLE
- SB SIGN BOARD
- SP SIGN POLE
- LP LAMP POST
- TP TELEPHONE POLE
- TL TRAFFIC LIGHT
- FH FIRE HYDRANT
- P.M PARKING METER
- BOLLARD AT ROAD
- GULLY
- GRATING
- VALVE FIRE
- VALVE GAS
- VALVE WATER WORKS
- MH MANHOLE
- ATC MANHOLE, ATC
- CATV MANHOLE, CABLE TV
- E&M MANHOLE, ELECTRIC & MECHANICAL SERVICES DEPARTMENT
- HKT MANHOLE, PCCW–HKT TELEPHONE LIMITED
- DSD MANHOLE, DRAINAGE SERVICES DEPARTMENT
- PL MANHOLE, PUBLIC LIGHTING
- HCL MANHOLE, HUTCHISON COMMUNICATION LIMITED
- HGC MANHOLE, HUTCHISON GLOBAL CROSSING LIMITED BROADBAND
- CATCH PIT
- MF MANHOLE, FOUL WATER/SEWER
- MS MANHOLE, STORM WATER
- PCW MANHOLE, PACIFIC CENTURY CABLE & WIRELESS
- NWT MANHOLE, NEW WORLD TELEPHONE
- CLP MANHOLE, CLP POWER
- WHT MANHOLE, WHAFT T & T
- T&T MANHOLE, TOWNGAS TELECOM
- PROPOSED SITE BOUNDARY
- RX — TRAFFIC BARRIER

• Lamp Pole number is referred to GeoInfo Map system (for client's reference only)

ABBREVIATION:

BO	BOULDER
BS	BUSH
BRS	BOUNDARY STONE
CA	CANOPY
CUL	CULVERT
CO	COLUMN
CONC	CONCRETE
EB	ELECTRIC BOX
END	END OF OBJECT
FB	FLOWER BED
FP	FOOTPATH
IL	INVERT LEVEL
NU	NULLAH
OH	OVERHANG
PL	PLATFORM
PO	POND
PZ	PIEZOMETER TUBE
RET	RETAIN
RU	RUIN
SS	SHRINE
TS	TEMPORARY STRUCTURE
VB	VEHICLE BARRIERS
WE	WELL
WIP	WORK IN PROGRESS
WT	WATER TANK

NOTE
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SCALE 1 : 200 (A0 SIZE)

metres 0 4 8 12 16 20 metres

HONG KONG METRIC GRID
PRINCIPAL DATUM HONG KONG
ALL UNITS IN METRES

DATE OF SURVEY: JANUARY 2024

INITIAL	24/02/2024	---
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PRELIMINARY
(24/02/2024)
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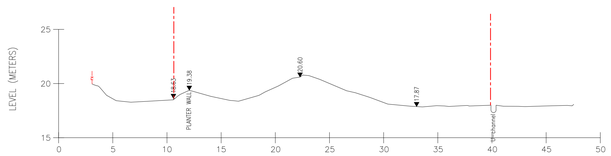
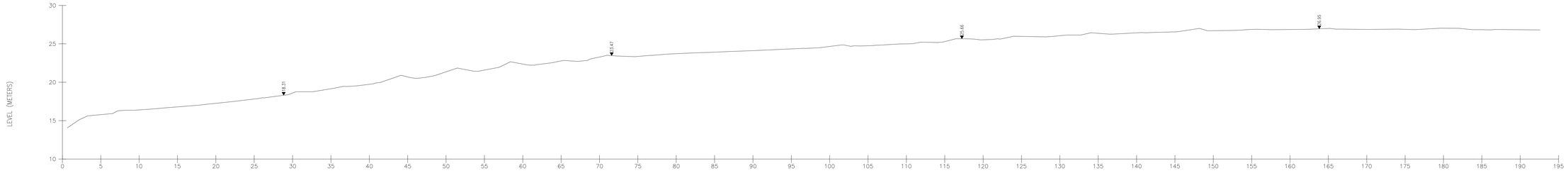
REGISTERED PROFESSIONAL SURVEYOR

PLAN NO. 9594/01 (SHEET 2 OF 3)



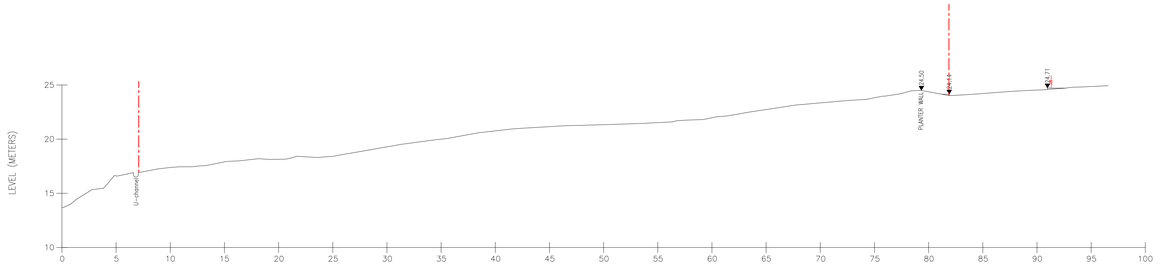
CHAINAGE (METERS)

SECTION E-E



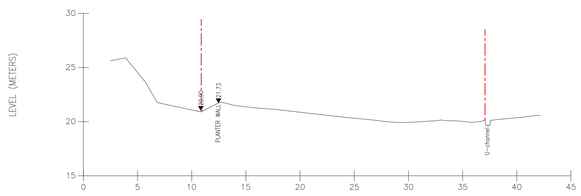
CHAINAGE (METERS)

SECTION F-F



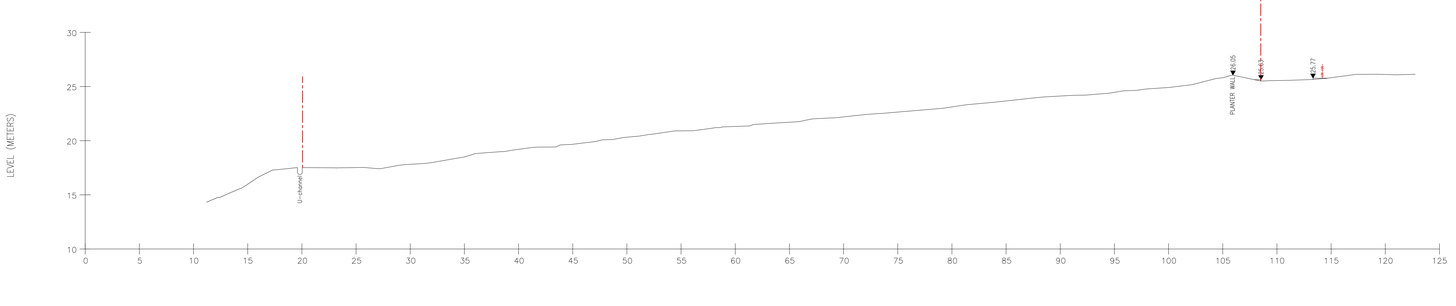
CHAINAGE (METERS)

SECTION G-G



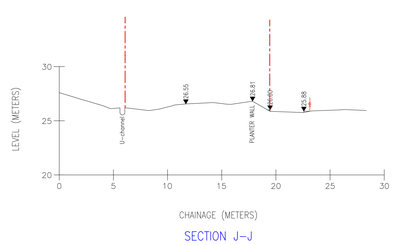
CHAINAGE (METERS)

SECTION H-H



CHAINAGE (METERS)

SECTION I-I



CHAINAGE (METERS)

SECTION J-J

LEGEND:

- ARTIFICIAL SLOPE
- CHANNEL WITH FLOW DIRECTION (0.80 WIDE OF CHANNEL)
- STEP CHANNEL WITH FLOW DIRECTION (0.80 WIDE OF STEP CHANNEL)
- BOUNDARY LINE & BOUNDARY POINT
- GATE
- PERMANENT BUILDING AND CANOPY
- TREE WITH TREE NO.
- INCLINED WALL (TOP) (BOTTOM)
- GRAVE
- CONTOURS
- TEMPORARY STRUCTURE
- PILLAR BOX
- HAND RAILING
- HOARDING
- KERB LINE (BOTTOM)
- SLOPE TOP
- SLOPE BOTTOM
- FENCE
- BARRIERS
- BENCH
- ELECTIC POLE
- SIGN BOARD
- SIGN POLE
- LAMP POST
- TELEPHONE POLE
- TRAFFIC LIGHT
- FIRE HYDRANT
- PARKING METER
- BOLLARD AT ROAD
- GULLY
- GRATING
- VALVE FIRE
- VALVE GAS
- VALVE WATER WORKS
- MANHOLE
- MANHOLE, ATC
- MANHOLE, CABLE TV
- MANHOLE, ELECTRIC & MECHANICAL SERVICES DEPARTMENT
- MANHOLE, PCCW-HKT TELEPHONE LIMITED
- MANHOLE, DRAINAGE SERVICES DEPARTMENT
- MANHOLE, PUBLIC LIGHTING
- MANHOLE, HUTCHISON COMMUNICATION LIMITED
- MANHOLE, HUTCHISON GLOBAL CROSSING LIMITED BROADBAND
- CATCH PIT
- MANHOLE, FOUL WATER/SEWER
- MANHOLE, STORM WATER
- MANHOLE, PACIFIC CENTURY CABLE & WIRELESS
- MANHOLE, NEW WORLD TELEPHONE
- MANHOLE, CLP POWER
- MANHOLE, WHARF T & T
- MANHOLE, TOWNGAS TELECOM
- PROPOSED SITE BOUNDARY
- RX — TRAFFIC BARRIER

* Lamp Pole number is referred to GeoInfo Map system (for client's reference only)

ABBREVIATION:

BD	BOULDER
BE	BERM
BS	BOUNDARY STONE
CA	CANOPY
CUL	CULVERT
CO	COLUMN
CONC	CONCRETE
CB	CONTROL BOX
END	END OF OBJECT
FB	FLOWER BED
FP	FOOTPATH
IL	INVERT LEVEL
NU	NULLAH
OH	OVERHANG
PF	PLATFORM
PO	POST
PZ	PIEZOMETER TUBE
RP	RAMP
RU	RUIN
SS	SHRINE
TS	TEMPORARY STRUCTURE
VB	VEHICLE BARRIERS
WE	WEIR
WIP	WORK IN PROGRESS
WT	WATER TANK

SCALE 1 : 200 (A0 SIZE)

metres 0 4 8 12 16 20 metres

HONG KONG METRIC GRID
PRINCIPAL DATUM HONG KONG
ALL UNITS IN METRES

NOTE
ALL SPOT LEVEL POSITIONS ARE THE DECIMAL POINT OR A CROSS

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PRELIMINARY
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REGISTERED PROFESSIONAL SURVEYOR

PLAN NO. 9594/01 (SHEET 3 OF 3)

Appendix D

Landscape Master Plan

Roadside Trees

Woodland Tree Mix

Shrubs and Groundcover

Climbing Plants on Boundary Fence

Grasscrete Paver

KEY:

1. Carparks
2. Concrete Plinth for Instrument
3. F.S. Water Tank
4. F.S. Pump Room
5. Emergency Generator Room
6. Electricity Pole
7. Ele. Cut Out

LEGEND:

- APPLICATION SITE BOUNDARY
- PROPOSED STANDARD TREES
- PROPOSED SHRUBS AND GROUNDCOVER
- PROPOSED WOODLAND MIX
- PROPOSED GRASSCRETE PAVER
- PROPOSED CLIMBING PLANT
- CONCRETE PAVING
- METAL FENCE (2.5M HIGH)
- +14.75 PROPOSED LEVEL
- SITE ENTRANCE
- BUILDING ENTRANCE

Grasscrete Pavers is proposed around the indoor and outdoor equipment to prevent obstruction of light and potential VOC emissions but enhance the local greenery with Site.

DEEP BAY ROAD / EVA

TSIM BEI TSUI POLICE POST

BLK A +29.63

BLK B +28.14

C1 C2

RC PLINTH (375m²) +20.87

+22.60

+19.50

28.1

WT

28

+10

Standard Trees and Climbing plants on metal fence to improve the Visual Appeal of the Roadside Environment

An earth tone paint color is applied on the Concrete Plinths for outdoor equipment to blend harmoniously with the surrounding hillside environment.

Woodland Tree Mix, Shrubs and Groundcover to provide a Seamless Transition between the Development and the adjacent Natural Environment

0 10 20 30 40M

PROJECT :

PROPOSED 'GOVERNMENT USE' (GBA AIR QUALITY LABORATORY AND METEORLOGICAL MONITORING SUPERSITE) ON DEEP BAY ROAD, TSIM BEI TSUI, N.T.

DRAWING TITLE :

LANDSCAPE MASTER PLAN

PROJECT No. C2520

DRAWING No. LMP01

SCALE : 1:500

DATE OF ISSUE : AUG 2025

CAD FILENAME : C2520-LMP01

REV	DESCRIPTION	DATE

DESIGN BY : TEL

DRAWN BY : CAD

CHECKED BY : TEL

APPROVED BY : TEL

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LANDES LIMITED
景藝設計有限公司

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SHUN PONT COMMERCIAL BUILDING,
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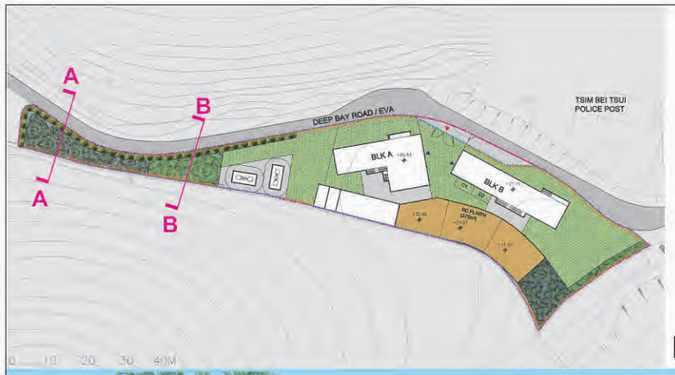
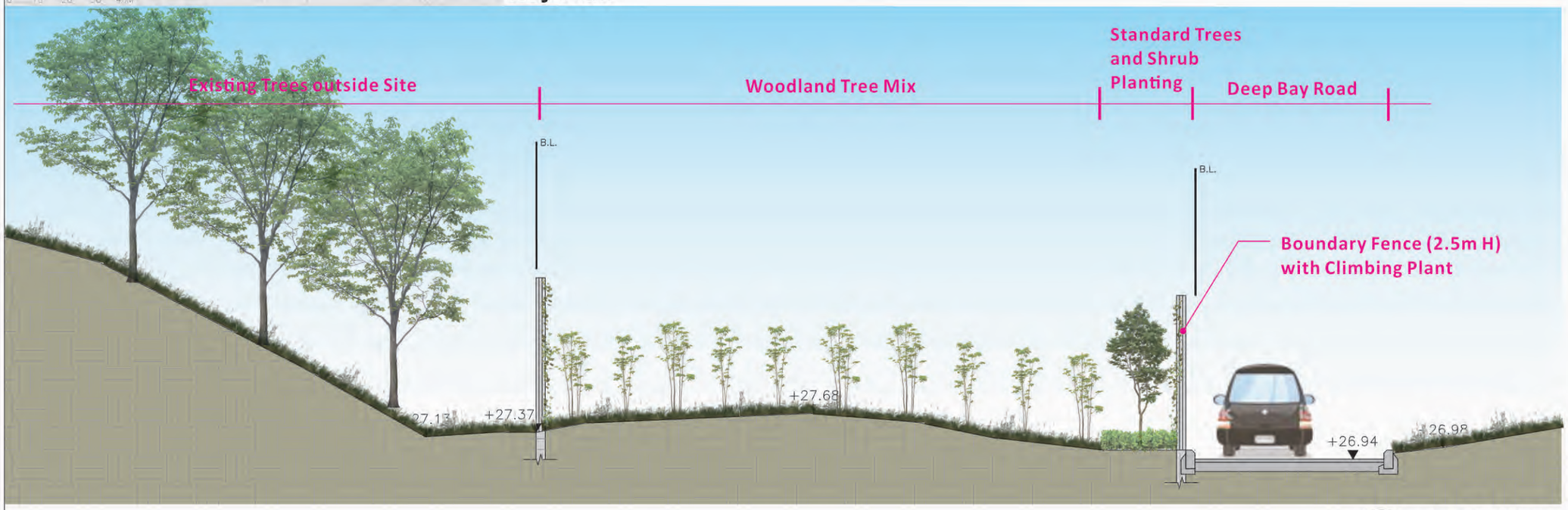
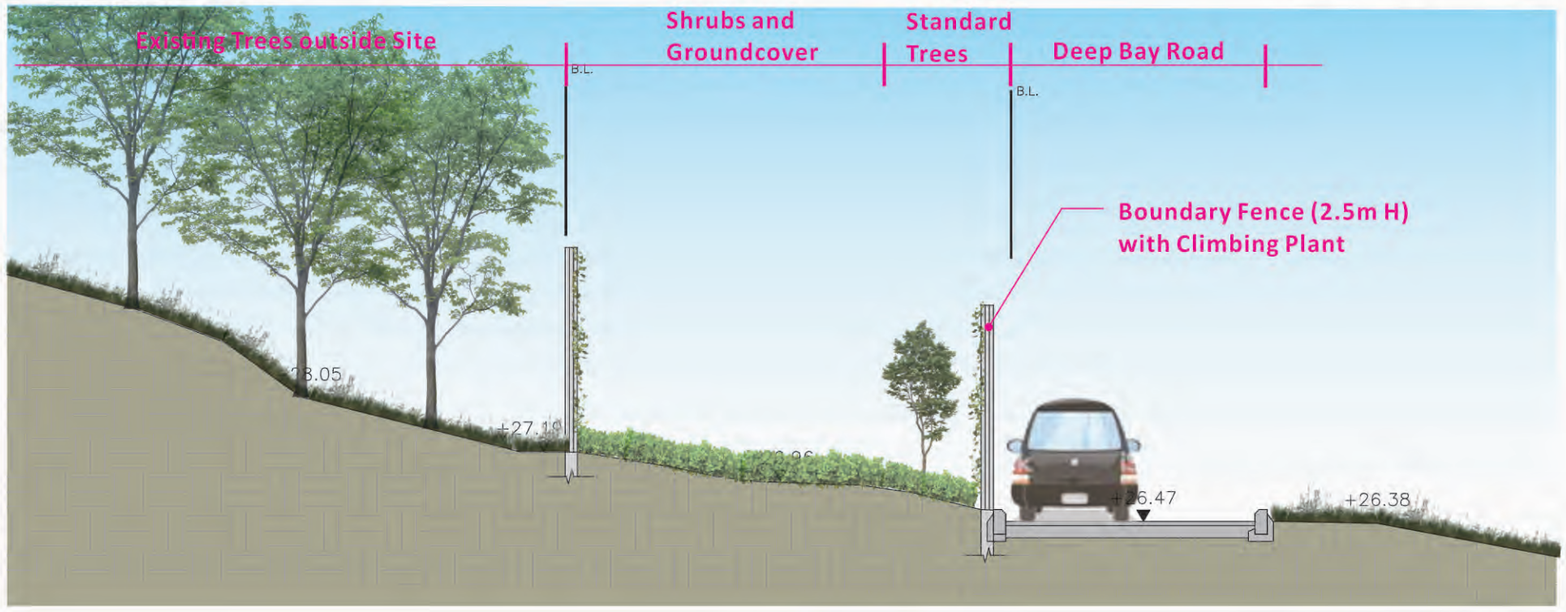
信邦商業大廈17樓A室
電話: 2868 0980
傳真: 2868 2203



Key Plan



A SECTION
SCALE 1:75



B SECTION
SCALE 1:75

PROJECT :

PROPOSED 'GOVERNMENT USE' (GBA AIR QUALITY LABORATORY AND METEORLOGICAL MONITORING SUPERSITE) ON DEEP BAY ROAD, TSIM BEI TSUI, N.T.

DRAWING TITLE :

LANDSCAPE SECTION

PROJECT No. C2520

DRAWING No. LD101

SCALE : 1:75

DATE OF ISSUE : AUG 2025

CAD FILENAME : C2520-LD101

REV	DESCRIPTION	DATE

DESIGN BY : TEL

DRAWN BY : CAD

CHECKED BY : TEL

APPROVED BY : TEL

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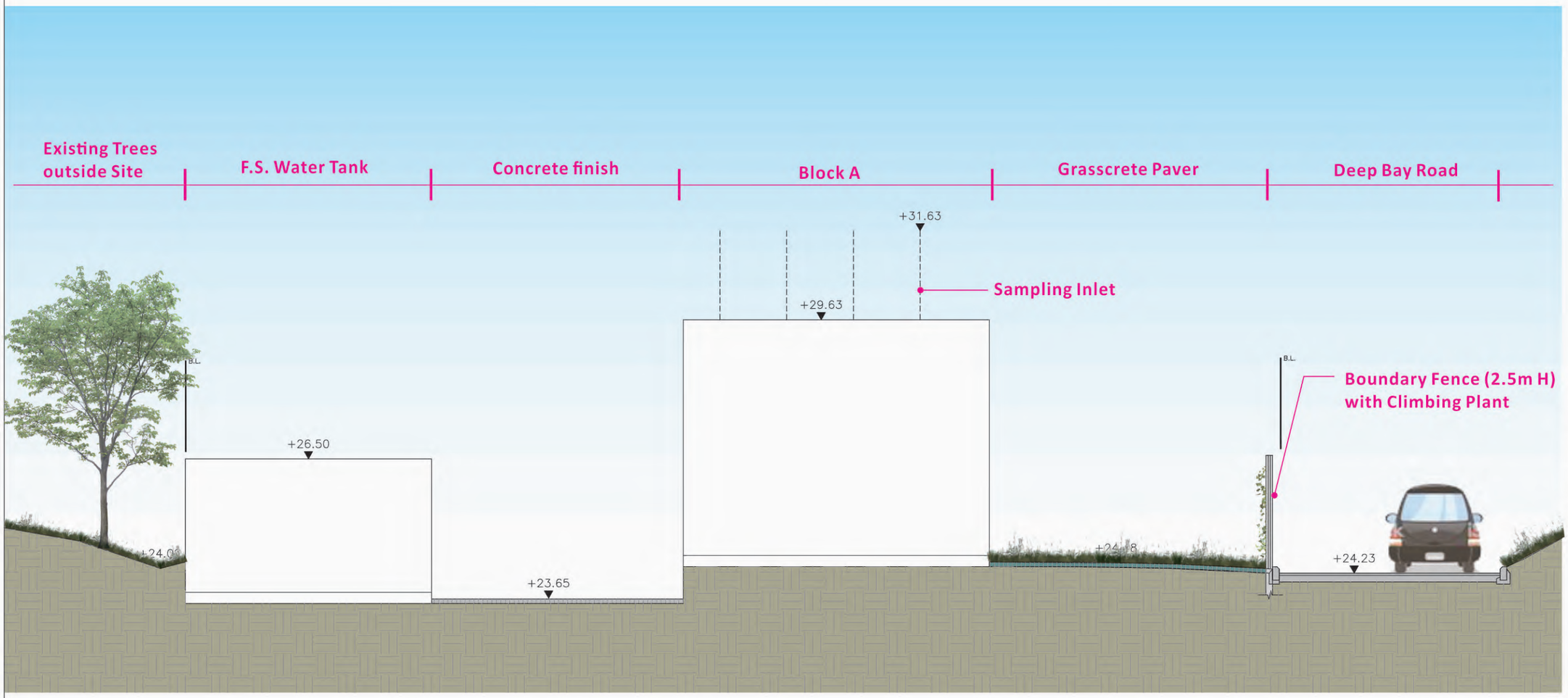
香港灣仔譚臣道5-11號
信邦商業大廈17樓A室
電話: 2868 0980
傳真: 2868 2203

Key Plan



PROJECT :

PROPOSED 'GOVERNMENT USE' (GBA AIR QUALITY LABORATORY AND METEORLOGICAL MONITORING SUPERSITE) ON DEEP BAY ROAD, TSIM BEI TSUI, N.T.

DRAWING TITLE :

LANDSCAPE SECTION

PROJECT No. C2520

DRAWING No. LD102

SCALE : 1:100

DATE OF ISSUE : AUG 2025

CAD FILENAME : C2520-LD102

REV	DESCRIPTION	DATE

DESIGN BY : TEL

DRAWN BY : CAD

CHECKED BY : TEL

APPROVED BY : TEL

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信邦商業大廈17樓A室
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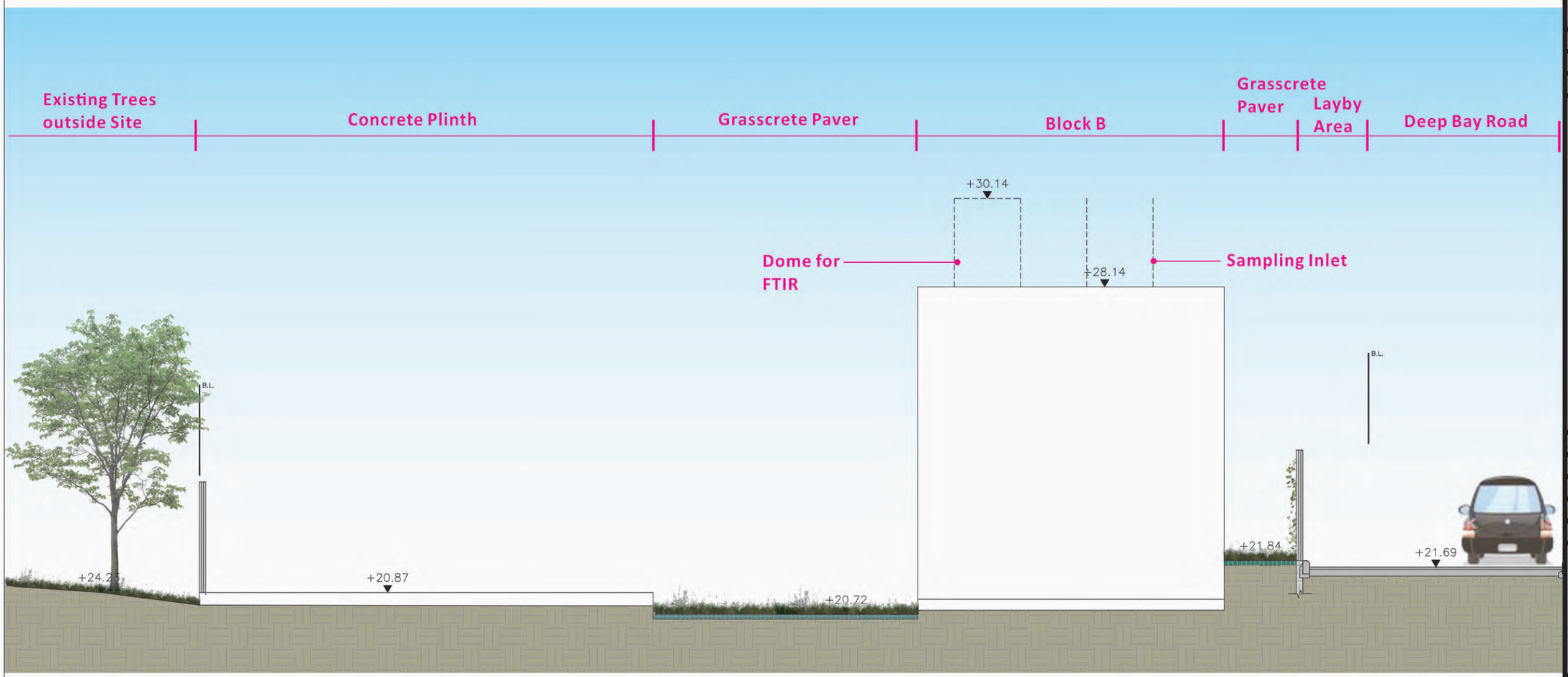
Key Plan



PROJECT :

PROPOSED 'GOVERNMENT USE' (GBA AIR QUALITY LABORATORY AND METEORLOGICAL MONITORING SUPERSITE) ON DEEP BAY ROAD, TSIM BEI TSUI, N.T.

DRAWING TITLE :

LANDSCAPE SECTION

PROJECT No. C2520

DRAWING No. LD103

SCALE : 1:100

DATE OF ISSUE : AUG 2025

CAD FILENAME : C2520-LD103

REV	DESCRIPTION	DATE

DESIGN BY : TEL

DRAWN BY : CAD

CHECKED BY : TEL

APPROVED BY : TEL

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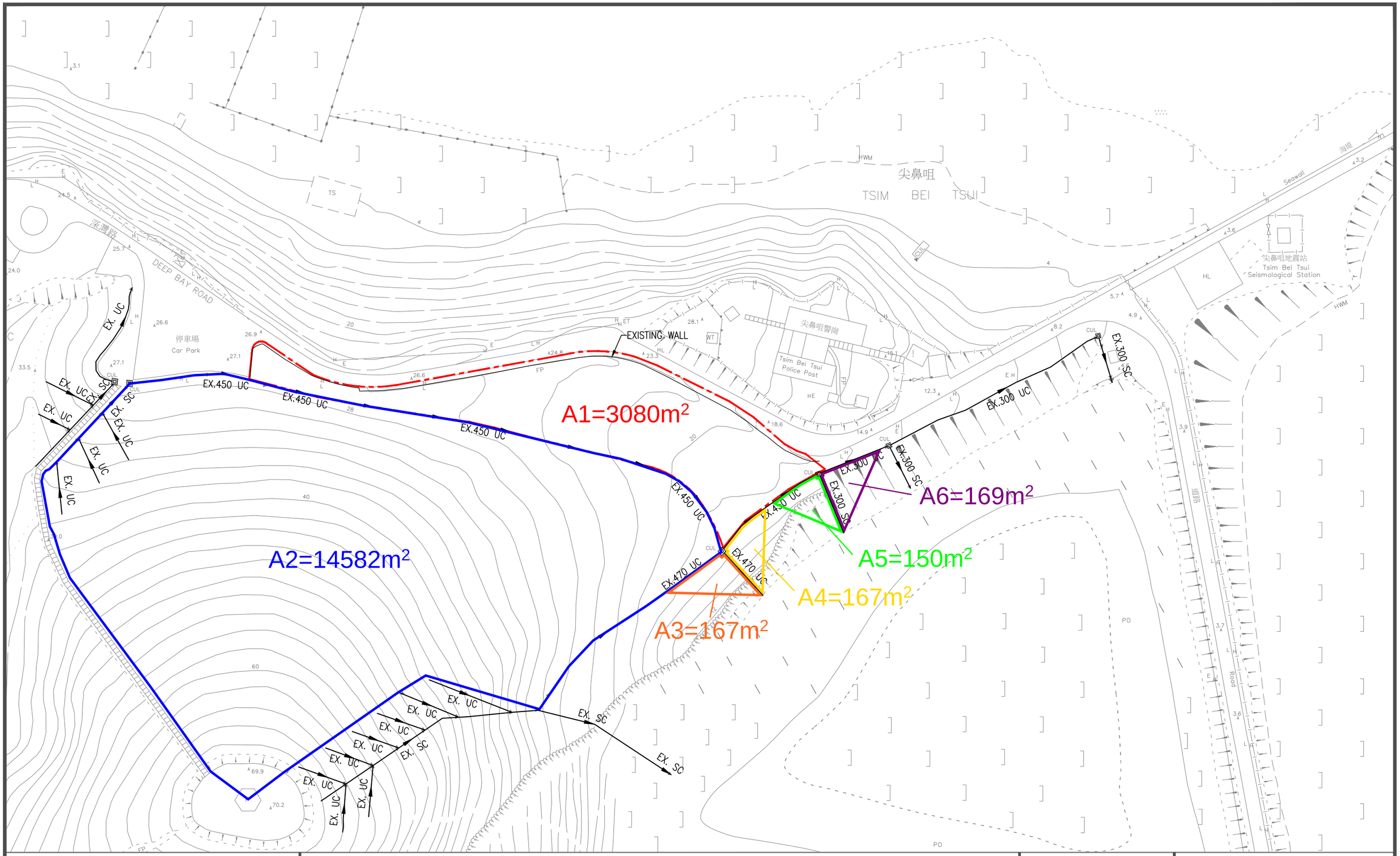
電話: 2868 0980
傳真: 2868 2203

Appendix E

Drainage Catchment Index Plan



Greg Wong & Associates Ltd.
Consulting Engineers & Project Managers
黃澤恩顧問工程師事務所

PLANNING APPLICATION FOR GREATER BAY AREA AIR QUALITY LABORATORY AND METEOROLOGICAL MONITORING SUPERSITE AT TSIM BEI TSUI

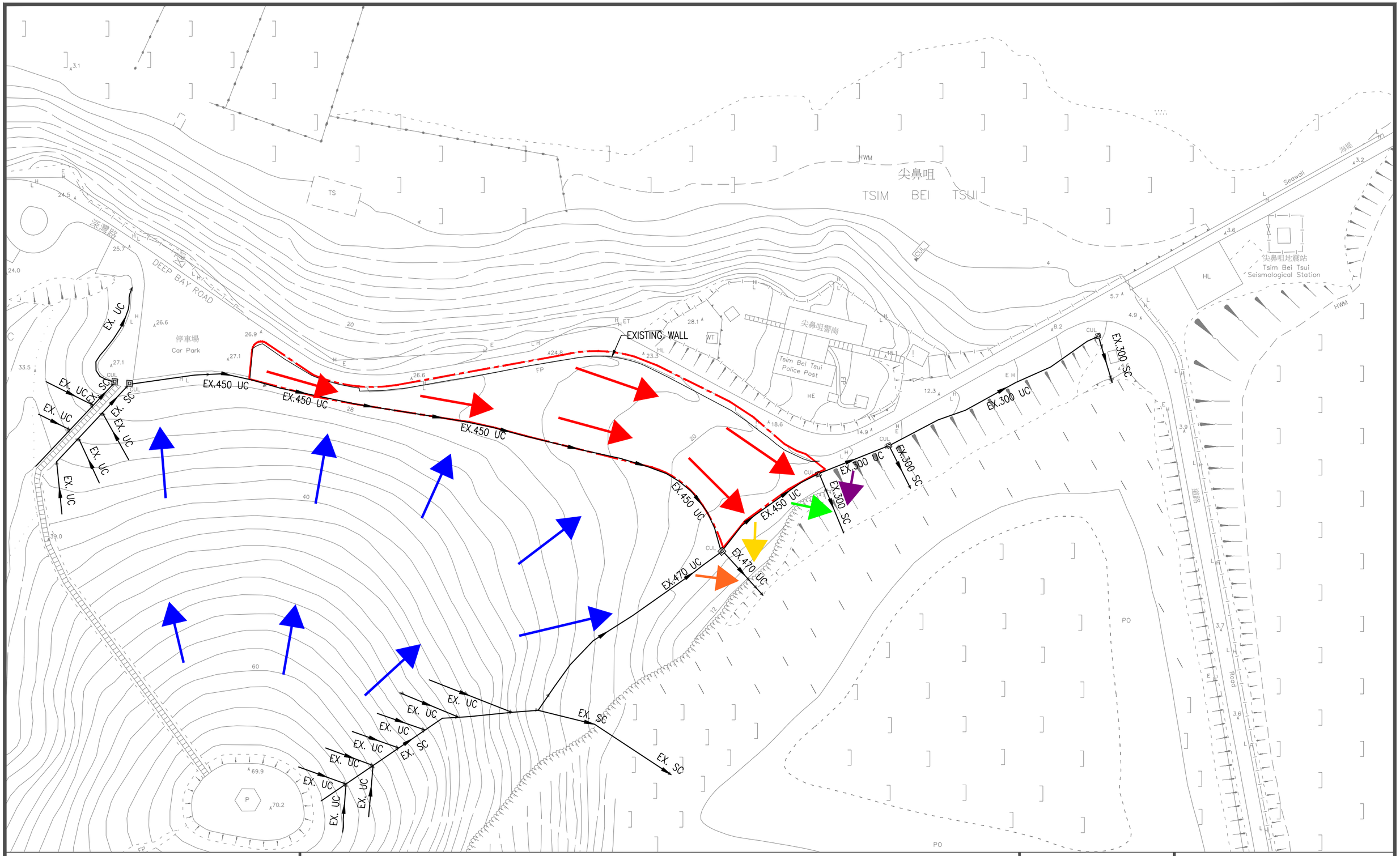
DRAINAGE CATCHMENTS INDEX PLAN

LEGEND:
- MANGROVE
- EX. 450 UC — EXISTING 450mm U-CHANNEL
- EX. 300 SC — EXISTING 300mm STEPPED CHANNEL
- PLANTATION
- SITE BOUNDARY
- EXISTING CATCHPIT

DESIGNED BY	K.A.Y.	JOB NO	P2676
CHECKED BY	K.T.	DRAWN BY	J.C.
DRAWING NO	DRAWING 1	SCALE	1:1000
		DATE	18-09-2025
		REV	–

Appendix F

Existing Stormwater Drainage Plan



Greg Wong & Associates Ltd.
Consulting Engineers & Project Managers
黃澤恩顧問工程師事務所

PLANNING APPLICATION FOR GREATER BAY AREA AIR QUALITY LABORATORY AND METEOROLOGICAL MONITORING SUPERSITE AT TSIM BEI TSUI

EXISTING STORMWATER DRAINAGE PLAN

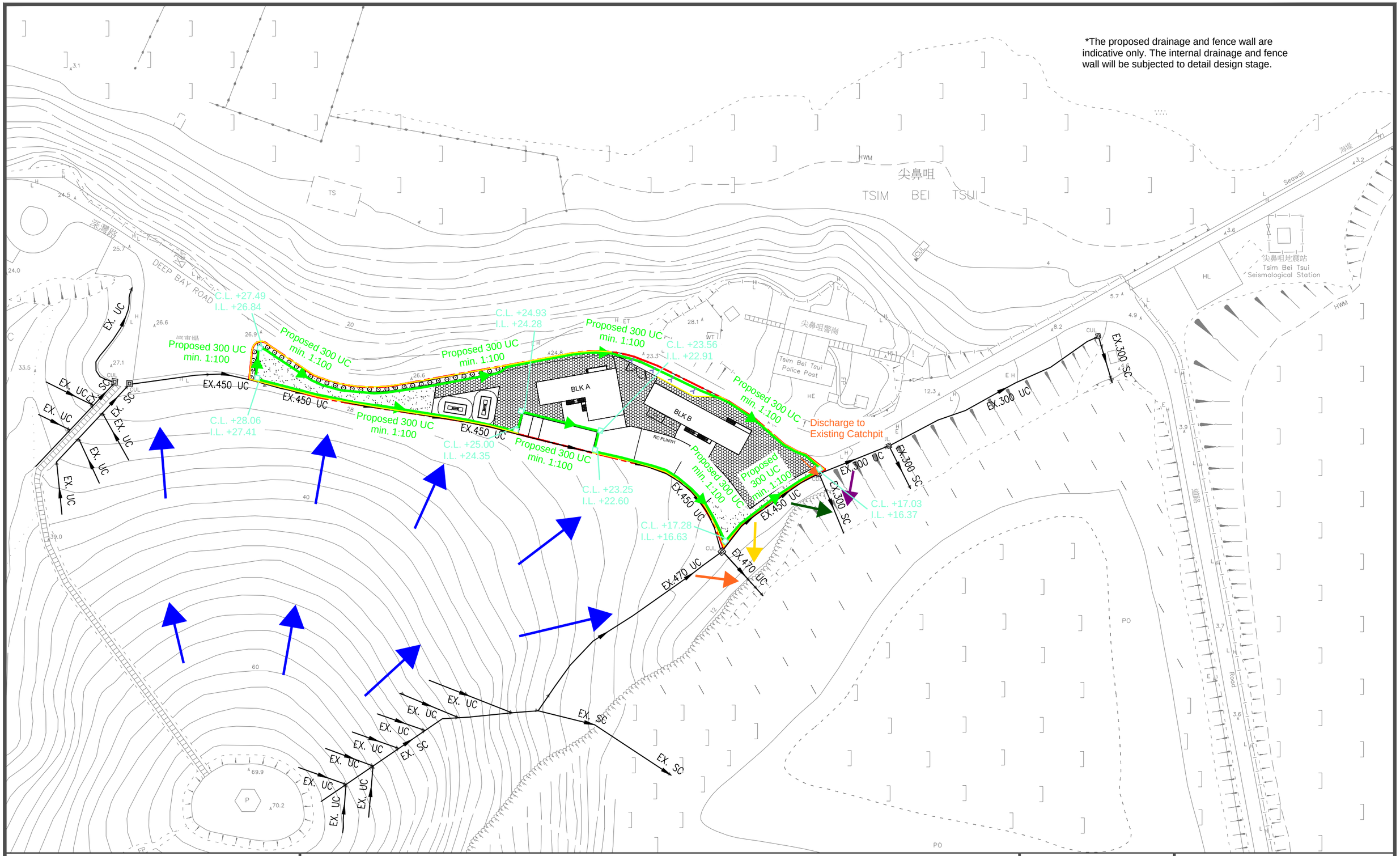
LEGEND:
- MANGROVE
- EX. 450 UC — EXISTING 450mm U-CHANNEL
- EX. 300 SC — EXISTING 300mm STEPPED CHANNEL
- EXISTING DRAINAGE ROUTES
- PLANTATION
- SITE BOUNDARY
- EXISTING CATCHPIT

DESIGNED BY	K.A.Y.
CHECKED BY	K.T.
DRAWING NO	DRAWING 2
JOB NO	P2676
DRAWN BY	J.C.
SCALE	1:1000
DATE	18-09-2025
REV	–

Appendix G

Proposed Stormwater Drainage Plan

*The proposed drainage and fence wall are indicative only. The internal drainage and fence wall will be subjected to detail design stage.



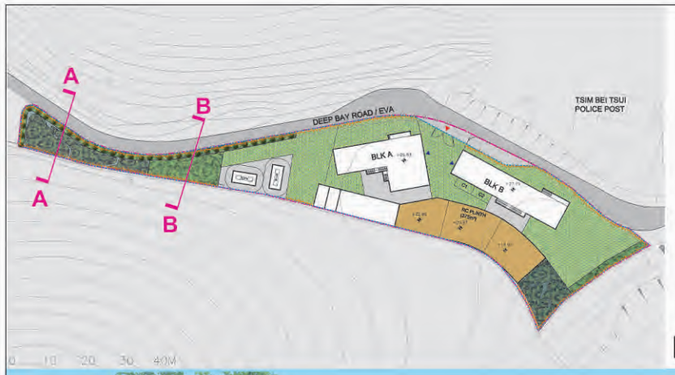
Greg Wong & Associates Ltd.
Consulting Engineers & Project Managers
黃澤恩顧問工程師事務所

PLANNING APPLICATION FOR GREATER BAY AREA AIR QUALITY LABORATORY AND METEOROLOGICAL MONITORING SUPERSITE AT TSIM BEI TSUI

PROPOSED STORMWATER DRAINAGE PLAN

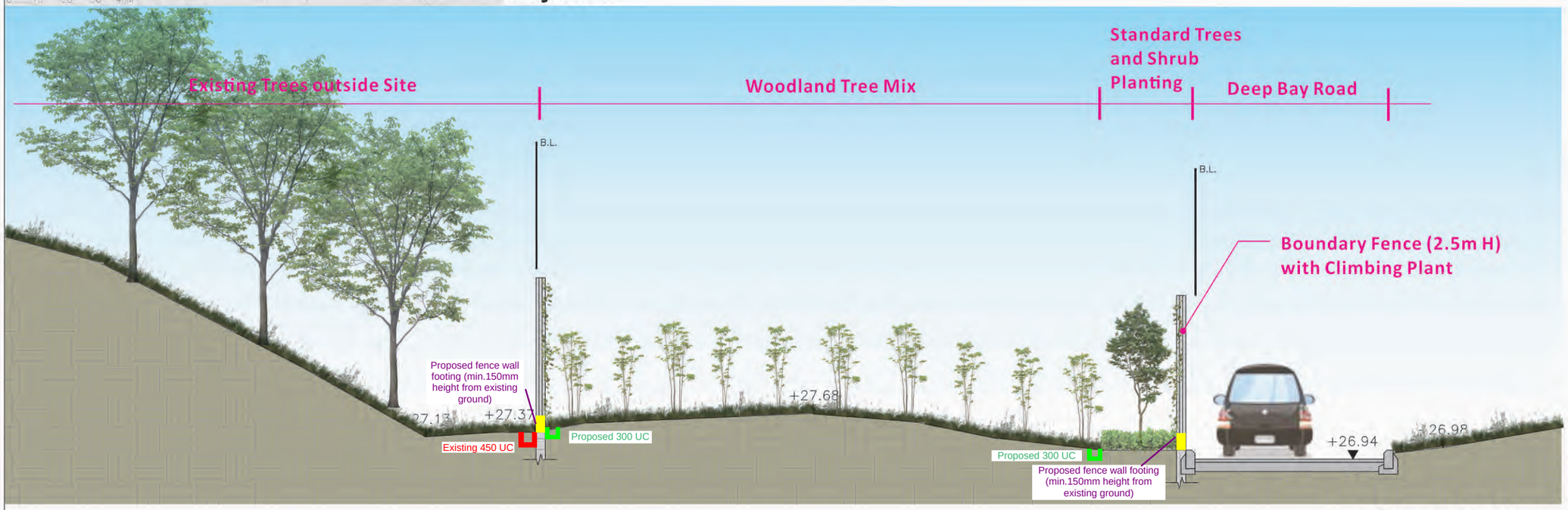
LEGEND:
- EX. 450 UC — EXISTING 450mm U-CHANNEL
- EX. 300 SC — EXISTING 300mm STEPPED CHANNEL
- PROPOSED RAMPING DOWN
- PROPOSED CATCHPIT
- MANGROVE
- PROPOSED FENCE WALL
- PROPOSED DRAINAGE ROUTES
- PLANTATION
- SITE BOUNDARY
- EXISTING CATCHPIT

DESIGNED BY	K.A.Y.	JOB NO	P2676
CHECKED BY	K.T.	DRAWN BY	J.C.
DRAWING NO	DRAWING 3	SCALE	1:1000
		DATE	18-09-2025
		REV	–

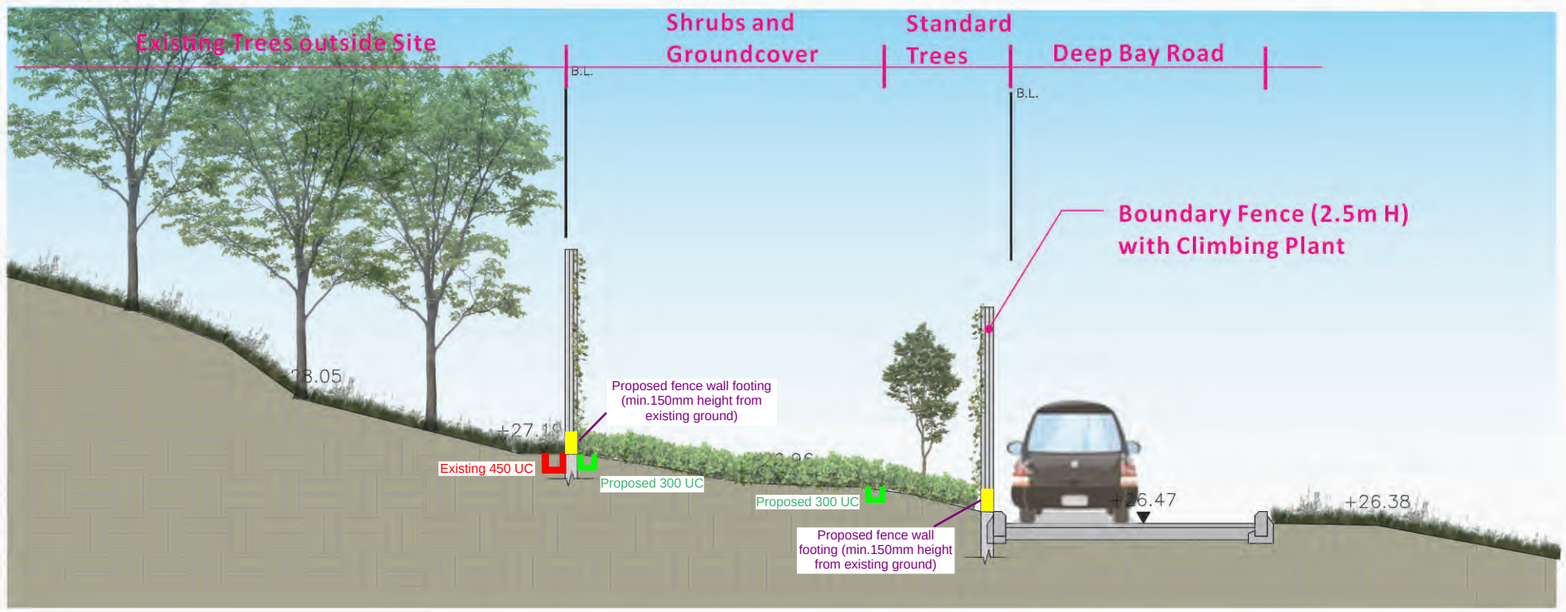


Key Plan

*The proposed drainage and fence wall are indicative only. The internal drainage and fence wall will be subjected to detail design stage.



A SECTION
SCALE 1:75



B SECTION
SCALE 1:75

PROJECT :

PROPOSED 'GOVERNMENT USE' (GBA AIR QUALITY LABORATORY AND METEORLOGICAL MONITORING SUPERSITE) ON DEEP BAY ROAD, TSIM BEI TSUI, N.T.

DRAWING TITLE :

PROPOSED STORMWATER SECTION

PROJECT No. C2520

DRAWING No. LD101

SCALE : 1:75

DATE OF ISSUE : AUG 2025

CAD FILENAME : C2520-LD101

REV	DESCRIPTION	DATE

DESIGN BY : TEL

DRAWN BY : CAD

CHECKED BY : TEL

APPROVED BY : TEL

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4. READ THIS DWG. IN CONNECTION WITH GEN. ARCH. PLANS, STRUCT. PLANS, AND OTHER RELATED DWGS.

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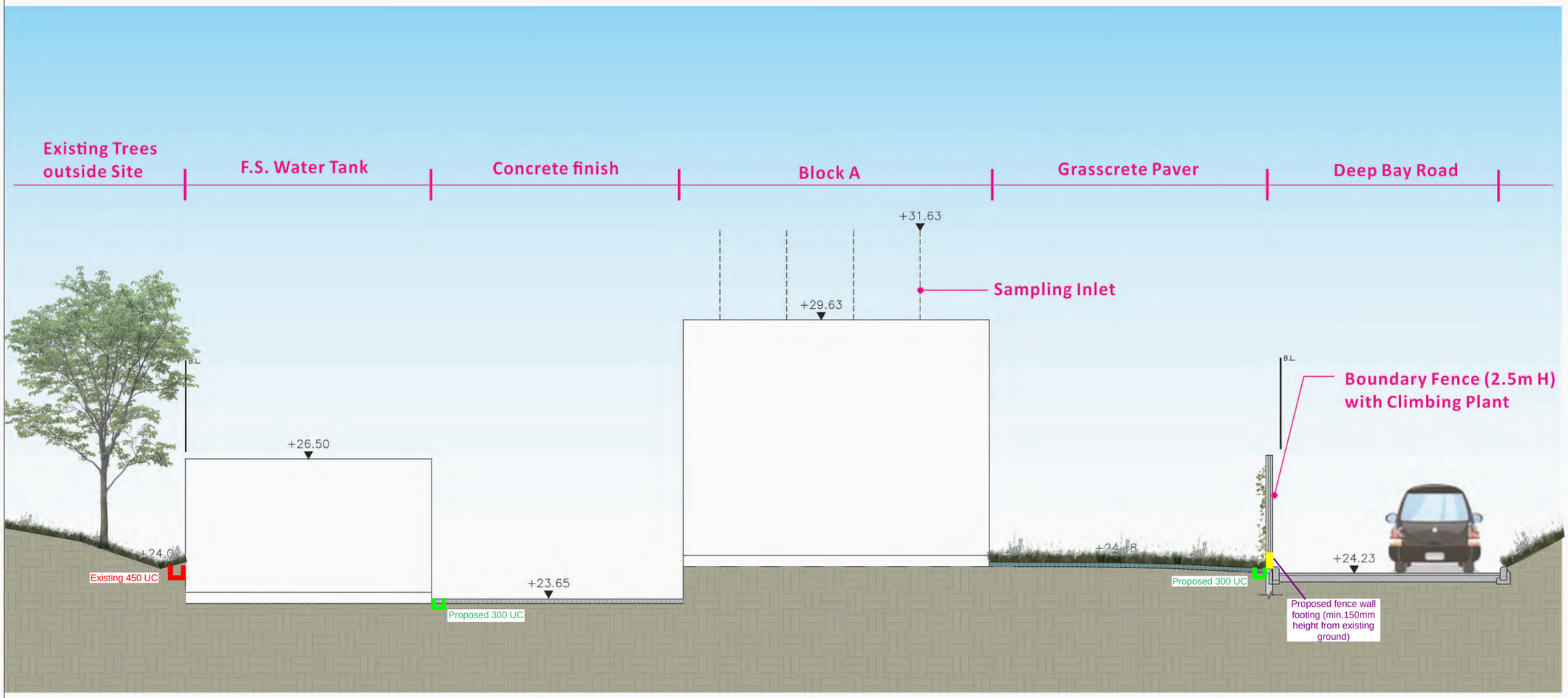
Key Plan

*The proposed drainage and fence wall are indicative only. The internal drainage and fence wall will be subjected to detail design stage.



PROJECT :

PROPOSED 'GOVERNMENT USE' (GBA AIR QUALITY LABORATORY AND METEORLOGICAL MONITORING SUPERSITE) ON DEEP BAY ROAD, TSIM BEI TSUI, N.T.

DRAWING TITLE :

PROPOSED STORMWATER SECTION

PROJECT No. C2520

DRAWING No. LD102

SCALE : 1:100

DATE OF ISSUE : AUG 2025

CAD FILENAME : C2520-LD102

REV	DESCRIPTION	DATE

DESIGN BY : TEL

DRAWN BY : CAD

CHECKED BY : TEL

APPROVED BY : TEL

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電話: 2868 0980
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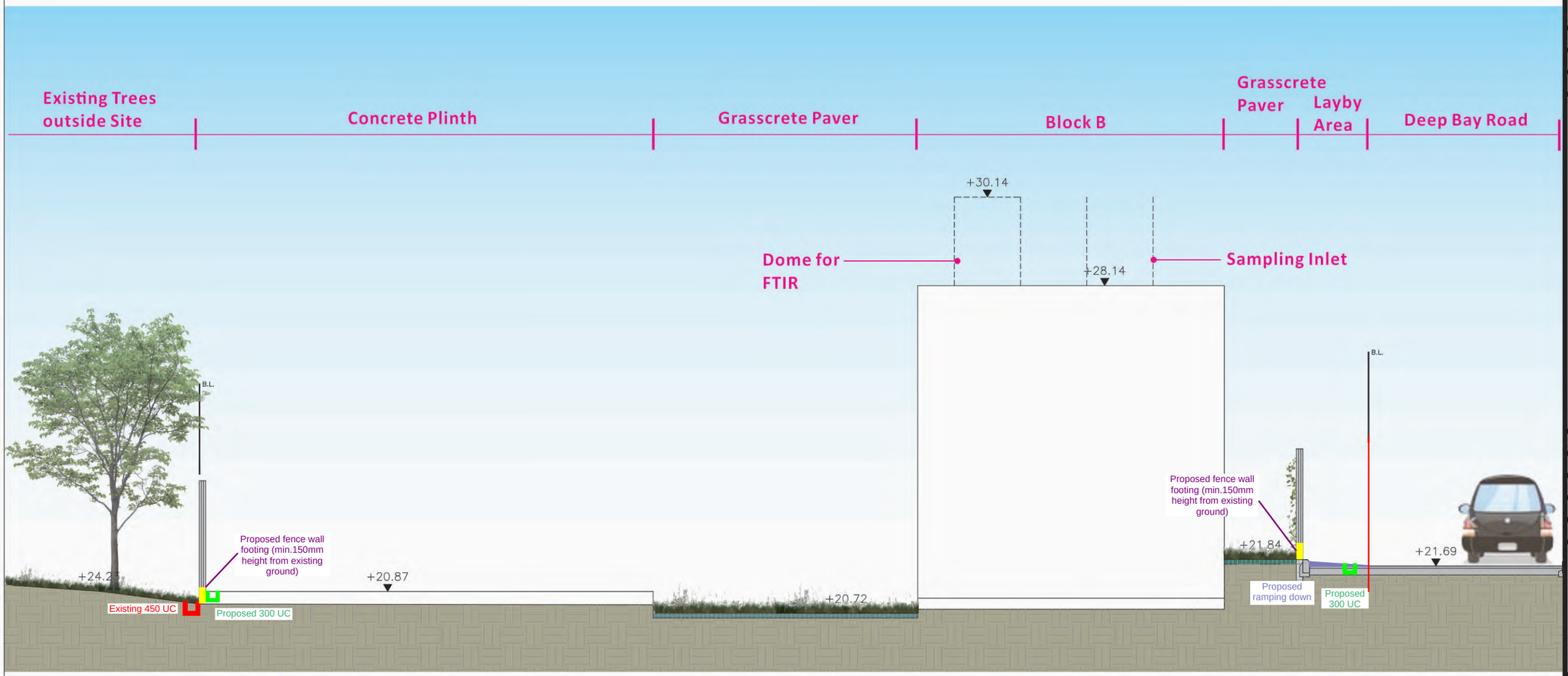
Key Plan

*The proposed drainage and fence wall are indicative only. The internal drainage and fence wall will be subjected to detail design stage.



PROJECT :

PROPOSED 'GOVERNMENT USE' (GBA AIR QUALITY LABORATORY AND METEORLOGICAL MONITORING SUPERSITE) ON DEEP BAY ROAD, TSIM BEI TSUI, N.T.

DRAWING TITLE :

PROPOSED STORMWATER SECTION

PROJECT No. C2520

DRAWING No. LD103

SCALE : 1:100

DATE OF ISSUE : AUG 2025

CAD FILENAME : C2520-LD103

REV	DESCRIPTION	DATE

DESIGN BY : TEL

DRAWN BY : CAD

CHECKED BY : TEL

APPROVED BY : TEL

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Appendix H

Hydraulic Design Check for Proposed Drainage System

Drainage Design and Checking

Project No.:	P2676	Date:	22-Dec-25
Prepared by:	KAY	Checked by:	KT

Check for the Drainage Capactiy inside Area A1 (Existing)

Total catchment area, A1 (paved) = 0 m^2
Total catchment area, A1 (vegetated) = 3080 m^2

Use Rational Method from Geo-Manual

Q = kiA/3600 where,

Q = Maximum runoff (lit/sec)
k = Runoff coefficient
i = Design mean intensity of rainfall (mm/hr)
A = Total catchment area (m^2)

Assume k = 0.85 (paved)
Assume k = 0.30 (flat,vegetated)

Longest distance from summit to outlet (Ld) = 167.90 m

Average fall, H = 8.09 m per 100m

From Bransby-Williams Equation (Geo-Manual)

T_c = $0.14465 \times L_d / (H^{0.2} \times A^{0.1})$
= 7.16 min > 1.0 min
= 7.16 min

Assume a 1 in 10 year design rainfall return period for existing channel

Corrigendum No. 1/2022, Table 28 - Rainfall Incease 16.0% for End of 21st Centur

i = 208 mm/hr x 1.16 = 241.28 mm/hr
Q = kiA/60
= 3716 lit/min
= 0.062 m3/s

From Geo-Manual (Fig 8.7) 10% reduction in flow area for sedimentation reduction
For existing 450 UC with 1 in 100 gradient
Maximum capacity = 24000 x 0.9
= 21600 lit/min > 3716 o.k.
The corresponding velocity = 1.57 m/s < 4 o.k.

Existing Intensity A1

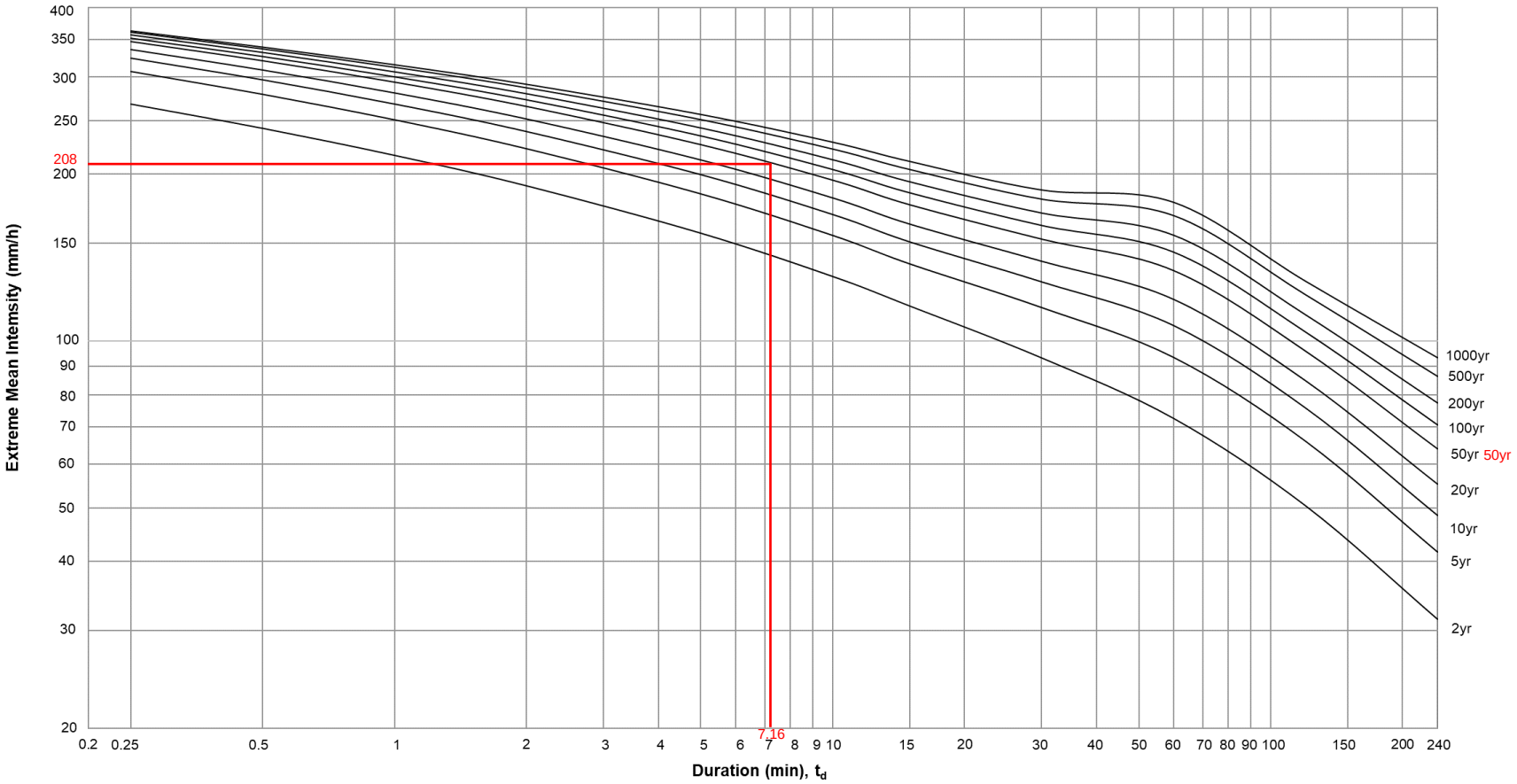


Figure 4a – Intensity-Duration-Frequency Curves of HKO Headquarters
(for durations not exceeding 4 hours)

Existing Catchment A1

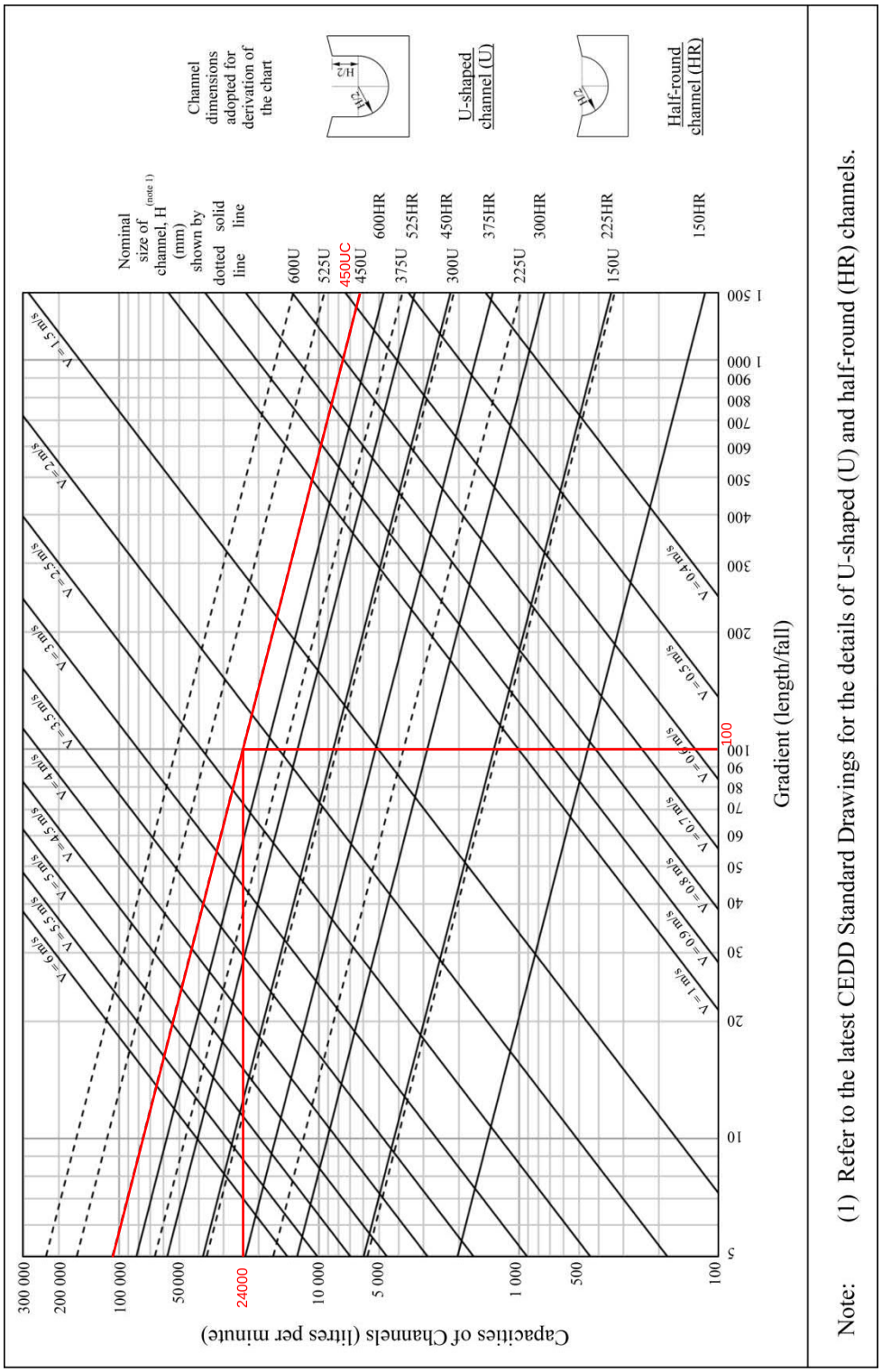


Figure 1 - Chart for the rapid design of U-shaped and half-round channels up to 600 mm

Note: (1) Refer to the latest CEDD Standard Drawings for the details of U-shaped (U) and half-round (HR) channels.

Drainage Design and Checking

Project No.:	P2676	Date:	22-Dec-25
Prepared by:	KAY	Checked by:	KT

Check for the Drainage Capactiy inside Area A1,A5,A6 (Existing)

Total catchment area, A1,A5,A6 (paved) = 0 m^2
Total catchment area, A1,A5,A6 (vegetated) = 3399 m^2

Use Rational Method from Geo-Manual

$Q = kiA/3600$ where,

Q = Maximum runoff (lit/sec)
k = Runoff coefficient
i = Design mean intensity of rainfall (mm/hr)
A = Total catchment area (m^2)

Assume k = 0.85 (paved)
Assume k = 0.35 (steep,vegetated)

Longest distance from summit to outlet (Ld) = 185.70 m

Average fall, H = 7.32 m per 100m

From Bransby-Williams Equation (Geo-Manual)

$T_c = 0.14465 \times L_d / (H^{0.2} \times A^{0.1})$
= 8.00 min > 1.0 min
= 8.00 min

Assume a 1 in 10 year design rainfall return period for existing channel

Corrigendum No. 1/2022, Table 28 - Rainfall Incease 16.0% for End of 21st Centur

i = 205 mm/hr x 1.16 = 237.80 mm/hr
Q = kiA/60
= 4715 lit/min
= 0.079 m3/s

From Geo-Manual (Fig 8.7) 10% reduction in flow area for sedimentation reduction
For existing 300 SC with 1 in 5 gradient
Maximum capacity = 37000 x 0.9
= 33300 lit/min > 4715 o.k.
The corresponding velocity = 4.53 m/s > 4 o.k.

Existing Intensity A1,A5,A6

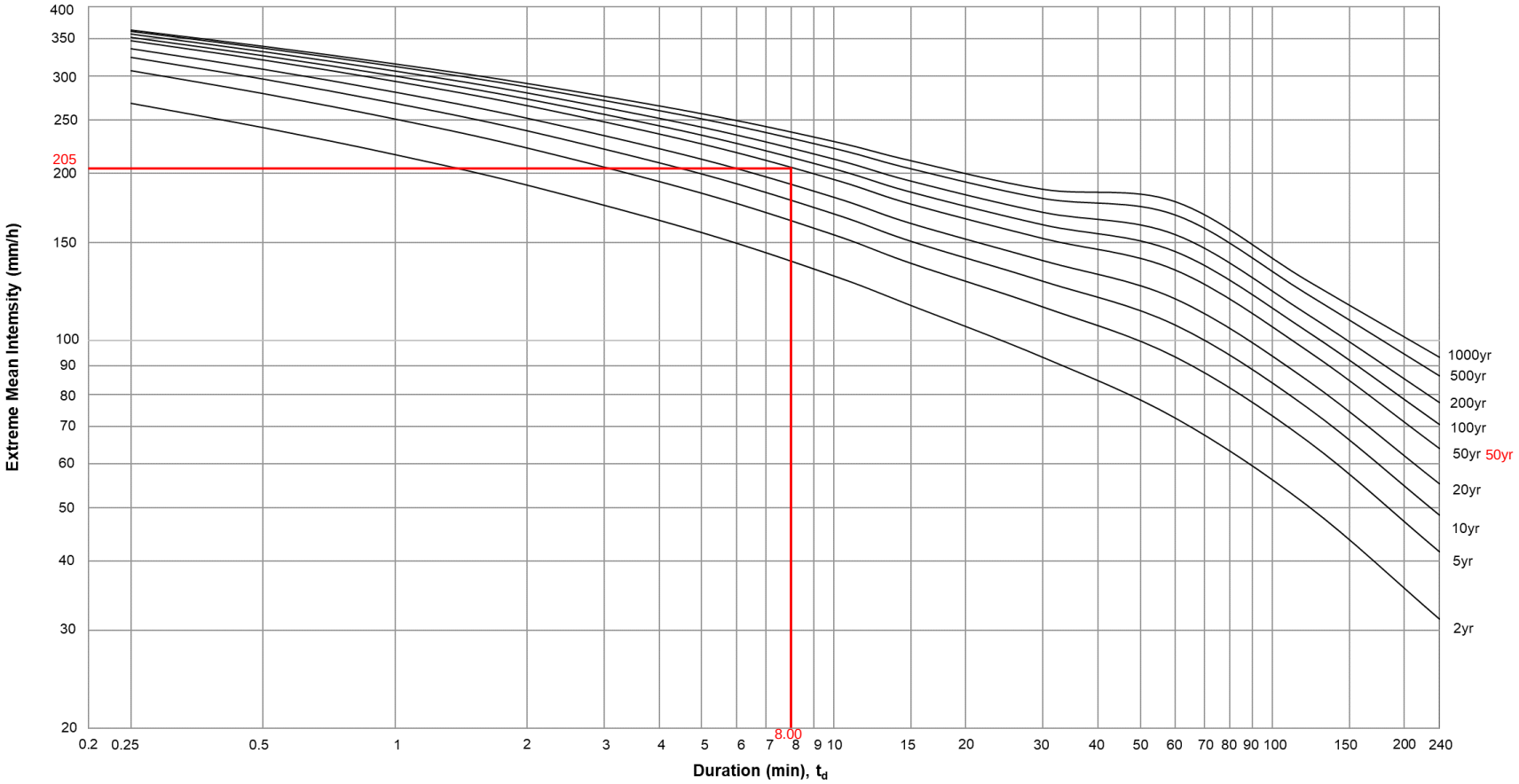


Figure 4a – Intensity-Duration-Frequency Curves of HKO Headquarters
(for durations not exceeding 4 hours)

Existing Catchment A1,A5,A6

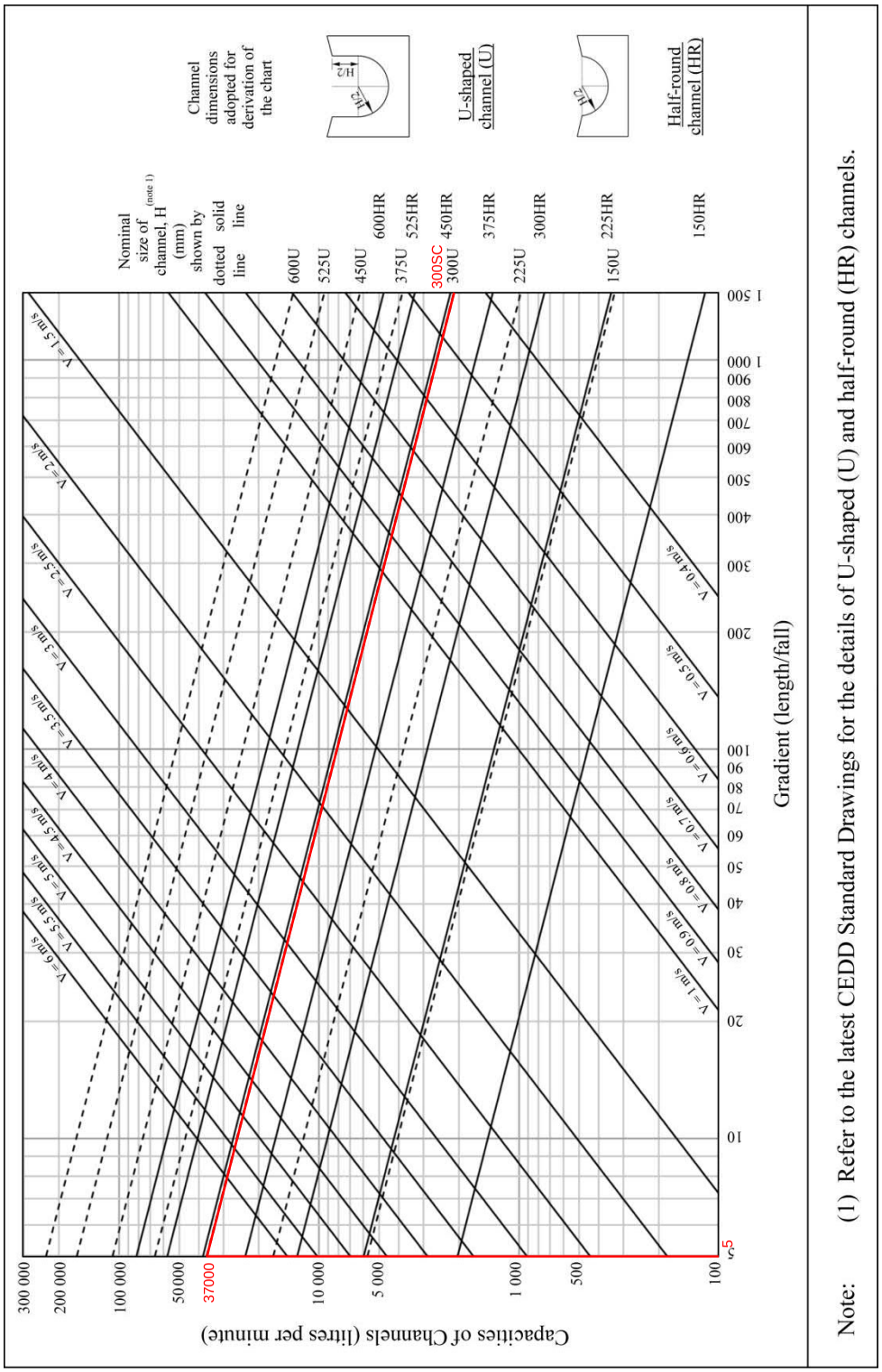


Figure 1 - Chart for the rapid design of U-shaped and half-round channels up to 600 mm

Note: (1) Refer to the latest CEDD Standard Drawings for the details of U-shaped (U) and half-round (HR) channels.

Drainage Design and Checking

Project No.:	P2676	Date:	22-Dec-25
Prepared by:	KAY	Checked by:	KT

Check for the Drainage Capactiy inside Area A1 (Proposed)

Total catchment area,	A1 (paved)	=	1377	m^2
Total catchment area,	A1 (vegetated)	=	600	m^2
Total catchment area,	A1 (grasscrete)	=	1103	m^2

Use Rational Method from Geo-Manual

$Q = kiA/3600$ where,

Q = Maximum runoff (lit/sec)
k = Runoff coefficient
i = Design mean intensity of rainfall (mm/hr)
A = Total catchment area (m^2)

Assume k = 0.85 (paved)
Assume k = 0.30 (flat,vegetated)

Longest distance from summit to outlet (Ld) = 167.90 m

Average fall, H = 8.09 m per 100m

From Bransby-Williams Equation (Geo-Manual)

$T_c = 0.14465 \times L_d / (H^{0.2} \times A^{0.1})$
= 7.16 min > 1.0 min
= 7.16 min

Assume a 1 in 10 year design rainfall return period for existing channel

Corrigendum No. 1/2022, Table 28 - Rainfall Incease 16.0% for End of 21st Centur

i = 208 mm/hr x 1.16 = 241.28 mm/hr
Q = kiA/60
= 9201 lit/min
= 0.153 m3/s

From Geo-Manual (Fig 8.7) 10% reduction in flow area for sedimentation reduction
For proposed 300 UC with 1 in 50 gradient
Maximum capacity = 12000 x 0.9
= 10800 lit/min > 9201 o.k.
The corresponding velocity = 2.53 m/s < 4 o.k.

Proposed Intensity A1

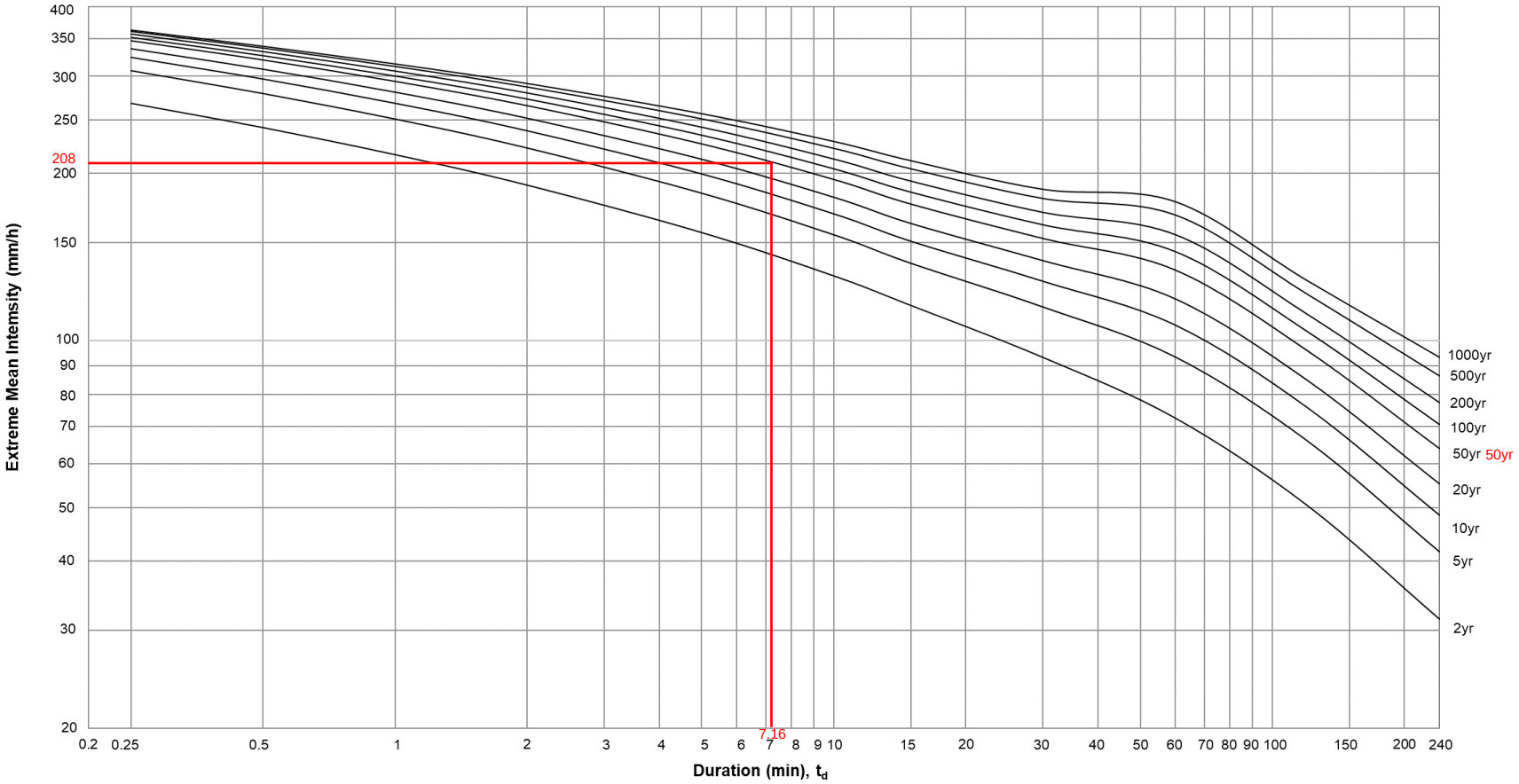


Figure 4a – Intensity-Duration-Frequency Curves of HKO Headquarters
(for durations not exceeding 4 hours)

Proposed Catchment A1

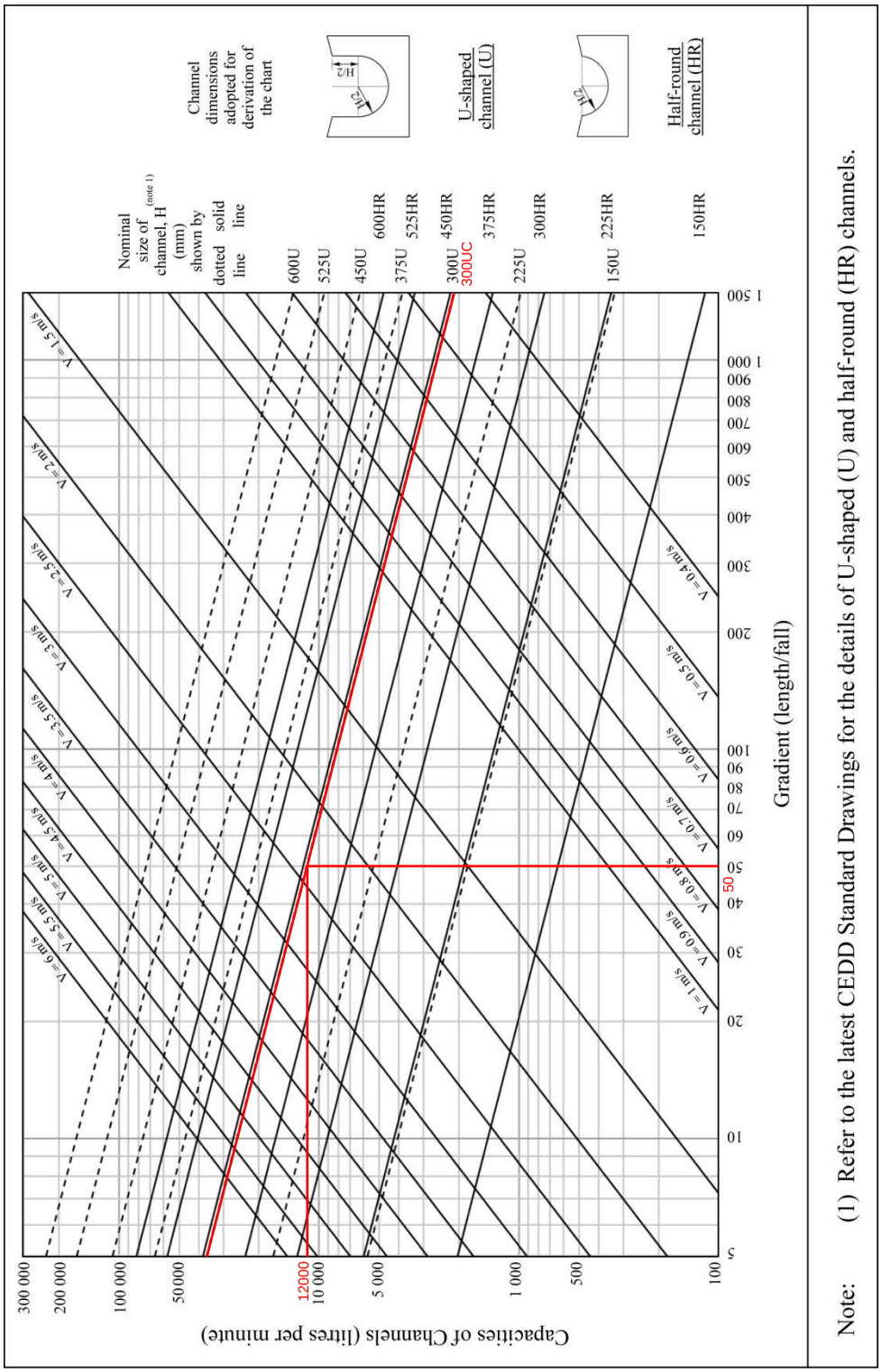


Figure 1 - Chart for the rapid design of U-shaped and half-round channels up to 600 mm

Note: (1) Refer to the latest CEDD Standard Drawings for the details of U-shaped (U) and half-round (HR) channels.

Drainage Design and Checking

Project No.:	P2676	Date:	22-Dec-25
Prepared by:	KAY	Checked by:	KT

Check for the Drainage Capactiy inside Area A1,A5,A6 (Proposed)

Total catchment area,	A1 (paved)	=	1377	m^2
Total catchment area,	A1,A5,A6 (vegetated)	=	919	m^2
Total catchment area,	A1 (grasscrete)	=	1103	m^2

Use Rational Method from Geo-Manual

$Q = kiA/3600$ where,

Q = Maximum runoff (lit/sec)
k = Runoff coefficient
i = Design mean intensity of rainfall (mm/hr)
A = Total catchment area (m^2)

Assume k = 0.85 (paved)
Assume k = 0.35 (steep,vegetated)

Longest distance from summit to outlet (Ld) = 185.70 m

Average fall, H = 7.32 m per 100m

From Bransby-Williams Equation (Geo-Manual)

$T_c = 0.14465 \times L_d / (H^{0.2} \times A^{0.1})$

= 8.00 min > 1.0 min

= 8.00 min

Assume a 1 in 10 year design rainfall return period for existing channel

Corrigendum No. 1/2022, Table 28 - Rainfall Incease 16.0% for End of 21st Centur

i = 205 mm/hr x 1.16 = 237.80 mm/hr

Q = kiA/60

= 9630 lit/min

= 0.160 m3/s

From Geo-Manual (Fig 8.7) 10% reduction in flow area for sedimentation reduction

For existing 300 SC with 1 in 5 gradient

Maximum capacity = 37000 x 0.9

= 33300 lit/min > 9630 o.k.

The corresponding velocity = 4.80 m/s > 4 o.k.

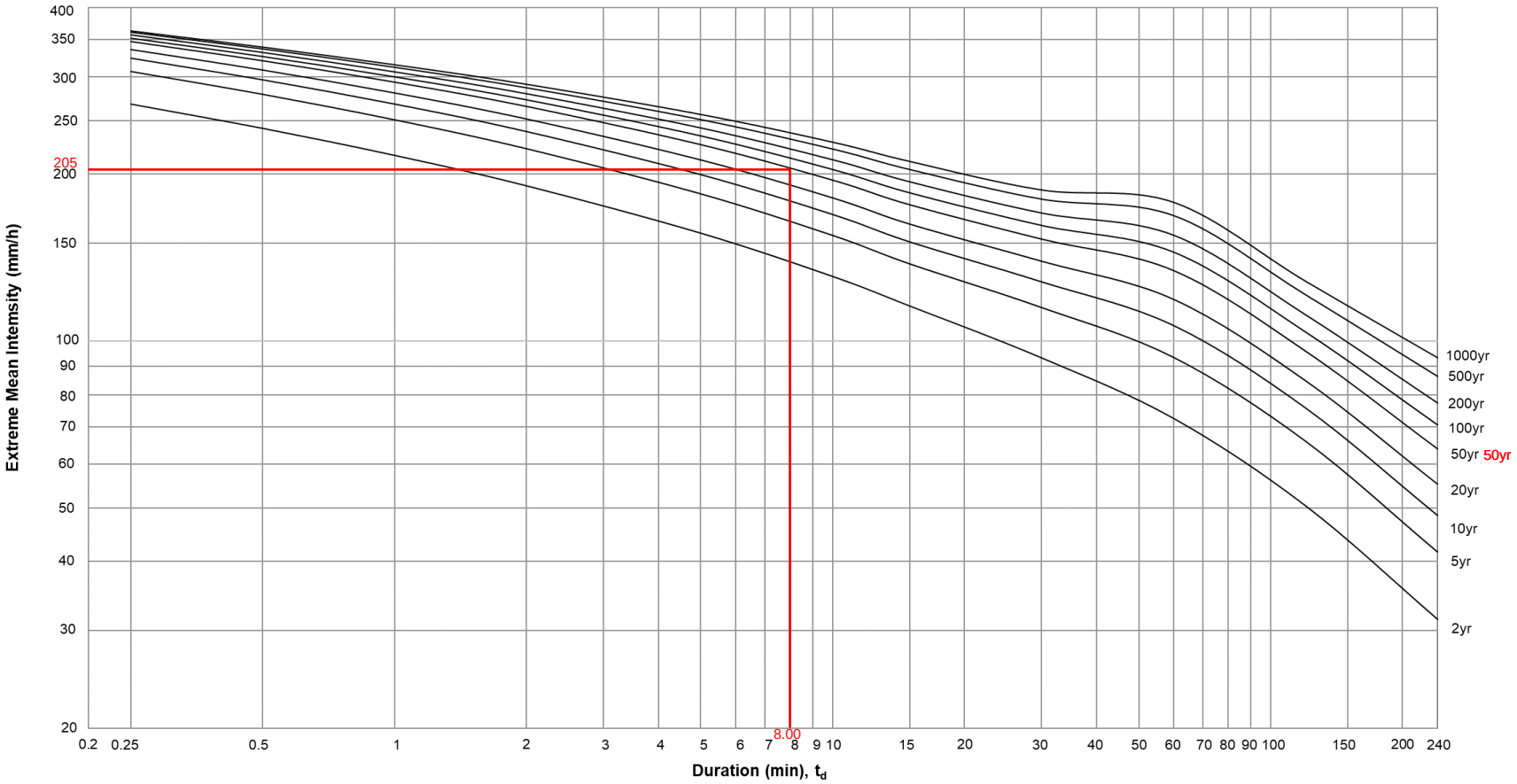


Figure 4a – Intensity-Duration-Frequency Curves of HKO Headquarters
(for durations not exceeding 4 hours)

Proposed Catchment A1,A5,A6

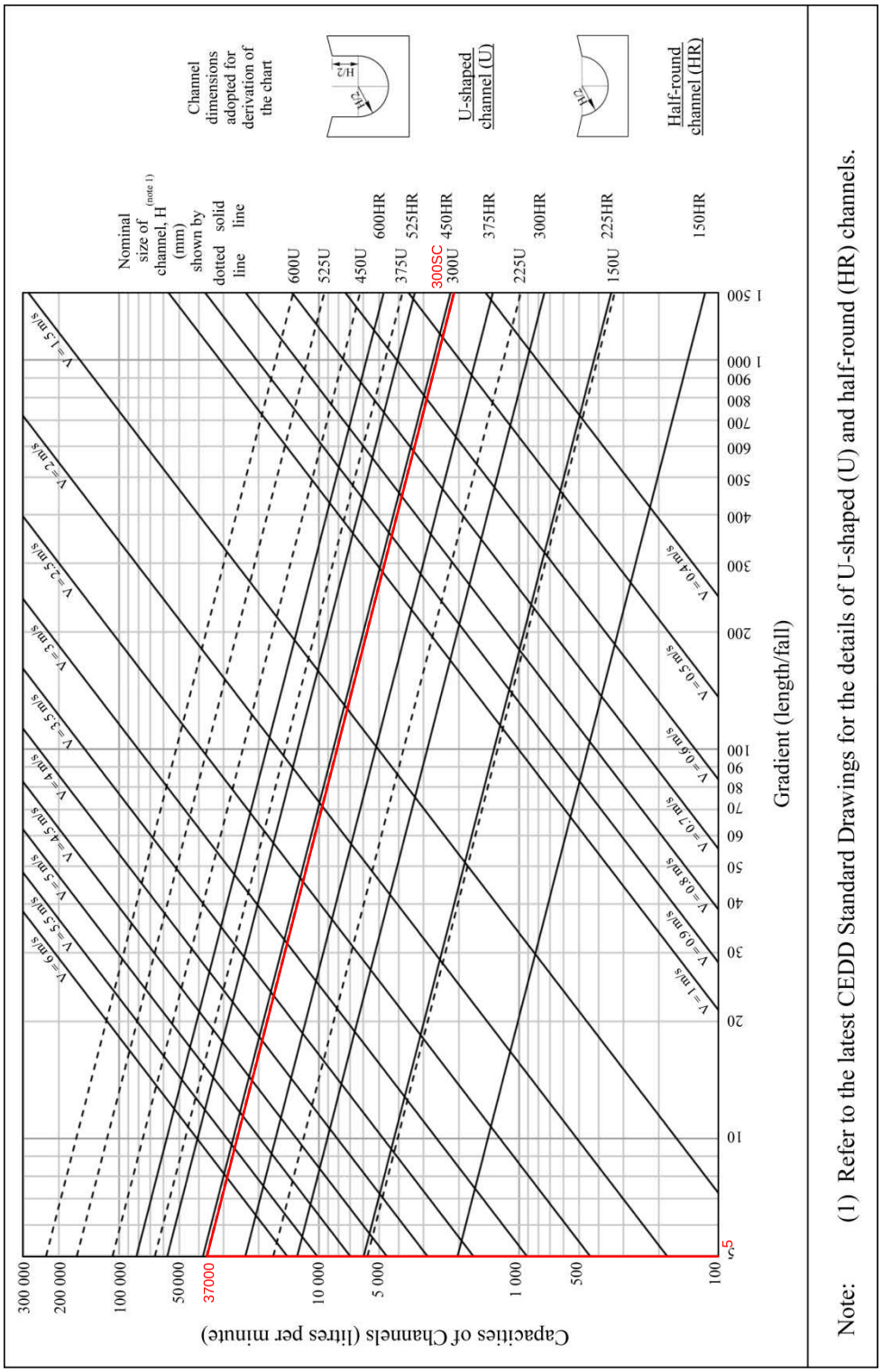


Figure 1 - Chart for the rapid design of U-shaped and half-round channels up to 600 mm

Note: (1) Refer to the latest CEDD Standard Drawings for the details of U-shaped (U) and half-round (HR) channels.

Drainage Design and Checking

Project No.:	P2676	Date:	22-Dec-25
Prepared by:	KAY	Checked by:	KT

Check for the Drainage Capactiy inside Area A2 (Existing)

Total catchment area, A2 (paved) = 0 m^2
Total catchment area, A2 (vegetated) = 14582 m^2

Use Rational Method from Geo-Manual

$Q = kiA/3600$ where,

Q = Maximum runoff (lit/sec)
k = Runoff coefficient
i = Design mean intensity of rainfall (mm/hr)
A = Total catchment area (m^2)

Assume k = 0.85 (paved)
Assume k = 0.35 (steep,vegetated)

Longest distance from summit to outlet (Ld) = 328.80 m

Average fall, H = 16.46 m per 100m

From Bransby-Williams Equation (Geo-Manual)

$T_c = 0.14465 \times L_d / (H^{0.2} \times A^{0.1})$
= 10.41 min > 1.0 min
= 10.41 min

Assume a 1 in 10 year design rainfall return period for existing channel

Corrigendum No. 1/2022, Table 28 - Rainfall Incease 16.0% for End of 21st Centur

i = 190 mm/hr x 1.16 = 220.40 mm/hr
Q = kiA/60
= 18748 lit/min
= 0.312 m3/s

From Geo-Manual (Fig 8.7) 10% reduction in flow area for sedimentation reduction
For existing 450 UC with 1 in 30 gradient
Maximum capacity = 44000 x 0.9
= 39600 lit/min > 18748 o.k.
The corresponding velocity = 3.65 m/s < 4 o.k.

Existing Intensity A2

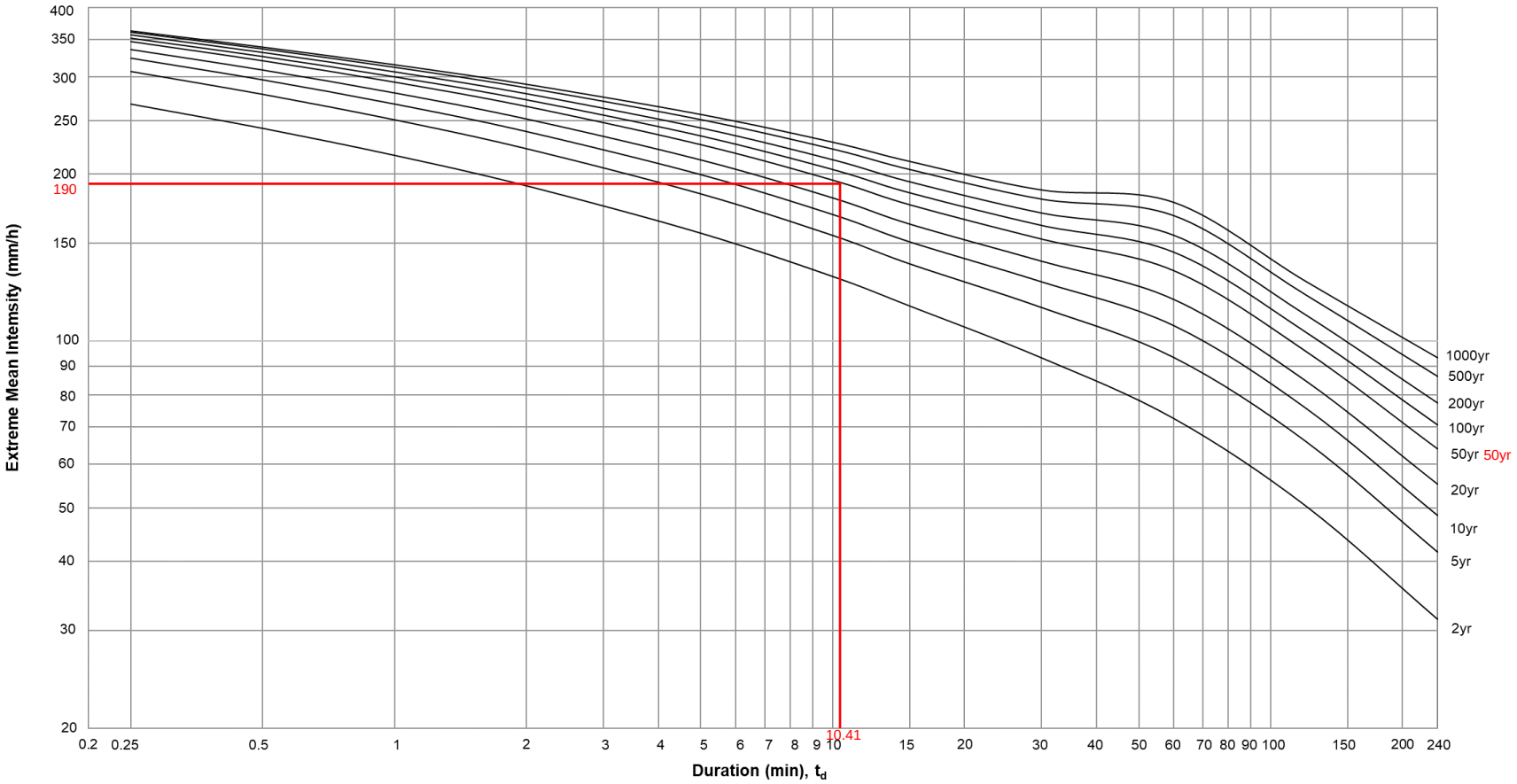


Figure 4a – Intensity-Duration-Frequency Curves of HKO Headquarters
(for durations not exceeding 4 hours)

Existing Catchment A2

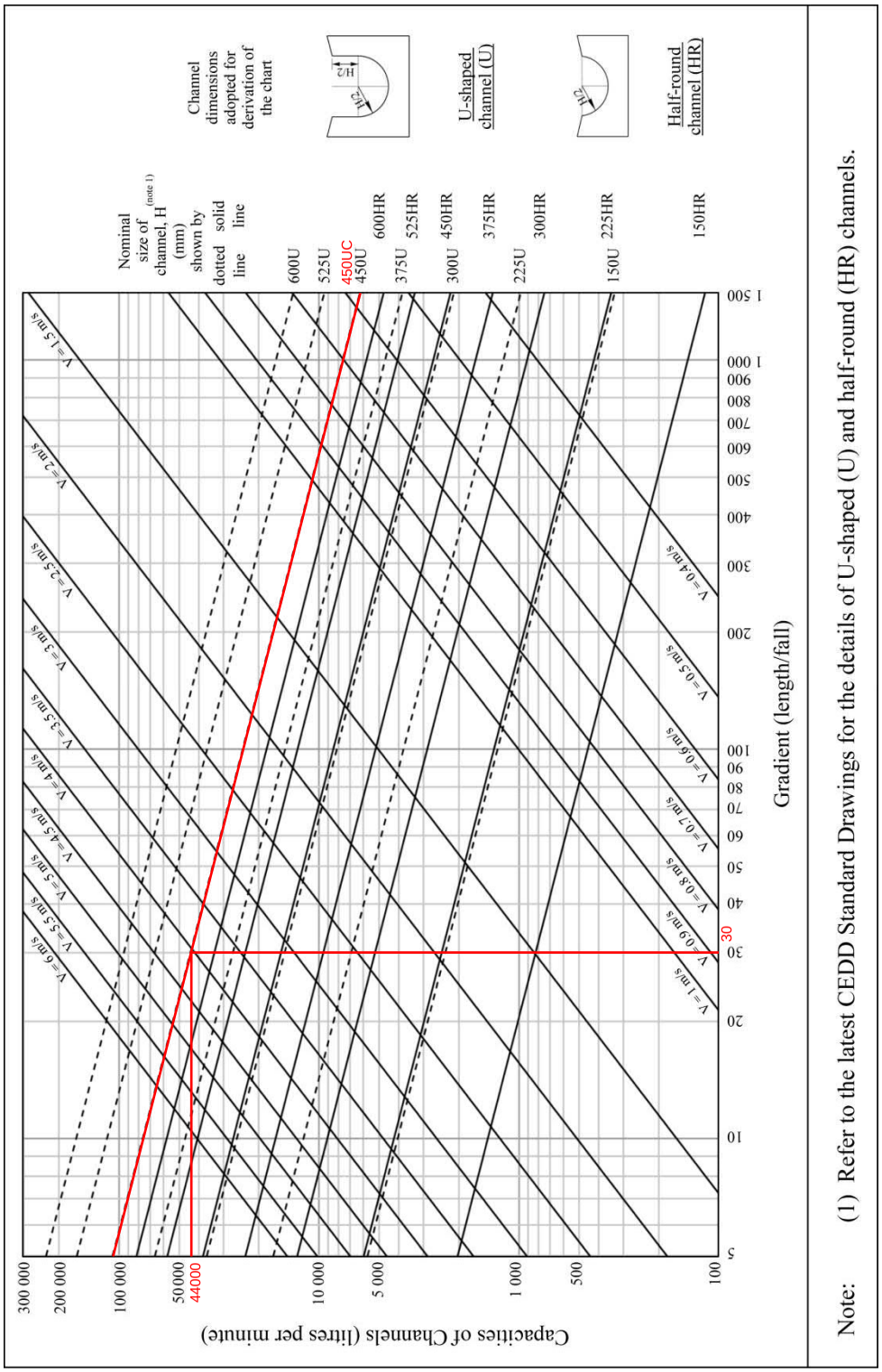


Figure 1 - Chart for the rapid design of U-shaped and half-round channels up to 600 mm

Note: (1) Refer to the latest CEDD Standard Drawings for the details of U-shaped (U) and half-round (HR) channels.

Drainage Design and Checking

Project No.:	P2676	Date:	22-Dec-25
Prepared by:	KAY	Checked by:	KT

Check for the Drainage Capactiy inside Area A2,A3,A4 (Existing)

Total catchment area, A2,A3,A4 (paved) = 0 m^2
Total catchment area, A2,A3,A4 (vegetated) = 14916 m^2

Use Rational Method from Geo-Manual

$Q = kiA/3600$ where,

Q = Maximum runoff (lit/sec)
k = Runoff coefficient
i = Design mean intensity of rainfall (mm/hr)
A = Total catchment area (m^2)

Assume k = 0.85 (paved)
Assume k = 0.35 (steep,vegetated)

Longest distance from summit to outlet (Ld) = 345.30 m

Average fall, H = 16.77 m per 100m

From Bransby-Williams Equation (Geo-Manual)

$T_c = 0.14465 \times L_d / (H^{0.2} \times A^{0.1})$
= 10.87 min > 1.0 min
= 10.87 min

Assume a 1 in 10 year design rainfall return period for existing channel

Corrigendum No. 1/2022, Table 28 - Rainfall Incease 16.0% for End of 21st Centur

i = 190 mm/hr x 1.16 = 220.40 mm/hr
Q = kiA/60
= 19177 lit/min
= 0.320 m3/s

From Geo-Manual (Fig 8.7) 10% reduction in flow area for sedimentation reduction
For existing 470 UC with 1 in 3 gradient
Maximum capacity = 140000 x 0.9
= 126000 lit/min > 19177 o.k.

Existing Intensity A2,A3,A4

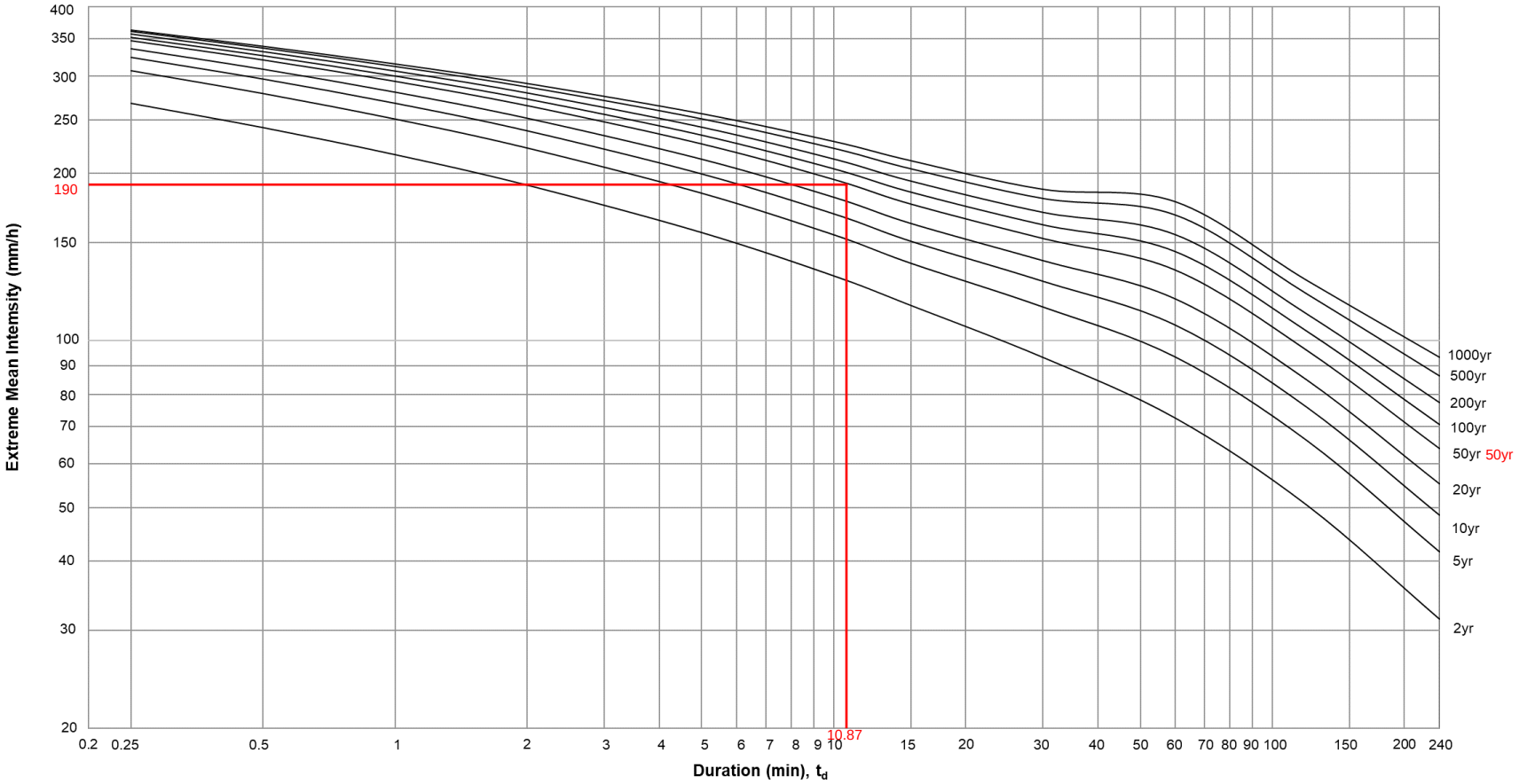


Figure 4a – Intensity-Duration-Frequency Curves of HKO Headquarters
(for durations not exceeding 4 hours)

Existing Catchment A2,A3,A4

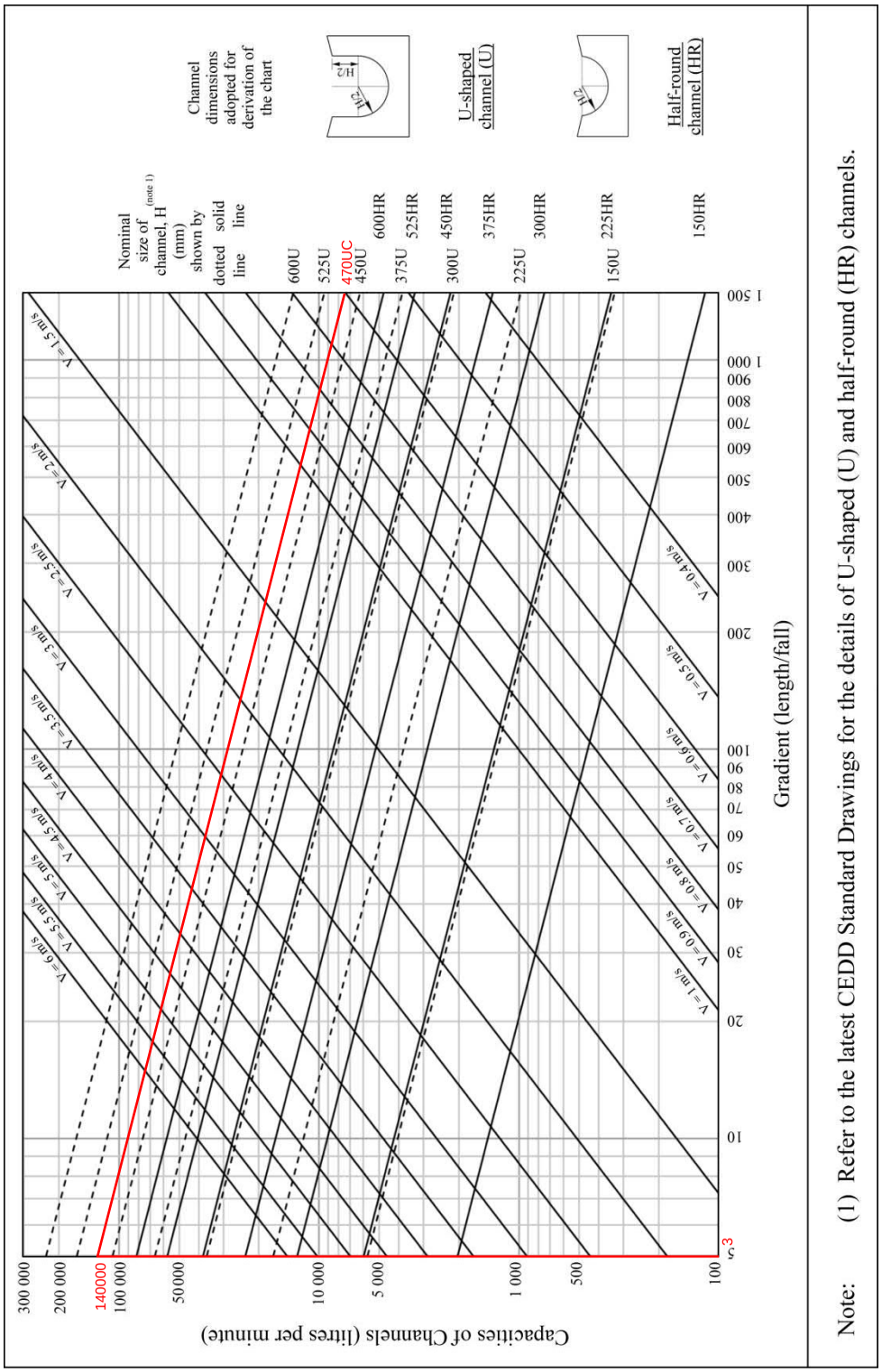
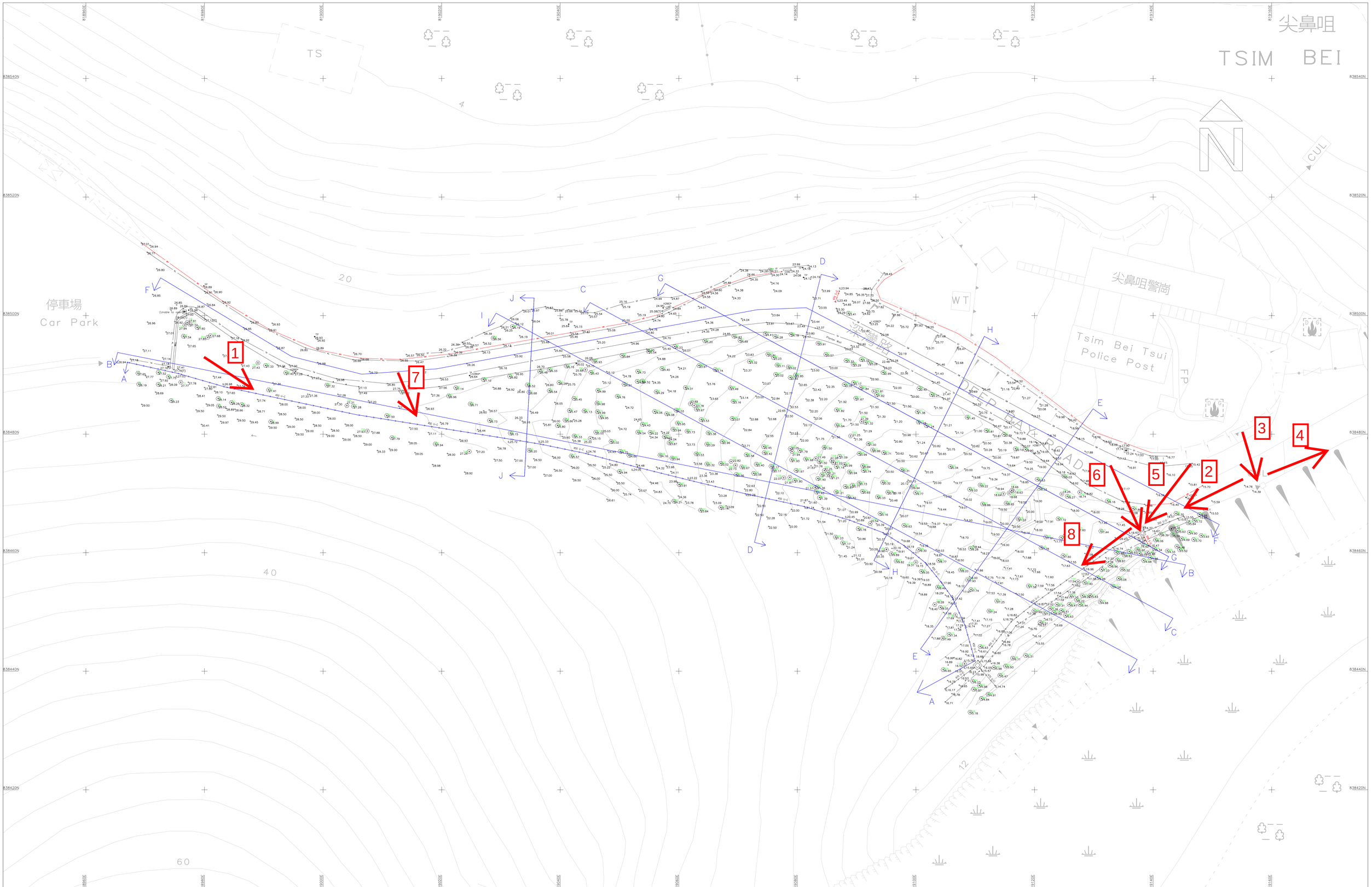


Figure 1 - Chart for the rapid design of U-shaped and half-round channels up to 600 mm

Note: (1) Refer to the latest CEDD Standard Drawings for the details of U-shaped (U) and half-round (HR) channels.

Appendix I

Photographic Record of Existing Drainage



LEGEND:

- ARTIFICIAL SLOPE
- CHANNEL WITH FLOW DIRECTION (0.80 WIDE OF CHANNEL)
- STEP CHANNEL WITH FLOW DIRECTION (0.80 WIDE OF STEP CHANNEL)
- BOUNDARY LINE & BOUNDARY POINT
- GATE
- PERMANENT BUILDING AND CANOPY
- TREE WITH TREE NO.
- INCLINED WALL (LOWER BOTTOM)
- GRAVE
- CONTOURS
- TS — TEMPORARY STRUCTURE
- PB — PILLAR BOX
- HR — HAND RAILING
- HO — HOARDING
- KL — KERB LINE (BOTTOM)
- ST — SLOPE TOP
- SB — SLOPE BOTTOM
- FX — FENCE
- BARRIERS
- BS — BENCH
- E — ELECTIC POLE
- SB — SIGN BOARD
- SP — SIGN POLE
- LP — LAMP POST
- TP — TELEPHONE POLE
- TL — TRAFFIC LIGHT
- FH — FIRE HYDRANT
- P.M — PARKING METER
- BOLLARD AT ROAD
- GULLY
- GRATING
- VALVE FIRE
- VALVE GAS
- VALVE WATER WORKS
- MANHOLE
- MANHOLE, ATC
- MANHOLE, CABLE TV
- MANHOLE, ELECTRIC & MECHANICAL SERVICES DEPARTMENT
- MANHOLE, PCCW-HKT TELEPHONE LIMITED
- MANHOLE, DRAINAGE SERVICES DEPARTMENT
- MANHOLE, PUBLIC LIGHTING
- MANHOLE, HUTCHISON COMMUNICATION LIMITED
- MANHOLE, HUTCHISON GLOBAL CROSSING LIMITED BROADBAND
- CATCH PIT
- MANHOLE, FOUL WATER/SEWER
- MANHOLE, STORM WATER
- MANHOLE, PACIFIC CENTURY CABLE & WIRELESS
- MANHOLE, NEW WORLD TELEPHONE
- MANHOLE, CLP POWER
- MANHOLE, WHART T & T
- MANHOLE, TOWNGAS TELECOM
- RX — TRAFFIC BARRIER

* Lamp Pole number is referred to Geoinfo Map system (for client's reference only)

ABBREVIATION:

BD	BOULDER
BE	BERM
BS	BOUNDARY STONE
CA	CANOPY
CUL	CULVERT
CL	CLIFF
CONC	CONCRETE
EB	ELECTRIC BOX
END	END OF OBJECT
FB	FLOWER BED
FP	FOOTPATH
IL	INVERT LEVEL
KL	KERB LINE
OH	OVERHANG
PL	PLATFORM
PO	POND
P2	PIEZOMETER TUBE
RP	RAMP
RU	RUIN
SH	SHRINE
TS	TEMPORARY STRUCTURE
VB	VEHICLE BARRIERS
WE	WELL
WIP	WORK IN PROGRESS
WT	WATER TANK

SCALE 1 : 200 (A0 SIZE)

metres 0 4 8 12 16 20 metres

HONG KONG METRIC GRID
PRINCIPAL DATUM HONG KONG
ALL UNITS IN METRES

NOTE
ALL SPOT LEVEL POSITIONS ARE THE DECIMAL POINT OR 'A' CROSS

DATE OF SURVEY: JANUARY 2024

REVISION	DATE	DESCRIPTION
INITIAL	24/02/2024	---

ARCHITECTURAL SERVICES DEPARTMENT

Topographical Survey
Guangdong-Hong Kong-Macao Greater Bay Area (GBA)
Air Quality Laboratory and Meteorological Monitoring Supersite

SAM MAK & ASSOCIATES SURVEYORS (HK) LTD.
CONSULTANTS IN LAND, ENGINEERING, MAPPING & AERIAL SURVEYS
ROOM 901, MARINA HOUSE, NO.68 HING MAN STREET, SHAUKEIWAN, HONG KONG.
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PRELIMINARY
(24/02/2024)

PLAN NO. 9594/01(SHEET 1 OF 3)

JESSICA PUI YEE LEUNG MHKIS RPS(LS)
REGISTERED PROFESSIONAL SURVEYOR

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不得擅進
NO UNAUTHORISED ENTRY

4

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T113

T114

T115

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8

Extract of Town Planning Board Guidelines for
Application for Development within Green Belt Zone
under Section 16 of the Town Planning Ordinance
(TPB PG-No. 10)

The relevant assessment criteria are as follows:

(a) There is a general presumption against development (other than redevelopment) in a "Green Belt" ("GB") zone. In general the Board will only be prepared to approve applications for development in the context of requests to rezone to an appropriate use.

(b) An application for new development in a "GB" zone will only be considered in exceptional circumstances and must be justified with very strong planning grounds. The scale and intensity of the proposed development including the plot ratio, site coverage and building height should be compatible with the character of surrounding areas. With the exception of New Territories Exempted Houses, a plot ratio up to 0.4 for residential development may be permitted.

(c) Applications for New Territories Exempted Houses with satisfactory sewage disposal facilities and access arrangements may be approved if the application sites are in close proximity to existing villages and in keeping with the surrounding uses, and where the development is to meet the demand from indigenous villagers.

(d) Redevelopment of existing residential development will generally be permitted up to the intensity of the existing development.

(e) Applications for government/institution/community (G/IC) uses and public utility installations must demonstrate that the proposed development is essential and that no alternative sites are available. The plot ratio of the development site may exceed 0.4 so as to minimize the land to be allocated for G/IC uses.

(f) Passive recreational uses which are compatible with the character of surrounding areas may be given sympathetic consideration.

(g) The design and layout of any proposed development should be compatible with the surrounding area. The development should not involve extensive clearance

of existing natural vegetation, affect the existing natural landscape, or cause any adverse visual impact on the surrounding environment.

(h) The vehicular access road and parking provision proposed should be appropriate to the scale of the development and comply with relevant standards. Access and parking should not adversely affect existing trees or other natural landscape features. Tree preservation and landscaping proposals should be provided.

(i) The proposed development should not overstrain the capacity of existing and planned infrastructure such as sewerage, roads and water supply. It should not adversely affect drainage or aggravate flooding in the area.

(j) The proposed development must comply with the development controls and restrictions of areas designated as water gathering grounds.

(k) The proposed development should not overstrain the overall provision of G/IC facilities in the general area.

(l) The proposed development should not be susceptible to adverse environmental effects from pollution sources nearby such as traffic noise, unless adequate mitigating measures are provided, and it should not itself be the source of pollution.

(m) Any proposed development on a slope or hillside should not adversely affect slope stability.

Relevant extract of the Town Planning Board Guidelines for
Application for Developments within Deep Bay Area
(TPB PG-No. 12C)

On 16.5.2014, the Town Planning Board Guidelines for Application for Developments within Deep Bay Area under Section 16 of the Town Planning Ordinance (TPB PG-No. 12C) were promulgated by the Town Planning Board, which set out the following criteria for the Wetland Buffer Area (WBA):

(a) The intention of the WBA is to protect the ecological integrity of the fish ponds and wetland within the WCA and prevent development that would have a negative off-site disturbance impact on the ecological value of fish ponds. A buffer area of about 500m along the landward boundary of the WCA is thus designated as a WBA. As a substantial amount of the fish ponds within the WBA have already been lost over time through filling and certain areas have been degraded by the presence of open storage use, these degraded areas may be considered as target areas to allow an appropriate level of residential/recreational development so as to provide an incentive to remove the open storage use and/or to restore some of the fish ponds lost.

(b) Within the WBA, for development or redevelopment which requires planning permission from the Board, an ecological impact assessment would also need to be submitted. Development/redevelopment which may have negative impacts on the ecological value of the WCA would not be supported by the Board, unless the ecological impact assessment can demonstrate that the negative impacts could be mitigated through positive measures. The assessment study should also demonstrate that the development will not cause net increase in pollution load to Deep Bay. Some local and minor uses are however exempted from the requirement of ecological impact assessment. They are listed in Appendix A and include temporary uses.

Appendix A

List of Uses Exempted from Ecological Impact Assessment Within the Wetland Buffer Area

For planning applications involving uses/development within the Wetland Buffer Area, the following uses/development are exempted from the requirement of ecological impact assessment as part of the submission to the Board :

- Temporary Uses
- Agricultural Use (except in SSSI Zone)
- Ancestral Hall
- Bank#
- Barbecue Spot
- Barber Shop#
- Beauty Parlour#
- Burial Ground
- Clinic/Polyclinic*
- Electricity Substation of single storey
- Government Refuse Collection Point^
- House (Alteration, modification and/or redevelopment to the existing building bulk only)
- New Territories Exempted Houses
- Off-Course Betting centre#
- On-farm Domestic Structure
- Photographic Studio#
- Playground/Playing Field in "V" and "R(D)" zones
- Police Post/Police Reporting Centre
- Post Office*
- Private Club#
- Public Convenience
- Public Library*
- Public Utility Installation (electricity mast, lamp pole, pipeline and telephone booth only)^
- Pumping Station of single storey
- Refreshment Kiosk
- Retail Shop#
- School*

- Showroom excluding Motor-vehicle Showroom#
- Shrine
- Social Welfare Facility*
- Tent Camping Site

Note:

other than free-standing building
* other than free-standing building exceeding 3 storeys
^ not applicable to the “Other Specified Uses” annotated “Eco-lodge” zone on the Ma Tso Lung and Hoo Hok Wai Outline Zoning Plan

Recommended Advisory Clauses

(a) 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 application site (the Site) to the nearby public roads and drains. The run-in/out from Deep Bay Road to the Site should be constructed and maintained by the applicant;

(b) to note the comments of the Commissioner for Transport that sufficient manoeuvring spaces shall be provided within the Site or its adjacent area. No vehicles are allowed to queue back to public roads or reverse onto/from public roads;

(c) to note the comments of Chief Town Planner/Urban Design and Landscape, Planning Department (CTP/UD&L, PlanD) that the applicant is reminded that approval of the s.16 application under Town Planning Ordinance does not imply approval of the site coverage of greenery requirements under APP PNAP-152 and/or under the lease. The site coverage of greenery calculation should be submitted to Buildings Department for approval. For any proposed tree preservation/removal scheme, the applicant shall be reminded to approach relevant authority/government department(s) direct to obtain necessary approval, where appropriate;

(d) to note the comments of the Director of Fire Services (D of FS) that:

  (i) detailed fire safety requirements will be formulated upon receipt of a formal submission of Short Term Tenancy or Short Term Waiver, general building plans or referral of the application via the relevant licensing authority; and

  (ii) the provision of emergency vehicular access in the subject work shall comply with the requirements as stipulated in Section 6, Part D of the Code of Practice for Fire Safety in Buildings 2011;

(e) to note the comments of the Chief Engineer/Mainland North, Drainage Services Department (CE/MN, DSD) that the applicant shall resolve any conflict/disagreement with relevant lot owner(s) and seek Lands Department's permission for laying new drains/channels and/or modifying/upgrading existing ones in other private lots or on Government land (where required) outside the Site; and

(f) to note the comments of the Chief Engineer/Construction, Water Supplies Department (CE/C, WSD) that:

  Existing water mains will be affected (**Plan A-2**). The cost of any necessary diversion shall be borne by the proposed development. In case it is not feasible to divert the affected water mains, a waterworks reserve within 1.5m from the center line of the water main shall be provided to WSD. No structure shall be built or materials stored within this waterworks reserve. Free access shall be made available at all times for WSD's staff or their contractor to carry out construction, inspection, operation, maintenance and repair works. No trees or shrubs with penetrating roots may be planted within the waterworks reserve or in the vicinity of the water main.

□Urgent □Return receipt □Expand Group □Restricted □Prevent Copy □[redacted]

tpbpd/PLAND

寄件者: [redacted]
寄件日期: 2026年01月27日星期二 3:52
收件者: tpbpd/PLAND
主旨: A/YL-LFS/592 EPD DD129 Tsim Bei Tsui

類別: Internet Email

A/YL-LFS/592 EPD

Government Land in D.D. 129, Tsim Bei Tsui, Yuen Long

Site area: About 3,080sq.m

Zoning: "Green Belt" and area shown as 'Road'

Applied development: GBA Air Quality Laboratory and Meteorological Monitoring Supersite / 2 Vehicle Parking / **Filling of Land**

Dear TPB Members,

Strongest Objections. "*The Site is currently vacant,* ***covered by trees.***" Moreover it is adjacent to "CPA" and "SSSI" zonings and is part of WBA.

POLICY ADDRESS 2023:

As we have already identified enough land for housing, industry and other developments for the coming 30 years, the Government has no plan for the time being to further use the "Green Belt" areas for large-scale development. Nonetheless, we will consider using some of the sites for **recreational and tourism purposes.**

The proposed use ticks neither box.

The development would result in the felling of 200+ trees and disturbance to the local ecosystem. In place of the trees there would be two bulky blocks that would strip the panorama of its current green and natural state. This is not a low rise development.

Of course, the trees have been described in the now familiar derogatory terms, surprisingly EPD has refrained from reducing compensation on the excuse of 'invasive species". The Collared Scops Owls have conveniently not been spotted since 2024. However birds do tend to return to familiar nesting grounds but they will be destroyed by the development.

It would be shocking if one had any faith in EPD re protection of the environment that the development is initiated by this department.

□Urgent □Return receipt □Expand Group □Restricted □Prevent Copy □Confidential

While the proposed facility has certain criteria, there are for sure a number of already degraded sites in the area that could be used for the purpose. There has been a number of applications for brownfield use that revealed that unapproved land filling had been carried out. EPD could certainly apply to resume one of those sites.

The application should be rejected. It is high time that the administration provides good example by refraining from unnecessary trashing of the environment. Members should note that no indication provided that any alternative site had been considered. Just because its free GL is no justification.

Mary Mulvihill