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

TABLE OF CONTENTS

Section

LIST OF FIGURES

LIST OF APPENDICES

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.**

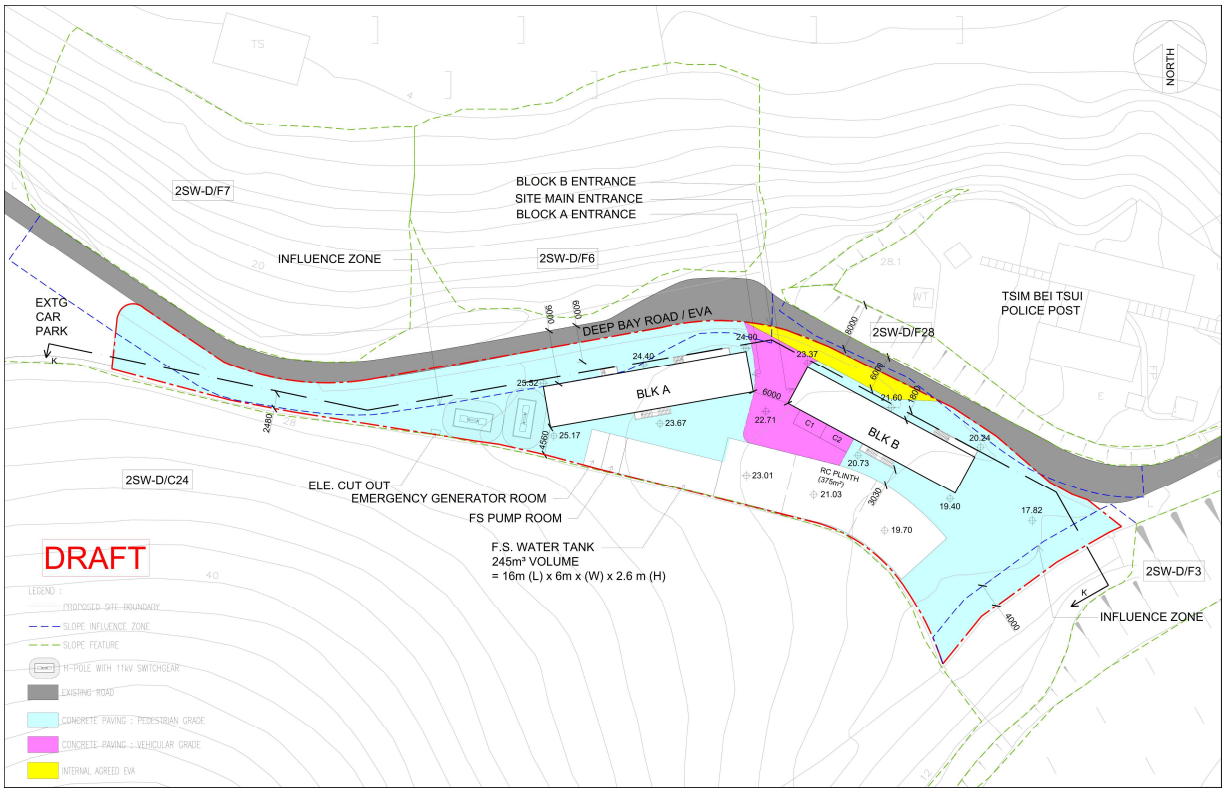


Figure A - Design Option 1 (2 Wings)

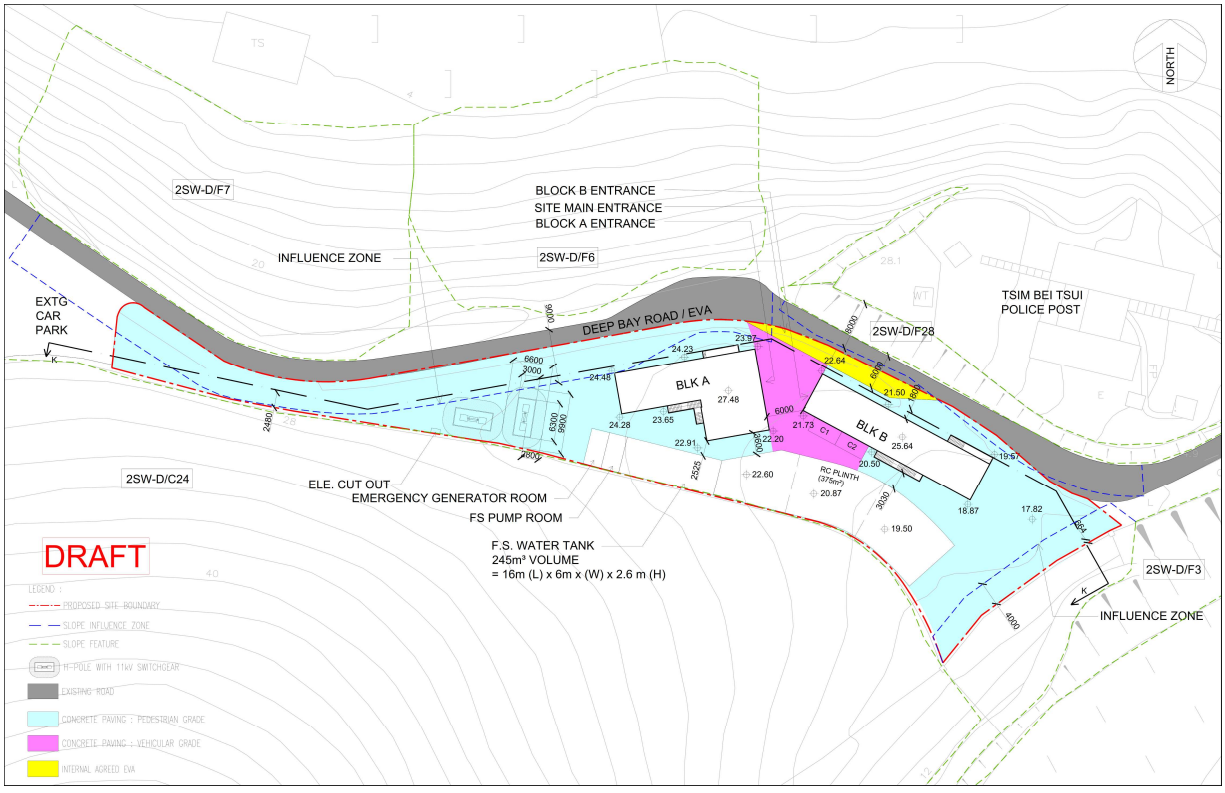


Figure B - Design Option 2 (1.5 Wings)

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.

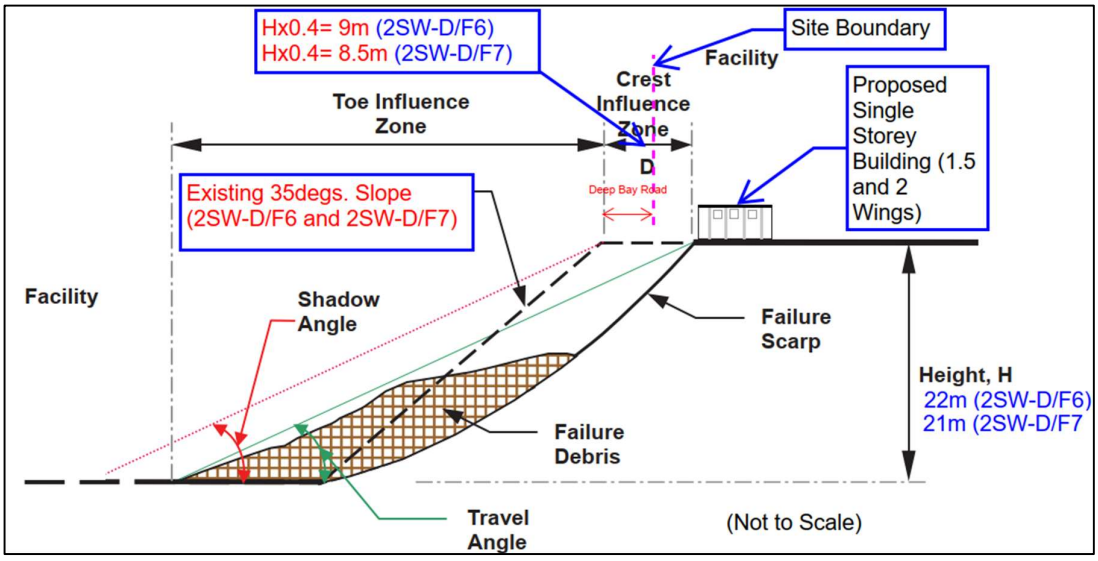


Figure 1 – Relationship between New Development (both 1.5 and 2 wings) and Crest Influence Zone (2SW-D/F6 and D/F7)

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.

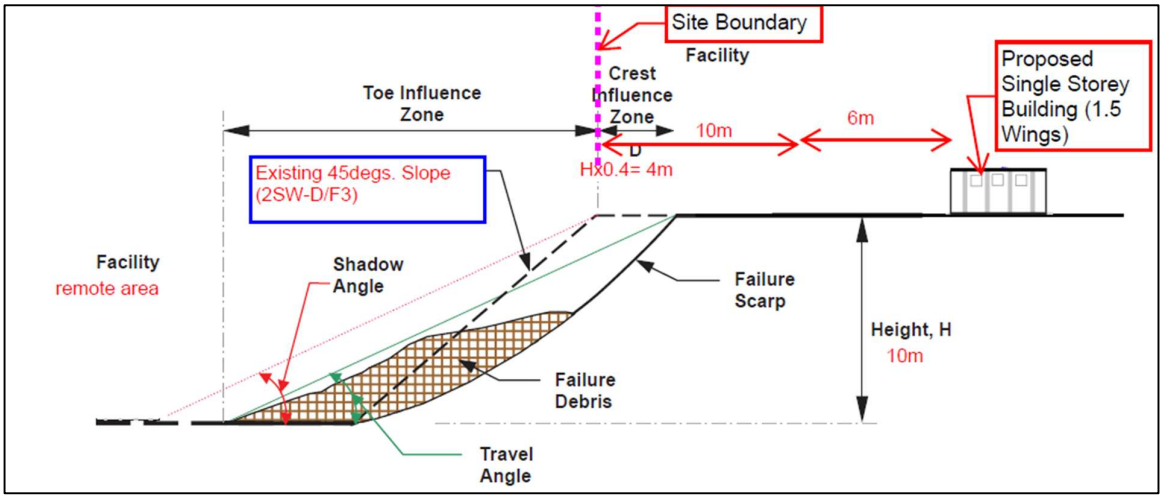


Figure 2.1 – Relationship between New Development (1.5 Wings) and Crest Influence Zone (2SW-D/F3)

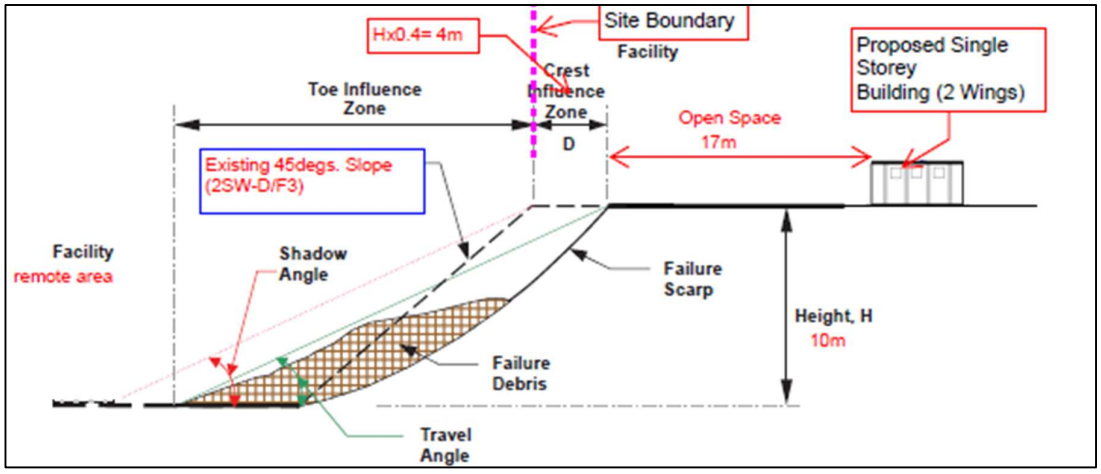


Figure 2.2 – Relationship between New Development (2 Wings) and Crest Influence Zone (2SW-D/F3)

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.

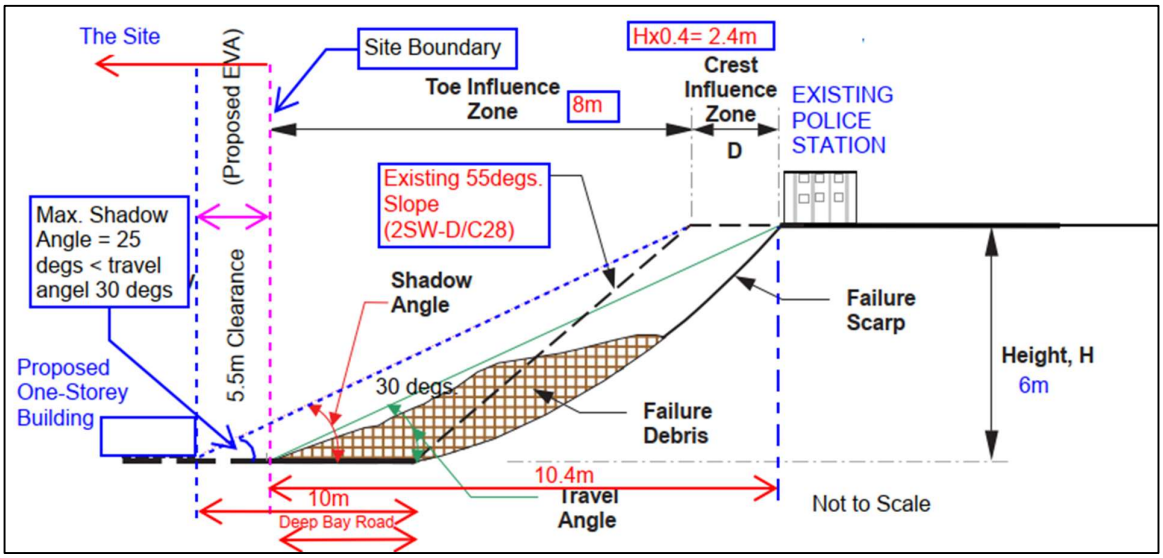


Figure 3 – Relationship between New Development and Crest Influence Zone (2SW-D/C28)

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

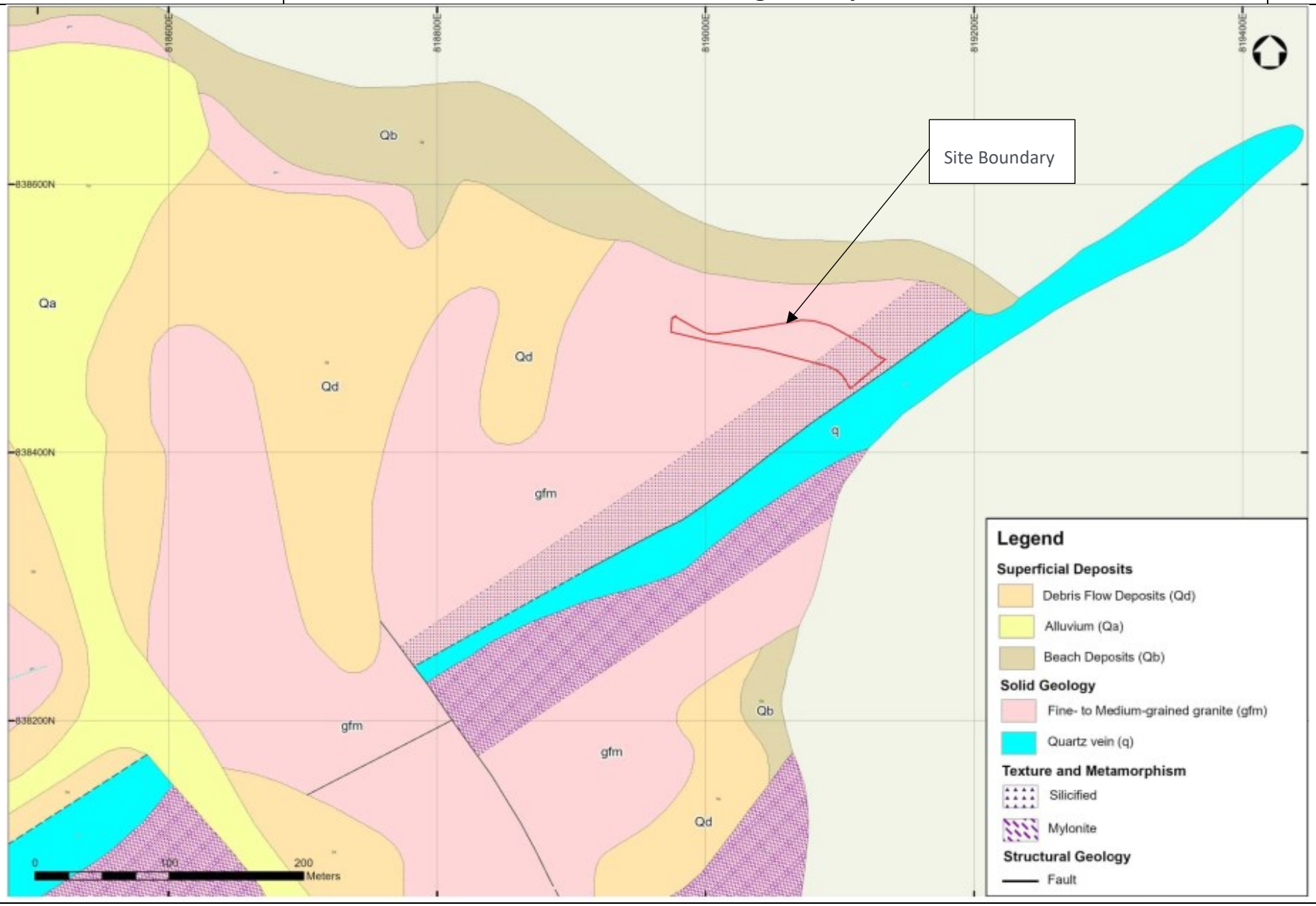
As mentioned in Section 5.1.2, two trial pits were proposed (refer to the plan in Appendix H-1), it was completed on 16 October 2025 by Fong On Construction Limited. The trial pits had revealed that the stratum on slope feature no. 2SW-D/C24 are underlying in-situ soils such as completely decomposed 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

RSLN/AYLL/ayll

Halcrow China Limited
22nd Floor, 625 King's Road
North Point
Hong Kong, China
T +852.2880.9788
F +852.2565.5561

Ch Geo Engr
Geotechnical Engineering Office
Mainland West Division
6/F, Civil Engineering and Development Building,
101 Princess Margaret Road,
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
66 Queensway
Hong Kong

Halcrow China Limited
22/F, 625 King's Road
North Point
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

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

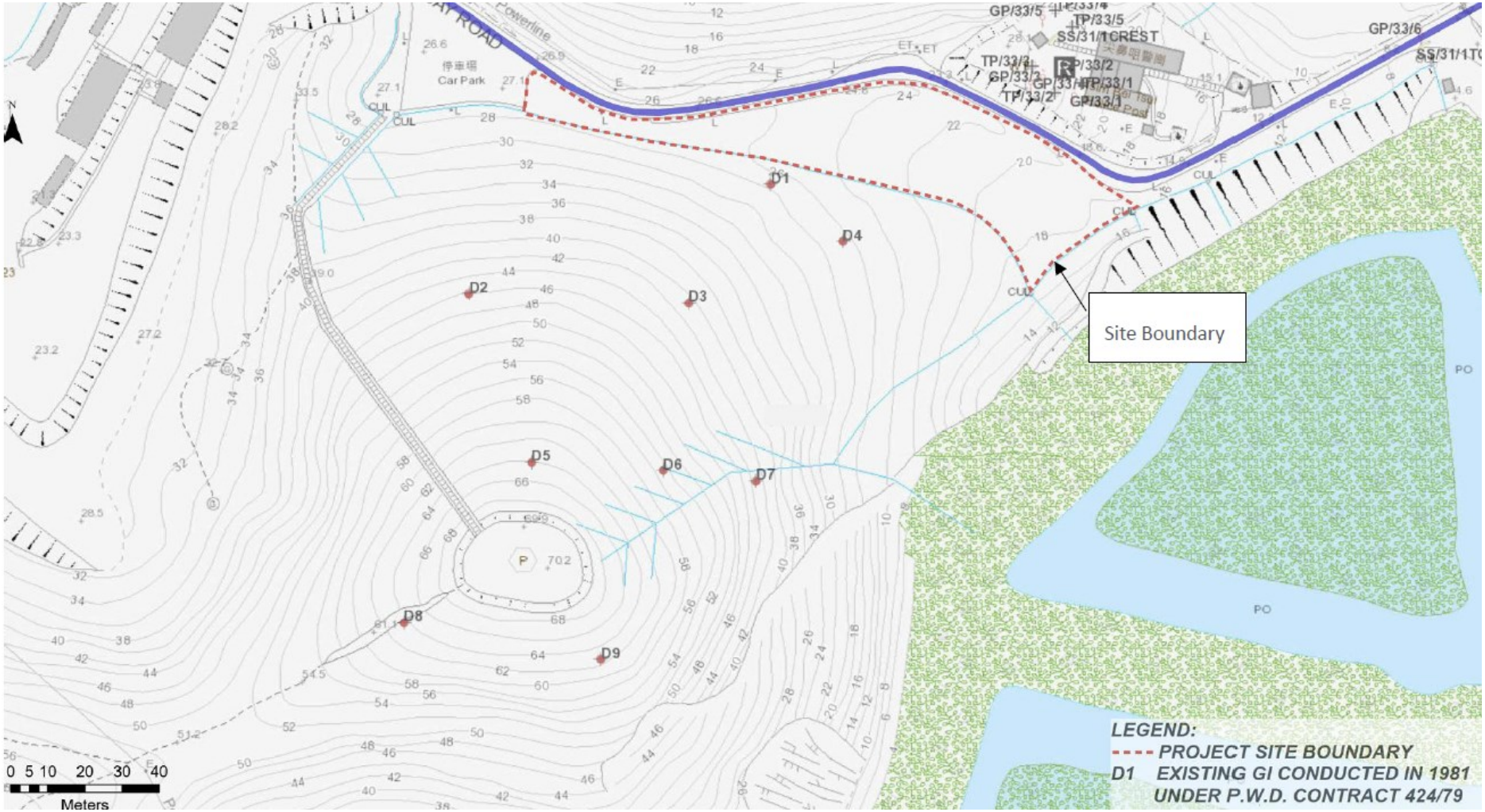
Document history and status

Revision	Date	Description	By	Reviewed	Approved
0	23 Aug 2024	First Issue	ML	RO	RL
1	15 Oct 2024	Second Issue	ML	RO	RL

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

TABLE OF CONTENTS

* * * * * * *

Section A - Borehole Logs

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. D1

Job No & Location: W.O.Q 7/2/5.111 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---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
									0.0	+48.0				
24-9-81	PX			70				1	1.0			Brown, CLAYEY SILTY SAND, with quartz gravels,		
							N=46	2	2.0	+46.0				
				35					2.5			Brown & pink, very dense, CLAYEY SILT with quartz gravels,		
								3	3.0					
							N=52	4	4.0	+44.0				
				50					4.5	+43.5		Yellow & pink, very dense, SANDY SILT with gravels, (C.W.G.)	V	
		3.0m at 19:00						5	5.0					
									5.8					
							N=45	6	6.0					
		NIL at 8:00							6.5			Pink & brown, very dense, SILTY SANDY QUARTZ GRAVELS. (C.W.G.)	V	
25-9-81				60					7.0					
								7	8.0					
							N=71	8	8.5					
				55					9.0					
	10.0m							9	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
33rd Floor, Hopewell Centre, 183 Queen's Road, East, Hong Kong.
Tel: 5-283941 Cables: GAMMONCO Telex: HX 73926

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 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
									10.0	+38.0				
25	PX	5.0m at 19:00					N=59	10	10.5			Brown. & pink. very dense. SILTY SANDY QUARTZ GRAVELS (C.W.G.)	V	
26-9		8.0m at 8:00							11.0					
		4.0m at 19:00		83	0	∞		11	11.4	+36.6				
		7.8m at 8:00		83	0	∞			12.0					
				96	0	∞			12.4				III	
				100	0	∞			12.9					
28-9-81				83	0	∞			13.0			Greyish white & brown. fine grained very closely spaced joints. QUARTZ with brown. SANDY SILT. weak.	IV	
				85	0	∞			13.6					
		3.5m at 19:00		61	0	∞			14.0					
		8.2m at 8:00		38	0	∞			14.1					
29-9-81				35	0	∞			14.9					
									15.0					
									16.0				IV	
				31	0	∞			17.0					
									18.0					
		4.0m at 19:00		25	0	∞			19.0	+29.0		Milky QUARTZ. weak.		
	19.0m													
30-9	NX	12.5m at 8:00		34	0	∞			19.9	+28.1			IV	
	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

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. 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	5.0m at 19:00		23	0	1.4	N=200/190		19.9	+28.1				
1-10-81		13.0m at 8:00		66	43	1.8			20.0					
									20.2	+27.8		Reddish brown, very dense, SANDY SILT with quartz gravels. (H.W.G.)	IV	
									20.9					
		NIL at 19:00		100	27	∞			21.0			Greyish white & brown. fine grained, very closely spaced joints. with brown iron stained. QUARTZ weak.		
									21.5					
									22.0				III	
				83	0	∞			22.2					
2-10-81	22.9m	NIL at 8:00		83	0	∞			22.6					
									22.9					
		NIL at 19:00		94	0	∞			23.0	+24.2				
									23.8			Operation stopped at 23.8m as instruction given on Works Order.		
									24.0					
									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

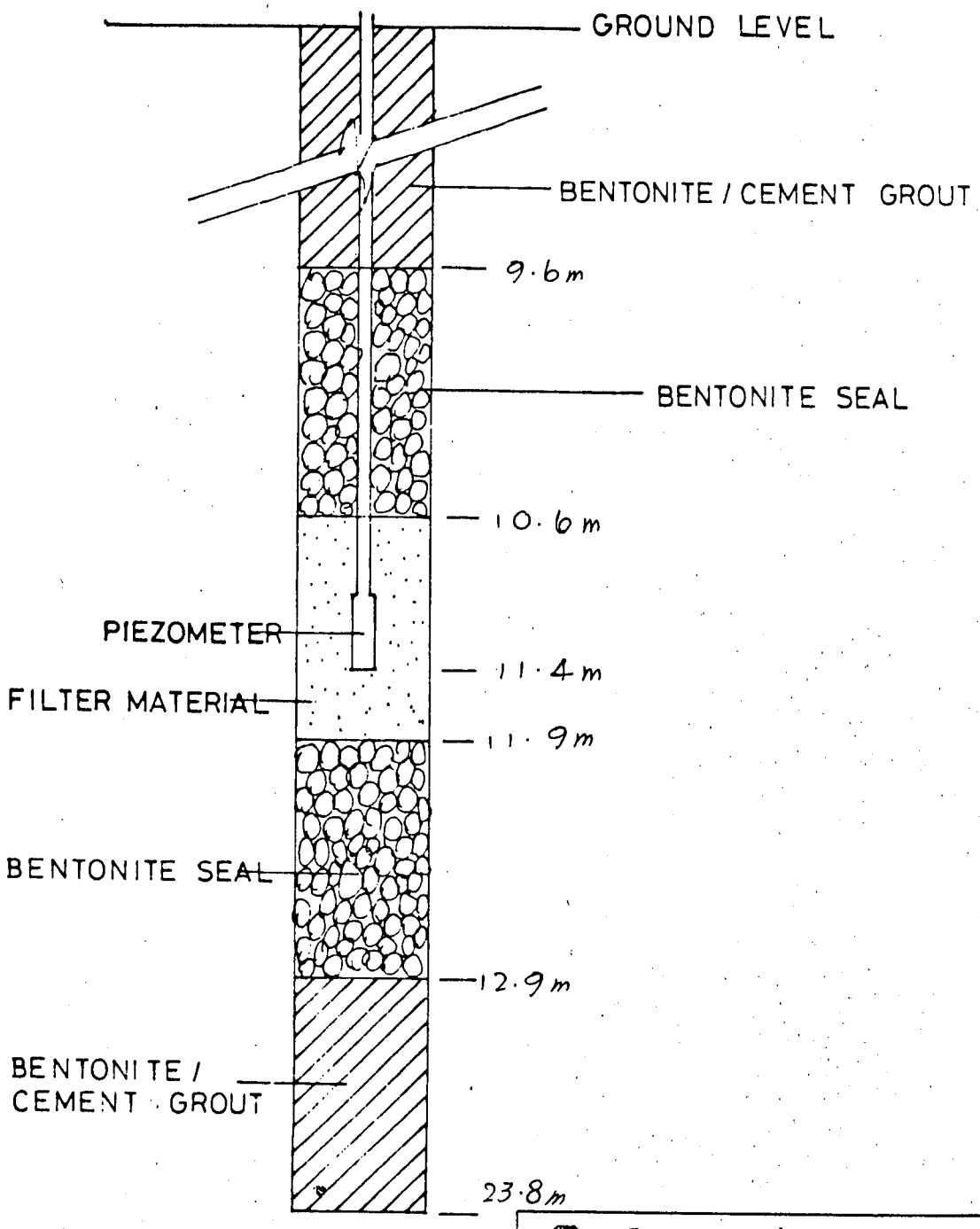
A piezometer was installed at 11.4m

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. 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		Pink & brown CLAYEY SANDY SILT. (C. W. G.)	V	
								3	3·0	+62.3		Light pink & yellow. dense. SILTY SAND. (C. W. G.)	V	
				70			N=34	4	4·0	+61.3		Brown, yellow & pink. CLAYEY SILT with SAND. (C. W. G.)	V	
								5	5·0	+60.3		Light pink & yellow. very dense. SANDY SILT. (C. W. G.)	V	
26-6-81				40			N=83	6	6·0	+59.3		Brown, very dense SANDY SILT with QUARTZ GRAVELS. (C. W. G.)	V	
								7	7·0					
				30			N=140/160	8	7·7	+57.6		QUARTZ GRAVELS.		
		2.5m at 19:00						9	8·0					
27	10.0m						N=148/160	10	9·0	+56.3		Light pink & yellow. very dense. CLAYEY SAND with QUARTZ GRAVELS (C.W.G.)	V	
									9·7					
									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

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 2 of 3

Method: ROTARY Ground Level: +65.3m PD Coords E. 18959.6

Machine: ACKER NIO 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
									10.0	+55.3				
27-6-81	PX	NIL at 8:00						11	11.0	+54.3		Yellow. CLAYEY SAND with QUARTZ GRAVELS. (C.W.G.)	V	
							N=153/50	12	11.8	+53.5		QUARTZ GRAVELS.		
				40					12.0			Brown, SANDY CLAY with QUARTZ GRAVELS. (C.W.G.)	V	
								13	13.0	+52.3				
							N=169/160	14	13.7			Pink, yellow & white. very dense. SANDY SILT with GRAVELS. (H.W.G.)	IV	
				60					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
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 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
										+45.3				
30-6-81		10.5m at 19:00		100	19	∞			20.0		+++			
											+++			
				100	0	∞			20.8					
									21.0		+++	Greyish White. fine to medium grained. very closely spaced joints with brown iron stained. MILKY QUARTZ. (PEGMATITE) moderately strong to strong		
				120	0	∞			21.3		+++			
											+++			
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	∞				+41.3	+++			
									24.0			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
CIVIL ENGINEERS & CONTRACTORS
33rd Floor, Hopewell Centre, 183 Queen's Road, East, Hong Kong.
Tel: 5-293941 Cables: GAMMONCO Telex: HX 73828

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.: 0.0m 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
21-8-81	PX	NIL at 19:00		57			N=16	1 2	0.0	+59.7		Yellowish brown. medium dense. SILTY SAND. with gravels. ⟨ C.W.G. ⟩	V	
									1.0					
									2.0					
									2.5	+57.2		White & brownish yellow. QUARTZ COBBLES.		
								3	3.0					
							N=31	4	4.0	+55.7		Brownish yellow. very dense. SILTY SAND with gravels & cobbles. ⟨ C.W.G. ⟩	V	
22-8-81		NIL at 8:00		85					4.5					
								5	5.0					
							N=67	6	6.0					
									6.5	+53.2		White. QUARTZ GRAVELS.		
		6.5m at 19:00		60				7	7.0					
							N=47	8	8.0	+51.7				
24-8-81		NIL at 8:00		44					8.5			Light reddish brown brownish yellow. & white. very dense. SILTY SAND with gravels & cobbles. ⟨ C.W.G. ⟩	V	
								9	9.0					
	10.5m						N=55	10	10.0					
									10.5	+49.2				

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

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. D3

Job No & Location: W.O.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					
									12.5					
									13.0					
									13.9	+45.8				
									14.0			Yellowish brown & light red. very dense. CLAYEY SILTY SAND. with gravels. (C.W.G.)	V	
26-8-81		8.5m at 8:00					N=66	14	14.5	+45.2				
								15	15.0					
		9.5m at :00							15.8					
							N=112	16	16.0					
									16.5			White. light red & brown. QUARTZ COBBLES & GRAVELS.		
27-8-81		7.6m at 8:00		55				17	17.0					
		9.8m at 19:00					N=94	18	17.8					
									18.0					
									18.5					
28-8-81		8.8m at 8:00		65					19.0					
	20.0m							19	19.8	+39.7				
									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 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 73828

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 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
									20.0	+39.7				
28-8-81	PX						N=200/150	20	20.2			White. light brown & red. QUARTZ COBBLES & GRAVES. with some SILTY SAND soil layers.		
				33					21.0					
							N=100/75	21	21.9					
								22	22.0					
									22.2					
									23.0					
							N=200/75	23	23.8					
								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		
31-8		9.5m at 8:00		84	0	∞			27.8					
				25	0	∞			28.0					
		7.8m at 19:00		67	0	∞			28.3					
									28.7					
1-9		9.0m at 8:00.		86	0	∞			29.0					
	30.0m			100	0	∞			29.7					
									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

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. D3

Job No & Location: W.O.Q 7/2/5.111 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 30.9m	7.5m at 19:00		78	33	∞			30.9			White, light red. & brown. fine grained. shattered to very closely spaced joints. QUARTZ COBBLES & GRAVELS.		
2-9-81		10.5m at 8:00		94	0	∞			31.0					
		7.5m at 19:00		100	0	∞			31.2					
				100	0	∞			31.5					
				100	0	∞			31.8	+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 table
- Standard penetration test
- Permeability test

Remarks

21 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. D4

Job No & Location: W.O.Q 7/2/5.111 TSIM BEI TSUI BORROW AREA

Sheet 1 of 3

Method: ROTARY. Ground Level: +46.8 m PD 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	1.0					
							N=20	4	2.0					
									2.5					
									3.0					
									3.5					
									4.0					
									4.5					
				40				5	5.0	+41.8				
							N=52	6	6.0			Yellow & brown, very dense; SILTY SANDY QUARTZ GRAVELS, ⟨C.W.G.⟩	V	
12-9-81		NIL at 8:00							6.5					
				50				7	7.0					
									7.7					
							N=85	8	8.0					
									8.5					
									9.0					
	9.7m	6.5m at 19:00		70				9	9.7	+37.1				

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

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. D4

Job No & Location: W.O.Q 7/2/5.111 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.: 0.0m — 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
15-9-81	PX	9.5m at 8:00		40			N=23	10	9.7	+37.1		Brown, yellow & pink. dense to very dense. SANDY QUARTZ GRAVELS. (H.W.G ~ C.W.G.)	V	
		7.1m at 19:00						11	10.0					
							N=39	12	10.5					
									11.0					
								13	12.0					
16-9-81		9.5m at 8:00					N=70	14	12.5					
				45					13.0					
								15	13.5					
							N=39	16	14.0					
									14.5					
									15.0					
									15.8					
									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	
		10.5m at 8:00		87	0	∞			18.0				IV	
17-9-81				46	0	∞			18.5					
									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.

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 73828

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				III/IV	
				41	0	∞			21.2					
				73	0	∞			22.0					
		6.0m at 19:00		100	0	∞			22.3			Greyish white. and brown. fine grained. shattered to very closely spaced joints. QUARTZ moderately strong.		
	24.2m NX								23.0				III/IV	
		10.5m at 8:00		67	0	∞			23.3					
19-9-81				95	0	∞			23.9					
				80	0	∞			24.0					
				88	0	∞			24.2					
	26.5m	7.8m at 19:00		83	0	∞			25.0				III	
				80	0	∞			25.1					
									25.4					
									25.9					
20-9-81		11.0m at 8:00		93	0	∞			26.0					
									26.5					
									26.9					
		7.0m at 19:00		90	0	∞			27.0				III	
									27.3					
									28.0					
									28.5	+18.3				
									29.0			Operation stopped at 28.5m as instruction given on Works Order.		

Legend

Samples:

- Small disturbed
- Large disturbed
- U40 undisturbed
- U100 undisturbed
- Mazier
- Liner sample
- Water sample
- Water table
- Standard penetration test
- Permeability test

Remarks

3151

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. 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 15

Machine: ACKER N10 D42 Orientation: VERTICAL N. 38395.8 79

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				
8.7.1981								5	5.0			Yellowish pink & brown. very dense. SILTY SAND with QUARTZ GRAVELS. (C. W. G.)	V	
				50			N=107	6	6.0					
								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

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. D5

Sheet 2 of 4

Job No & Location: W.O.Q. 7/2/5.111 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
									10.0	+64.6				
8-7-81	PX	NIL at 19:00						11	11.0			Yellow. very dense. SILTY SAND with Gravels. (H.W.G./C.W.G.)	III/IV	
9-7-81		NIL at 8:00		60			N=98/150	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					
		7.5m at 19:00					N=30	16	16.0					
				40				17	17.0					
15-7-81		NIL at 8:00					N=78/160	18	17.7 18.0				VI	
								19	19.0					
	20.0m						N=200/160	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

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. D5

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 32.4 m 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						21	20.0	+54.6				
		NIL at 8:00					N=200/80	22	21.0					
									21.6					
									22.0					
								23	23.0					
16-7-81							N=205/80	24	23.6			QUARTZ gravels with layers of Soil (C.W.G.)		
									24.0					
								25	25.0					
							N=200/50	26	25.7					
									26.0					
								27	27.0					
		0.8m at 19:00					N=200/50	28	27.6					
		NIL at 8:00							28.0					
								29	29.0					
17-7-81	30.0m	0.5m at 19:00					N=200/50	30	29.6					
									30.0	+44.6				

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

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. 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
									30.0	+44.6				
18-7	PX	0.2m at 8:00 1.0m at 18:00										QUARTZ gravels with layers of Soil. (C.W.G.)		
20-7-81	32.4m	0.2m at 8:00 1.0m at 19:00		100 100 83 87	0 0 0 0	∞ 7.0 6.0 ∞			31.0 31.6 31.9 32.0 32.2 32.4	+43.0				
21-7-81		NIL at 8:00		38 98 95 95	0 0 0 0	∞ ∞ 6 ∞			33.0 33.1 33.4 33.8 34.0 34.2			Milky QUARTZ GRAVELS.		
		0.6m at 19:00		30	0	6			35.0					
22-7-81		NIL at 8:00		27	0	∞			35.7 36.0					
		0.5m at 19:00		0	0	∞			36.6	+38.0		Operation stopped at 36.6m as instruction given on Works Order.		
									37.0 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

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. 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 2

Machine: D59 Orientation: VERTICAL N. 38393.6 -9

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						
				45				6	8.0	+53.4				
15-10-81		NIL at 8:00					N=80	7				Yellowish brown. & greyish white. very dense. SANDY SILTY QUARTZ GRAVELS. (C.W.G.)	V	
	10.0m			60				8	10.0	+51.4				

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

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 434/79
Client Office G.C.O.

Borehole/Drillhole No. D6

Job No & Location: W.O.Q 7/2/5.III TSIM BEI TSUI BORROW AREA.

Sheet 2 of 4

Method: ROTARY Ground Level: +61.4 m P.D. Coords E. 190 11.9

Machine: D59 Orientation: VERTICAL N. 38393.6

Hole dia.: 0.0m — 140mm — 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
									10.0	+51.4				
15-10-81	PX	6.6m at 12:00 NIL at 13:00		50			N=110	9	10.5					
								10	11.0					
				45			N=39	11	12.0			Yellowish brown & greyish white. very dense. SANDY SILTY QUARTZ GRAVELS. (C.W.G.)	V	
								12	12.5					
				42			N=101	13	13.0					
								14	14.0					
							N=104	15	14.5					
				50				16	15.0					
16-10-81		12.2m at 19:00 NIL at 8:00		34	0	8			16.0					
				26	0	8			16.5					
		13.3m at 12:00							17.0					
	20.0m								17.6	+43.8		Milky QUARTZ. with layers of soil.	V	
									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

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. D6

Job No & Location: W.O.Q 7/2/5.111 TSIM BEI TSUI BORROW AREA.

Sheet 3 of 4

Method: ROTARY Ground Level: +61.4m 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						D 17	20.2			Milky QUARTZ with layers of soil.	V	
									21.0					
17-10-81		NIL at 8:00							21.3	+40.1				
		16.8m at 12:00					N=25/230	D 18	22.0			Yellowish brown & greyish white. very dense. SANDY SILTY QUARTZ GRAVELS. (H.W.G.)	IV	
		NIL at 13:00							22.4					
		21.4m at 19:00					N=200/150	D 19	23.0					
18-10-81		NIL at 8:00		32	0	∞			24.0	+37.2				
		22.8m at 12:00		0					24.2					
		NIL at 13:00					N=200/150	D 20	25.0					
		22.0m at 19:00		21	0	∞			25.1			Milky QUARTZ with layers of soil.	IV	
		NIL at 8:00		22	0	∞			26.0					
									26.2					
19-10-81				26	0	∞			27.0					
									27.9					
									28.0					
									29.0					
									29.3					
	29.8m			74	0	∞			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

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 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 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 30.0 31.0 31.1 32.0			Milky QUARTZ. with layers of soil.	IV	
20-10	33.7m	NIL at 8:00 NIL at 19:00		0 94	0	8			32.6 33.0 33.4				II/IV	
21-10		NIL at 8:00 NIL at 19:00		67 85 85 50 88	0 0 0 0 0	8 8 8 8 8			33.7 34.0 34.2 34.5 34.8 35.0 35.2 36.0	+26.2		Operation stopped at 35.2m as instruction given on Works Order.		

Legend

Samples:

- Small disturbed
- Large disturbed
- U40 undisturbed
- U100 undisturbed
- Mazier
- Liner sample
- Water sample
- Water table
- Standard penetration test
- Permeability test

Remarks

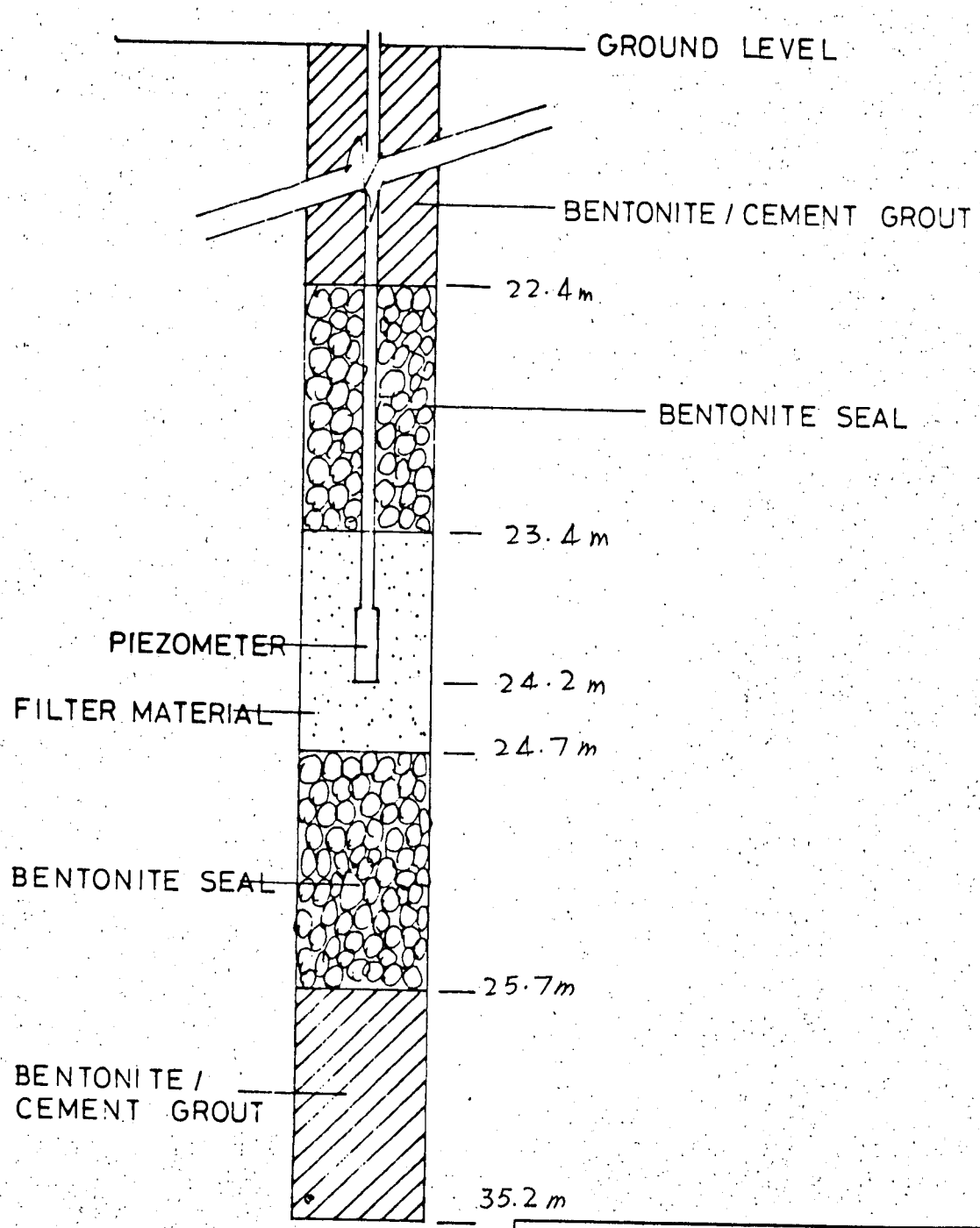
A piezometer was installed at 24.2m

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
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. D7

Job No & Location: W.O.D 7/2/5.111 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	
31-10-81		4.2m at 12:00 NIL at 13:00		40 90 65 50			N=18 N=17 N=45	3 4 5 6 7 8 9	3.0 4.0 4.5 5.0 6.0 6.5 7.0 8.0 8.5 9.0 10.0	+32.1				
	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

G151

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. 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					
									11.0					
1-11-81		10.1m at 8:00					N=131	12	12.0					
		10.3m at 12:00		55					12.5					
		10.3m at 13:00						13	13.0					
		11.1m at 19:00					N=91	14	13.9					
	14.5m NX								14.0					
		12.0m at 8:00							14.5					
3-11-81		12.0m at 12:00		80	0	∞			14.9	+27.2		Greyish white. medium to coarse grained. closely spaced joints to shattered. QUARTZ. moderately strong.	III	
		12.2m at 13:00		100	0	∞			15.0					
		12.2m at 19:00		80	0	∞			15.9					
4-11-81		12.2m at 8:00		43	0	∞			16.0					
		12.0m at 19:00		72	0	∞			17.0					
5-11	20.0m	12.2m at 8:00							17.2					
									18.0					
									18.4					
									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
HWG: HIGHLY WEATHERED GRANITE

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.

Drillhole 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 PD. 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	20.7					
									21.0					
6-11-81		12.2m at 8:00							22.0					
									22.3	+19.8		Brown. & red. very dense. CLAYEY SILT. with some SAND. (H.W.G.)	IV	
									23.0					
							N=207/150	17	24.0					
									24.3					
									25.0					
		11.5m at 19:00							26.0					
							N=200/80	18	26.2	+15.9				
7-11-81		12.2m at 8:00							27.0			Greyish white. brown. & red. very dense. SILTY SAND. (H.W.G.)	IV	
									28.0					
	28.5m	12.0m at 19:00					N=200/150	19	28.2					
8-11-81		12.2m at 8:00		90	30	8.0			28.5	+13.6	+++	Greyish pink. medium to coarse grained, closely spaced joints PAGMANTITE strong pegmatite	II	
				80	0	∞			29.0		+++			
				87.1	0	10.0			29.4		+++			
				93.1	0	∞			29.7		+++			
		12.0m at 19:00		64	17	∞			29.9		+++			
									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, 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. 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 PD 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
									0.0	+63.4				
25-7-81	PX	2.7m at 9.8m		60			N=5	1	1.0			Brown. light pink. loose. SANDY SILT. with gravels. (C.W.G)	V	
							N=52	2	2.0	+61.4				
								3	3.0					
				50				4	4.0			Brown. & light pink. medium dense to very dense SILTY SAND with quartz gravels. (C.W.G.)		
								5	5.0				V	
							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

G151

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 434/79
Client Office G. C. O.

~~Borehole~~/Drillhole No. D8

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 PD. 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
										+53.6				
27-7-81	PX	6.0m at 8:00						11	9.8			Yellowish brown. & light pink. very dense. SILTY SAND with gravels. (C.W.G.)	V	
							N=139/150	12	11.0					
		4.0m at 19:00							11.9 12.0	+51.5				
28-7-81		11.9m at 8:00						13	13.0			Light grey & white. QUARTZ COBBLES & GRAVELS.	IV	
							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				
5-8-81		NIL at 8:00						17	17.0			Dark grey. & white. very dense. SILTY SAND (C.W.G.)	V	
							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	+43.4				
		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 11.0m, 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: 5-283941 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 PD 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	12.8m at 19:00 NIL at 8:00					N=63/50	21 22	21.0 21.6 22.0			Light pinkish grey. very dense. SILTY SAND. with gravels. (C.W.G.)	V	
							N=65/50	23 24	23.0 23.6 24.0					
6-8-81							N=72/75	25 26	25.0 25.6 26.0	+38.4				
		19.7m at 19:00 NIL at 8:00					N=60/55	27 28	27.0 27.6 28.0			Light grey. light pink. very dense. SILTY SAND with gravels. (C.W.G.)	V	
7-8	29.9m							29	29.0 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: 5-283941 Cables: GAMMONCO Telex: HX 73826

P.W.D. Contract 424/79
Client Office G.C.O.

Borehole No. D8

Job No & Location: W.D.Q 7/2/5.111 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
									29.9	+33.5				
7-8-81	PX			21	0	∞			31.0			White. light red. fine grained. shattered to very closely spaced joints QUARTZ COBBLES & GRAVELS.	III/IV	
	32.2m			17	0	∞			31.3					
									32.0					
				18	0	∞			32.2					
		20.1m at 19:00							33.0					
				42	0	∞			33.1					
									33.5					
8-8-81		NIL at 8:00							33.6					
				98	0	∞			34.0					
		25.2m at 19:00							34.4					
				97	0	∞			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

G151

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 73828

P.W.D. Contract 424/79
Client Office G.C.O.

~~Borehole~~/Drillhole No. D9

Job No & Location: W.O.Q 712/5.111 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 – 75.8mm – 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
									0.0	+62.6				
25-11-81	PX	NIL at 8:00												
		1.0m at 13:00		50				1	1.0					
		NIL at 13:00					N=68	2	2.0					
									2.5					
		1.0m at 19:00		57				3	3.0			Brown. very dense. SILTY SANDY QUARTZ GRAVELS. (C.W.G. ~ H.W.G.)	V/IV	
		NIL at 8:00					N=263/150	4	3.7					
26-11-81									4.0					
									4.3					
									5.0					
							N=200/150	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	∞			7.8					
27-11				80	0	∞			8.0			Milky QUARTZ. with layers of soil.	III/IV	
		NIL at 19:00		57	0	∞			8.3					
									8.8					
28	9.8m	NIL at 8:00		90	0	∞			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: 5-283941 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 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
									9.8	+52.8				
28-11-81	NX	NIL at 19:00		82	0	∞			10.0			Milky QUARTZ with layers of soil.	III/IV	
				90	0	∞			10.5					
29-11-81		NIL at 8:00		90	0	∞			11.0					
				85	0	∞			11.5					
		NIL at 19:00		70	0	∞			11.8					
	12.5m								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

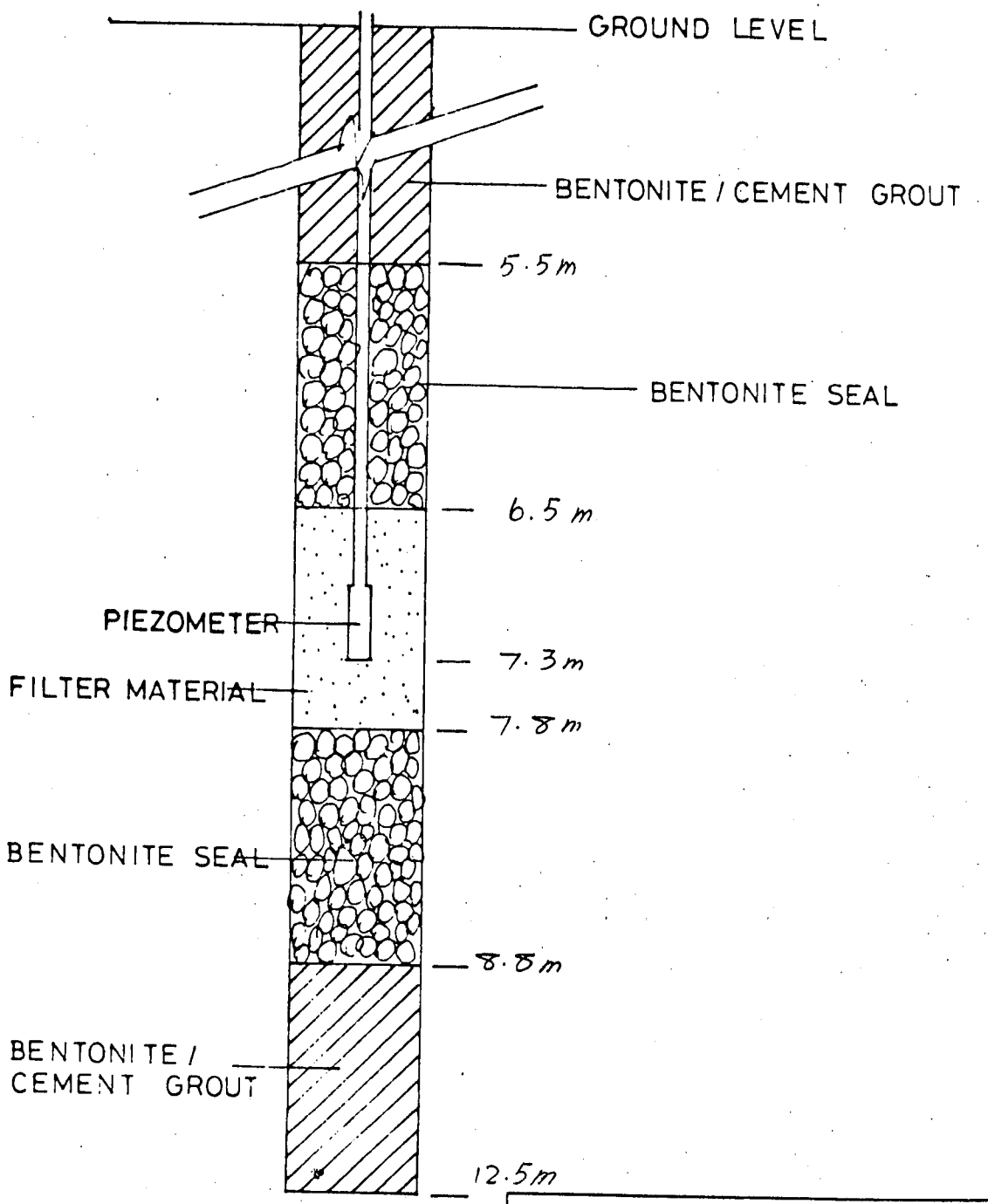
A piezometer was installed at 7.3 m.

GI 51

DETAIL OF STANDPIPE PIEZOMETER INSTALLATION

JOB NO. 364 W.O.Q 7/215.111
LOCATION TSIM BEI TSUI BORROW AREA
DATE 30-11-1981

HOLE NO. D9



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 Cables GAMMONCO Telex HX 73826

PIEZOMETER READINGS ON D - 1

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 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. E. 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. 7/2/5.111

Location TSIM BEI TSUI BORROW AREA

Ex. Ground Level ____ m P.D.

Coordinates N ____ E ____

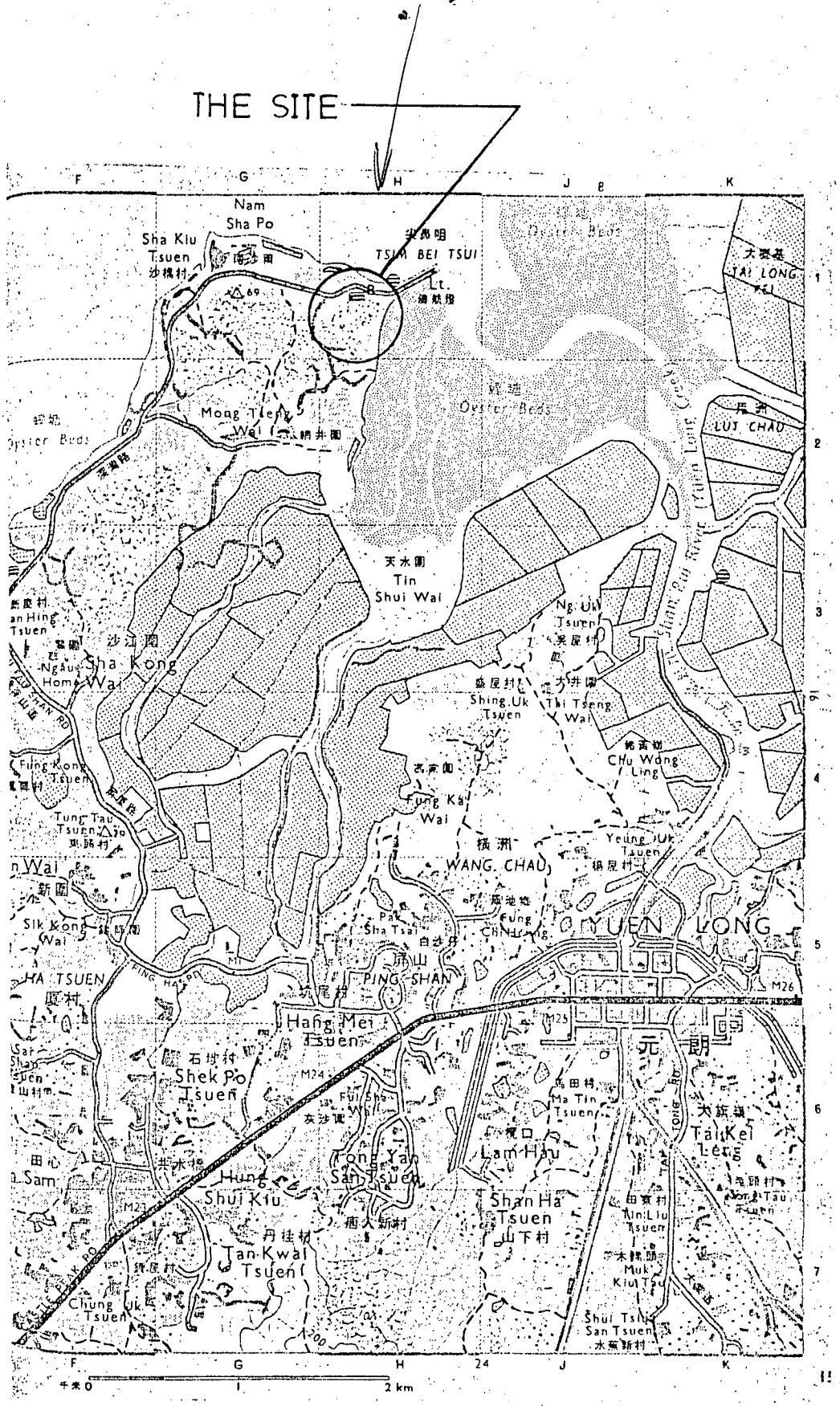
DATE OF INSTALLATION 30-11-1981

DEPTH OF PIEZOMETER 7.3 m

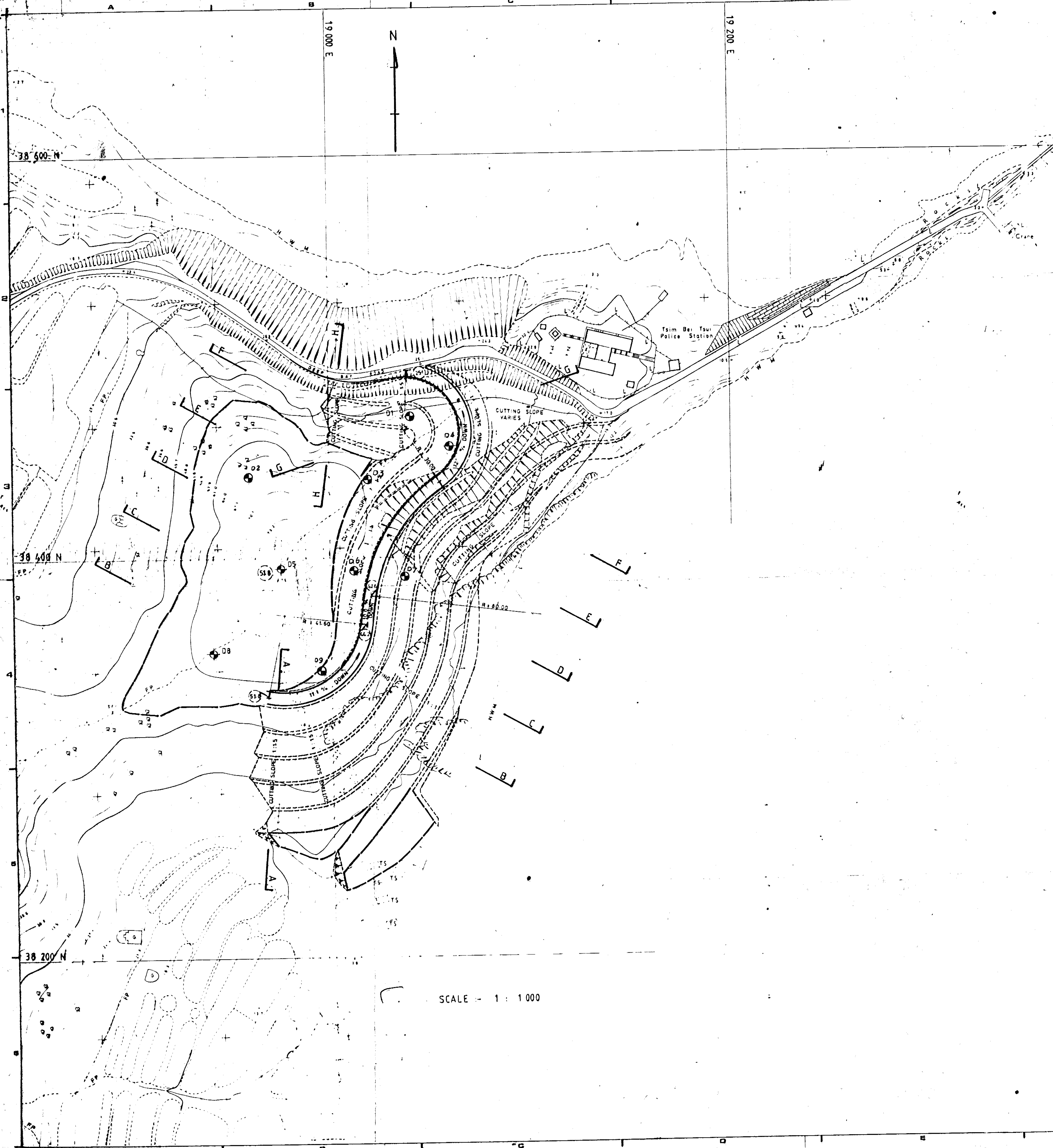
DATE	READINGS (M)
2-12-1981	NIL
3-12-1981	NIL
4-12-1981	NIL
5-12-1981	NIL
7-12-1981	NIL
8-12-1981	NIL
9-12-1981	NIL

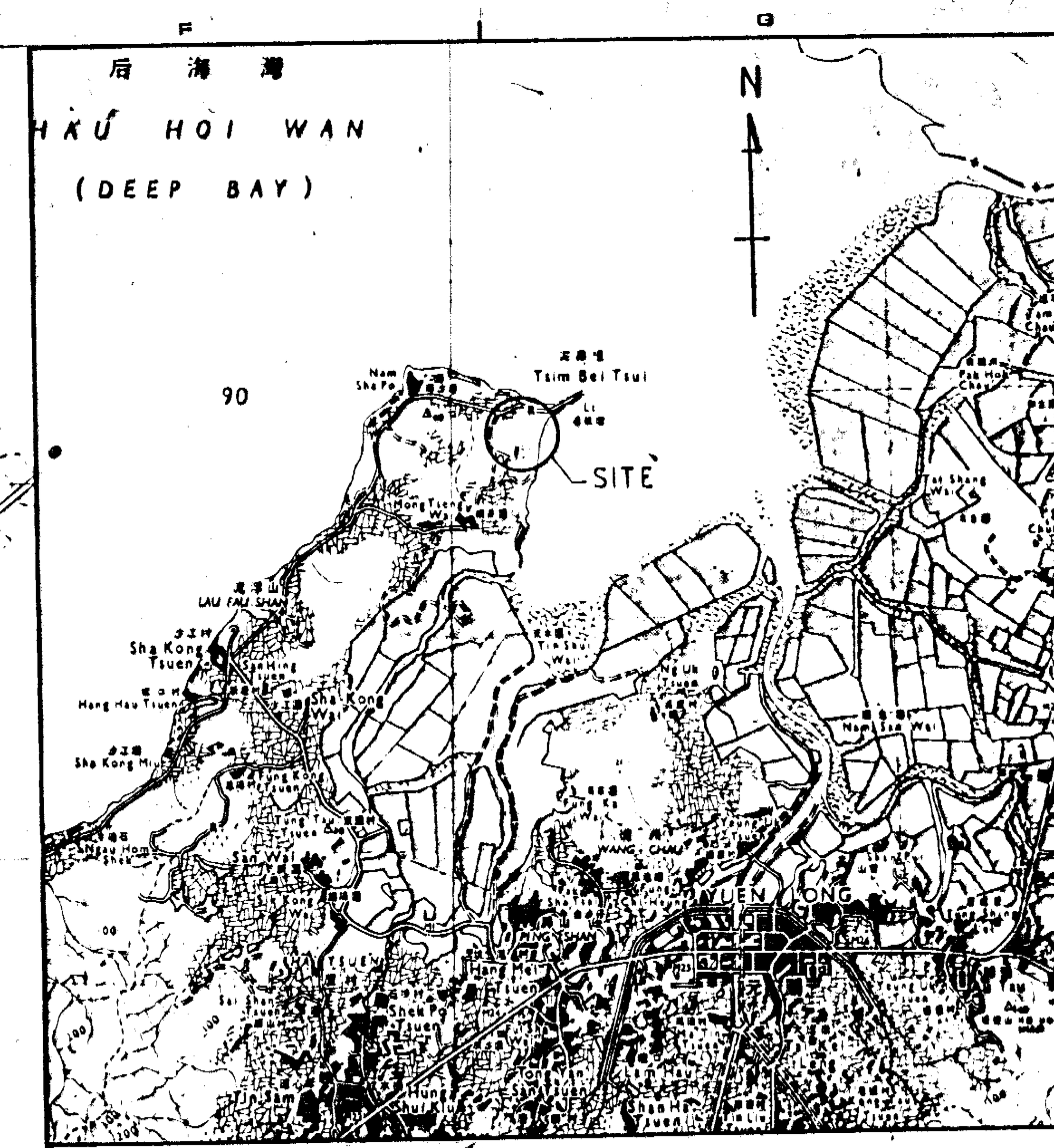
Section C - Borehole Location Plan & Key Plan

D-SW-C & D



KEY PLAN





KEY PLAN
SCALE - 1 50 000

NOTES
1. ALL DIMENSIONS, CONTOURS AND SPOT LEVELS ARE IN METRES

LEGEND
PROPOSED ACCESS ROAD
PROPOSED CUTTING SLOPE
PROPOSED TERRACE
PROPOSED LEVEL
PROPOSED POSITIONS OF DRILL HOLES

no.	date	description	initial
REVISION			

	name	date
surveyed		
designed		3/4/81
drawn	T.M. CHUNG	18/3/81
traced		
checked		1/4/81
approved		

chief engineer

contract no.

file no.

project no.

contract

MAIN BORDER FENCE
PHASE V
TSIM BEI TSUI BORROW AREA

drawing title

SITE INVESTIGATION

drawing no. SD/B19

scale AS SHOWN

office
HIGHWAYS N.T. DIVISION

DATA BANK 3226

PUBLIC WORKS DEPARTMENT HONG KONG

A1 841 x 594

pwd 183

Appendix D

Slope Crest/Toe Influence Zone Layout Plan (1.5 and 2 Wings)

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

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

BLK A

BLK B

C1

C2

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 (VERSION B)

1:500 (A3)

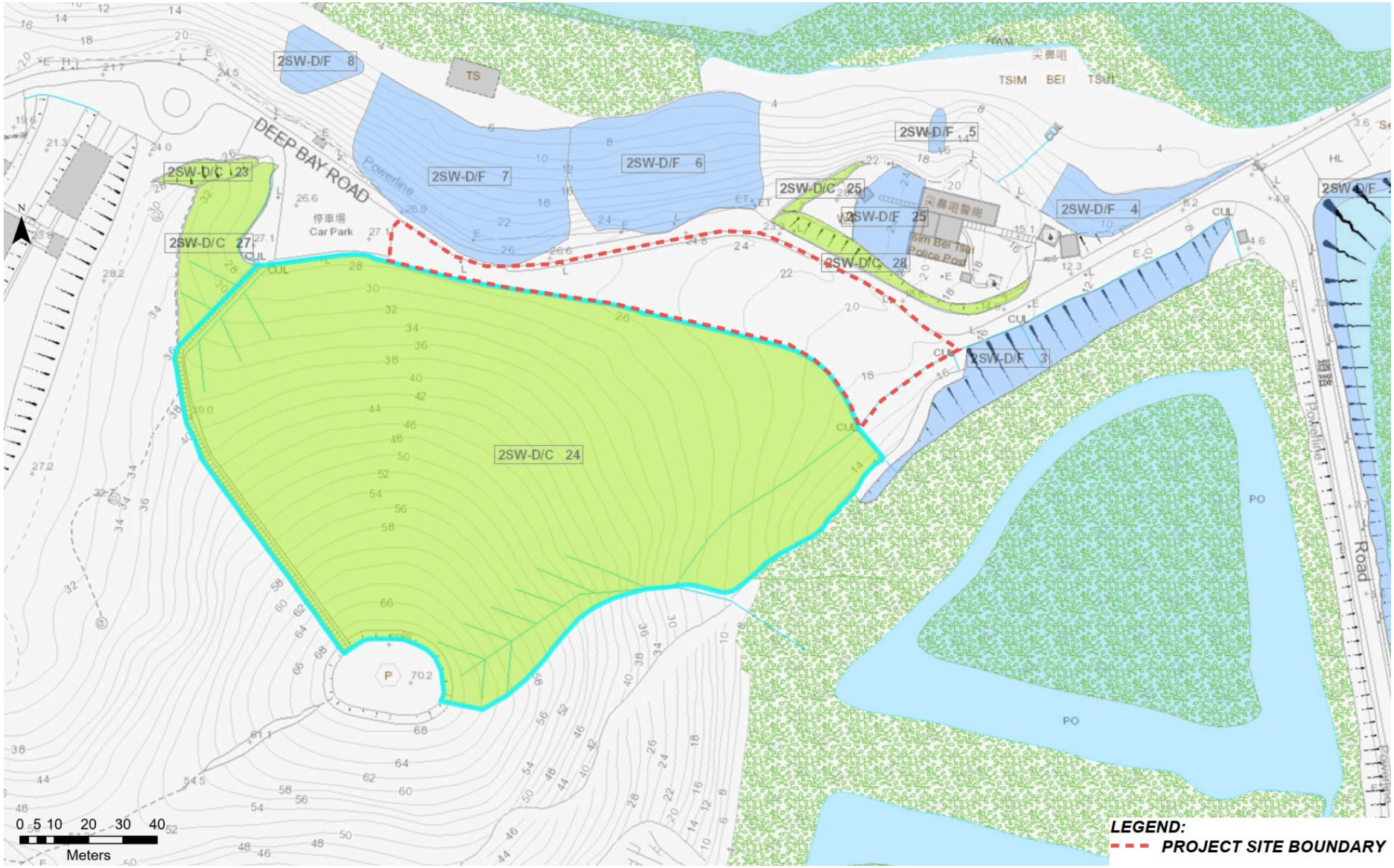
1A

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,)

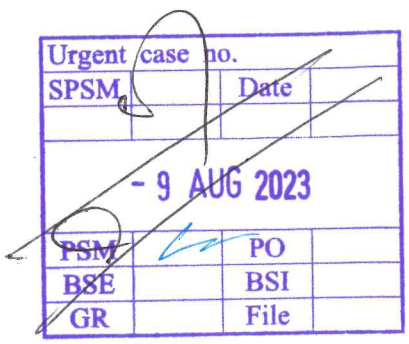
貴客戶：

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



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

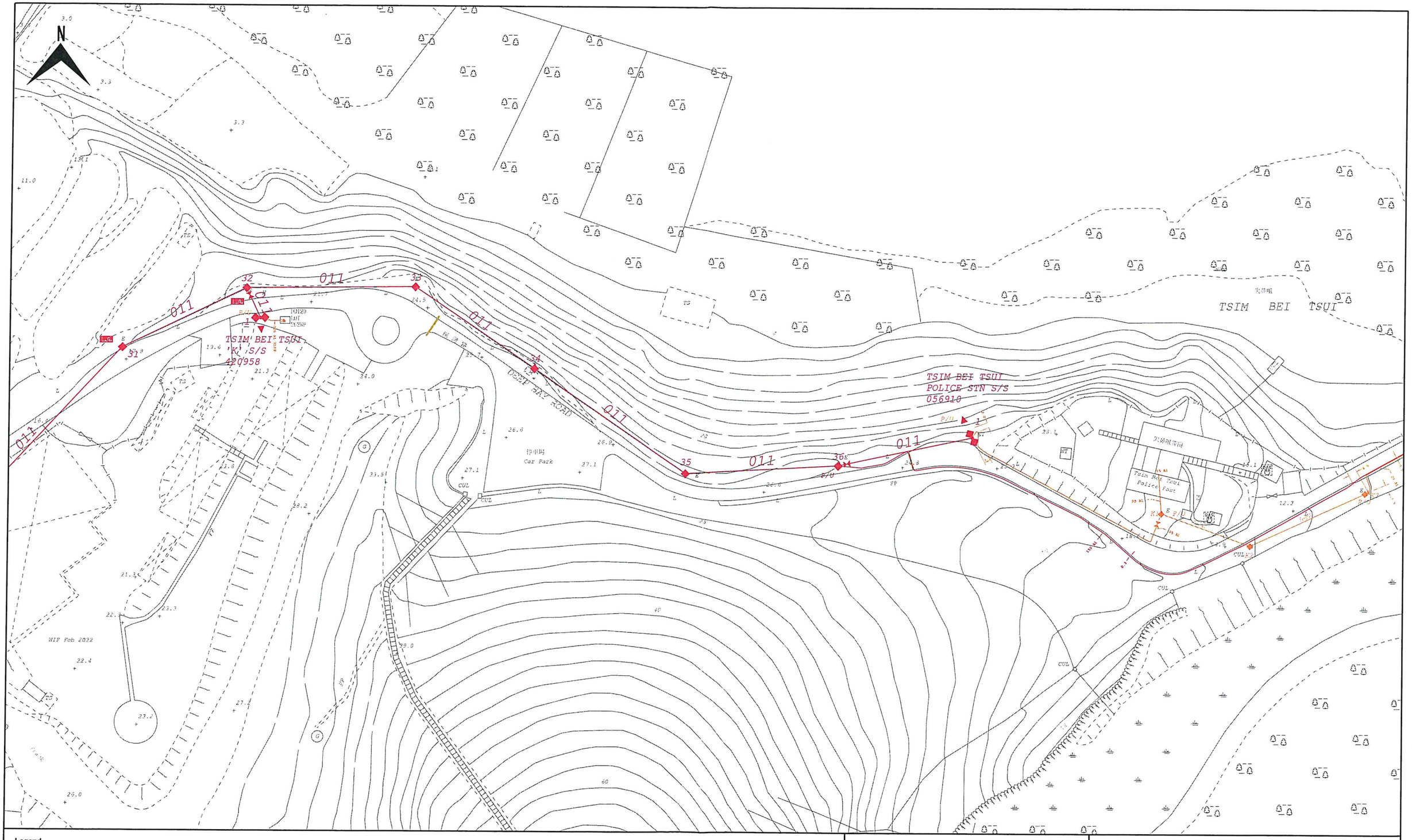
We refer to your letter dated 04 Aug, 2023 and enclose herewith our record sheet(s) showing the present location(s) of this Company's underground cables and / or overhead lines. The alignments of the cables and overhead lines could be altered in the future to meet the requirements of our power system.

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.

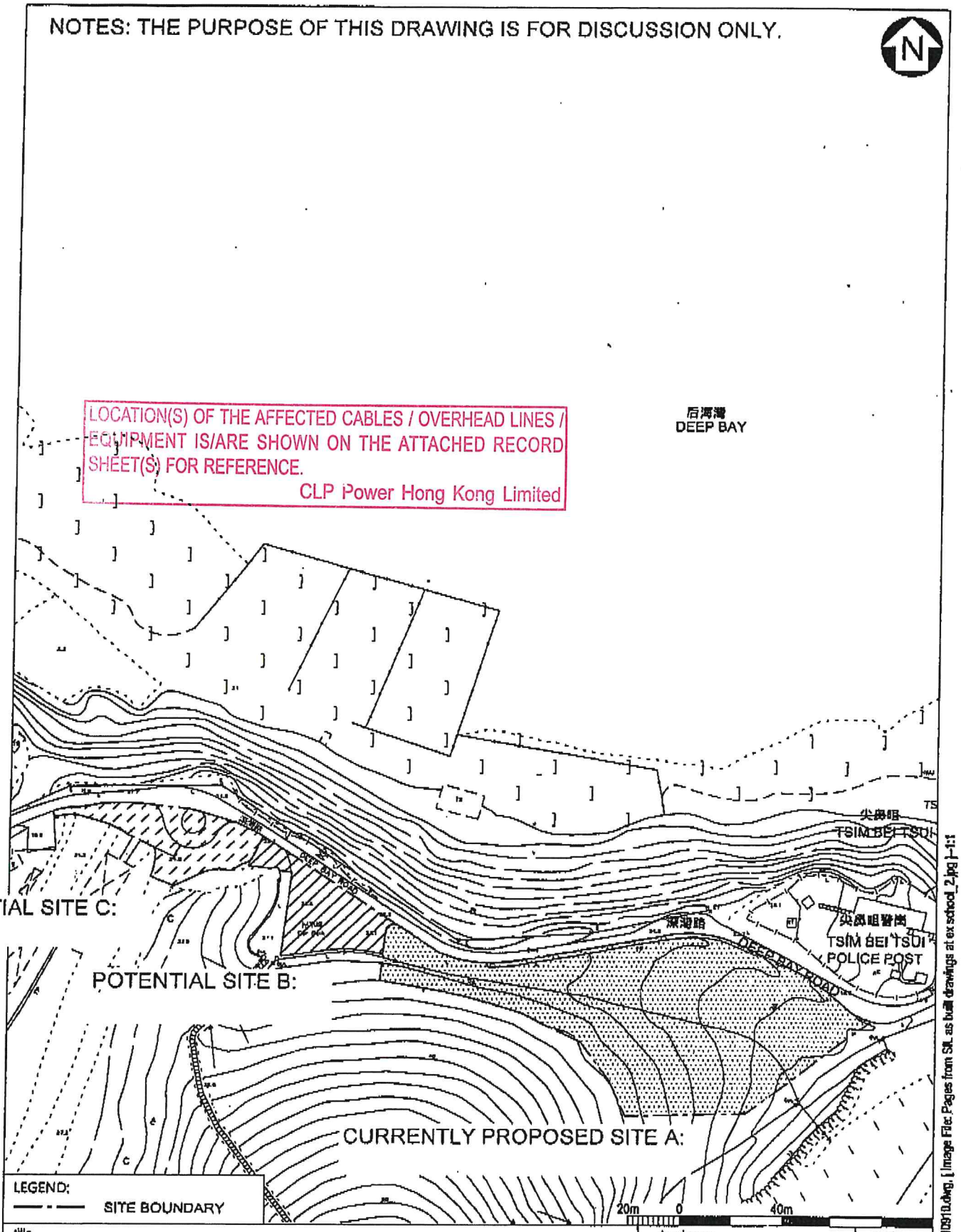
CLP 中電

MAP NO: CLP Facility Records Map
02SW18B
02SW13D

SCALE: 1:1000 **PRINTED ON:** 10-08-2023

Reference no. : N-2023-1133-001

NOTES: THE PURPOSE OF THIS DRAWING IS FOR DISCUSSION ONLY.



title

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

drawing no.

scale

1:2000

ARCHITECTURAL SERVICES DEPARTMENT

A4 210 x 297

CAD Ref. - site location_20210910.dwg, [Image File: Pages from SIL as built drawings at ex school_2.jpg]--1:1

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	×	

Appendix G

General Building Plan

Appendix G1A

General Building Plan
1.5 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

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

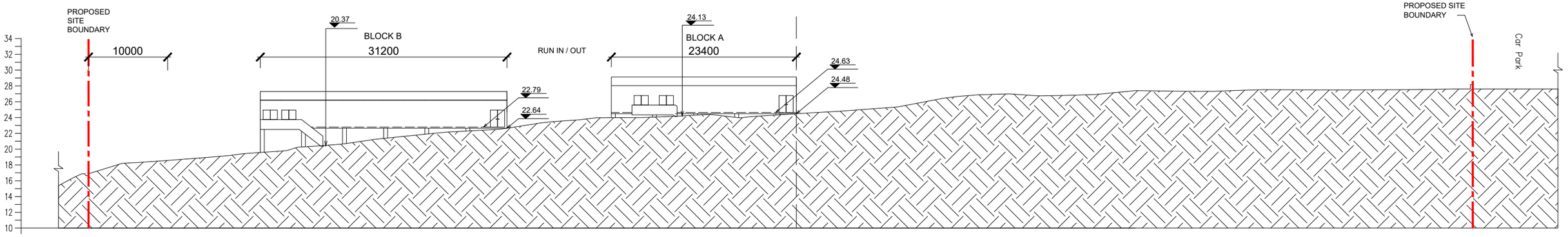
思 建 設 計 顧 問 有 限 公 司
C Arch Design Consultant Limited

EPD SUPERSITE TSIM BEI TSUI MASTER LAYOUT PLAN

1:500 (A3)

1

24 - 03 - 2025



SCHEMATIC ELEVATION K-K

REMARK : FOR INDICATION ONLY

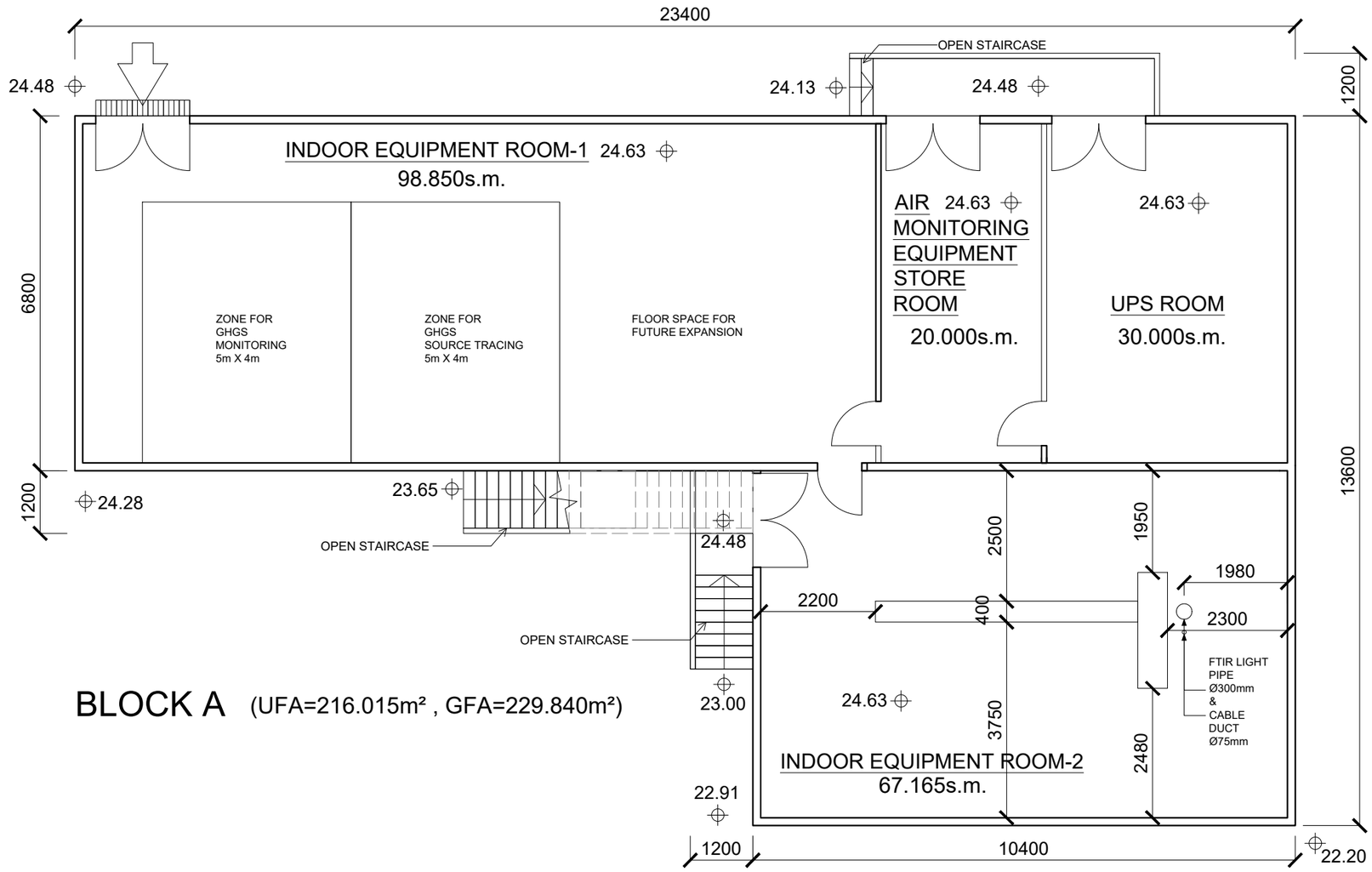
DRAFT

思 建 設 計 顧 問 有 限 公 司
C Arch Design Consultant Limited

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

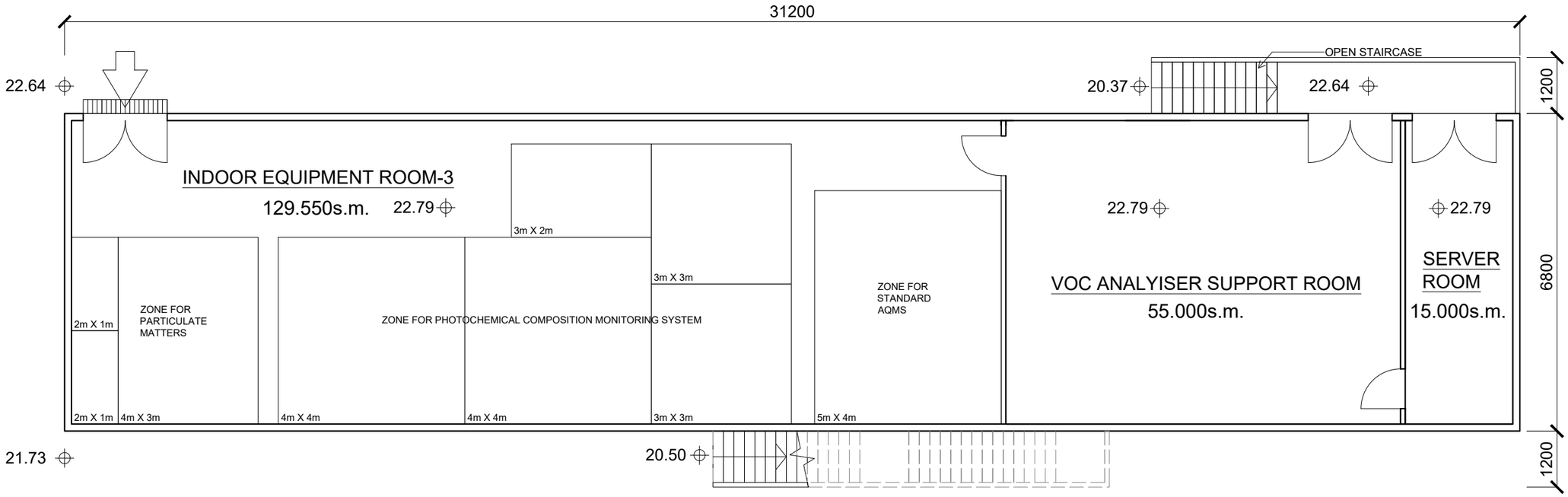
思 建 設 計 顧 問 有 限 公 司
C Arch Design Consultant Limited

EPD SUPERSITE TSIM BEI TSUI LAYOUT PLAN (1)

1:100 (A3)

3a

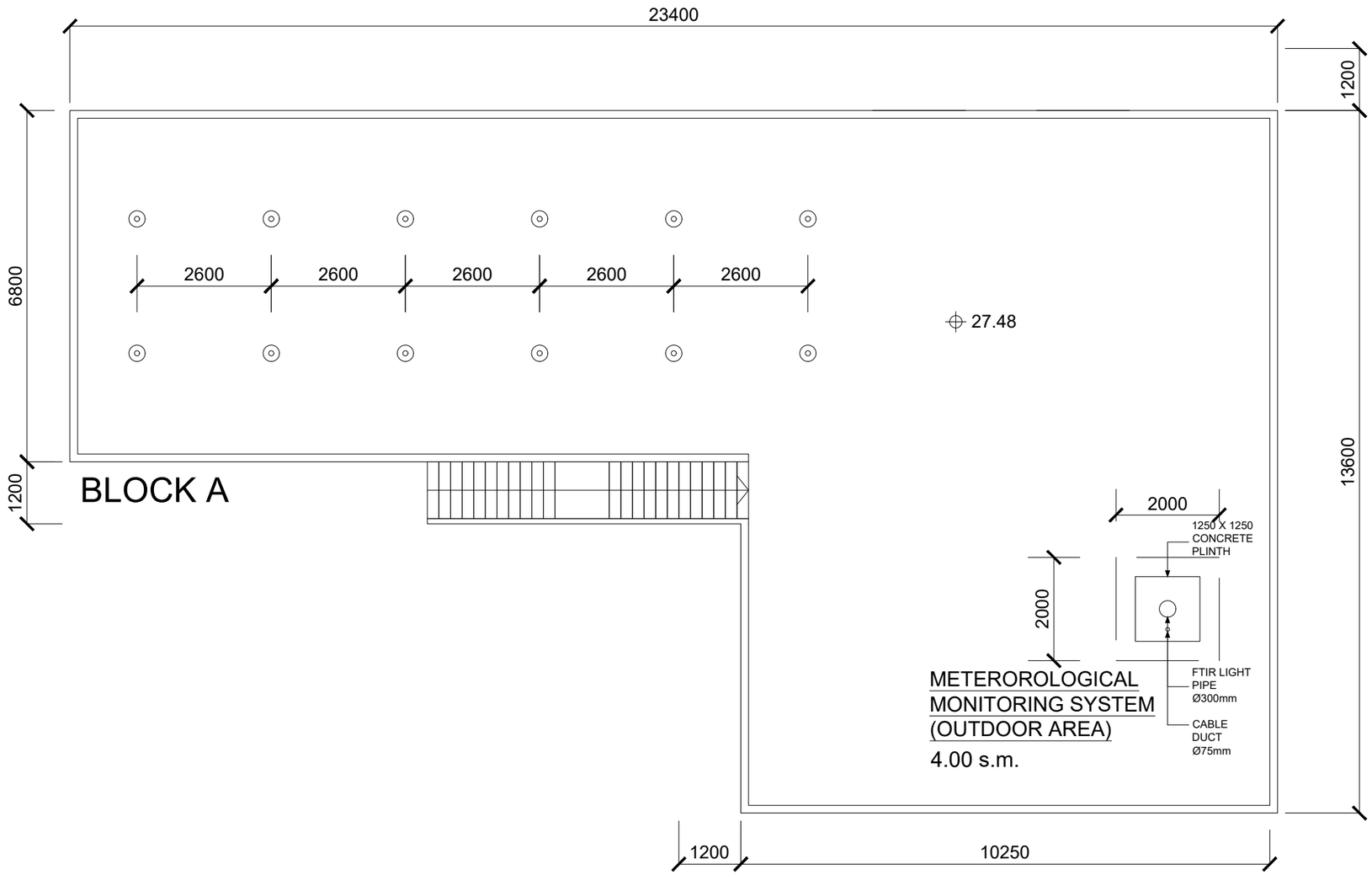
24 - 03 - 2025



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

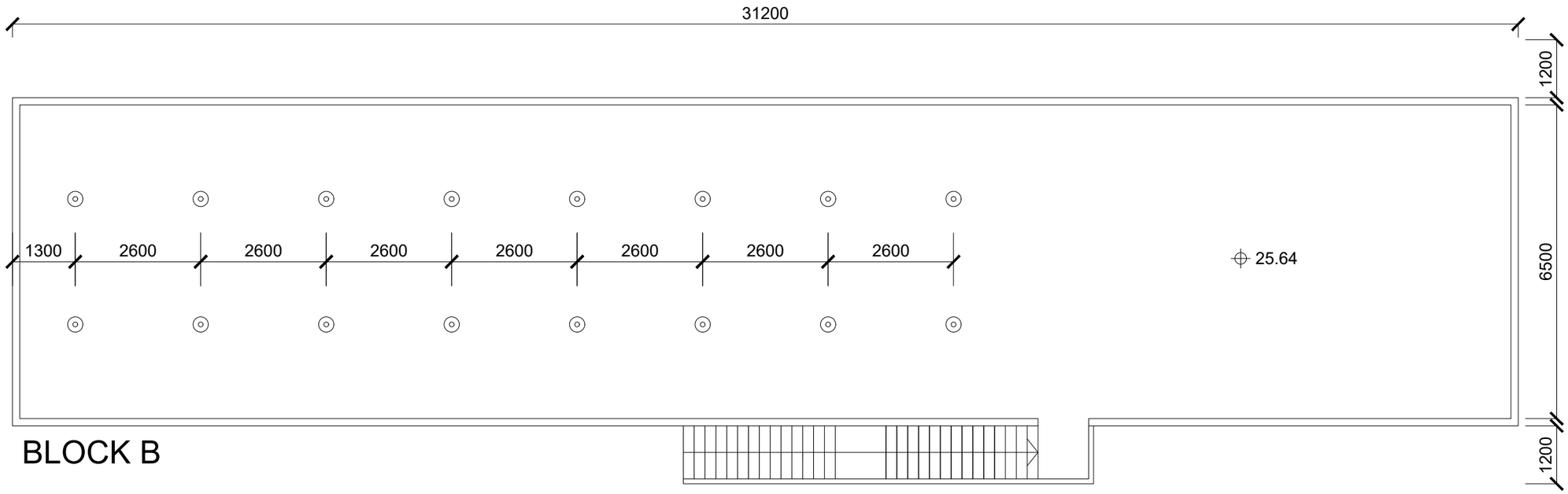


DRAFT

思 建 設 計 顧 問 有 限 公 司
C Arch Design Consultant Limited

EPD SUPERSITE TSIM BEI TSUI ROOF PLAN (1)
1:100 (A3)

4a
24 - 03 - 2025



BLOCK B

DRAFT

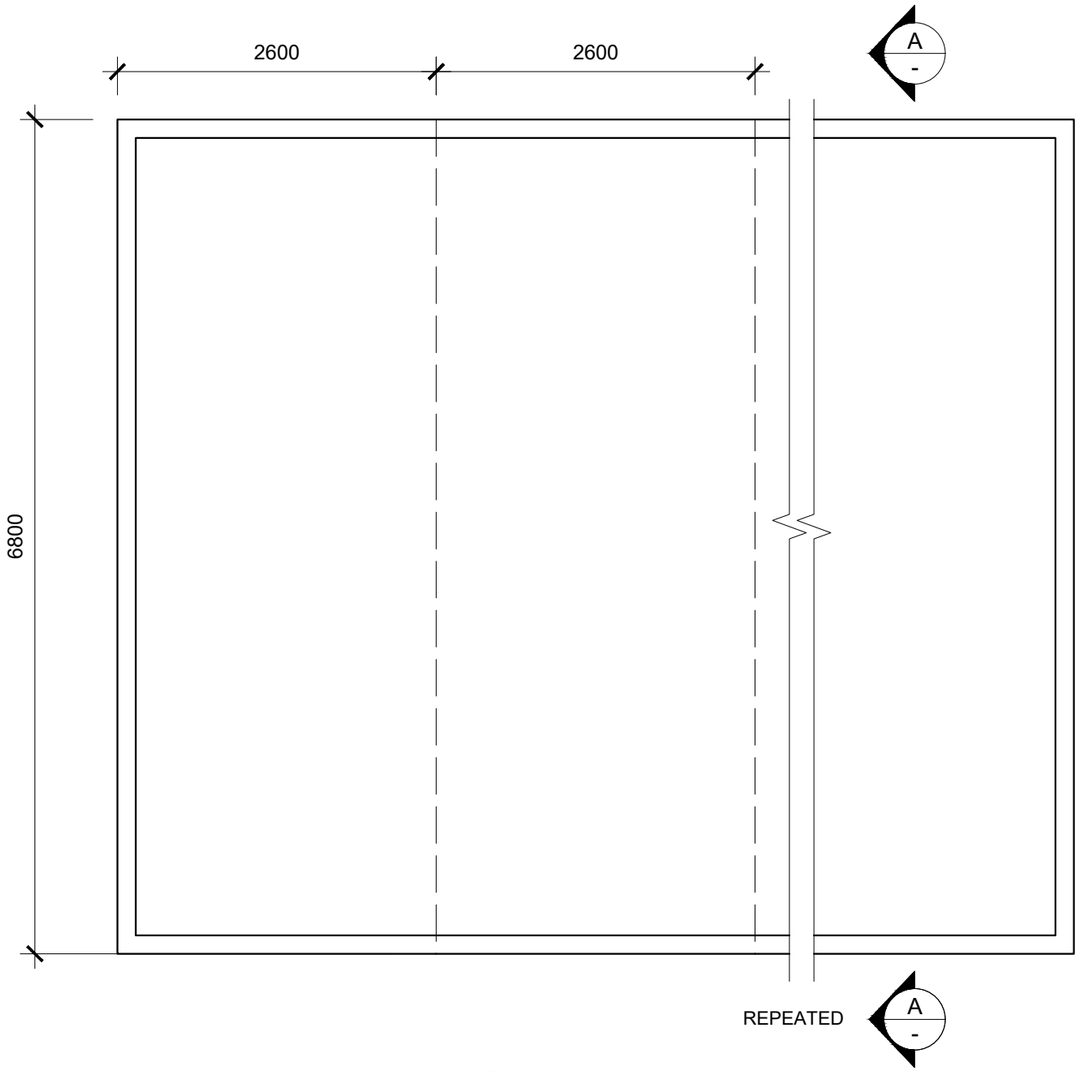
思 建 設 計 顧 問 有 限 公 司
C Arch Design Consultant Limited

EPD SUPERSITE TSIM BEI TSUI ROOF PLAN (2)

1:100 (A3)

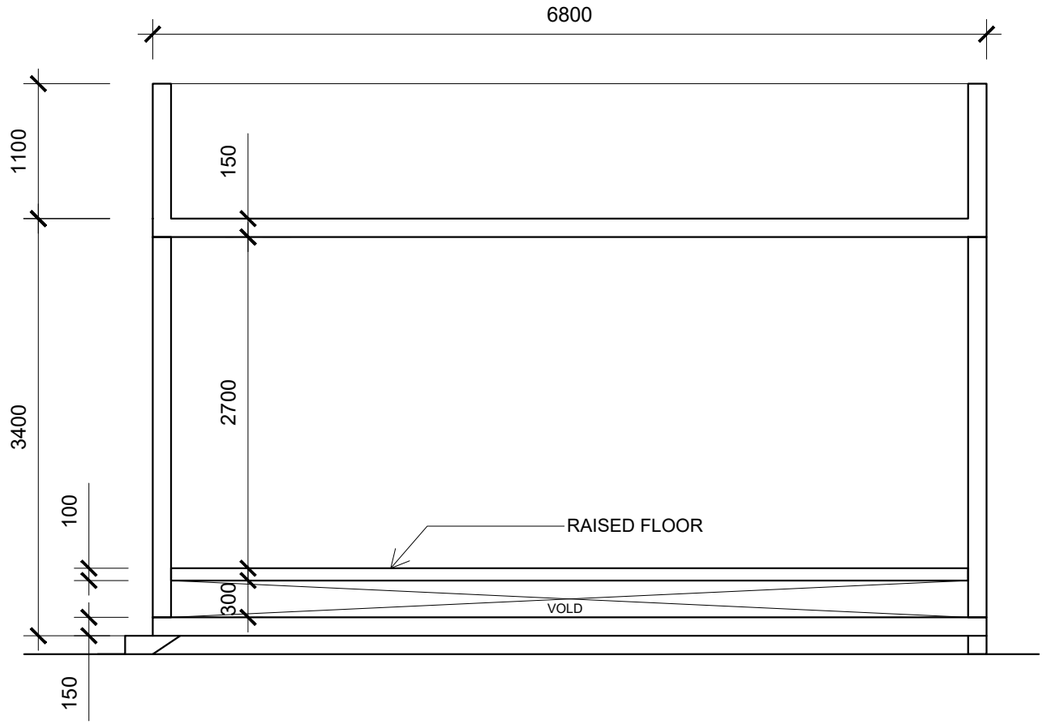
4b

24 - 03 - 2025



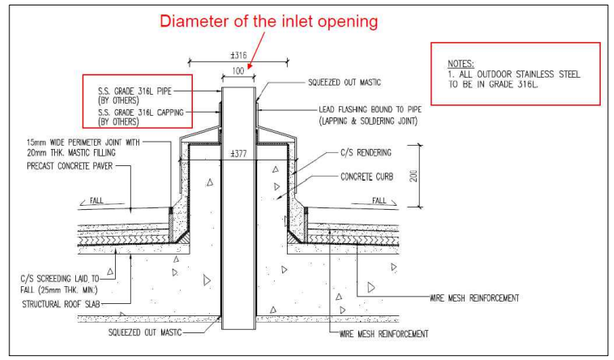
TYPICAL MIC LAYOUT

1:50



TYPICAL SECTION A-A

1:50



TYPICAL SLAB OPENING DETAIL

1:20

DRAFT

思 建 設 計 顧 問 有 限 公 司
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

BLK A

BLK B

C1

C2

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

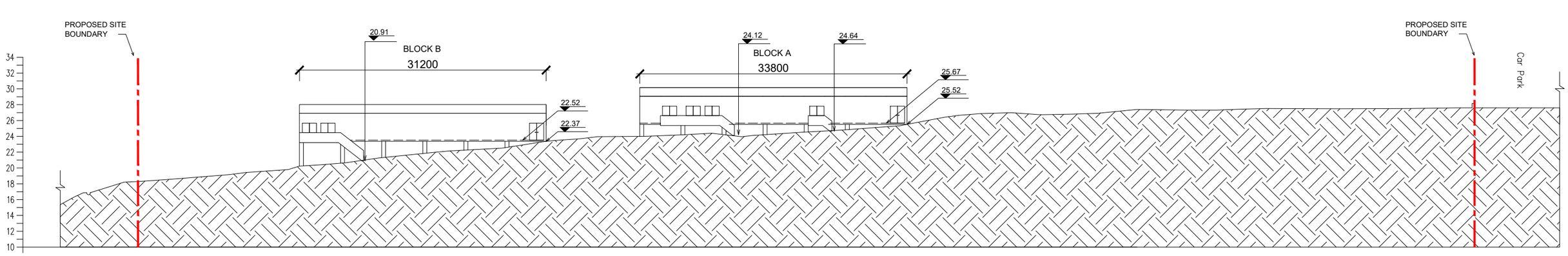
思 建 設 計 顧 問 有 限 公 司
C Arch Design Consultant Limited

EPD SUPERSITE TSIM BEI TSUI MASTER LAYOUT PLAN (VERSION B)

1:500 (A3)

1A

24 - 03 - 2025



SCHEMATIC ELEVATION K-K

REMARK : FOR INDICATION ONLY

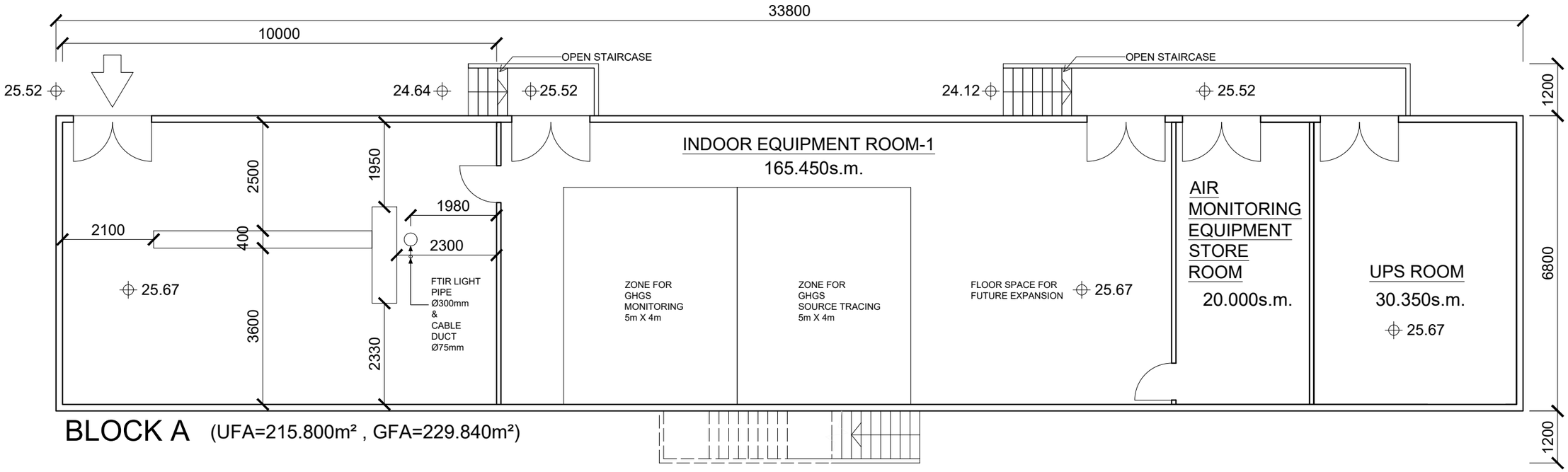
DRAFT

思 建 設 計 顧 問 有 限 公 司
C Arch Design Consultant Limited

EPD SUPERSITE TSIM BEI TSUI SCHEMATIC SECTION K-K

1:500 (A3)

24 - 03 - 2025



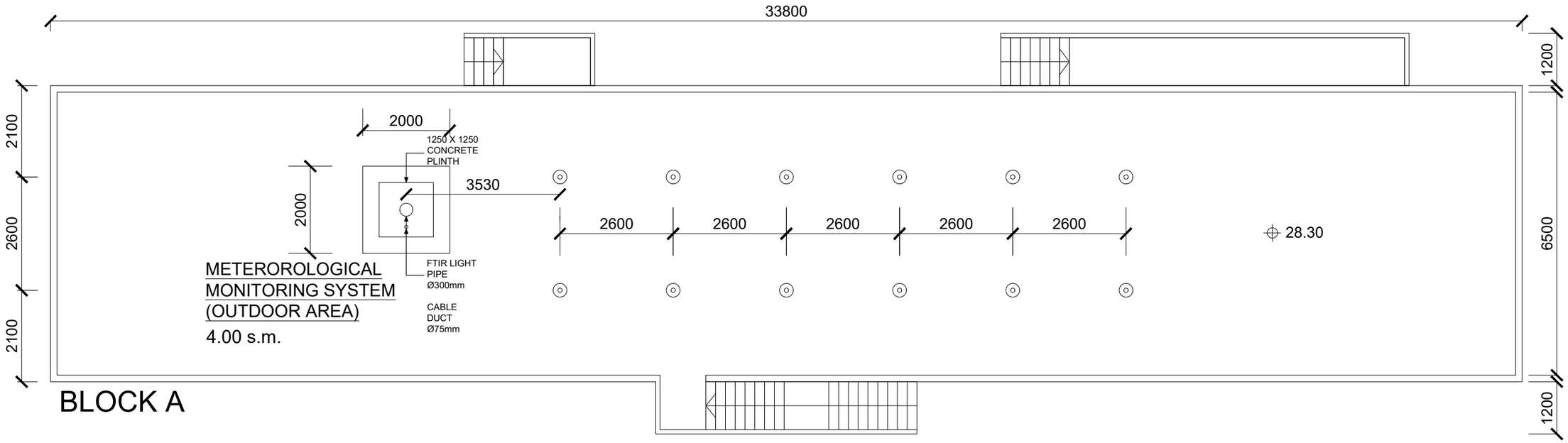
	ROOM	REQ. UFA	PRO. UFA
BLK A	INDOOR EQUIPMENT ROOM-1	165.450	165.450
	AIR MONITORING EQUIPMENT STORE ROOM	20	20
	UPS ROOM	30	30.350
BLK B	INDOOR EQUIPMENT ROOM-2	129.550	129.550
	VOC ANALYISER SUPPORT ROOM	55	55
	SERVER ROOM	15	15

DRAFT

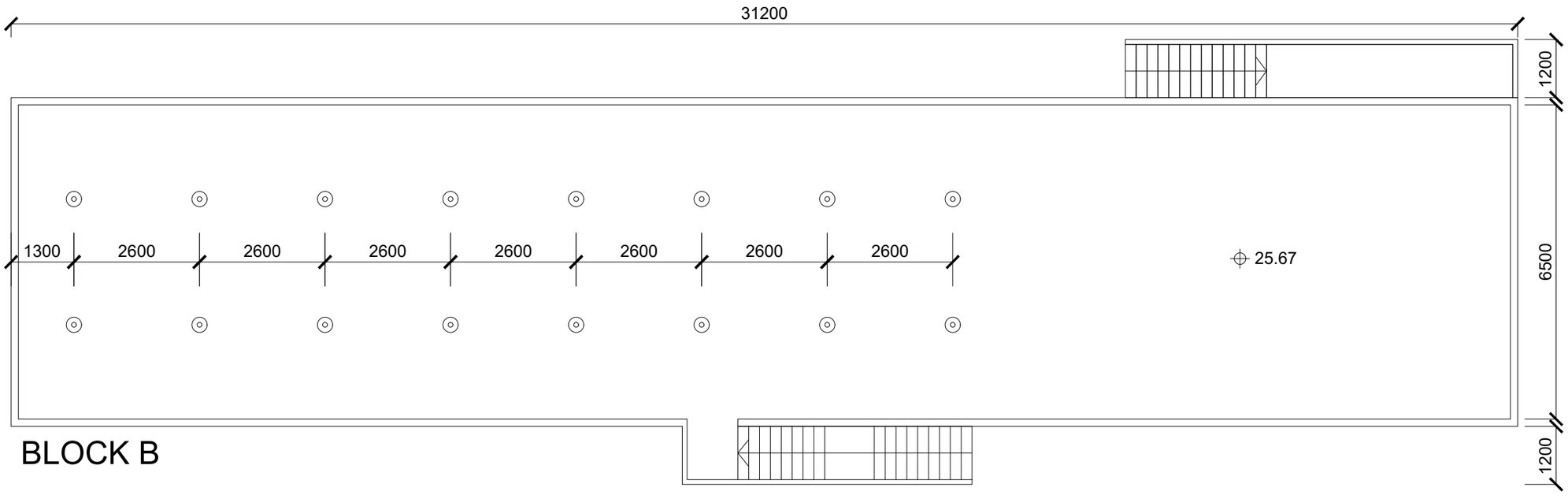
思建設計顧問有限公司
C Arch Design Consultant Limited

EPD SUPERSITE TSIM BEI TSUI LAYOUT PLAN

1:100 (A3)



BLOCK A



BLOCK B

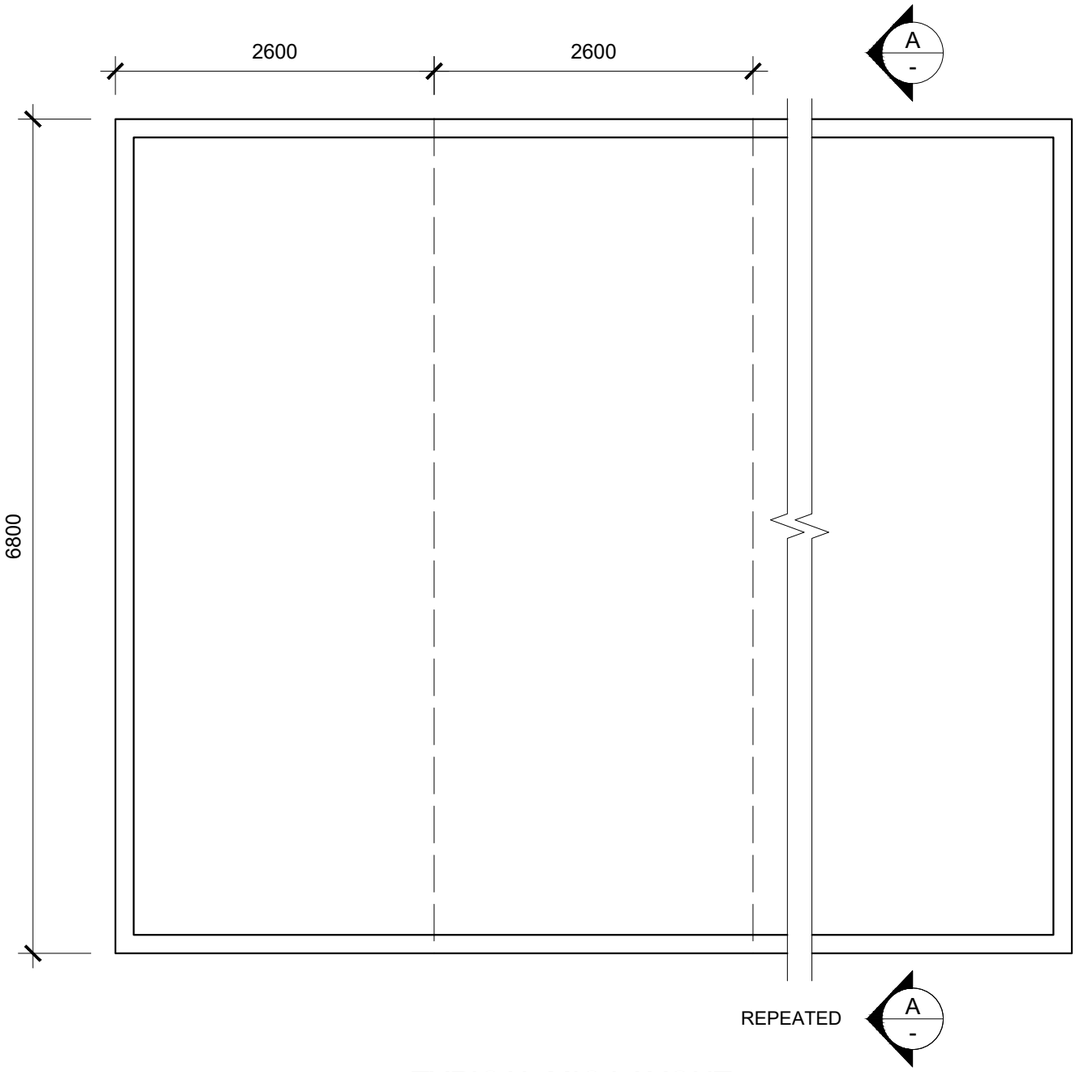
DRAFT

思 建 設 計 顧 問 有 限 公 司
C Arch Design Consultant Limited

EPD SUPERSITE TSIM BEI TSUI ROOF PLAN

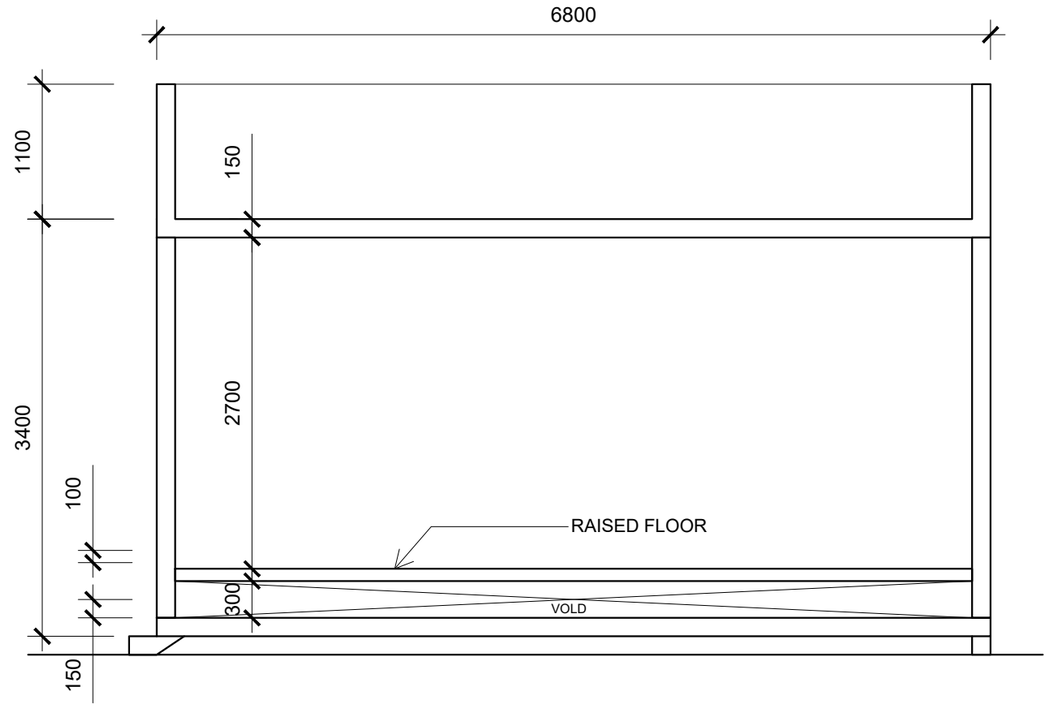
1:100 (A3)

24 - 03 - 2025



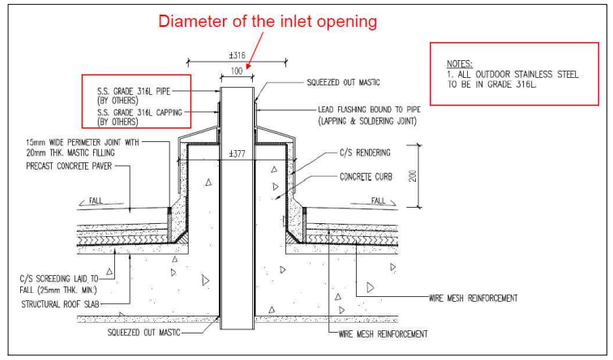
TYPICAL MIC LAYOUT

1:50



TYPICAL SECTION A-A

1:50



TYPICAL SLAB OPENING DETAIL

1:20

DRAFT

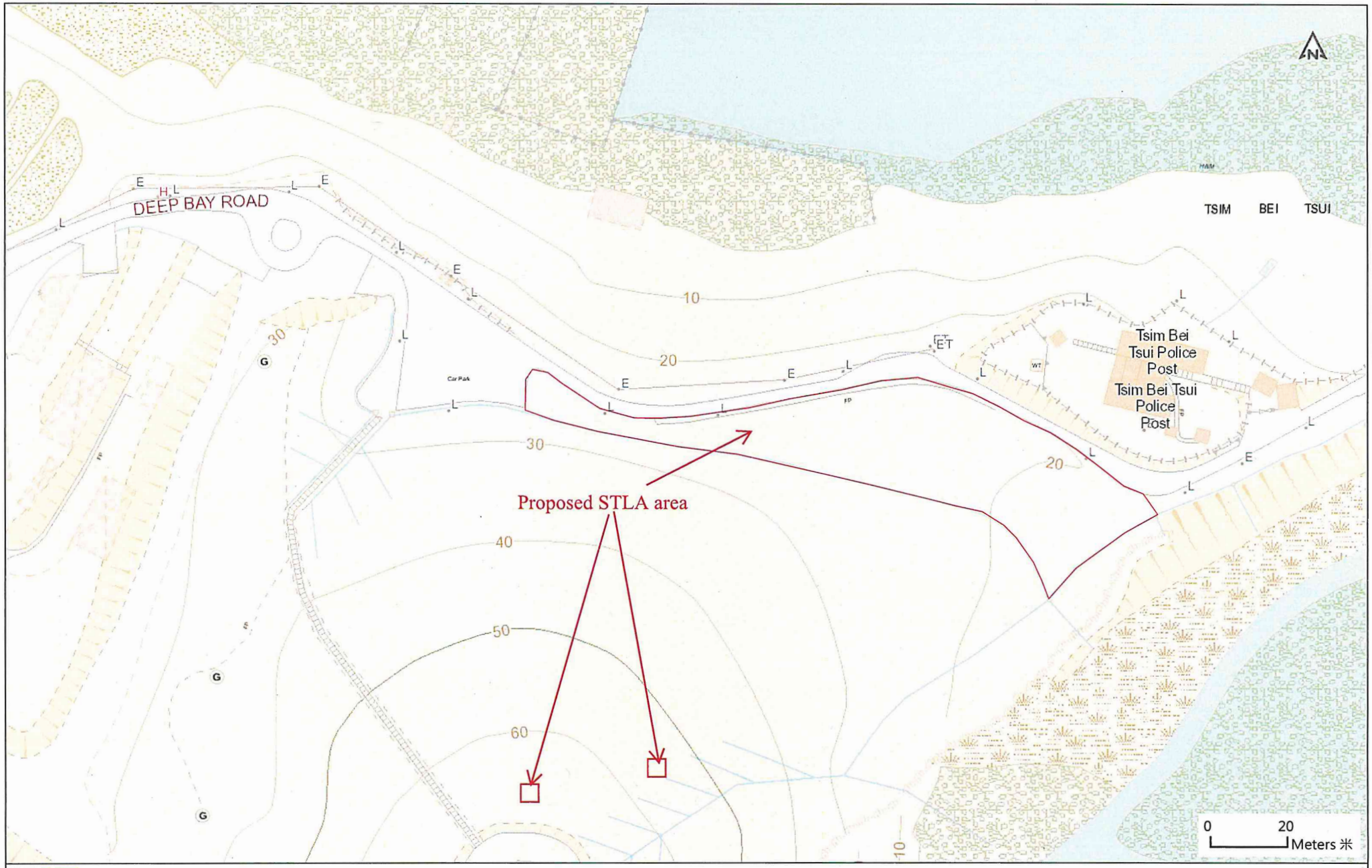
思 建 設 計 顧 問 有 限 公 司
C Arch Design Consultant Limited

EPD SUPERSITE TSIM BEI TSUI MIC LAYOUT & SECTION

SCALE AS SHOWN (A3)

Appendix H-1

Plan of Proposed Ground Investigation Works



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)

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)

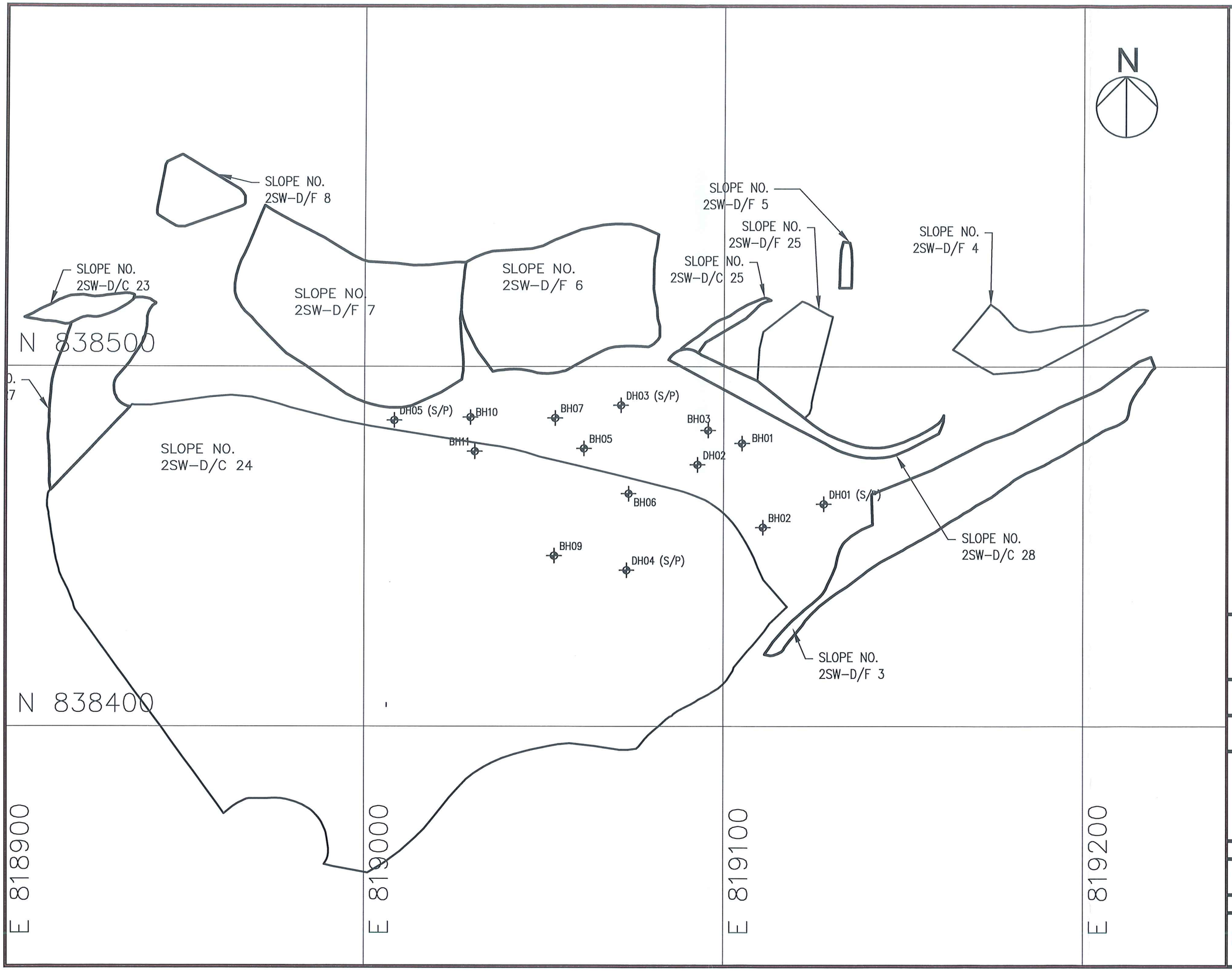
(REPORT NO.: J2105SF14/012935/GI/01)

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							
27/05/2024		Dry at 18:00									3.90					
28/05/2024		Dry at 08:00						(50/30mm 200/40mm) N=200/40 mm	4 5		4.00 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	6.30				IV	
				100	0	0				T2-101		+13.37	6.95			
							NI				7.20	+13.12	7.20		III	
			80	100	0	0				T2-101						6.95-7.20m: Moderately strong, moderately decomposed.
				100	0	0				T2-101	8.10					
				100	0	0	NA			T2-101					IV	
				100	0	0				T2-101	9.00					
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					
			80	100	12	12	NI		T2-101 15.15					
				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					
		15.11m at					15.2			+0.54	19.78			
							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	+0.22	20.10			19.78-20.10m: Moderately weak, highly decomposed. (Sandy fine to coarse GRAVEL with some cobble)
							NI		T2-101					
				100	0	0			21.10					
									T2-101					
				100	0	0	>20		22.00					
									T2-101					
				100	17	12			22.95				III	
							13.6		T2-101					
			80						23.90					
				100	17	0	>20		T2-101					
									25.10					
				100	15	9	NI		T2-101					
							14.3		26.30	-5.98	26.30			
				100	0	0	NA		T2-101				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	-7.18	27.50			
08/06/2024		15.00m at 08:00		91	20	14	NI		T2-101				III	
							6.7	(50/40mm 200/40mm) N=200/40 mm	6 28.50 28.56	-8.18	28.50			
			70							-9.68	30.00		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)

- 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) -9.68	Depth (m) 30.00	Legend	Grade	Description
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 NA	T2-101	33.10	-13.22	33.54		V	33.10-33.54m: Moderately strong, moderately decomposed brecciated and silicified GRANITE with cataclastic texture.
								(50/50mm 200/50mm) N=200/50 mm	9 34.40 34.50	-14.08	34.40			Extremely weak, pale brown (10YR 6/3), completely decomposed GRANITE. (Sandy fine to medium GRAVEL)
			70					(50/40mm 200/40mm) N=200/40 mm	10 36.40 36.48				V	
	37.10 HW									-16.78	37.10			
				100	67	56	NI 6.1	T2-101	37.10	-17.78	38.10		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.
							NA			-17.98	38.30		IV	38.10-38.30m: Moderately weak, highly decomposed. (Sandy clayey COBBLE with some coarse gravel)
			80	100	98	98	2.4	T2-101	38.30				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								-19.38	39.70			
12/06/2024		15.10m at		100	61	34	12.7	T2-101	39.70	-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		70					(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	T2-101 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						15.15	+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	+1.52	16.03			15.75-16.03m: Moderately weak, highly decomposed. (Sandy coarse GRAVEL with some cobble)
			80	87	6	0	5.9		16.25				III	
							NI		T2-101					
							NR			+0.20	17.35			
							NI		17.51	+0.04	17.51		V	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			
				100	0	0	>20		T2-101 21.29				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.
		15.20m at 18:00		100	22	0	15.4		T2-101 21.78					
06/05/2024							>20							
07/05/2024		14.70m at 08:00		100	72	52	8.0		T2-101 22.03					
			80	100	35	35			T2-101 22.40					20.70-23.70m: With cataclastic texture.
				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	(50/20mm 200/10mm) N=200/10 mm	14 23.70	-6.15	23.70			
08/05/2024									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.
				100	72	27	9.2		T2-101 26.20					
				100	30	0	>20		T2-101 26.80					24.50-31.50m: With cataclastic texture.
		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					19.4		T2-101 28.20					
10/05/2024				90	30	0	NI		T2-101 28.80					
11/05/2024		15.00m at 08:00		87	60	43	11.6		T2-101 29.23					
				100	0	0	>20		T2-101 29.94					
		15.00m at 18:00		100	94	34	13.4			-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	80	100	74	17	13.4		T2-101 30.64	-12.45	30.00		III	As Sheet 3 of 4.
		14.90m at 18:00		100	22	0			T2-101 31.10					
13/05/2024				100	30	0	>20		T2-101 31.40					
14/05/2024		15.20m at 08:00		100	15	0			T2-101 32.01	-13.95	31.50			
				96	85	51	6.9		T2-101 32.48					
				100	45	31			T2-101 33.72					
14/05/2024		15.20m at 18:00					>20							
16/05/2024		15.20m at 08:00		93	0	0			T2-101 34.15	-16.60	34.15			End of drillhole at 34.15m.
16/05/2024														

- 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. **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	+21.03	0.00			
									A		0.20	+20.78	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					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.
										T2-101	1.15					
				100	0	0				T2-101	2.10					
				100	0	0				T2-101	3.04					
			80	100	0	0	NI			T2-101	4.45				III	
				100	0	0				T2-101	5.30					
		Dry at 18:00		100	0	0				T2-101	5.80	+15.23	5.80			
04/06/2024 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					(50/50mm 200/70mm) N=200/70 mm	2		7.80 7.92				IV	
											8.45	+12.58 +12.49	8.45 8.55			
			80	100	0	0	NI			T2-101	9.55				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.
				100	17	0				T2-101		+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					
								(50/40mm 200/70mm) N=200/70 mm	3 12.12 12.23	+8.91	12.12			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							
			80	96	27	27	9.1		T2-101 14.08					
							15.6							
				95	9	0	NI		T2-101 15.20					
							>20							
				100	11	0	NI	(50/40mm 200/60mm) N=200/60 mm	T2-101 15.85 16.00					
									T2-101 16.60	+4.43	16.60			
			70						4 16.70	+3.98	17.05		IV	Weak, white (10YR 8/1), highly decomposed silicified GRANITE. (Fine to medium GRAVEL)
				98	83	0	14.1		17.05					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		T2-101 17.89	+3.14	17.89			
			80				12.3			+3.03	18.00		III	
				100	53	29	>20		T2-101 18.45					
							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			
12/06/2024		15.30m at 08:00	70							-0.10	21.13		IV	Weak, white (10YR 8/1), highly decomposed silicified GRANITE. (Fine to medium GRAVEL)
							>20		21.31					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.
				100	41	23	13.7		T2-101				III	
							NA		22.44	-1.27	22.30		IV	21.13-28.55m: With cataclastic texture.
				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)
									27.23					
							>20							
				100	48	10	15.4		T2-101				III	
		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										IV	Weak, white (10YR 8/1), highly decomposed silicified GRANITE. (Medium to coarse GRAVEL)
										-8.97	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 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) -8.97	Depth (m) 30.00	Legend	Grade	Description
13/06/2024		14.70m at 18:00												As Sheet 3 of 5.
14/06/2024		15.20m at 08:00	70					I (50/30mm 200/50mm) N=200/50 mm	7 ● 30.55 30.63				IV	
										31.76				
				100	40	24	10.9			-10.73	31.76			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.
							>20		T2-101					
14/06/2024		14.60m at 18:00					12.1							
15/06/2024		18.40m at 08:00	80											
				100	7	0	>20							
										33.20				
									T2-101					
										34.57				
				89	11	0	NI		T2-101					
								I (50/40mm 200/60mm) N=200/50 mm	8 ● 35.10 35.20	-14.07	35.10		III	
15/06/2024		14.90m at 18:00	70										IV	Weak, white (10YR 8/1), highly decomposed silicified GRANITE. (Medium to coarse GRAVEL)
17/06/2024		20.60m at 08:00								-14.77	35.80			
			80	100	0	0	NI			35.80			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.
									T2-101					
				100	59	59	13.6		T2-101	36.38				
								I (50/30mm 200/60mm) N=200/60 mm	9 ● 36.60 36.69	-15.57	36.60			35.80-36.60m: With cataclastic texture.
			70										IV	Weak, white (10YR 8/1), highly decomposed silicified GRANITE. (Medium to coarse GRAVEL)
								I (50/30mm 200/70mm) N=200/70 mm	10 ● 38.60 38.70				
										-18.23	39.26			
										39.26				
			80	100	100	85	4.3		T2-101	-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

MACHINE / No. MF-38

FLUSHING MEDIUM WATER

CO-ORDINATES
E 819 095.62
N 838 482.28

ORIENTATION Vertical

W.O. No. ASD 012935

DATE from 12/04/2024 to 20/06/2024

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 -19.40	40.00 40.43		III	and 20°-30°. 39.26-40.43m: With cataclastic texture.
								I (50/30mm 200/50mm) N=200/50 mm	11					39.26-39.53m: FAULT BRECCIA. Weak, white (10YR 8/1), highly decomposed silicified GRANITE. (Fine to medium GRAVEL)
17/06/2024 19/06/2024	43.67 HW	21.60m at 18:00 22.00m at 08:00	70					I (50/30mm 200/70mm) N=200/70 mm	12 42.43 42.53				IV	
									43.67	-22.64	43.67			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°.
				100	100	85	5.4		T2-101 44.97				III	
				100	100	98	9.1		T2-101 46.41					
			80	100	95	66	5.7		T2-101 47.69	-25.59	46.62			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.
19/06/2024		21.30m at 18:00		100	75	18	9.2 13.5		T2-101 48.81	-27.78	48.81		III	
														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 0.45	+23.68 +23.23	0.00 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)
																Wash boring.
11/04/2024	2.00 SW	Dry at 18:00														
25/04/2024	PW	Dry at 08:00						(50/10mm ↓ 200/30mm) N=200/30 mm	1		2.00 2.04	+21.68	2.00			Weak, light reddish brown (5YR 6/3), highly decomposed silicified GRANITE. (Fine to medium GRAVEL)
			70												IV	
	4.20 PW							(50/10mm ↓ 200/20mm) N=200/20 mm	2		4.00 4.03	+19.38	4.30			
	PW			71	0	0	NI			T2-101	4.30	+18.88	4.80		III	Moderately strong, light reddish brown, moderately decomposed brecciated and silicified GRANITE. Rock is non-intact and recovered as COBBLE with some coarse gravel.
							NR					+18.68	5.00		V	
				64	0	0	NI			T2-101	5.00	+17.98	5.70		III	4.30-9.00m: With cataclastic texture. 4.80-5.00m: No recovery, assumed to be completely decomposed GRANITE.
							NR					+17.58	6.10		V	
				45	0	0	NI			T2-101	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				NR								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			
		7.00m at 18:00		66	0	0	NI		T2-101	+5.93	17.75		III	Moderately strong, light reddish brown and white, moderately decomposed brecciated and silicified GRANITE. Rock is non-intact and recovered as cobble.
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.
													V	No sample retrieved, assumed to be completed decomposed GRANITE.
										+3.68	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 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
										+3.68	20.00			
								(50/20mm 200/20mm) N=200/20 mm	9 ● 20.07	+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			
				88	0	0	NI		21.32 T2-101 22.40				III	Moderately strong, light reddish moderately decomposed brecciated and silicified GRANITE. Rock is non-intact and recovered as cobble with some coarse gravel. 21.32-24.33m: With cataclastic texture.
				86	0	0			T2-101	+0.38	23.30			
							NR		23.45	+0.23	23.45		V	
				80	0	0	NI		T2-101				III	23.30-23.45m: No recovery, assumed to be completely decomposed GRANITE.
										-0.47	24.15			
							NR		24.33	-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					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		25.28 T2-101	-2.21	25.89			24.33-29.39m: With cataclastic texture.
				100	100	100	3.4		26.21 T2-101 27.13	-3.32	27.00		III	25.89-27.00m: FAULT BRECCIA.
				100	100	100			T2-101	-4.21	27.89			
				100	100	100	3.3		27.89 T2-101 28.48 T2-101					27.89-29.39m: FAULT BRECCIA.
30/04/2024		8.00m at 18:00		100	100	100			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)	Depth (m)	Legend	Grade	Description
26/04/2024	SW	Dry at									0.00	+22.90	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					White, angular COBBLE of silicified granite. (COLLUVIUM)
07/05/2024											1.00	+21.90	1.00			Wash boring.
08/05/2024		Dry at 08:00														
								(50/20mm ≤ 200/20mm) N=200/20 mm	1		2.00 2.03	+20.90	2.00			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					
		Dry at 18:00		95	0	0	>20				4.60	+18.30	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°.
08/05/2024										T2-101						
09/05/2024		Dry at 08:00		98	49	49	8.9				5.00					
										T2-101						
				95	6	0	>20				6.00				III	4.60-10.80m: With cataclastic texture.
										T2-101						
			70								7.00					
				98	0	0				T2-101						
							NA					+15.20	7.70			
												+14.90	8.00		IV	7.70-8.00m: Moderately weak, highly decomposed. (Sandy medium to coarse GRAVEL with some cobble)
											8.00					
							>20					+14.50	8.40		III	
				97	0	0				T2-101						
		Dry at 18:00					NA					+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			As Sheet 1 of 4.
			70	72	26	20	7.9		T2-101 10.00				III	
							>20			+12.32	10.58			
							NR			+12.10	10.80		V	
								(50/20mm 200/10mm) N=200/10 mm	3 10.80					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									+11.35	11.55			
	HW			88	0	0			11.55 T2-101					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		11.85 T2-101					11.55-18.90m: With cataclastic texture.
									12.90					
		Dry at 18:00		95	0	0	10.0		T2-101					
10/05/2024									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	+4.00	18.90			
									18.93				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)	Depth (m)	Legend	Grade	Description
										+2.90	20.00			As Sheet 2 of 4.
								(50/20mm 200/30mm) N=200/30 mm	5 20.90 20.95				IV	
								(50/10mm 200/20mm) N=200/20 mm	6 22.90 22.93					
14/05/2024	24.30 HW	Dry at 18:00								-1.40	24.30			
16/05/2024		Dry at 08:00		87	0	0	NI		24.30 T2-101 24.99					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.
				92	92	79	4.8		T2-101 26.03				III	24.30-30.14m: With cataclastic texture.
				85	7	0	NI		T2-101					
			80				5.6		27.09					
				78	0	0	NI		T2-101					
							NR		28.11	-4.99	27.89			
										-5.21	28.11		V	27.89-28.11m: No recovery, assumed to be completely decomposed GRANITE.
				97	56	48	NI		T2-101					
							6.5		29.12				III	
				93	27	12	NI		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
16/05/2024		Dry at 18:00	80	94	81	55	7.5 NI 8.6		T2-101 30.14 T2-101 31.15	-7.24 -8.25	30.14 31.15		III	(Sandy medium to coarse GRAVEL with some cobble) 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	+23.75	0.80			
10/04/2024		Dry at 08:00									0.80					Wash boring.
											2.00	+22.55	2.00			
			70					(6, 8, 10, 13, 18, 26) N=67	1							Very weak, light reddish brown (5YR 6/3), highly decomposed brecciated and silicified GRANITE. (Sandy fine to coarse GRAVEL)
									2		2.45				IV	
10/04/2024	4.20	1.50m at 18:00														
11/04/2024	SW	Dry at 08:00						(50/20mm 200/60mm) N=200/60 mm	3		4.00 4.08					
	PW										4.20	+20.35	4.20			
			80	56	0	0	NI			T2-101		+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.
							NR					+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					
											7.40	+17.15	7.40			
			80	43	0	0	NI			T2-101		+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					+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					Very weak, light reddish brown (5YR 6/3), highly decomposed brecciated and silicified GRANITE. (Fine to medium GRAVEL)
	HW		70									+14.55	10.00		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
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) +14.55	Depth (m) 10.00	Legend	Grade	Description
			70					(50/20mm 200/30mm) N=200/30 mm	7 ● 11.00 11.05				IV	As Sheet 1 of 4.
								(50/20mm 200/20mm) N=200/20 mm	8 ● 13.00 13.04					
	13.40 HW									+11.15	13.40			
				83	0	0			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.
				85	0	0	NI		T2-101					13.40-22.54m: With cataclastic texture.
							NR			+9.70	14.85		V	
										+9.55	15.00			
		3.50m at 18:00		75	0	0	NI		15.00 T2-101				III	14.85-15.00m: No recovery assumed to be completely decomposed GRANITE.
13/04/2024							NR			+8.65	15.90		V	
15/04/2024		Dry at 08:00								+8.35	16.20			15.90-16.20m: No recovery assumed to be completely decomposed GRANITE.
			80	98	0	0	NI		16.20 T2-101 17.52				III	
				57	0	0			T2-101	+6.58	17.97			17.97-18.31m: No recovery assumed to be completely decomposed GRANITE.
							NR			+6.24	18.31		V	
				88	0	0	NI		18.31 T2-101 19.33				III	
							NR			+5.34	19.21		V	19.21-19.33m: No recovery assumed to be completely decomposed GRANITE.
				70	0	0	NI		T2-101	+5.22	19.33		III	
										+4.55	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 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) +4.55	Depth (m) 20.00	Legend	Grade	Description
				70	0	0	NI NR		T2-101 20.55	+4.37 +4.00	20.18 20.55		III V	As Sheet 2 of 4. 20.18-20.55m: No recovery assumed to be completely decomposed GRANITE.
		6.00m at 18:00		62	16	16	NI NR		T2-101 21.36	+3.50 +3.19	21.05 21.36		III V	
15/04/2024														21.05-21.36m: No recovery assumed to be completely decomposed GRANITE.
16/04/2024		Dry at 08:00		100	0	0	>20		T2-101 21.96 T2-101 22.54	+2.01	22.54		III	
				100	0	0								
				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. 22.54-39.35m: With cataclastic texture.
				100	26	0			T2-101 24.16					
			80	100	27	8	>20		T2-101 25.66					
		5.00m at 18:00		100	37	26	6.7 NI		T2-101 26.48				III	
16/04/2024														
18/04/2024		22.50m at 08:00		100	37	0	>20		T2-101 27.98					
				100	28	28	NI >20		T2-101 29.36					
		7.00m at 18:00		100	61	61			T2-101 29.54					
18/04/2024														
19/04/2024		23.00m at 08:00		100	73	73	11.1		T2-101	-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					
			80	100	100	100	5.1		T2-101 34.68				III	
				100	100	100			T2-101 35.12					
		6.00m at 18:00		100	100	100			T2-101 35.62					
20/04/2024				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					
		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								+26.13	-3.05			
	PW			100	17	17	NI		3.05 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									T2-101					
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	+21.99	7.19			
01/06/2024								(50/55mm 200/34mm) N=200/34 mm	2 7.20 7.289					
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)
		Dry at 18:00							8.90	+20.28	8.90			
04/06/2024									T2-101					
05/06/2024		Dry at 08:00	80	91	0	0	NI		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	12.20 PW	Dry at 08:00	80	97	11	11	NI		T2-101 11.20 – 12.18	+17.98	11.20		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 12.20 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		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°.
							7.0							
							>20							15.57-17.83m: With cataclastic texture.
				100	12	12	8.3			+12.11	17.07			
							>20			+11.99	17.19			17.07-17.19m: Moderately weak, highly decomposed. (Sandy clayey COBBLE with some coarse gravel)
							NA		T2-101 16.80 – 17.83					
							NI							
			70					(50/45mm 200/26mm) N=200/26 mm	6 17.90 17.971	+11.35	17.83		IV	Weak, white (5YR 8/1), highly decomposed brecciated and silicified GRANITE. (Medium to coarse GRAVEL)
								(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					
									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	NI 7.7 NI 7.7 NI 12.5		T2-101				III	27.25-28.92m: With cataclastic texture.
		22.96m at 18:00		100	0	0	>20		T2-101 28.59 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			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)
23/03/2024									INSPECTION PIT A 0.45	+26.41	0.50			
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			
	4.10 SW		70					(50/20mm 200/40mm) N=200/40 mm	4.00 2 4.01	+22.81	4.10		IV	3.55-4.10m: Weak, highly decomposed. (Slightly silty sandy medium to coarse GRAVEL)
	PW								4.06 4.10					
			80	60	0	0	NI		T2-101	+22.06	4.85		III	
22/04/2024		Dry at 18:00					NR			+21.56	5.35		V	4.85-5.35m: No recovery assumed to be completely decomposed GRANITE.
23/04/2024		Dry at 08:00							5.35					
			80	87	0	0	NI		T2-101	+20.26	6.65		III	
							NR			+20.06	6.85		V	
									6.85					6.65-6.85m: No recovery assumed to be completely decomposed GRANITE.
			70					(5, 7, 9, 12, 15, 18) N=54	7.00 3 4 7.45				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
										+16.91	10.00			As Sheet 1 of 5.
			80	90	7	0	NI	(50/70mm 200/60mm) N=200/50 mm	T2-101 10.70 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					
24/04/2024			80				NI		13.60				III	
25/04/2024		Dry at 08:00		98	21	0			T2-101					
	14.50 PW								14.42 14.50	+12.49	14.42			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 16.50 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 18.50 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 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.
				91	0	0				+6.91	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 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 11				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				III	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 T2-101					24.96-28.66m: With cataclastic texture.
26/04/2024 27/04/2024		23.00m at 08:00	80						26.70					
		24.50m at 18:00		92	9	0	NI		T2-101					
27/04/2024 29/04/2024		23.80m at 08:00							27.68					
		24.00m at 18:00		97	36	23	>20		T2-101					
29/04/2024								(50/30mm 200/20mm) N=200/20 mm	28.66 13 28.70 28.75	-1.75	28.66			
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

MACHINE / No. ML-1

FLUSHING MEDIUM WATER

CO-ORDINATES
E 819 026.45
N 838 485.96

ORIENTATION Vertical

W.O. No. ASD 012935

DATE from 23/03/2024 to 09/05/2024

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°.
				100	11	0	NI		T2-101					
02/05/2024		24.55m at 18:00							35.23					34.03-39.24m: With cataclastic texture.
03/05/2024		24.59m at 08:00		96	18	0	>20		T2-101					
			80						36.20				III	
				100	8	0			T2-101					
									37.43					
		23.58m at 18:00		100	75	51	12.7		T2-101					
03/05/2024									38.34					
06/05/2024		24.50m at 08:00		100	29	16	>20		T2-101					
		24.23m at 18:00								-12.19	39.10		IV	
06/05/2024	39.35 HW		70				NA	(50/30mm 200/20mm) N=200/20 mm	16 39.24 39.30 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									0.00	+26.71	0.00			
26/04/2024									A		0.35	+26.31	0.40			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)
10/05/2024		Dry at 08:00									0.40					Wash boring.
			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									3.50	+23.21	3.50			
11/05/2024		Dry at 08:00	80	52	0	0	NI			T2-101		+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 PW		70												IV	Weak, very pale brown (10YR 7/3), highly decomposed brecciated and silicified GRANITE. (Slightly sandy fine to coarse GRAVEL)
								(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									7.50	+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			T2-101		+18.46	8.25			
							NI				8.45					7.50-8.25m: Moderately weak, highly decomposed. (Sandy silty fine to medium GRAVEL with some cobble)
			80	96	54	36	6.5			T2-101		+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)	Depth (m)	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			
	14.70 PW HW		70					(50/60mm 200/45mm) N=200/45 mm	5 14.70 14.805	+11.31	15.40		IV	Weak, yellowish brown (10YR 7/3), highly decomposed brecciated and silicified GRANITE. (Fine to medium GRAVEL)
16/05/2024		Dry at 18:00		95	0	0			T2-101 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.
17/05/2024		Dry at 08:00	80	88	0	0	NI		T2-101 16.19				III	15.40-17.24m: With cataclastic texture.
17/05/2024		Dry at 18:00		97	72	28	13.8		T2-101 16.85					
20/05/2024		Dry at 08:00						(50/60mm 200/45mm) N=200/45 mm	6 17.30 17.405	+9.47	17.24		IV	Weak, yellowish brown (10YR 7/3), highly decomposed brecciated and silicified GRANITE. (Fine to medium GRAVEL)
			70					(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
														As Sheet 2 of 4.
20/05/2024		21.05m at 18:00	70					(50/50mm 200/30mm) N=200/30 mm	8 21.30 21.38				IV	
21/05/2024		Dry at 08:00												
									21.73	+4.98	21.73			
			80	100	64	12	11.8		T2-101				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.
							>20							
		22.09m at 18:00		100	30	30	NI		22.70					21.73-23.27m: With cataclastic texture.
21/05/2024							5.9		T2-101 23.27					
22/05/2024		22.16m at 08:00						(50/40mm 200/25mm) N=200/25 mm	9 23.30 23.365	+3.44	23.27			
			70										IV	Weak, very pale brown (10YR 7/3), highly decomposed brecciated and silicified GRANITE. (Fine to medium GRAVEL)
								(50/35mm 200/22mm) N=200/22 mm	10 25.30 25.357					
									25.92	+0.79	25.92			
			80	96	41	9	NI		T2-101				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					11.8		27.32	-0.61	27.32			
22/05/2024								(50/55mm 200/26mm) N=200/26 mm	11 27.40 27.481					
23/05/2024		21.45m at 08:00												Weak, very pale brown (10YR 7/3), highly decomposed brecciated and silicified GRANITE. (Medium to coarse GRAVEL)
			70										IV	
								(50/53mm 200/25mm) N=200/25 mm	12 29.40 29.478					
										-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					
											6.90	+10.74	6.90			Moderately strong, light yellowish brown, moderately decomposed brecciated and silicified GRANITE. Rock is non-intact and recovered as cobble with some gravel.
		Dry at 18:00		67	0	0	NI			T2-101		+10.34	7.30		III	
15/04/2024							NR				7.50	+10.14	7.50		V	
16/04/2024		Dry at 08:00	80				NI					+10.04	7.60		III	
				17	13	13	NR			T2-101					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.
								(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.
			70													
							NI				9.00	+8.64 +8.54	9.00 9.10		III	Extremely weak, pinkish grey (5YR 7/2), dappled grey, completely decomposed GRANITE. (Stiff, slightly sandy SILT)
			80	11	0	0	NR			T2-101					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 13.98					11.80-21.77m: With cataclastic texture.
18/04/2024									T2-101					
19/04/2024	14.27	08:00 Dry		100	100	100	3.4		14.27					
19/04/2024	HW								T2-101					
20/04/2024		at 08:00 15.20m at 08:00 15.30m at 18:00		100	90	90	13.8		14.85					
									T2-101					
				100	100	100			15.45					
20/04/2024				100	100	100	8.8		T2-101 15.62					
20/04/2024		15.30m at 18:00	80						T2-101				III	
				100	42	25			16.57					
							>20		T2-101					
				100	63	0	13.9		17.13					
									T2-101					
				100	100	100			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		T2-101 20.57					As Sheet 2 of 3.
			80	100	100	83	6.0		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		Dry at 08:00									0.00	+20.54	0.00			
12/04/2024	0.50 HW								A	INSPECTION PIT	0.45	+20.04	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)
17/06/2024		Dry at 08:00		100	0	0					0.50					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.
				100	0	0			T2-101		1.30					
				100	0	0			T2-101		2.20					0.50-20.40m: With cataclastic texture.
				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				III	
				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										+10.54	10.00			
19/06/2024		Dry at 08:00		100	0	0			T2-101							

- 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
19/06/2024		Dry at 18:00		100	0	0			T2-101 10.30					As Sheet 1 of 6.
20/06/2024		Dry at 08:00		100	0	0			T2-101 11.20					
				100	0	0			T2-101 12.10					
				100	0	0			T2-101 13.00					
				100	0	0	NI		T2-101 13.90					
				100	0	0			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		21.10					
				100	68	63			T2-101					
									22.60					
21/06/2024		19.80m at 18:00		91	86	32	6.5		T2-101					
22/06/2024		19.70m at 08:00							23.75					
				100	86	21			T2-101					
									24.65					
			80	100	93	93	3.0		T2-101				III	
				98	74	67			25.40					
							NI		T2-101					
									26.30					
				100	27	14	11.6		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) -9.46	Depth (m) 30.00	Legend	Grade	Description
				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	-14.58	35.12		IV	34.10-35.12m: Weak, highly decomposed. (Sandy silty fine to coarse GRAVEL with some cobble)
24/06/2024							NI			-14.86	35.40		III	35.12-35.40m: QUARTZ VEIN.
25/06/2024		19.70m at 08:00		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		IV	
25/06/2024										-19.24	39.78		III	39.52-39.78m: Weak, highly decomposed. (Sandy
										-19.46	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
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.
										T2-101	4.50				III	
			80	82	0	0	NI									
				86	0	0				T2-101	5.60					
		Dry at 18:00										+16.90	6.55			
07/05/2024							NR				6.70	+16.75	6.70		V	
08/05/2024		Dry at 08:00		86	0	0	NI			T2-101					III	6.55-6.70m: No recovery, assumed to be completely decomposed GRANITE.
							NR					+15.80	7.65			
								(50/30mm 200/50mm) N=200/50 mm			7.80	+15.65	7.80		V	7.65-7.80m: No recovery, assumed to be completely decomposed GRANITE.
									1		8.00 8.08					Weak, white (5YR 8/1), highly decomposed brecciated and silicified GRANITE. (Medium to coarse GRAVEL with occasional cobble)
				0					2		8.90				IV	
	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				16.10	+7.50 +7.35	15.95 16.10		V	
09/05/2024		Dry at 08:00		96	10	0	NI			T2-101	17.10					15.95-16.10m: No recovery, assumed to be completely decomposed GRANITE.
				100	37	37	10.0			T2-101	18.25				III	
				96	0	0	NI			T2-101	19.00					
				100	49	41	12.0			T2-101	19.85					
				93	0	0	NA			T2-101		+3.45	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
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) +3.45	Depth (m) 20.00	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		83	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 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
- 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 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 30.30					As Sheet 3 of 5.
							NI							
				100	82	43	15.4		T2-101					
							4.8		31.80				III	
				96	11	0	15.6		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					
							6.3		T2-101					
13/05/2024		21.40m at 18:00							34.56				III	
14/05/2024		21.20m at 08:00	80				15.6		T2-101					
				100	77	24	5.3							
							14.3							
							NA		36.05	-12.46	35.91		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	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
							NA			-16.55	40.00			
		21.00m at 18:00		96	34	0	15.6		T2-101	-16.83	40.28		IV	39.71-40.28m: Moderately weak, highly decomposed. (Sandy medium to coarse GRAVEL with some cobble)
14/05/2024									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					
							>20		42.22					
				98	15	0			T2-101					
									43.60					
			80				12.4		T2-101				III	
				100	77	29			45.10					
							>20		T2-101					
				100	89	43	9.6		46.60					
		21.00m at 18:00					14.3		T2-101					
16/05/2024				100	95	39	7.4		47.58					
17/05/2024		21.00m at 08:00												
							2.7		T2-101					
				100	97	92								
		21.20m at 18:00					8.0		49.08	-25.63	49.08			
17/05/2024														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									0.20-10.50m: With cataclastic texture.
									T2-101		2.05				III	
				93	19	0	NI									
									T2-101		3.05					
				85	0	0										
												+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							
			80								5.05				III	
							8.8									
		2.00m at 18:00		96	57	44			T2-101			+19.25	5.62			
20/05/2024							NA								IV	5.62-6.05m: Moderately weak, highly decomposed. (Sandy medium to coarse GRAVEL with some cobble)
21/05/2024		Dry at 08:00										+18.82	6.05			
							>20				6.05					
				95	55	0			T2-101							
							10.9								III	
				86	39	23	4.0				7.10					
							NI		T2-101							
							NR					+16.82	8.05			
											8.20	+16.67	8.20		V	8.05-8.20m: No recovery assumed to be completely decomposed GRANITE.
				88	0	0										
							NI		T2-101							
											9.29				III	
				86	15	15			T2-101							
												+14.87	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
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
		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	11.40 PW HW	Dry at 08:00		0					11.40					Weak, yellowish brown (10YR 5/4) dappled white, highly decomposed silicified GRANITE. (Coarse GRAVEL with occasional cobble)
			70					(50/20mm 200/20mm) N=200/20 mm	2 3 12.40 12.50 12.54				IV	
				0					13.40					
								(50/10mm 200/10mm) N=200/10 mm	4 5 14.40 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		96	96	81	6.5		15.79 T2-101				III	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.
									16.79	+8.00	16.87			
				100	16	0	NA		T2-101	+7.80	17.07		IV	15.79-19.40m: With cataclastic texture.
			80				NI		17.29				III	16.87-17.07m: Moderately weak, highly decomposed. (Sandy medium to coarse GRAVEL with some cobble)
							3.4							
				92	21	21	>20		T2-101	+6.64	18.23			
							NA			+6.27	18.60		IV	18.23-18.60m: Moderately weak, highly decomposed. (Sandy medium to coarse GRAVEL with some cobble)
							NI		18.70				III	
				79	0	0			T2-101	+5.62	19.25			
							NR	(50/10mm 200/10mm) N=200/10 mm	7 19.40 19.42	+5.47	19.40		V	19.25-19.40m: No recovery assumed to be completely decomposed GRANITE.
			70							+4.87	20.00		IV	Weak, very pale brown (10YR 7/3), highly

- 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 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			

- 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 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
- 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 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	CO-ORDINATES E 819 008.37 N 838 485.07	W.O. No. ASD 012935
MACHINE / No. ML-1		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
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							B		0.50 / 0.75	+26.55	0.80			Firm, dark yellowish brown (10YR 4/4), sandy SILT with some angular fine to coarse gravel of quartz fragments and rootlets. (FILL) / (COLLUVIUM)
			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 / 2		2.45					Medium dense, greyish brown (10YR 5/2), dappled black, silty fine SAND with some quartz and decayed wood fragments. (COLLUVIUM)
08/04/2024	3.00 SW	Dry at 18:00							3		2.90	+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		T2-101						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			
			80								4.30	+23.05	4.30		V	3.00-4.30m: With cataclastic texture.
				68	8	0	NI		T2-101						III	4.10-4.30m: No recovery assumed to be completely decomposed GRANITE.
									T2-101		5.10					
				89	6	0										
09/04/2024		Dry at 18:00							T2-101		6.00	+21.35	6.00			
10/04/2024		Dry at 08:00						(50/50mm 200/40mm) N=200/40 mm	4		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		7.90	+19.35	8.00			
									6		8.00	+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		T2-101		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.
											8.15	+18.00	9.35			
							NR					+17.67	9.68		V	8.15-14.00m: With cataclastic texture.
				71	0	0	NI		T2-101		9.68				III	9.35-9.68m: No recovery assumed to be completely
												+17.35	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 17/04/2024

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					NI						III	
				63	0	0			T2-101	+15.79	11.56			
							NR						V	11.56-12.00m: No recovery assumed to be completely decomposed GRANITE.
			80						12.00	+15.35	12.00			
				71	0	0	NI		T2-101				III	
										+14.50	12.85			
	13.20 PW						NR		13.20	+14.15	13.20		V	12.85-13.20m: No recovery assumed to be completely decomposed GRANITE.
	HW						NI						III	
				62	0	0			T2-101	+13.65	13.70			
							NR						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	+13.35	14.00			Weak, very pale brown (10YR 8/2), highly decomposed brecciated and silicified GRANITE. (Slightly sandy fine to coarse GRAVEL)
				0					14.90	+12.45	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 9 16.125	+11.35	16.00			
12/04/2024		Dry at 08:00												
			70						16.90	+10.45	16.90		IV	16.90-18.00m: With much cobble.
				0										
								(50/40mm 200/30mm) N=200/30 mm	10 17.90 18.00 11 18.07	+9.35	18.00			
									18.90	+8.45	18.90			18.90-20.00m: With much cobble.
				0										
								(50/35mm	12 19.90	+7.35	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 17/04/2024

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					1 200/30mm) N=200/30 mm	18 30.00 30.005 30.055	-2.65	30.00		IV	As Sheet 2 of 4.
15/04/2024		25.00m at 08:00		87	19	19	NI	(50/20mm 1 200/30mm) N=200/30 mm	19 32.00 32.05	-4.70	32.05			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.
							6.7		T2-101					
				87	0	0			32.85				III	32.05-36.07m: With cataclastic texture.
							NI		T2-101					
			80						33.94					
				78	0	0			T2-101					
		25.00m at 18:00								-7.54	34.89			
15/04/2024							NR			-7.84	35.19		V	34.89-35.19m: No recovery assumed to be completely decomposed GRANITE.
16/04/2024		25.10m at 08:00		91	13	13	NI		T2-101				III	
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

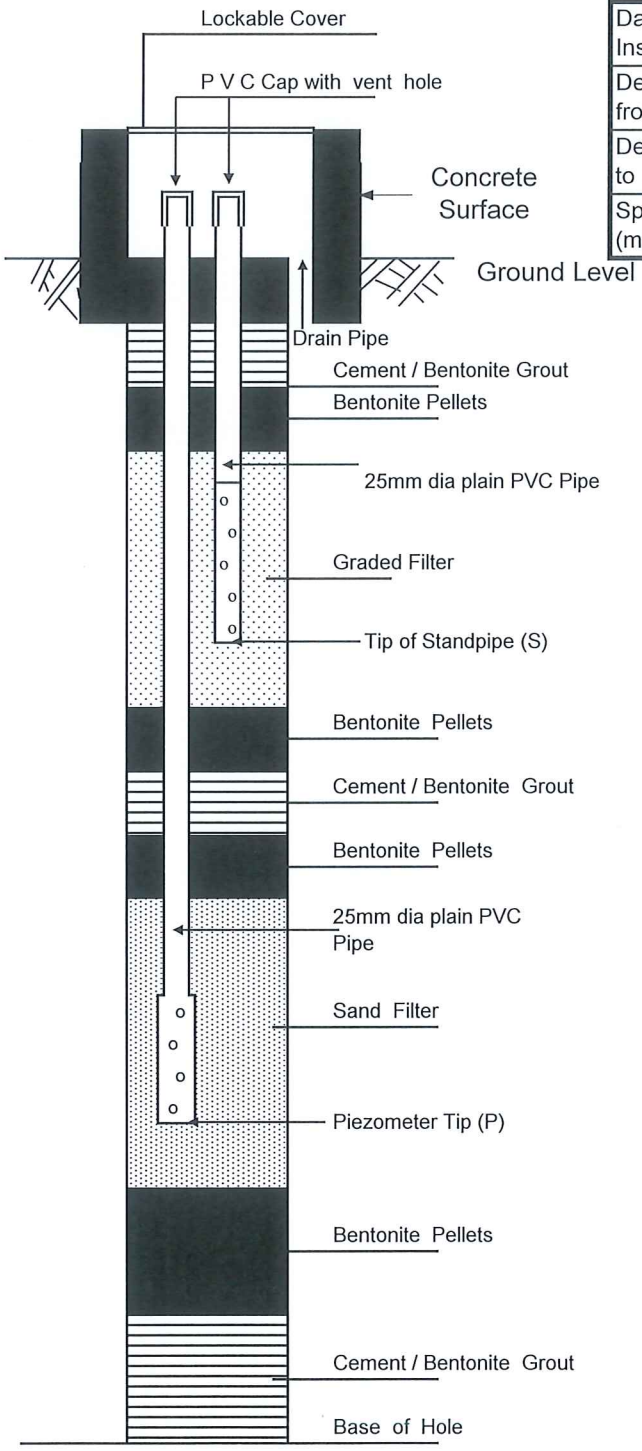
STANDPIPE

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

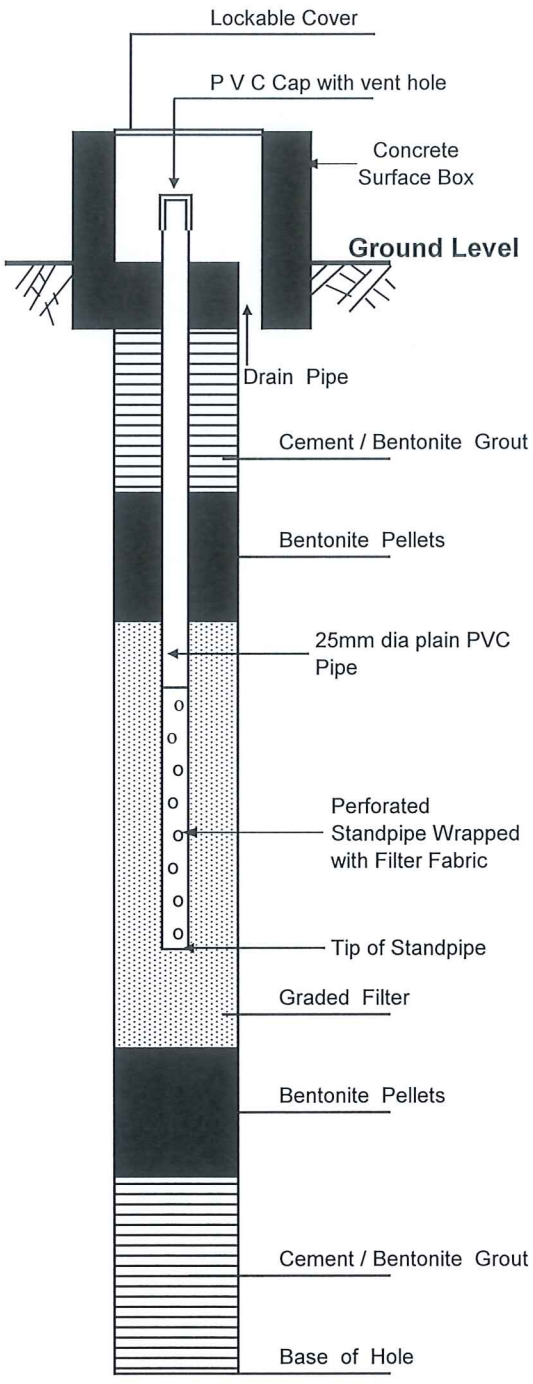
		Hole No. :	DH03 (S/P)
		Standpipe ID. :	S
		Date installed :	21/5/2024
Contract No. : TC K510	Works Order No. : ASD 012935	Supervised by :	Janson Zhang
Project : PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen 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

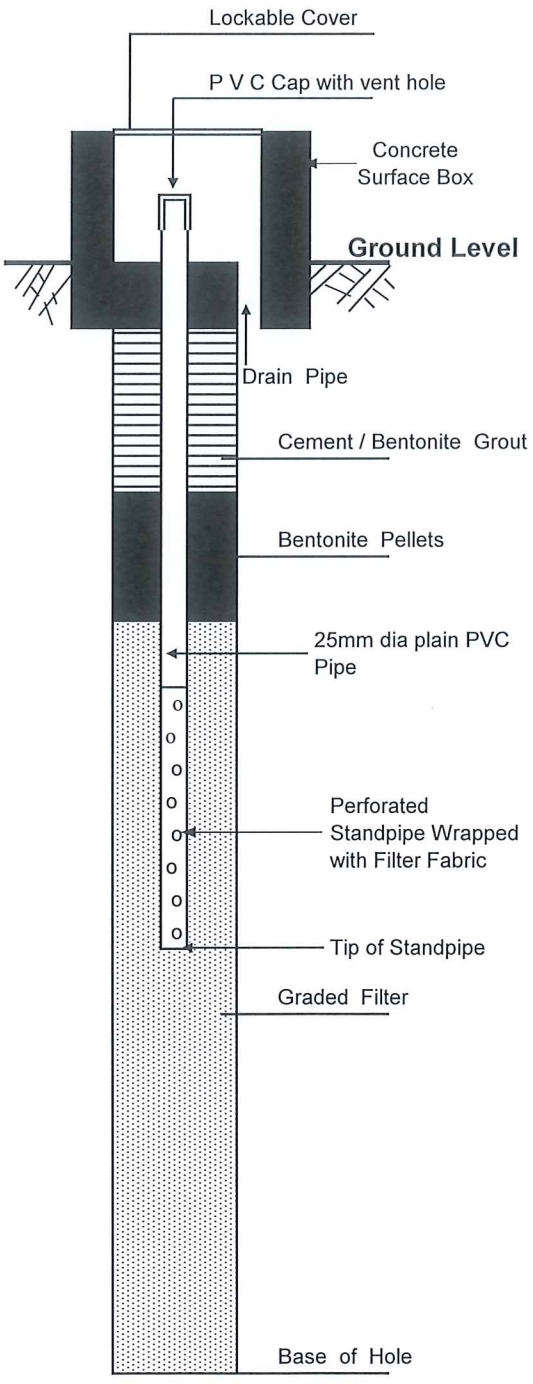
		Hole No. :	DH04 (S/P)
		Standpipe ID. :	S
		Date installed :	27/5/2024
Contract No. : TC K510	Works Order No. : ASD 012935	Supervised by :	Janson Zhang
Project : PWP Item No. 743ZX - Guangdong-Hong Kong-Macao Greater Bay Area (GBA) Air Quality Laboratory and Meteorological Monitoring Supersite, Yuen 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



(Not to Scale)

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

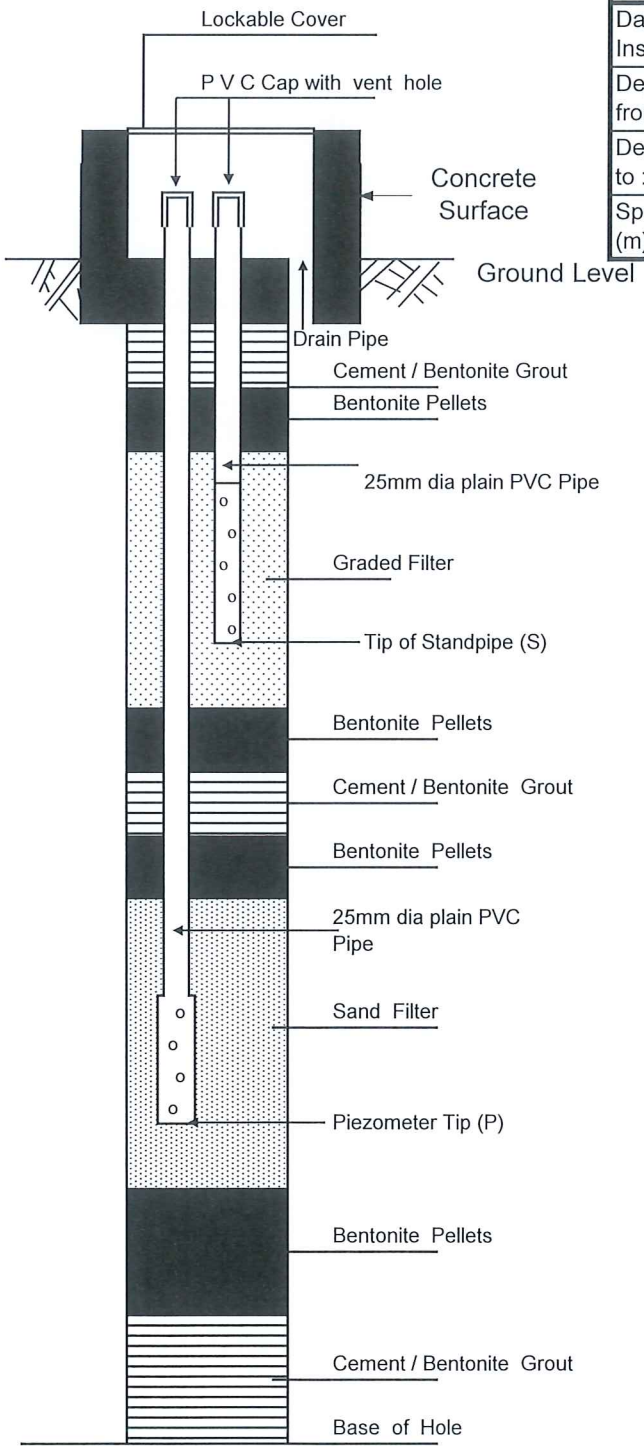
STANDPIPE

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



(Not to Scale)

BUCKETS (IF ANY)	
Date Installed :	NA
Depth (m) from :	NA
Depth (m) to :	NA
Spacing (m) :	NA

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

Checked by: Lau Kam Yin (Supervisor)

Approved signatory: Yeung Chi San (Manager)

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 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		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**

Form No.:SRRP 000-2/Issue 2/Rev. C/01/11/2007

Checked by: Lau Kam Yin (Supervisor)

Approved signatory: Yeung Chi San (Manager)

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

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)

Form No.:CHRP(SR)003/Issue 2/Rev. B/01/11/2007

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 Electro-chemical Test Results on Soils

Report No.:	24SR060809
Page:	4 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			
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

Checked by: Lau Kam Yin (Supervisor) Approved signatory: Yeung Chi San (Manager)

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 Rock Testing

Report No.: 24SR060809
Page: 5 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.			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	12.83	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/m^3	-	-	-	-	-
Dry density		Mg/m^3	-	-	-	-	-
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

Checked by: Lau Kam Yin (Supervisor)

Approved Signatory: Yeung Chi San (Manager)

Form No.:SRRP 000-3/Issue 2/Rev. C/01/11/2007

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.:	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	%	#	-	-	-	-
Atterberg limits: Plastic limit	%	-	-	-	-	-
Atterberg limits: Plasticity index		-	-	-	-	-
Atterberg limits: Liquidity index		-	-	-	-	-
Atterberg limits: Passing 425 μm sieve	%	-	-	-	-	-
Particle Size: Cobble	%	0	-	-	-	-
Particle Size: Gravel	%	26	-	-	-	-
Particle Size: Sand	%	65	-	-	-	-
Particle Size: Silt	%	9#	-	-	-	-
Particle Size: Clay	%		-	-	-	-
Compaction: Optimum M.C.	%	-	-	-	-	-
Compaction: Max. dry density	Mg/m³	-	-	-	-	-
Field density: Wet density	Mg/m³	-	-	-	-	-
Field density: Dry density	Mg/m³	-	-	-	-	-
Field density: Relative dry density	%	-	-	-	-	-
Lab vane shear: Peak	kPa	-	-	-	-	-
Lab vane shear: 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

Checked by: Lau Kam Yin (Supervisor)

Approved signatory: Yeung Chi San (Manager)

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 Consolidation and Shear Strength Tests

Report No.:	24SR062718
Page:	2 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	-	-	-	-
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	-	-	-	-
		Specimen/Stage 2	s'	kPa	324.7	-	-	-	-
			t	kPa	215.6	-	-	-	-
		Specimen/Stage 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	-	-	-	-	-
		Specimen/Stage 2	s_u	kPa	-	-	-	-	-
			t_u	kPa	-	-	-	-	-
		Specimen/Stage 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**

Form No.:SRRP 000-2/Issue 2/Rev. C/01/11/2007

Checked by: Lau Kam Yin (Supervisor)

Approved signatory: Yeung Chi San (Manager)

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 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

Checked by: Lau Kam Yin (Supervisor) Approved signatory: Yeung Chi San (Manager)

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 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/m^3	-	-	-	-	-
Dry density			Mg/m^3	-	-	-	-	-
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

Checked by: Lau Kam Yin (Supervisor)

Approved Signatory: Yeung Chi San (Manager)

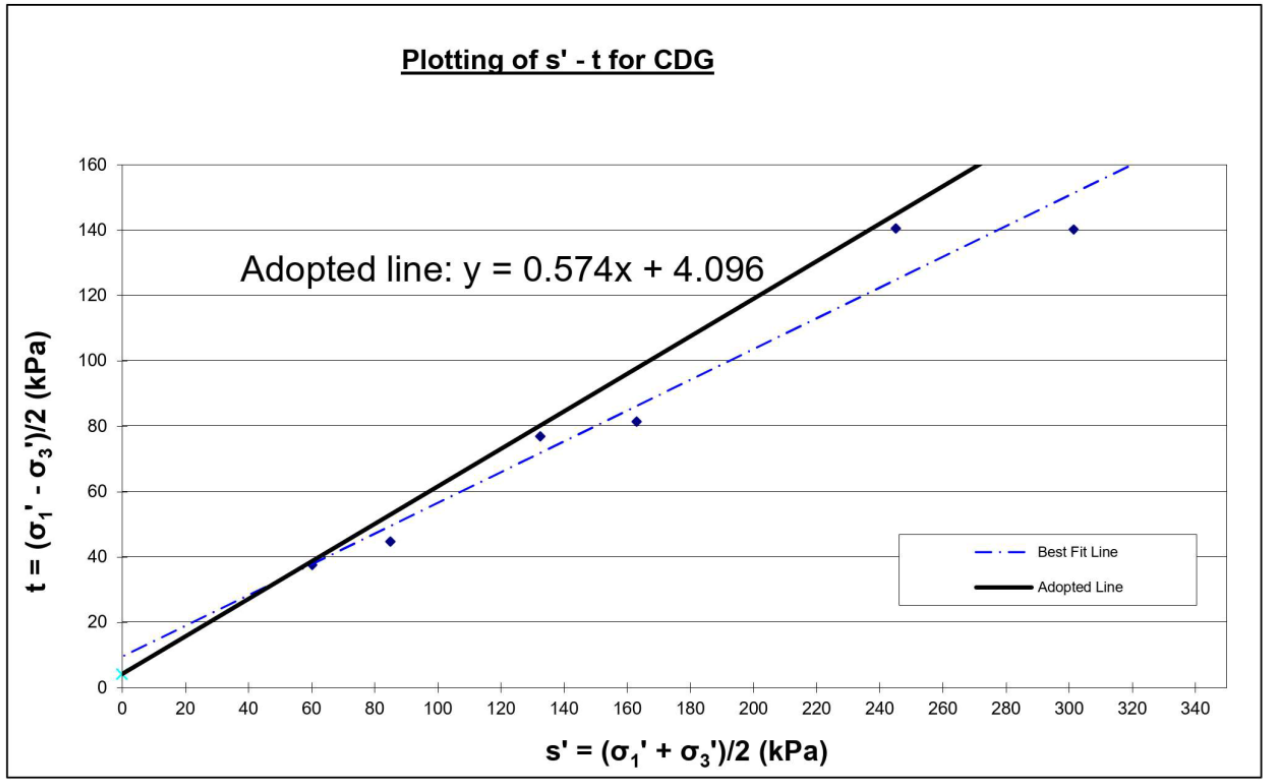
Appendix H-4

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

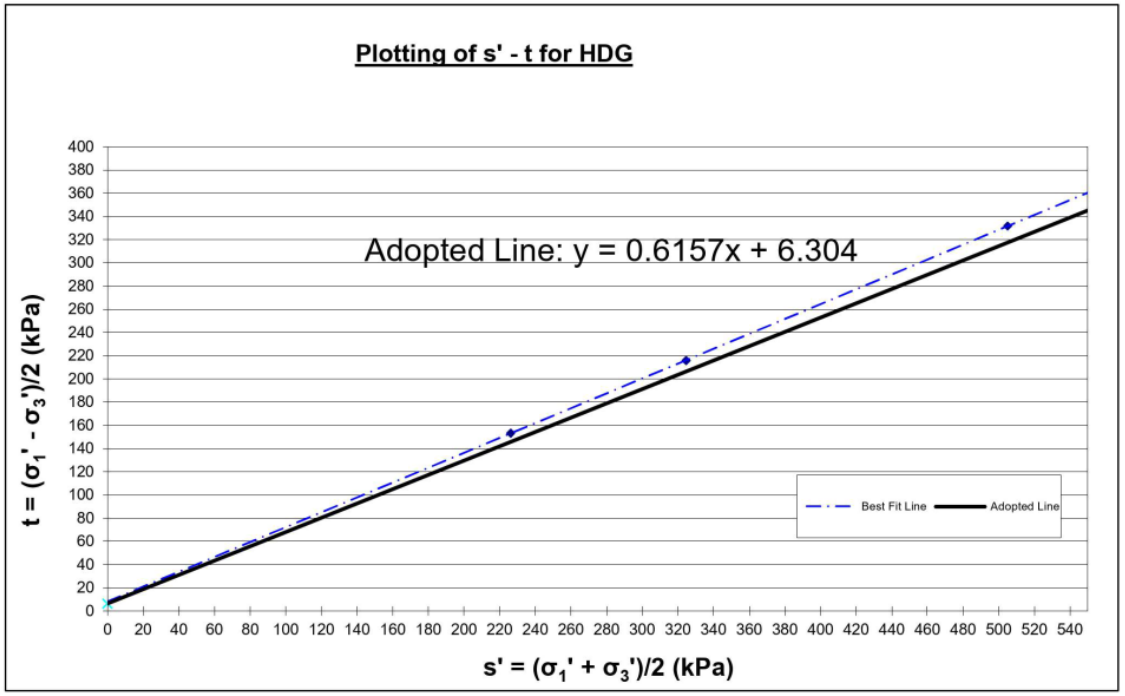
y = 0.574x + 4.096

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

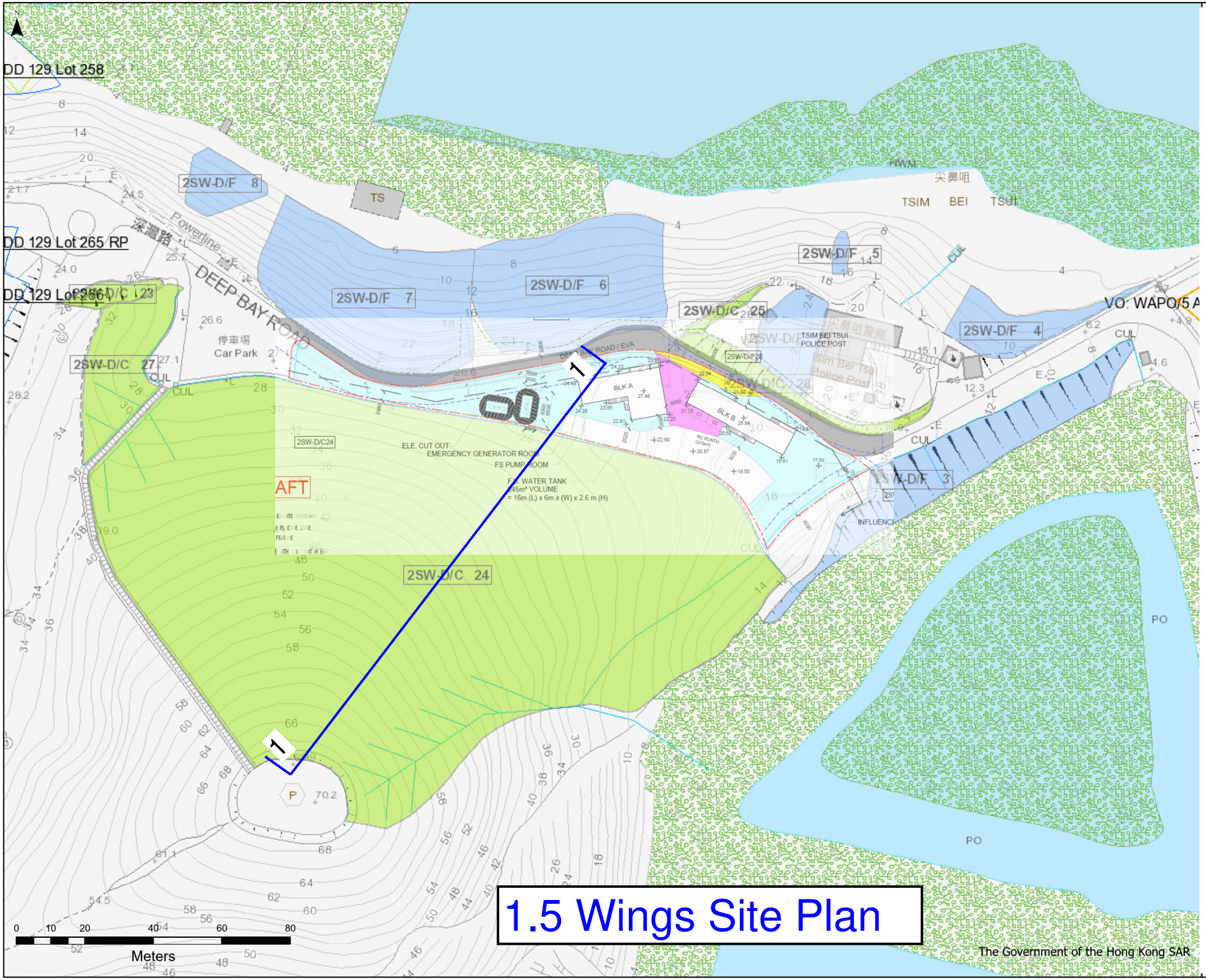
y = 0.6157x + 6.304

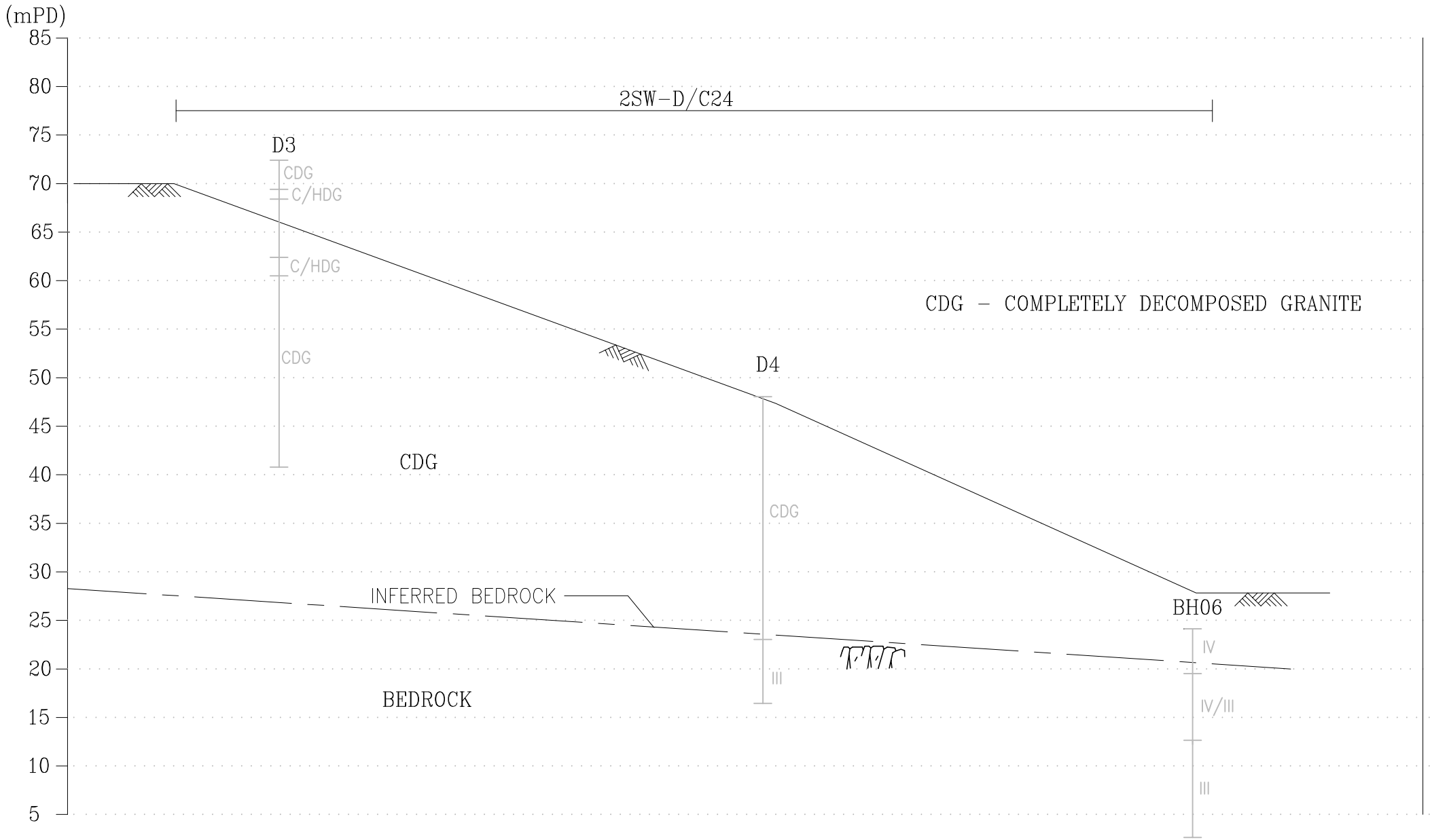
Hence,
ϕ' = arcsin(0.6157)
= **38.0°**
And, c' = 6.304/cos38°
= **8 kPa**

Appendix I

Slope Stability Analysis

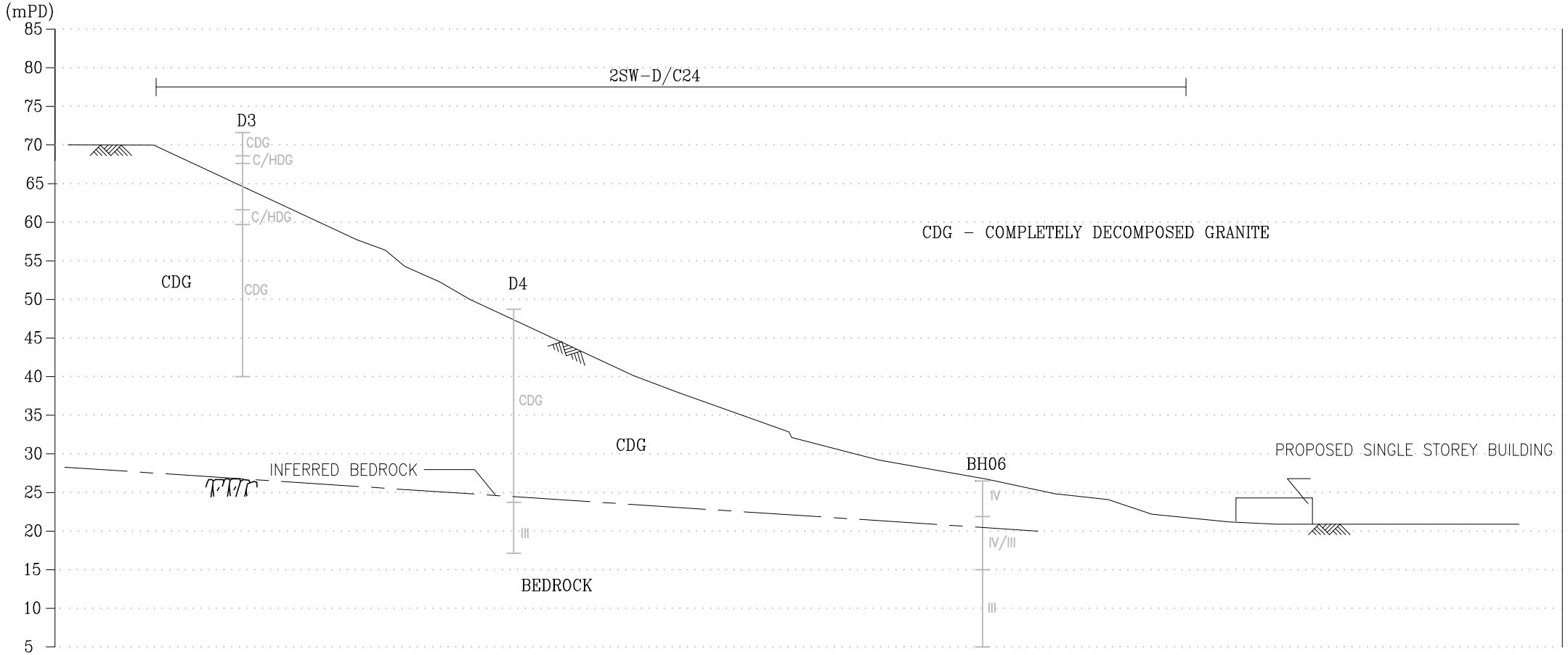

DD 129 Lot 258
DD 129 Lot 265 RP
DD 129 Lot 266
DEEP BAY ROAD
深灣路
Powerline
停車場
Car Park
2SW-D/F 8
2SW-D/F 7
2SW-D/F 6
2SW-D/F 5
2SW-D/F 4
2SW-D/F 3
2SW-D/C 27
2SW-D/C 25
2SW-D/C 24
2SW-D/C 28
2SW-D/C23
2SW-D/C24
TS
TSIM BEI TSUI
尖鼻咀
TSIM BEI TSUI POLICE POST
ELE. CUT OUT
EMERGENCY GENERATOR ROOM
FS PUMP ROOM
W. WATER TANK
245m³ VOLUME
= 16m (L) x 6m x (W) x 2.6 m (H)
BLK A
BLK B
ROAD / EVA
INFLUE
PO
P
AFT
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
DEEP BAY ROAD
深灣路
Powerline
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
2SW-D/C 28
TS
停車場
Car Park
TSIM BEI TSUI POLICE POST
Tsim Bei Tsui Police Post
尖鼻咀
TSIM BEI TSUI
VO: WAPO/5 A
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
P
CUL
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



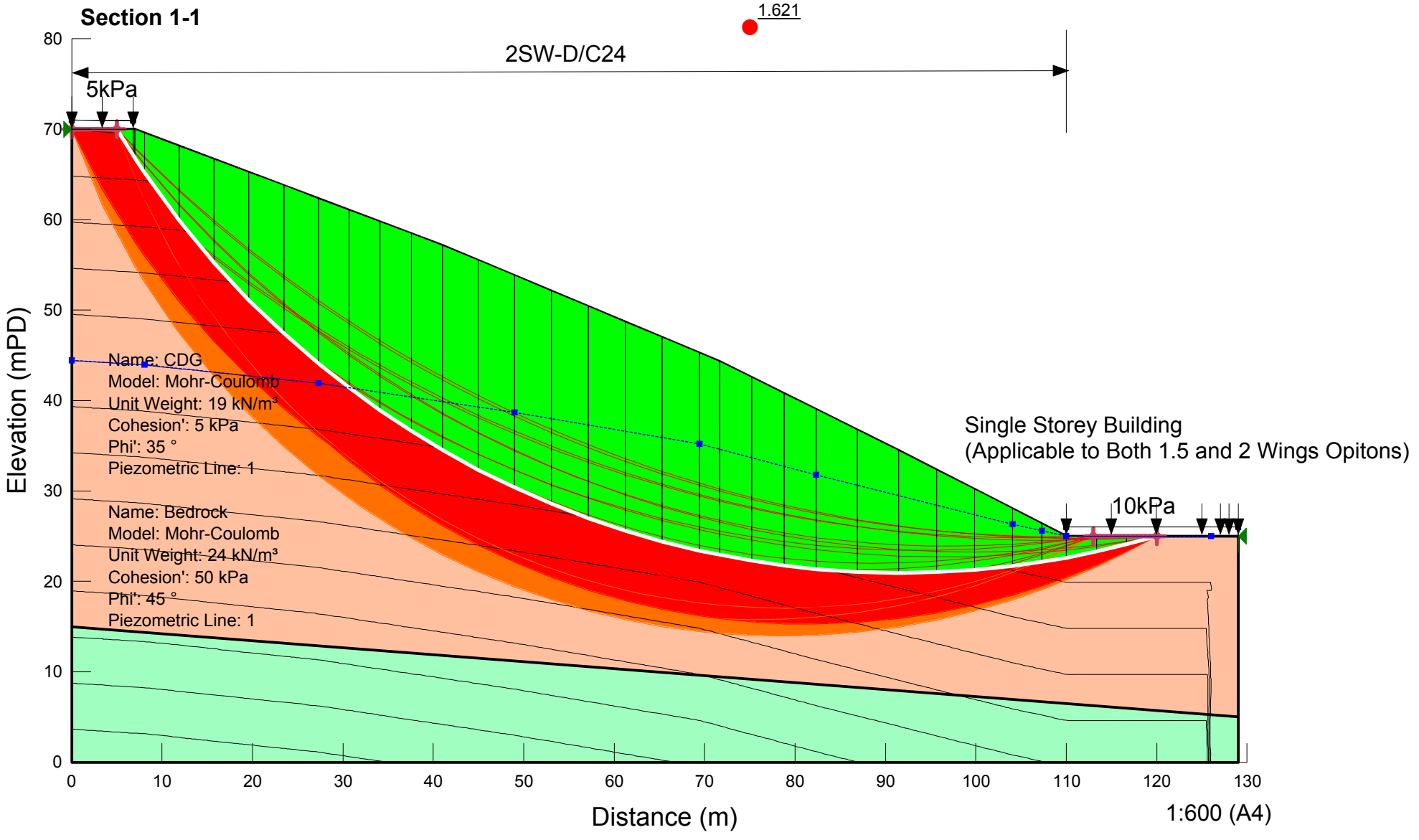
GEOLOGICAL SECTION 2-2

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

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

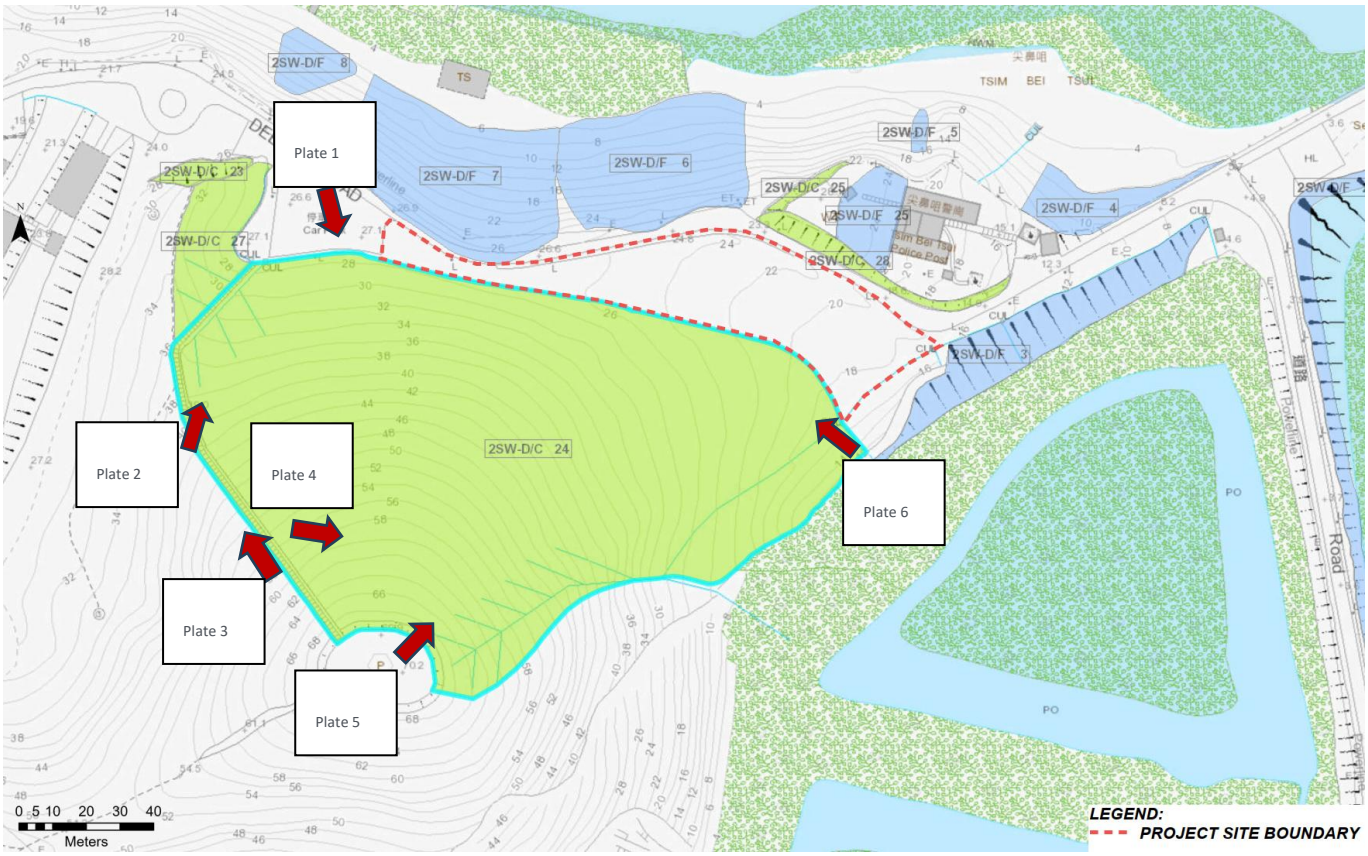
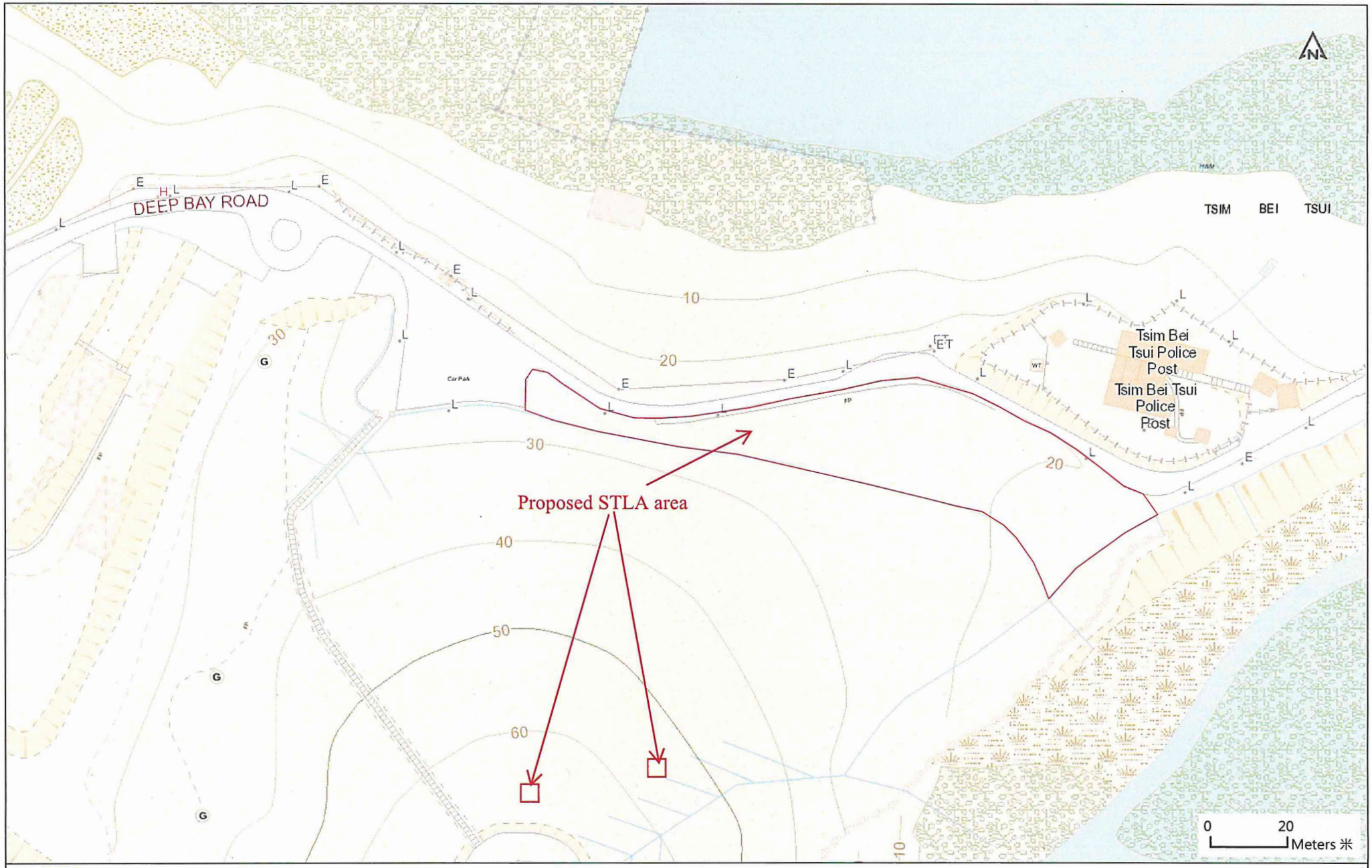


Plate 1
Plate 2
Plate 3
Plate 4
Plate 5
Plate 6
2SW-D/C 24
2SW-D/F 8
2SW-D/F 7
2SW-D/F 6
2SW-D/F 5
2SW-D/F 4
2SW-D/F 3
2SW-D/C 23
2SW-D/C 27
2SW-D/C 25
2SW-D/F 25
2SW-D/C 28
0 5 10 20 30 40
Meters
LEGEND:
PROJECT SITE BOUNDARY

Photo Plan

Appendix K

Trial Pit Records for Geological Review and Verification



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**

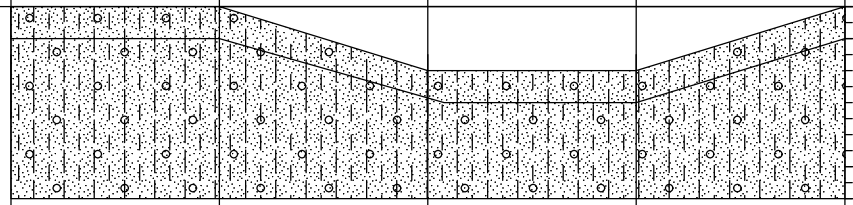
CHECKED BY: **H K HCENG**
DATE : **16/10/2025**

CO-ORDINATES :
E **818976.89**
N **838402.47**

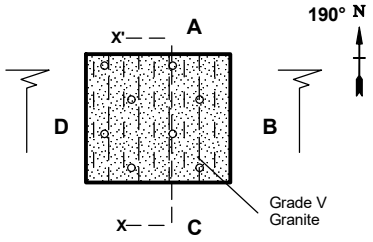
GROUND LEVEL :
+66.80 m.P.D.
EXCAVATION DATE :
09/10/2025 to **09/10/2025**
BACKFILL DATE :
to

TRIAL PIT NO. :
TP1

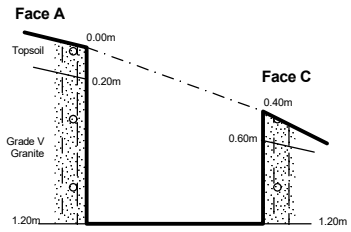
TRIAL PIT RECORD

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)
	1 – 1.20		1 – 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)
	2		2			End of trial pit at 1.00m (Averrage)
	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: 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**

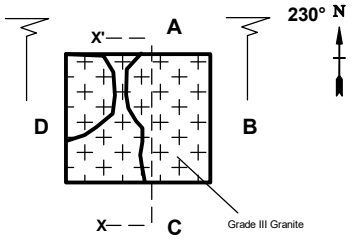
GROUND LEVEL :
+56.10 m.P.D.
EXCAVATION DATE :
09/10/2025 to **09/10/2025**
BACKFILL DATE :
to

TRIAL PIT NO. :
TP2

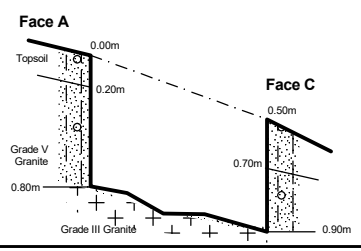
TRIAL PIT RECORD

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