S16 PLANNING APPLICATION
APPROVED MID-LEVELS EAST OZP No. S/H12/14

Proposed Access (Inclined Lift) for the Existing Residential Development in "Green Belt" and "Residential (Group C) 1" Zones at No. 17 Bowen Road, Mid-Levels, Hong Kong

SUPPORTING PLANNING STATEMENT

February 2026

Applicant:
Sydney Fung & Son Limited

Consultancy Team:
KTA Planning Ltd.
Fruit Design & Build Limited
Landes Limited
Green Engineering Consultant Company Limited

PLANNING LIMITED
規劃顧問有限公司

Executive Summary

This Supporting Planning Statement is prepared on behalf of Sydney Fung & Son Limited ("the "Applicant") to seek approval from the Town Planning Board ("TPB") under Section 16 of the Town Planning Ordinance for Proposed Access (Inclined Lift) for the existing residential development at No. 17 Bowen Road, Mid-Levels, Hong Kong (the "Site"). The Proposed Access occupies a site area of about 89.6m^2, falling within an area partly zoned "Green Belt" ("GB") and "Residential (Group C) 1" Zones ("R(C)1") on the Approved Mid-Levels East Outline Zoning Plan (the "Approved OZP") No. S/H12/14.

The Proposed Access involves installation of an inclined lift (about of 32m in length) and the associated works area. This is to provide a safe and convenient access next to the existing Right of Way to the existing permitted residential development at IL 2460, namely Caronia. The proposed inclined lift is small in size and minimal in scale, featuring a compact design with a dimension of approx. 2.2m in height and 1.5m in width. Sensitive design measures, such as non-reflective surface and natural colour scheme, will be incorporated to minimise potential visual and physical impact to the surrounding environment.

The Proposed Access is fully justified based on the following main reasons:

- The Proposed Access is small in size and minimal in scale;
- The Proposed Access is compatible with surrounding environment;
- The Proposal will not adversely affect public amenity and declared monument;
- There will be no adverse visual impact;
- There will be no adverse landscape impact;
- The Proposal is in line with Town Planning Board Guidelines for Application for Development within Green Belt Zone;
- The Proposed Access will enhance accessibility;
- The Proposal has incorporated various adjustments to address TPB's previous concerns;
- Approval of the Planning Application would be consistent with TPB's previous decisions on similar applications; and

In light of justifications given throughout the Supporting Planning Statement, we sincerely request the TPB to give favourable consideration to this Planning Application.

行政摘要

（內文如有差異，應以英文版本為準）

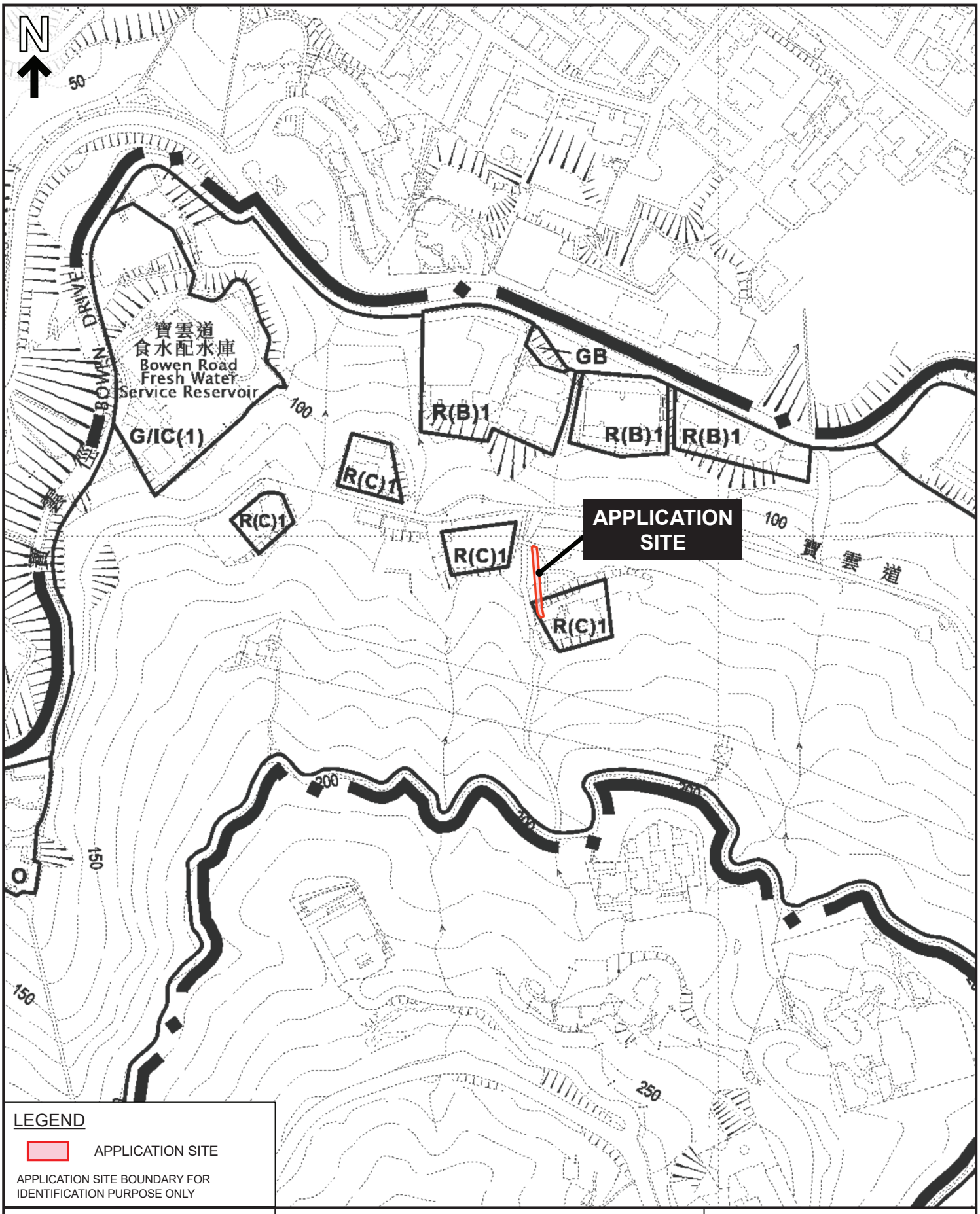
本規劃申請書是代表申請人Sydney Fung & Son Limited（下稱「申請人」）根據城市規劃條例第 16 條，向城市規劃委員會（下稱「城規會」），就擬議通路(斜道升降機)提出規劃申請。申請地點位於半山區寶雲道 17 號（下稱「申請地點」）並位於半山區東部分區計劃大綱核准圖（下稱「核准圖」）編號 S/H12/14 的「綠化地帶」及「住宅(丙類)」地帶內。申請地點的面積將約 89.6 平方米。

擬議方案僅涉及安裝一條約 32 米長的斜道升降機及相關施工區域，旨在為位於內地段 2460 號的現有住宅「Caronia」提供必要的無障礙通道。擬議斜道升降機體積小，規模輕微，並採用緊湊設計，尺寸約為 2.2 米高及 1.5 米寬。為減低對周邊環境的潛在視覺及實質影響，擬議斜道升降機將採用敏感的設計措施，包括非反光表面及自然色調配色。

擬議通路有充份理據支持，其主要理據如下：

- 擬議通道體積小及規模輕微;
- 擬議通道與周邊環境相容;
- 不會對公共設施及法定古蹟造成不良影響;
- 不會產生不良視覺影響；
- 不會產生不良景觀影響；
- 擬議通道符合城市規劃委員會規劃指引編號 10 「擬在綠化地帶進行發展而按照城市規劃條例第 16 條提出的規劃申請」；
- 擬議通道將提高可達性；
- 擬議方案已納入多項調整，以解決城規會先前的擔憂；
- 批准本規劃申請與城規會之前考慮同類型規劃申請的決定一致；及

基於以上各項規劃理據，申請人希望是次的規劃申請能獲城規會支持。



LEGEND

APPLICATION SITE

APPLICATION SITE BOUNDARY FOR IDENTIFICATION PURPOSE ONLY

KTA PLANNING LIMITED
規劃顧問有限公司

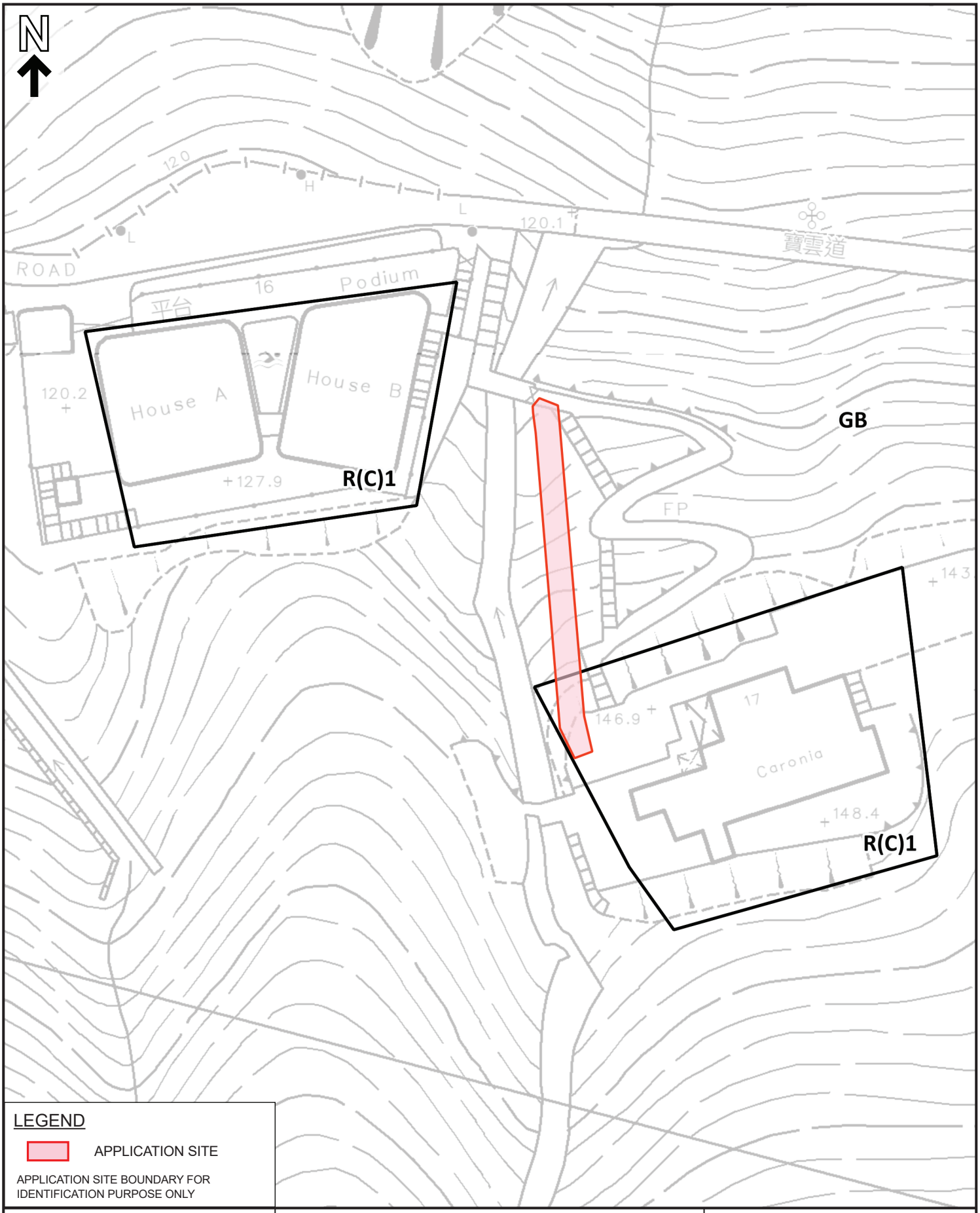
LOCATION PLAN

Proposed Access Road (Inclined Lift) for the Existing Residential Development in "Green Belt" and "Residential (Group C) 1" Zones at No. 17 Bowen Road, Mid-Levels, Hong Kong

SCALE: 1:2500

Extract plan based on the Approved Mid-Levels East Outline Zoning Plan No. S/H12/14 approved on 24.9.2024

DATE: 11 February 2026



LEGEND

APPLICATION SITE

APPLICATION SITE BOUNDARY FOR IDENTIFICATION PURPOSE ONLY

KTA PLANNING LIMITED
規劃顧問有限公司

SITE PLAN

Proposed Access Road (Inclined Lift) for the Existing Residential Development in "Green Belt" and "Residential (Group C) 1" Zones at No. 17 Bowen Road, Mid-Levels, Hong Kong

SCALE: 1:500

Extract plan based on the Survey Sheet No. 11-SW-14D

DATE: 11 February 2026

GREEN BELT

Column 1 Uses always permitted	Column 2 Uses that may be permitted with or without conditions on application to the Town Planning Board
Agricultural Use Barbecue Spot Government Use (Police Reporting Centre only) Nature Reserve Nature Trail On-Farm Domestic Structure Picnic Area Public Convenience Tent Camping Ground Wild Animals Protection Area	Animal Boarding Establishment Broadcasting, Television and/or Film Studio Cable Car Route and Terminal Building Field Study/Education/Visitor Centre Flat Government Refuse Collection Point Government Use (not elsewhere specified) Holiday Camp House Mass Transit Railway Vent Shaft and/or Other Structure above Ground Level other than Entrances Petrol Filling Station Place of Recreation, Sports or Culture Public Transport Terminus or Station Public Utility Installation Public Vehicle Park (excluding container vehicle) Radar, Telecommunications Electronic Microwave Repeater, Television and/or Radio Transmitter Installation Religious Institution Residential Institution School Service Reservoir Social Welfare Facility Utility Installation for Private Project Zoo

Planning Intention

The planning intention of this zone is primarily for the conservation of the existing natural environment amid the built-up areas/at the urban fringe, to safeguard it from encroachment by urban type development, and to provide additional outlets for passive recreational activities. There is a general presumption against development within this zone.

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S16 PLANNING APPLICATION
Approved Mid-Levels East OZP No. S/H12/14

Proposed Access (Inclined Lift) for the Existing Residential Development in "Green Belt" and "Residential (Group B)" Zones at No. 17 Bowen Road, Mid-Levels, Hong Kong

Supporting Planning Statement

1. INTRODUCTION

1.1 Purpose

1.1.1 This Planning Application is prepared and submitted on behalf of Sydney Fung & Son Limited (the "Applicant") to seek approval from the Town Planning Board ("TPB") under Section 16 of the Town Planning Ordinance for a Proposed Access (Inclined Lift) for the existing residential development at No. 17 Bowen Road, Mid-Levels, Hong Kong (the "Site"). The Site falls primarily within an area zoned "Green Belt" ("GB") with a minor portion encroaching into the "Residential (Group C) 1" ("R(C)1") on the Approved Mid-Levels East Outline Zoning Plan (the "Approved OZP") No. S/H12/14. This Supporting Planning Statement is to provide the TPB and relevant Government departments with necessary information to facilitate consideration of this Planning Application.

1.2 Report Structure

1.2.1 Following this introductory section, the site and planning context will be briefly set out in Section 2. The description of Proposed Access is included in Section 3, followed by the planning merits and justifications for the Planning Application in Section 4. The Supporting Planning Statement will be concluded and summarises in Section 5.

2. SITE AND PLANNING CONTEXT

2.1 Site Location and Existing Condition

2.1.1 The Site is situated at a steep slope, extending uphill from the lower section of the existing right of way ("RoW") to the platform of Caronia, which is an existing single house development (**Figure 2.1** refers). The lower section of the Site is located at approx. +127.6mPD, while the upper section on the platform is at approx. +146.0mPD. The total site area is about 89.6m^2.

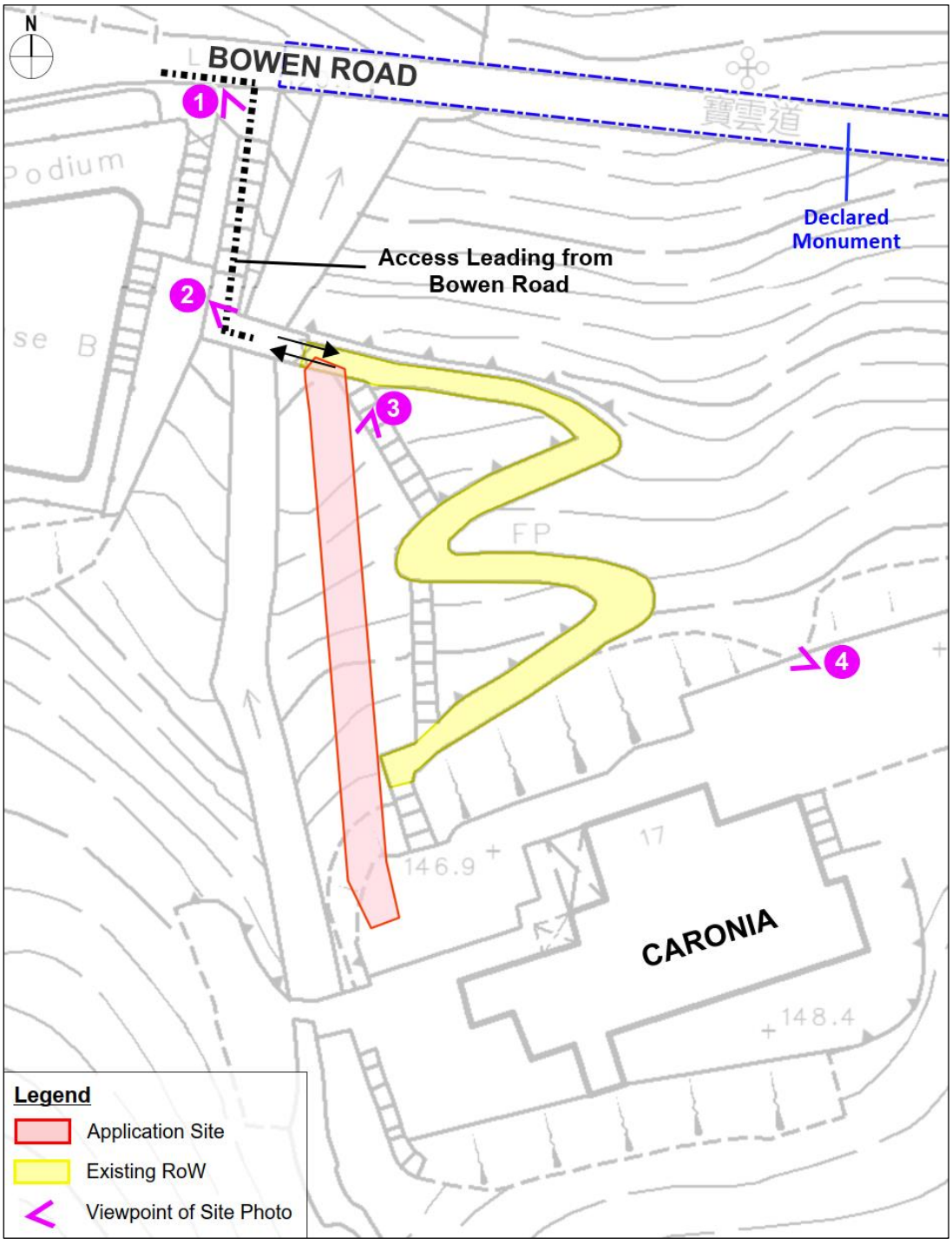


Figure 2.1: Site Location Plan

2.1.2 The Site is primarily a vegetated slope with portion occupied by a temporary manual conveying system (Photo 3 of **Figure 2.2** refers). The existing Row extends from approx. +127.5mPD to 143.4mPD, resulting in a gradient of about 1:1.8. The steep slope significantly restricts the accessibility to Caronia, creating a pedestrian-hostile environment that poses great difficulty to elderly and people with disabilities.



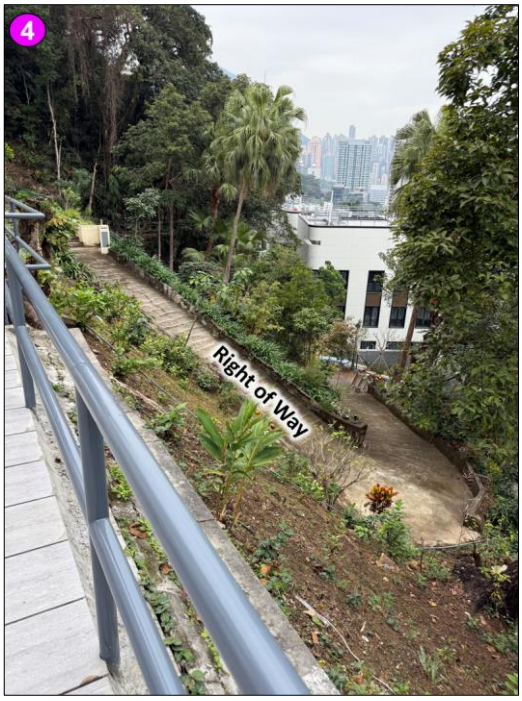
Viewing from Bowen Road



Viewing from the Gate



Viewing from Lower Portion of the Site



Viewing from Caronia

Figure 2.2: Site Photos

2.2 Land Status

2.2.1 About 77.8% of the Site (approx. 69.7m^2) falls on Government Land, whilst the rest of the Site (approx. 19.9m^2) is within Inland Lot (IL) 2460, which is wholly owned by the Applicant (**Figure 2.3** refers). The areas quoted are subject to detailed survey.

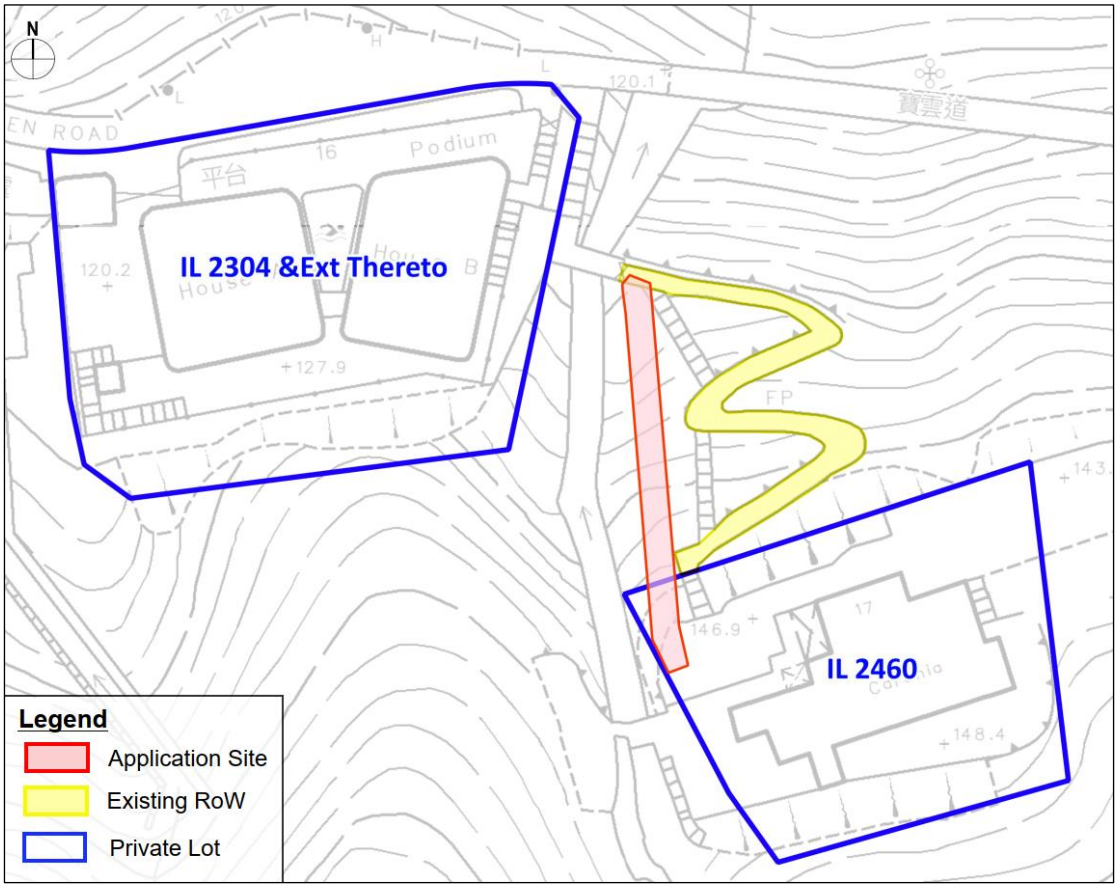


Figure 2.3: Lot Index Plan (For Illustrative Purpose Only)

2.3 Statutory Planning Context

2.3.1 The Site falls primarily within an area zoned "Green Belt" ("GB") with a minor portion encroaching into the "Residential (Group C) 1" ("R(C)1") on the Approved Mid-Levels East Outline Zoning Plan (the "Approved OZP") No. S/H12/14 (**Figure 2.4** refers). According to the Statutory Notes of the Approved OZP, the planning intention of "GB" zone is as follows,

"*The planning intention of this zone is primarily for the conservation of the existing natural environment amid the built-up areas/at the urban fringe, to safeguard it from encroachment by urban type development, and to provide additional outlets for passive recreational activities. There is a general presumption against development within this zone*".

2.3.2 The Proposed Access (Inclined Lift) is ancillary use to the 'House' use. Whilst 'House' is always permitted in "R(C)1" zone, it is a Column 2 Use in the "GB" zone and requires planning permission from the Town Planning Board ("TPB").

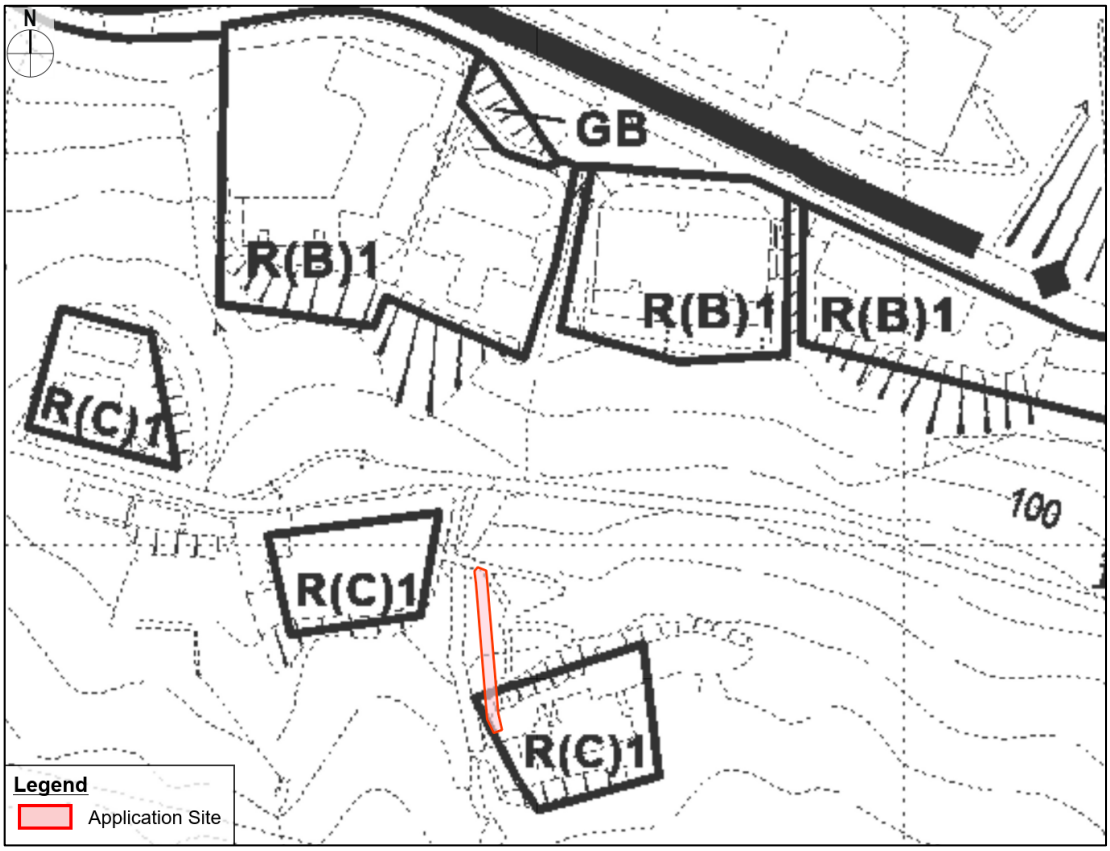


Figure 2.4: Zoning Context Plan (Extracted from the Approved OZP No. S/H12/14)

2.4 Surrounding Context

2.4.1 Bowen Road is a carriageway traversing the mid-levels, which also forms part of a fitness trail, namely Bowen Road Fitness Trail. Vehicles without valid permit are prohibited from entering the trail starting from the staircase to Caronia (Photo 1 of **Figure 2.2** refers). The Proposed Access (Inclined Lift) and the existing house are situated off Bowen Road and within a predominately residential area with various low to medium-rise residential developments. The surrounding area is largely occupied by vegetated slope and greenery area (**Figure 2.5** refers).

2.4.2 To the immediate northwest of the Site is two low-rise houses (i.e. 16 Bowen Road) falling within an area zoned "R(C)1" zone along Bowen Road. There are two "R(C)1" zones to its further northwest, which are also occupied by houses (i.e. 12 and 15 Bowen Road) and the Consulate of the Republic of Seychelles. To the north of the Site across Bowen Road downhill are three "Residential (Group B) 1" ("R(B)1") zones, comprising several medium-rise residential developments, namely Monticello, Man Yuen Garden, Ewan Court, Sakura Court and Kantian Rise, all served by Kennedy Road. The surrounding vegetated slope and greenery area are zoned "GB".

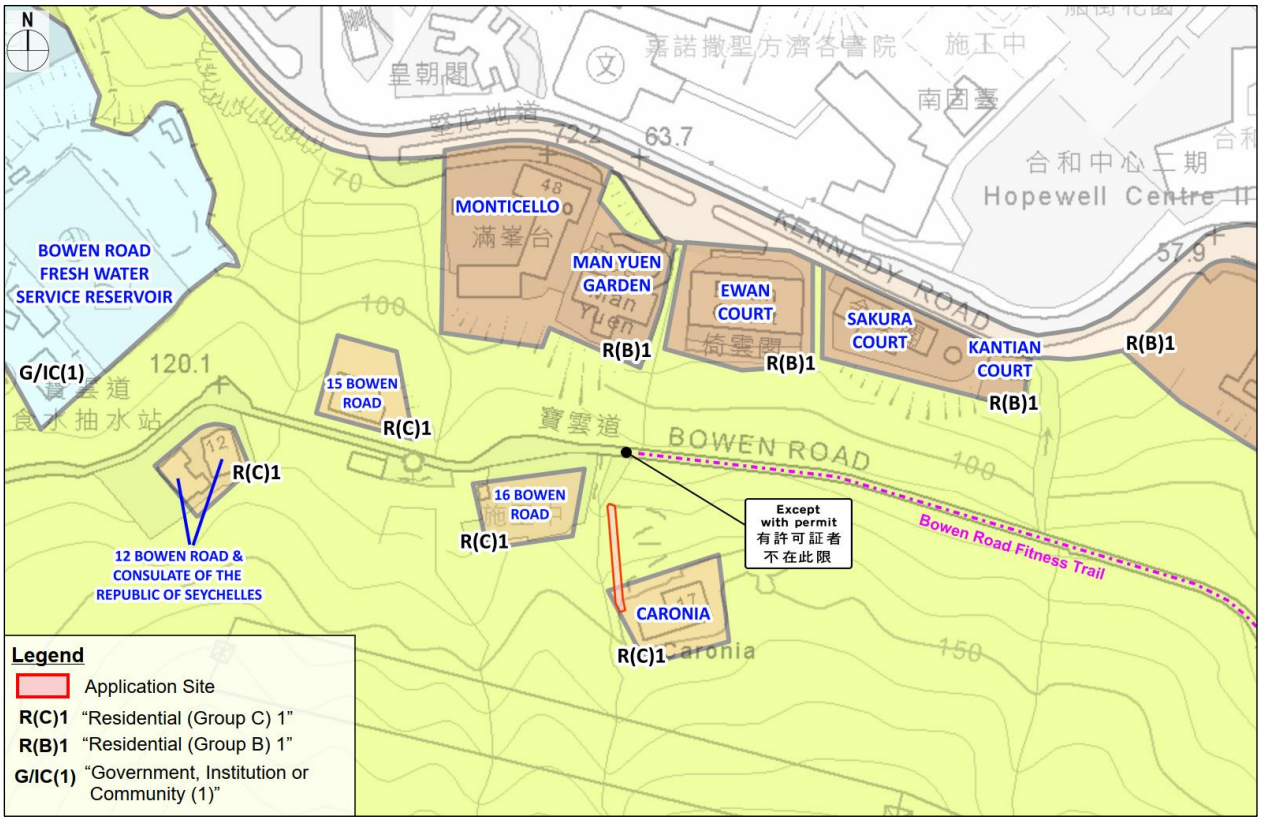


Figure 2.5: Surrounding Context Plan

2.5 Accessibility

2.5.1 The Site is accessible from the existing staircase and footpath ("RoW") leading from Bowen Road (**Figure 2.1** refers).

2.6 Planning History of the Site and Surrounding Area

2.6.1 There were a total of 4 previous planning applications in the vicinity seeking for permission for an access (pedestrian and/or vehicular) to serve the existing house (i.e. Caronia) between 1992 and 2015 viz. A/H12/3, A/H12/14, A/H12/18, and A/H12/28 (**Figure 2.6** refers). The Proposed Access (Inclined Lift) falls within one of the previous applications.

2.6.2 TPB rejected all these applications, mainly on the grounds of adverse visual and/or landscape impact, general presumptions against developments in "GB", not in line with "Town Planning Board Guideline No. 10 for Application for Development within Green Belt Zone" ("TPB PG-No.10"), adverse impact on public amenity and declared monument, and setting an undesirable precedent. Details of these planning applications and major rejection reasons have been summarised in **Table 2.1**.

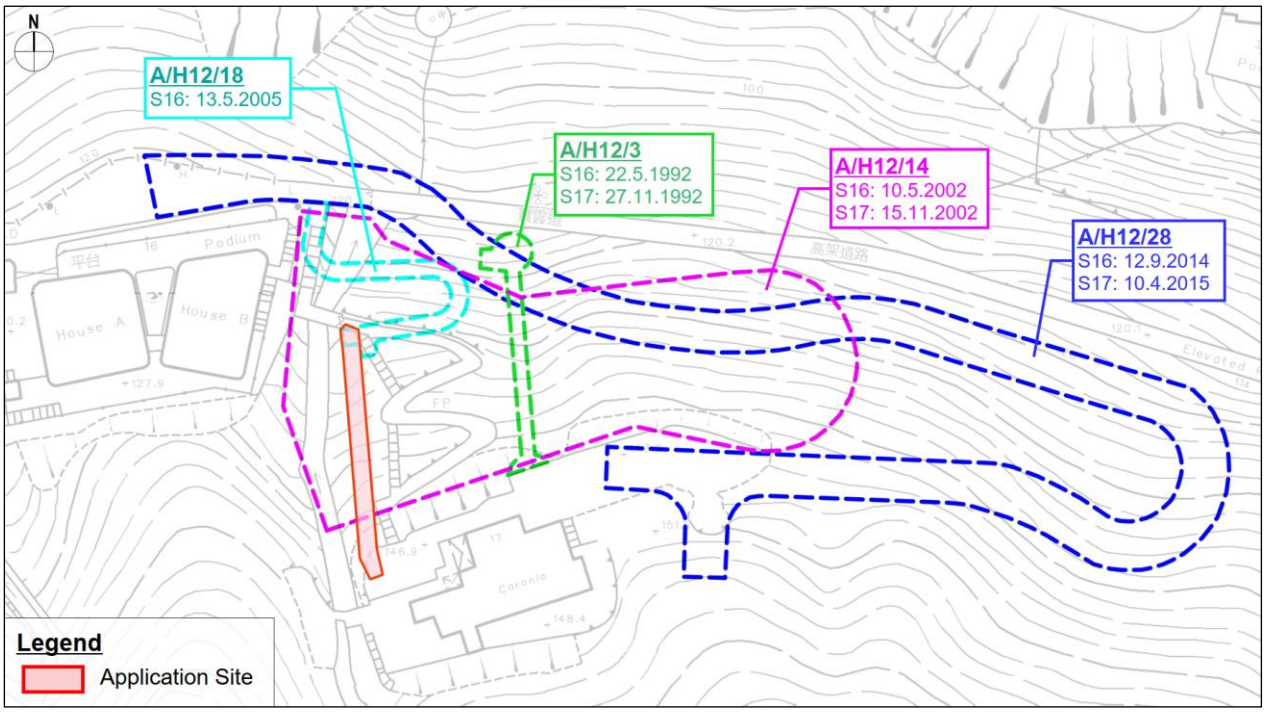


Figure 2.6: Planning History of the Site and Surrounding Area

Table 2.1: Details of Planning Applications of the Site and Surrounding Area

Application No.	Applied Use(s)	Site Area	Decision	Rejection Reason	Decision Date
A/H12/3	Inclined Passenger Elevator	73m^2	Rejected	(a), (b) & (c)	22.5.1992 (S16) 27.11.1992 (S17)
A/H12/14	Vehicular Access and Car Parking Spaces Ancillary to Residential Use	2,200m^2	Rejected	(a), (b) & (d)	10.5.2002 (S16) 15.11.2002 (S17)
A/H12/18	Access Road Ancillary to Residential Use	176m^2	Rejected	(a), (b) & (d)	13.05.2005 (S16)
A/H12/28	Proposed Vehicular Access for Residential Development	1,700m^2	Rejected	(b), (d), (e) & (f)	12.9.2014 (S16) 10.4.2015 (S17)

Note

(a) : Substantial adverse visual and/or landscape impact

(b) : Undesirable precedent

(c) : Public amenity affected

(d) : General presumption against development in “GB” and/or deviation from planning intention

(e) : Adverse impact on declared monument

(f) : Not in line with TPB PG-No.10

2.7 Similar Planning Applications

2.7.1 Apart from the planning applications discussed in **Section 2.6** above, there is no similar applications for access road use in “GB” zone within the same OZP. Nonetheless, TPB approved several similar planning applications within “GB” zone in other OZPs. Particulars of these planning applications have been provided in **Table 2.2**.

2.7.2 In gist, these applications were approved mainly on grounds of (i) in line with TPB PG-No. 10, (ii) no adverse impact (e.g. landscape and visual), and (iii) no objection from relevant departments.

Table 2.2: Similar Planning Applications Approved by the TPB

Application No.	Applied Use(s)	Zoning(s)	Site Area	Decision Date
A/H14/48	Proposed Access Road	“GB”	723m^2	14.1.2005
A/H14/61	Proposed Access Road with Guardhouse and Gate for Permitted House Development	“GB”	370m^2	24.7.2009
A/H14/66	Proposed Access Road for Residential Development	“GB” & ‘Road’	300m^2	18.3.2011
A/H14/69	Proposed Access Road for Residential Development	“GB”	72m^2	4.11.2011
A/TWW/114	Proposed Access Road for Residential Development	“GB” & ‘Road’	1,662m^2	16.11.2018

2.8 Town Planning Board Guideline No.10 for Application for Development within Green Belt Zone

2.8.1 The TPB PG-No.10 set out the main planning criteria for all developments to be erected within “GB” zone. While there is a general presumption against development with “GB” zone, any development/redevelopment should be compatible with the surrounding areas and should itself not be a source of pollutant.

2.8.2 The main planning criteria include:-

a. *There is a general presumption against development (other than redevelopment) in a "GB" zone. In general, the Board will only be prepared to approve applications for development in the context of requests to rezone to an appropriate use.*

b. *An application for new development in a "GB" zone will only be considered in exceptional circumstances and must be justified with very strong planning grounds. The scale and intensity of the proposed development including the plot ratio, site coverage and building height should be compatible with the character of surrounding areas. With the exception of New Territories Exempted Houses, a plot ratio up to 0.4 for residential development may be permitted.*

c. *Applications for New Territories Exempted Houses with satisfactory sewage disposal Town Planning Board July 1991 facilities and access arrangements may be approved if the application sites are in close proximity to existing villages and in keeping with the surrounding uses, and where the development is to meet the demand from indigenous villagers.*

d. *Redevelopment of existing residential development will generally be permitted up to the intensity of the existing development.*

e. *Applications for G/IC uses and public utility installations must demonstrate that the proposed development is essential and that no alternative sites are available. The plot ratio of the development site may exceed 0.4 so as to minimize the land to be allocated for G/IC uses.*

f. *Passive recreational uses which are compatible with the character of surrounding areas may be given sympathetic consideration.*

g. *The design and layout of any proposed development should be compatible with the surrounding area. The development should not involve extensive clearance of existing natural vegetation, affect the*

existing natural landscape, or cause any adverse visual impact on the surrounding environment.

h. *The vehicular access road and parking provision proposed should be appropriate to the scale of the development and comply with relevant standards. Access and parking should not adversely affect existing trees or other natural landscape features. Tree preservation and landscaping proposals should be provided.*

i. *The proposed development should not overstrain the capacity of existing and planned infrastructure such as sewerage, roads and water supply. It should not adversely affect drainage or aggravate flooding in the area.*

j. *The proposed development must comply with the development controls and restrictions of areas designated as water gathering grounds.*

k. *The proposed development should not overstrain the overall provision of G/IC facilities in the general area.*

l. *The proposed development should not be susceptible to adverse environmental effects from pollution sources nearby such as traffic noise, unless adequate mitigating measures are provided, and it should not itself be the source of pollution.*

m. *Any proposed development on a slope or hillside should not adversely affect slope stability.*

3. PROPOSED ACCESS ROAD (INCLINED LIFT)

3.1 The Proposal

3.1.1 Schematic and sectional drawings of the Proposed Access (Inclined Lift) are presented in **Appendix 1** of this Supporting Planning Statement. The Proposed Access, involving the installation of an inclined lift (about of 32m in length) and the associated works area, occupies a site area of about 89.6m^2. This is to provide barrier-free access alongside the existing RoW, with a view to enhancing accessibility for the residents of Caronia.

3.1.2 The Proposed Access (Inclined Lift) is strategically positioned adjacent to the existing gate at the lower section of the RoW, at approx. +127.6mPD, extending uphill to the platform of the Caronia at approx. +146.0mPD (**Figures 3.1** & **3.2** refers). To minimise potential intrusion into the surrounding environment, the proposed inclined lift features a compact design with a dimension of approx. 2.2m in height and 1.5m in width, which will facilitate seamless integration with the existing terrain and built features, such as the adjacent staircase and footpath.

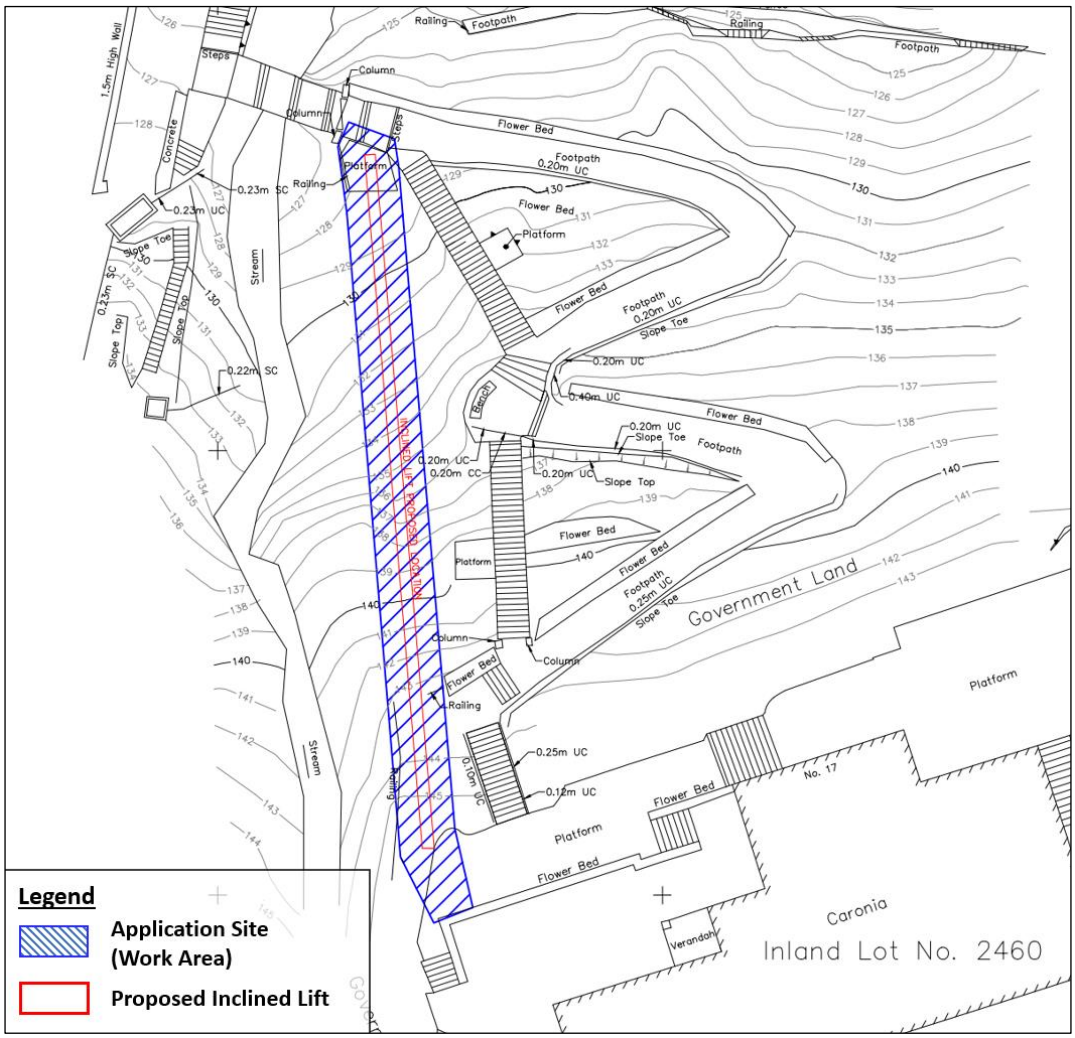


Figure 3.1: The Proposed Inclined Lift

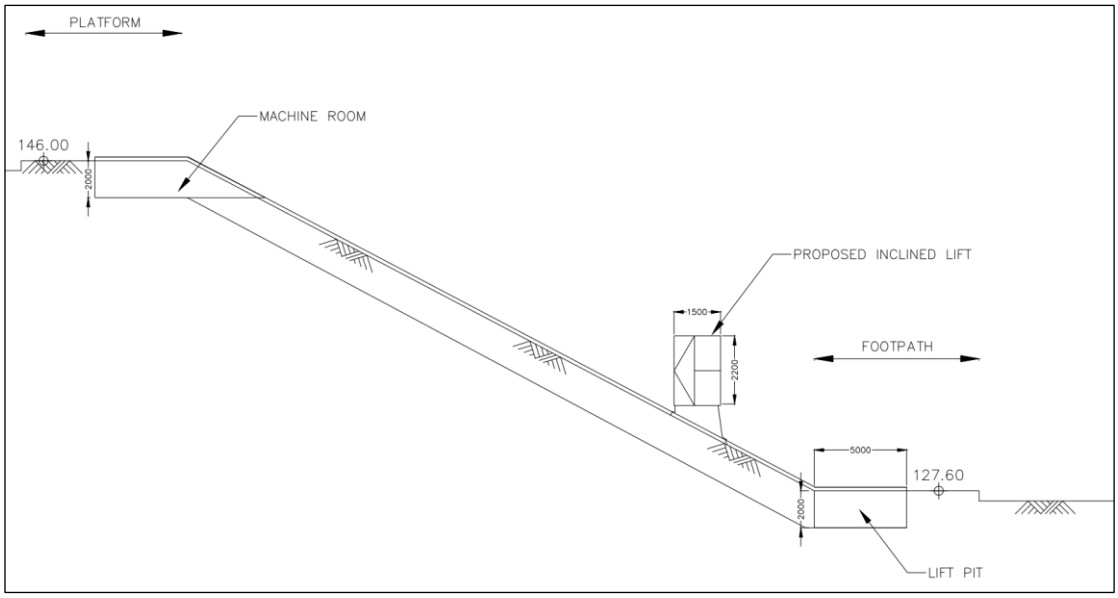


Figure 3.2: Section of The Proposed Inclined Lift

3.2 Site Selection and Alignment Considerations

3.2.1 Drawing on the experience of the previously rejected planning applications (**Section 2.6** refers), the location and alignment of the Proposed Access Road have been carefully studied and selected, taking into account the rejection grounds and considerations by TPB Members.

3.2.2 The site selection has addressed TPB's concerns on the potential impact to the public amenity and declared monument by strategically positioning the proposed inclined lift away from the public walking trail along Bowen Road and pushing it to the farthest corner possible to avoid direct interface with the declared monument (i.e. 21-Arch Section of the Bowen Aqueduct). Further, the site area has been significantly reduced to a minimal size and scale (about 89.6m^2) to serve only essential access function without compromising the integrity of the "GB" zone.

3.2.3 Not least, the alignment of the proposed inclined lift has also been carefully planned to avoid extensive clearance of existing vegetation or landscape. Site survey confirmed that only 5 nos. of tree (2 nos. within the Site and 3 nos. outside the Site) of common species will be affected and that they will be compensated in the immediate surrounding (please refer to **Section 3.4** for further details).

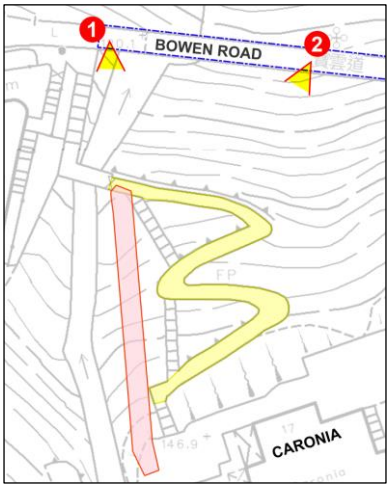
3.3 Visual Considerations

3.3.1 To minimise visual impact and ensure compatibility with the surrounding environment, various sensitive design features will be incorporated in the proposed inclined lift. For instance, non-reflective materials and natural colour schemes will be adopted for seamless integration with the surrounding environment and existing terrain. In addition, the compact size

of the proposed inclined lift would further reduce potential intrusion, ensuring negligible physical and visual impact onto the surrounding area.

3.3.2 As demonstrated in **Figure 3.3**, the proposed inclined lift will be largely or even completely shielded off by the existing vegetation when viewing from different locations along Bowen Road. When the proposed incline lift arrives at the footpath level near Bowen Road, the top portion of the glassy compartment would be visible; on the contrary, when it reaches the platform level, view towards the proposed inclined lift would be completely blocked by existing vegetation. Since the proposed inclined lift would blend in well with the surroundings and appear visually compatible with the low-rise and low-density residential characteristics, only negligible visual impact would be envisaged.





Viewpoint 1



Viewpoint 2

Figure 3.3: Photomontages

3.4 Tree Preservation and Landscape Proposal

3.4.1 The Applicant has carried out a Tree Survey (**Appendix 2** refers) that covers both the Application Site and as well as the area 3m away from both sides of the boundary. As revealed in the Tree Survey, there are a total of 11 nos. of existing trees, including 2 nos. within the Site and 9 nos. outside the Site. All existing trees are common species that can be found in Hong Kong. No Old and Valuable Trees (OVT), protected species, nor Tree of Particular Interest (TPI) has been identified. Out of the 11 nos. existing trees, 6 nos. are proposed to be retained, whilst 5 nos. (2 nos. within the Site and 3 nos. outside the Site) would be felled. In terms compensation, a total of 8 nos. of standard trees would be planted in the immediate surroundings of the Site along the slope, achieving a compensatory ratio of 1:1.6.

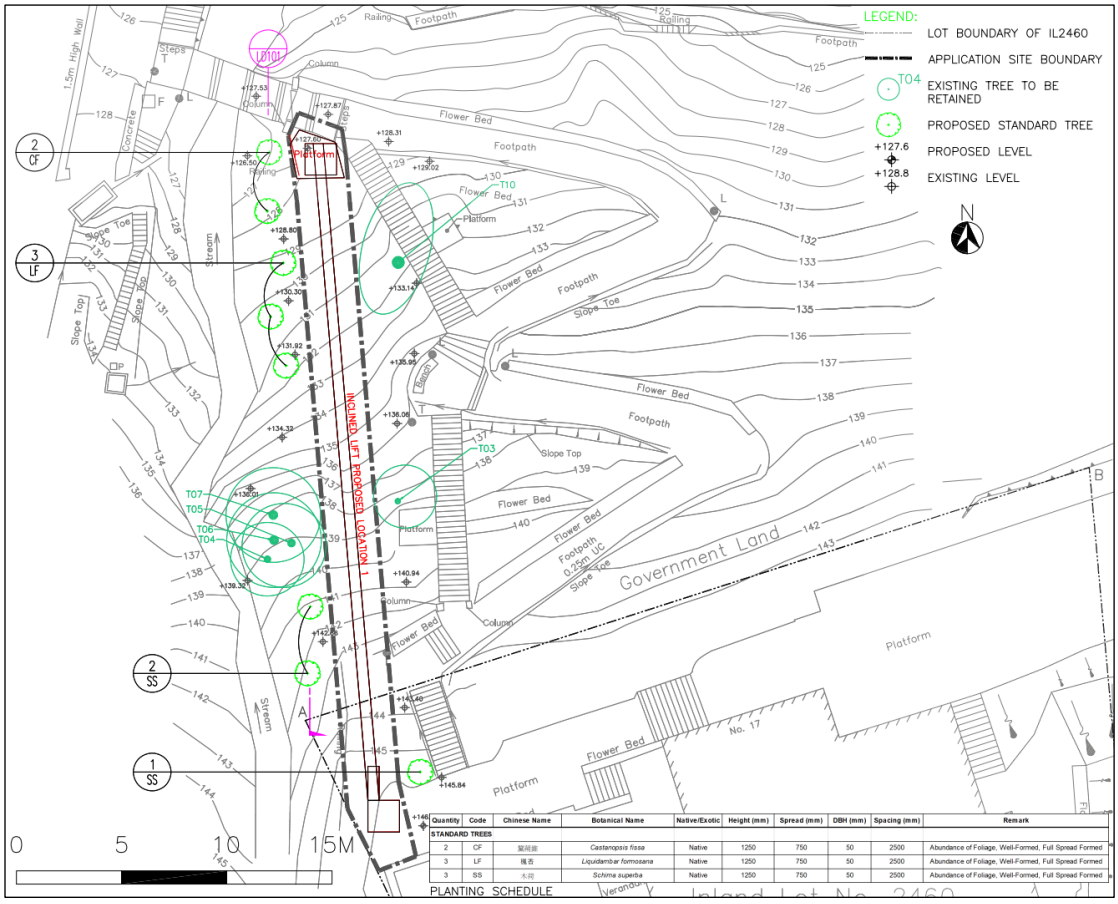


Figure 3.4: Landscape Proposal

4. PLANNING JUSTIFICATIONS

4.1 The Proposed Access (Inclined Lift) is "Small in Size and Minimal in Scale"

4.1.1 The Proposed Access, involving the installation of an inclined lift and the associated works area, occupies a site area of about 89.6m^2 only, which is exceptionally small in size and minimal in scale. Amongst which, only 69.7m^2 falls within the "GB" zone, representing a negligible 5.1% of the "GB" area between Caronia and Bowen Road (**Figure 4.1** refers). The small site size ensures that the Proposed Access Road will only serve essential access function without compromising the integrity of the "GB" zone.

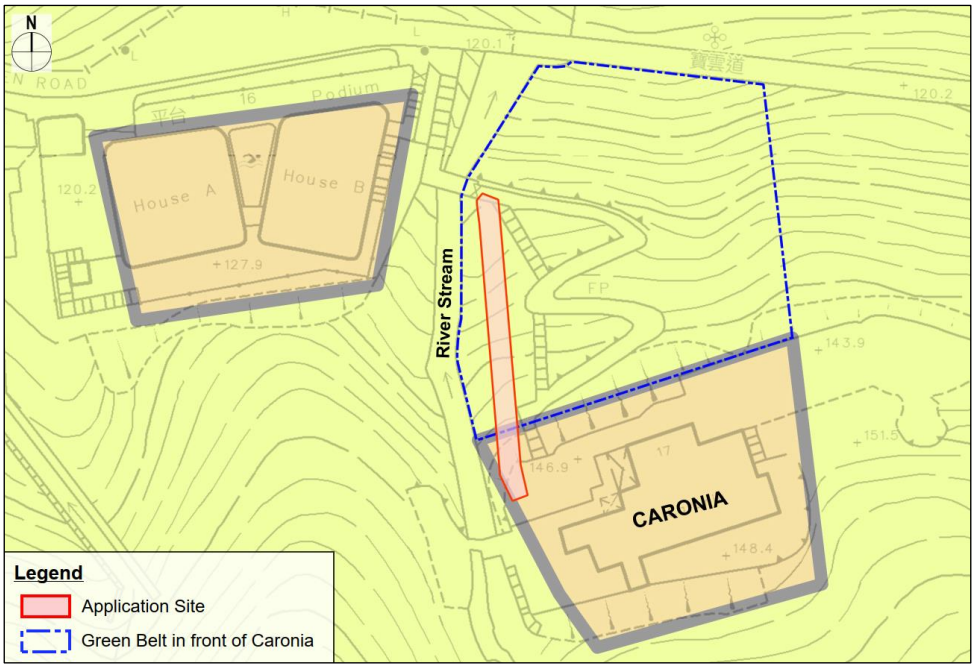


Figure 4.1: Affected "GB" Area

4.1.2 In addition to its small size, the proposed inclined lift also features a compact design with a dimension of about 2.2m in height and about 1.5m in width. The minimal scale of the proposed inclined lift represent a low-profile design, which would ensure negligible visual and physical impact, as well as seamless integration with the surrounding environment.

4.2 Compatible with Surrounding Environment

4.2.1 Although the Site falls primarily within a "GB" zone, it is actually a sparsely vegetated cut-slope with low landscape and amenity value. No least, the surrounding environment of the Site is characterised by existing hard-paved infrastructures (i.e. staircase and footpath), and low-rise residential developments such as Caronia and 16 Bowen Road. The Proposed Access Road is compatible with the surrounding environment in terms of land use and character.

4.2.2 Nonetheless, to further enhance compatibility with the existing built environment, various sensitive design features, such as non-reflective surface and natural colour scheme, will be adopted for the proposed inclined lift to harmonise with the surrounding environment.

4.3 No Adverse Impact on Public Amenity and Declared Monument

4.3.1 While the Site is located on Government Land, it is actually gated and not publicly accessible. In addition, to avoid direct impact on the public amenity and interface with the declared monument (i.e. 21-Arch Section of the Bowen Aqueduct), the proposed inclined lift is strategically positioned away from the public walking trail along Bowen Road (**Figure 2.1** refers). Through careful site selection and alignment, the Proposed Access Road will not adversely affect the amenity and historical value of the area, thereby preserving public amenity and the integrity of the declared monument.

4.4 In line with TPB PG-No. 10

4.4.1 The Proposed Access Road, involving only installation of a inclined lift, is small in size and minimal in scale. It is fully in line with the planning criteria set out in TPB PG-No.10 and the justifications are tabulated as follows:

Main Planning Criteria		Justification
(a)	There is a general presumption against development (other than redevelopment) in a "GB" zone. In general the Board will only be prepared to approve applications for development in the context of requests to rezone to an appropriate use.	With a site area of about 89.6sq.m, the Proposed Access Road is small in size and minimal in scale. Not least, only a very small part of the “GB” zone (about 69.7sq.m), amounting to about 5.1% of “GB” area between Caronia and Bowen Road, will be affected by the proposal. Given the small size of the Proposed Access Road, the integrity of the “GB” zone will not be compromised. In addition, the proposal only involves installation of a inclined lift, which serves an essential function of providing barrier-free access. With a dimension of about 2.2m in height and 1.5m in width, the proposed inclined lift is minimal in scale and intensity, and compatible with the character of surrounding areas. It also represents a low-profile design that would ensure negligible visual and physical impact.
(b)	An application for new development in a "GB" zone will only be considered in exceptional circumstances and must be justified with very strong planning grounds. The scale and intensity of the proposed development including the plot ratio, site coverage and building height should be compatible with the character of surrounding areas. With the exception of New Territories Exempted Houses, a plot ratio up to 0.4 for residential development may be permitted.	

	Main Planning Criteria	Justification
(g)	The design and layout of any proposed development should be compatible with the surrounding area. The development should not involve extensive clearance of existing natural vegetation, affect the existing natural landscape, or cause any adverse visual impact on the surrounding environment.	To avoid extensive clearance of existing natural vegetation and adverse visual impact, site selection and alignment of the Proposed Access Road were carefully studied. First off, it is strategically positioned away from the public walking trail along Bowen Road and the declared monument. Secondly, the alignment of the inclined lift has successfully minimise vegetation clearance, under which only 5 nos. of tree (2 nos. within the Site and 3 nos. outside the Site) of common species will be affected. The affected trees will be compensated in the immediate surrounding (**Figure 3.4** refers). Not least, sensitive design features, such as non-reflective surface and natural colour scheme, will be adopted, which will not only minimise potential visual intrusion, but also ensure seamless integration with the surrounding environment. As demonstrated in **Figure 3.3**, the proposed inclined lift will be largely or completely shielded off when viewing from Bowen Road. Hence, the Proposed Access Road is envisaged to result in negligible visual impact.

4.5 Improvement to Accessibility for the Existing Residents

4.5.1 Situated on a steep slope with gradient of about 1:1.8, the Caronia has no direct vehicular access nor served by any barrier-free facilities. At present, access to Caronia is restricted to the steep staircase and footpath leading from Bowen Road. In this regard, the accessibility of Caronia is severely hindered by the steep terrain, which created a pedestrian-hostile environment, posing significant challenges to elderly, not to mention safety issue during wet and humid weather.

4.5.2 Provision of an inclined lift next to the existing RoW would effectively address the accessibility issue and transform the residential site into a more pedestrian-friendly environment, thereby enhancing the overall liveability, inclusivity and safety for existing residents of the Caronia, while also without compromising the integrity of the "GB" zone.

4.6 Adjustments Made To Address TPB's Previous Concerns

4.6.1 In response to the TPB's considerations and rejection grounds from the previous planning applications (**Section 2.6** refers), the current proposal has incorporated various adjustments to address TPB's concerns and comply with TPB PG-No.10. The Applicant's proactive approach demonstrates the commitment to balance accessibility needs as well as the conservation objectives of the "GB" zone:

Optimised Site Selection and Alignment Design

4.6.2 To minimise potential impacts on public amenities and the declared monument, the proposed inclined lift has been strategically positioned away from Bowen Road (i.e. Bowen Road Fitness Trail & declared monument) at the expense of the optimum convenience of the residents. Future users will have to take a few steps off Bowen Road before reaching the proposed inclined lift. Unlike the previous applications, the current proposal has avoided direct interface with the declared monument by locating the inclined lift to the farthest feasible corner. Not least, there will not be any direct sightline to the inclined lift from the Fitness Trail. Coupled with the negligible visual impact, the potential impact on public amenities will be minimised to a negligible level.

Substantial Reduction in Site Area

4.6.3 The site area of the current proposal has been significantly reduced to about 89.6m^2, representing a substantial reduction compared to the average of 997.5m² for the previous applications. The small site area represents a minimal footprint that serves only essential accessibility function while limiting the encroachment onto the "GB" zone. By adopting the "small in size, minimal in scale" approach, the current proposal will result in a much lower visual and landscape impact than those of the previous applications', in that only negligible visual and landscape impact would be envisaged.

4.6.4 In addition, to further minimise the site area, the Applicant has taken deliberate step of forgoing the direct access to Bowen Road, which would have required a larger land take, causing greater disruption to the "GB" zone and public amenities. This compromise made, combined with the site selection, alignment and sensitive design measures, reflects the Applicant's commitment to balance accessibility needs with the conservation objectives of the "GB" zone.

4.7 Approval of the Planning Application is Consistent with TPB's Previous Decisions On Similar Applications

4.7.1 As detailed in **Section 2.7**, the TPB has previously approved several similar planning applications for access road use within "GB" zone. The site area of these applications range from 72m^2 to 1,662m^2. The Proposed

Access Road is significantly smaller in size and scale than these approved schemes.

4.7.2 As such, approval of the current Planning Application would be consistent with the TPB's previous decisions on similar small-scale developments within "GB" zone. Given the small size, minimal scale, and negligible physical, visual and environmental impact of the Proposed Access Road, the proposal will not set any undesirable precedent.

4.8 Technically Feasible with No Insurmountable Impact

Visual

4.8.1 Based on the photomontages provided in **Figure 3.3**, the proposed inclined lift will only result in negligible visual impact as it will be largely or completely shielded off by existing vegetation when viewing from different locations along Bowen Road.

Tree and Landscape (Appendix 2 refers)

4.8.2 A total of 11 nos. of trees, including 2 nos. within the Site and 9 nos. within its 3m buffer, were identified. No OVT, protected species, nor TPI was surveyed. Amongst the 11 nos. of existing trees, 6 nos. are proposed to be retained, while the remaining 5 nos. (2 nos. within the Site and 3 nos. its 3m buffer), which will be inevitably affected by the Proposed Development, are recommended to be felled. A compensation ratio of 1:1.6 (i.e. 8 nos. of trees) will be achieved. The compensatory trees will be reprovisioned to the immediate surroundings of the Site along the slope.

Geotechnical (Appendix 3 refers)

4.8.3 Based on the findings of the Geotechnical Planning Review Report, the Proposed Development is considered relatively small in scale and geotechnically feasible to be implemented at the Site. While no natural terrain hazard study is required, geotechnical assessment report, detailed design and works proposal of associated works shall be submitted for approval in subsequent stages.

5. CONCLUSION AND SUMMARY

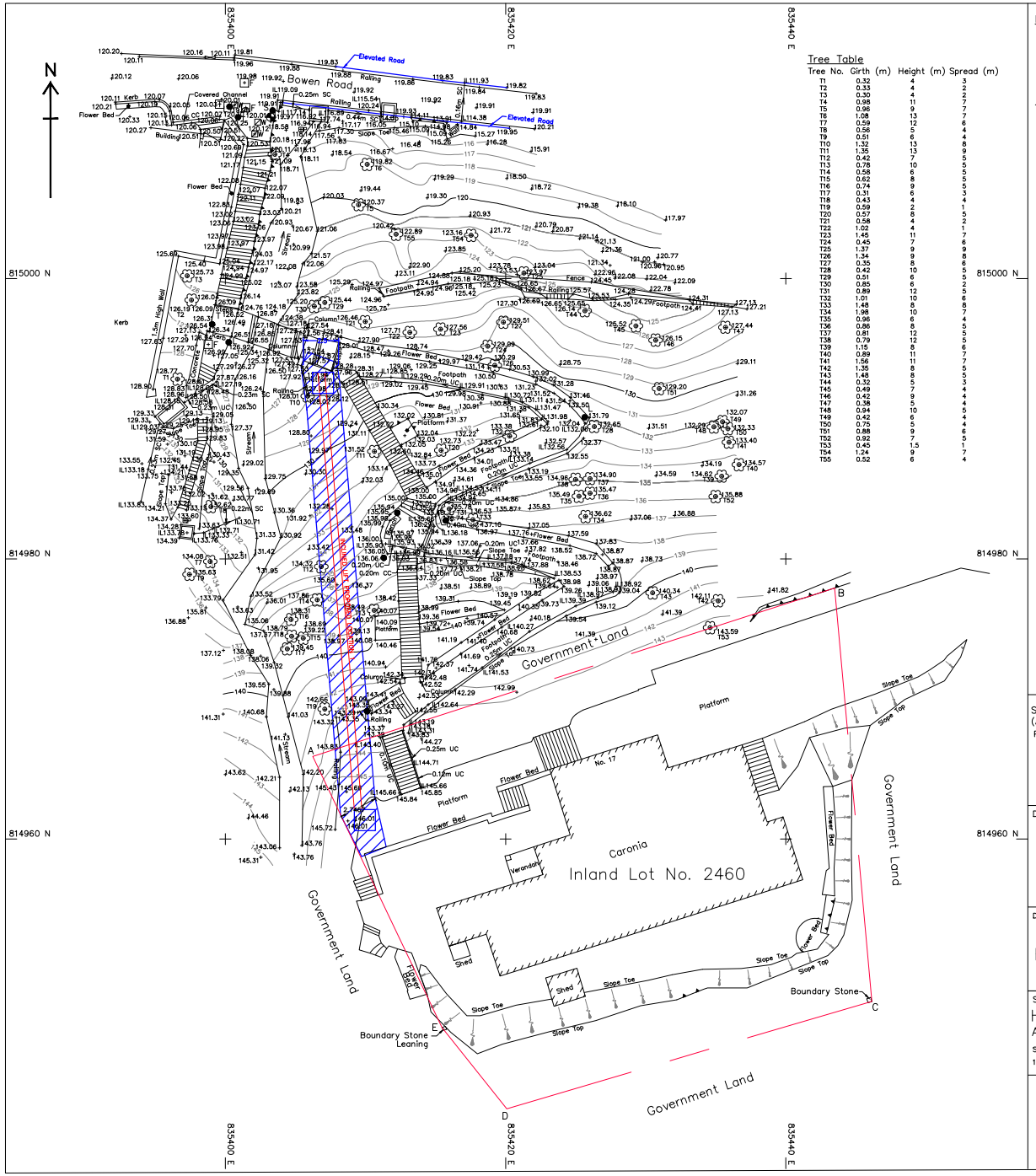
5.1.1 In light of the above, it is believed that the Proposed Access (Inclined Lift) should be favourably considered by the TPB from the planning and technical point of view.

5.1.2 The Planning Department and Members of the TPB are respectfully requested to give favourable consideration to support the Proposed Access (Inclined Lift) based on the following main reasons:

- The Proposed Access (Inclined Lift) is small in size and minimal in scale;
- The Proposed Access (Inclined Lift) is compatible with the surrounding environment;
- The Proposal will not adversely affect public amenity and declared monument;
- There will be no adverse visual impact;
- There will be no adverse landscape impact;
- The Proposal is in line with Town Planning Board Guidelines for Application for Development within Green Belt Zone;
- The Proposed Access (Inclined Lift) will enhance accessibility;
- The Proposal has incorporated adjustments to address TPB’s previous concerns;
- Approval of the Planning Application would be consistent with TPB’s previous decisions on similar applications; and

Appendix 1

Schematic and Sectional Drawings



Tree Table

Tree No.	Girth (m)	Height (m)	Spread (m)
T1	0.32	4	3
T2	0.33	4	2
T3	0.30	4	2
T4	0.98	11	7
T5	0.98	9	7
T6	1.08	13	7
T7	0.59	12	6
T8	0.56	5	4
T9	0.51	6	4
T10	1.32	13	8
T11	1.35	13	9
T12	0.42	7	5
T13	0.78	10	5
T14	0.58	6	5
T15	0.62	8	5
T16	0.74	9	5
T17	0.31	6	3
T18	0.43	4	4
T19	0.59	2	1
T20	0.57	8	5
T21	0.58	4	2
T22	1.02	4	1
T23	1.45	11	7
T24	0.45	7	6
T25	1.37	9	9
T26	1.34	9	8
T27	0.35	8	6
T28	0.42	10	5
T29	0.51	6	5
T30	0.85	6	2
T31	0.89	12	5
T32	1.01	10	6
T33	1.48	8	8
T34	1.98	10	7
T35	0.96	6	4
T36	0.86	8	5
T37	0.81	12	5
T38	0.79	12	5
T39	1.15	8	6
T40	0.89	11	7
T41	1.56	11	7
T42	1.35	8	5
T43	1.48	8	5
T44	0.32	5	3
T45	0.49	7	4
T46	0.42	9	4
T47	0.38	5	4
T48	0.94	10	5
T49	0.42	6	4
T50	0.75	5	4
T51	0.88	9	6
T52	0.92	7	5
T53	0.45	1.5	1
T54	1.24	9	7
T55	0.52	6	4

Notes:

1. All levels are in metres above HK Principal Datum
2. Grid lines are in H.K. Metric Grid 1980.
3. Elevations of kerb are referred to the bottom of kerb.

Legend:

- F — Foul Water Manhole
- MH — Manhole
- 0.30m UC IL45.20 — U-Channel and Invert Level
- 0.30m SC IL45.20 — Stepped Channel and Invert Level
- Catch Pit
- T — Telecom Manhole
- P — Pit
- Bore Hole
- T1 — Tree & Tree Number
- L — Lamp Post
- S — Sign Pole
- T — Telephone Pole
- W — Valve Water
- Gate
- Slope
- Fence/Railing
- Retaining Wall Top
- Retaining Wall toe
- Lot Boundary
- Working Area

SUBJECT INLAND LOT NO.– 2460
(Area =964.0 sq. m. (about))

Point	Bearing	Distance	N	E
A			814 965.905	835 406.233
B	72°07'45"	39.141	814 977.916	835 443.485
C	174°51'48"	29.616	814 948.419	835 446.137
D	253°36'52"	27.153	814 940.759	835 420.087
E	321°22'48"	7.417	814 946.554	835 415.458
A	334°30'39"	21.438	814 965.905	835 406.233

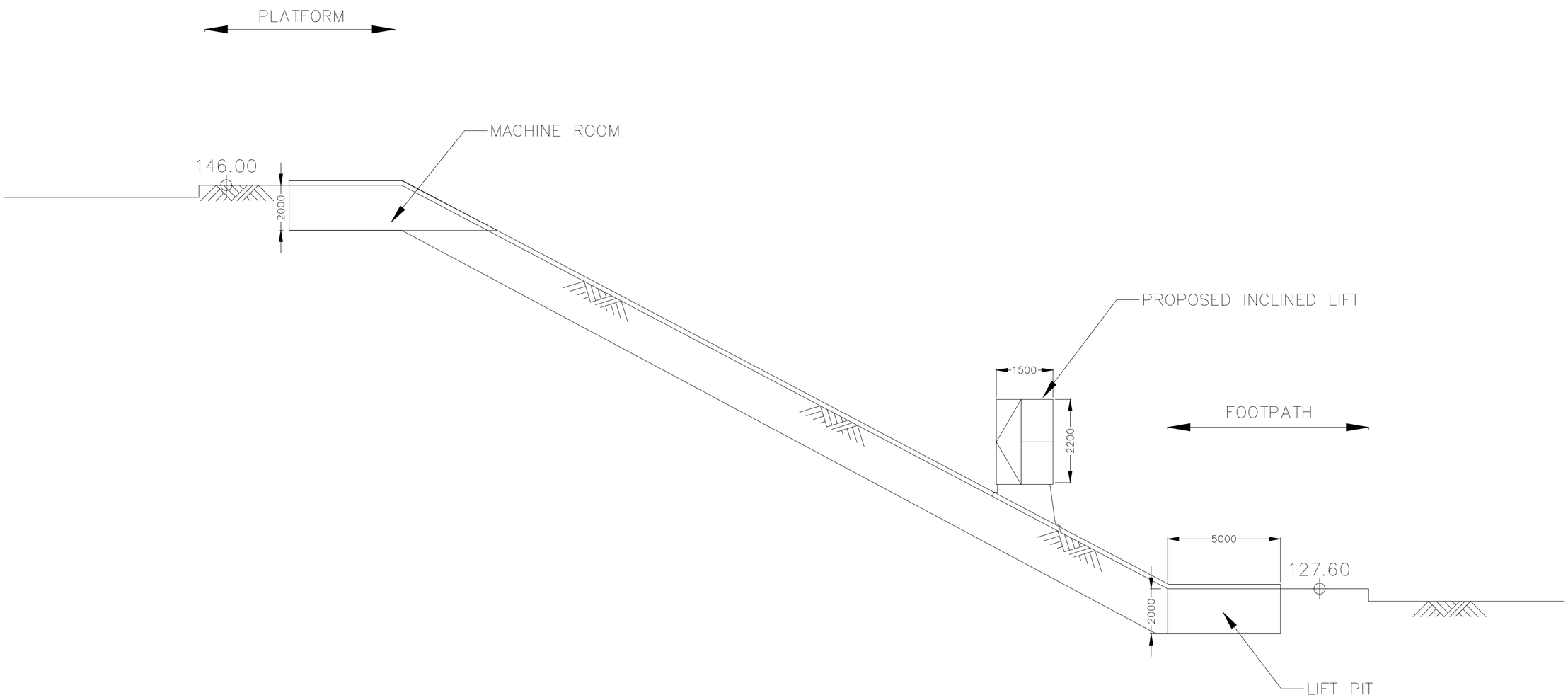
Drawing title:

Topographical Survey Plan of Inland Lot No. 2460, 17 Bowen Road, Hong Kong.

Drawing No.:	Date:	Scale:
HC–16208/01	23/04/2025	1 : 200 (A2)
	Checked by: H. So	Drawn by: H.Y. Poon

Surveyor:
HENRY CHAN SURVEYORS LTD.
Authorized Land & Hydrographic Surveyors
Shop 7, Mei Hing Mansion, Tel : 2638–1313 Fax : 2638–1328
1–17 Yan Hing Street, Tai Po, N.T. e–mail : hcsurvey@netvigator.com

Henry H K Chan
BSc FHKIS RPS(LSD)
Authorized Land Surveyor


PLATFORM
MACHINE ROOM
146.00
2000
PROPOSED INCLINED LIFT
1500
2200
FOOTPATH
5000
127.60
2000
LIFT PIT

Appendix 2

Landscape Proposal

Proposed Access (Inclined Lift) for the Existing Residential Development
In "Green Belt" and "Residential (Group C) 1" Zones
At No. 17 Bowen Road, Mid-Levels, Hong Kong

Tree Survey Report

1st Submission

by

Landes Limited

Date: 7 November 2025

CONTENTS

1.0 Introduction

2.0 The Site and Its Context

3.0 The Proposed Development

4.0 Existing Vegetation

5.0 Recommendation

6.0 Planting Proposal

APPENDICES

Appendix A Tree Treatment Plan

Appendix B Tree Assessment Schedule

Appendix C Photographic Record of Existing Trees

Appendix D Tree Protection Plan

Appendix E Tree Planting Plan

1.0 Introduction

1.1 The Proposed Access (Inclined Lift) for the Existing Residential Development in "Green Belt" and "Residential (Group C) 1" Zones (The Proposed Access) is located close to No. 17 Bowen Road, Mid-Levels, Hong Kong. This report is prepared in support of the Proposed Access under this S.16 Planning Application.

1.2 This report outlines the approach and findings of the tree survey and describes the type, number and condition of all existing trees found within or immediate outside the Application Site. Effort was also made to advise the values of the existing vegetation and necessary protection approach. The tree survey was conducted on **3 November 2025**.

1.3 The following legislation, standards and guidelines are applicable to the tree survey, felling, and compensatory planting associated with the proposed building works for the project.

- Hong Kong Planning Standards and Guidelines;
- Technical Guidelines on Landscape Treatment for Slopes (GEO Publication No. 1/2011);
- Design Manual: Barrier Free Access 2008 (Buildings Department);
- BD PNAP APP-152 – Sustainable Building Design Guidelines (2019 version).
- DEVB TCW No. 5/2020 – Registration and Preservation of Old and Valuable Trees; and
- LAO Practice Note No. 6/2023 – Processing of Tree Preservation and Removal Proposals for Building Development in Private Projects – Compliance with Tree Preservation Clause under Lease; and
- Guidelines for Tree Risk Assessment and Management Arrangement (10th Edition).

1.4 This Tree Survey Report presents:

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

2.0 The Site and Its Context

2.1 The Site is situated at a steep slope, extending uphill from the lower section of the existing right of way ("RoW") to the platform of Caronia, which is an existing single house development. The lower section of the Site is located at approx. +127.6mPD, while the upper section on the platform is at approx. +146.0mPD. The total site area is about 89.6m^2. It is accessible from the existing staircase and footpath leading from Bowen Road.

2.2 The Site is primarily a vegetated slope, with a portion occupied by a temporary manual conveying system. Trees are scattered on slopes and are generally in poor form and health conditions. In accordance with DEVB TCW No. 5/2020 – *Registration and Preservation of Old and Valuable Trees (OVT)*, and the *Forests and Countryside Ordinance*, no OVT or protected species have been identified within the site.

2.3 The landscape character of the Site and its surrounding is solely low-rise luxury houses e.g. Evan Court, Man Yuen, medium-rise residential development, e.g. Monticello, Bamboo Grove and natural hillsides.

3.0 The Proposed Redevelopment

3.1 The Proposed Access, involving the installation of an inclined lift (about of 32m in length) and the associated works area, occupies a site area of about 89.6m^2. This is to provide barrier-free access alongside the existing RoW, with a view to enhancing accessibility for the residents of Caronia.

3.2 The Proposed Access is strategically positioned adjacent to the existing gate at the lower section of the RoW, at approx. +127.6mPD, extending uphill to the platform of the Caronia at approx.. +146.0mPD. To minimize potential intrusion into the surrounding environment, the proposed inclined lift features a compact design with a dimension of approx.. 2.2m in height and 1.5m in width, which will facilitate seamless integration with the existing terrain and built features, such as the adjacent staircase and footpath. Drawings of the Proposed Access could be referred to the drawings submitted under the same application.

3.2 Due to the construction works, some of the vegetation would be affected by the Proposed Access. The detailed tree assessment shall refer to the **Para 4.0** below. The access layout has overlaid on the Tree Treatment Plan to illustrate the impact of the Proposed Access on existing vegetation. The Tree Treatment Plan and tree assessment schedule are included in **Appendix A** and **Appendix B** for reference.

4.0 Existing Vegetation

4.1 A tree survey was carried out on **3 November 2025** in accordance with LAO PN No. 6/2023. In order to determine the impact on existing trees, trees within **3**m from the Application Site Boundary are included in the tree survey. A total of **11** trees including **2** within and **9** outside the Site were recorded. The photographic records of these existing trees are in **Appendix C**. The surveyed existing tree species are outlined below:

Table 1.0 Existing Tree Species Summary (Surveyed Trees)

Species no.	Scientific Name	Chinese Name	Quantity	Tree No.
1	*Dimocarpus longan*	龍眼	1	T01
2	*Nerium oleander*	夾竹桃	2	T02, T06
3	*Livistona chinensis*	蒲葵	3	T03, T07, T08
4	*Sterculia lanceolata*	假蘋婆	3	T04, T05, T09
5	*Litsea monopetala*	假柿樹	2	T10, T11
		Total:	**11**	

4.2 The tree species recorded are mostly common species found in Hong Kong. A total of **5** species were identified, with heights ranging from **3.0** m to **12.0** m, crown spreads from **3.5** m to **8** m, and DBH (Diameter at Breast Height) from **108** mm to **600** mm. No OVT, protected species and TPI has been identified in accordance with the DEVB TCW No. 5/2020 – Registration and Preservation of Old and Valuable Trees, the Forests and Countryside Ordinance and Guidelines for Tree Risk Assessment and Management Arrangement (10th Edition) respectively.

5.0 Recommendation

5.1 The construction works will lead to disturbance of **5** surveyed existing tree. The layout of the Proposed Access has been overlaid on **Tree Treatment Plan** in **Appendix A** to illustrate the impact on the existing trees. **Table 2.0** provides a summary of the recommendation for the treatment of these surveyed existing trees.

Table 2.0 Summary of Tree Recommendation

	Trees to be Retained	**Trees to be Transplanted**	**Trees to be Felled**	**Subtotal:**
Trees within Site	0	0	2	2
Trees outside Site	6	0	3	9
Subtotal:	**6**	**0**	**5**	**11**

Retention of Trees

5.2 **6** trees outside the Application Site will remain unaffected by the Proposed Access. These trees are located on both sides of the running track of the Inclined Lift and are outside the working area for construction. The retained trees will be protected and maintained in accordance with the details specified in Section 25 – Landscape Work of the General Specification for Building (2022) and the relevant guidelines issued by DEVB. Please also refer to the **Tree Protection Plan** in **Appendix D**.

Felling and Transplantation of Trees

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

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

5.3 **None** of the disturbed trees within the Application Site boundary can fulfil the above requirement and are recommended to be transplanted.

5.4 All **5** disturbed trees, including tree nos. **T09,** and **T11** within Site and tree nos. **T01, T02** and **T08** are growing on steep sloping areas. It is very challenging to form well-balanced and viable rootballs for transplantation in these conditions. Additionally, transplanting semi-mature trees on steep slopes may compromise their stability. Therefore, it is proposed to remove these trees and replace them with high-quality trees as compensation.

6.0 PLANTING PROPOSALS (Refer to Appendix E)

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

- To compensate the loss of affected tree;
- To screen the Inclined Lift and reduce the visual impact to the nearby residents/ visitors;
- To minimize future maintenance; and
- To be compatible with the hillside environment.

6.2 In this study area, a total of **11** trees were recorded, including **2** located within and **9** outside the application site boundary. Of these, **6** trees will be retained in-situ, while **5** trees—comprising **2** within and **3** outside the boundary—will be felled due to conflicts with the Proposed Access and associated works. To compensate, **8** new trees of standard size are proposed.

6.3 New standard trees will be planted along the western sides of the Proposed Access. Besides, they are proposed at relatively flat areas with slope gradient ranging from 17° to 29°, in accordance with Technical Guidelines on Landscape Treatment for Slopes (GEO Publication No. 1/2011). Please refer to the **Landscape Section** showing the slope gradient in **Appendix E**. The species list is provided below:

Table 5.0 Proposed Planting Schedule

Botanical Name	**Chinese Name**	**Size (mm)**	**Spacing (mm)**	**Native/ Exotic**
STANDARD TREES		**Height x Spread x DBH (mm)**		
Castanopsis fissa	黧蒴錐	1250x750x50	2500	Native
Liquidambar formosana	楓香	1250x750x50	2500	Native
Schima superba	木荷	1250x750x50	2500	Native

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

Quantity of loss of trees: 5 nos.
Quantity of compensatory trees: 8 nos.
Quantity compensation ratio approx. 1:1.6

6.3 Tree Planting Plan showing the location of retained trees and new trees are shown in **Appendix E**.

Appendix A

Tree Treatment Plan



PROJECT :

PROPOSED ACCESS (INCLINED LIFT) FOR THE EXISTING RESIDENTIAL DEVELOPMENT IN "GREEN BELT" AND "RESIDENTIAL (GROUP C) 1 ZONES" AT NO.17 BOWEN ROAD. MID-LEVELS. HONG KONG

DRAWING TITLE :

TREE TREATMENT PLAN

PROJECT No. C2525

DRAWING No. TS01

SCALE : 1:150

DATE OF ISSUE : OCT 2025

CAD FILENAME : C2525-TS01

REV	DESCRIPTION	DATE

DESIGN BY : TEL

DRAWN BY : CAD

CHECKED BY : TEL

APPROVED BY : TEL

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3. ALL DIMENSIONS ARE TO BE CHECKED AT SITE BY THE MAIN CONTRACTOR.
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LanDes

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Appendix B

Tree Assessment Schedule

Tree Treatment Schedule at
Proposed Access (Inclined Lift) for the Existing Residential Development in "Green Belt" and "Residential (Group B)" Zones
at No. 17 Bowen Road, Mid-Levels, Hong Kong
Prepared by Ted Lam (R.L.A. No. R-073) on 03/11/2025
To be read in conjunction with Tree Survey Plan, dwg. no. C2525-TS01

Tree	Species					Proposed Treatment	Remark[1]
No.	Scientific Name	Chinese Name	Height (m)	DBH[2] (mm)	Crown Spread (m)	(Retain/Transplant/Fell)	
Trees within Application Site Boundary							
T09	*Sterculia lanceolata*	假蘋婆	5.5	163.00	5.0	Fell	on rocky steep slope
T11	*Litsea monopetala*	假柿樹	9.0	492.00	8.0	Fell	restricted root, leaning, co-dominant trunks, included bark
Trees outside Application Site Boundary							
T01	*Dimocarpus longan*	龍眼	8.0	600.00	6.0	Fell	restricted root, on steep slope, canker at trunk base, inrolled crack at trunk base, truncated branch
T02	*Nerium oleander*	夾竹桃	3.0	135.00	3.5	Fell	on rocky steep slope, trunk topped
T03	*Livistona chinensis*	蒲葵	7.0	220.00	4.0	Retain	restricted root, on rocky steep slope
T04	*Sterculia lanceolata*	假蘋婆	6.0	108.00	3.5	Retain	on rocky steep slope, bending trunk
T05	*Sterculia lanceolata*	假蘋婆	7.0	180.00	4.5	Retain	on rocky steep slope
T06	*Nerium oleander*	夾竹桃	5.0	147.00	4.5	Retain	on rocky steep slope, leaning, trunk split
T07	*Livistona chinensis*	蒲葵	5.0	215.00	4.5	Retain	on rocky steep slope
T08	*Livistona chinensis*	蒲葵	7.5	255.00	5.0	Fell	on rocky steep slope
T10	*Litsea monopetala*	假柿樹	12.0	410.00	6.0	Retain	restricted root, on rocky steep slope, trunk conflicted with concrete stairs, broken branch

Summary Table

Tree to be Retained	6 nos.
Tree to be Transplanted	0
Tree to be Felled	5 nos.
Total Number of Existing Trees	11 nos.

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

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

Appendix C

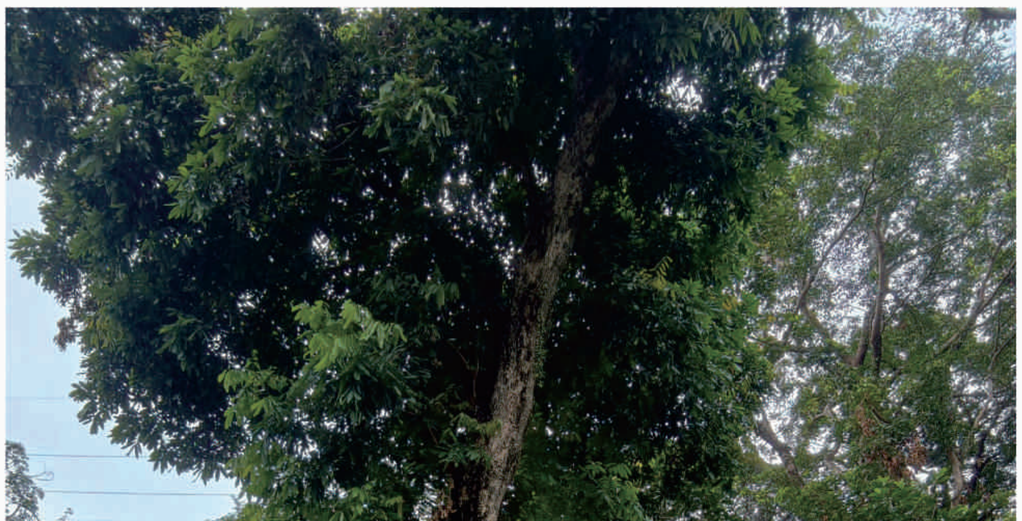
Photographic Record of Existing Trees



T01 (F) - Label



T01 (F) - Overview



T01 (F) - Trunk



T01 (F) - Canker at Trunk Base

LEGEND :

(R) - Retain , (F) - Fell , (T) - Transplant

Photographic Record of Existing Trees

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PROPOSED ACCESS (INCLINED LIFT) FOR THE EXISTING RESIDENTIAL DEVELOPMENT IN "GREEN BELT" AND "RESIDENTIAL (GROUP C) 1 ZONES" AT NO.17 BOWEN ROAD, MID-LEVELS, HONG KONG



T02 (F) - Label



T02 (F) - Overview



T02 (F) - Trunk



T02 (F) - Trunk Topped

LEGEND :

(R) - Retain , (F) - Fell , (T) - Transplant



T03 (R) - Label



T03 (R) - Overview



T03 (R) - Trunk



T03 (R) - Base

LEGEND :

(R) - Retain , (F) - Fell , (T) - Transplant



T04 (R) - Label



T04 (R) - Overview



T04 (R) - Trunk



T04 (R) - Base

LEGEND :

(R) - Retain , (F) - Fell , (T) - Transplant

Photographic Record of Existing Trees

LanDes

PROPOSED ACCESS (INCLINED LIFT) FOR THE EXISTING RESIDENTIAL DEVELOPMENT IN "GREEN BELT" AND "RESIDENTIAL (GROUP C) 1 ZONES" AT NO.17 BOWEN ROAD, MID-LEVELS, HONG KONG



T05 (R) - Label



T05 (R) - Overview



T05 (R) - Trunk



T05 (R) - Base

LEGEND :

(R) - Retain , (F) - Fell , (T) - Transplant



T06 (R) - Label



T06 (R) - Overview



T06 (R) - Trunk



T06 (R) - Trunk Split

LEGEND :

(R) - Retain , (F) - Fell , (T) - Transplant

Photographic Record of Existing Trees

LanDes



T07 (R) - Label



T07 (R) - Overview



T07 (R) - Trunk



T07 (R) - Base

LEGEND :

(R) - Retain , (F) - Fell , (T) - Transplant



T08 (F) - Label



T08 (F) - Overview



T08 (F) - Trunk



T08 (F) - Base

LEGEND :

(R) - Retain , (F) - Fell , (T) - Transplant

Photographic Record of Existing Trees

LanDes

PROPOSED ACCESS (INCLINED LIFT) FOR THE EXISTING RESIDENTIAL DEVELOPMENT IN "GREEN BELT" AND "RESIDENTIAL (GROUP C) 1 ZONES" AT NO.17 BOWEN ROAD, MID-LEVELS, HONG KONG



T09 (F) - Label



T09 (F) - Overview



T09 (F) - Trunk



T09 (F) - Base

LEGEND :

(R) - Retain , (F) - Fell , (T) - Transplant

Photographic Record of Existing Trees

LanDes

PROPOSED ACCESS (INCLINED LIFT) FOR THE EXISTING RESIDENTIAL DEVELOPMENT IN "GREEN BELT" AND "RESIDENTIAL (GROUP C) 1 ZONES" AT NO.17 BOWEN ROAD, MID-LEVELS, HONG KONG



T10 (R) - Label



T10 (R) - Overview



T10 (R) - Trunk



T10 (R) - Broken Branch

LEGEND :

(R) - Retain , (F) - Fell , (T) - Transplant



T11 (F) - Label



T11 (F) - Overview



T11 (F) - Trunk



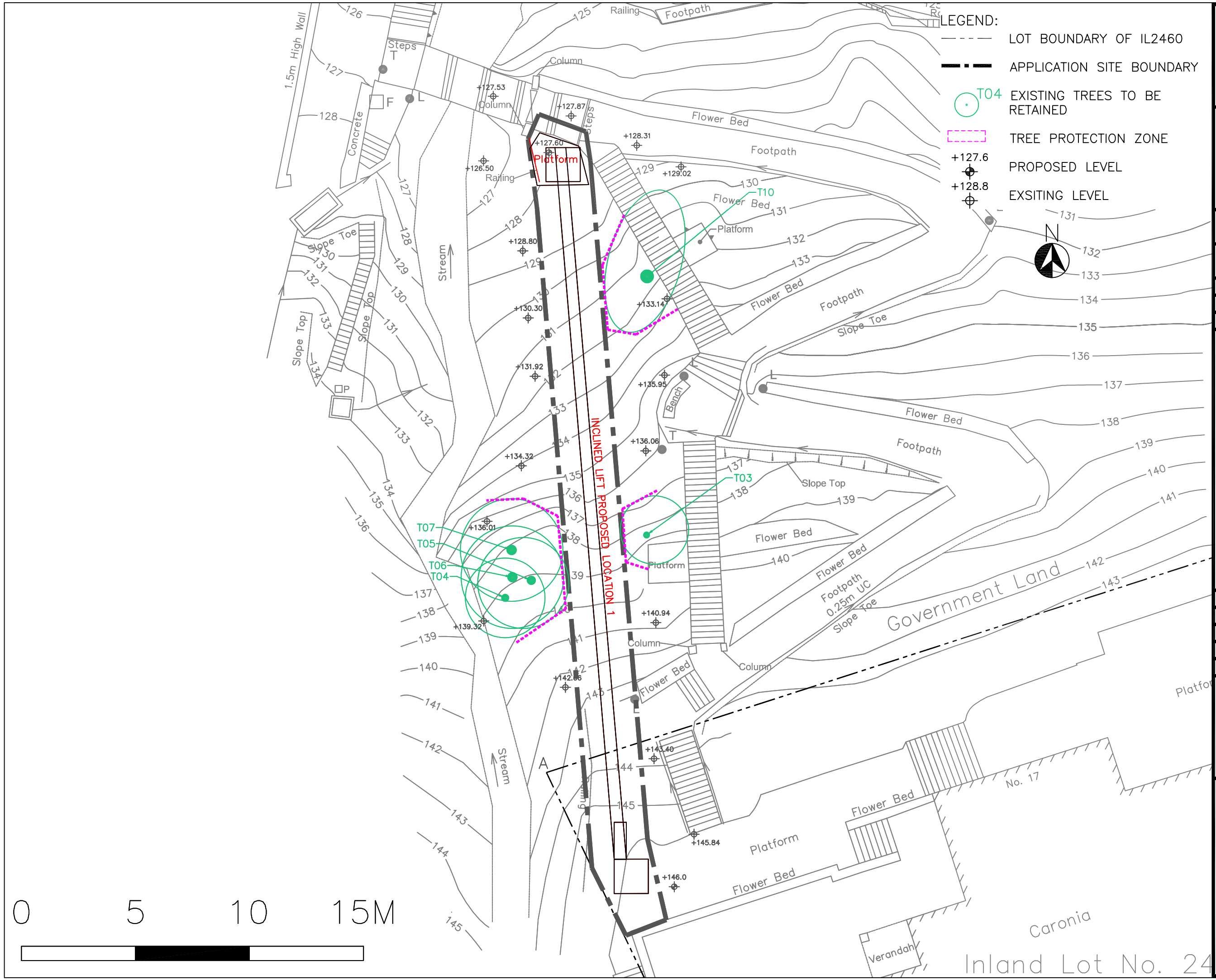
T11 (F) - Included Bark

LEGEND :

(R) - Retain , (F) - Fell , (T) - Transplant

Appendix D

Tree Protection Plan



PROJECT :

PROPOSED ACCESS (INCLINED LIFT) FOR THE EXISTING RESIDENTIAL DEVELOPMENT IN "GREEN BELT" AND "RESIDENTIAL (GROUP C) 1 ZONES" AT NO.17 BOWEN ROAD. MID-LEVELS. HONG KONG

DRAWING TITLE :

TREE PROTECTION PLAN

PROJECT No. C2525

DRAWING No. TP01

SCALE : 1:150

DATE OF ISSUE : OCT 2025

CAD FILENAME : C2525-TP01

REV	DESCRIPTION	DATE

DESIGN BY : TEL

DRAWN BY : CAD

CHECKED BY : TEL

APPROVED BY : TEL

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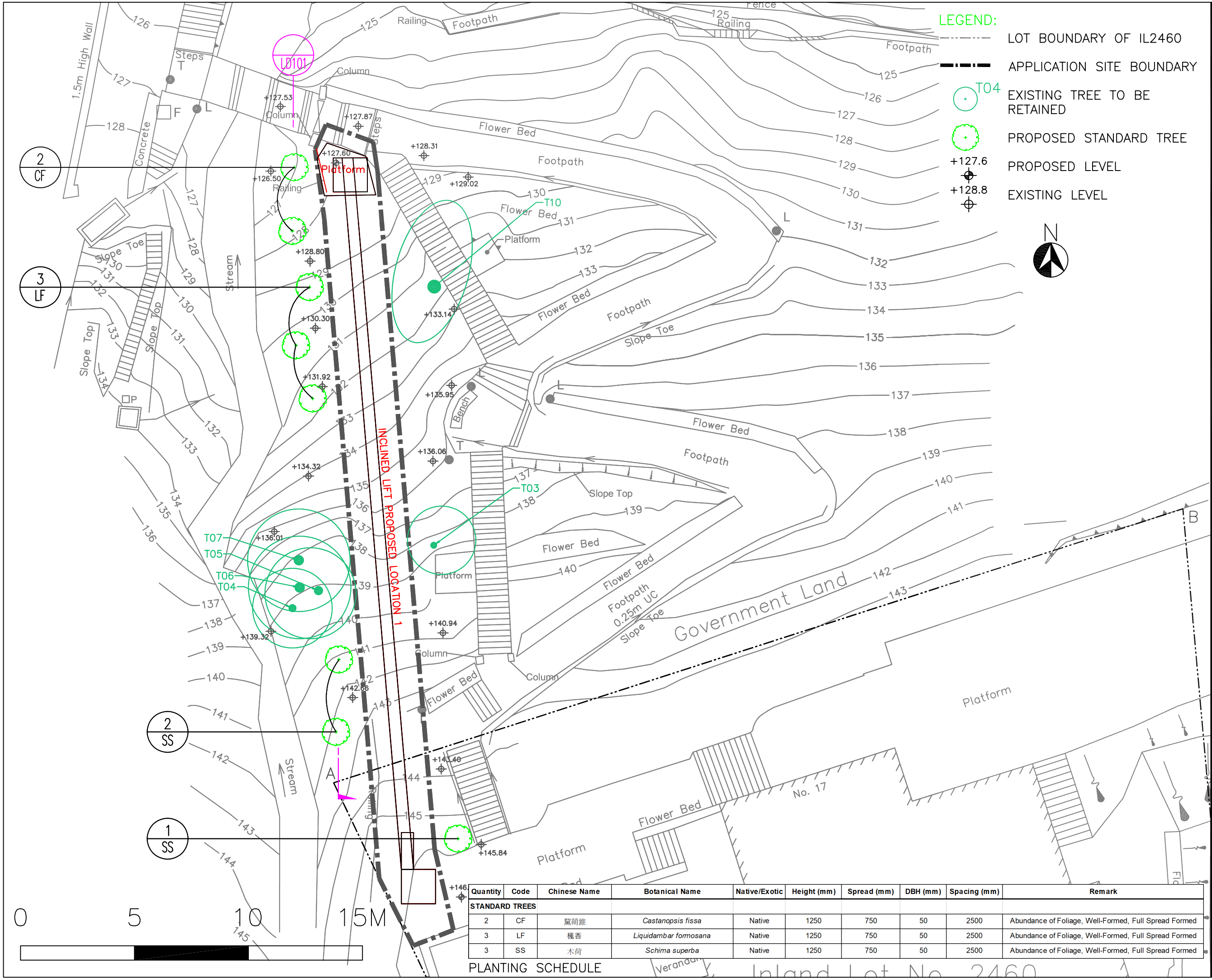
LanDes

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Appendix E

Tree Planting Plan



PLANTING SCHEDULE

Quantity	Code	Chinese Name	Botanical Name	Native/Exotic	Height (mm)	Spread (mm)	DBH (mm)	Spacing (mm)	Remark
STANDARD TREES									
2	CF	黧蒴錐	*Castanopsis fissa*	Native	1250	750	50	2500	Abundance of Foliage, Well-Formed, Full Spread Formed
3	LF	楓香	*Liquidambar formosana*	Native	1250	750	50	2500	Abundance of Foliage, Well-Formed, Full Spread Formed
3	SS	木荷	*Schima superba*	Native	1250	750	50	2500	Abundance of Foliage, Well-Formed, Full Spread Formed

PROJECT :

PROPOSED ACCESS (INCLINED LIFT) FOR THE EXISTING RESIDENTIAL DEVELOPMENT IN "GREEN BELT" AND "RESIDENTIAL (GROUP C) 1 ZONES" AT NO.17 BOWEN ROAD, MID-LEVELS, HONG KONG

DRAWING TITLE :

TREE PLANTING PLAN

PROJECT No. C2525

DRAWING No. PT01

SCALE : 1:150

DATE OF ISSUE : OCT 2025

CAD FILENAME : C2525-PT01

REV	DESCRIPTION	DATE

DESIGN BY : TEL

DRAWN BY : CAD

CHECKED BY : TEL

APPROVED BY : TEL

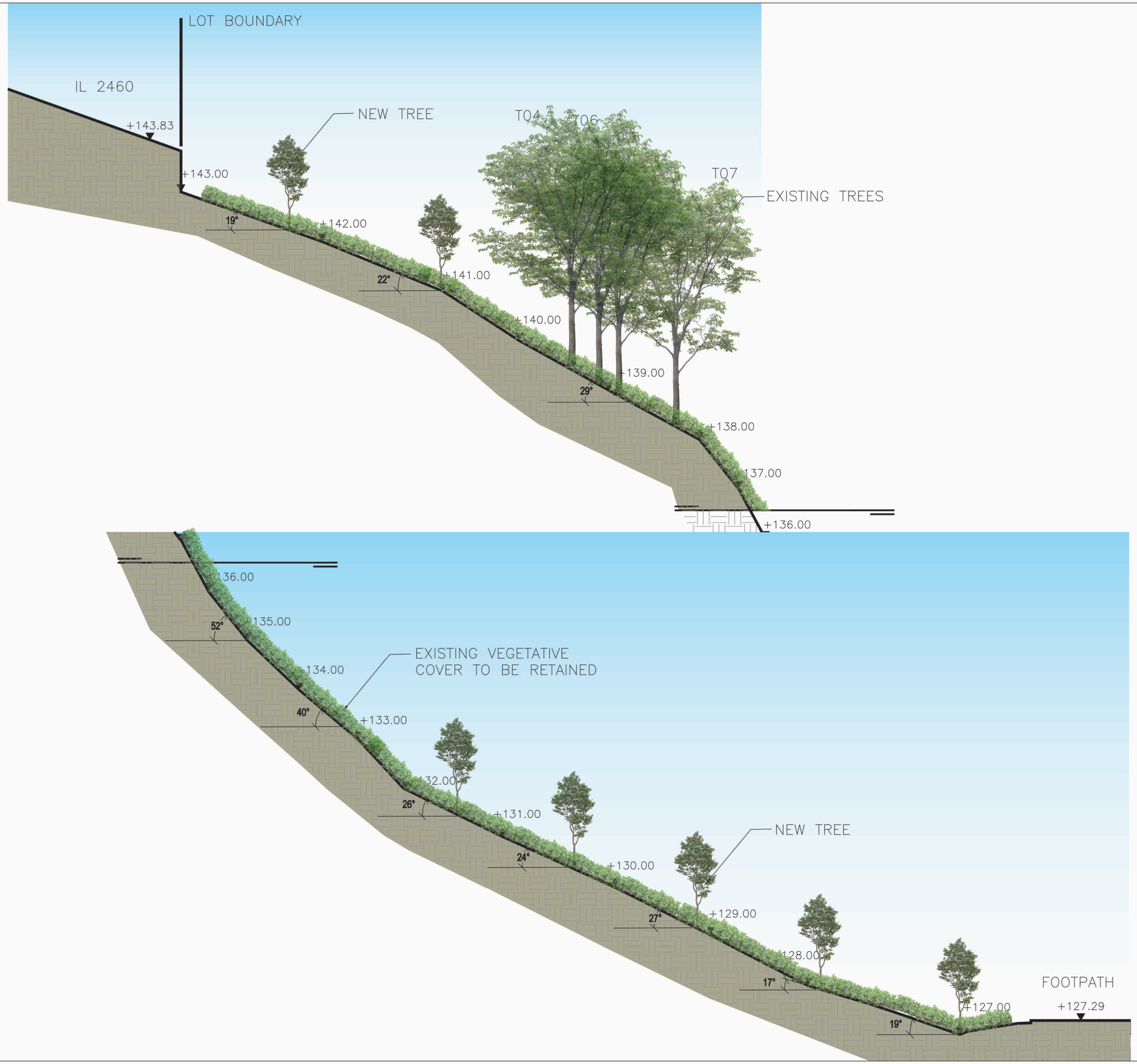
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PROJECT :

PROPOSED ACCESS (INCLINED LIFT) FOR THE EXISTING RESIDENTIAL DEVELOPMENT IN "GREEN BELT" AND "RESIDENTIAL (GROUP C) 1 ZONES" AT NO.17 BOWEN ROAD, MID-LEVELS, HONG KONG

DRAWING TITLE :

LANDSCAPE SECTION

PROJECT No. C2525

DRAWING No. LD101

SCALE : 1:75

DATE OF ISSUE : OCT 2025

CAD FILENAME : C2525-LD101

REV	DESCRIPTION	DATE

DESIGN BY : TEL

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Appendix 3

Geotechnical Planning Review Report

Project:

Proposed Access (Inclined Lift) for the Existing Residential Development in "Green Belt" and "Residential (Group C) 1" Zones at 17 Bowen Road, Mid-Levels, HK S16 Planning Application

Geotechnical Planning Review Report

Revision:

Date: 11/ 2025

Project no.:	25047
Designed by:	NC
Check / Approved By:	Eddy Kwok

So Chi Wai

Registered Geotechnical Engineer

(RGE No.: 89/ 00)

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Appendices

Appendix 01 – Topographic Survey Plan

Appendix 02 – Proposed Geotechnical Works Layout Plan & Section

Appendix 03 – Record Photos for Existing Site Condition

Appendix 04 – Abstract of Natural Terrain Hazard Map and Records

Appendix 05 – Abstract of Slope Registration Record

Appendix 06 – Abstract of Record Ground Investigation Report

Appendix 07 – Reference Drawings for Similar Development

(Tai O Heritage Hotel)

1 Introduction

1.1 Background

Green Engineering Consultant Company Limited (GEC) is commissioned as the geotechnical engineering consultant to support the application of Section 16 for the site at No. 17 Bowen Road, Mid-Levels, Hong Kong. The application site (the "Site") is located in "Green Belt" and "Residential (Group C) 1" Zones at North side of No. 17 Bowen Road, Hong Kong. The Site area is about 90 m^2 in which about 77.8% of site area falls in Government Land whilst about 22.2% of area is within Inland Lot (IL) 2460 that wholly owned by the Applicant.

2 Site Information

2.1 General

The Site is about 2.4 m x 38 m with site area 90 m^2 approximately on plan. It is on a sloping ground with site ground level 146 mPD at Lot IL 2460 to 127.6 mPD at the existing stairway at North. There is an existing natural stream on the West side and 1 m wide stairway on the East side. The average gradient of the slope is about 1:2 (i.e. 26 degree) along the site.

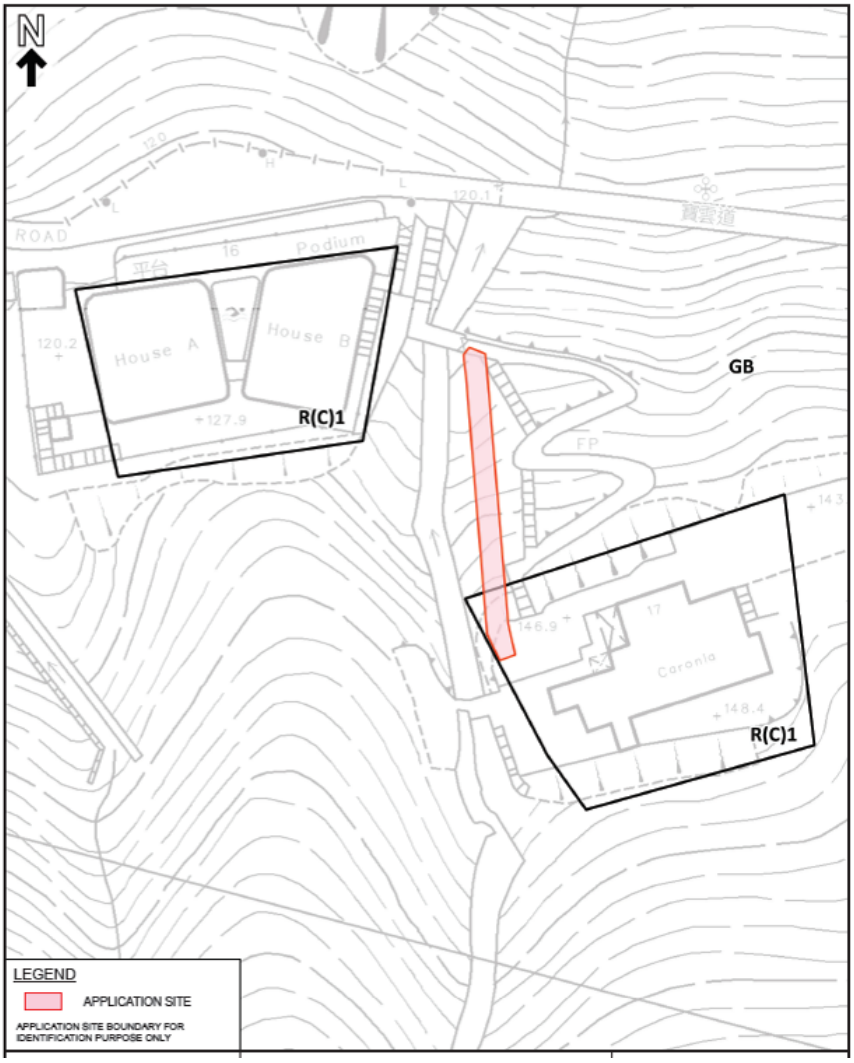


Figure 1: Site Plan

2.2 Site Geology

To reveal the geological information for the site, the following information was reviewed and collected:-

- The Hong Kong Geological Map Sheet (Edition II-2012)
- Geotechnical Area Studies Programme (GASP)
- Enhanced Natural Terrain Landslide Inventory (ENTLI)
- Existing Ground Investigation Record

2.2.1 Geological Map

The Hong Kong Geological Map Sheet (Edition II – 2012) No. 11 (Scale 1:20,000) on Solid Geology published by the Geotechnical Engineering Offices indicates that the Site is underlain by bedrock of fine ash tuff of Upper Jurassic Mesozoic. The part of the geological map is shown in Figure 2 below.

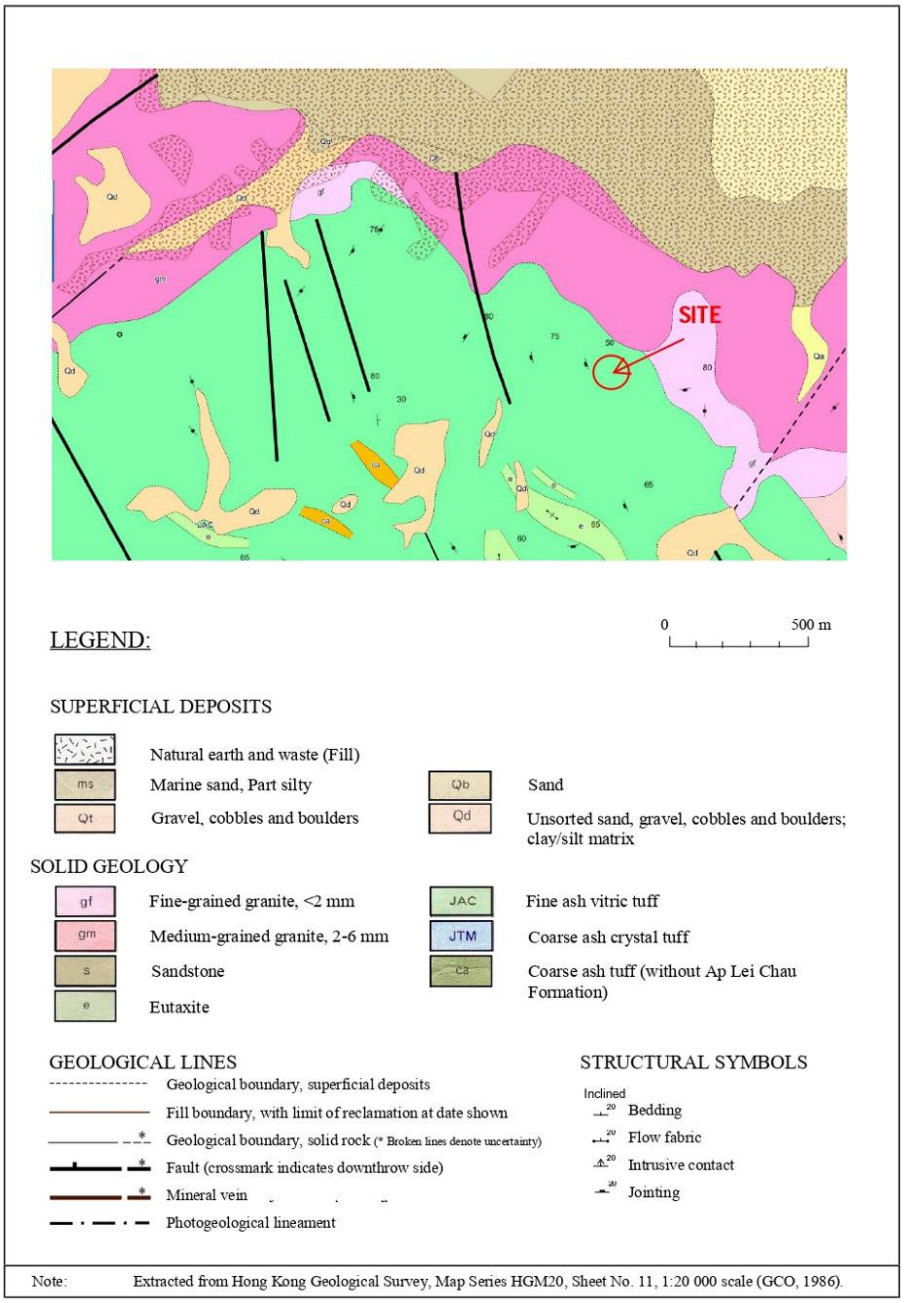


Figure 2: The Geological Map of Hong Kong (Sheet 11: HGM20 Series : Edition II-2012)

2.2.2 Geotechnical Area Studies Programme (GASP)

According to Geotechnical Area Studies Programme (GASP), Geotechnical Land Use map GASP/20/1/1, the Site is classified as Class III with high geotechnical limitations. It may require intensive geotechnical investigation.

High engineering cost and normal site investigation works envisaged. Engineering Geology Map GASP/20/1/2 indicated the site geology is dominantly granophyric rocks that weathers to produce clayey silty sand with corestones. Physical Constraints Mapsheet GASP/20/1/6 indicates the Site is within zone of general instability associated with predominate in-situ terrain.

2.2.3 Natural Terrain Hazards

There is no landslide record at the site area. ENTLI records that there are two past slope failure at about 80 m East of the Site. They are:-

ENTLI No.	Type of Slides	Width of Main Scarp (m)	Length of Landslide Source (m)	Year of Landslide Observed
11SWD0602E	Relict	33	40.5	1963
11SWB0008E	Recent open hillside	25	20	1982
11SWD0729E	Recent open hillside	15	30	2008

Table 1: Record of Slope Failure Nearby

Detail information of the record is appended in Appendix 04. All the affected slope features shall be checked and upgraded to achieve current standard as necessary.

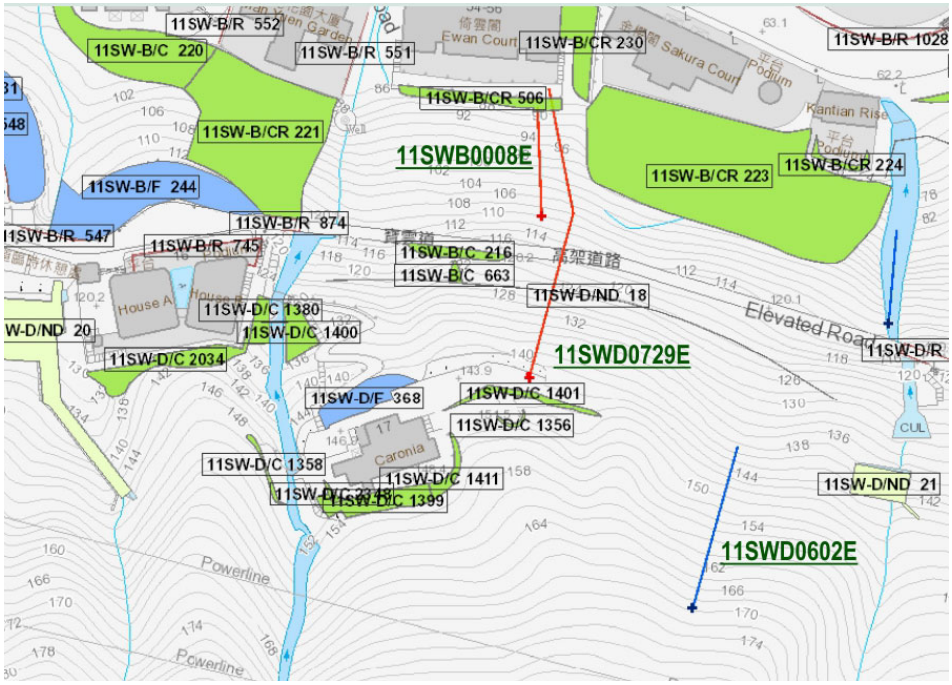


Figure 3: Location Plan of Past Slope Failure Record

2.2.4 Pervious Ground Investigation Records

There is no recorded borehole information within the Site. However, the most nearby ground investigation record is the ground investigation work conducted by Driltech in 2010 that includes three trial pits and two slope stripping at the existing feature no.: 11SW-D/C 1411 at the South-east of the Site.

The inferred geological profile by recorded ground investigation information indicates that the top soil is 0.6 m thick colluvium with grade V CDT below.

Copy of the ground investigation report is appended in Appendix 06.

2.2.5 Groundwater

No ground water monitoring records were available.

2.3 Adjoining Structures

There is an existing two storey residential building, Caronia (IL 2460), suit at the South side of the proposed Site.

2.4 Existing Features Within and Adjacent to the Site Area

Major geotechnical features in the vicinity and their Slope Information System (SIS) together with proposed actions are summarized as below:-

Feature No.	Type of Feature	Slope Dimension (Max. H X L (m))	Angle (Degree)	Maintenance Responsibility
11SW-D/C 138	Soil Cut Slope	6.5 (H) x 15 (L)	45	CEDD
11SW-D/C 1400	Soil Cut Slope	8.5 (H) x 16 (L)	50	IL 2460
11SW-D/F 368	Soil Cut Slope	5 (H) x 23 (L)	35	IL 2460

Copy of the slope information is appended in Appendix 05.

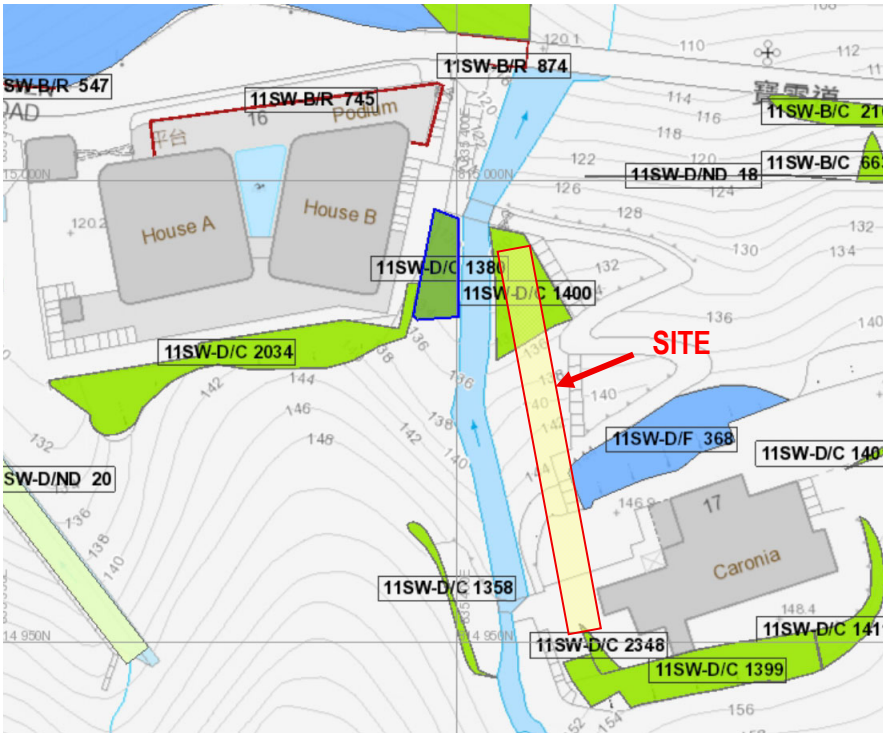


Figure 4: Existing Feature Layout Plan

3 Proposed Development

It is proposed to construct a inclined lift from the flat platform with level 146 mPD at IL 2460, Caronia, to the stair platform at level about 127.6 mPD. A new R C trough will be constructed to support the lift. Critical section along the proposed lift is provided in Figure 6.

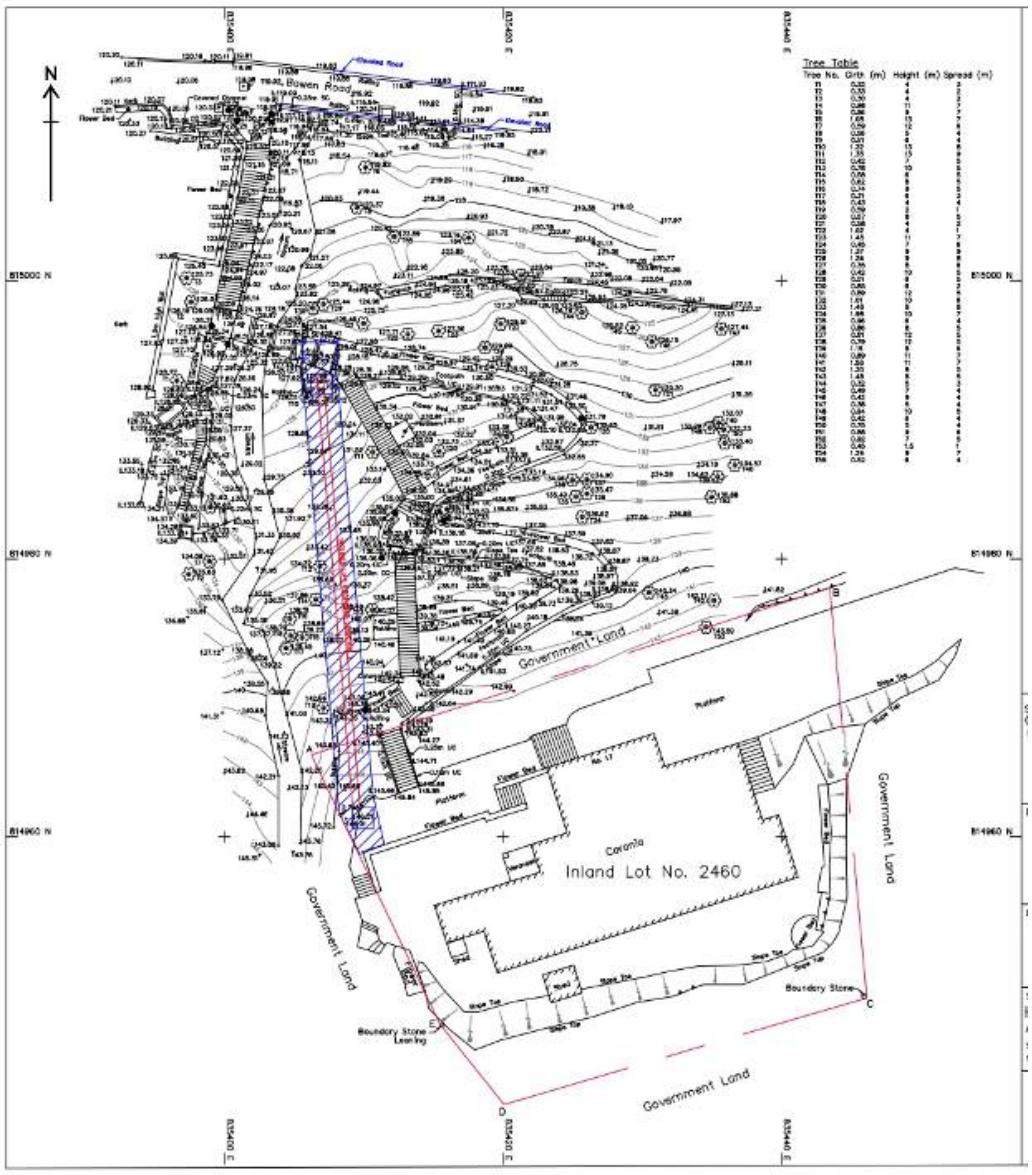


Figure 5: Proposed Layout of the Site

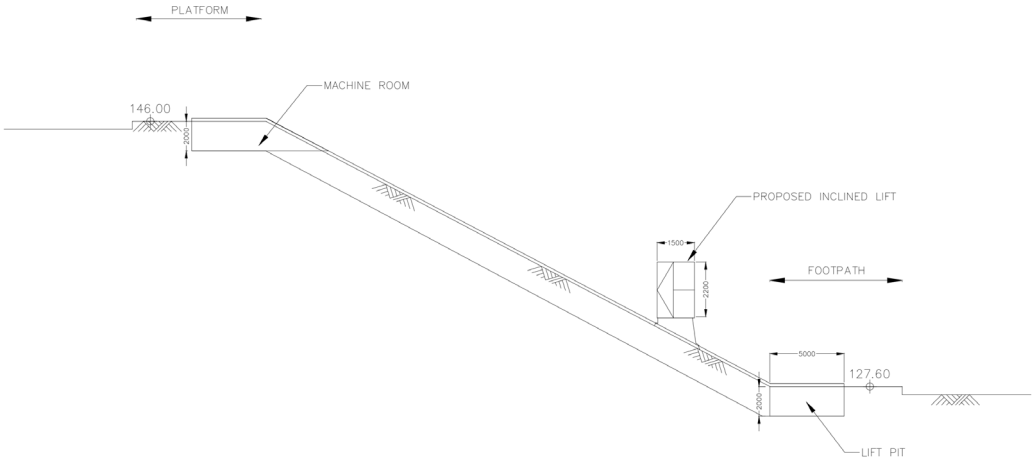


Figure 6: Section along the Proposed Inclined Lift

3.1 Proposed Site Formation Works

The natural hillside is about 26 degree that is not steep. There is no sign of distress apparent. Extensive geotechnical work shall be avoided to destroy its natural stability. The portion of natural slope measured 10 m on plan from the site boundary is proposed to undertake further study. Ground investigation works including vertical bored holes and trial pits shall be carried out to determine the soil design parameters for its stabilities checking. The affected area shall be upgraded as necessary to current safety standard. We consider that the subjected slope can be upgraded to sufficient factor of safety by installation of new soil nails and/ or rock dowel subjected to the detail design. Proper surface drainage will be provided to collect the surface water to the natural stream beside.

We consider that the natural terrain hazard study is not necessary because:-

(1) The proposed facilities are group 4 only (i.e. road with low vehicle or pedestrian traffic density) as per Table 2.2 of GEO Report No. 138.

(2) There is no past failure record at the subjected Site.

(3) The uphill side of the Site is protected by the existing platform of building, Caronia.

3.2 Proposed Foundation Works

The existing soil profile will be trimmed locally to provide a branched flat platform for strip footing of the R C trough. Soil nails will be installed to the affected slopes as necessary.

3.3 Proposed ELS Works

Temporary sheet pile / pipe pile with temporary open cut slope along both sides of the Site may be adopted for temporary excavation works of the proposed development.

3.4 Proposed Access during Construction Works

There is no accessible road directly to the subjected Site at this moment. We propose that all material and plants shall be transported from the adjoining Lot IL 2304 that owned by the applicant. The proposed development involves only soil nail, concrete work and backfilling that can be transported to the Site easily.

4 Effect on Adjacent Ground

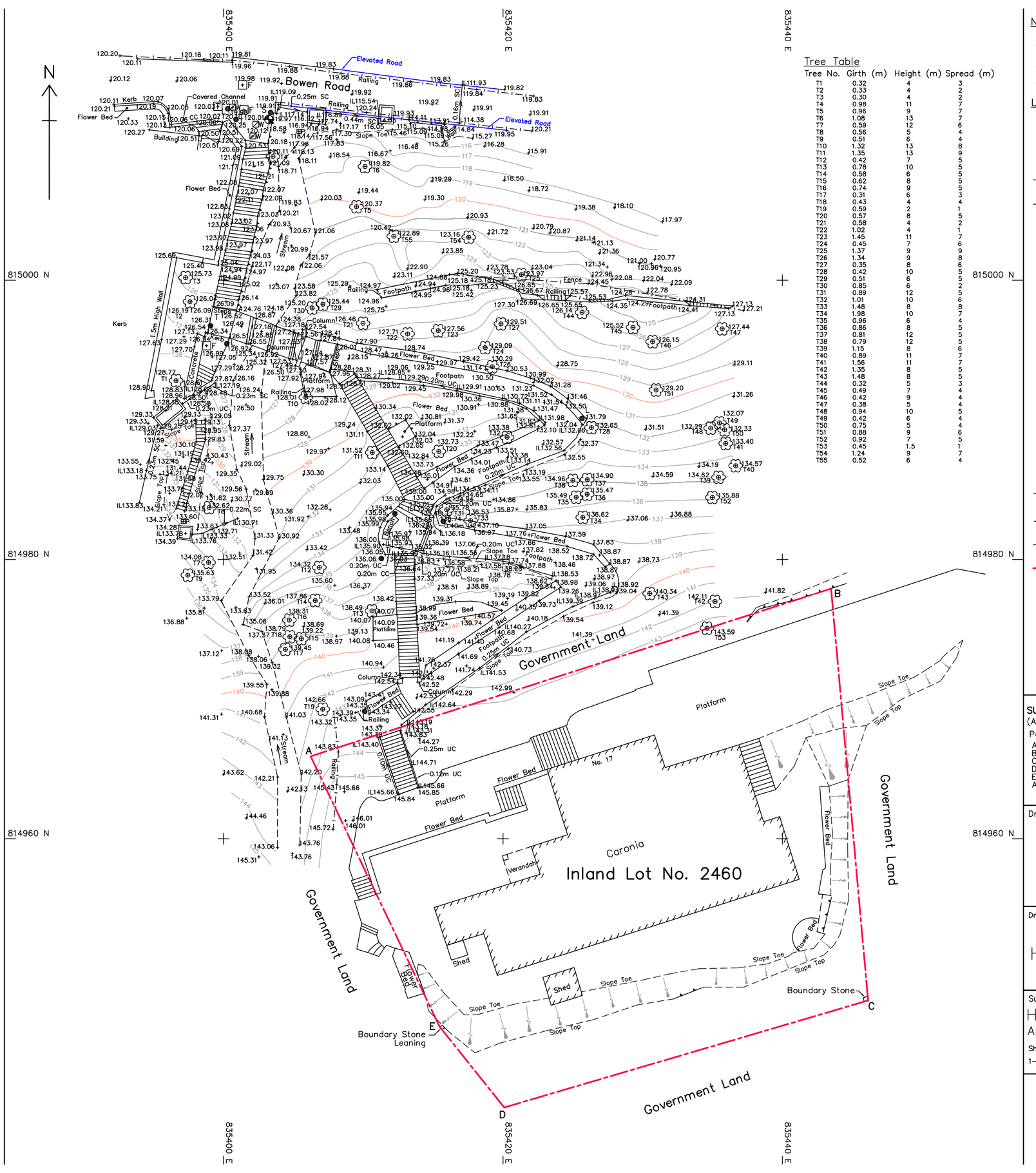
There are no nearby buildings or sensitive utilities that could adversely affect or be affected by the proposed development. The affected features will be checked and slope upgrading works will be provided as necessary.

5 Conclusion

The proposed development only involves slope stability enhancement and on-grade R C trough. It is considered geotechnical feasible based on its relatively small construction scale. Its surrounding natural sloping ground is not steep. We consider that no natural terrain hazard study is required. However, geotechnical assessment report, detailed design and works proposal of associated works shall be submitted for approval.

Appendix 01

Topographic Survey Plan



Tree Table

Tree No.	Girth (m)	Height (m)	Spread (m)
T1	0.32	4	3
T2	0.33	4	2
T3	0.30	4	2
T4	0.98	11	7
T5	0.96	9	7
T6	1.08	13	7
T7	0.59	12	6
T8	0.56	5	4
T9	0.51	6	4
T10	1.32	13	8
T11	1.35	13	9
T12	0.42	7	5
T13	0.78	10	5
T14	0.58	6	5
T15	0.62	8	5
T16	0.74	9	5
T17	0.31	6	3
T18	0.43	4	4
T19	0.59	2	1
T20	0.57	8	5
T21	0.58	4	2
T22	1.02	4	1
T23	1.45	11	7
T24	0.45	7	6
T25	1.37	9	9
T26	1.34	9	8
T27	0.35	8	6
T28	0.42	10	5
T29	0.51	6	5
T30	0.85	6	2
T31	0.89	12	5
T32	1.01	10	6
T33	1.48	8	8
T34	1.98	10	7
T35	0.96	6	4
T36	0.86	8	5
T37	0.81	12	5
T38	0.79	12	5
T39	1.15	8	6
T40	0.89	11	7
T41	1.56	11	7
T42	1.35	8	5
T43	1.48	8	5
T44	0.32	5	3
T45	0.49	7	4
T46	0.42	9	4
T47	0.38	5	4
T48	0.94	10	5
T49	0.42	6	4
T50	0.75	5	4
T51	0.88	9	6
T52	0.92	7	5
T53	0.45	1.5	1
T54	1.24	9	7
T55	0.52	6	4

Notes:

1. All levels are in metres above HK Principal Datum
2. Grid lines are in H.K. Metric Grid 1980.
3. Elevations of kerb are referred to the bottom of kerb.

Legend:

- F — Foul Water Manhole
- MH — Manhole
- 0.30m UC / IL45.20 — U–Channel and Invert Level
- 0.30m SC / IL45.20 — Stepped Channel and Invert Level
- Catch Pit
- T — Telecom Manhole
- P — Pit
- Bore Hole
- T1 — Tree & Tree Number
- L — Lamp Post
- S — Sign Pole
- T — Telephone Pole
- W — Valve Water
- Gate
- Slope
- Fence/Railing
- Retaining Wall Top
- Retaining Wall toe
- Lot Boundary

SUBJECT INLAND LOT NO.– 2460

(Area =964.0 sq. m. (about))

Point	Bearing	Distance	N	E
A			814 965.905	835 406.233
B	72°07'45"	39.141	814 977.916	835 443.485
C	174°51'48"	29.616	814 948.419	835 446.137
D	253°36'52"	27.153	814 940.759	835 420.087
E	321°22'48"	7.417	814 946.554	835 415.458
A	334°30'39"	21.438	814 965.905	835 406.233

Drawing title:

Topographical Survey Plan of Inland Lot No. 2460, 17 Bowen Road, Hong Kong.

Drawing No.:	Date:	Scale:
HC–16208/01	23/04/2025	1 : 200 (A2)
	Checked by: H. So	Drawn by: H.Y. Poon

Surveyor:

HENRY CHAN SURVEYORS LTD.

Authorized Land & Hydrographic Surveyors

Shop 7, Mei Hing Mansion, 1–17 Yan Hing Street, Tai Po, N.T.

Tel : 2638–1313 Fax : 2638–1328

e–mail : hcsurvey@netvigator.com

Henry H K Chan

BSc FHKIS RPS(LSD)

Authorized Land Surveyor

Appendix 02

Proposed Geotechnical Works Layout Plan & Section

B.D. Ref. No. –

LEGENDS : –

WORKING AREA

PROPOSED TEMPORARY SHEET PILE OR PIPE PILE



–	NOV. 2025	1st BD SUBMISSION
REV.	DATE	DESCRIPTION

DRAWN BY:	TTT	SCALE:	A3 1:300
APPROVED BY:	EK	DATE:	NOV., 2025

CONSULTING ENGINEER:

Green Engineering Consultant Company Limited
晴工程顧問有限公司
W1, 9/F, The Bedford, 93 Bedford Road, Kowloon
九龍必發道 93 號 The Bedford 9 樓 W1 室
T: (852) 2381 6633 E: mail@gecc.hk
F: (852) 2152 7510 : www.facebook.com/GECCL

THE COPYRIGHT IN THIS DRAWING IS RETAINED BY THE ENGINEER WHOSE CONSENT MUST BE OBTAINED BEFORE ANY USE OR REPRODUCTION IN WHOLE OR IN PART CAN BE MADE.

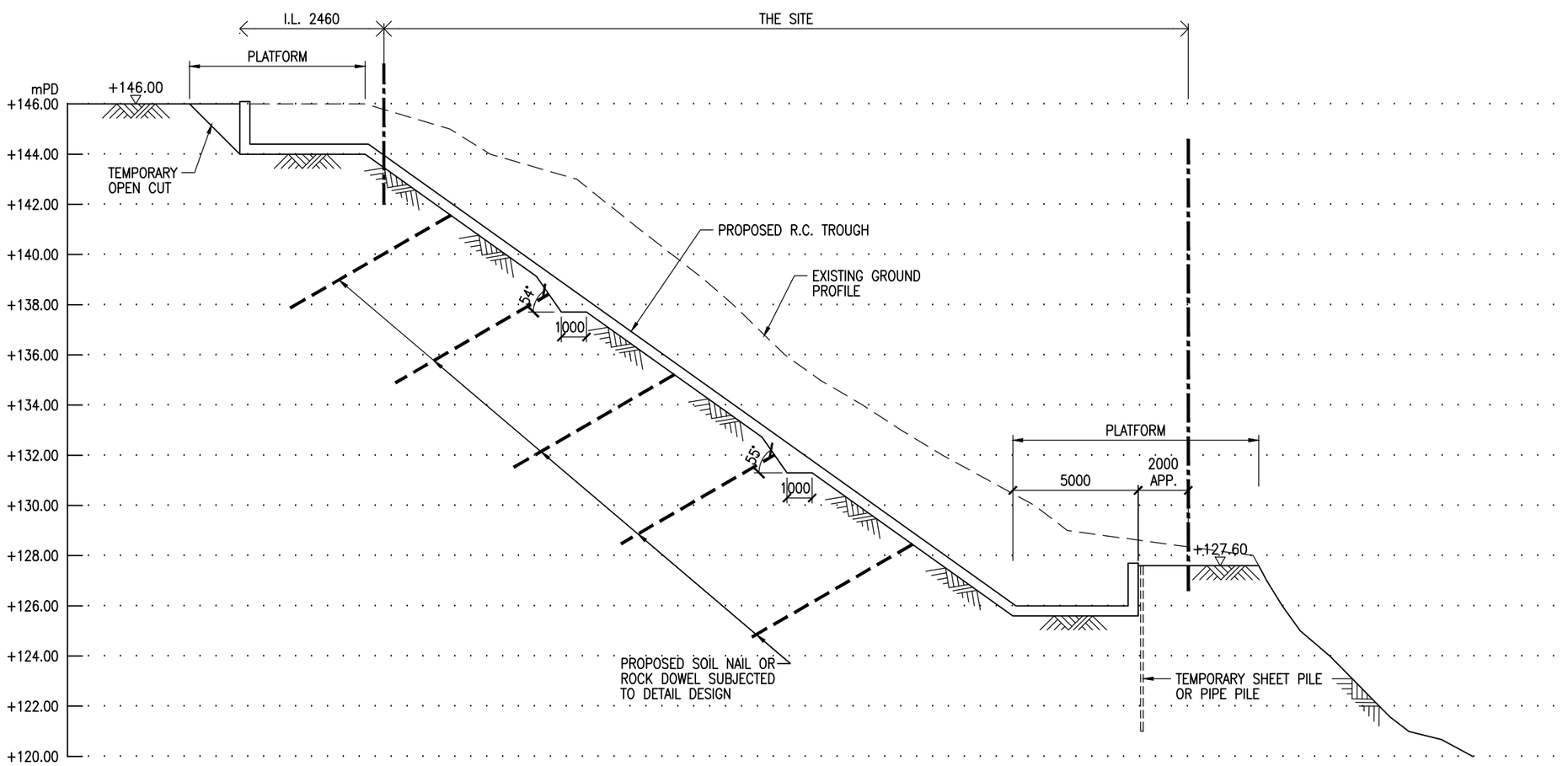
PROJECT:
PROPOSED ACCESS (INCLINED LIFT) FOR THE EXISTING RESIDENTIAL DEVELOPMENT IN "GREEN BELT" AND "RESIDENTIAL (GROUP C) 1" ZONES AT 17 BOWEN ROAD, MID-LEVELS, HK S16 PLANNING APPLICATION

DRAWING TITLE:
PROPOSED GEOTECHNICAL WORK LAYOUT PLAN

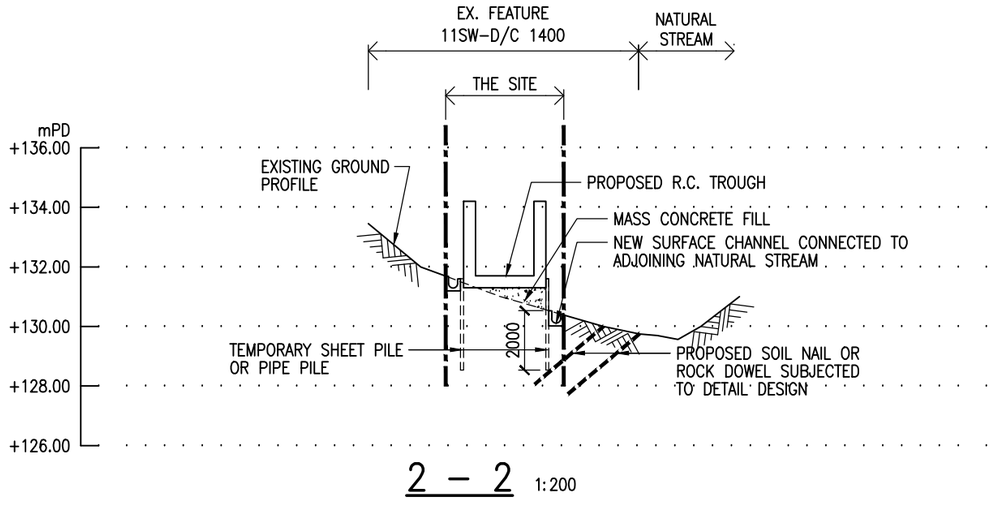
DRAWING No.:	PROJECT No.:
25047_SK-001	25047

Cad Ref. 25047_SK001.dwg

B.D. Ref. No. –



1 – 1 1:200



2 – 2 1:200

REV.	DATE	DESCRIPTION
–	NOV. 2025	1st BD SUBMISSION

DRAWN BY:	TTT	SCALE:	AS SHOWN
APPROVED BY:	EK	DATE:	NOV., 2025

CONSULTING ENGINEER:

Green Engineering Consultant Company Limited
晴工程顧問有限公司
W1, 9/F, The Bedford, 93 Bedford Road, Kowloon
[illegible] The Bedford 93 W1
T: (852) 2381 6633 E: mail@gecc.hk
F: (852) 2152 7510 www.facebook.com/GECCL

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PROJECT:
PROPOSED ACCESS (INCLINED LIFT) FOR THE EXISTING RESIDENTIAL DEVELOPMENT IN "GREEN BELT" AND "RESIDENTIAL (GROUP C) 1" ZONES AT 17 BOWEN ROAD, MID-LEVELS, HK S16 PLANNING APPLICATION

DRAWING TITLE:

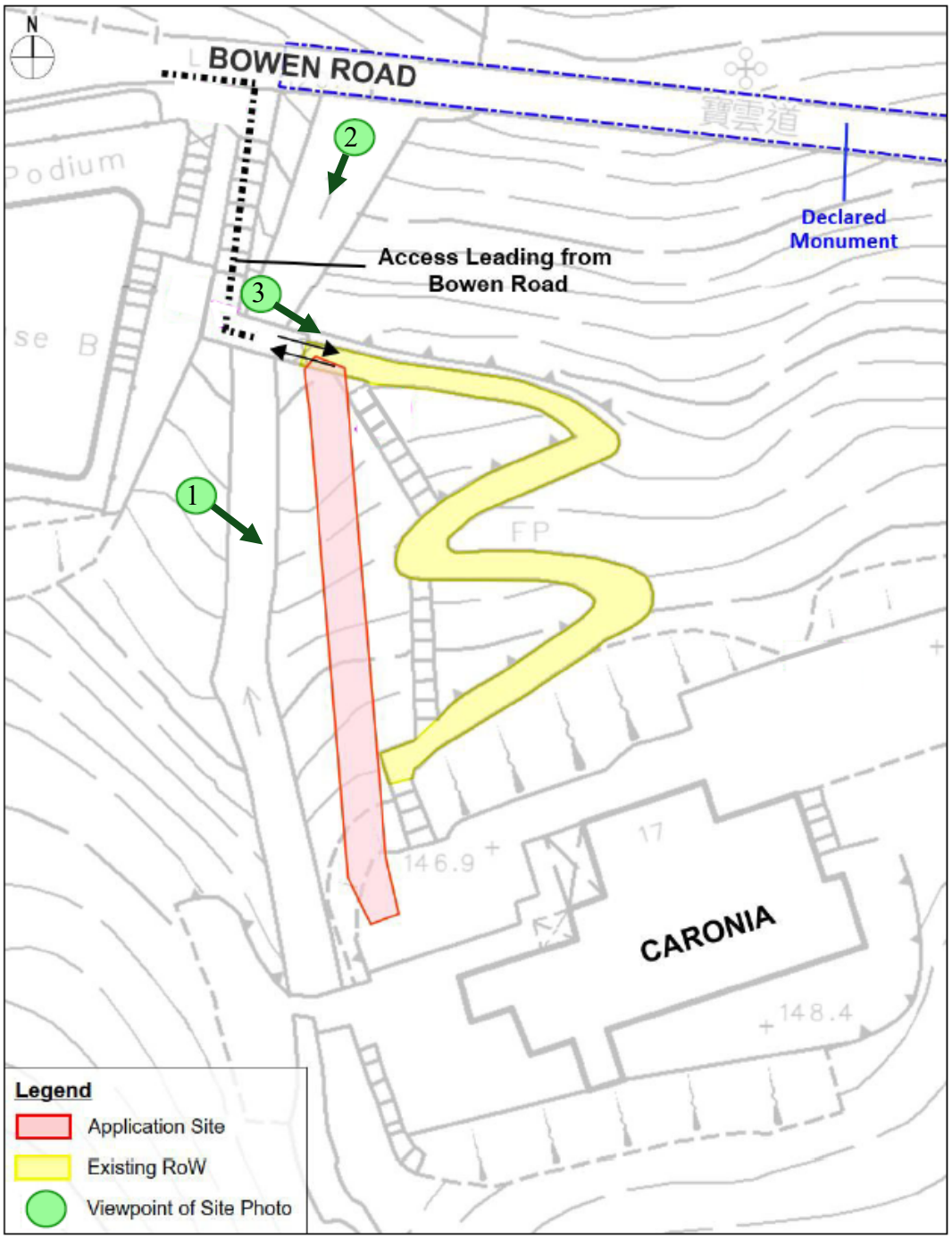
SECTIONS

DRAWING No.:	PROJECT No.:
25047_SK-002	25047

Cad Ref. 25047_SK002.dwg

Appendix 03

Record Photos for Existing Site Condition



Site Location Plan

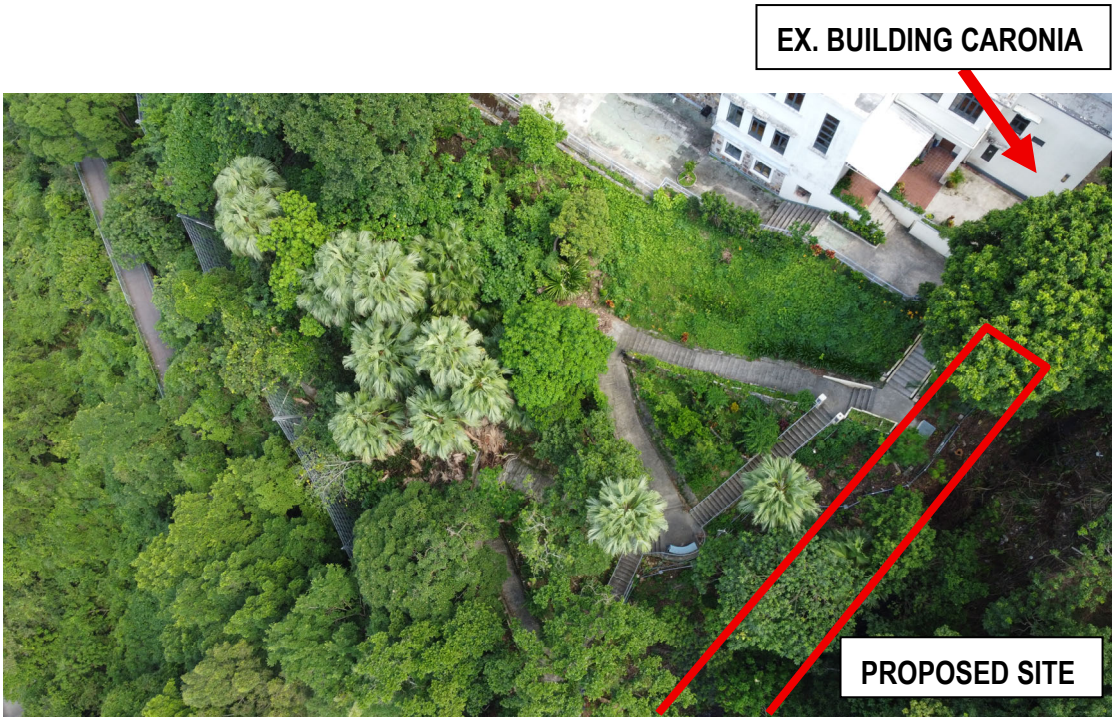


Plate 1: Aerial View of the Site (View 1)



Plate 2: Aerial View of the Site (View 2)



Plate 3: Existing Feature 11 SW-D/C 1400

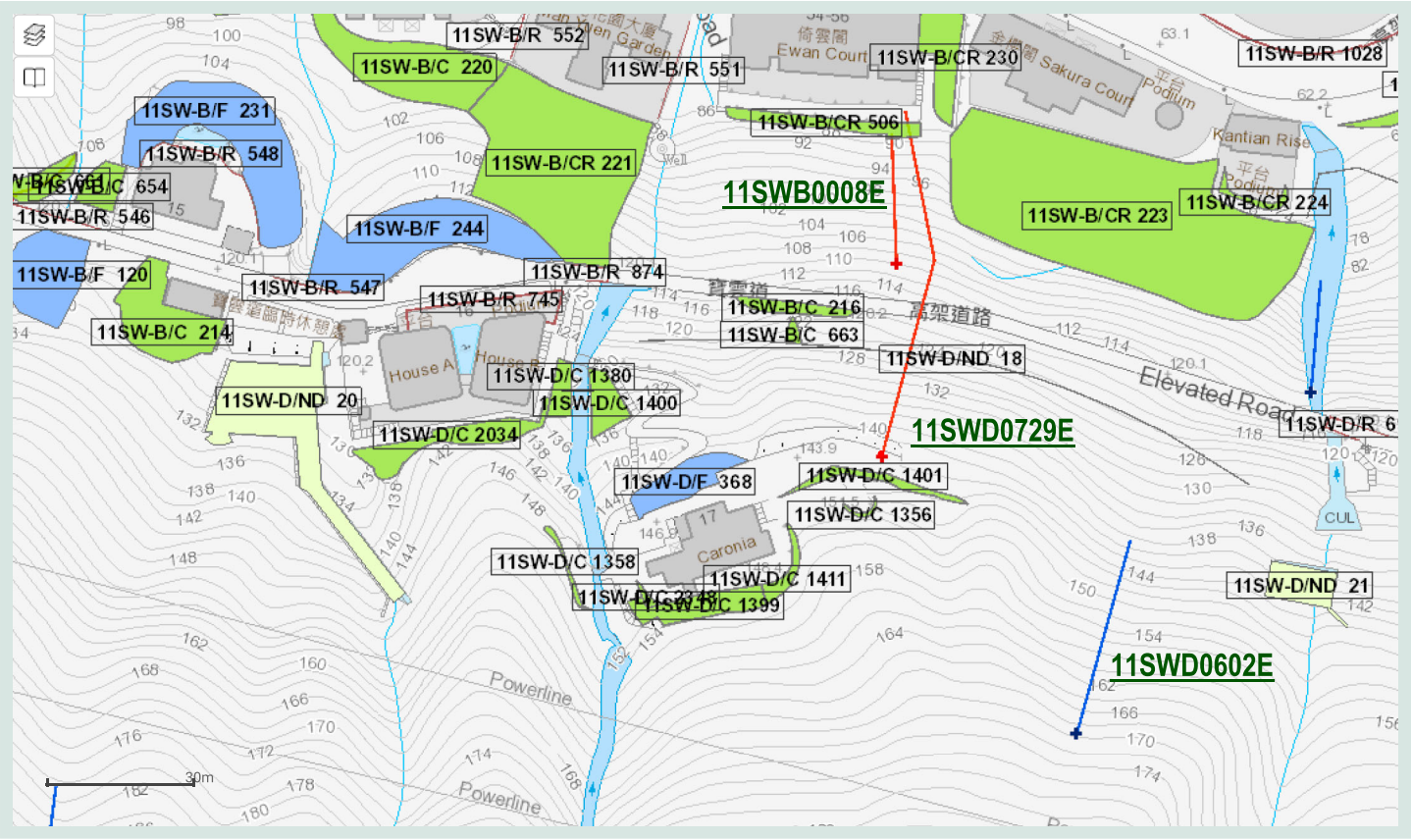
Appendix 04

Abstract of Natural Terrain Hazard Map and Records

Facts and Figures

Slope Information System

Search By: Building / Street Street / Road / Building: 17 bowen road **Search**



User Manual

Application for information from the Catalogue of Slopes

Disclaimer

Sitemap

Facts and Figures

Slope Information System

	Back
ENTLI No.	11SWB0008E
Type of slides	Recent open hillside
Width of main scarp	25
Length of landslide source	20
Slope	48
Vegetation cover	Totally bare
Year landslide first observed	1982
Elevation of landslide crown	109
Elevation of landslide toe	88
Elevation difference of landslide trail	21
Gully	N
Relict class	-
Easting	835465.803162
Northing	815016.049334

Facts and Figures

Slope Information System

	Back
ENTLI No.	11SWD0602E
Type of slides	Relict
Width of main scarp	33
Length of landslide source	40.5
Slope	25.5
Vegetation cover	Completely in grass
Year landslide first observed	1963
Elevation of landslide crown	169
Elevation of landslide toe	138
Elevation difference of landslide trail	31
Gully	N
Relict class	Broad depression (10% certain)
Easting	835502.171148
Northing	814921.15072

Facts and Figures

Slope Information System

	Back
ENTLI No.	11SWD0729E
Type of slides	Recent open hillside
Width of main scarp	15
Length of landslide source	30
Slope	19.5
Vegetation cover	Totally bare
Year landslide first observed	2008
Elevation of landslide crown	144
Elevation of landslide toe	84
Elevation difference of landslide trail	60
Gully	N
Relict class	-
Easting	835462.808375
Northing	814977.042947

Appendix 05

Abstract of Slope Registration Record

BASIC INFORMATION

Location:	NW of Caronia, 17 Bowen Road
Date of Formation:	pre-1977
Date of Construction/ Modification:	N/A
Approximate Coordinates:	Easting : 835398 Northing : 814988

CONSEQUENCE-TO-LIFE CATEGORY

Facility at Crest:	Undeveloped green belt
Distance of Facility from Crest (m):	0
Facility at Toe:	Road/footpath with low traffic density
Distance of Facility from Toe (m):	0
Consequence-to-life Category:	3
Remarks:	N/A

SLOPE PART

(1) Max. Height (m): 6.5 Length (m): 15 Average Angle (deg): 45

WALL PART

N/A

MAINTENANCE RESPONSIBILITY

Maintenance Type: Government Party: Lands D Agent: Lands D
Maintenance Type: Government Party: CEDD Agent: CEDD

DETAILS OF SLOPE / RETAINING WALL

Date of Inspection:	19-09-2000
Data Source:	EI
Slope Part Drainage:	(1) Position: Crest Size(mm): 151
Wall Part Drainage:	N/A

SLOPE PART

Slope Part (1)
Surface Protection (%): Bare: 0 Vegetated: 100 Chunam: 0 Shotcrete: 0 Other Cover: 0
Material Description: Material type: Soil Geology: N/A
Berm: No. of Berms: N/A Min. Berm Width (m): N/A
Weepholes: Size (mm): 65 Spacing (m): 1.2

WALL PART

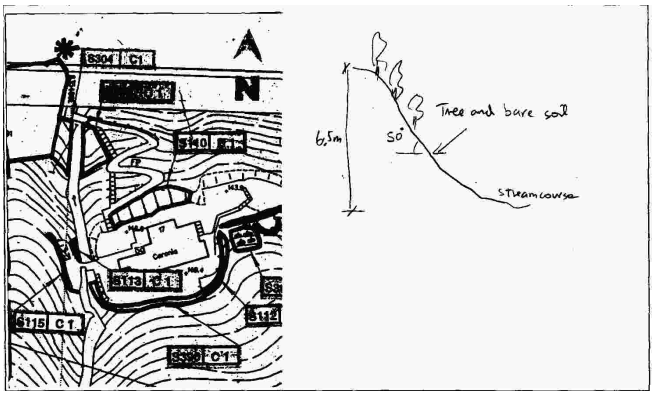
N/A

SERVICES

(1) Utilities Type: Water Main Size (mm): 35 Location: On crest Remark: N/A
(2) Utilities Type: Water Main Size (mm): 35 Location: On slope Remark: N/A

STAGE 1 STUDY REPORT

Inspected On: 13-12-1996
Weather: Mainly Fine
District: I



Section No: 1-1
Height (m): N/A
Type of Toe Facility: Road/footpath with low traffic density
Distance from Toe (m): 0
Type of Crest Facility: Undeveloped green belt
Distance from Crest (m): 0
Consequence Category: 1
Engineering Judgement: P
Section No: 2-2
Type of Toe Facility: N/A
Distance from Toe (m): 0
Type of Crest Facility: N/A
Distance from Crest (m): 0
Consequence Category: 1
Engineering Judgement: P
Sign of Seepage: Slope : No signs of seepage
Wall : N/A
Criterion A satisfied: N
Sign of Distress: Slope : N/A
Wall : N/A
Criterion D satisfied: N
Non-routine maintenance required: N

Note:	N/A
Masonry wall / Masonry facing:	N
Note:	N/A
Consequence category (for critical section):	1
Observations:	N/A
Emergency Action Required:	N
Action By:	N/A

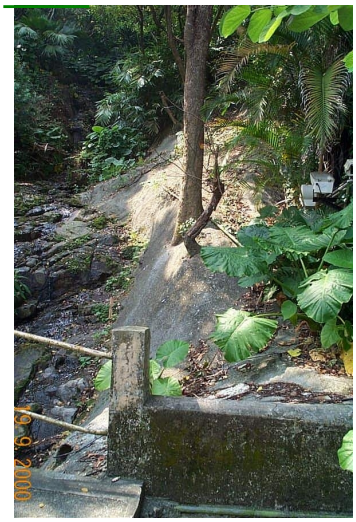
ACTION TO INITIATE PREVENTIVE WORKS

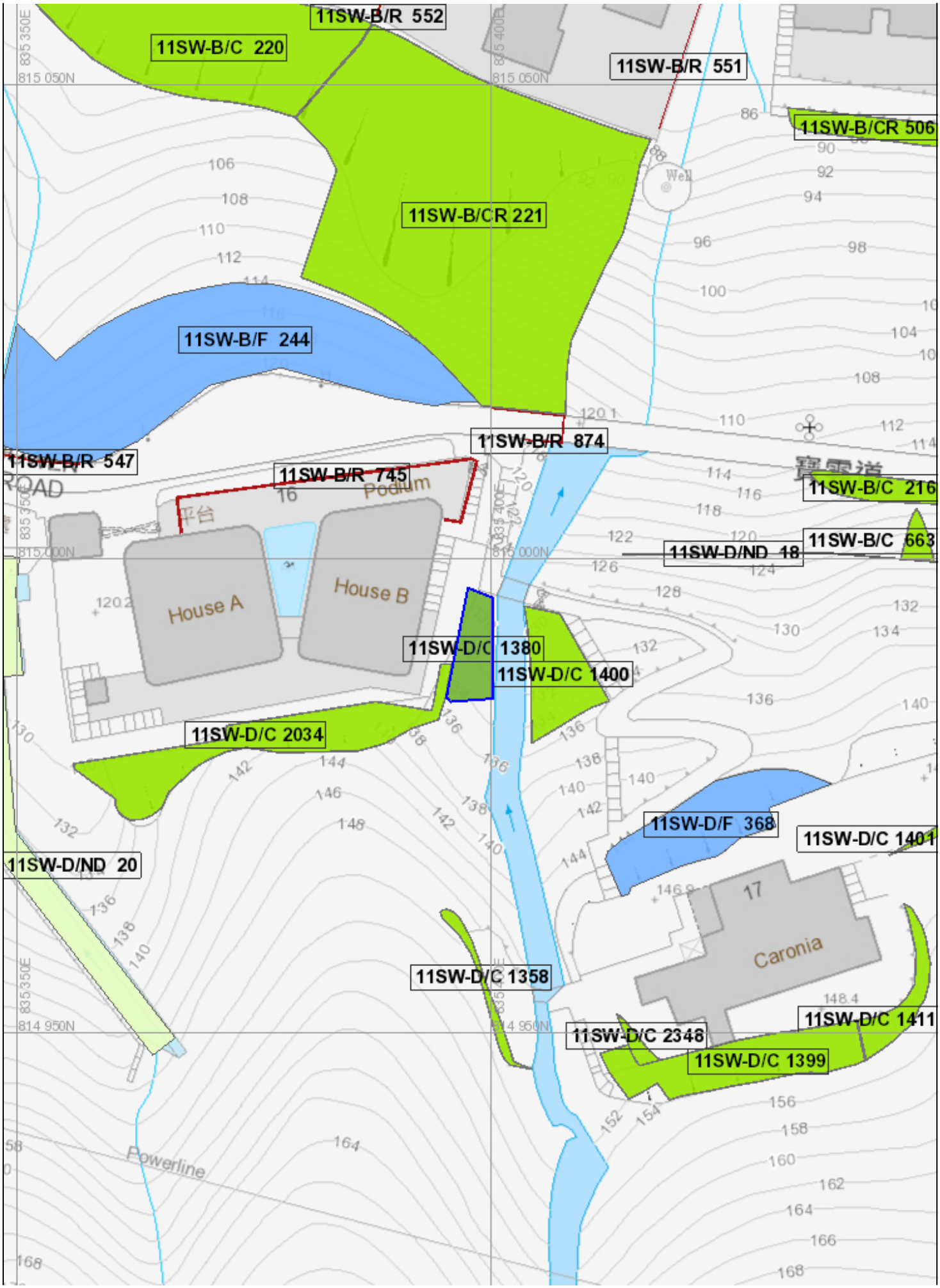
Criterion A / Criterion D:	N/A
Action By:	N/A
Further Study:	Y
Action By:	Mixed

OTHER EXTERNAL ACTION

Check / repair Services:	N
Action By:	N/A
Non-routine Maintenance:	N
Action By:	N/A

PHOTO




11SW-B/R 552
11SW-B/C 220
11SW-B/R 551
11SW-B/CR 506
11SW-B/CR 221
11SW-B/F 244
11SW-B/R 874
11SW-B/R 547
11SW-B/R 745
11SW-B/C 216
11SW-B/C 663
11SW-D/ND 18
House A
House B
Podium
11SW-D/C 1380
11SW-D/C 1400
11SW-D/C 2034
11SW-D/F 368
11SW-D/C 1401
11SW-D/ND 20
Caronia
11SW-D/C 1358
11SW-D/C 1411
11SW-D/C 2348
11SW-D/C 1399
Powerline

BASIC INFORMATION

Location:	E OF CAONIA, 17 BOWEN ROAD
Date of Formation:	pre-1977
Date of Construction/ Modification:	N/A
Approximate Coordinates:	Easting : 835407 Northing : 814988

CONSEQUENCE-TO-LIFE CATEGORY

Facility at Crest:	Densely-used playground
Distance of Facility from Crest (m):	0
Facility at Toe:	Residential building
Distance of Facility from Toe (m):	0
Consequence-to-life Category:	1
Remarks:	N/A

SLOPE PART

(1) Max. Height (m): 8.5 Length (m): 16 Average Angle (deg): 50

WALL PART

N/A

MAINTENANCE RESPONSIBILITY

Maintenance Type: Private Party: IL2460 Agent: N/A

DETAILS OF SLOPE / RETAINING WALL

Date of Inspection:	13-12-1996
Data Source:	SIRST
Slope Part Drainage:	N/A
Wall Part Drainage:	N/A

SLOPE PART

Slope Part (1)
Surface Protection (%): Bare: 50 Vegetated: 50 Chunam: 0 Shotcrete: 0 Other Cover: 0
Material Description: Material type: Soil Geology: Decomposed volcanic
Berm: No. of Berms: N/A Min. Berm Width (m): N/A
Weepholes: Size (mm): N/A Spacing (m): N/A

WALL PART

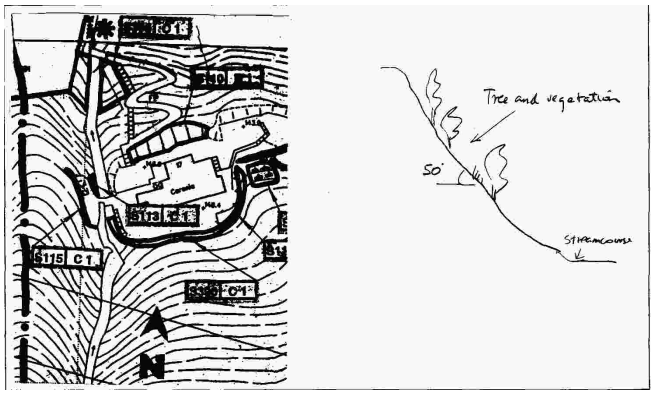
N/A

SERVICES

(1) Utilities Type: Electricity Size (mm): 0 Location: On crest Remark: Size cannot be determined

STAGE 1 STUDY REPORT

Inspected On:	13-12-1996
Weather:	Mainly Fine
District:	I



Section No:	1-1
Height (m):	N/A
Type of Toe Facility:	Residential building
Distance from Toe (m):	0
Type of Crest Facility:	Densely-used playground
Distance from Crest (m):	0
Consequence Category:	1
Engineering Judgement:	P
Section No:	2-2
Type of Toe Facility:	N/A
Distance from Toe (m):	0
Type of Crest Facility:	N/A
Distance from Crest (m):	0
Consequence Category:	1
Engineering Judgement:	P
Sign of Seepage:	Slope : No signs of seepage Wall : N/A
Criterion A satisfied:	N
Sign of Distress:	Slope : N/A Wall : N/A
Criterion D satisfied:	N
Non-routine maintenance required:	N
Note:	N/A
Masonry wall / Masonry facing:	N

Note:	N/A
Consequence category (for critical section):	1
Observations:	N/A
Emergency Action Required:	N
Action By:	N/A

ACTION TO INITIATE PREVENTIVE WORKS

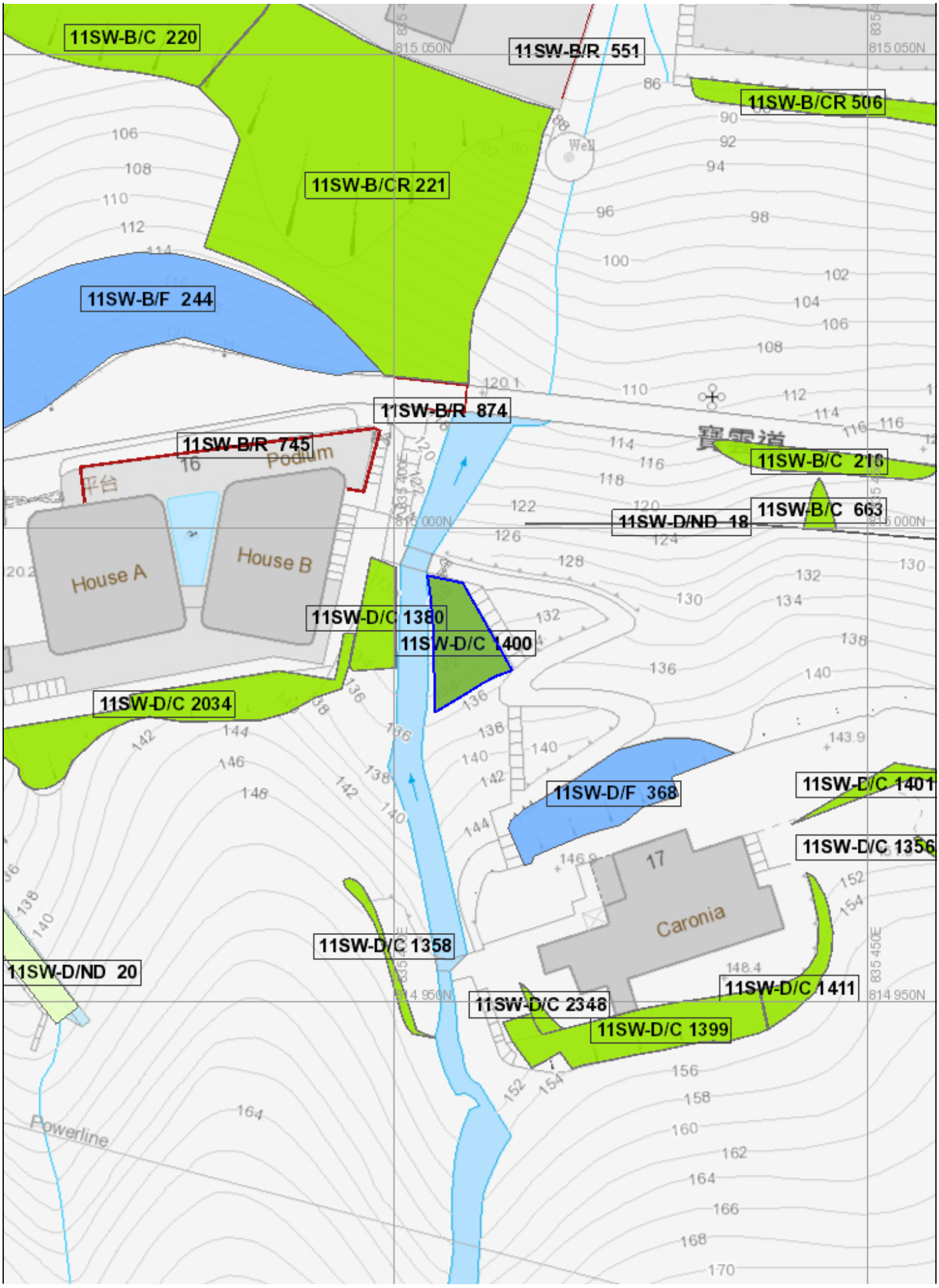
Criterion A / Criterion D:	N/A
Action By:	N/A
Further Study:	Y
Action By:	Mixed

OTHER EXTERNAL ACTION

Check / repair Services:	N
Action By:	N/A
Non-routine Maintenance:	N
Action By:	N/A

PHOTO




11SW-B/C 220
11SW-B/R 551
11SW-B/CR 506
11SW-B/CR 221
11SW-B/F 244
11SW-B/R 874
11SW-B/R 745
Podium
平台
House A
House B
11SW-B/C 216
11SW-B/C 663
11SW-D/ND 18
11SW-D/C 1380
11SW-D/C 1400
11SW-D/C 2034
11SW-D/F 368
11SW-D/C 1401
11SW-D/C 1356
Caronia
11SW-D/C 1358
11SW-D/ND 20
11SW-D/C 1411
11SW-D/C 2348
11SW-D/C 1399
Powerline
Well
寶雲道

BASIC INFORMATION

Location:	IN FRONT OF 17 BOWEN ROAD
Registration Date:	16-03-1998
Ranking Score (NPRS):	0 (LPMit)
Date of Formation:	pre-1977
Date of Construction/ Modification:	
Data Source:	SIRST
Approximate Coordinates:	Easting : 835421 Northing : 814971

CONSEQUENCE-TO-LIFE CATEGORY

Facility at Crest:	Residential building
Distance of Facility from Crest (m):	3
Facility at Toe:	Road/footpath with low traffic density
Distance of Facility from Toe (m):	0
Consequence-to-life Category:	1
Remarks:	N/A

SLOPE PART

(1) Max. Height (m): 5 Length (m): 23 Average Angle (deg): 35

WALL PART

N/A

MAINTENANCE RESPONSIBILITY

(1) Sub Div.: 0 Private Feature Party: IL2460 Agent: N/A Land Cat.: 1,5a,7 Reason Code: 44 MR Endorsement Date: 01-12-1998

DETAILS OF SLOPE / RETAINING WALL

Date of Inspection:	11-12-1996
Data Source:	SIRST
Slope Part Drainage:	N/A
Wall Part Drainage:	N/A

SLOPE PART

Slope Part (1)
Surface Protection (%): Bare: 70 Vegetated: 30 Chunam: 0 Shotcrete: 0 Other Cover: 0
Material Description: Material type: Soil Geology: N/A
Berm: No. of Berms: N/A Min. Berm Width (m): N/A
Weepholes: Size (mm): N/A Spacing (m): N/A

WALL PART

N/A

SERVICES

(1) Utilities Type: Electricity Size(mm): 0 Location: On crest Remark: Size cannot be determined
(2) Utilities Type: Sewer/Drain Size(mm): 0 Location: On crest Remark: Size cannot be determined
(3) Utilities Type: Water Main Size(mm): 0 Location: On crest Remark: Size cannot be determined

CHECKING STATUS INFORMATION

Tagmark: SCS_10567 Part: 0 Checking Status: Others (See remarks) Checking Certificate No.: N/A

BACKGROUND INFORMATION

GIU Cell Ref.:	11SW14D1
Map Sheet Reference (1:1000):	11SW-14D
Aerial Photos:	7053/4 (1963),
Nearest Rainguage Station (Station Number):	25 Borrett Road(H17)
Data Collected On:	11-12-1996
Date of Construction, Subsequent Modification and Demolition:	Modification: Constructed Before: 1949 After: N/A
Related Reports/Files or Documents:	File/Report: Development Ref. No.: GCI 2/B7/113 File/Report: Development Ref. No.: GCI 2/B7/113
Remarks:	N/A
Follow Up Actions:	N/A
DH-Order (To Be Confirmed with Buildings Department):	None
Advisory Letter (To Be Confirmed with Buildings Department):	None
LPMIS:	None

ENHANCED MAINTENANCE INFORMATION

From Maintenance Department: (Last Updated Date: 25/09/2025)

STAGE 1 STUDY REPORT

Inspected On:	
Weather:	
District:	I
Section No:	1-1
Height(m):	
Type of Toe Facility:	Road/footpath with low traffic density
Distance from Toe(m):	0
Type of Crest Facility:	Residential building
Distance from Crest(m):	3
Consequence Category:	
Engineering Judgement:	
Section No:	2-2
Type of Toe Facility:	
Distance from Toe(m):	
Type of Crest Facility:	
Distance from Crest(m):	
Consequence Category:	
Engineering Judgement:	
Sign of Seepage:	
Criterion A satisfied:	
Sign of Distress:	
Criterion D satisfied:	
Non-routine maintenance required:	
Note:	
Masonry wall/Masonry facing:	
Note:	
Consequence category (for critical section):	
Observations:	N/A
Emergency Action Required:	
Action By:	N/A

ACTION TO INITIATE PREVENTIVE WORKS

Criterion A/Criterion D:	N/A
Action By:	N/A
Further Study:	
Action By:	N/A

OTHER EXTERNAL ACTION

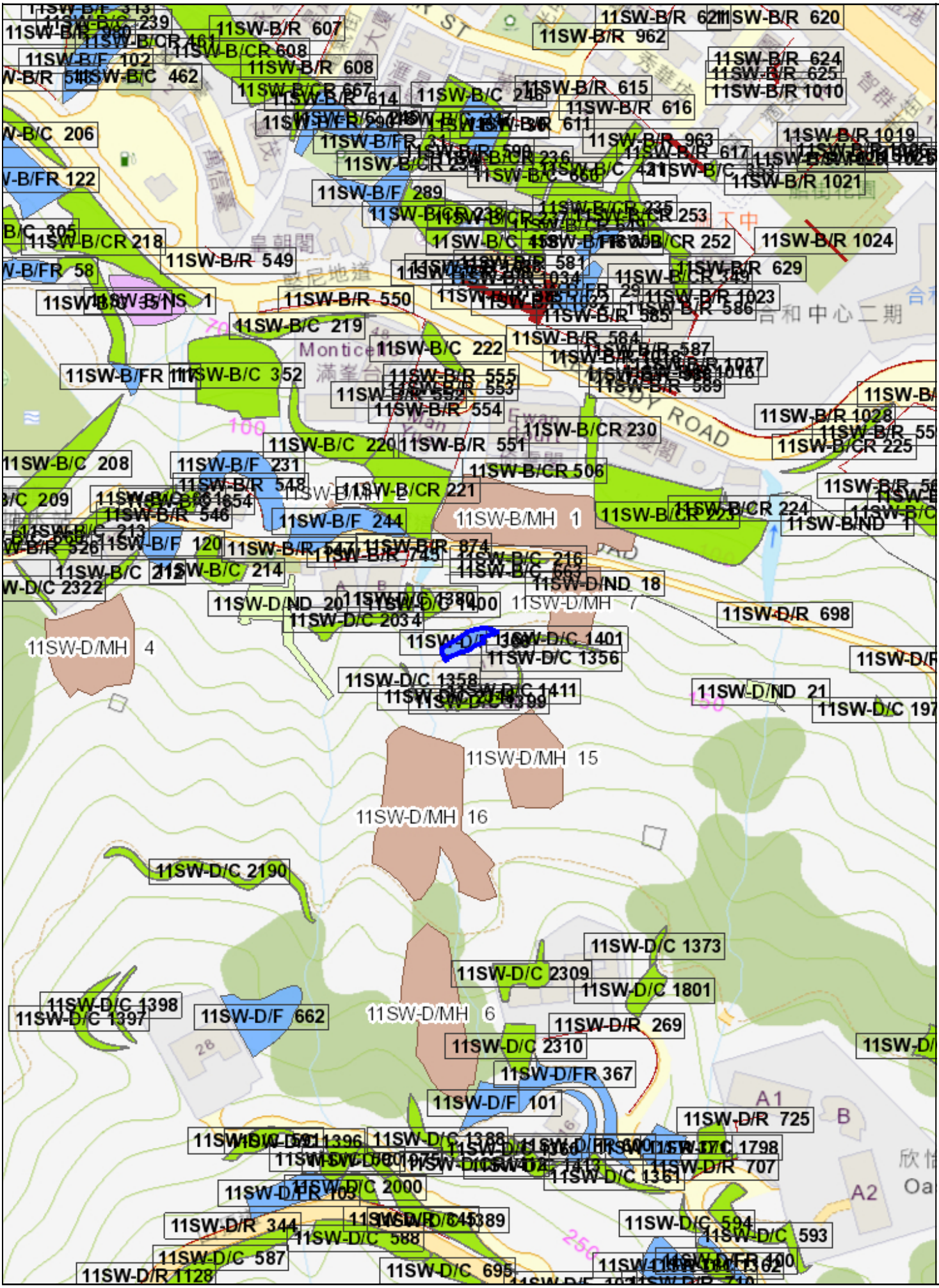
Check / repair Services:	
Action By:	N/A

Non-routine Maintenance:

Action By: N/A

PHOTO




11SW-B/R 607
11SW-B/CR 608
11SW-B/R 608
11SW-B/C 462
11SW-B/R 614
11SW-B/C 248
11SW-B/R 615
11SW-B/R 616
11SW-B/R 962
11SW-B/R 620
11SW-B/R 624
11SW-B/R 625
11SW-B/R 1010
11SW-B/R 963
11SW-B/R 1019
11SW-B/R 1021
11SW-B/F 289
11SW-B/CR 253
11SW-B/CR 252
11SW-B/R 1024
11SW-B/CR 218
11SW-B/R 549
11SW-B/R 629
11SW-B/R 550
11SW-B/C 219
11SW-B/C 222
11SW-B/R 1023
11SW-B/R 586
11SW-B/R 585
11SW-B/R 584
11SW-B/R 587
11SW-B/R 1017
11SW-B/R 589
11SW-B/C 352
11SW-B/R 554
11SW-B/R 1028
11SW-B/CR 230
11SW-B/CR 225
11SW-B/C 220
11SW-B/R 551
11SW-B/C 208
11SW-B/F 231
11SW-B/CR 506
11SW-B/CR 221
11SW-B/MH 1
11SW-B/CR 224
11SW-B/ND 1
11SW-B/R 546
11SW-B/F 244
11SW-B/F 120
11SW-B/R 874
11SW-B/C 214
11SW-D/C 2322
11SW-D/C 216
11SW-D/ND 18
11SW-D/ND 20
11SW-D/C 1400
11SW-D/MH 7
11SW-D/C 2034
11SW-D/R 698
11SW-D/MH 4
11SW-D/C 1401
11SW-D/C 1356
11SW-D/C 1358
11SW-D/C 1411
11SW-D/ND 21
11SW-D/C 197
11SW-D/MH 15
11SW-D/MH 16
11SW-D/C 2190
11SW-D/C 1373
11SW-D/C 2309
11SW-D/C 1801
11SW-D/C 1398
11SW-D/C 1397
11SW-D/F 662
11SW-D/MH 6
11SW-D/R 269
11SW-D/C 2310
11SW-D/FR 367
11SW-D/F 101
11SW-D/R 725
11SW-D/C 1798
11SW-D/R 707
11SW-D/C 1361
11SW-D/C 2000
11SW-D/R 344
11SW-D/C 588
11SW-D/C 594
11SW-D/C 593
11SW-D/C 587
11SW-D/R 1128
11SW-D/C 695
Montice
Ewan Court
Yuan Yick Road
MODY ROAD
A1
A2
B

Appendix 06

Abstract of Record Ground Investigation Report

DRiLTECH

CONTRACT NO. GE/2009/03
GROUND INVESTIGATION – URBAN
(TERM CONTRACT)

WORKS ORDER NO. GE/2009/03.221

Agreement No. CE15/2009(GE)
Landslip Prevention and Mitigation Programme 2009,
Package A, Landslip Preventive Works on Government Slopes and Retaining Walls Hong Kong Island – Investigation, Design and Construction
Feature No. 11SW-D/C1411 (Behind No. 17 Bowen Road)

Ground Investigation

FINAL FIELD WORK REPORT

Certified as Checked

Clement Lun
Geotechnical Engineer

Certified as Completed by

K C Sung
Contractor's Representative

CONTRACTOR
DRiLTECH Ground Engineering Ltd.
Blk A & B, 9/F., Hong Kong Spinners Industrial Bldg.
Phase VI,
481 – 483 Castle Peak Road,
Kowloon.

September 2010

DrilTech Ground Engineering Ltd.
BLK A & B, 9/F, HONG KONG SPINNERS IND. BLDG, PHASE VI,481-483 CASTLE PEAK RD, KLN, HONG KONG
TEL: 2371 0008 FAX: 2744 1037 E-Mail: driltech@driltech.com.hk WEBSITE: driltech.com.hk

CONTRACT DATA SUMMARY

Project Name & No. *Ground Investigation* *Urban (Term Contract)*	**Site Name** *Works Order No. GE/2009/03.221* *Agreement No. CE15/2009(GE), Landslip Prevention and Mitigation Programme 2009, Package A, Landslip Preventive Works on Government Slopes and Retaining Walls Hong Kong Island - Investigation, Design and Construction, Feature No. 11SW-D/C1411 (Behind No. 17 Bowen Road)*	**Date:** *31-Jul-10* to *24-Sep-10* **Official Only** **G.E.O. Data Bank No.**
G.I. Contractor *DrilTech Ground Engineering Ltd.*	**Client** *Geotechnical Engineering Office* *Civil Engineering and Development Department*	
Contract No. *GE/2009/03*	**Consulting Engineer** *AECOM*	**File Ref.**

FIELD WORK SUMMARY

Drillholes:	**No.**	*Nil*	**Method:**	*Nil*		**Date:**	*13-Aug-10* to	*2-Sep-10*
Trial Pits / I.P.	**No.**	*3 / ---*	**Trial Trenches:**	**No.**	*Nil*			
Coreholes:	**No.**	*Nil*	**Strippings:**	**No.**	*2*	**Probes:**	**No.**	*Nil*
Piezometers:	**No.**	*Nil*	**Standpipes:**	**No.**	*Nil*	**Piezometer Buckets:**	**No.**	*Nil*
Insitu Tests:	**No.**	*Nil*	**Types:**	*Nil*				
Geophysics:	**No.**	*Nil*	**Types:**	*Nil*				

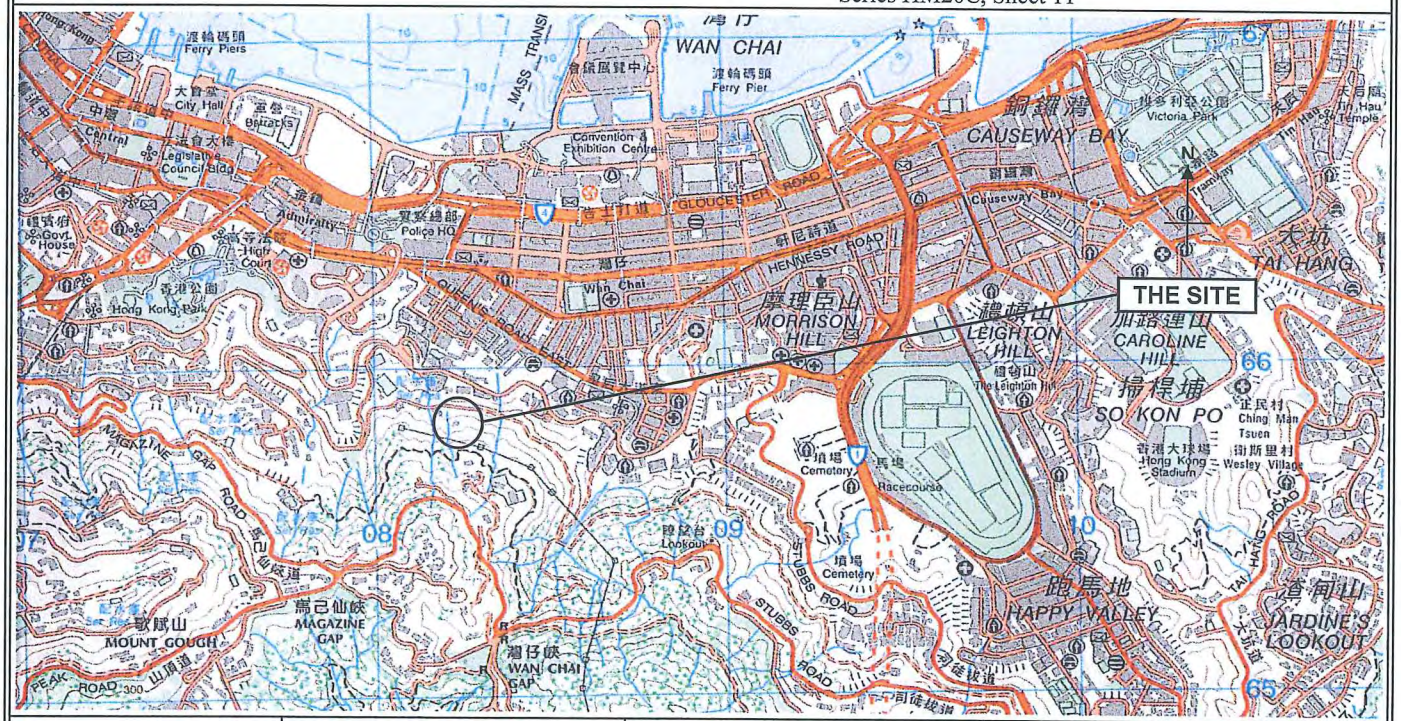
LABORATORY TESTING SUMMARY

No. of each type of test: Date: to

SOIL	Physical Properties	LL	PL	PSD	MC
		SG			
	Strength Tests	Cum			Shear Box
	Compaction & CBR Tests	Stan		or	CBR
	Oedometer & Perm. Tests	Cv	k		
	Others	Split Mazier			
ROCK		Pt Load	UC	Shear Box	US Vel.

NOT APPLICABLE

LOCATION PLAN Scale 1 : 20, 000 Derived from : Survey & Mapping Office, Lands Department Series HM20C, Sheet 11



	G.I.	Laboratory	Geotechnical Engineering Office
Contractor	*DrilTech Ground Engineering Ltd.*	---	CEDD CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT
Works Order No.	*GE/2009/03.221*	---	

DRiLTECH

WORKS ORDER NO. GE/2009/03.221

Agreement No. CE15/2009(GE)
Landslip Prevention and Mitigation Programme 2009,
Package A, Landslip Preventive Works on Government
Slopes and Retaining Walls Hong Kong Island –
Investigation, Design and Construction
Feature No. 11SW-D/C1411 (Behind No. 17 Bowen Road)

Ground Investigation

FINAL FIELD WORK REPORT

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DRiLTECH

CONTRACT NO. GE/2009/03
GROUND INVESTIGATION - URBAN
(TERM CONTRACT)

WORKS ORDER NO. GE/2009/03.221
Agreement No. CE15/2009(GE)
Landslip Prevention and Mitigation Programme 2009,
Package A, Landslip Preventive Works on Government Slopes and Retaining Walls Hong Kong Island - Investigation, Design and Construction
Feature No. 11SW-D/C1411 (Behind No. 17 Bowen Road)

Ground Investigation

FINAL FIELD WORK REPORT

1. Introduction

DRiLTECH Ground Engineering Ltd. was awarded a 2-year Term Contract from the Geotechnical Engineering Office, Civil Engineering and Development Department of the Government of Hong Kong Special Administrative Region in March 2009 to carry out ground investigation works in any locations in Hong Kong Island, Ap Lei Chau, Kowloon and may cover other areas in the territory of Hong Kong including outlying islands.

This report presents the results of ground investigation for Feature No. 11SW-D/C1411 (Behind No. 17 Bowen Road), under the Works Order GE/2009/03.221. The fieldwork was carried out in the period between 13th August 2010 and 2nd September 2010, under the supervision of AECOM.

2. Site Location

The site is located at Feature No. 11SW-D/C1411 (Behind No. 17 Bowen Road), Hong Kong, bounded within the following co-ordinates.

835 442E	814 962N
835 456E	814 962N
835 456E	814 940N
835 442E	814 940N

The locations of the investigation stations are shown in Ground Investigation Plan No. D419/03.221/GI/D001 and survey records of the stations are shown in Table 1.

3. Geology

According to the 1:20,000 scale, Sheet 11 of HGM20 Series Solid and Superficial Geology Map published by the Geotechnical Control Office, the site may be underlain by bedrock of fine ash Tuff of Upper Jurassic, Mesozoic.

3. Geology (Cont'd)

The results of investigation reveal that the site is composed of Superficial Deposit (Top Soil and Colluvium), Saprolite and Bedrock (Corestone ?) of fine ash Tuff.

Superficial Deposits

The Top Soil layer is encountered in all trial pits with approximately thickness of 0.30m, which is composed mainly of sandy clayey silt with some subangular gravel of rock fragments materials.

The Colluvium layer was found in all trial pits with maximum thickness of 0.60m, which is composed mainly of sandy clayey silt with subangular gravel, locally with cobbles and boulders of rock fragments materials.

Saprolite

The highly decomposed material is found in trial pit TP3 only with approximately thickness of 0.80m, which is composed mainly of sandy clayey silty cobbles with some gravel of rock fragments materials.

Bedrock (Corestone ?)

The rock type that encountered in the investigation is fine ash Tuff, bedrock or corestone was found at the base of each trial pit.

4. Field Works

Field works included sampling and field testing in three (3) trial pits (TP1 to TP3) and two (2) slope strips (S1 and S2) were carried out at locations as shown in the Ground Investigation Plan No. D419/03.221/GI/D001 as specified in the Works Order.

4.1 Field Tests

4.1.1 Dynamic Probing (GCO Probe) Tests

Dynamic probing tests were carried out using a GCO Probe on the trial pits before excavation and after backfilling. The features of the Probe are given in the Figure 36 of Geoguide 2.

A rod with diameter of approximately 12mm was driven into the ground by a hammer of 10kg in weight dropping freely from a height of 300mm. The rod was equipped at its lower end with a driving point, which was 25mm in diameter with a cylindrical portion of about 25mm long and a conical tip with an apex angle of approximately 45°. The numbers of blows required for the hammer to drive the rod into the ground for each 100mm were recorded. The tests were carried out to specified depths or where refusal was encountered.

4.1.1 Dynamic Probing (GCO Probe) Tests (Cont'd)

The results of the pre-excavation probing tests are presented in Appendix E.

4.2 Trial Pits

Trial pits were excavated manually using hand tools.

The trial pits were excavated to expose the underground materials for inspection and sampling. Undisturbed block and U76 and large disturbed samples were taken at specified locations and depths. Small disturbed samples were taken at 0.50m intervals starting from the ground level.

The trial pits were inspected and logged and the results are reported in the Trial Pit Records in Appendix C. Record photographs taken on each side of the trial pits are presented in Appendix D.

The trial pits were subsequently backfilled with excavated materials and were compacted using portable tools.

4.3 Slope Surface Protection Stripping

Slope surface of about 500mm wide, generally 100mm thick at locations S1 and S2 were stripped off using manual tools to expose the geological profile of the slope. Temporary steel access ladders were erected to facilitate the inspection and logging. The stripped surfaces were reinstated upon completion of field works.

The results of investigation are presented in the Slope Stripping Records in Appendix C.

5. Soil and Rock Descriptions

The soils and rocks encountered in the investigation have generally been described according to the Geoguide 3, Guide to Rock and Soil Descriptions, except for the following terms, which are used for the secondary constituents other than clay, silt and sand, in composition of common ground:

"with occasional" for less than 5%, and
"with some" for between 5% and 20%; and
"with much or many" for greater than 20%

The classification and definitions of the descriptive terms are presented in Appendix A.

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5. Soil and Rock Descriptions (Cont'd)

The delineation of various strata was primary based on examination the exposed faces of the trial pits and slope strips. The results are presented in Appendix C in form of Trial Pit and Slope Strip Records, which have been finalized by incorporating comments provided by AECOM.

The legends used in these records are summarized in Appendix B.

6. Surveying

The locations of investigation stations were surveyed using theodolite and the results are related to the Hong Kong Grid System. The co-ordinates and levels of these investigation stations are presented on the relevant records and are summarized in Table 1.

7. Digital Data Record

The data of the ground investigation works are also provided in an electronic format. The format complies with the 3rd edition of the Association of Geotechnical and Geoenvironmental Specialists (AGS) Publication 'Electronic Transfer of Geotechnical and Geoenvironmental Data'.

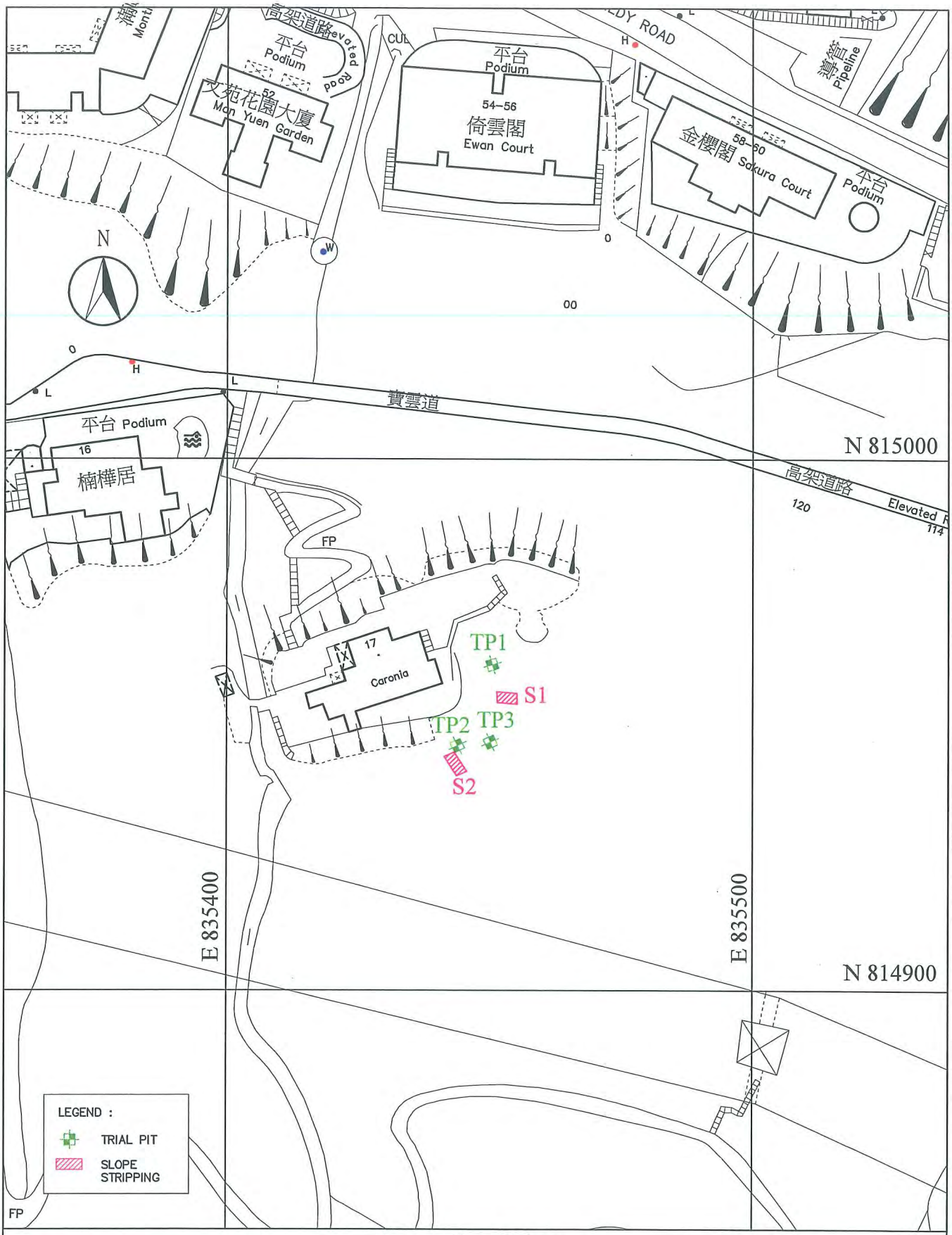
The Final Fieldwork Report and Individual Investigation Stations Record Folders were also created in Acrobat format and stored together with AGS on a CD-ROM.

All digital records are included in Appendix F.

8. References

1. Geotechnical Control Office, Geological Map of Hong Kong HGM20, Sheet 11, (1:20,000)
2. Geotechnical Engineering Office (2nd Reprint, 1994), Guide to Rock and Soil Descriptions (Geoguide 3)
3. Geotechnical Engineering Office (4th Reprint, 2000), Guide to Site Investigation (Geoguide 2)
4. Association of Geotechnical & Geoenvironmental Specialists (1999), Electronic Transfer of Geotechnical and Geoenvironmental Data, 3rd Edition
5. BS 5930: 1981, the "Code of Practice for Site Investigation"

Ground Investigation Plan
(No. D419/03.221/GI/D001)



Location Plan

Contract No. GE/2009/03
Ground Investigation - Urban (Term Contract)
Works Order No. GE/2009/03.221
Ground Investigation - Urban (Term Contract), Agreement No. CE 15/2009(GE), Landslip Prevention and Mitigation Programme 2009, Package A, Landslip Preventive Works on Government Slopes and Retaining Walls, Hong Kong Island - Investigation, Design and Construction. Feature No. 11SW-D/C1411 (Behind No. 17, Bowen Road)

Drawing No. : D419/03.221/GI/D001
Date : September 2010
Scale 1 : 1000
DRiLTECH

Table 1

DRILTECH

Contract No. GE/2009/03
Ground Investigation - Urban (Term Contract)

Works Order No. GE/2009/03.221
Agreement No. CE15/2009(GE)
Landslip Prevention and Mitigation Programme 2009,
Package A, Landslip Preventive Works on Government
Slopes and Retaining Walls Hong Kong Island -
Investigation, Design and Construction
Feature No. 11SW-D/C1411 (Behind No. 17, Bowen Road)

Final Field Work Report

Table 1 - Survey Records

Station No.	Ground Level/ Reference Level (mPD)	Easting	Northing	Remark
TP1	+152.78	835450.50	814961.35	
TP2	+155.72	835443.99	814946.13	
TP3	+158.05	835450.14	814946.77	
S1 (Crest)	+156.74	835455.27	814954.92	
S1 (Toe)	+155.89	835451.48	814955.19	
S2 (Crest)	+156.66	835444.84	814940.81	
S2 (Toe)	+155.97	835442.51	814944.42	

CHECKLIST FOR SOIL DESCRIPTION

GEOTECHNICAL ENGINEERING OFFICE, HKSAR

1. STRENGTH (Compactness & Consistency)

Soil Type	Term	Identification
Very Coarse (COBBLES & BOULDERS)	Loose	By inspection of voids and particle packing in the field.
	Dense	
Coarse (SANDS & GRAVELS)	Very loose	SPT 'N' value 0-4.
	Loose	SPT 4-10; can be excavated with spade; 50 mm peg easily driven.
	Medium dense	SPT 10-30.
	Dense	SPT 30-50; requires pick for excavation; 50 mm peg hard to drive.
	Very dense	SPT > 50.
Fine (CLAYS & SILTS)	Very soft	Undrained shear strength (USS) < 20 kPa; exudes between fingers when squeezed in hand.
	Soft	USS 20-40 kPa; moulded by light finger pressure.
	Firm	USS 40-75 kPa; can be moulded by strong finger pressure.
	Stiff	USS 75-150 kPa; cannot be moulded by fingers; can be indented by thumb.
	Very stiff or hard	USS > 150 kPa; can be indented by thumbnail.
Organic (ORGANIC CLAYS, SILTS SANDS & PEATS)	Compact	Fibres already compressed together.
	Spongy	Very compressible and open structure.
	Plastic	Can be moulded in hand and smears fingers.

Terms applicable only to transported soils. For soils derived from insitu rock weathering, record actual values of quantitative tests (e.g. SPT 'N' value) as part of the description, where appropriate.

2. COLOUR

Parameter	Terms
Value	Light, Dark
Chroma	Pinkish, Reddish, Yellowish, Orangish, Brownish, Greenish, Bluish, Purplish, Greyish
Hue	Pink, Red, Yellow, Orange, Brown, Green, Blue, Purple, White, Grey, Black

For uniform colour distribution, choose a hue, supplemented by a value and/or chroma if necessary.

For non-uniform distribution, repeat this procedure using one of the following descriptors: spotted, mottled, dappled, streaked, striped (e.g. light yellowish brown mottled with red).

State whether sample was wet or dry when described.

3. PARTICLE SHAPE & COMPOSITION

Characteristic	Terms
Form	Equidimensional, Flat, Elongate, Flat & Elongate
Angularity	Angular, Subangular, Subrounded, Rounded
Surface Texture	Smooth, Rough, Glassy, Honeycombed, Pitted, Striated

Describe composition of coarse particles where appropriate. Gravel and larger particles are usually rock fragments (e.g. granite, tuff); sand particles are usually individual minerals (e.g. quartz, feldspar).

4. STRUCTURE

Soil Type	Term	Identification
Coarse & Fine	Homogenous	Deposit consists essentially of one type.
	Interstratified (Interbedded or Interlaminated)	Alternating layers of varying types or with bands or lenses of other materials.
Coarse	Heterogenous	A mixture of types.
Fine	Fissured	Breaks into polyhedral fragments along fissures.
	Intact	No fissures.
Organic	Fibrous	Plant remains recognizable & retain some strength.
	Amorphous	No recognizable plant remains.

Describe spacing of bedding planes, fissures, shell bands, etc using the spacing terms given in items 6 & 7 for rock description (see other side).

Above terms applicable only to transported soils. For soils derived from insitu rock weathering, describe relict structures in accordance with item 6 of rock description (see other side).

5. WEATHERING

Soils Derived from Insitu Weathering of Rocks

There are two main types: saprolites (rock texture/structure retained) and residual soils (rock texture/structure completely destroyed). Describe state of weathering in accordance with items 4 & 8 for rock description (see other side).

Sedimentary (Transported) Soils

Coarse soils: Describe overall discolouration of soil and degree of decomposition of gravel and larger particles (see item 4, other side). Also note any signs of disintegration of large particles where apparent.

Fine Soils: Describe overall discolouration of soil where apparent.

6. SOIL NAME

A. Basic Soil Types

Soil Type	Particle Sizes (mm)		Identification
BOULDERS	–	> 200	Only seen complete in pits or exposures.
COBBLES	–	60 - 200	Often difficult to recover from boreholes.
GRAVELS	Coarse	20 - 60	Easily visible to naked eye; particle shape and grading can be described.
	Medium	6 - 20	Well-graded: wide range of grain sizes.
	Fine	2 - 6	Poorly-graded: not well-graded (split further into uniform or gap-graded).
SANDS	Coarse	0.6 - 2	Visible to naked eye; very little or no cohesion; grading can be described.
	Medium	0.2 - 0.6	May be well-graded or poorly-graded (uniform or gap-graded) as for gravel.
	Fine	0.06 - 0.2	
SILTS	Coarse	0.02 - 0.06	Only coarse silt barely visible to naked eye; exhibits little plasticity and marked dilatancy; slightly granular or silky to the touch. Disintegrates in water; lumps dry quickly; possesses cohesion but can be powdered easily between fingers.
	Medium	0.006 - 0.02	
	Fine	0.002 - 0.006	
CLAYS	–	< 0.002	Dry lumps can be broken by hand but not powdered between the fingers. Disintegrates in water more slowly than silt; smooth to the touch; exhibits plasticity but no dilatancy; sticks to the fingers and dries slowly; shrinks appreciably on drying, usually showing cracks. These properties more noticeable with increasing plasticity.
ORGANIC CLAYS, SILTS OR SANDS	–	varies	Contains much organic vegetable matter; often has a noticeable smell and changes colour on oxidation.
PEATS	–	varies	Predominantly plant remains; usually dark brown or black in colour, often with distinctive smell; low bulk density.

B. Composite Soil Types (Mixtures of Basic Types)

Principal Soil Type	Terminology Sequence	Term for Secondary Constituent	% of Secondary Constituent
Very coarse (BOULDERS & COBBLES) (> 50% of soil > 60 mm)	Secondary constituents (finer material) ▲ after principal	With a little	< 5
		With some	5 - 20
		With much	20 - 50
Coarse (GRAVELS & SANDS) (> 65% gravel & sand sizes)	Secondary constituents before principal (excluding cobbles & boulders) +	Slightly (silty, clayey or silty/clayey) *	< 5
		- (silty, clayey or silty/clayey) *	5 - 15
		Very (silty, clayey or silty/clayey) * AND/OR	15 - 35
		Slightly (gravelly or sandy) *	< 5
		- (gravelly or sandy) *	5 - 20
		Very (gravelly or sandy) *	20 - 50
Fine (SILTS & CLAYS) (> 35% silt & clay sizes)	Secondary constituents before principal (excluding cobbles & boulders) +	Slightly (gravelly or sandy or both) *	< 35
		- (gravelly or sandy) *	35 - 65

▲ Full name of finer material should be given (see examples below).

* Secondary soil type as appropriate; use 'silty/clayey' when a distinction cannot be made between the two.

\+ If cobbles or boulders are also present in a coarse or fine soil, this can be indicated by using one of the following terms relating to the very coarse fraction after the principal: 'with occasional' (< 5), 'with some' (5-20), 'with many' (20-50), where figures in brackets are % very coarse material expressed as a fraction of the whole soil (see examples below).

Examples: Slightly silty/clayey, sandy GRAVEL. Slightly gravelly, sandy SILT. Very gravelly SAND. Sandy GRAVEL with occasional boulders. BOULDERS with much finer material (silty/clayey, very sandy gravel).

For fine soils, plasticity terms should also be described where possible, viz: 'non-plastic' (generally silts), 'intermediate plasticity' (lean clays), 'high plasticity' (fat clays).

7. DISCONTINUITIES

Full description of discontinuities, where necessary, should be made using the methods and terms given in item 7 for rock description (see other side).

8. ADDITIONAL GEOLOGICAL INFORMATION

Record geological name which indicates geological origin or soil type (e.g. Alluvium, Colluvium, Marine sand etc.). Refer to HKGS maps & memoirs for further information.

NOTES:

1. Mass characteristics of soils (i.e. structure, weathering, discontinuities) can only be described satisfactorily in undisturbed field exposures or large undisturbed samples.
2. For full descriptions of soils derived from insitu rock weathering:
   (a) saprolites - describe as rocks, supplemented by soil strength and soil name terms in brackets,
   (b) residual soils - describe as soils, supplemented by name of parent rock where apparent from field evidence.

CHECKLIST FOR ROCK DESCRIPTION

GEOTECHNICAL ENGINEERING OFFICE, HKSAR

1. STRENGTH

Term	Identification
Extremely weak	Easily crumbled by hand; indented deeply by thumbnail.
Very weak	Crumbled with difficulty; scratched easily by thumbnail; peeled easily by pocket knife.
Weak	Broken into pieces by hand; scratched by thumbnail; peeled by pocket knife; deep indentations (to 5 mm) by point of geological pick; hand-held specimen easily broken by single light hammer blow.
Moderately weak	Broken with difficulty in two hands; scratched with difficulty by thumbnail; difficult to peel but easily scratched by pocket knife; shallow indentations easily made by point of pick; hand-held specimen usually broken by single light hammer blow.
Moderately strong	Scratched by pocket knife; shallow indentations made by firm blow with point of pick; hand-held specimen usually broken by single firm hammer blow. Point load strength (PLS) 0.5 - 2 MPa.
Strong	Firm blows with point of pick cause only superficial surface damage; hand-held specimen requires more than one firm hammer blow to break. PLS 2 - 4 MPa.
Very strong	Many hammer blows required to break specimen. PLS 4 - 8 MPa.
Extremely strong	Specimen only chipped by hammer blows. PLS > 8 MPa.

2. COLOUR

Parameter	Terms
Value	Light, Dark
Chroma	Pinkish, Reddish, Yellowish, Orangish, Brownish, Greenish, Bluish, Purplish, Greyish
Hue	Pink, Red, Yellow, Orange, Brown, Green, Blue, Purple, White, Grey, Black

For uniform colour distribution, choose a hue, supplemented by a value and/or chroma if necessary.

For non-uniform distribution, repeat this procedure using one of the following descriptors: spotted, mottled, dappled, streaked, striped (e.g. light pinkish grey spotted with black).

State whether sample was wet or dry when described.

3. TEXTURE/FABRIC

Texture Terms (Applicable Mainly to Igneous Rocks)
Equigranular, Inequigranular, Megacrystic, Porphyritic, Crystalline, Cryptocrystalline, Aphanitic

Fabric
Describe preferred orientation of grains/crystals where apparent.

Describe intensity, spacing, continuity and any preferred orientation of microfractures where apparent.

4. MATERIAL WEATHERING/ALTERATION

Decomposition Term	Grade Symbol	Typical Characteristics
Residual Soil	VI	Original rock texture completely destroyed; can be crumbled by hand and finger pressure into constituent grains.
Completely Decomposed	V	Original rock texture preserved; can be crumbled by hand and finger pressure into constituent grains; easily indented by point of geological pick; slakes in water; completely discoloured compared with fresh rock.
Highly Decomposed	IV	Can be broken by hand into smaller pieces; makes a dull sound when struck by hammer; not easily indented by point of pick; does not slake in water; completely discoloured compared with fresh rock.
Moderately Decomposed	III	Cannot usually be broken by hand; easily broken by hammer; makes a dull or slight ringing sound when struck by hammer; completely stained throughout.
Slightly Decomposed	II	Not broken easily by hammer; makes a ringing sound when struck by hammer; fresh rock colours generally retained but stained near joint surfaces.
Fresh Rock	I	Not broken easily by hammer; makes a ringing sound when struck by hammer; no visible signs of decomposition (i.e. no discolouration).

This classification is applicable to igneous and volcanic rocks and other rocks of equivalent strength in fresh state.

Disintegration
Describe small-scale cracking and fracturing caused by mechanical weathering, where apparent.

Alteration
Describe state of alteration (e.g. mineralised, kaolinised) where apparent.

5. ROCK NAME (Including Grain Size)

Igneous	:	Coarse- (6-20 mm), Medium- (2-6 mm) & Fine- (0.06-2 mm) grained GRANITE; GRANODIORITE. Very Fine-grained (< 0.06 mm) RHYOLITE; BASALT. (Common types only, see Geoguide 3 for others).
Pyroclastic	:	PYROCLASTIC BRECCIA (> 60 mm), Lapilli TUFF (2-60 mm), Coarse ash TUFF (0.06-2 mm), Fine ash TUFF (< 0.06 mm).
Metamorphic	:	Foliated - SCHIST (> 0.06 mm), PHYLLITE (< 0.06 mm). Non-foliated - MARBLE, QUARTZITE, FAULT BRECCIA.
Sedimentary	:	CONGLOMERATE, BRECCIA (> 2 mm), SANDSTONE (0.06-2 mm), MUDSTONE (< 0.06 mm) = SILTSTONE (0.002-0.06 mm) + CLAYSTONE (< 0.002 mm). (Common types only).

If rock name cannot be identified, describe grain size quantitatively, including textural term where appropriate.

6. STRUCTURE

Structural Term	Rock Type
Bedded, Laminated, Massive	Sedimentary
Massive, Flow-banded	Igneous, Pyroclastic
Foliated, Banded, Cleaved	Metamorphic

Spacing of Planar Structures
Very thick (> 2 m), Thick (0.6-2 m), Medium (200-600 mm),
Thin (60-200 mm), Very thin (20-60 mm),
Thickly-laminated (Sedimentary) (6-20 mm) or Narrow (Igneous, Metamorphic) (6-20 mm),
Thinly-laminated (Sedimentary) (< 6 mm) or Very narrow (Igneous, Metamorphic) (< 6 mm).

Examples: Thickly-bedded SANDSTONE. Narrowly flow-banded RHYOLITE.

7. DISCONTINUITIES

Nature (Type of Discontinuity)

Fault zone	Cleavage	Fissure	Bedding
Fault	Schistocity	Tension crack	
Joint	Shear plane	Foliation	

Location and Orientation
Record location as co-ordinates or relative position along datum line, preferably on map or plan.

Record orientation as dip direction/dip in degrees (e.g. 032/55).

Spacing
Extremely widely-spaced (> 6 m), Very widely-spaced (2-6 m),
Widely-spaced (0.6-2 m), Medium-spaced (200-600 mm),
Closely-spaced (60-200 mm), Very closely-spaced (20-60 mm),
Extremely closely-spaced (< 20 mm).

In exposures, supplement spacing with description of rock block shape where possible. Descriptors: Blocky, Tabular, Columnar, Polyhedral.

Persistence (Areal extent or size of a discontinuity within a plane)
Measured maximum persistence dimension should be used where possible (e.g. the discontinuity trace length on the surfaces of rock exposures). For general descriptions of different discontinuity sets, relative terms should be used.

Roughness
Waviness (large-scale): Estimate/measure wavelength and amplitude in metres.
Unevenness (small-scale), use one term from the following:

Rough stepped	Smooth stepped	Slickensided stepped
Rough undulating	Smooth undulating	Slickensided undulating
Rough planar	Smooth planar	Slickensided planar

Aperture Size
Wide (> 200 mm), Moderately wide (60-200 mm), Moderately narrow (20-60 mm), Narrow (6-20 m), Very narrow (2-6 mm), Extremely narrow (> 0-2 mm), Tight (zero).

Infilling (Nature)

Clean	Surface staining	Decomposed/ disintegrated rock
Non-cohesive soil	Cohesive soil	
Calcite	Manganese	Quartz
Other (Specify)		Kaolin

Give full description of infill materials/minerals where appropriate.

Seepage

Dry	Damp/wet	Seepage present (estimate quantity in l/sec or l/min)

Fracture State
In borehole cores, measure the following: Total Core Recovery (TCR), Solid Core Recovery (SCR), Rock Quality Designation (RQD), Fracture Index (FI). See Geoguide 3 for definitions.

8. MASS WEATHERING

Term	Zone Symbol	Typical Characteristics
Residual Soil	RS	**Residual soil derived from insitu weathering; mass structure and material texture/fabric completely destroyed: 100% soil**
Partially Weathered Rock	PW	**Less than 30% rock**
	0/30	**Soil retains original mass structure and material texture/fabric (i.e. saprolite)**
		Rock content does not affect shear behaviour of mass, but relict discontinuities in soil may do so.
		Rock content may be significant for investigation and construction.
	PW	**30% to 50% rock**
	30/50	Both rock content and relict discontinuities may affect shear behaviour of mass.
	PW	**50% to 90% rock**
	50/90	Interlocked structure.
	PW	**Greater than 90% rock**
	90/100	Small amount of the material converted to soil along discontinuities.
Unweathered Rock	UW	**100% rock.**
		May show slight discolouration along discontinuities.

9. ADDITIONAL GEOLOGICAL INFORMATION

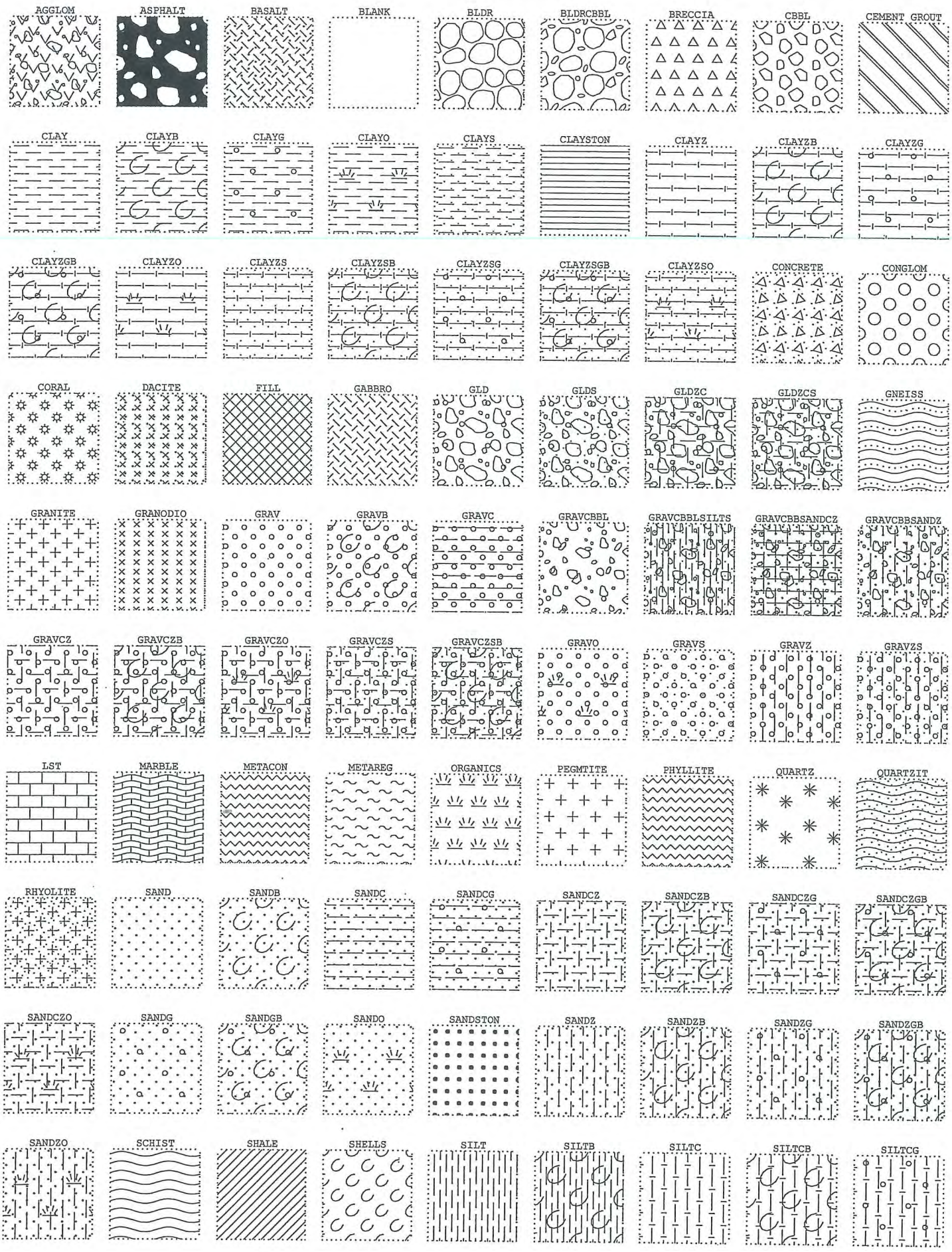
Record geological formation name if known. Avoid conjecture. Refer to HKGS maps & memoirs for further information.

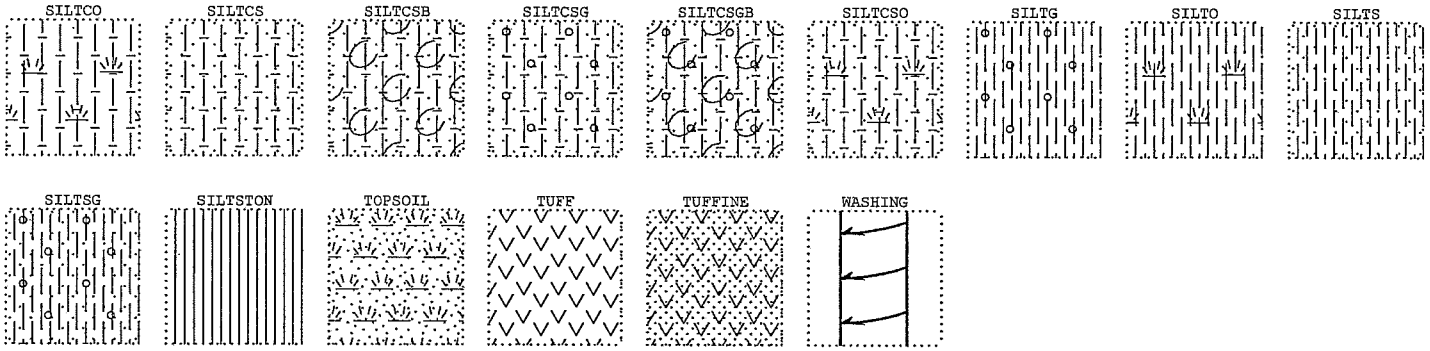
NOTES:

1. Rock material description normally includes: strength, colour, texture/fabric, material weathering/alteration and ROCK NAME.
2. Rock mass description normally includes: strength, colour, structure, mass weathering, ROCK NAME, discontinuities and additional geological information. Can be supplemented with more detailed information on texture/fabric and material weathering/alteration of different materials within the mass where necessary.

Appendix A

Checklists for Soil and Rock Descriptions


AGGLOM
ASPHALT
BASALT
BLANK
BLDR
BLDRCBBL
BRECCIA
CBBL
CEMENT GROUT
CLAY
CLAYB
CLAYG
CLAYO
CLAYS
CLAYSTON
CLAYZ
CLAYZB
CLAYZG
CLAYZGB
CLAYZO
CLAYZS
CLAYZSB
CLAYZSG
CLAYZSGB
CLAYZSO
CONCRETE
CONGLOM
CORAL
DACITE
FILL
GABBRO
GLD
GLDS
GLDZC
GLDZCS
GNEISS
GRANITE
GRANODIO
GRAV
GRAVB
GRAVC
GRAVCBBL
GRAVCBBLSILTS
GRAVCBBSANDCZ
GRAVCBBSANDZ
GRAVCZ
GRAVCZB
GRAVCZO
GRAVCZS
GRAVCZSB
GRAVO
GRAVS
GRAVZ
GRAVZS
LST
MARBLE
METACON
METAREG
ORGANICS
PEGMTITE
PHYLLITE
QUARTZ
QUARTZIT
RHYOLITE
SAND
SANDB
SANDC
SANDCG
SANDCZ
SANDCZB
SANDCZG
SANDCZGB
SANDCZO
SANDG
SANDGB
SANDO
SANDSTON
SANDZ
SANDZB
SANDZG
SANDZGB
SANDZO
SCHIST
SHALE
SHELLS
SILT
SILTB
SILTC
SILTCB
SILTCG


SILTCO
SILTCS
SILTCSB
SILTCSG
SILTCSGB
SILTCSO
SILTG
SILTO
SILTS
SILTSG
SILTSTON
TOPSOIL
TUFF
TUFFINE
WASHING

Appendix B

Legends for Use on Trial Pit and Slope Stripping Records

SYMBOLS - Material: c:\progra~1\gintw\vw221201.glb

Name	Description
AGGLOM	PYROCLASTIC BRECCIA
ASPHALT	ASPHALT
BASALT	BASALT
BLANK	NO RECOVERY
BLDR	BOULDERS
BLDRCBBL	BOULDERS and COBBLES
BRECCIA	SEDIMENTARY BRECCIA
CBBL	COBBLE
CEMENT GROUT	Cement Grout
CLAY	CLAY
CLAYB	CLAY with shell fragments
CLAYG	Gravelly CLAY
CLAYO	CLAY with Peats
CLAYS	Sandy CLAY
CLAYSTON	CLAYSTONE / MUDSTONE
CLAYZ	Silty CLAY
CLAYZB	Silty CLAY with shells
CLAYZG	Silty CLAY with gravel
CLAYZGB	Silty CLAY with gravel and shell fragments
CLAYZO	Silty CLAY with peats
CLAYZS	Sandy silty CLAY
CLAYZSB	Sandy silty CLAY with shells
CLAYZSG	Sandy silty CLAY with gravel
CLAYZSGB	Sandy silty CLAY with gravel and shells
CLAYZSO	Sandy silty CLAY with peats
CONCRETE	CONCRETE
CONGLOM	CONGLOMERATE
CORAL	CORAL. NOT USED
DACITE	DACITE / LATITE / ANDESITE / TRACHYTE / TRACHYANDESITE
FILL	FILL (made ground)
GABBRO	GABBRO / LAMPROPHYRE
GLD	GRAVEL, COBBLES and BOULDERS
GLDS	GRAVEL, COBBLES and BOULDERS with sand
GLDZC	GRAVEL, COBBLES and BOULDERS with silt and clay
GLDZCS	GRAVEL, COBBLES and BOULDERS with sand, silt and clay
GNEISS	GNEISS
GRANITE	GRANITE
GRANODIO	GRANODIORITE / SYENITE / MONZONITE
GRAV	GRAVEL
GRAVB	GRAVEL with shell fragments
GRAVC	Clayey GRAVEL
GRAVCBBL	GRAVEL and COBBLES
GRAVCBBLSILTS	gravels & cobbles in sandy silt
GRAVCBBSANDCZ	gravel & cobble in silty sand
GRAVCBBSANDZ	gravel & cobble in silty sand
GRAVCZ	Silty clayey GRAVEL
GRAVCZB	Silty clayey GRAVEL with shell fragments
GRAVCZO	Silty clayey GRAVEL with peats
GRAVCZS	Sandy silty clayey GRAVEL
GRAVCZSB	Sandy silty clayey GRAVEL with shell fragments
GRAVO	GRAVEL with peats
GRAVS	Sandy GRAVEL
GRAVZ	Silty GRAVEL
GRAVZS	Sandy silty GRAVEL
LST	LIMESTONE

SYMBOLS - Material: c:\progra~1\gintw\vw221201.glb

Name	Description
MARBLE	MARBLE
METACON	Metamorphic Rocks - Contact
METAREG	Metamorphic Rocks - Regional
ORGANICS	PEAT
PEGMTITE	PEGMATITE, Coarse-grained GRANITE
PHYLLITE	PHYLLITE / MYLONITE
QUARTZ	Quartz
QUARTZIT	QUARTZITE
RHYOLITE	RHYOLITE
SAND	SAND
SANDB	SAND with shell fragments
SANDC	Clayey SAND
SANDCG	Clayey SAND with gravel
SANDCZ	Silty, clayey SAND
SANDCZB	Silty, clayey SAND with shells
SANDCZG	Silty, clayey SAND with gravel
SANDCZGB	Silty, clayey SAND with gravel and shells
SANDCZO	Silty, clayey SAND with peats
SANDG	Gravelly SAND
SANDGB	Gravelly SAND wth shell fragments
SANDO	SAND with Peat
SANDSTON	SANDSTONE
SANDZ	Silty SAND
SANDZB	Silty SAND with shell fragments
SANDZG	Silty SAND with gravels
SANDZGB	Silty SAND with gravels and shells
SANDZO	Silty SAND with peats
SCHIST	SCHIST
SHALE	SHALE
SHELLS	Shells
SILT	SILT
SILTB	SILT with shell fragments
SILTC	Clayey SILT
SILTCB	Clayey SILT wth shells
SILTCG	Clayey SILT wth gravel
SILTCO	Clayey SILT wth peat
SILTCS	Sandy Clayey SILT
SILTCSB	Sandy Clayey SILT with shells
SILTCSG	Sandy Clayey SILT with gravel
SILTCSGB	Sandy Clayey SILT with gravel and shells
SILTCSO	Sandy Clayey SILT with peat
SILTG	Gravelly SILT
SILTO	SILT with peat
SILTS	Sandy SILT
SILTSG	Gravelly sandy SILT
SILTSTON	SILTSTONE
TOPSOIL	Topsoil
TUFF	Coarse Ash TUFF, Lapilli Tuff
TUFFINE	Fine Ash TUFF
WASHING	Wash Boring

Appendix C

Trial Pit and Slope Stripping Records

PROJECT	Ground Investigation - Urban (Term Contract), Agreement No. CE15/2009 (GE), Landslip Prevention and Mitigation Programme 2009, Package A, Landslip Preventive Works on Government Slopes and Retaining Walls Hong Kong Island - Investigation, Design and Construction. Feature No. 11SW-D/C1411 (Behind No. 17, Bowen Road)	WORKS ORDER NO.	GE/2009/03.221
CO-ORDINATES	E 835450.50 N 814961.35	GROUND LEVEL: +152.78 mPD	LOGGED L. Zhang / CHECKED C. Lun
		DATE 24.08.2010	DATE 25.08.2010
EXCAVATION DATES:	16.08.2010 to 19.08.2010		
BACKFILL DATES:	02.09.2010 to 02.09.2010		

DRiLTECH

TRIAL PIT RECORD

CONTRACT NO. GE/2009/03
FEATURE NO. 11SW-D/C1411

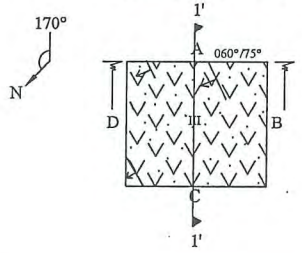
TRIAL PIT NO. TP 1

SHEET 1 of 1

SAMPLES and TESTS	DEPTH (m)	SKETCH: FACE A: 1.50 m / FACE B: 1.50 m / FACE C: 1.50 m / FACE D: 1.50 m	DEPTH (m)	LEGEND	GRADE	DESCRIPTION
	0.00		0.00			Soft, moist, dark greyish brown (10YR4/2), sandy clayey SILT with some subangular fine to coarse gravel of weak to moderately strong tuff fragments and rootlets. (TOP SOIL)
	0.30	08° 0.20m	0.30			Soft, moist, reddish yellow (5YR6/8) to light yellowish brown (10YR5/6), sandy clayey SILT with some subangular fine to coarse gravel and cobbles occasional boulders of weak to moderately strong tuff fragments and rootlets. (COLLUVIUM)
	0.45 0.50 0.60		0.60			Bottom: Moderately strong, very pale brown mottled strong brown, moderately decomposed fine ash TUFF with closely spaced, rough planar, extremely narrow to very narrow, manganese oxide stained and greyish brown soil coated joints.
						End of trial pit at maximum depth of 0.60 m.

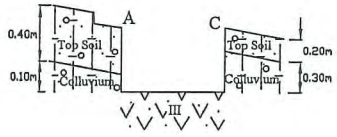
- SMALL DISTURBED SAMPLE
- LARGE DISTURBED SAMPLE
- U76 SAMPLE (VERTICAL / HORIZONTAL)
- U100 SAMPLE (VERTICAL / HORIZONTAL)
- BLOCK SAMPLE
- IN-SITU DENSITY TEST
- WATER SAMPLE
- WATER SEEPAGE
- N-SCHMIDT HAMMER TEST

PLAN (not to scale)



SECTION (not to scale)

Section 1' - 1'



REMARKS

Maximum Depth: 0.60 m Average Depth: 0.50 m
Shoring: NO Stability: STABLE
Water Seepage: NO

1. Small disturbed sample was taken at 0.50m.
2. Large disturbed sample was taken at 0.50m.
3. Block sample was taken at 0.30m.
4. U76 (Horizontal) sample was taken at 0.30m on Face D.

PROJECT	Ground Investigation - Urban (Term Contract), Agreement No. CE15/2009 (GE), Landslip Prevention and Mitigation Programme 2009, Package A, Landslip Preventive Works on Government Slopes and Retaining Walls Hong Kong Island - Investigation, Design and Construction. Feature No. 11SW-D/C1411 (Behind No. 17, Bowen Road)	WORKS ORDER NO.	GE/2009/03.221
CO-ORDINATES	E 835443.99 N 814946.13	GROUND LEVEL:	+155.72 mPD
LOGGED	L. Zhang	DATE	24.08.2010
CHECKED	C. Lun	DATE	25.08.2010
EXCAVATION DATES:	19.08.2010 to 19.08.2010		
BACKFILL DATES:	02.09.2010 to 02.09.2010		

DRILTECH

TRIAL PIT RECORD

CONTRACT NO. GE/2009/03
FEATURE NO. 11SW-D/C1411

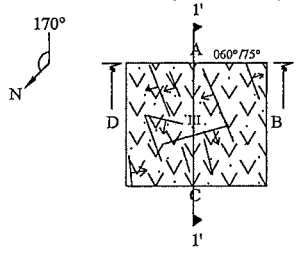
TRIAL PIT NO. TP 2

SHEET 1 of 1

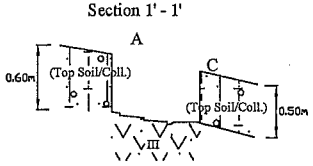
SAMPLES and TESTS	DEPTH (m)	SKETCH	DEPTH (m)	LEGEND	GRADE	DESCRIPTION
	0.00	FACE A: 1.50 m / FACE B: 1.50 m / FACE C: 1.50 m / FACE D: 1.50 m	0.00			Soft, moist, dark greyish brown (10YR4/2), sandy clayey SILT with many subangular cobbles and fine to coarse gravel of moderately weak to moderately strong tuff fragments and rootlets. (TOP SOIL)
	0.30	11° 0.30m Area A				Area A: Loose, moist, dark greyish brown (10YR4/2) to pale brown (10YR6/3), sandy silty clayey subangular COBBLES with some fine to coarse gravel of moderately strong rock fragments and many rootlets (100mm). (COLLUVIUM)
	0.45					
	0.50					Bottom: Moderately strong, very dark grey, moderately decomposed fine ash TUFF with closely spaced, rough planar, extremely narrow to very narrow, iron and manganese oxide stained and grey soil infilled joints measured as following: J1: 065°/75°, J2: 240°/82°, J3: 350°/70°, J4: 347°/80°, J5: 245°/65°.
	0.75		0.75			End of trial pit at maximum depth of 0.75 m.

- SMALL DISTURBED SAMPLE
- LARGE DISTURBED SAMPLE
- U76 SAMPLE (VERTICAL / HORIZONTAL)
- U100 SAMPLE (VERTICAL / HORIZONTAL)
- BLOCK SAMPLE
- IN-SITU DENSITY TEST
- WATER SAMPLE
- WATER SEEPAGE
- N-SCHMIDT HAMMER TEST

PLAN (not to scale)



SECTION (not to scale)



REMARKS

Maximum Depth: 0.75 m
Average Depth: 0.50 m
Shoring: NO
Stability: STABLE
Water Seepage: NO

1. Small disturbed sample was taken at 0.50m.
2. Large disturbed sample was taken at 0.50m.
3. Block sample was taken at 0.30m.
4. U76 (Horizontal) sample was taken at 0.30m on Face A.

PROJECT	Ground Investigation - Urban (Term Contract), Agreement No. CE15/2009 (GE), Landslip Prevention and Mitigation Programme 2009, Package A, Landslip Preventive Works on Government Slopes and Retaining Walls Hong Kong Island - Investigation, Design and Construction. Feature No. 11SW-D/C1411 (Behind No. 17, Bowen Road)		WORKS ORDER NO. GE/2009/03.221
CO-ORDINATES E 835450.14	N 814946.77	GROUND LEVEL: +158.05 mPD	EXCAVATION DATES: 17.08.2010 to 19.08.2010
LOGGED L. Zhang	CHECKED C. Lun	DATE 24.08.2010	DATE 25.08.2010
BACKFILL DATES: 02.09.2010 to 02.09.2010			

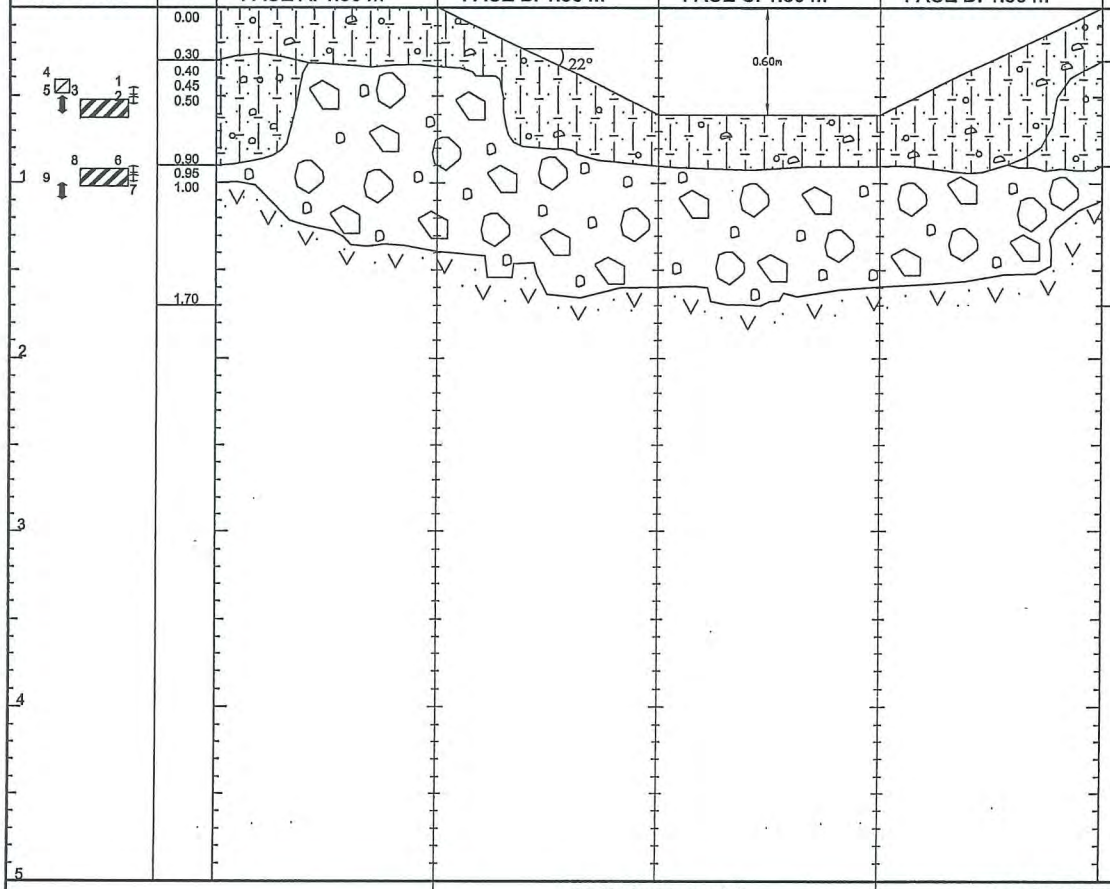
DRILTECH

TRIAL PIT RECORD

CONTRACT NO. GE/2009/03
FEATURE NO. 11SW-D/C1411

TRIAL PIT NO. TP 3

SHEET 1 of 1



DESCRIPTION

Soft, moist, dark greyish brown (10YR4/4), sandy clayey SILT with some subangular fine to coarse gravel of cobbles of weak to moderately strong tuff fragments and rootlets. (TOP SOIL)

Firm, moist, pale brown (10YR6/3), slightly sandy clayey SILT with some subangular fine to coarse gravel of moderately weak to moderately strong tuff fragments. (COLLUVIUM)

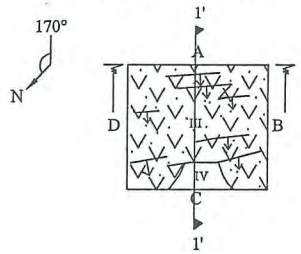
Weak to locally moderately weak, very pale brown, highly decomposed fine ash TUFF with closely spaced, smooth and rough planar, extremely narrow to very narrow, iron oxide stained and pale brown soil (clayey silty) infilled joints. (Sandy clayey silty COBBLES with some fine to coarse gravel)

Bottom: Moderately strong, brownish yellow to olive grey, moderately decomposed fine ash TUFF with closely spaced, rough planar, extremely narrow to very narrow, iron and manganese oxide stained and pale brown, soil (clay/ silt) infilled joints measured as 340°/80°.

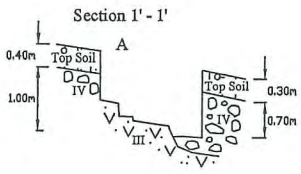
End of trial pit at maximum depth of 1.70 m.

- SMALL DISTURBED SAMPLE
- LARGE DISTURBED SAMPLE
- U76 SAMPLE (VERTICAL / HORIZONTAL)
- U100 SAMPLE (VERTICAL / HORIZONTAL)
- BLOCK SAMPLE
- IN-SITU DENSITY TEST
- WATER SAMPLE
- WATER SEEPAGE
- N-SCHMIDT HAMMER TEST

PLAN (not to scale)



SECTION (not to scale)



REMARKS

Maximum Depth: 1.70 m
Average Depth: 1.00 m
Shoring: YES
Stability: STABLE
Water Seepage: NO

1. Small disturbed samples were taken at 0.50m and 1.00m.
2. Large disturbed samples were taken at 0.50m and 1.00m.
3. Block sample was taken at 0.40m.
4. U76 (Horizontal) samples were taken at 0.50m and 0.90m on Face A.

DRiLTECH

SLOPE STRIPPING RECORD

CONTRACT NO. GE/2009/03

FEATURE NO. 11SW-D/C1411

STRIP NO. **S 1**

FEATURE NO. **11SW-D/C1411**

SHEET 1 of 1

PROJECT Ground Investigation - Urban (Term Contract), Agreement No. CE15/2009 (GE), Landslip Prevention and Mitigation Programme 2009, Package A, Landslip Preventive Works on Government Slopes and Retaining Walls Hong Kong Island - Investigation, Design and Construction. Feature No. 11SW-D/C1411 (Behind No. 17, Bowen Road)

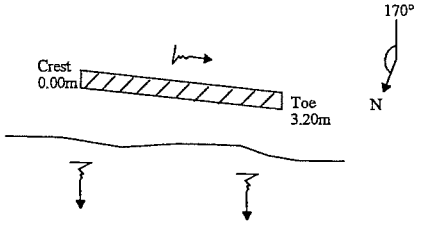
LOGGED	L. Zhang	DATUM (CREST) CO-ORDINATES	DATUM (TOE) CO-ORDINATES	WORKS ORDER NO.	GE/2009/03.221
DATE	24.08.2010	E 835455.27	E 835451.48	DATE	20.08.2010 to 20.08.2010
CHECKED	C. Lun	N 814954.92	N 814955.19	DATE REINSTATED	01.09.2010
DATE	25.08.2010	LEVEL +156.74 mPD	LEVEL +155.89 mPD		

Distance from Datum (m)	Slope Angle	Reduced Level (mPD)	Samples and Tests	Description	Legend	Grade	Discontinuities: Dip Direction / Dip	Discontinuities: Nature & Infilling
0.00		+156.74						
0.45								
0.50	00°		1, 2, 3, 4	Soft to firm, moist, very pale brown (10YR7/4) mottled red and very pale brown, slightly sandy CLAY/ SILT with some subangular fine to coarse gravel and cobbles, occasional boulders of moderately weak to moderately strong tuff fragments. (COLLUVIUM)				
0.95								
1.45			5					
1.95	25°		6	Overlain by 150mm thick TOP SOIL of soft, moist, dark greyish brown (10YR4/2), sandy clayey SILT with some subangular fine to coarse gravel and rootlets.				
2.45			7					
2.60			8, 9					
2.95			10					
3.05			11					
3.15		+155.89		End of stripping at 3.20 m.				

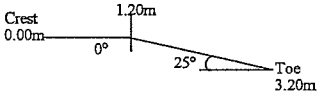
REMARKS 1. Surface: Natural Ground.
2. U76 (Vertical) samples were taken at 0.50m and 2.60m.

- SMALL DISTURBED SAMPLE
- U76 SAMPLE (VER / HOR)
- U100 SAMPLE (VER / HOR)
- LARGE DISTURBED SAMPLE
- BLOCK SAMPLE
- IN-SITU DENSITY TEST
- WATER SAMPLE
- WATER SEEPAGE
- N-SCHMIDT HAMMER TEST

PLAN (not to scale)



SECTION (not to scale)



DRiLTECH

SLOPE STRIPPING RECORD

CONTRACT NO. GE/2009/03

FEATURE NO. 11SW-D/C1411

STRIP NO. **S 2**

FEATURE NO. **11SW-D/C1411**

SHEET 1 of 1

PROJECT Ground Investigation - Urban (Term Contract), Agreement No. CE15/2009 (GE), Landslip Prevention and Mitigation Programme 2009, Package A, Landslip Preventive Works on Government Slopes and Retaining Walls Hong Kong Island - Investigation, Design and Construction. Feature No. 11SW-D/C1411 (Behind No. 17, Bowen Road)

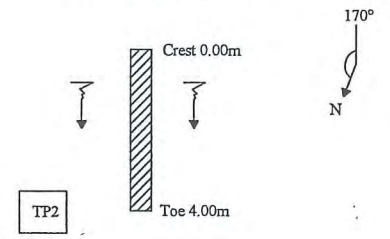
LOGGED	L. Zhang	DATUM (CREST) CO-ORDINATES	DATUM (TOE) CO-ORDINATES	WORKS ORDER NO.	GE/2009/03.221
DATE	24.08.2010	E 835444.84	E 835442.51	DATE	20.08.2010 to 20.08.2010
CHECKED	C. Lun	N 814940.81	N 814944.42	DATE REINSTATED	01.09.2010
DATE	25.08.2010	LEVEL +156.66 mPD	LEVEL +155.97 mPD		

Distance from Datum (m)	Slope Angle	Reduced Level (mPD)	Samples and Tests	Description	Legend	Grade	Discontinuities: Dip Direction / Dip	Discontinuities: Nature & Infilling
0.00		+156.66						
0.45			2 1	Firm, moist, pale brown (10YR6/3) mottled very pale brown and red, slightly sandy clayey SILT with some subangular fine to coarse gravel, cobbles and boulders of moderately strong tuff fragments. (COLLUVIUM)				
0.50								
1 0.95			3 4					
1.45			5					
2 1.95	15°		6	Overlain by 200mm thick TOP SOIL of soft, dark greyish brown (10YR4/2), sandy clayey SILT with some subangular fine to coarse gravel and cobbles of moderately strong tuff fragments and rootlets.				
2.45			7					
3 2.95			8					
3.45			9 11					
3.50								
4 4.00		+155.97	10 12					
5				End of stripping at 4.00 m.				
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								

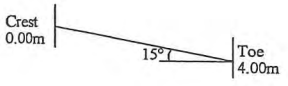
REMARKS 1. Surface: Natural Ground.
2. U76 (Vertical) samples were taken at 0.50m and 3.50m.

- SMALL DISTURBED SAMPLE
- U76 SAMPLE (VER / HOR)
- U100 SAMPLE (VER / HOR)
- LARGE DISTURBED SAMPLE
- BLOCK SAMPLE
- IN-SITU DENSITY TEST
- WATER SAMPLE
- WATER SEEPAGE
- N-SCHMIDT HAMMER TEST

PLAN (not to scale)



SECTION (not to scale)



Appendix D

Photographs of Trial Pits

DRiLTECH
DrilTech Ground Engineering Ltd.
BLK A & B, 9/F, HONG KONG SPINNERS IND. BLDG, PHASE VI,481-483 CASTLE PEAK RD, KLN, HONG KONG
TEL: 2371 0008 FAX: 2744 1037 E-Mail: driltech@driltech.com.hk WEBSITE: driltech.com.hk



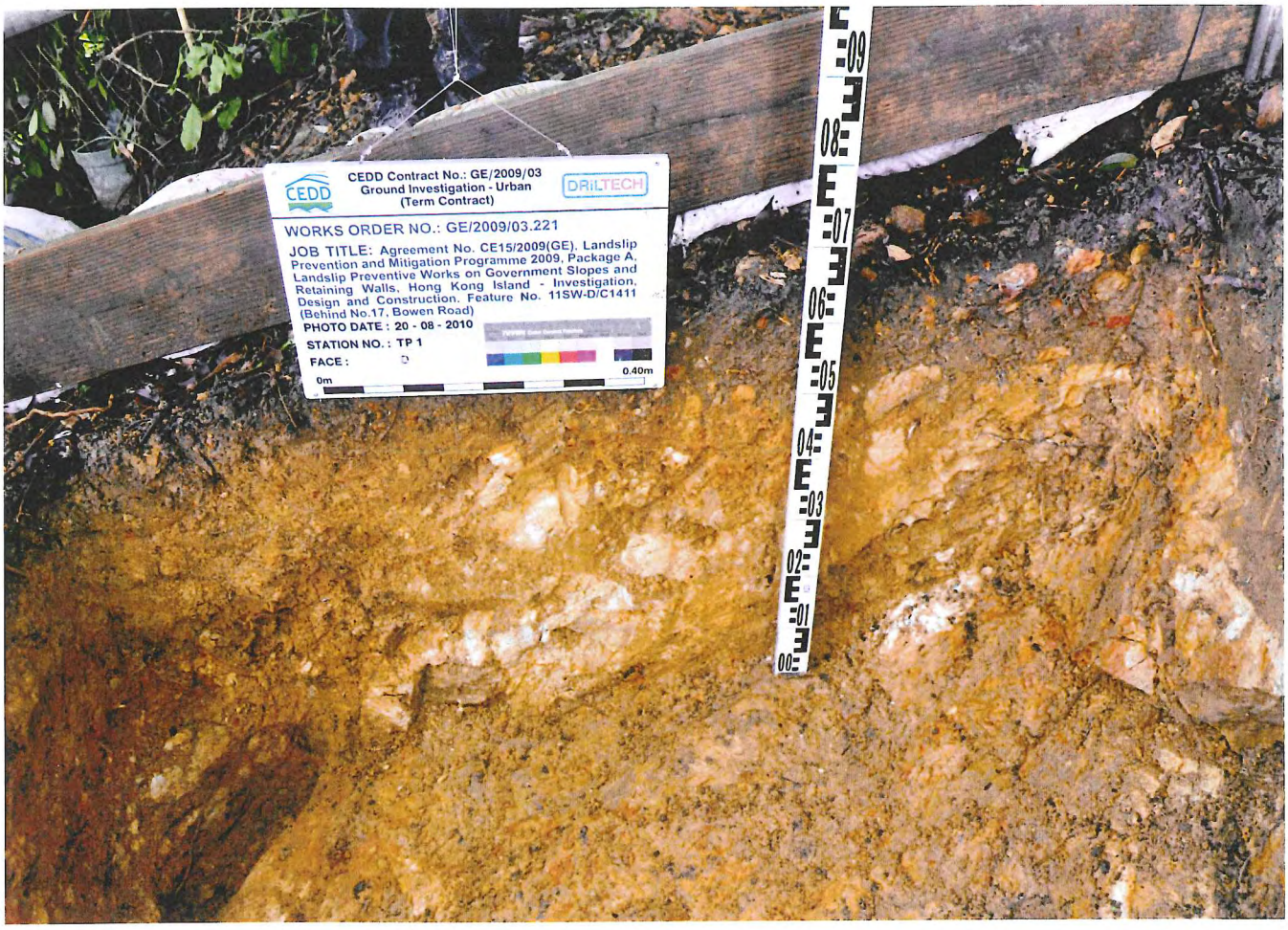
DRiLTECH
DrilTech Ground Engineering Ltd.
BLK A & B, 9/F, HONG KONG SPINNERS IND. BLDG, PHASE VI,481-483 CASTLE PEAK RD, KLN, HONG KONG
TEL: 2371 0008 FAX: 2744 1037 E-Mail: driltech@driltech.com.hk WEBSITE: driltech.com.hk



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Appendix E

Dynamic Probing (GCO Probe) Test Results

DRiLTECH

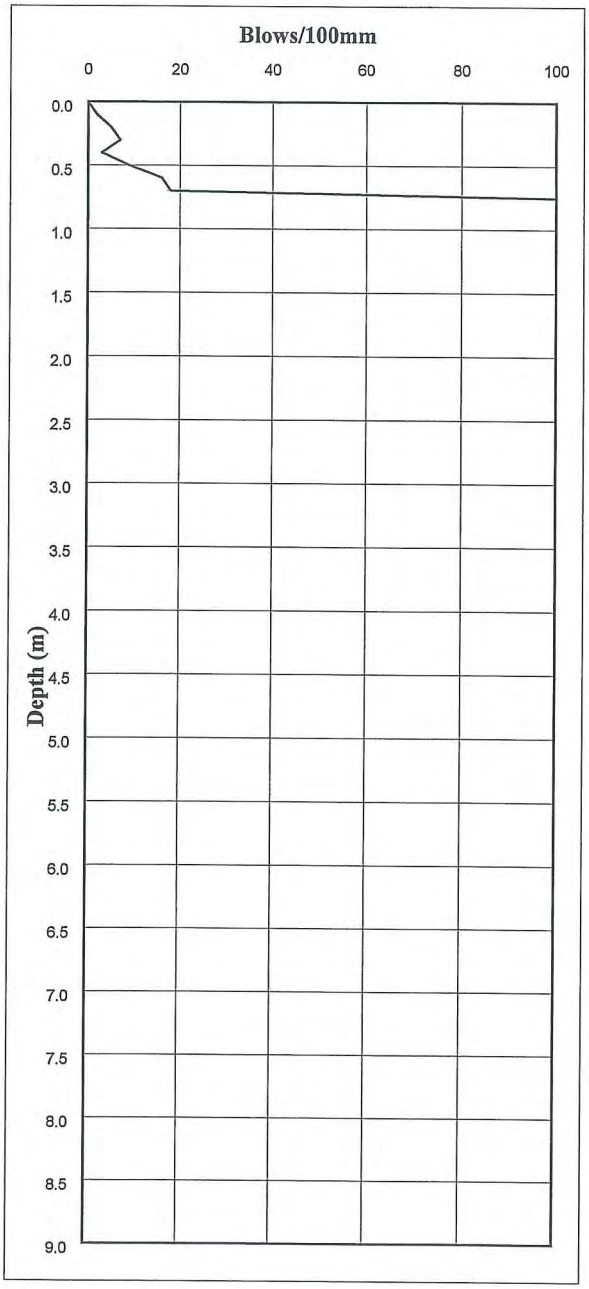
DYNAMIC PROBING TEST RECORD

Trial Pit No.: TP1

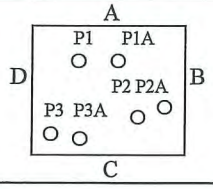
Probe No.: P1

Contract No. :	GE/2009/03
Works Order No. :	GE/2009/03.221
Project :	Ground Investigation - Urban (Term Contract), Agreement No. CE15/2009(GE), Landslip Prevention and Mitigation Programme 2009, Package A, Landslip Preventive Works on Government Slopes and Retaining Walls Hong Kong Island - Investigation, Design and Construction. Feature No. 11SW-D/C1411 (Behind No.17, Bowen Road)
Tested by:	S. W. Wong
Supervised by:	Y. P. Leung
Date of Test:	13-Aug-10
Ground Level:	+152.78 mPD
Co-ordinates:	
(Trial Pit)	E: 835450.50 N: 814961.35

Depth (m) (below G.L.)	blows /100mm	Depth (m) (below G.L.)	blows /100mm	Depth (m) (below G.L.)	blows /100mm
0.10	2	3.10		6.10	
0.20	5	3.20		6.20	
0.30	7	3.30		6.30	
0.40	3	3.40		6.40	
0.50	9	3.50		6.50	
0.60	16	3.60		6.60	
0.70	18	3.70		6.70	
0.75	100	3.80		6.80	
0.90		3.90		6.90	
1.00		4.00		7.00	
1.10		4.10		7.10	
1.20		4.20		7.20	
1.30		4.30		7.30	
1.40		4.40		7.40	
1.50		4.50		7.50	
1.60		4.60		7.60	
1.70		4.70		7.70	
1.80		4.80		7.80	
1.90		4.90		7.90	
2.00		5.00		8.00	
2.10		5.10		8.10	
2.20		5.20		8.20	
2.30		5.30		8.30	
2.40		5.40		8.40	
2.50		5.50		8.50	
2.60		5.60		8.60	
2.70		5.70		8.70	
2.80		5.80		8.80	
2.90		5.90		8.90	
3.00		6.00		9.00	



Probe Location Plan



Remarks: Pre-excavation GCO Probe

P1 terminated on refusal

Checked by: C. Lun

Date: 13-Aug-10

DRiLTECH

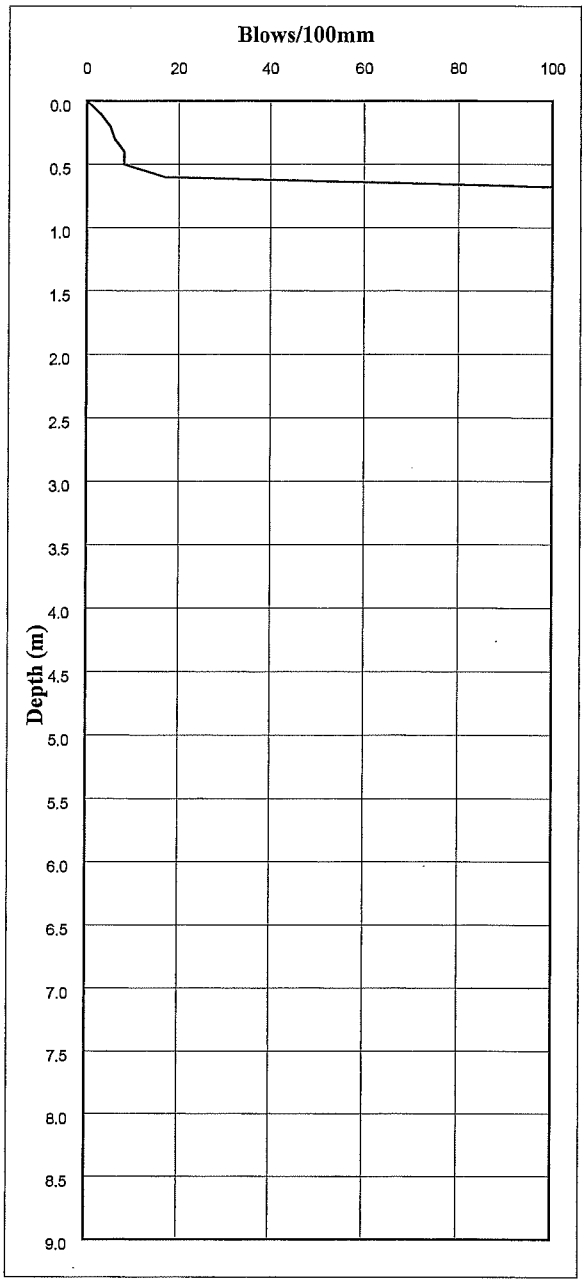
DYNAMIC PROBING TEST RECORD

Trial Pit No.: TP1

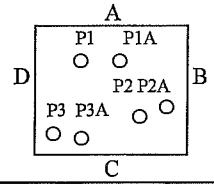
Probe No.: P1A

Contract No. :	GE/2009/03	**Date of Test:**	13-Aug-10
Works Order No. :	GE/2009/03.221	**Ground Level:**	+152.78 mPD
Project :	Ground Investigation - Urban (Term Contract), Agreement No. CE15/2009(GE), Landslip Prevention and Mitigation Programme 2009, Package A, Landslip Preventive Works on Government Slopes and Retaining Walls Hong Kong Island - Investigation, Design and Construction Feature No. 11SW-D/C1411 (Behind No.17, Bowen Road)	**Co-ordinates:** (Trial Pit)	E: 835450.50 N: 814961.35
Tested by:	S. W. Wong		
Supervised by:	Y. P. Leung		

Depth (m) (below G.L.)	blows /100mm	Depth (m) (below G.L.)	blows /100mm	Depth (m) (below G.L.)	blows /100mm
0.10	3	3.10		6.10	
0.20	5	3.20		6.20	
0.30	6	3.30		6.30	
0.40	8	3.40		6.40	
0.50	8	3.50		6.50	
0.60	17	3.60		6.60	
0.68	100	3.70		6.70	
0.80		3.80		6.80	
0.90		3.90		6.90	
1.00		4.00		7.00	
1.10		4.10		7.10	
1.20		4.20		7.20	
1.30		4.30		7.30	
1.40		4.40		7.40	
1.50		4.50		7.50	
1.60		4.60		7.60	
1.70		4.70		7.70	
1.80		4.80		7.80	
1.90		4.90		7.90	
2.00		5.00		8.00	
2.10		5.10		8.10	
2.20		5.20		8.20	
2.30		5.30		8.30	
2.40		5.40		8.40	
2.50		5.50		8.50	
2.60		5.60		8.60	
2.70		5.70		8.70	
2.80		5.80		8.80	
2.90		5.90		8.90	
3.00		6.00		9.00	



Probe Location Plan



Remarks: Pre-excavation GCO Probe

2nd attempt due to P1 terminated on refusal

Checked by: C. Lun

Date: 13-Aug-10

DRiLTECH

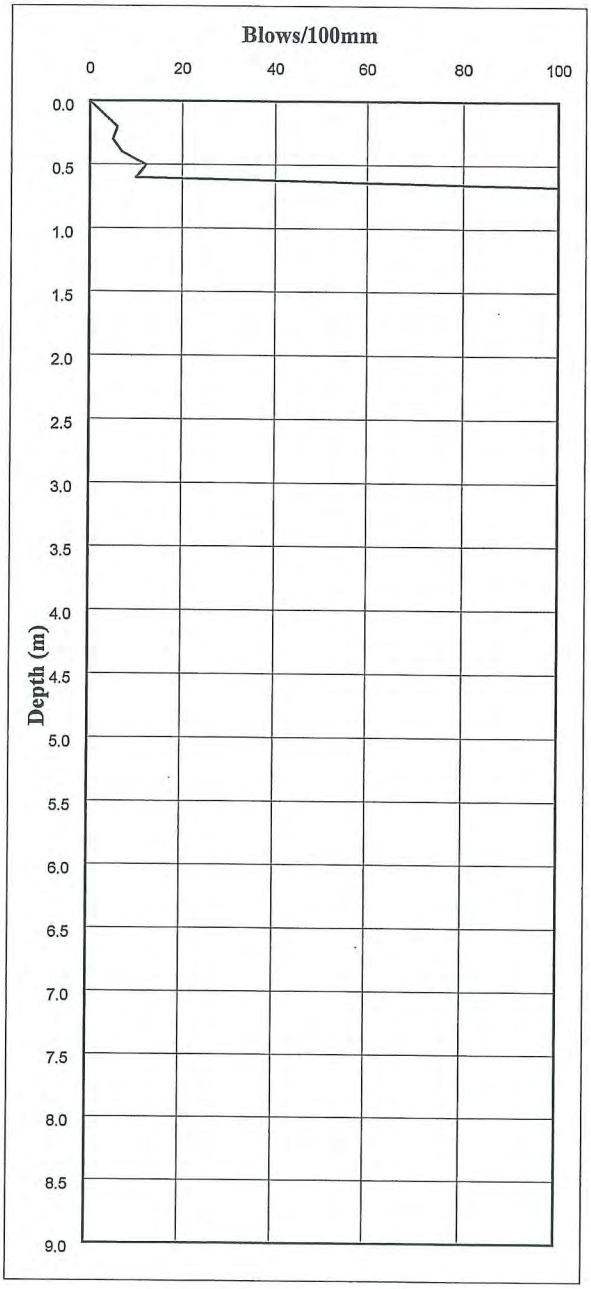
DYNAMIC PROBING TEST RECORD

Trial Pit No.: TP1

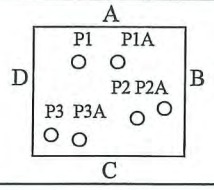
Probe No.: P2

Contract No. :	GE/2009/03	**Date of Test:**	13-Aug-10
Works Order No. :	GE/2009/03.221	**Ground Level:**	+152.78 mPD
Project :	Ground Investigation - Urban (Term Contract), Agreement No. CE15/2009(GE), Landslip Prevention and Mitigation Programme 2009, Package A, Landslip Preventive Works on Government Slopes and Retaining Walls Hong Kong Island - Investigation, Design and Construction Feature No. 11SW-D/C1411 (Behind No.17, Bowen Road)	**Co-ordinates:** (Trial Pit)	E: 835450.50 N: 814961.35
Tested by:	S. W. Wong		
Supervised by:	Y. P. Leung		

Depth (m) (below G.L.)	blows /100mm	Depth (m) (below G.L.)	blows /100mm	Depth (m) (below G.L.)	blows /100mm
0.10	3	3.10		6.10	
0.20	6	3.20		6.20	
0.30	5	3.30		6.30	
0.40	7	3.40		6.40	
0.50	12	3.50		6.50	
0.60	10	3.60		6.60	
0.67	100	3.70		6.70	
0.80		3.80		6.80	
0.90		3.90		6.90	
1.00		4.00		7.00	
1.10		4.10		7.10	
1.20		4.20		7.20	
1.30		4.30		7.30	
1.40		4.40		7.40	
1.50		4.50		7.50	
1.60		4.60		7.60	
1.70		4.70		7.70	
1.80		4.80		7.80	
1.90		4.90		7.90	
2.00		5.00		8.00	
2.10		5.10		8.10	
2.20		5.20		8.20	
2.30		5.30		8.30	
2.40		5.40		8.40	
2.50		5.50		8.50	
2.60		5.60		8.60	
2.70		5.70		8.70	
2.80		5.80		8.80	
2.90		5.90		8.90	
3.00		6.00		9.00	



Probe Location Plan



Remarks: Pre-excavation GCO Probe

P2 terminated on refusal

Checked by: C. Lun

Date: 13-Aug-10

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DYNAMIC PROBING TEST RECORD

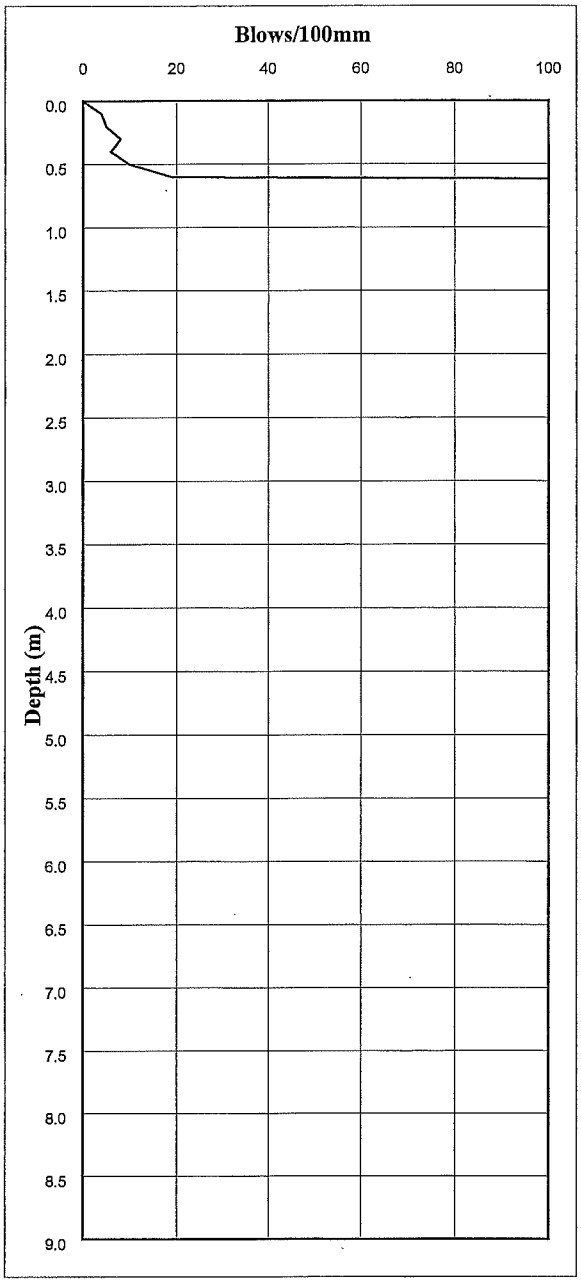
Trial Pit No.: TP1

Probe No.: P2A

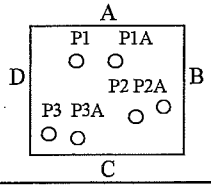
Contract No. :	GE/2009/03
Works Order No. :	GE/2009/03.221
Project :	Ground Investigation - Urban (Term Contract), Agreement No. CE15/2009(GE), Landslip Prevention and Mitigation Programme 2009, Package A, Landslip Preventive Works on Government Slopes and Retaining Walls Hong Kong Island - Investigation, Design and Construction Feature No. 11SW-D/C1411 (Behind No.17, Bowen Road)
Tested by:	S. W. Wong
Supervised by:	Y. P. Leung

Date of Test:	13-Aug-10
Ground Level:	+152.78 mPD
Co-ordinates:	
	E: 835450.50
(Trial Pit)	N: 814961.35

Depth (m) (below G.L.)	blows /100mm	Depth (m) (below G.L.)	blows /100mm	Depth (m) (below G.L.)	blows /100mm
0.10	4	3.10		6.10	
0.20	5	3.20		6.20	
0.30	8	3.30		6.30	
0.40	6	3.40		6.40	
0.50	10	3.50		6.50	
0.60	19	3.60		6.60	
0.62	100	3.70		6.70	
0.80		3.80		6.80	
0.90		3.90		6.90	
1.00		4.00		7.00	
1.10		4.10		7.10	
1.20		4.20		7.20	
1.30		4.30		7.30	
1.40		4.40		7.40	
1.50		4.50		7.50	
1.60		4.60		7.60	
1.70		4.70		7.70	
1.80		4.80		7.80	
1.90		4.90		7.90	
2.00		5.00		8.00	
2.10		5.10		8.10	
2.20		5.20		8.20	
2.30		5.30		8.30	
2.40		5.40		8.40	
2.50		5.50		8.50	
2.60		5.60		8.60	
2.70		5.70		8.70	
2.80		5.80		8.80	
2.90		5.90		8.90	
3.00		6.00		9.00	



Probe Location Plan



Remarks: Pre-excavation GCO Probe

2nd attempt due to P2 terminated on refusal

Checked by: C. Lun

Date: 13-Aug-10

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DYNAMIC PROBING TEST RECORD

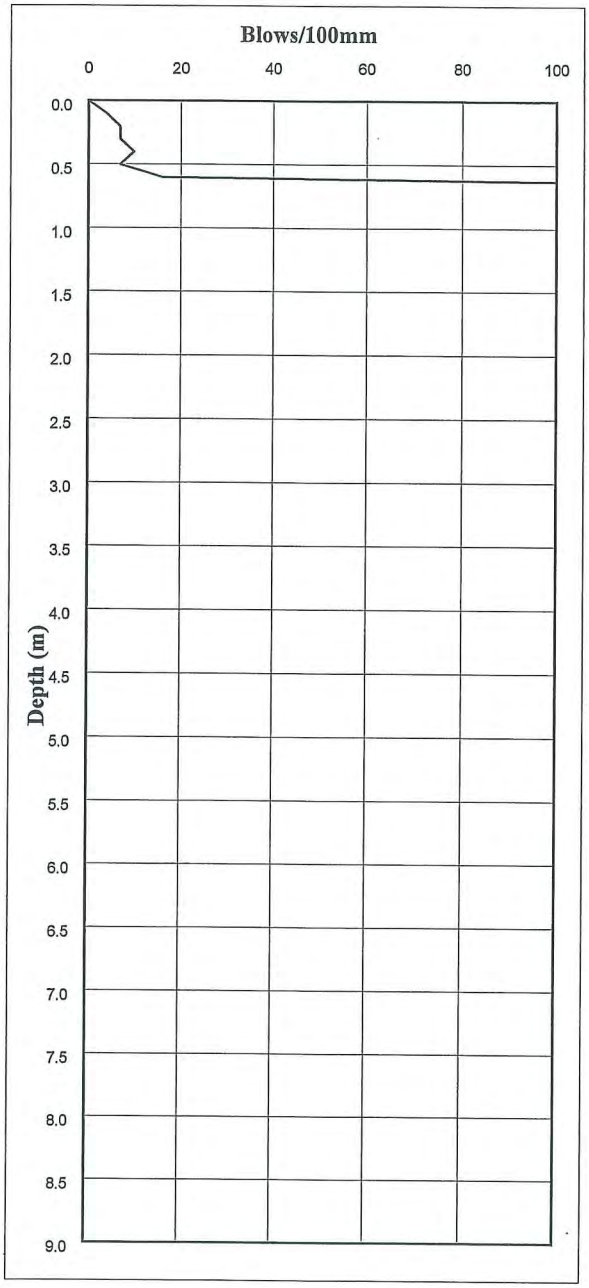
Trial Pit No.: TP1

Probe No.: P3

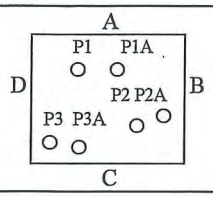
Contract No. :	GE/2009/03
Works Order No. :	GE/2009/03.221
Project :	Ground Investigation - Urban (Term Contract), Agreement No. CE15/2009(GE), Landslip Prevention and Mitigation Programme 2009, Package A, Landslip Preventive Works on Government Slopes and Retaining Walls Hong Kong Island - Investigation, Design and Construction Feature No. 11SW-D/C1411 (Behind No.17, Bowen Road)
Tested by:	S. W. Wong
Supervised by:	Y. P. Leung

Date of Test:	13-Aug-10
Ground Level:	+152.78 mPD
Co-ordinates:	
	E: 835450.50
(Trial Pit)	N: 814961.35

Depth (m) (below G.L.)	blows /100mm	Depth (m) (below G.L.)	blows /100mm	Depth (m) (below G.L.)	blows /100mm
0.10	4	3.10		6.10	
0.20	7	3.20		6.20	
0.30	7	3.30		6.30	
0.40	10	3.40		6.40	
0.50	7	3.50		6.50	
0.60	16	3.60		6.60	
0.63	100	3.70		6.70	
0.80		3.80		6.80	
0.90		3.90		6.90	
1.00		4.00		7.00	
1.10		4.10		7.10	
1.20		4.20		7.20	
1.30		4.30		7.30	
1.40		4.40		7.40	
1.50		4.50		7.50	
1.60		4.60		7.60	
1.70		4.70		7.70	
1.80		4.80		7.80	
1.90		4.90		7.90	
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2.10		5.10		8.10	
2.20		5.20		8.20	
2.30		5.30		8.30	
2.40		5.40		8.40	
2.50		5.50		8.50	
2.60		5.60		8.60	
2.70		5.70		8.70	
2.80		5.80		8.80	
2.90		5.90		8.90	
3.00		6.00		9.00	



Probe Location Plan



Remarks: Pre-excavation GCO Probe

P3 terminated on refusal

Checked by: C. Lun

Date: 13-Aug-10

DRiLTECH

DYNAMIC PROBING TEST RECORD

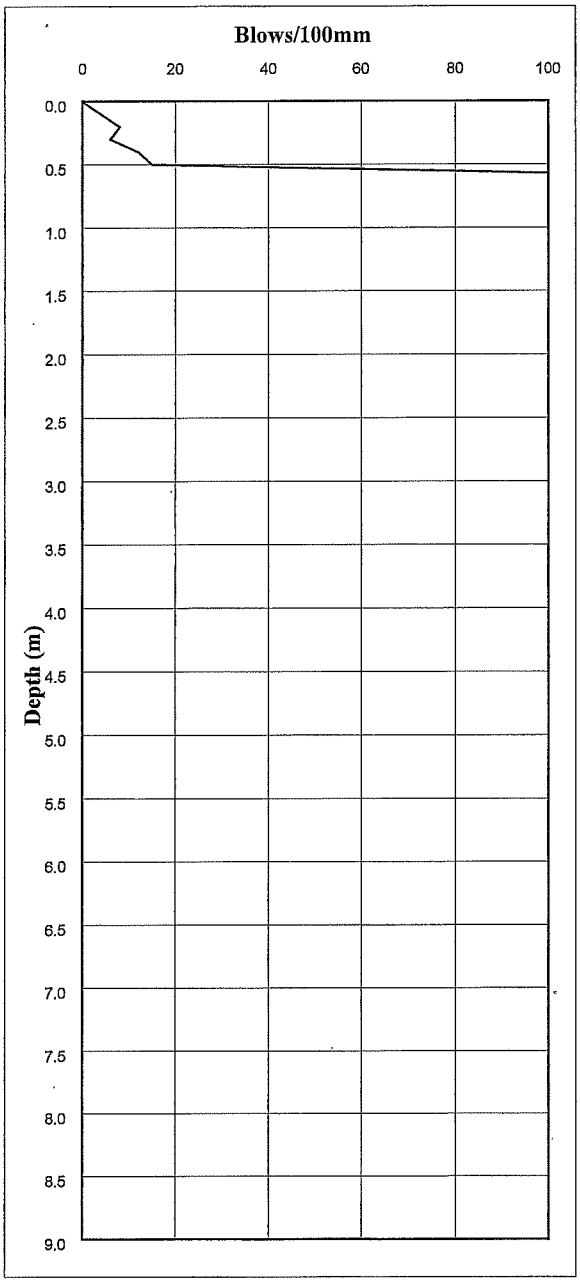
Trial Pit No.: TP1

Probe No.: P3A

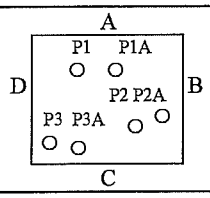
Contract No. :	GE/2009/03
Works Order No. :	GE/2009/03.221
Project :	Ground Investigation - Urban (Term Contract), Agreement No. CE15/2009(GE), Landslip Prevention and Mitigation Programme 2009, Package A, Landslip Preventive Works on Government Slopes and Retaining Walls Hong Kong Island - Investigation, Design and Construction Feature No. 11SW-D/C1411 (Behind No.17, Bowen Road)
Tested by:	S. W. Wong
Supervised by:	Y. P. Leung

Date of Test:	13-Aug-10
Ground Level:	+152.78 mPD
Co-ordinates:	
	E: 835450.50
(Trial Pit)	N: 814961.35

Depth (m) (below G.L.)	blows /100mm	Depth (m) (below G.L.)	blows /100mm	Depth (m) (below G.L.)	blows /100mm
0.10	4	3.10		6.10	
0.20	8	3.20		6.20	
0.30	6	3.30		6.30	
0.40	12	3.40		6.40	
0.50	15	3.50		6.50	
0.57	100	3.60		6.60	
0.70		3.70		6.70	
0.80		3.80		6.80	
0.90		3.90		6.90	
1.00		4.00		7.00	
1.10		4.10		7.10	
1.20		4.20		7.20	
1.30		4.30		7.30	
1.40		4.40		7.40	
1.50		4.50		7.50	
1.60		4.60		7.60	
1.70		4.70		7.70	
1.80		4.80		7.80	
1.90		4.90		7.90	
2.00		5.00		8.00	
2.10		5.10		8.10	
2.20		5.20		8.20	
2.30		5.30		8.30	
2.40		5.40		8.40	
2.50		5.50		8.50	
2.60		5.60		8.60	
2.70		5.70		8.70	
2.80		5.80		8.80	
2.90		5.90		8.90	
3.00		6.00		9.00	



Probe Location Plan



Remarks: Pre-excavation GCO Probe

2nd attempt due to P3 terminated on refusal

Checked by: C. Lun

Date: 13-Aug-10

DRiLTECH

DYNAMIC PROBING TEST RECORD

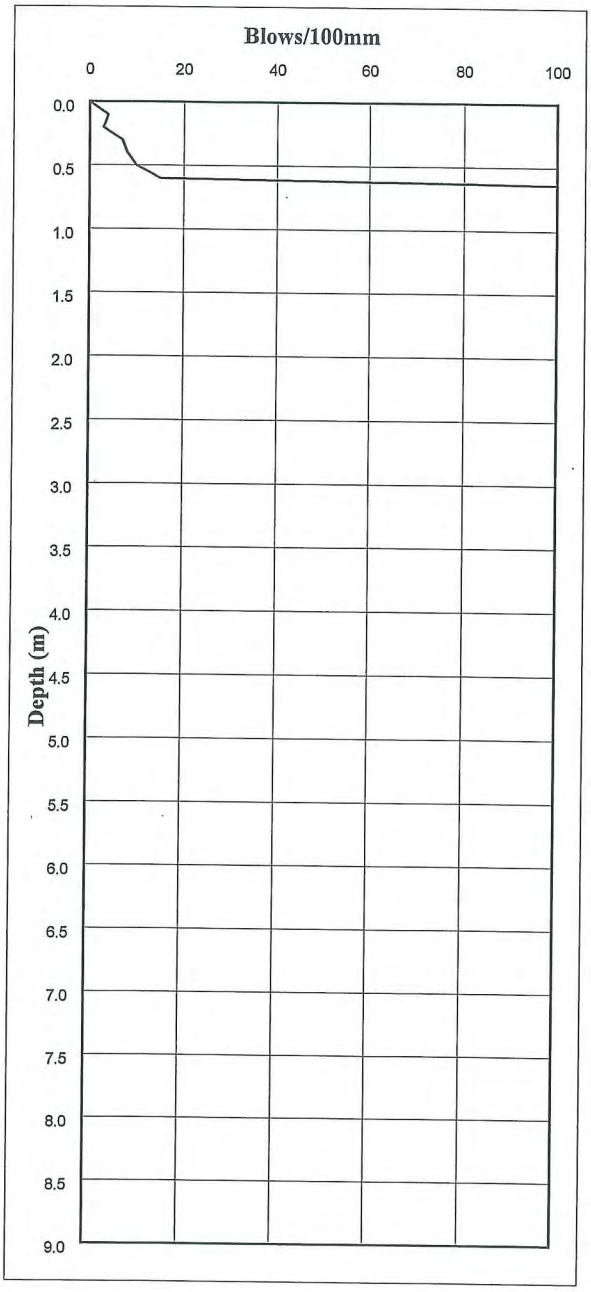
Trial Pit No.: TP2

Probe No.: P1

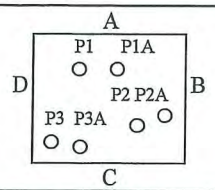
Contract No. :	GE/2009/03
Works Order No. :	GE/2009/03.221
Project :	Ground Investigation - Urban (Term Contract), Agreement No. CE15/2009(GE), Landslip Prevention and Mitigation Programme 2009, Package A, Landslip Preventive Works on Government Slopes and Retaining Walls Hong Kong Island - Investigation, Design and Construction Feature No. 11SW-D/C1411 (Behind No.17, Bowen Road)
Tested by:	S. W. Wong
Supervised by:	Y. P. Leung

Date of Test:	13-Aug-10
Ground Level:	+155.72 mPD
Co-ordinates:	
(Trial Pit)	E: 835443.99
	N: 814946.13

Depth (m) (below G.L.)	blows /100mm	Depth (m) (below G.L.)	blows /100mm	Depth (m) (below G.L.)	blows /100mm
0.10	4	3.10		6.10	
0.20	3	3.20		6.20	
0.30	7	3.30		6.30	
0.40	8	3.40		6.40	
0.50	10	3.50		6.50	
0.60	15	3.60		6.60	
0.64	100	3.70		6.70	
0.80		3.80		6.80	
0.90		3.90		6.90	
1.00		4.00		7.00	
1.10		4.10		7.10	
1.20		4.20		7.20	
1.30		4.30		7.30	
1.40		4.40		7.40	
1.50		4.50		7.50	
1.60		4.60		7.60	
1.70		4.70		7.70	
1.80		4.80		7.80	
1.90		4.90		7.90	
2.00		5.00		8.00	
2.10		5.10		8.10	
2.20		5.20		8.20	
2.30		5.30		8.30	
2.40		5.40		8.40	
2.50		5.50		8.50	
2.60		5.60		8.60	
2.70		5.70		8.70	
2.80		5.80		8.80	
2.90		5.90		8.90	
3.00		6.00		9.00	



Probe Location Plan



Remarks: Pre-excavation GCO Probe

P1 terminated on refusal

Checked by: C. Lun

Date: 13-Aug-10

DRiLTECH

DYNAMIC PROBING TEST RECORD

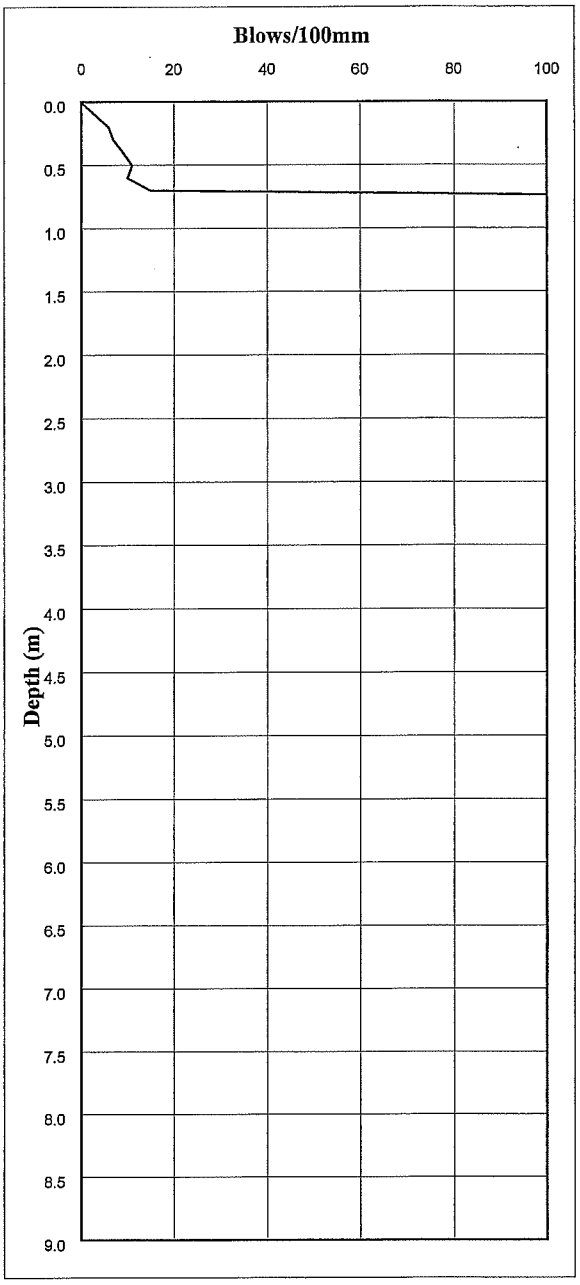
Trial Pit No.: TP2

Probe No.: P1A

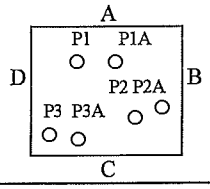
Contract No. :	GE/2009/03
Works Order No. :	GE/2009/03.221
Project :	Ground Investigation - Urban (Term Contract), Agreement No. CE15/2009(GE), Landslip Prevention and Mitigation Programme 2009, Package A, Landslip Preventive Works on Government Slopes and Retaining Walls Hong Kong Island - Investigation, Design and Construction Feature No. 11SW-D/C1411 (Behind No.17, Bowen Road)
Tested by:	S. W. Wong
Supervised by:	Y. P. Leung

Date of Test:	13-Aug-10
Ground Level:	+155.72 mPD
Co-ordinates:	
(Trial Pit)	E: 835443.99
	N: 814946.13

Depth (m) (below G.L.)	blows /100mm	Depth (m) (below G.L.)	blows /100mm	Depth (m) (below G.L.)	blows /100mm
0.10	3	3.10		6.10	
0.20	6	3.20		6.20	
0.30	7	3.30		6.30	
0.40	9	3.40		6.40	
0.50	11	3.50		6.50	
0.60	10	3.60		6.60	
0.70	15	3.70		6.70	
0.74	100	3.80		6.80	
0.90		3.90		6.90	
1.00		4.00		7.00	
1.10		4.10		7.10	
1.20		4.20		7.20	
1.30		4.30		7.30	
1.40		4.40		7.40	
1.50		4.50		7.50	
1.60		4.60		7.60	
1.70		4.70		7.70	
1.80		4.80		7.80	
1.90		4.90		7.90	
2.00		5.00		8.00	
2.10		5.10		8.10	
2.20		5.20		8.20	
2.30		5.30		8.30	
2.40		5.40		8.40	
2.50		5.50		8.50	
2.60		5.60		8.60	
2.70		5.70		8.70	
2.80		5.80		8.80	
2.90		5.90		8.90	
3.00		6.00		9.00	



Probe Location Plan



Remarks: Pre-excavation GCO Probe

2nd attempt due to P1 terminated on refusal

Checked by: C. Lun

Date: 13-Aug-10

DRiLTECH

DYNAMIC PROBING TEST RECORD

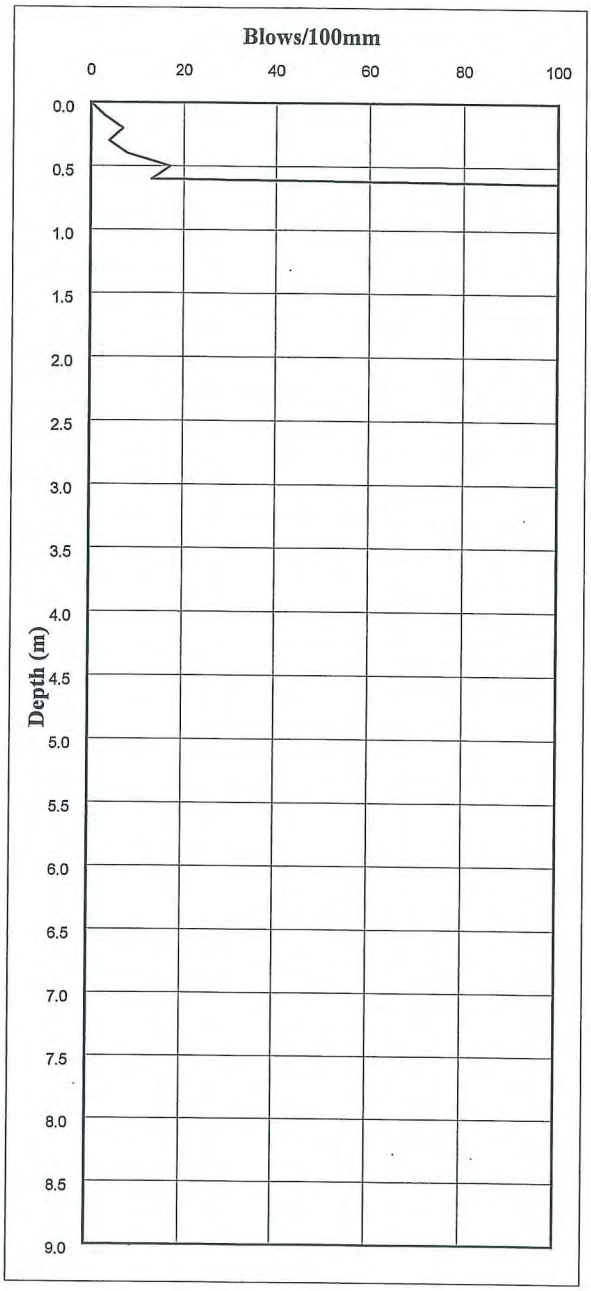
Trial Pit No.: TP2

Probe No.: P2

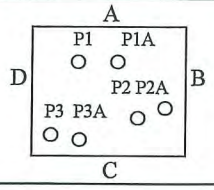
Contract No. :	GE/2009/03
Works Order No. :	GE/2009/03.221
Project :	Ground Investigation - Urban (Term Contract), Agreement No. CE15/2009(GE), Landslip Prevention and Mitigation Programme 2009, Package A, Landslip Preventive Works on Government Slopes and Retaining Walls Hong Kong Island - Investigation, Design and Construction Feature No. 11SW-D/C1411 (Behind No.17, Bowen Road)
Tested by:	S. W. Wong
Supervised by:	Y. P. Leung

Date of Test:	13-Aug-10
Ground Level:	+155.72 mPD
Co-ordinates:	
	E: 835443.99
(Trial Pit)	N: 814946.13

Depth (m) (below G.L.)	blows /100mm	Depth (m) (below G.L.)	blows /100mm	Depth (m) (below G.L.)	blows /100mm
0.10	3	3.10		6.10	
0.20	7	3.20		6.20	
0.30	4	3.30		6.30	
0.40	8	3.40		6.40	
0.50	17	3.50		6.50	
0.60	13	3.60		6.60	
0.63	100	3.70		6.70	
0.80		3.80		6.80	
0.90		3.90		6.90	
1.00		4.00		7.00	
1.10		4.10		7.10	
1.20		4.20		7.20	
1.30		4.30		7.30	
1.40		4.40		7.40	
1.50		4.50		7.50	
1.60		4.60		7.60	
1.70		4.70		7.70	
1.80		4.80		7.80	
1.90		4.90		7.90	
2.00		5.00		8.00	
2.10		5.10		8.10	
2.20		5.20		8.20	
2.30		5.30		8.30	
2.40		5.40		8.40	
2.50		5.50		8.50	
2.60		5.60		8.60	
2.70		5.70		8.70	
2.80		5.80		8.80	
2.90		5.90		8.90	
3.00		6.00		9.00	



Probe Location Plan



Remarks: Pre-excavation GCO Probe

P2 terminated on refusal

Checked by: C. Lun

Date: 13-Aug-10

DRiLTECH

DYNAMIC PROBING TEST RECORD

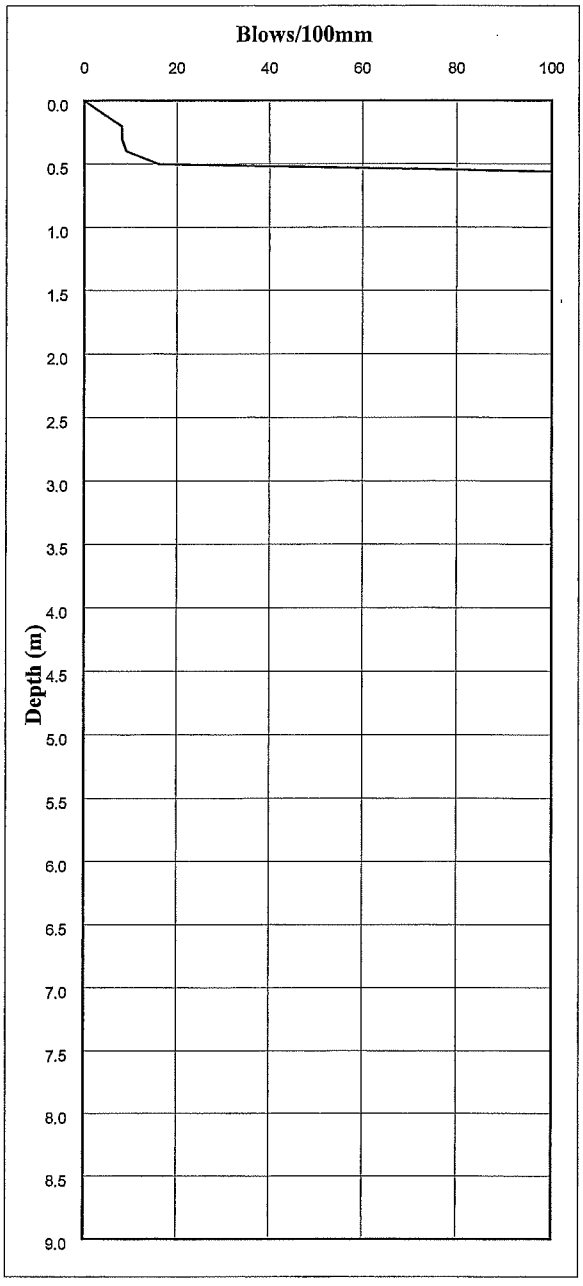
Trial Pit No.: TP2

Probe No.: P2A

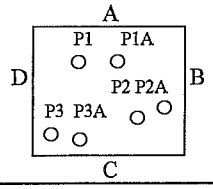
Contract No. :	GE/2009/03
Works Order No. :	GE/2009/03.221
Project :	Ground Investigation - Urban (Term Contract), Agreement No. CE15/2009(GE), Landslip Prevention and Mitigation Programme 2009, Package A, Landslip Preventive Works on Government Slopes and Retaining Walls Hong Kong Island - Investigation, Design and Construction Feature No. 11SW-D/C1411 (Behind No.17, Bowen Road)
Tested by:	S. W. Wong
Supervised by:	Y. P. Leung

Date of Test:	13-Aug-10
Ground Level:	+155.72 mPD
Co-ordinates:	
(Trial Pit)	E: 835443.99
	N: 814946.13

Depth (m) (below G.L.)	blows /100mm	Depth (m) (below G.L.)	blows /100mm	Depth (m) (below G.L.)	blows /100mm
0.10	4	3.10		6.10	
0.20	8	3.20		6.20	
0.30	8	3.30		6.30	
0.40	9	3.40		6.40	
0.50	16	3.50		6.50	
0.56	100	3.60		6.60	
0.70		3.70		6.70	
0.80		3.80		6.80	
0.90		3.90		6.90	
1.00		4.00		7.00	
1.10		4.10		7.10	
1.20		4.20		7.20	
1.30		4.30		7.30	
1.40		4.40		7.40	
1.50		4.50		7.50	
1.60		4.60		7.60	
1.70		4.70		7.70	
1.80		4.80		7.80	
1.90		4.90		7.90	
2.00		5.00		8.00	
2.10		5.10		8.10	
2.20		5.20		8.20	
2.30		5.30		8.30	
2.40		5.40		8.40	
2.50		5.50		8.50	
2.60		5.60		8.60	
2.70		5.70		8.70	
2.80		5.80		8.80	
2.90		5.90		8.90	
3.00		6.00		9.00	



Probe Location Plan



Remarks: Pre-excavation GCO Probe

2nd attempt due to P2 terminated on refusal

Checked by: C. Lun

Date: 13-Aug-10

DRiLTECH

DYNAMIC PROBING TEST RECORD

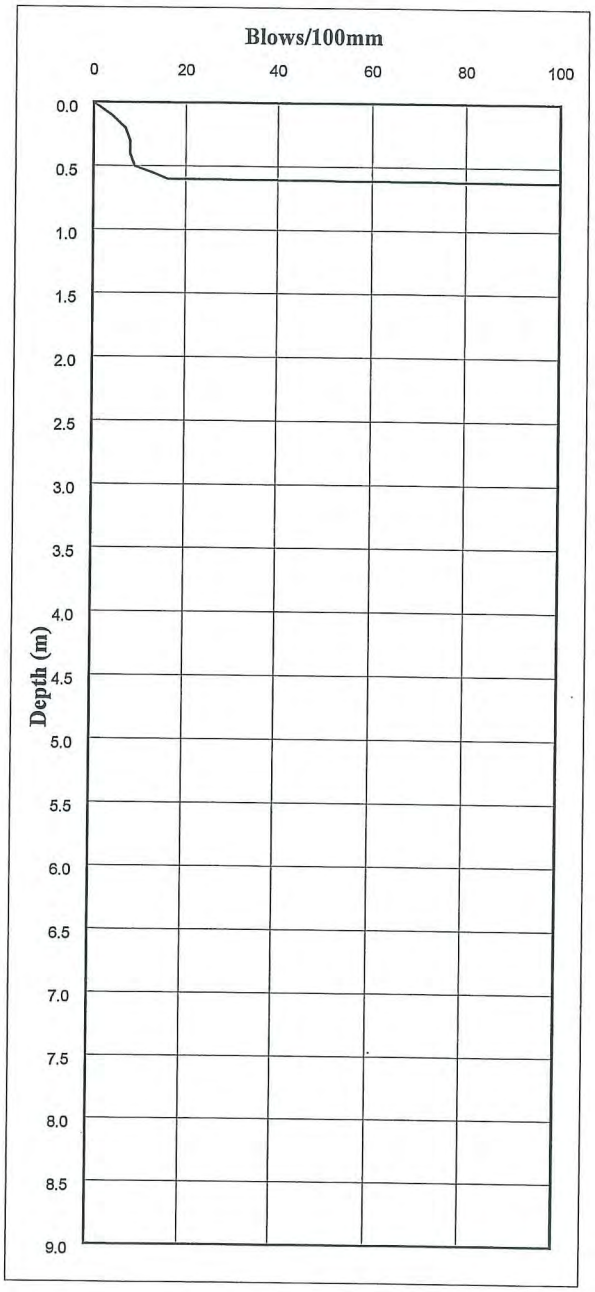
Trial Pit No.: TP2

Probe No.: P3

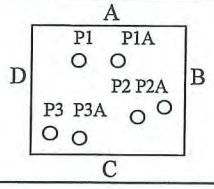
Contract No. :	GE/2009/03
Works Order No. :	GE/2009/03.221
Project :	Ground Investigation - Urban (Term Contract), Agreement No. CE15/2009(GE), Landslip Prevention and Mitigation Programme 2009, Package A, Landslip Preventive Works on Government Slopes and Retaining Walls Hong Kong Island - Investigation, Design and Construction Feature No. 11SW-D/C1411 (Behind No.17, Bowen Road)
Tested by:	S. W. Wong
Supervised by:	Y. P. Leung

Date of Test:	13-Aug-10
Ground Level:	+155.72 mPD
Co-ordinates:	
	E: 835443.99
(Trial Pit)	N: 814946.13

Depth (m) (below G.L.)	blows /100mm	Depth (m) (below G.L.)	blows /100mm	Depth (m) (below G.L.)	blows /100mm
0.10	4	3.10		6.10	
0.20	7	3.20		6.20	
0.30	8	3.30		6.30	
0.40	8	3.40		6.40	
0.50	9	3.50		6.50	
0.60	16	3.60		6.60	
0.62	100	3.70		6.70	
0.80		3.80		6.80	
0.90		3.90		6.90	
1.00		4.00		7.00	
1.10		4.10		7.10	
1.20		4.20		7.20	
1.30		4.30		7.30	
1.40		4.40		7.40	
1.50		4.50		7.50	
1.60		4.60		7.60	
1.70		4.70		7.70	
1.80		4.80		7.80	
1.90		4.90		7.90	
2.00		5.00		8.00	
2.10		5.10		8.10	
2.20		5.20		8.20	
2.30		5.30		8.30	
2.40		5.40		8.40	
2.50		5.50		8.50	
2.60		5.60		8.60	
2.70		5.70		8.70	
2.80		5.80		8.80	
2.90		5.90		8.90	
3.00		6.00		9.00	



Probe Location Plan



Remarks: Pre-excavation GCO Probe

P3 terminated on refusal

Checked by: C. Lun

Date: 13-Aug-10

DRiLTECH

DYNAMIC PROBING TEST RECORD

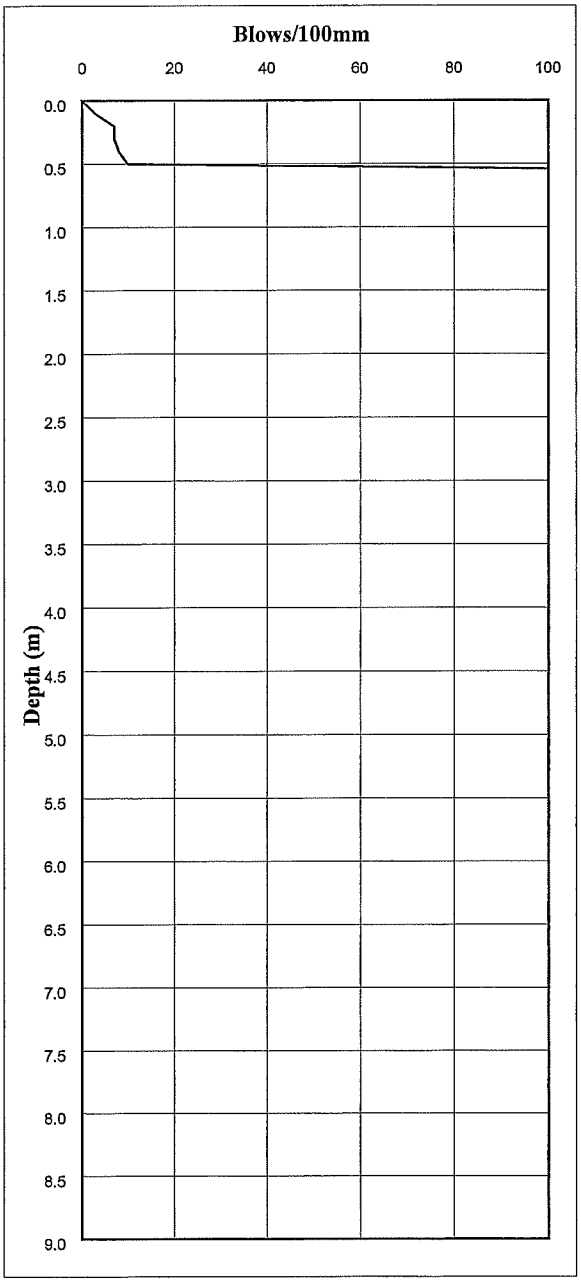
Trial Pit No.: TP2

Probe No.: P3A

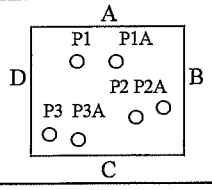
Contract No. :	GE/2009/03
Works Order No. :	GE/2009/03.221
Project :	Ground Investigation - Urban (Term Contract), Agreement No. CE15/2009(GE), Landslip Prevention and Mitigation Programme 2009, Package A, Landslip Preventive Works on Government Slopes and Retaining Walls Hong Kong Island - Investigation, Design and Construction Feature No. 11SW-D/C1411 (Behind No.17, Bowen Road)
Tested by:	S. W. Wong
Supervised by:	Y. P. Leung

Date of Test:	13-Aug-10
Ground Level:	+155.72 mPD
Co-ordinates:	
(Trial Pit)	E: 835443.99 N: 814946.13

Depth (m) (below G.L.)	blows /100mm	Depth (m) (below G.L.)	blows /100mm	Depth (m) (below G.L.)	blows /100mm
0.10	3	3.10		6.10	
0.20	7	3.20		6.20	
0.30	7	3.30		6.30	
0.40	8	3.40		6.40	
0.50	10	3.50		6.50	
0.54	100	3.60		6.60	
0.70		3.70		6.70	
0.80		3.80		6.80	
0.90		3.90		6.90	
1.00		4.00		7.00	
1.10		4.10		7.10	
1.20		4.20		7.20	
1.30		4.30		7.30	
1.40		4.40		7.40	
1.50		4.50		7.50	
1.60		4.60		7.60	
1.70		4.70		7.70	
1.80		4.80		7.80	
1.90		4.90		7.90	
2.00		5.00		8.00	
2.10		5.10		8.10	
2.20		5.20		8.20	
2.30		5.30		8.30	
2.40		5.40		8.40	
2.50		5.50		8.50	
2.60		5.60		8.60	
2.70		5.70		8.70	
2.80		5.80		8.80	
2.90		5.90		8.90	
3.00		6.00		9.00	



Probe Location Plan



Remarks: Pre-excavation GCO Probe

2nd attempt due to P3 terminated on refusal

Checked by: C. Lun

Date: 13-Aug-10

DRiLTECH

DYNAMIC PROBING TEST RECORD

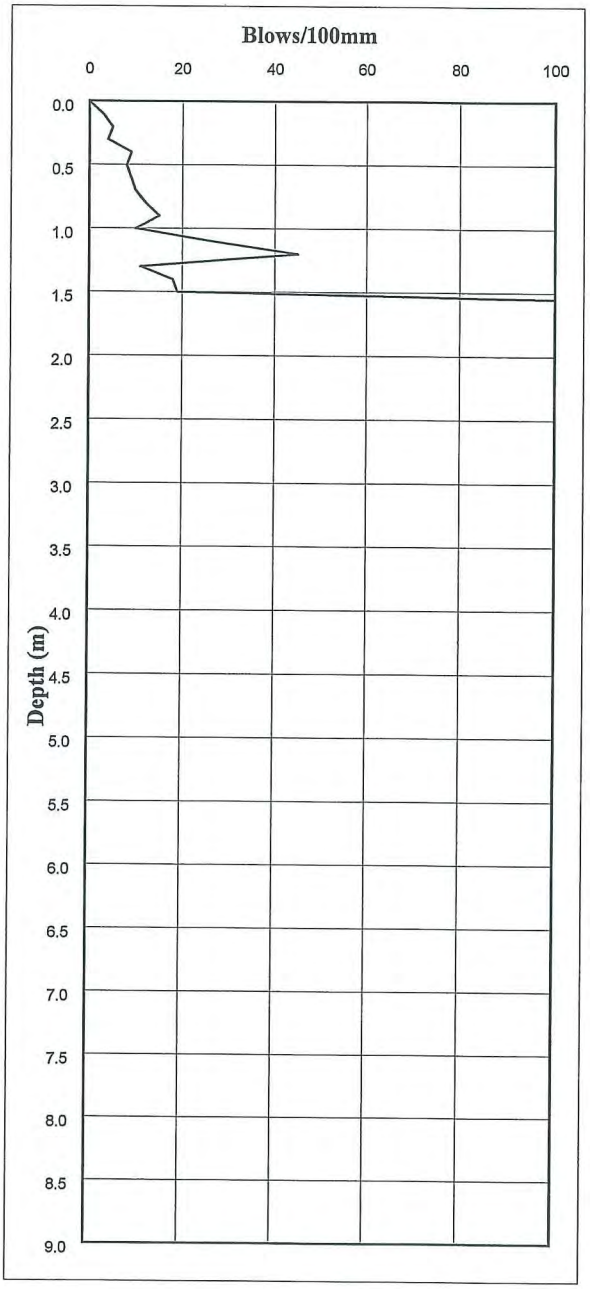
Trial Pit No.: TP3

Probe No.: P1

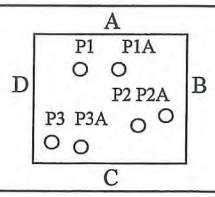
Contract No. :	GE/2009/03
Works Order No. :	GE/2009/03.221
Project :	Ground Investigation - Urban (Term Contract), Agreement No. CE15/2009(GE), Landslip Prevention and Mitigation Programme 2009, Package A, Landslip Preventive Works on Government Slopes and Retaining Walls Hong Kong Island - Investigation, Design and Construction Feature No. 11SW-D/C1411 (Behind No.17, Bowen Road)
Tested by:	S. W. Wong
Supervised by:	Y. P. Leung

Date of Test:	16-Aug-10
Ground Level:	+158.05 mPD
Co-ordinates:	
	E: 835450.14
(Trial Pit)	N: 814946.77

Depth (m) (below G.L.)	blows /100mm	Depth (m) (below G.L.)	blows /100mm	Depth (m) (below G.L.)	blows /100mm
0.10	3	3.10		6.10	
0.20	5	3.20		6.20	
0.30	4	3.30		6.30	
0.40	9	3.40		6.40	
0.50	8	3.50		6.50	
0.60	9	3.60		6.60	
0.70	10	3.70		6.70	
0.80	12	3.80		6.80	
0.90	15	3.90		6.90	
1.00	10	4.00		7.00	
1.10	26	4.10		7.10	
1.20	45	4.20		7.20	
1.30	11	4.30		7.30	
1.40	18	4.40		7.40	
1.50	19	4.50		7.50	
1.55	100	4.60		7.60	
1.70		4.70		7.70	
1.80		4.80		7.80	
1.90		4.90		7.90	
2.00		5.00		8.00	
2.10		5.10		8.10	
2.20		5.20		8.20	
2.30		5.30		8.30	
2.40		5.40		8.40	
2.50		5.50		8.50	
2.60		5.60		8.60	
2.70		5.70		8.70	
2.80		5.80		8.80	
2.90		5.90		8.90	
3.00		6.00		9.00	



Probe Location Plan



Remarks: Pre-excavation GCO Probe

P1 terminated on refusal

Checked by: C. Lun

Date: 16-Aug-10

DRiLTECH

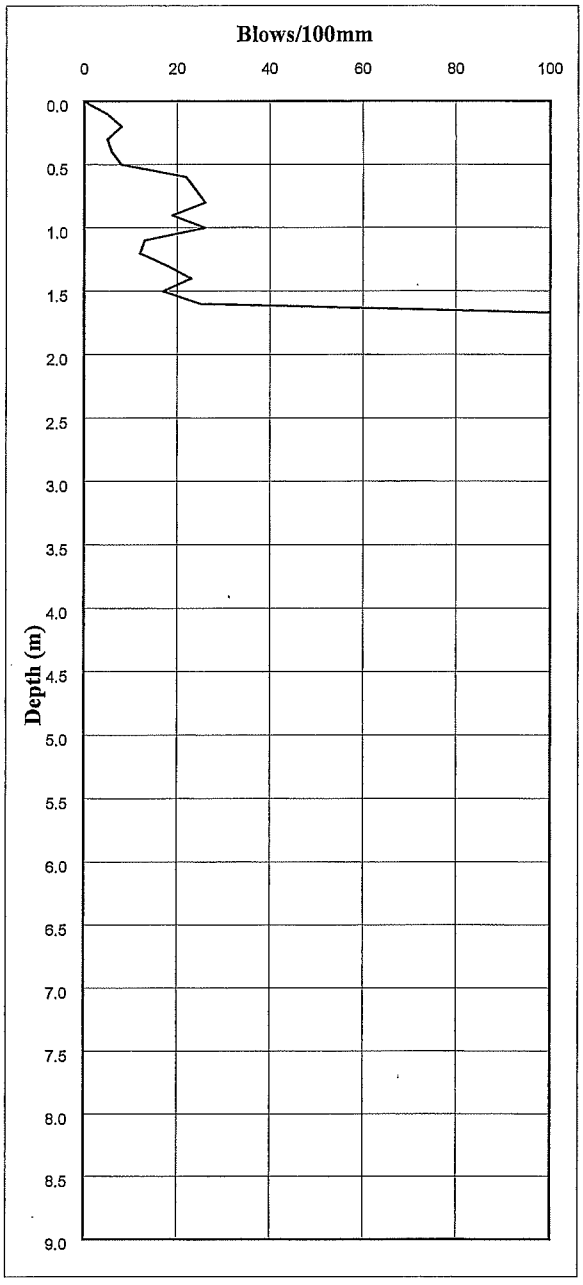
DYNAMIC PROBING TEST RECORD

Trial Pit No.: TP3

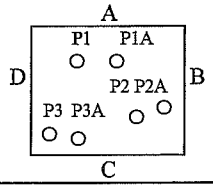
Probe No.: P1A

Contract No. :	GE/2009/03	**Date of Test:**	16-Aug-10
Works Order No. :	GE/2009/03.221	**Ground Level:**	+158.05 mPD
Project :	Ground Investigation - Urban (Term Contract), Agreement No. CE15/2009(GE), Landslip Prevention and Mitigation Programme 2009, Package A, Landslip Preventive Works on Government Slopes and Retaining Walls Hong Kong Island - Investigation, Design and Construction Feature No. 11SW-D/C1411 (Behind No.17, Bowen Road)	**Co-ordinates:** (Trial Pit)	E: 835450.14 N: 814946.77
Tested by:	S. W. Wong		
Supervised by:	Y. P. Leung		

Depth (m) (below G.L.)	blows /100mm	Depth (m) (below G.L.)	blows /100mm	Depth (m) (below G.L.)	blows /100mm
0.10	5	3.10		6.10	
0.20	8	3.20		6.20	
0.30	5	3.30		6.30	
0.40	6	3.40		6.40	
0.50	8	3.50		6.50	
0.60	22	3.60		6.60	
0.70	24	3.70		6.70	
0.80	26	3.80		6.80	
0.90	19	3.90		6.90	
1.00	26	4.00		7.00	
1.10	13	4.10		7.10	
1.20	12	4.20		7.20	
1.30	18	4.30		7.30	
1.40	23	4.40		7.40	
1.50	17	4.50		7.50	
1.60	25	4.60		7.60	
1.67	100	4.70		7.70	
1.80		4.80		7.80	
1.90		4.90		7.90	
2.00		5.00		8.00	
2.10		5.10		8.10	
2.20		5.20		8.20	
2.30		5.30		8.30	
2.40		5.40		8.40	
2.50		5.50		8.50	
2.60		5.60		8.60	
2.70		5.70		8.70	
2.80		5.80		8.80	
2.90		5.90		8.90	
3.00		6.00		9.00	



Probe Location Plan



Remarks: Pre-excavation GCO Probe

2nd attempt due to P1 terminated on refusal

Checked by: C. Lun

Date: 16-Aug-10

DRiLTECH

DYNAMIC PROBING TEST RECORD

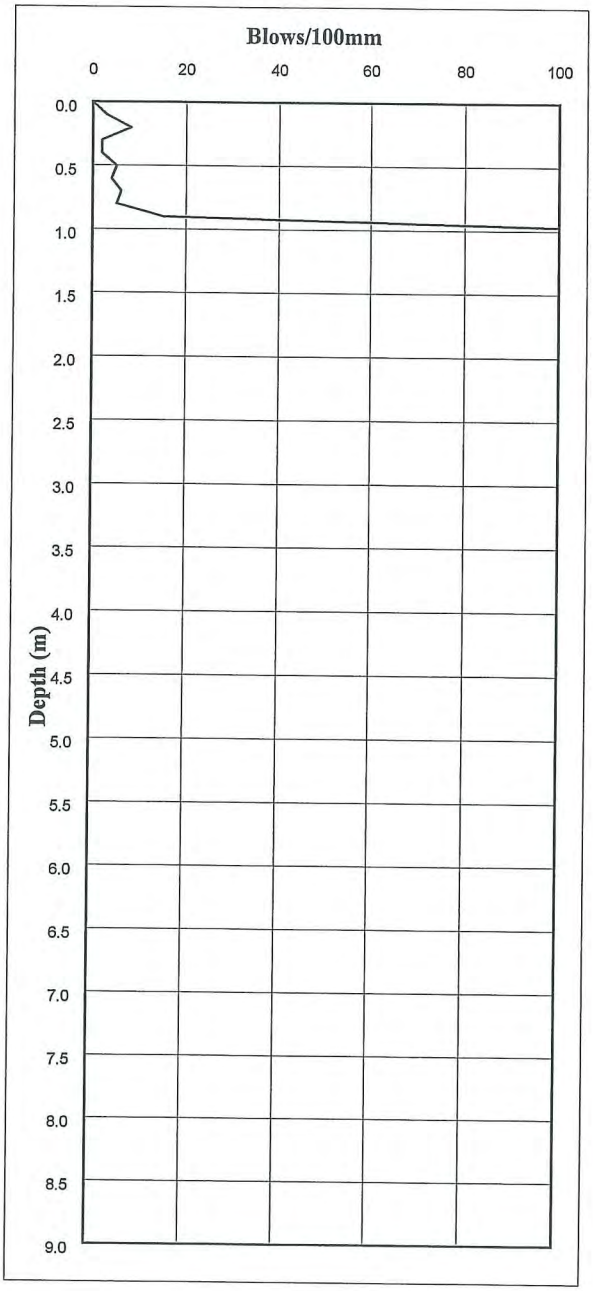
Trial Pit No.: TP3

Probe No.: P2

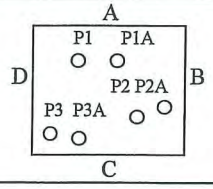
Contract No. :	GE/2009/03
Works Order No. :	GE/2009/03.221
Project :	Ground Investigation - Urban (Term Contract), Agreement No. CE15/2009(GE), Landslip Prevention and Mitigation Programme 2009, Package A, Landslip Preventive Works on Government Slopes and Retaining Walls Hong Kong Island - Investigation, Design and Construction Feature No. 11SW-D/C1411 (Behind No.17, Bowen Road)
Tested by:	S. W. Wong
Supervised by:	Y. P. Leung

Date of Test:	16-Aug-10
Ground Level:	+158.05 mPD
Co-ordinates:	
(Trial Pit)	E: 835450.14
	N: 814946.77

Depth (m) (below G.L.)	blows /100mm	Depth (m) (below G.L.)	blows /100mm	Depth (m) (below G.L.)	blows /100mm
0.10	3	3.10		6.10	
0.20	8	3.20		6.20	
0.30	2	3.30		6.30	
0.40	2	3.40		6.40	
0.50	5	3.50		6.50	
0.60	4	3.60		6.60	
0.70	6	3.70		6.70	
0.80	5	3.80		6.80	
0.90	15	3.90		6.90	
0.97	100	4.00		7.00	
1.10		4.10		7.10	
1.20		4.20		7.20	
1.30		4.30		7.30	
1.40		4.40		7.40	
1.50		4.50		7.50	
1.60		4.60		7.60	
1.70		4.70		7.70	
1.80		4.80		7.80	
1.90		4.90		7.90	
2.00		5.00		8.00	
2.10		5.10		8.10	
2.20		5.20		8.20	
2.30		5.30		8.30	
2.40		5.40		8.40	
2.50		5.50		8.50	
2.60		5.60		8.60	
2.70		5.70		8.70	
2.80		5.80		8.80	
2.90		5.90		8.90	
3.00		6.00		9.00	



Probe Location Plan



Remarks: Pre-excavation GCO Probe

P2 terminated on refusal

Checked by: C. Lun

Date: 16-Aug-10

DRiLTECH

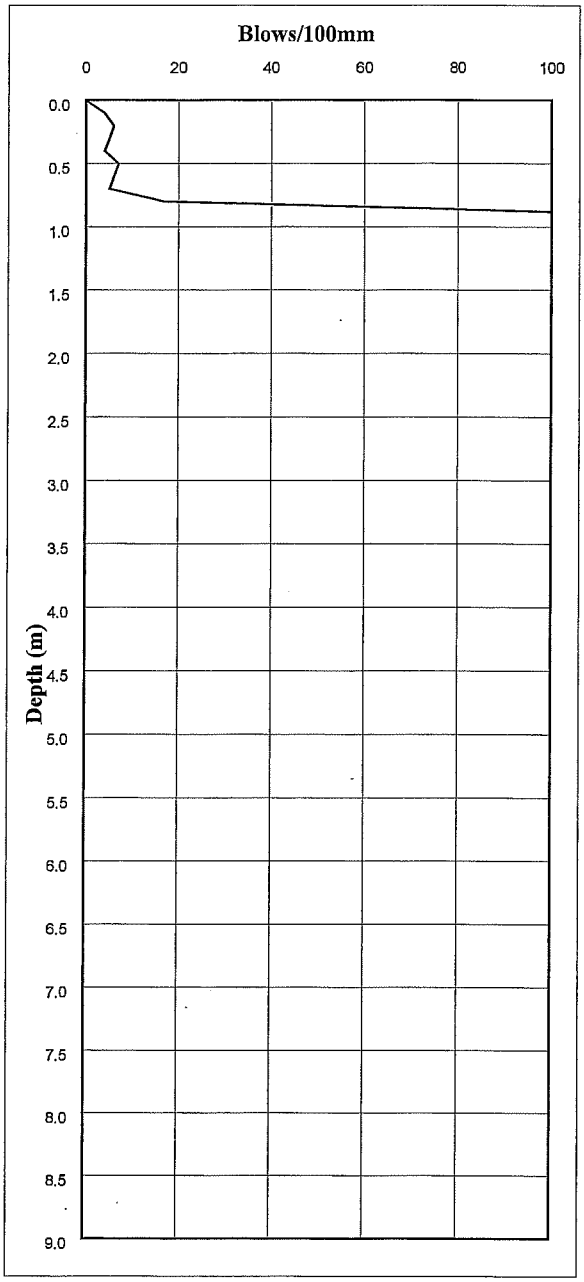
DYNAMIC PROBING TEST RECORD

Trial Pit No.: TP3

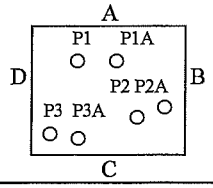
Probe No.: P2A

Contract No. :	GE/2009/03	**Date of Test:**	16-Aug-10
Works Order No. :	GE/2009/03.221	**Ground Level:**	+158.05 mPD
Project :	Ground Investigation - Urban (Term Contract), Agreement No. CE15/2009(GE), Landslip Prevention and Mitigation Programme 2009, Package A, Landslip Preventive Works on Government Slopes and Retaining Walls Hong Kong Island - Investigation, Design and Construction Feature No. 11SW-D/C1411 (Behind No.17, Bowen Road)	**Co-ordinates:** (Trial Pit)	E: 835450.14 N: 814946.77
Tested by:	S. W. Wong		
Supervised by:	Y. P. Leung		

Depth (m) (below G.L.)	blows /100mm	Depth (m) (below G.L.)	blows /100mm	Depth (m) (below G.L.)	blows /100mm
0.10	4	3.10		6.10	
0.20	6	3.20		6.20	
0.30	5	3.30		6.30	
0.40	4	3.40		6.40	
0.50	7	3.50		6.50	
0.60	6	3.60		6.60	
0.70	5	3.70		6.70	
0.80	17	3.80		6.80	
0.88	100	3.90		6.90	
1.00		4.00		7.00	
1.10		4.10		7.10	
1.20		4.20		7.20	
1.30		4.30		7.30	
1.40		4.40		7.40	
1.50		4.50		7.50	
1.60		4.60		7.60	
1.70		4.70		7.70	
1.80		4.80		7.80	
1.90		4.90		7.90	
2.00		5.00		8.00	
2.10		5.10		8.10	
2.20		5.20		8.20	
2.30		5.30		8.30	
2.40		5.40		8.40	
2.50		5.50		8.50	
2.60		5.60		8.60	
2.70		5.70		8.70	
2.80		5.80		8.80	
2.90		5.90		8.90	
3.00		6.00		9.00	



Probe Location Plan



Remarks: Pre-excavation GCO Probe

2nd attempt due to P2 terminated on refusal

Checked by: C. Lun

Date: 16-Aug-10

DRiLTECH

DYNAMIC PROBING TEST RECORD

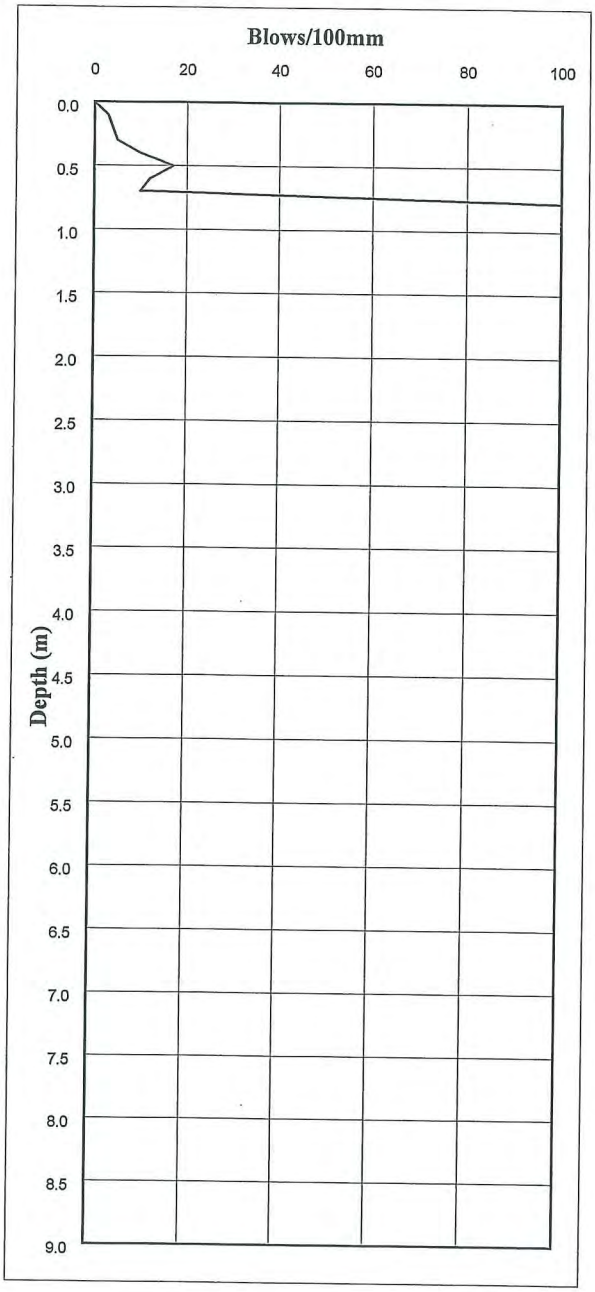
Trial Pit No.: TP3

Probe No.: P3

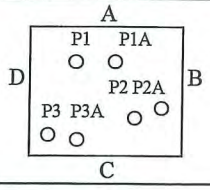
Contract No. :	GE/2009/03
Works Order No. :	GE/2009/03.221
Project :	Ground Investigation - Urban (Term Contract), Agreement No. CE15/2009(GE), Landslip Prevention and Mitigation Programme 2009, Package A, Landslip Preventive Works on Government Slopes and Retaining Walls Hong Kong Island - Investigation, Design and Construction Feature No. 11SW-D/C1411 (Behind No.17, Bowen Road)
Tested by:	S. W. Wong
Supervised by:	Y. P. Leung

Date of Test:	16-Aug-10
Ground Level:	+158.05 mPD
Co-ordinates:	
(Trial Pit)	E: 835450.14
	N: 814946.77

Depth (m) (below G.L.)	blows /100mm	Depth (m) (below G.L.)	blows /100mm	Depth (m) (below G.L.)	blows /100mm
0.10	3	3.10		6.10	
0.20	4	3.20		6.20	
0.30	5	3.30		6.30	
0.40	10	3.40		6.40	
0.50	17	3.50		6.50	
0.60	12	3.60		6.60	
0.70	10	3.70		6.70	
0.78	100	3.80		6.80	
0.90		3.90		6.90	
1.00		4.00		7.00	
1.10		4.10		7.10	
1.20		4.20		7.20	
1.30		4.30		7.30	
1.40		4.40		7.40	
1.50		4.50		7.50	
1.60		4.60		7.60	
1.70		4.70		7.70	
1.80		4.80		7.80	
1.90		4.90		7.90	
2.00		5.00		8.00	
2.10		5.10		8.10	
2.20		5.20		8.20	
2.30		5.30		8.30	
2.40		5.40		8.40	
2.50		5.50		8.50	
2.60		5.60		8.60	
2.70		5.70		8.70	
2.80		5.80		8.80	
2.90		5.90		8.90	
3.00		6.00		9.00	



Probe Location Plan



Remarks: Pre-excavation GCO Probe

P3 terminated on refusal

Checked by: C. Lun

Date: 16-Aug-10

DRiLTECH

DYNAMIC PROBING TEST RECORD

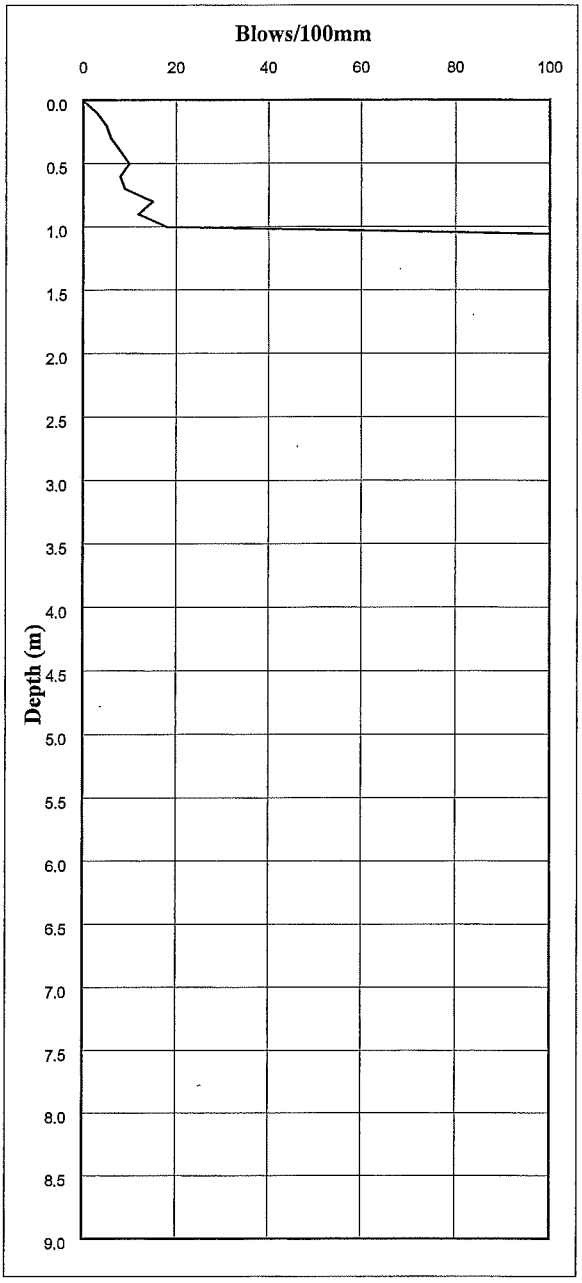
Trial Pit No.: TP3

Probe No.: P3A

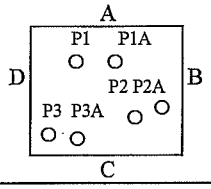
Contract No. :	GE/2009/03
Works Order No. :	GE/2009/03.221
Project :	Ground Investigation - Urban (Term Contract), Agreement No. CE15/2009(GE), Landslip Prevention and Mitigation Programme 2009, Package A, Landslip Preventive Works on Government Slopes and Retaining Walls Hong Kong Island - Investigation, Design and Construction Feature No. 11SW-D/C1411 (Behind No.17, Bowen Road)
Tested by:	S. W. Wong
Supervised by:	Y. P. Leung

Date of Test:	16-Aug-10
Ground Level:	+158.05 mPD
Co-ordinates:	
	E: 835450.14
(Trial Pit)	N: 814946.77

Depth (m) (below G.L.)	blows /100mm	Depth (m) (below G.L.)	blows /100mm	Depth (m) (below G.L.)	blows /100mm
0.10	3	3.10		6.10	
0.20	5	3.20		6.20	
0.30	6	3.30		6.30	
0.40	8	3.40		6.40	
0.50	10	3.50		6.50	
0.60	8	3.60		6.60	
0.70	9	3.70		6.70	
0.80	15	3.80		6.80	
0.90	12	3.90		6.90	
1.00	18	4.00		7.00	
1.06	100	4.10		7.10	
1.20		4.20		7.20	
1.30		4.30		7.30	
1.40		4.40		7.40	
1.50		4.50		7.50	
1.60		4.60		7.60	
1.70		4.70		7.70	
1.80		4.80		7.80	
1.90		4.90		7.90	
2.00		5.00		8.00	
2.10		5.10		8.10	
2.20		5.20		8.20	
2.30		5.30		8.30	
2.40		5.40		8.40	
2.50		5.50		8.50	
2.60		5.60		8.60	
2.70		5.70		8.70	
2.80		5.80		8.80	
2.90		5.90		8.90	
3.00		6.00		9.00	



Probe Location Plan



Remarks: Pre-excavation GCO Probe

2nd attempt due to P3 terminated on refusal

Checked by: C. Lun

Date: 16-Aug-10

Appendix F

Digital Data Record
(AGS and PDF in CD-ROM)

DRiLTECH

Media Index Record

Project Identification	**D-419**
Project Name	**Ground Investigation - Urban (Term Contract) Agreement No. CE 15/2009(GE), Landslip Prevention and Mitigation Programme 2009, Package A, Landslip Preventive Works on Government Slopes and Retaining Walls, Hong Kong Island - Investigation, Design and Construction. Feature No. 11SW-D/C1411 (Behind No. 17, Bowen Road)**
Works Order No.	**GE/2009/03.221**
Location	Bowen Road
Client	**Geotechnical Engineering Office, Civil Engineering and Development Department**
From	**DrilTech Ground Engineering Ltd.**

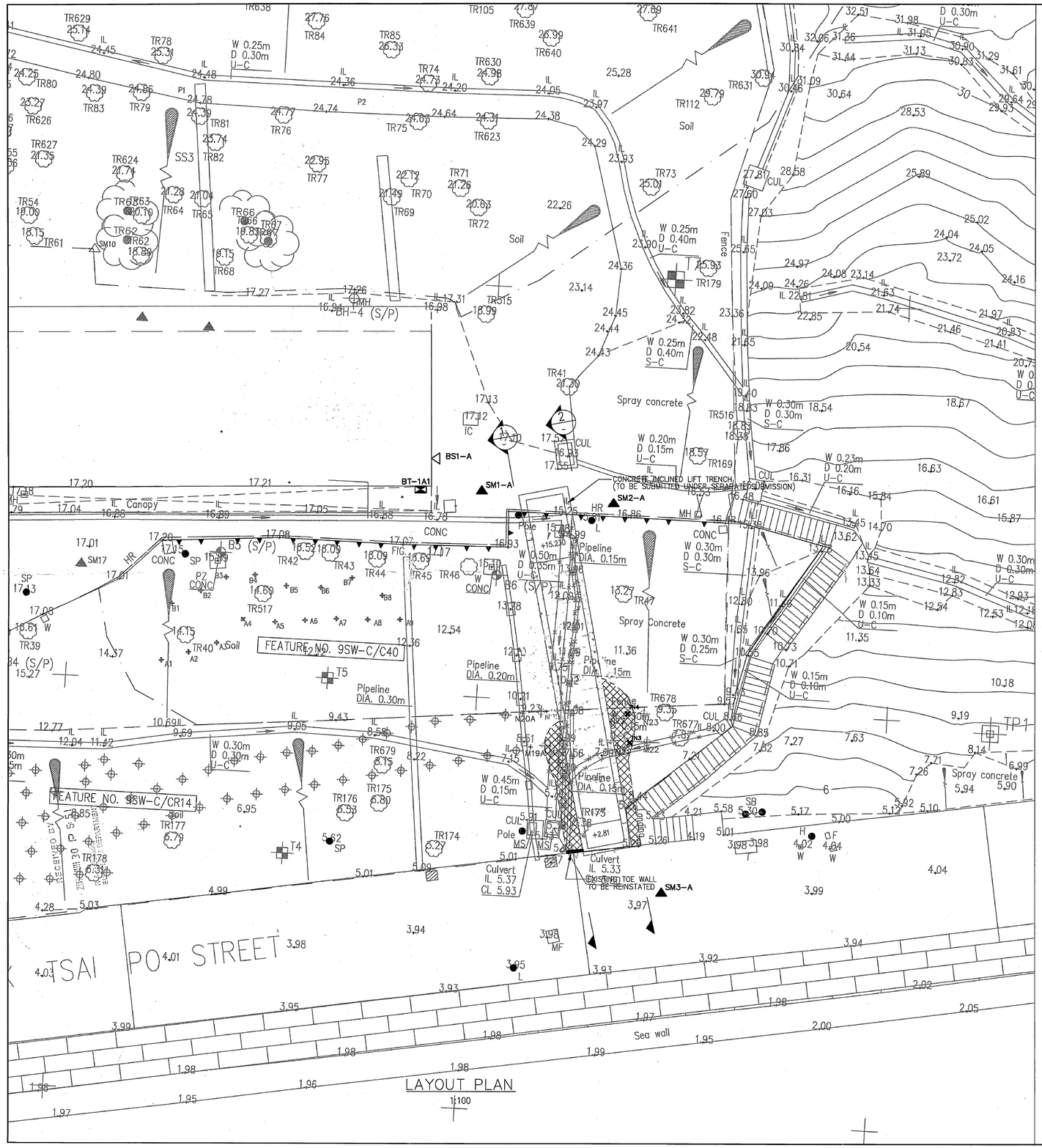
Issue Sequence Number	Date of Issue	Issued To	General Notes
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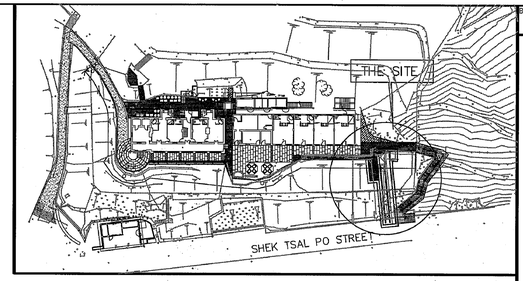
File Name	Creation Date	Creation Time	File Size in Bytes	General Description of Data Transferred
GE200903.221.ags	21-Sep-10	18:12	11KB	Digital Data in AGS Format for Final Factual Fieldwork Report
GE200903.221.pdf	22-Sep-10	9:47	21,784KB	Digital Data in PDF Format for Final Factual Fieldwork Report
Photographs_03.221.jpg	22-Sep-10	9:43	47MB	Digital Data in JPG Format for Final Factual Fieldwork Report
Individual Investigation Stations.pdf	22-Sep-10	9:59	8MB	Digital Data in PDF Format for Final Factual Fieldwork Report

Appendix 07

Reference Drawings for Similar Development

(Tai O Heritage Hotel)





LOCATION PLAN
N.T.S.

SOIL NAIL PULL OUT TEST SCHEDULE

FEATURE NO.	TEST NAIL NO.	NAILS DIAMETER (mm)	LEVEL (mPD)	DRILLHOLE DIAMETER (mm)	TOTAL LENGTH (m)	GROUT LENGTH (m)	DIPPING ANGLE (DEGREES)	To (kN)	TDL1 (kN)	TDL2 (kN)	Tp (kN)
9SW-C/CR14	TN3	25	+7.5	100	10.0	2.0	15	4	19	38	76
	TN4	25	+9.0	100	10.0	2.0	15	4	20	40	80

SOIL NAIL SCHEDULE

FEATURE NO.	SOIL NAIL NO.	NAILS DIAMETER (mm)	TENTATIVE LEVEL (mPD)	TENTATIVE NOS. OF NAILS	TOTAL LENGTH (m)	DIPPING ANGLE (DEGREES)		DRILLHOLE DIAMETER (mm)	ALLOWABLE STABILIZING FORCE (kN nr)	NAIL HEAD SIZE (mmXmm)
9SW-C/CR14	M19A	25	+7.5	2	10.0	15		150	45	500X600X250
	M21	25	+7.5	2	10.0	15		150	45	
	N20A	25	+9.0	2	10.0	15		150	45	
	N22	25	+9.0	2	10.0	15		150	45	

HORIZONTAL SPACING BETWEEN PROPOSED & EXISTING SOIL NAILS SHALL BE NOT GREATER THAN 1.5m.

Yung Hun Tat, Arthur
BSc MSc DIC FIStructE FHKIE FICE
Registered Structural Engineer

CHAN Henry
Registered Geotechnical Engineer
RGE 12/05

BD Reference No. :

LEGEND:

- SITE BOUNDARY
- SLOPE FEATURE BOUNDARY
- BH-1 EXISTING BOREHOLES (BY LAMS GEOTECHNICS LTD. 1984)
- DH/14/1 EXISTING BOREHOLES (BY LAMS GEOTECHNICS LTD. 2001)
- B1 EXISTING BOREHOLES (BY TYSAN FOUNDATION LTD. 2008)
- T1 EXISTING TRIAL PITS (BY TYSAN FOUNDATION LTD. 2008)
- SS1 EXISTING SLOPE STRIPPING (BY LAMS GEOTECHNICS LTD. 1985)
- SS1/14/1 EXISTING SLOPE STRIPPING (BY LAMS GEOTECHNICS LTD. 2001)
- AS-BUILT SOIL NAIL
- SOIL NAIL TO BE CONSTRUCTED UNDER ARCH.S.D. AGREEMENT NO. ASD/PSB/PM1 /PM3/03/05
- TO BE BACKFILL WITH NO-FINE CONCRETE
- SM1 SETTLEMENT MARKERS
- BT1 TILTING MARKER
- BS1 BUILDING SETTLEMENT MARKER
- TN3 PROPOSED PULL-OUT TEST NAILS (TN3, TN4)
- N22 PROPOSED SOIL NAIL (N20A,N22, M19A,M21)
- EXISTING TOE WALL TO BE REINSTATED

Plan Approved
CHAN Yuen-ming, Mary
Senior Building Surveyor
for BUILDING AUTHORITY
25 AUG 2011

Rev.	Stat.	Description	Date	By	Chk.	Ver'd
B	IFS	BD SUBMISSION	06/11	RC	ML	MN
A	IFT	GENERAL REVISION	03/11	ML	MN	MN
–	IFT	TENDER DRAWING	10/10	ML	MN	MN

Revisions

ESA 工程顧問有限公司
CONSULTING ENGINEERS LTD
Civil / Structural / Geotechnical / Environmental
10 / F., Greatmany Centre, 109 – 115 Queen's Road East, Wanchai, Hong Kong. Tel : 2528 6217 Fax : 2865 2857

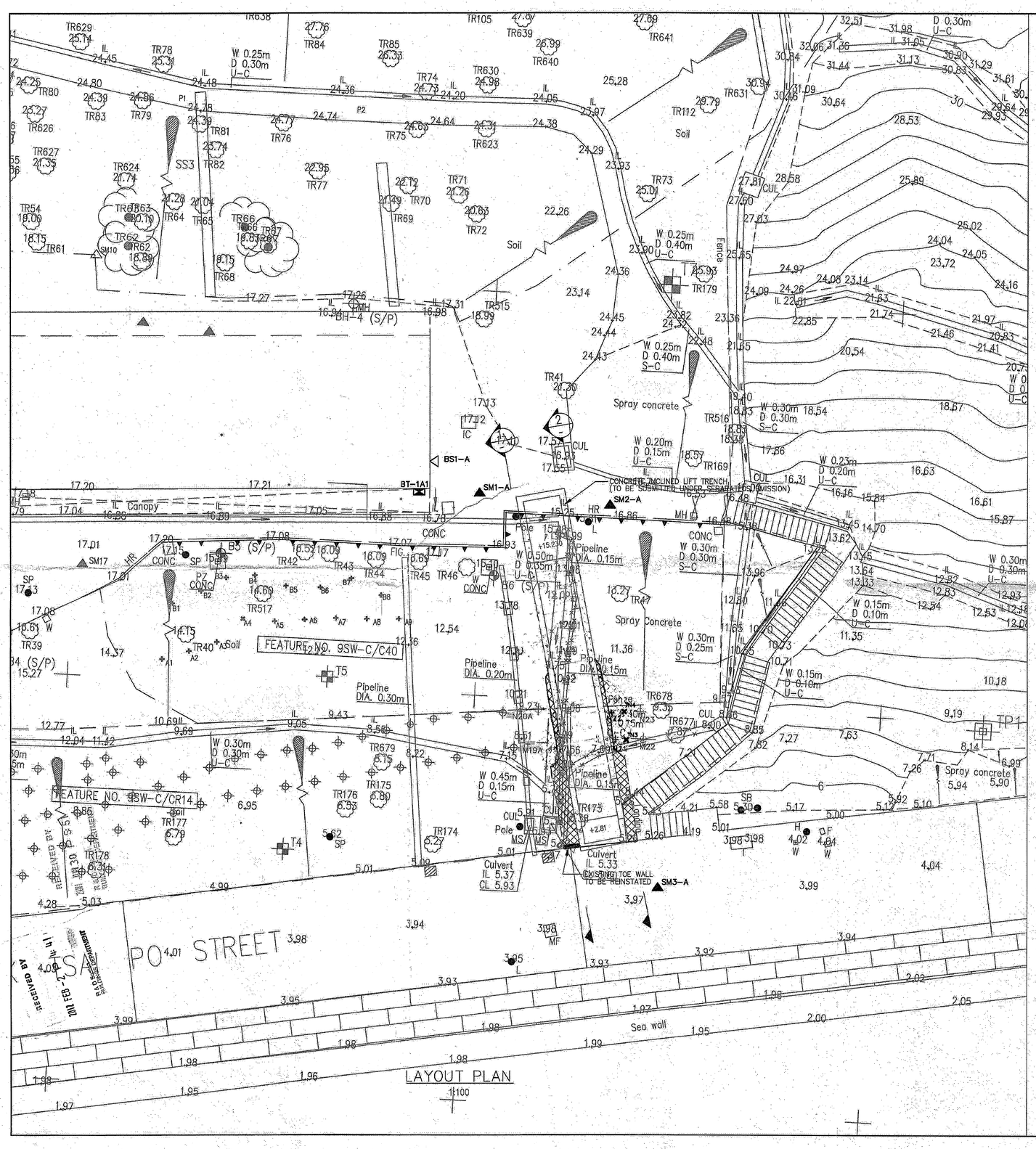
Authorized Person / Registered Structural Engineer :
MAK CHI CHEUNG, PETER
BArch., BASS, FHKIA, SBA, AAIA
REGISTERED ARCHITECT, AP(List 1)

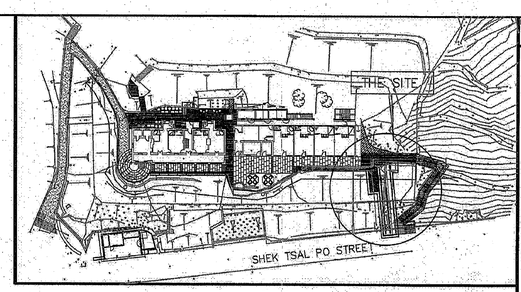
Project :
REVITALISATION SCHEME CONVERSION OF OLD TAI O POLICE STATION INTO TAI O HERITAGE HOTEL

Drawing Title :
SITE FORMATION LAYOUT PLAN (INCLINED LIFT)

Drawn :	LC	Date :	10/10	Job No. :	091427
Checked :	ML	Date :	10/10	Cad File :	091427_SF01B
Approved :	MN	Date :	10/10	Scale :	AS SHOWN
Drawing No. :	091427/SF01			Rev.	B

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LOCATION PLAN

N.T.S.

SOIL NAIL PULL OUT TEST SCHEDULE

FEATURE NO.	TEST NAIL NO.	NAILS DIAMETER (mm)	LEVEL (mPD)	DRILLHOLE DIAMETER (mm)	TOTAL LENGTH (m)	GROUT LENGTH (m)	DIPPING ANGLE (DEGREES)	To (kN)	TDL1 (kN)	TDL2 (kN)	Tp (kN)
9SW-C/CR14	TN3	25	+7.5	100	10.0	2.0	15	4	19	38	76
	TN4	25	+9.0	100	10.0	2.0	15	4	20	40	80

SOIL NAIL SCHEDULE

FEATURE NO.	SOIL NAIL NO.	NAILS DIAMETER (mm)	TENTATIVE LEVEL (mPD)	TENTATIVE NOS. OF NAILS	TOTAL LENGTH (m)	DIPPING ANGLE (DEGREES)	"a" (m)	DRILLHOLE DIAMETER (mm)	ALLOWABLE STABILIZING FORCE (kN)	NAIL HEAD SIZE (mmXmm)
9SW-C/CR14	M19A	25	+7.5	2	10.0	15	-	150	45	600X600X250
	M21	25	+7.5	2	10.0	15	-	150	45	
	N20A	25	+9.0	2	10.0	15	-	150	45	
	N22	25	+9.0	2	10.0	15	-	150	46	

HORIZONTAL SPACING BETWEEN PROPOSED & EXISTING SOIL NAILS SHALL BE NOT GREATER THAN 1.5m.

Yung Hun Tat, Arthur
BSc MSc DIC FIStructE FHKIE FICE
Registered Structural Engineer

Plan Approved
CHAN Yuen-ming, Mary
Senior Building Surveyor
for BUILDING AUTHORITY
25 AUG 2011

Yung Hun Tat, Arthur
BSc MSc DIC FIStructE FHKIE FICE
Registered Structural Engineer

CHAN Henry
Registered Geotechnical Engineer
RGE 12/05

BD Reference No. :

LEGEND:

- SITE BOUNDARY
- SLOPE FEATURE BOUNDARY
- BH-1 EXISTING BOREHOLES (BY LAMS GEOTECHNICS LTD. 1984)
- BH/14/1 EXISTING BOREHOLES (BY LAMS GEOTECHNICS LTD. 2001)
- B1 EXISTING BOREHOLES (BY TYSAN FOUNDATION LTD. 2008)
- T1 EXISTING TRIAL PITS (BY TYSAN FOUNDATION LTD. 2008)
- SS1 EXISTING SLOPE STRIPPING (BY LAMS GEOTECHNICS LTD. 1985)
- SS1/14/1 EXISTING SLOPE STRIPPING (BY LAMS GEOTECHNICS LTD. 2001)
- AS-BUILT SOIL NAIL
- SOIL NAIL TO BE CONSTRUCTED UNDER ARCH.S.D. AGREEMENT NO. ASD/PSB/PM1 /PM3/03/08
- TO BE BACKFILL WITH NO-FINE CONCRETE
- SM1 SETTLEMENT MARKERS
- BT1 TILTING MARKER
- BS1 BUILDING SETTLEMENT MARKER
- TN3 PROPOSED PULL-OUT TEST NAILS (TN3, TN4)
- N22 PROPOSED SOIL NAIL (N20A,N22, M19A,M21)
- EXISTING TOE WALL TO BE REINSTATED

MAK CHI CHEUNG, PETER
BArch, BAAS, FHKIA, RIBA, AAHA
REGISTERED ARCHITECT, AP(List 1)

Plan Approved
Senior Building Surveyor
for BUILDING AUTHORITY
25 AUG 2011

AS-BUILT RECORD PLAN

Rev.	Stat.	Description	Date	By	Chk.	Ver'd
B	IFS	BD SUBMISSION	06/11	RC	ML	MN
A	IFT	GENERAL REVISION	03/11	ML	MN	MN
-	IFT	TENDER-DRAWING	10/10	ML	MN	MN

Revisions

ESA 工程顧問有限公司
CONSULTING ENGINEERS LTD
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MAK CHI CHEUNG, PETER
BArch, BAAS, FHKIA, RIBA, AAHA
REGISTERED ARCHITECT, AP(List 1)

Project :

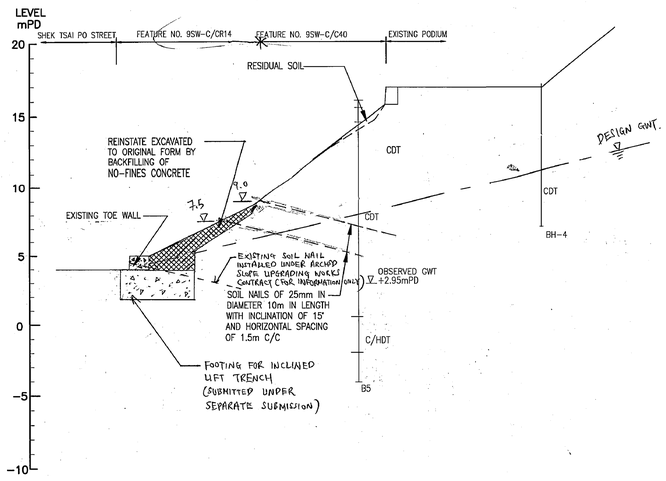
REVITALISATION SCHEME CONVERSION OF OLD TAI O POLICE STATION INTO TAI O HERITAGE HOTEL

Drawing Title :

SITE FORMATION LAYOUT PLAN (INCLINED LIFT)

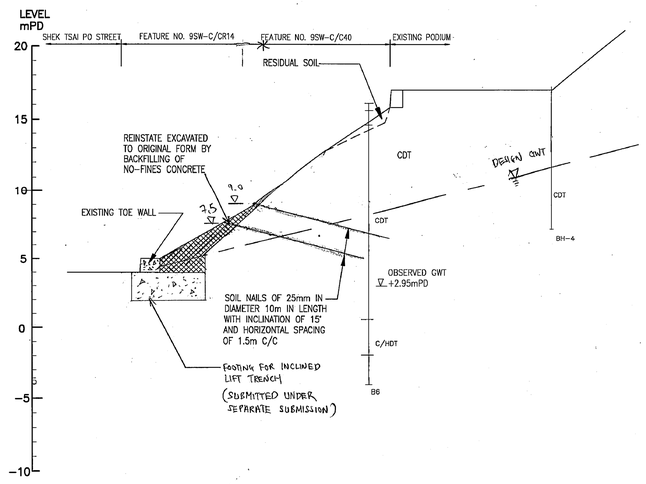
Drawn :	LC	Date :	10/10	Job No. :	091427
Checked :	ML	Date :	10/10	Cad File :	091427_SF01B
Approved :	MN	Date :	10/10	Scale :	AS SHOWN
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SECTION 1-1

1:200



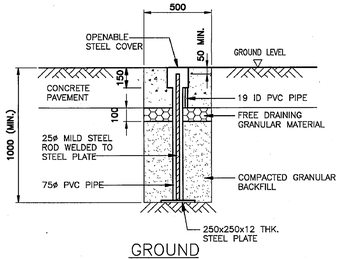
SECTION 2-2

1:200

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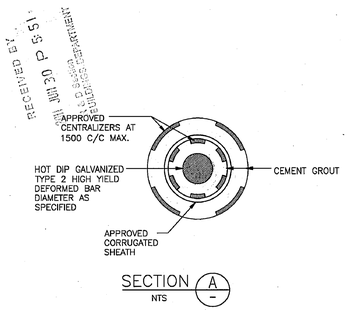
——— SOIL NAIL

– – – SOIL NAIL LOCATION (REFER DRAWING NO. 091427/SF01 FOR LOCATION OF SOIL NAILS).



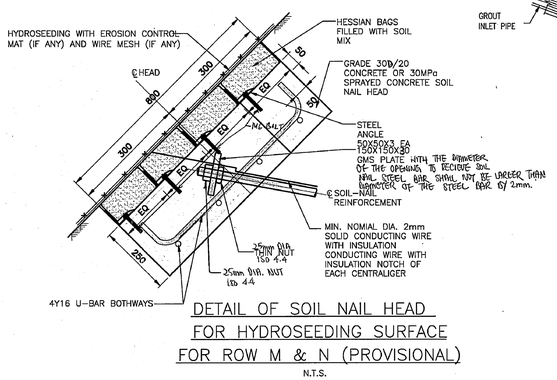
GROUND SETTLEMENT POINT

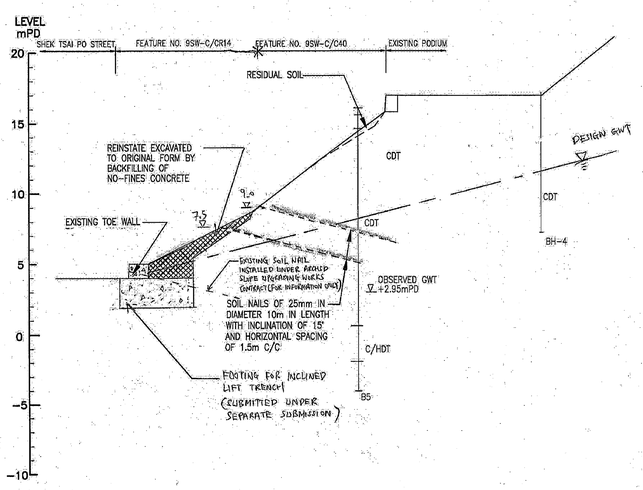
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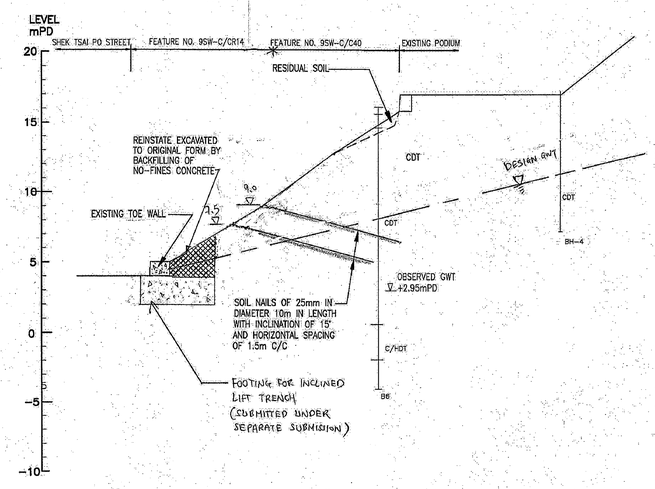
SECTION A

NTS


HYDROSEEDING WITH EROSION CONTROL MAT (IF ANY) AND WIRE MESH (IF ANY)
HESSIAN BAGS FILLED WITH SOIL MIX
GRADE 30D/20 CONCRETE OR 30MPa SPRAYED CONCRETE SOIL NAIL HEAD
℄HEAD
800
300
300
80
80
80



SECTION 1-1
1:200

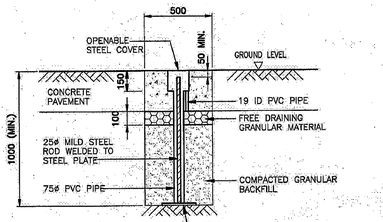


SECTION 2-2
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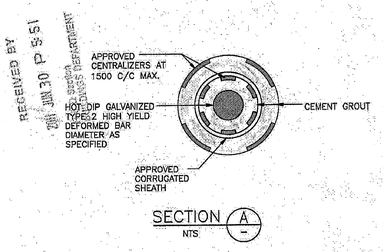
LEGEND :

——— SOIL NAIL

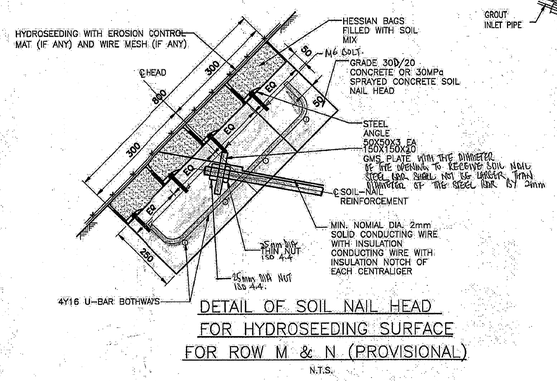
— — — SOIL NAIL LOCATION (CREEP DRAWING NO. 091427/SF01 FOR LOCATION OF SOIL NAILS).



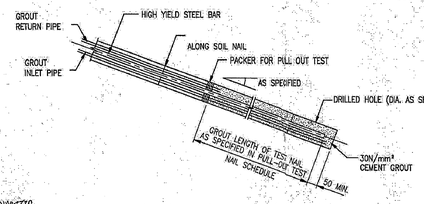
GROUND SETTLEMENT POINT
N.T.S.



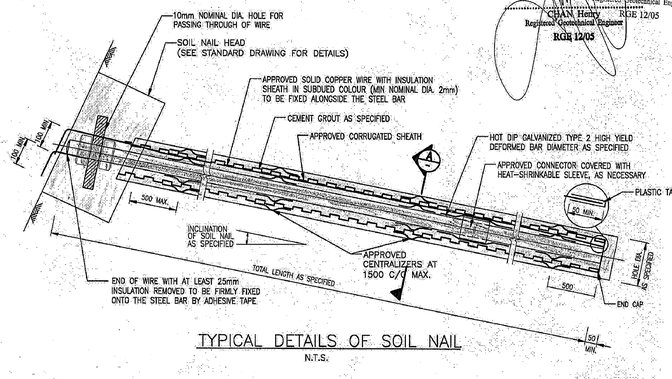
SECTION A-A
NTS



DETAIL OF SOIL NAIL HEAD FOR HYDROSEEDING SURFACE FOR ROW M & N (PROVISIONAL)
N.T.S.



TYPICAL ARRANGEMENT FOR PULL-OUT TEST
NTS



TYPICAL DETAILS OF SOIL NAIL
N.T.S.

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RGE 12/05

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BD Reference No. :

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Plan Approved
CHAN Wai-ming, Mary
Senior Building Surveyor
for BUILDING AUTHORITY
25 AUG 2011

AS-BUILT RECORD PLAN

Rev	Stat.	Description	Date	By	Chk.	Ver'd
B	IFS	BD SUBMISSION	06/11	RC	ML	MN
A	IFT	GENERAL REVISION	03/11	ML	MN	MN
-	IFT	TENDER DRAWING	10/10	ML	MN	MN

Revisions

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Authorised Person / Registered Structural Engineer :

Project :
REVITALISATION SCHEME CONVERSION OF OLD TAI O POLICE STATION INTO TAI O HERITAGE HOTEL

Drawing Title :
SECTIONS FOR SITE FORMATION (INCLINED LIFT)

Drawn :	LC	Date :	10/10	Job No. :	091427
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GENERAL NOTES

1. DO NOT SCALE DRAWINGS.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SPECIFIED.
3. ALL LEVELS ARE IN METRES ABOVE PRINCIPLE DATUM (mPD) UNLESS OTHERWISE SPECIFIED.
4. ALL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ALL RELEVANT DRAWINGS AND SPECIFICATIONS ISSUED UNDER THE CONTRACT. THE CONTRACTOR SHALL INFORM THE AP FOR ANY DISCREPANCIES WHICH MAY BE FOUND AMONG THESE DRAWINGS.
5. THE CONTRACTOR SHALL INSPECT THE CONDITIONS OF ADJOINING AREAS AND RECORD THE EXISTING STRUCTURES, UTILITIES, ROADS, PAVEMENTS, AND THE LIKE PRIOR TO THE COMMENCEMENT AND AFTER COMPLETION OF THE WORKS. THE CONTRACTOR SHALL SUBMIT THE CONDITION SURVEY REPORT TO THE AP FOR RECORD BEFORE CONSTRUCTION.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR AND REPAIR ANY DAMAGES TO ADJOINING AREAS, STRUCTURES, UTILITIES, ROADS, PAVEMENT AND THE LIKE ARISING DIRECTLY FROM THE WORKS AT NO EXTRA COST AND NO EXTENSION OF TIME.
7. ALL WORKS SHALL COMPLY WITH THE GENERAL SPECIFICATION FOR CIVIL ENGINEERING 2006, HONG KONG BUILDING (CONSTRUCTION) REGULATIONS 1990, RELEVANT PRACTICE NOTES FOR AUTHORIZED PERSONS AND REGISTERED STRUCTURAL ENGINEERS, AND PRACTICE NOTES FOR REGISTERED CONTRACTORS. ALL EXCAVATION WORKS SHALL BE CARRIED OUT ACCORDING TO SECTION 6 OF THE GENERAL SPECIFICATION. ALL DESIGN AND WORKS OF STRUCTURAL STEEL SHALL COMPLY WITH CODE OF PRACTICE FOR THE STRUCTURAL USE OF STEEL 2005. ALL DESIGN AND WORKS FOR REINFORCED CONCRETE SHALL COMPLY WITH CODE OF STRUCTURAL USE OF CONCRETE 2004.
8. ALL UTILITIES LOCATED IN THE WORK AREA SHALL BE IDENTIFIED BY THE THE CONTRACTOR PRIOR TO THE COMMENCEMENT OF THE WORKS. IF NECESSARY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE TEMPORARY UTILITY DIVERSION AND REINSTATEMENT AND ALL COORDINATION WORKS WITH THE UTILITY COMPANIES.
9. THE EXACT BOUNDARY OF THE WORKS SITE AND THE WORKS AREA SHALL BE CONFIRMED BY THE ENGINEER ON SITE.
10. ALL MONITORING WORKS REQUIRED FOR THE PROPOSED WORKS SHALL REFER TO DRAWING NO. 091427/SF01.
11. THE REQUIREMENT FOR SITE SUPERVISION SHALL FOLLOW THAT STIPULATED IN THE CODE OF PRACTICE FOR SITE SUPERVISION 2009
12. SOIL PROPERTIES

MATERIALS	COHESION C'(kPa)	FRICTION ANGLE ϕ'(°)	UNIT WEIGHT (kN/m³)
CDT	4	36	17
EXISTING FILL	0	32	19

~~13. ALL STRUCTURAL STEEL TO BE GRADE S275 TO BS EN 10025.~~

13. TOE WALL TO BE REINSTATED SHALL BE GRADE 30/20 D AND T852 WIRE MESH SHALL BE PLACED CENTRALLY.

NOTES ON TEMPORARY DRAINAGE

1. SUMP PUMP AND SUMP PIT SHALL BE PROVIDED FOR THE TEMPORARY DRAINAGE PURPOSE IF NECESSARY. ADEQUATE FILTERS SHALL BE PROVIDED TO PREVENT LOSS OF GROUND AS A RESULT OF PUMPING.
2. ALL TEMPORARY U-CHANNEL SHALL BE 1 IN 100 IN GRADIENT UNLESS OTHERWISE STATED.
3. SUMP PUMPING WITH SUFFICIENT CAPACITY SHALL BE PROVIDED AS DRAINAGE FOR THE TEMPORARY EXCAVATION.
4. LOCATION, NUMBERS AND METHOD OF INSTALLATION OF SUMP PUMPS SHALL BE PROPOSED BY THE CONTRACTOR AGREED WITH THE AP/RGE ON SITE.
5. WATER DISCHARGED FROM SUMP PUMPS SHALL BE DIRECTED TO SAND TRAP AND THEN GOVERNMENTS STORM WATER DRAINS. PERMITS FROM STATUTORY AUTHORITIES SHALL BE OBTAINED FOR WATER DISCHARGING.
6. A REGULAR MAINTENANCE OF SAND TRAP SHALL BE PROVIDED TO ENSURE NO LIKELIHOOD OF FLOODING OCCURING FROM THE SITE ONTO THE ADJACENT AREAS.
7. ALL SURFACE WATER SHALL BE DIVERTED AND COLLECTED WITHIN THE EXCAVATION AREA AND SHALL BE DISCHARGED BY SUMP PUMPS.

NOTES ON EXCAVATION

1. ALL TEMPORARY SOIL CUT SURFACE/SLOPE EXPOSED FOR LESS THAN A WEEK SHALL BE PROTECTED WITH NYLON SHEETS SECURED AGAINST WIND.
2. ~~ALL TEMPORARY SOIL CUT SURFACE FORMED BY TEMPORARY PIPE PILE WALL, THAT IS EXPOSED FOR A WEEK OR MORE SHALL BE PROTECTED BY 5mm GRADE S275 STEEL PLATE AS DETAIL SHOWN ON DRAWING NO. 091427/GL02.~~
3. MATERIAL THAT MAY CAUSE A LANDSLIDE OF THE TEMPORARY CUT SLOPE SHALL NOT BE STOCKPILED BEHIND THE CREST OF OR ON THE TEMPORARY CUT SLOPE.
4. OVER EXCAVATION IF ANY BELOW THE FINAL FORMATION LEVEL SHALL BE BACKFILLED WITH NO-FINES CONCRETE.
5. EXCAVATION OF SOIL SLOPES SHALL BE CARRIED OUT IN SUCH A MANNER THAT SOIL IS REMOVED FROM THE SLOPE FACE WITHOUT AFFECTING THE STABILITY AND INTEGRITY OF THE SLOPE. MEASURES SHALL BE TAKEN TO PREVENT UNCONTROLLED FALLS OF DEBRIS.
6. EXCAVATION OF SOIL SLOPES SHALL BE CARRIED OUT USING HAND-HELD TOOLS. ALL MATERIAL REMOVED OR EXCAVATED BY TRIMMING AND LOOSE FRAGMENTS OF SOIL AND ROCK SHALL BE REMOVED FROM THE SLOPE.
7. THE EXACT LOCATION FOR CARRYING OUT EXCAVATION TO THE SLOPE SHALL BE VERIFIED BY ENGINEER ON SITE.
8. TAKE NECESSARY PRECAUTION TO PREVENT DAMAGE TO EXISTING DRAINS AND SERVICES ENCOUNTERED IN AND AROUND THE EXCAVATION AREA. WHERE NECESSARY, TEMPORARILY DIVERT DRAINS AND SERVICES IN THE EXCAVATION AREA AND SUBSEQUENTLY REINSTATE.
9. EXCAVATED MATERIAL SHALL BE DISPOSED OF BY THE CONTRACTOR UNLESS OTHERWISE STATED IN THE CONTRACT.

NOTES ON STEELWORK

1. ALL STEELWORK INCLUDING UNIVERSAL COLUMNS, STEEL PLATE SHALL BE GRADE S275 TO BS EN 10025, AND HOLLOW CIRCULAR SECTIONS SHALL BE GRADE S275 TO BS EN 10210 1:1994. ALL STEELWORKS SHALL BE CLASS 1.
2. THE FABRICATION, ERECTION AND WELDING OF STRUCTURAL STEEL SHALL CONFORM TO THE HONG KONG BUILDING (CONSTRUCTION) REGULATIONS 1990 AND CODE OF PRACTICE FOR STRUCTURAL USE OF STEEL 2005.
3. CERTIFICATE OF ORIGIN AND CHEMICAL COMPOSITION OF THE STRUCTURAL STEEL TO BE USED SHALL BE SUBMITTED REGISTERED STRUCTURAL ENGINEER PRIOR TO THE COMMENCEMENT OF FABRICATION WORK.

NOTES ON GROUNDWATER TABLE

1. THE DESIGN GROUNDWATER TABLE IS ASSUMED TO BE ONE-THIRD OF SLOPE HEIGHT

NOTES ON EXCAVATION AND LATERAL SUPPORT (ELS) WORKS

1. THE CONTRACTOR SHALL TAKE FULL RESPONSIBILITY FOR THE ERECTION, MAINTENANCE AND REMOVAL OF ALL TEMPORARY WORKS DURING CONSTRUCTION.
2. NECESSARY PRECAUTIONS SHALL BE TAKEN TO PREVENT DAMAGE TO EXISTING FOUNDATIONS, DRAINS, PAVEMENTS, FEATURES, SERVICES, ETC. SHOULD ANY DAMAGE OCCUR, NOTIFY THE ENGINEER ON SITE AND RELEVANT AUTHORITIES CONCERNED IMMEDIATELY
3. ALL TEMPORARY WORKS INCLUDING ELS WORKS SHALL BE WITHIN SITE BOUNDARY.

PROTECTION OF EARTHWORKS

1. ALL EARTHWORKS SHALL BE GRADED AND SEALED TO ENSURE RUN-OFF AND TO AVOID PONDING.
2. A METHOD OF WORKING SHALL BE ADOPTED IN WHICH THE MINIMUM OF BARE SOIL IS EXPOSED AT ANY TIME. EARTHWORK TO FORM THE FINAL FACE SHALL BE FOLLOWED UP IMMEDIATELY WITH SURFACE PROTECTION.
3. WHERE TEMPORARY BARE SLOPE FACES ARE UNAVOIDABLE, THEY SHALL BE PROTECTED WITH SHEETING SECURED AGAINST THE WIND. WHERE SLOPE FACES ARE TO BE TEMPORARY EXPOSED FOR MORE THAN TWO WEEKS, TEMPORARY HARD SURFACING SHALL BE PROVIDED AND TEMPORARY DRAINS SHALL BE INSTALLED.
4. IF TRENCHES ON OR ADJACENT TO SLOPE HAVE TO BE EXCAVATED DURING THE WET SEASON, THIS SHALL BE DONE WITH EXTREME CARE IN SHORT SECTIONS AT A TIME. PRECAUTION SHALL BE TAKEN TO PREVENT WATER ENTERING AND ACCUMULATING IN THE TRENCH.
5. EARTHWORKS SHALL BE SEALED TO THE SATISFACTION OF THE SUPERVISING ENGINEER TO PREVENT INFILTRATION AND EROSION.
6. EXCAVATION WORKS FOR ANY SECTION OF A TRENCH FOR TEMPORARY/PERMANENT DRAINAGE WORKS SHALL NOT COMMENCE UNTIL THE NATURE, LOCATION AND SIZE OF EXISTING UTILITIES WHICH MAY BE AFFECTED BY THE EXCAVATION HAVE BEEN ASCERTAINED AND THE SETTING OUT DETAILS HAVE BEEN APPROVED BY THE SUPERVISING ENGINEER.
7. THE CONTRACTOR SHALL ALLOW THE SUPERVISING ENGINEER TO INSPECT TRENCHES, BEDDING, PIPES, JOINTS, FITTINGS AND VALVES BEFORE DRAINAGE WORKS STARTS. THE CONTRACTOR SHALL INFORM THE SUPERVISING ENGINEER 24 HOURS OR SUCH SHORTER PERIOD AGREED BY THE SUPERVISING ENGINEER, BEFORE TEMPORARY/PERMANENT DRAINAGE WORKS STARTS IN ANY PART OF THE WORKS.
8. NEITHER STOCK PILING ON THE SLOPE NOR THE CEMENT IS PERMITTED WITHOUT APPROVAL FROM THE ARCHITECT.

NOTES ON SITE SUPERVISION

1. THE TCP SUPERVISION PERSONNEL UNDER THE RSE'S STREAM SHALL SUBMIT REGULAR REPORTS OF HIS/HER FINDINGS AND RECOMMENDATIONS TO RSE. THE RSE SHALL FORMALLY SUBMIT THESE REPORTS TO THE BD AND PROVIDE A COPY TO THE GEO AT MONTHLY INTERVALS OR MORE FREQUENTLY AS NECESSARY.
2. TYPICAL CONTENTS OF THE REGULAR REPORTS PREPARED BY THE TCP TO SITE SUPERVISION PERSONNEL SHALL INCLUDE THE FOLLOWING,
   (A) PROGRESS OF THE WORKS
   (B) RESULTS OF MONITORING DURING CONSTRUCTION
   (C) SITE OBSERVATIONS
   (D) INSPECTION RECORDS
   (E) REMARK

NOTES ON STRUCTURAL STEELWORK

1. ALL STEELWORK INCLUDING BASE STEEL PLATE SHALL BE GRADE S275 JR TO BE EN 10025. ALL STEEL SHALL BE CLASS 1.
2. DESIGN STRENGTH FOR STEEL = 275 N/mm².
3. THE FABRICATION, ERECTION AND WELDING OF STRUCTURAL STEEL SHALL CONFORM TO THE HONG KONG BUILDING (CONSTRUCTION) REGULATIONS (AD. AND CODE OF PRACTICE FOR STRUCTURAL USE OF STEEL 2005.
4. CERTIFICATION OF ORIGIN AND CHEMICAL COMPOSITION OF STRUCTURAL STEEL TO BE USED SHALL BE SUBMITTED TO REGISTERED STRUCTURAL ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.
5. ALL BOLT AND NUTS SHALL BE OF GRADE ISO 4.4.

NOTES ON MONITORING

1. ALL THE CHECK POINTS SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF SITE FORMATION & ELS WORKS. THE INITIAL READINGS SHALL BE TAKEN AND SUBMITTED TO THE BUILDINGS DEPARTMENT AND THE AP/RGE/RSE PRIOR TO THE COMMENCEMENT OF ELS WORKS. DURING THE PROCESSES OF SITE FORMATION & ELS WORKS, THE CHECK POINTS AND PIEZOMETERS SHALL BE MONITORED DAILY. ALL READINGS SHALL BE KEPT ON SITE AND SUBMITTED TO THE ENGINEER AND BUILDINGS DEPARTMENT BI-WEEKLY.

NOTES ON REACHING THE TRIGGER LEVELS

1. IF AN ALERT LEVEL IS REACHED, THE CONTRACTOR SHALL:
   (A) NOTIFY THE ENGINEER IMMEDIATELY.
   (B) WITHIN 24 HOURS OF DETECTING THAT AN ALERT LEVEL HAS BEEN REACHED, SUBMIT A BRIEF REPORT DESCRIBING THE WORKS BEING UNDERTAKEN CLOSE BY AND ANY OTHER RELEVANT OBSERVATIONS.
   (C) PROPOSE A SUITABLE PLAN OF ACTION THAT INCLUDES THE INSTALLATION OF ADDITIONAL INSTRUMENTS AND/OR INCREASING THE MONITORING FREQUENCY.
   (D) WITHIN 7 DAYS, SUBMIT A REPORT TO REVIEW THE INSTRUMENT RESPONSES, INCLUDING DIFFERENTIAL DEFORMATIONS, ASSESS THE EFFECTS ON THE MONITORED ELEMENTS IN LIGHT OF THE RELEVANT CONSTRUCTION ACTIVITIES AND PREDICT FURTHER RESPONSES AND THEIR EFFECT BASED ON THE DATA TREND TO DATE.
   (E) WITHIN 7 DAYS, SUBMIT A DETAILED PLAN OF ACTION TO THE ENGINEER AND THE ARCHITECT DESCRIBING THE MEASURE TO BE TAKEN IN THE EVENT OF AN ALARM TRIGGER LEVEL BEING REACHED. THE PLAN OF ACTION WILL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.
   (F) MAKE PREPARATIONS FOR IMPLEMENTING THE ALARM TRIGGER ACTIONS, IN ACCORDANCE WITH THE AGREED DETAILED PLAN OF ACTION.
2. IF AN ALARM LEVEL IS REACHED, THE CONTRACTOR SHALL
   (A) NOTIFY THE ENGINEER AND THE ARCHITECT IMMEDIATELY.
   (B) UNDERTAKE A JOINT INSPECTION OF THE WORKS WITH THE ENGINEER.
   (C) IMPLEMENT THE ALARM TRIGGER ACTIONS, PHASED AS APPROPRIATE, SO THAT THE ACTION LEVEL IS NOT REACHED BEFORE THE PREDICTED STAGE.
   (D) IF THE ALARM LEVEL OF OBSERVATION WELL IS REACHED, WATER RECHARGING SHOULD BE CARRIED OUT ACCORDING TO NOTE (D).
   (E) WITHIN 48 HOURS OF EXCEEDING AN ALARM TRIGGER LEVEL, DEVISE AND SUBMIT AN EMERGENCY PLAN DESCRIBING THE MEASURE TO BE TAKEN IN THE EVENT OF AN ACTION TRIGGER LEVEL BEING ATTAINED.
   (F) MEET THE ENGINEER TO DISCUSS THE INSTRUMENT RESPONSE AND REVIEW THE EFFECTIVENESS OF THE TRIGGER LEVEL ACTIONS.
   (G) AS DISCUSSED AND AGREED WITH THE ENGINEER, UNDERTAKE ADDITIONAL MEASURES IN THE AFFECTED AREA TO AVOID REACHING THE ACTION LEVEL.
   (H) WITHIN 7 DAYS, SUBMIT AN UPDATED REPORT TO THE ENGINEER TO REVIEW THE INSTRUMENT RESPONSES, INCLUDING DIFFERENTIAL DEFORMATIONS, ASSESS THE CONSTRUCTION ACTIVITIES AND PREDICT FURTHER RESPONSES AND THEIR EFFECT, BASED ON THE DATA TREND TO DATE.
3. IF AN ACTION VALUE IS REACHED OR THE GROUND/BUILDING SETTLEMENT BETWEEN TWO CONSECUTIVE READING EXCEED 5mm, THE CONTRACTOR SHALL
   (A) SUSPEND ALL WORKS WITHIN SITE.
   (B) NOTIFY BD/AP/RSE/RGE IMMEDIATELY.
   (C) UNDERTAKE A JOINT INSPECTION OF THE WORKS WITH THE ENGINEER.
   (D) IMPLEMENT EMERGENCY TRIGGER ACTION(S) BASED ON THE EMERGENCY PLAN OF TRIGGER ACTIONS REVIEW WITHOUT OBJECTION BY THE ENGINEER. THESE EMERGENCY TRIGGER ACTIONS WILL INCLUDE MEASURE TO DIMINISH THE DEFORMATIONS AND GROUND RESPONSES.
   (E) WITHIN 3 DAYS, PROVIDE A COMPLETE REPORT TO EXAMINE THE CONSTRUCTION METHOD AND A DETAILED REPORT TO THE DEFORMATION AND GROUND RESPONSE HISTORY AND TRIGGER ACTIONS ADOPTED RELATED TO THE CONSTRUCTION ACTIVITIES.
   (F) COMPLETE REPORT SHOULD BE SUBMITTED TO BD FOR APPROVAL PRIOR TO RECOMMENCEMENT OF WORKS.

MONITORING POINT	ALERT LEVEL	ALARM LEVEL	ACTION LEVEL
SETTLEMENT MARKER ON GROUND (SM1-A TO SM3-A)	5mm	10mm	15mm
BUILDING SETTLEMENT MARKER (BS1-A)	5mm	10mm	15mm
BUILDING TILTING MARKER (BT-1A)	1:1000	1:750	1:500
PIEZOMETER (pe)	3m BELOW DESIGN LEVEL	2m BELOW DESIGN LEVEL	1m BELOW DESIGN LEVEL

MASTER CONSTRUCTION SEQUENCE

1. FOR CONSTRUCTION OF FOOTING FOR LOWER LANDING PLATFORM
   a) OPEN EXCAVATE THE EXISTING SLOPE TO LEVEL 5.5mPD.
   b) INSTALL PIPE PILE TO THE FOUNDING LEVEL AS SPECIFIED IN DRAWING NO. 091427/SF04.
   c) EXCAVATE TO THE LEVEL OF LEVEL 5.0mPD.
   d) INSTALL STRUT AND WALING AT LEVEL 5.0mPD.
   e) CONTINUE TO EXCAVATE TO THE FOUNDING LEVEL AS SPECIFIED IN 091427/SF04 FOR THE LOWER LANDING PLATFORM.
   f) CONSTRUCT THE FOOTING AS DETAILED IN RELEVANT STRUCTURAL DRAWINGS (UNDER SEPARATED BD SUBMISSION).
   g) BACKFILL THE SLOPE USING NO-FINE CONCRETE MATERIALS.
2. FOR CONSTRUCTION OF FOOTING FOR UPPER LANDING PLATFORM
   a) INSTALL PIPE PILE TO THE FOUNDING LEVEL AS SPECIFIED IN DRAWING NO. 091427/GL02.
   b) EXCAVATE TO THE LEVEL OF LEVEL 14.588mPD.
   c) CONSTRUCT THE FOOTING NO. 4 OF THE UPPER LANDING PLATFORM.
3. FOR CONSTRUCTION OF INCLINED LIFT TRENCH
   a) OPEN EXCAVATION WITH 45° TEMPORARY CUT SLOPE FOR THE LIFT TRENCH.
   b) EXCAVATE TRENCH TO FOUNDING LEVEL AS SPECIFIED IN DRAWING NO. 091427/GL01 AND GL02.
   c) CONSTRUCT THE INCLINED LIFT TRENCH.
   d) BACKFILL SLOPE WITH NO-FINE CONCRETE.

NOTES ON DUST CONTROL

1. THE CONTRACTOR SHALL SUBMIT FOR THE ENGINEER'S PRIOR APPROVAL, AT LEAST 2 WEEKS BEFORE COMMENCEMENT OF ANY WORK, METHOD STATEMENT IDENTIFYING OPERATIONS AND PLANTS LIKELY TO CAUSE AIR POLLUTION OR DUST EMISSIONS FROM THE SITE, TOGETHER WITH MEASURES TO BE IMPLEMENTED TO MITIGATE AND CONTROL SUCH POLLUTION AND EMISSION.
2. DURING THE COURSE OF DRILLING WORKS, THE WORKS SHALL BE TREATED WITH WATER OR SPRAYED WITH WETTING AGENT.

CONCRETE WORKS

1. ALL CONCRETE WORKS TO BE GRADE 30/20 TO COMPLY WITH ~~CP2~~ CS1:2010 MAXIMUM AGGREGATE SIZE = 20.
2. ALL STEEL REINFORCEMENT SHALL BE HIGH YIELD BAR TYPE 2 AND COMPLY WITH CS2:1995

ALLOWABLE BEARING PRESSURE

1. ALLOWABLE BEARING PRESSURE FOR FOOTING NO. F1 (FOR GLASS ENCLOSURE) = 85kPa
2. ALLOWABLE BEARING FOR FOOTING NO. F1 = 160kPa
3. ALL FOOTING SHALL BE FOUNDED ON COMPLETELY DECOMPOSED TUFF

ALLOWABLE LOADING FOOTING FOR UPPER LANDING PLATFORM

1. ALLOWABLE LOADING FOR FOOTING OF UPPER LANDING PLATFORM = 40kPa

NOTES ON SOIL NAILS

1. THE SOIL NAILS SHALL BE INSTALLED PERPENDICULAR TO THE GENERAL SLOPE FACE UNLESS OTHERWISE NOTED OR INSTRUCTED BY THE ENGINEER.
2. THE MINIMUM DIAMETER OF THE DRILLHOLE FOR SOIL NAIL INSTALLATION SHALL BE 100mm UNLESS OTHERWISE STATED. TOLERANCE OF ANGLE SHALL BE ±2° AIR OR FOAM FLUSH MEDIUM MUST BE USED DURING DRILLING, WATER SHALL NOT BE USED FOR FLUSHING.
3. THE SOIL NAILS SHALL BE INSTALLED WITHIN 24 HOURS OF COMPLETION OF THE DRILLING UNLESS OTHERWISE AGREED BY THE ENGINEER'S REPRESENTATIVE. DRILLHOLE SHALL BE CLEARED OF ALL DEBRIS IMMEDIATELY BEFORE GROUTING.
4. STEEL BAR FOR SOIL NAILS IS TO BE 25mm DIAZ. HIGH YIELD TENSILE STEEL BAR TO CS2 : 1995 WITH A MINIMUM YIELD STRESS OF 460 N/mm². ALL STEEL REINFORCEMENT TO COMPLY WITH CS2:1995.
5. CENTRALIZES SHALL BE PROVIDED AT 1500mm SPACING ALONG THE STEEL BAR TO ENSURE A MINIMUM GROUT COVER OF 30mm ALL AROUND TO THE STEEL BAR.
6. CEMENT GROUT SHALL BE A DESIGN MIX HAVING A 28 DAY CUBE STRENGTH OF 30MPa AND THE WATER CEMENT RATIO SHALL NOT EXCEED 0.45.
7. GROUT IS TO BE INJECTED UNDER MINIMUM PRESSURE TO LIMIT POTENTIAL DISTURBANCE AT THE SITE (MIN. PRESSURE IS TAKEN TO BE THE AVERAGE CONFINING PRESSURE AT THE SOIL NAIL LEVEL PLUS 10%).
8. CEMENT GROUT SHALL BE DISCHARGED FROM THE BOTTOM OF DRILLHOLE BY MEANS OF A GROUT PIPE. GROUTING SHALL PROCEED AT A SLOW STEADY RATE AND SHALL CONTINUE UNTIL INJECTED GROUT OF THE SAME COMPOSITION AND CONSISTENCY AS THAT MIXED HAS BEEN EMERGING FROM THE OUTLET FOR AT LEAST ONE MINUTE.
9. ALL SOIL NAIL AND OTHER STEEL COMPONENTS ARE TO BE HOT DIP GALVANIZED TO BS EN ISO 1461:1999. THE THICKNESS OF ZINC COATING SHALL BE A MINIMUM OF 610g/m².
10. THE EXACT LOCATION OF ALL SOIL NAILS SHALL BE AGREED WITH THE ENGINEER PRIOR TO WORK COMMENCING.
11. FOR CONTROL OF ALKALI-AGGREGATE REACTION IN CONCRETE, THE CONTRACTOR IS TO SUBMIT TO THE ENGINEER TEST RESULTS TO VERIFY THAT THE EQUIVALENT SODIUM OXIDE (Na_2O) CONTENT PER CUBIC METRES OF CONCRETE DOES NOT EXCEED 3.0kg.
12. ALL WORKING NAILS SHALL BE INSTALLED WITH PROVISIONS FOR SUBSEQUENT TIME DOMAIN REFLECTION TEST.
13. THE EXACT LOCATION OF PULL-OUT TESTING NAILS SHALL BE DETERMINED ON SITE.
14. CASING SHALL BE PROVIDED FOR DRILLING THROUGH THE FILL LAYER.
15. FOR SOIL NAILS WITH DOUBLE CORROSION PROTECTION THE ANNULAR SPACE BETWEEN THE WALL OF DRILLHOLE AND CORRUGATED SHEATHING SHALL BE GROUTED FIRST IN A CONTINUOUS OPERATION. THE ANNULAR SPACE BETWEEN CORRUGATED SHEATHING AND STEEL BARS SHALL BE GROUTED IMMEDIATELY AFTERWARDS IN A CONTINUOUS OPERATION.

SPECIFICATION FOR SOIL NAIL PULL OUT TEST

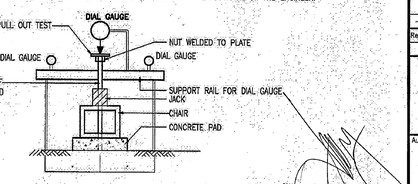
1. THE APPARATUS FOR MEASURING LOADS AND DEFORMATIONS SHALL HAVE AN ACCURACY OF 5 KN AND 0.05 MM RESPECTIVELY.
2. THE PULL-OUT TEST SHALL NOT BE CARRIED OUT UNTIL THE GROUT HAS REACHED A CUBE STRENGTH OF 21 MPa.
3. THE APPARATUS SHALL BE TESTED AND CALIBRATED BY APPROVED LABORATORIES NOT MORE THAN 6 MONTHS PRIOR TO THE DATE OF CARRYING OUT OF THE TESTS.

PULL-OUT TEST

1. SOIL NAILS SHALL BE INSTALLED FOR PULL-OUT TESTS PRIOR TO THE INSTALLATION OF PERMANENT SOIL NAILS.
2. SOIL NAILS SUBJECTED TO PULL-OUT TESTS SHALL NOT FORM PART OF THE PERMANENT WORKS.
3. THE ENTIRE FREE LENGTH OF THE STEEL BAR SHALL BE PROPERLY WRAPPED OR CAPPED TO ENSURE THAT THE TEST LOAD CAN BE DIRECTLY TRANSFERRED TO THE BONDED ZONE IN CASE OF GROUT LEAK THROUGH THE PACKER.
4. THE MAXIMUM TEST LOAD (Tp) SHALL BE ACCORDING TO THE SOIL NAIL PULL OUT TEST SCHEDULE.
5. THE TEST NAIL SHALL BE LOADED IN STAGES FROM THE INITIAL LOAD (To) VIA TWO INTERMEDIATE TEST LOADS (T_{a1} AND T_{a2}) TO THE MAXIMUM TEST LOAD.
6. DURING THE FIRST TWO LOADING CYCLES, THE INTERMEDIATE LOADS, T_{a1} AND T_{a2} SHALL BE MAINTAINED FOR 60 MINUTES FOR DEFORMATION MEASUREMENT. AFTER THE MEASUREMENT HAS BEEN COMPLETED, THE LOAD SHALL BE REDUCED TO To AND THE RESIDUAL DEFORMATION SHALL BE RECORDED. IN THE LAST CYCLE, THE TEST LOAD SHALL BE INCREASED GRADUALLY FROM To STRAIGHT TO MAXIMUM TEST LOAD AND THEN MAINTAINED FOR DEFORMATION MEASUREMENT.
7. THE MEASUREMENT AT EACH OF THE CYCLES SHALL BE TAKEN AT TIME INTERVALS OF 1, 3, 6, 10, 20, 30, 40, 50 AND 60 MINUTES.
8. THE TEST NAIL IS CONSIDERED TO BE ABLE TO SUSTAIN THE TEST LOAD IF THE DIFFERENCE OF NAIL MOVEMENTS AT 6 AND 60 MINUTES DOES NOT EXCEED 2mm OR 0.1% OF THE GROUT LENGTH OF THE TEST NAIL. IN THIS CASE, THE TEST SHALL PROCEED TO THE NEXT LOADING CYCLE OR BE TERMINATED IF THE TEST NAIL IS SUBJECTED TO Tp.
9. THROUGHOUT THE TEST, THE SOIL NAIL MOVEMENT AS WELL AS THE MOVEMENT OF THE BEARING PLATE VERSUS THE APPLIED LOAD SHALL BE MEASURED, RECORDED AND PLOTTED ON A GRAPH IN THE FORMAT APPROVED BY THE ENGINEER.
10. IF THE TEST SOIL NAIL FAILS TO SUSTAIN TDL1, TDL2, OR THE MAXIMUM TEST LOAD IN ANY CYCLE, THE TEST SHALL BE TERMINATED AND THE SOIL NAIL MOVEMENT AGAINST RESIDUAL LOAD WITH TIME SHALL BE RECORDED. THE MEASUREMENTS SHALL BE TAKEN AT TIME INTERVALS OF 1, 3, 6, 10 AND, EVERY 10 MINUTES THEREAFTER OVER A PERIOD FOR AT LEAST TWO HOURS. THE MEASUREMENTS SHALL BE TAKEN FOR A LONGER PERIOD WHERE CONSIDERED NECESSARY.

SOIL NAIL PULL OUT TEST ARRANGEMENT

EXACT DETAILS ARE TO BE PROVIDED BY THE CONTRACTOR, SUBJECT TO THE APPROVAL OF THE ENGINEER.



NOTES ON NON-DESTRUCTIVE TEST (NDT) FOR SOIL NAILS

1. TIME DOMAIN REFLECTOMETRY (TDR) TESTS FOR THE PERMANENT SOIL NAILS SHALL BE CARRIED OUT
2. A CONTROL NAIL SHALL BE SELECTED BY THE ENGINEER FOR CALIBRATION OF THE TDR TEST.
3. THE EXACT LOCATIONS OF ALL TDR TESTS SHALL BE CONFIRMED BY THE ENGINEER ON SITE. A MINIMUM OF 2 NUMBERS OF TDR TESTS OR 1% OF THE TOTAL NUMBER OF SOIL NAILS, WHICHEVER IS GREATER, SHALL BE CARRIED OUT.
4. TDR TEST SHALL NOT BE CARRIED OUT WITHIN 3 DAYS AFTER COMPLETION OF GROUTING.
5. TDR TEST SHALL BE CARRIED OUT BY AN INDEPENDENT LABORATORY AND A REPORT WITH THE TEST RESULTS AND INTERPRETATIONS SHALL BE SUBMITTED TO THE ENGINEER FOR ACCEPTANCE.

Yung Hun Tat, Arthur
BSc MSc DIC FIStructE FHKIE FICE
Registered Structural Engineer

CHAN Henry
Registered Geotechnical Engineer
RGE 12/05

BD Reference No. :

MAK CHI CHEUNG, PETER
B.Arch., BAAS, FHKIA, RIBA, AKAIA
REGISTERED ARCHITECT, AP(List 1)

Plan Approved
CHAN Yuk-sing, Mary
Senior Building Surveyor
for BUILDING AUTHORITY
25 AUG 2011

AS-BUILT RECORD PLAN

Rev.	Stat.	Description	Date	By	Chk.	Ver'd
–	IFS	BD SUBMISSION	08/11	RC	ML	MN

Revisions

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CHAN Henry
Geotechnical Engineer
GE 12/05

Project :

REVITALISATION SCHEME CONVERSION OF OLD TAI O POLICE STATION INTO TAI O HERITAGE HOTEL

Drawing Title :

NOTES FOR SITE FORMATION (INCLINED LIFT)

Drawn :	LC	Date :	04/11	Job No. :	091427
Checked :	ML	Date :	04/11	Cad File :	091427_SF05
Approved :	MN	Date :	04/11	Scale :	AS SHOWN
Drawing No. :	091427/SF03			Rev. :	—

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GENERAL NOTES

1. DO NOT SCALE DRAWINGS.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SPECIFIED.
3. ALL LEVELS ARE IN METRES ABOVE PRINCIPLE DATUM (mPD) UNLESS OTHERWISE SPECIFIED.
4. ALL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ALL RELEVANT DRAWINGS AND SPECIFICATIONS ISSUED UNDER THE CONTRACT. THE CONTRACTOR SHALL INFORM THE AP FOR ANY DISCREPANCIES WHICH MAY BE FOUND AMONG THESE DRAWINGS.
5. THE CONTRACTOR SHALL INSPECT THE CONDITIONS OF ADJOINING AREAS AND RECORD THE EXISTING STRUCTURES, UTILITIES, ROADS, PAVEMENTS, AND THE LIKE PRIOR TO THE COMMENCEMENT AND AFTER COMPLETION OF THE WORKS. THE CONTRACTOR SHALL SUBMIT THE CONDITION SURVEY REPORT TO THE AP FOR RECORD BEFORE CONSTRUCTION.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR AND REPAIR ANY DAMAGES TO ADJOINING AREAS, STRUCTURES, UTILITIES, ROADS, PAVEMENT AND THE LIKE ARISING DIRECTLY FROM THE WORKS AT NO EXTRA COST AND NO EXTENSION OF TIME.
7. ALL WORKS SHALL COMPLY WITH THE GENERAL SPECIFICATION FOR CIVIL ENGINEERING 2006, HONG KONG BUILDING (CONSTRUCTION) REGULATIONS 1990, RELEVANT PRACTICE NOTES FOR AUTHORIZED PERSONS AND REGISTERED STRUCTURAL ENGINEETS AND PRACTICE NOTES FOR REGISTERED CONTRACTORS. ALL EXCAVATION WORKS SHALL BE CARRIED OUT ACCORDING TO SECTION 6 OF THE GENERAL SPECIFICATION. ALL DESIGN AND WORKS OF STRUCTURAL STEEL SHALL COMPLY WITH CODE OF PRACTICE FOR THE STRUCTURAL USE OF STEEL 2005. ALL DESIGN AND WORKS FOR REINFORCED CONCRETE SHALL COMPLY WITH CODE OF STRUCTURAL USE OF CONCRETE 2004.
8. ALL UTILITIES LOCATED IN THE WORK AREA SHALL BE IDENTIFIED BY THE THE CONTRACTOR PRIOR TO THE COMMENCEMENT OF THE WORKS. IF NECESSARY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE TEMPORARY UTILITY DIVERSION AND REINSTATEMENT AND ALL COORDINATION WORKS WITH THE UTILITY COMPANIES.
9. THE EXACT BOUNDARY OF THE WORKS SITE AND THE WORKS AREA SHALL BE CONFIRMED BY THE ENGINEER ON SITE.
10. ALL MONITORING WORKS REQUIRED FOR THE PROPOSED WORKS SHALL REFER TO DRAWING NO. 091427/SF01.
11. THE REQUIREMENT FOR SITE SUPERVISION SHALL FOLLOW THAT STIPULATED IN THE CODE OF PRACTICE FOR SITE SUPERVISION 2009.
12. SOIL PROPERTIES

MATERIALS	COHESION C'(kPa)	FRICTION ANGLE ϕ'(°)	UNIT WEIGHT (kN/m³)
CDT	4	36	17
EXISTING FILL	0	32	19

~~13. ALL STRUCTURAL STEEL TO BE GRADE S275 TO BS EN 10025.~~
13. TOE WALL TO BE REINSTATED SHALL BE GRADE 30/220 AND A252 WIRE MESH SHALL BE PLACED CENTRALLY.

NOTES ON TEMPORARY DRAINAGE

1. SUMP PUMP AND SUMP PIT SHALL BE PROVIDED FOR THE TEMPORARY DRAINAGE PURPOSE IF NECESSARY. ADEQUATE FILTERS SHALL BE PROVIDED TO PREVENT LOSS OF GROUND AS A RESULT OF PUMPING.
2. ALL TEMPORARY U-CHANNEL SHALL BE 1 IN 100 IN GRADIENT UNLESS OTHERWISE STATED.
3. SUMP PUMPING WITH SUFFICIENT CAPACITY SHALL BE PROVIDED AS DRAINAGE FOR THE TEMPORARY EXCAVATION.
4. LOCATION, NUMBERS AND METHOD OF INSTALLATION OF SUMP PUMPS SHALL BE PROPOSED BY THE CONTRACTOR AGREED WITH THE AP/RSE ON SITE.
5. WATER DISCHARGED FROM SUMP PUMPS SHALL BE DIRECTED TO SAND TRAP AND THEN GOVERNMENTS STORM WATER DRAINS. PERMITS FROM STATUTORY AUTHORITIES SHALL BE OBTAINED FOR WATER DISCHARGING.
6. A REGULAR MAINTENANCE OF SAND TRAP SHALL BE PROVIDED TO ENSURE NO LIKELIHOOD OF FLOODING OCCURING FROM THE SITE ONTO THE ADJACENT AREAS.
7. ALL SURFACE WATER SHALL BE DIVERTED AND COLLECTED WITHIN THE EXCAVATION AREA AND SHALL BE DISCHARGED BY SUMP PUMPS.

NOTES ON EXCAVATION

1. ALL TEMPORARY SOIL CUT SURFACE/SLOPE EXPOSED FOR LESS THAN A WEEK SHALL BE PROTECTED WITH NYLON SHEETS SECURED AGAINST WIND.
2. ~~ALL TEMPORARY SOIL CUT SURFACE FORMED BY TEMPORARY PIPE PILE WALL THAT IS EXPOSED FOR A WEEK OR MORE SHALL BE PROTECTED BY 5mm GRADE S275 STEEL PLATE AS DETAIL SHOWN ON DRAWING NO. 091427/GL02.~~
3. MATERIAL THAT MAY CAUSE A LANDSLIDE OF THE TEMPORARY CUT SLOPE SHALL NOT BE STOCKPILED BEHIND THE CREST OF OR ON THE TEMPORARY CUT SLOPE.
4. OVER EXCAVATION IF ANY BELOW THE FINAL FORMATION LEVEL SHALL BE BACKFILLED WITH NO-FINES CONCRETE.
5. EXCAVATION OF SOIL SLOPES SHALL BE CARRIED OUT IN SUCH A MANNER THAT SOIL IS REMOVED FROM THE SLOPE FACE WITHOUT AFFECTING THE STABILITY AND INTEGRITY OF THE SLOPE. MEASURES SHALL BE TAKEN TO PREVENT UNCONTROLLED FALLS OF DEBRIS.
6. EXCAVATION OF SOIL SLOPES SHALL BE CARRIED OUT USING HAND-HELD TOOLS. ALL MATERIAL REMOVED OR EXCAVATED BY TRIMMING AND LOOSE FRAGMENTS OF SOIL AND ROCK SHALL BE REMOVED FROM THE SLOPE.
7. THE EXACT LOCATION FOR CARRYING OUT EXCAVATION TO THE SLOPE SHALL BE VERIFIED BY ENGINEER ON SITE.
8. TAKE NECESSARY PRECAUTION TO PREVENT DAMAGE TO EXISTING DRAINS AND SERVICES ENCOUNTERED IN AND AROUND THE EXCAVATION AREA. WHERE NECESSARY, TEMPORARILY DIVERT DRAINS AND SERVICES IN THE EXCAVATION AREA AND SUBSEQUENTLY REINSTATE.
9. EXCAVATED MATERIAL SHALL BE DISPOSED OF BY THE CONTRACTOR UNLESS OTHERWISE STATED IN THE CONTRACT.

NOTES ON STEELWORK

1. ALL STEELWORK INCLUDING UNIVERSAL COLUMNS, STEEL PLATE SHALL BE GRADE S275 TO BS EN 10025, AND HOLLOW CIRCULAR SECTIONS SHALL BE GRADE S275 TO BS EN 10210 1:1994. ALL STEELWORKS SHALL BE CLASS 1.
2. THE FABRICATION, ERECTION AND WELDING OF STRUCTURAL STEEL SHALL CONFORM TO THE HONG KONG BUILDING (CONSTRUCTION) REGULATIONS 1990 AND CODE OF PRACTICE FOR STRUCTURAL USE OF STEEL 2005.
3. CERTIFICATE OF ORIGIN AND CHEMICAL COMPOSITION OF THE STRUCTURAL STEEL TO BE USED SHALL BE SUBMITTED REGISTERED STRUCTURAL ENGINEER PRIOR TO THE COMMENCEMENT OF FABRICATION WORK.

NOTES ON GROUNDWATER TABLE

1. THE DESIGN GROUNDWATER TABLE IS ASSUMED TO BE ONE-THIRD OF SLOPE HEIGHT.

NOTES ON EXCAVATION AND LATERAL SUPPORT (ELS) WORKS

1. THE CONTRACTOR SHALL TAKE FULL RESPONSIBILITY FOR THE ERECTION, MAINTENANCE AND REMOVAL OF ALL TEMPORARY WORKS DURING CONSTRUCTION.
2. NECESSARY PRECAUTIONS SHALL BE TAKEN TO PREVENT DAMAGE TO EXISTING FOUNDATIONS, DRAINS, PAVEMENTS, FEATURES, SERVICES, ETC. SHOULD ANY DAMAGE OCCUR, NOTIFY THE ENGINEER ON SITE AND RELEVANT AUTHORITIES CONCERNED IMMEDIATELY.
3. ALL TEMPORARY WORKS INCLUDING ELS WORKS SHALL BE WITHIN SITE BOUNDARY.

PROTECTION OF EARTHWORKS

1. ALL EARTHWORKS SHALL BE GRADED AND SEALED TO ENSURE RUN-OFF AND TO AVOID PONDING.
2. A METHOD OF WORKING SHALL BE ADOPTED IN WHICH THE MINIMUM OF BARE SOIL IS EXPOSED AT ANY TIME. EARTHWORK TO FORM THE FINAL FACE SHALL BE FOLLOWED UP IMMEDIATELY WITH SURFACE PROTECTION.
3. WHERE TEMPORARY BARE SLOPE FACES ARE UNAVOIDABLE, THEY SHALL BE PROTECTED WITH SHEETING SECURED AGAINST THE WIND. WHERE SLOPE FACES ARE TO BE TEMPORARY EXPOSED FOR MORE THAN TWO WEEKS, TEMPORARY HARD SURFACING SHALL BE PROVIDED AND TEMPORARY DRAINS SHALL BE INSTALLED.
4. IF TRENCHES ON OR ADJACENT TO SLOPE HAVE TO BE EXCAVATED DURING THE WET SEASON, THIS SHALL BE DONE WITH EXTREME CARE IN SHORT SECTIONS AT A TIME. PRECAUTION SHALL BE TAKEN TO PREVENT WATER ENTERING AND ACCUMULATING IN THE TRENCH.
5. EARTHWORKS SHALL BE SEALED TO THE SATISFACTION OF THE SUPERVISING ENGINEER TO PREVENT INFILTRATION AND EROSION.
6. EXCAVATION WORKS FOR ANY SECTION OF A TRENCH FOR TEMPORARY/PERMANENT DRAINAGE WORKS SHALL NOT COMMENCE UNTIL THE NATURE, LOCATION AND SIZE OF EXISTING UTILITIES WHICH MAY BE AFFECTED BY THE EXCAVATION HAVE BEEN ASCERTAINED AND THE SETTING OUT DETAILS HAVE BEEN APPROVED BY THE SUPERVISING ENGINEER.
7. THE CONTRACTOR SHALL ALLOW THE SUPERVISING ENGINEER TO INSPECT TRENCHES, BEDDING, PIPES, JOINTS, FITTINGS AND VALVES BEFORE DRAINAGE WORKS STARTS. THE CONTRACTOR SHALL INFORM THE SUPERVISING ENGINEER 24 HOURS OR SUCH SHORTER PERIOD AGREED BY THE SUPERVISING ENGINEER, BEFORE TEMPORARY/PERMANENT DRAINAGE WORKS STARTS IN ANY PART OF THE WORKS.
8. NEITHER STOCK PILING ON THE SLOPE NOR THE CEMENT IS PERMITTED WITHOUT APPROVAL FROM THE ARCHITECT.

NOTES ON SITE SUPERVISION

1. THE TCP SUPERVISION PERSONNEL UNDER THE RGE'S STREAM SHALL SUBMIT REGULAR REPORTS OF HIS/HER FINDINGS AND RECOMMENDATIONS TO RSE. THE RGE SHALL FORMALLY SUBMIT THESE REPORTS TO THE BD AND PROVIDE A COPY TO THE GEO AT MONTHLY INTERVALS OR MORE FREQUENTLY AS NECESSARY.
2. TYPICAL CONTENTS OF THE REGULAR REPORTS PREPARED BY THE TCP TS SITE SUPERVISION PERSONNEL SHALL INCLUDE THE FOLLOWING.
   (A) PROGRESS OF THE WORKS
   (B) RESULTS OF MONITORING DURING CONSTRUCTION
   (C) SITE OBSERVATIONS
   (D) INSPECTION RECORDS
   (E) REVIEW

NOTES ON STRUCTURAL STEELWORK

1. ALL STEEL WORK INCLUDING GUSS STEEL PLATE SHALL BE GRADE S275 JO TO BS EN 10025. ALL STEEL SHALL BE CLASS 1.
2. DESIGN STRENGTH FOR STEEL = 275 MPa
3. THE FABRICATION, ERECTION AND WELDING OF STRUCTURAL STEEL SHALL CONFORM TO THE HONG KONG BUILDING (CONSTRUCTION) REGULATIONS 1990 AND CODE OF PRACTICE FOR STRUCTURAL USE OF STEEL 2005.
4. CERTIFICATION OF ORIGIN AND CHEMICAL COMPOSITION OF STRUCTURAL STEEL TO BE USED SHALL BE SUBMITTED TO REGISTERED STRUCTURAL ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.
5. ALL BOLT AND NUTS SHALL BE OF GRADE ISO 4.4.

NOTES ON MONITORING

1. ALL THE CHECK POINTS SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF SITE FORMATION & ELS WORKS. THE INITIAL READINGS SHALL BE TAKEN AND SUBMITTED TO THE BUILDINGS DEPARTMENT AND THE AP/RGE/RSE PRIOR TO THE COMMENCEMENT OF ELS WORKS. DURING THE PROCESSES OF SITE FORMATION & ELS WORKS, THE CHECK POINTS AND PIEZOMETERS SHALL BE MONITORED DAILY. ALL READINGS SHALL BE KEPT ON SITE AND SUBMITTED TO THE ENGINEER AND BUILDINGS DEPARTMENT BI-WEEKLY.

NOTES ON REACHING THE TRIGGER LEVELS

1. IF AN ALERT LEVEL IS REACHED, THE CONTRACTOR SHALL:
   (A) NOTIFY THE ENGINEER IMMEDIATELY.
   (B) WITHIN 24 HOURS OF DETECTING THAT AN ALERT LEVEL HAS BEEN REACHED, SUBMIT A BRIEF REPORT DESCRIBING THE WORKS BEING UNDERTAKEN CLOSE BY AND ANY OTHER RELEVANT OBSERVATIONS.
   (C) PROPOSE A SUITABLE PLAN OF ACTION THAT INCLUDES THE INSTALLATION OF ADDITIONAL INSTRUMENTS AND/OR INCREASING THE MONITORING FREQUENCY.
   (D) WITHIN 7 DAYS, SUBMIT A REPORT TO REVIEW THE INSTRUMENT RESPONSES, INCLUDING DIFFERENTIAL DEFORMATIONS, ASSESS THE EFFECTS ON THE MONITORED ELEMENTS IN LIGHT OF THE RELEVANT CONSTRUCTION ACTIVITIES AND PREDICT FURTHER RESPONSES AND THEIR EFFECT BASED ON THE DATA TREND TO DATE.
   (E) WITHIN 7 DAYS, SUBMIT A DETAILED PLAN OF ACTION TO THE ENGINEER AND THE ARCHITECT DESCRIBING THE MEASURE TO BE TAKEN IN THE EVENT OF AN ALARM TRIGGER LEVEL BEING REACHED. THE PLAN OF ACTION WILL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.
   (F) MAKE PREPARATIONS FOR IMPLEMENTING THE ALARM TRIGGER ACTIONS, IN ACCORDANCE WITH THE AGREED DETAILED PLAN OF ACTION.
2. IF AN ALARM LEVEL IS REACHED, THE CONTRACTOR SHALL
   (A) NOTIFY THE ENGINEER AND THE ARCHITECT IMMEDIATELY.
   (B) UNDERTAKE A JOINT INSPECTION OF THE WORKS WITH THE ENGINEER.
   (C) IMPLEMENT THE ALARM TRIGGER ACTIONS, PHASED AS APPROPRIATE, SO THAT THE ACTION LEVEL IS NOT REACHED BEFORE THE PREDICTED STAGE.
   (D) IF THE ALARM LEVEL OF OBSERVATION WELL IS REACHED, WATER RECHARGING SHOULD BE CARRIED OUT ACCORDING TO NOTE (O).
   (E) WITHIN 48 HOURS OF EXCEEDING AN ALARM TRIGGER LEVEL, DEVISE AND SUBMIT AN EMERGENCY PLAN DESCRIBING THE MEASURE TO BE TAKEN IN THE EVENT OF AN ACTION TRIGGER LEVEL BEING ATTAINED.
   (F) MEET THE ENGINEER TO DISCUSS THE INSTRUMENT RESPONSE AND REVIEW THE EFFECTIVENESS OF THE TRIGGER LEVEL ACTIONS.
   (G) AS DISCUSSED AND AGREED WITH THE ENGINEER, UNDERTAKE ADDITIONAL MEASURES IN THE AFFECTED AREA TO AVOID REACHING THE ACTION LEVEL.
   (H) WITHIN 7 DAYS, SUBMIT AN UPDATED REPORT TO THE ENGINEER TO REVIEW THE INSTRUMENT RESPONSES, INCLUDING DIFFERENTIAL DEFORMATIONS, ASSESS THE CONSTRUCTION ACTIVITIES AND PREDICT FURTHER RESPONSES AND THEIR EFFECT, BASED ON THE DATA TREND TO DATE.
3. IF AN ACTION VALUE IS REACHED OR THE GROUND/BUILDING SETTLEMENT BETWEEN TWO CONSECUTIVE READING EXCEED 5mm, THE CONTRACTOR SHALL
   (A) SUSPEND ALL WORKS WITHIN SITE.
   (B) NOTIFY BD/AP/RSE/RGE IMMEDIATELY.
   (C) UNDERTAKE A JOINT INSPECTION OF THE WORKS WITH THE ENGINEER.
   (D) IMPLEMENT EMERGENCY TRIGGER ACTION(S) BASED ON THE EMERGENCY PLAN OF TRIGGER ACTIONS REVIEW WITHOUT OBJECTION BY THE ENGINEER. THESE EMERGENCY TRIGGER ACTIONS WILL INCLUDE MEASURE TO DIMINISH THE DEFORMATIONS AND GROUND RESPONSES.
   (E) WITHIN 3 DAYS, PROVIDE A COMPLETE REPORT TO EXAMINE THE CONSTRUCTION METHOD AND A DETAILED REPORT TO THE DEFORMATION AND GROUND RESPONSE HISTORY AND TRIGGER ACTIONS ADOPTED RELATED TO THE CONSTRUCTION ACTIVITIES.
   (F) COMPLETE REPORT SHOULD BE SUBMITTED TO BD FOR APPROVAL PRIOR TO RECOMMENCEMENT OF WORKS.

MONITORING POINT	ALERT LEVEL	ALARM LEVEL	ACTION LEVEL
SETTLEMENT MARKER ON GROUND (SM1-A TO SM3-A)	5mm	10mm	15mm
BUILDING SETTLEMENT MARKER (BS1-A)	5mm	10mm	15mm
BUILDING TILTING MARKER (BT-1A)	1:1L	1:750	1:500
PIEZOMETER (B6)	3m BELOW DESIGN LEVEL	2m BELOW DESIGN LEVEL	1m BELOW DESIGN LEVEL

MASTER CONSTRUCTION SEQUENCE

1. FOR CONSTRUCTION OF FOOTING FOR LOWER LANDING PLATFORM
   a) OPEN EXCAVATE THE EXISTING SLOPE TO LEVEL 5.5mPD.
   b) INSTALL PIPE PILE TO THE FOUNDING LEVEL AS SPECIFIED IN DRAWING NO. 091427/SF04.
   c) EXCAVATE TO THE LEVEL OF LEVEL 5.0mPD.
   d) INSTALL STRUT AND WALING AT LEVEL 5.0mPD.
   e) CONTINUE TO EXCAVATE TO THE FOUNDING LEVEL AS SPECIFIED IN 091427/SF04 FOR THE LOWER LANDING PLATFORM.
   f) CONSTRUCT THE FOOTING AS DETAILED IN RELEVANT STRUCTURAL DRAWINGS (UNDER SEPARATED BD SUBMISSION).
   g) BACKFILL THE SLOPE USING NO-FINE CONCRETE MATERIALS.
2. FOR CONSTRUCTION OF FOOTING FOR UPPER LANDING PLATFORM
   a) INSTALL PIPE PILE TO THE FOUNDING LEVEL AS SPECIFIED IN DRAWING NO. 091427/GL02.
   b) EXCAVATE TO THE LEVEL OF LEVEL 14.588mPD.
   c) CONSTRUCT THE FOOTING NO. 4 OF THE UPPER LANDING PLATFORM.
3. FOR CONSTRUCTION OF INCLINED LIFT TRENCH
   a) OPEN EXCAVATION WITH 45° TEMPORARY CUT SLOPE FOR THE LIFT TRENCH.
   b) EXCAVATE TRENCH TO FOUNDING LEVEL AS SPECIFIED IN DRAWING NO. 091427/GL01 AND GL02.
   c) CONSTRUCT THE INCLINED LIFT TRENCH.
   d) BACKFILL SLOPE WITH NO-FINE CONCRETE.

NOTES ON DUST CONTROL

1. THE CONTRACTOR SHALL SUBMIT FOR THE ENGINEER'S PRIOR APPROVAL AT LEAST 2 WEEKS BEFORE COMMENCEMENT OF ANY WORK, METHOD STATEMENT IDENTIFYING OPERATIONS AND PLANTS LIKELY TO CASE AIR POLLUTION OR DUST EMISSIONS FROM THE SITE. TOGETHER WITH MEASURES TO BE IMPLEMENTED TO MITIGATE AND CONTROL SUCH POLLUTION AND EMISSION.
2. DURING THE COURSE OF DRILLING WORKS. THE WORKS SHALL BE TREATED WITH WATER OR SPRAYED WITH WETTING AGENT.

CONCRETE WORKS

1. ALL CONCRETE WORKS TO BE GRADE 300/20 TO COMPLY WITH CS1:2010 MAXIMUM AGGREGATE SIZE = 20.
2. ALL STEEL REINFORCEMENT SHALL BE HIGH YIELD BAR TYPE 2 AND COMPLY WITH CS2:1995

ALLOWABLE BEARING PRESSURE

1. ALLOWABLE BEARING PRESSURE FOR FOOTING NO. F1 (FOR GLASS ENCLOSURE) = 85kPa
2. ALLOWABLE BEARING FOR FOOTING NO. F3 = 160kPa
3. ALL FOOTING SHALL BE FOUNDED ON COMPLETELY DECOMPOSED TUFF

ALLOWABLE LOADING FOOTING FOR UPPER LANDING PLATFORM

1. ALLOWABLE LOADING FOR FOOTING OF UPPER LANDING PLATFORM = 40kPa

NOTES ON SOIL NAILS

1. THE SOIL NAILS SHALL BE INSTALLED PERPENDICULAR TO THE GENERAL SLOPE FACE UNLESS OTHERWISE NOTED OR INSTRUCTED BY THE ENGINEER.
2. THE MINIMUM DIAMETER OF THE DRILLHOLE FOR SOIL NAIL INSTALLATION SHALL BE 100mm UNLESS OTHERWISE STATED. TOLERANCE OF ANGLE SHALL BE ±2° AIR OR FOAM FLUSH MEDIUM MUST BE USED DURING DRILLING, WATER SHALL NOT BE USED FOR FLUSHING.
3. THE SOIL NAILS SHALL BE INSTALLED WITHIN 24 HOURS OF COMPLETION OF THE DRILLING UNLESS OTHERWISE AGREED BY THE ENGINEER'S REPRESENTATIVE. DRILLHOLE SHALL BE CLEARED OF ALL DEBRIS IMMEDIATELY BEFORE GROUTING.
4. STEEL BAR FOR SOIL NAILS IS TO BE 25mm DIAZ. HIGH YIELD TENSILE STEEL BAR TO CS2 : 1995 WITH A YIELD STRENGTH OF 460 N/mm². REINFORCEMENT TO COMPLY WITH CS2:1995.
5. CENTRALIZES SHALL BE PROVIDED AT 1500mm SPACING ALONG THE STEEL BAR TO ENSURE A MINIMUM GROUT COVER OF 30mm ALL AROUND TO THE STEEL BAR.
6. CEMENT GROUT SHALL BE A DESIGN MIX HAVING A 28 DAY CUBE STRENGTH OF 30MPa AND THE WATER CEMENT RATIO SHALL NOT EXCEED 0.45.
7. GROUT IS TO BE INJECTED UNDER MINIMUM PRESSURE TO LIMIT POTENTIAL DISTURBANCE AT THE SITE (MIN. PRESSURE IS TAKEN TO BE THE AVERAGE CONFINING PRESSURE AT THE SOIL NAIL LEVEL PLUS 10%).
8. CEMENT GROUT SHALL BE DISCHARGED FROM THE BOTTOM OF DRILLHOLE BY MEANS OF A GROUT PIPE. GROUTING SHALL PROCEED AT A SLOW STEADY RATE AND SHALL CONTINUE UNTIL INJECTED GROUT OF THE SAME COMPOSITION AND CONSISTENCY AS THAT MIXED HAS BEEN EMERGING FROM THE OUTLET FOR AT LEAST ONE MINUTE.
9. ALL SOIL NAIL AND OTHER STEEL COMPONENTS ARE TO BE HOT DIP GALVANIZED TO BS EN ISO 1461:1999. THE THICKNESS OF ZINC COATING SHALL BE A MINIMUM OF 610g/m².
10. THE EXACT LOCATION OF ALL SOIL NAILS SHALL BE AGREED WITH THE ENGINEER PRIOR TO WORK COMMENCING.
11. FOR CONTROL OF ALKALI-AGGREGATE REACTION IN CONCRETE, THE CONTRACTOR IS TO SUBMIT TO THE ENGINEER TEST RESULTS TO VERIFY THAT THE EQUIVALENT SODIUM OXIDE (Na_2O) CONTENT PER CUBIC METRES OF CONCRETE DOES NOT EXCEED 3.0kg.
12. ALL WORKING NAILS SHALL BE INSTALLED WITH PROVISIONS FOR SUBSEQUENT TIME DOMAIN REFLECTION TEST.
13. THE EXACT LOCATION OF PULL-OUT TESTING NAILS SHALL BE DETERMINED ON SITE.
14. CASING SHALL BE PROVIDED FOR DRILLING THROUGH THE FILL LAYER.
15. FOR SOIL NAILS WITH DOUBLE CORROSION PROTECTION THE ANNULAR SPACE BETWEEN THE WALL OF DRILLHOLE AND CORRUGATED SHEATHING SHALL BE GROUTED FIRST IN A CONTINUOUS OPERATION. THE ANNULAR SPACE BETWEEN CORRUGATED SHEATHING AND STEEL BARS SHALL BE GROUTED IMMEDIATELY AFTERWARDS IN A CONTINUOUS OPERATION.

SPECIFICATION FOR SOIL NAIL PULL OUT TEST

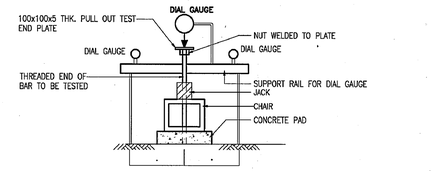
1. THE APPARATUS FOR MEASURING LOADS AND DEFORMATIONS SHALL HAVE AN ACCURACY OF 5 KN AND 0.05 MM RESPECTIVELY.
2. THE PULL-OUT TEST SHALL NOT BE CARRIED OUT UNTIL THE GROUT HAS REACHED A CUBE STRENGTH OF 21 MPa.
3. THE APPARATUS SHALL BE TESTED AND CALIBRATED BY APPROVED LABORATORIES NOT MORE THAN 6 MONTHS PRIOR TO THE DATE OF CARRYING OUT OF THE TESTS.

PULL-OUT TEST

1. SOIL NAILS SHALL BE INSTALLED FOR PULL-OUT TESTS PRIOR TO THE INSTALLATION OF PERMANENT SOIL NAILS.
2. SOIL NAILS SUBJECTED TO PULL-OUT TESTS SHALL NOT FORM PART OF THE PERMANENT WORKS.
3. THE ENTIRE FREE LENGTH OF THE STEEL BAR SHALL BE PROPERLY WRAPPED OR CAPPED TO ENSURE THAT THE TEST LOAD CAN BE DIRECTLY TRANSFERRED TO THE BONDED ZONE IN CASE OF GROUT LEAK THROUGH THE PACKER.
4. THE MAXIMUM TEST LOAD (Tp) SHALL BE ACCORDING TO THE SOIL NAIL PULL OUT TEST SCHEDULE.
5. THE TEST NAIL SHALL BE LOADED IN STAGES: FROM THE INITIAL LOAD (To) VIA, TWO INTERMEDIATE TEST LOADS (T_{AI} AND T_{AII}) TO THE MAXIMUM TEST LOAD.
6. DURING THE FIRST TWO LOADING CYCLES, THE INTERMEDIATE LOADS, T_{AI} AND T_{AII} SHALL BE MAINTAINED FOR 60 MINUTES FOR DEFORMATION MEASUREMENT. AFTER THE MEASUREMENT HAS BEEN COMPLETED, THE LOAD SHALL BE REDUCED TO To AND THE RESIDUAL DEFORMATION SHALL BE RECORDED. IN THE LAST CYCLE, THE TEST LOAD SHALL BE INCREASED GRADUALLY FROM To STRAIGHT TO MAXIMUM TEST LOAD AND THEN MAINTAINED FOR DEFORMATION MEASUREMENT.
7. THE MEASUREMENT AT EACH OF THE CYCLES SHALL BE TAKEN AT TIME INTERVALS OF 1, 3, 6, 10, 20, 30, 40, 50 AND 60 MINUTES.
8. THE TEST NAIL IS CONSIDERED TO BE ABLE TO SUSTAIN THE TEST LOAD IF THE DIFFERENCE OF NAIL MOVEMENTS AT 6 AND 60 MINUTES DOES NOT EXCEED 2mm OR 0.1% OF THE GROUT LENGTH OF THE TEST NAIL. IN THIS CASE, THE TEST SHALL PROCEED TO THE NEXT LOADING CYCLE OR BE TERMINATED IF THE TEST NAIL IS SUBJECTED TO Tp.
9. THROUGHOUT THE TEST, THE SOIL NAIL MOVEMENT AS WELL AS THE MOVEMENT OF THE BEARING PLATE VERSUS THE APPLIED LOAD SHALL BE MEASURED, RECORDED AND PLOTTED ON A GRAPH IN THE FORMAT APPROVED BY THE ENGINEER.
10. IF THE TEST SOIL NAIL FAILS TO SUSTAIN TDL1, TDL2, OR THE MAXIMUM TEST LOAD IN ANY CYCLE, THE TEST SHALL BE TERMINATED AND THE SOIL NAIL MOVEMENT AGAINST RESIDUAL LOAD WITH TIME SHALL BE RECORDED. THE MEASUREMENTS SHALL BE TAKEN AT TIME INTERVALS OF 1, 3, 6, 10 AND, EVERY 10 MINUTES THEREAFTER OVER A PERIOD FOR AT LEAST TWO HOURS. THE MEASUREMENTS SHALL BE TAKEN FOR A LONGER PERIOD WHERE CONSIDERED NECESSARY.

SOIL NAIL PULL OUT TEST ARRANGEMENT

EXACT DETAILS ARE TO BE PROVIDED BY THE CONTRACTOR, SUBJECT TO THE APPROVAL OF THE ENGINEER.



NOTES ON NON-DESTRUCTIVE TEST (NDT) FOR SOIL NAILS

1. TIME DOMAIN REFLECTOMETRY (TDR) TESTS FOR THE PERMANENT SOIL NAILS SHALL BE CARRIED OUT.
2. A CONTROL NAIL SHALL BE SELECTED BY THE ENGINEER FOR CALIBRATION OF THE TDR TEST.
3. THE EXACT LOCATIONS OF ALL TDR TESTS SHALL BE CONFIRMED BY THE ENGINEER ON SITE. A MINIMUM OF 2 NUMBERS OF TDR TESTS OR 1% OF THE TOTAL NUMBER OF SOIL NAILS, WHICHEVER IS GREATER, SHALL BE CARRIED OUT.
4. TDR TEST SHALL NOT BE CARRIED OUT WITHIN 3 DAYS AFTER COMPLETION OF GROUTING.
5. TDR TEST SHALL BE CARRIED OUT BY AN INDEPENDENT LABORATORY AND A REPORT WITH THE TEST RESULTS AND INTERPRETATIONS SHALL BE SUBMITTED TO THE ENGINEER FOR ACCEPTANCE.

Yung Hun Tat, Arthur
BSc MSc DIS RSEmantE FHKIE FICE
Registered Structural Engineer

CHAN Henry
Registered Geotechnical Engineer
RGE 12/05

BD Reference No. :

Plan Approved
CHAN Yuenming, Mary
Senior Building Surveyor
for BUILDING AUTHORITY
25 AUG 2011

Rev.	Stat.	Description	Date	By	Chk.	Ver'o
–	IFS	BD SUBMISSION	05/11	RC	ML	MN

Revisions

ESA 工程顧問有限公司
CONSULTING ENGINEERS LTD
Civil . Structural . Geotechnical . Environmental
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Authorized Person / Registered Structural Engineer :

Project :
REVITALISATION SCHEME CONVERSION OF OLD TAI O POLICE STATION INTO TAI O HERITAGE HOTEL

Drawing Title :
NOTES FOR SITE FORMATION (INCLINED LIFT)

Drawn :	LC	Date :	04/11	Job No. :	091427
Checked :	ML	Date :	04/11	Cad File :	091427_SF05
Approved :	MN	Date :	04/11	Scale :	AS SHOWN
Drawing No. :	091427/SF03			Rev.	–

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GENERAL NOTES

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3. ALL LEVELS ARE IN METRES ABOVE PRINCIPLE DATUM (mPD) UNLESS OTHERWISE SPECIFIED.
4. ALL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ALL RELEVANT DRAWINGS AND SPECIFICATIONS ISSUED UNDER THE CONTRACT. THE CONTRACTOR SHALL INFORM THE AP FOR ANY DISCREPANCIES WHICH MAY BE FOUND AMONG THESE DRAWINGS.
5. THE CONTRACTOR SHALL INSPECT THE CONDITIONS OF ADJOINING AREAS AND RECORD THE EXISTING STRUCTURES, UTILITIES, ROADS, PAVEMENTS, AND THE LIKE PRIOR TO THE COMMENCEMENT AND AFTER COMPLETION OF THE WORKS. THE CONTRACTOR SHALL SUBMIT THE CONDITION SURVEY REPORT TO THE AP FOR RECORD BEFORE CONSTRUCTION.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR AND REPAIR ANY DAMAGES TO ADJOINING AREAS, STRUCTURES, UTILITIES, ROADS, PAVEMENT AND THE LIKE ARISING DIRECTLY FROM THE WORKS AT NO EXTRA COST AND NO EXTENSION OF TIME.
7. ALL WORKS SHALL COMPLY WITH THE GENERAL SPECIFICATION FOR BUILDING 2006, HONG KONG BUILDING (CONSTRUCTION) REGULATIONS 1990, RELEVANT PRACTICE NOTES FOR AUTHORIZED PERSONS AND REGISTERED STRUCTURAL ENGINEERS AND PRACTICE NOTES FOR REGISTERED CONTRACTORS. ALL EXCAVATION WORKS SHALL BE CARRIED OUT ACCORDING TO SECTION 6 OF THE SPECIFICATION. ALL DESIGN AND WORKS OF STRUCTURAL STEEL SHALL COMPLY WITH CODE OF PRACTICE FOR THE STRUCTURAL USE OF STEEL 2005. ALL DESIGN AND WORKS FOR REINFORCED CONCRETE SHALL COMPLY WITH CODE OF PRACTICE FOR STRUCTURAL USE OF CONCRETE 2004.
8. ALL UTILITIES LOCATED IN THE WORK AREA SHALL BE IDENTIFIED BY THE THE CONTRACTOR PRIOR TO THE COMMENCEMENT OF THE WORKS. IF NECESSARY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE TEMPORARY UTILITY DIVERSION AND REINSTATEMENT AND ALL COORDINATION WORKS WITH THE UTILITY COMPANIES.
9. THE EXACT BOUNDARY OF THE WORKS SITE AND THE WORKS AREA SHALL BE CONFIRMED BY THE ENGINEER ON SITE.
10. ALL MONITORING WORKS REQUIRED FOR THE PROPOSED WORKS SHALL REFER TO DRAWING NO. P093113/ELS02.
11. THE REQUIREMENT FOR SITE SUPERVISION SHALL FOLLOW THAT STIPULATED IN THE CODE OF PRACTICE FOR SITE SUPERVISION 2005.
12. SOIL PROPERTIES

MATERIALS	COHESION C'(kPa)	FRICTION ANGLE Ø'(°)	UNIT WEIGHT (kN/m³)
FILL	0	32	19
RESIDUAL SOIL	0	32	19
COLLUVIUM	6	28	19
CDT	4	36	17

13. SLOPE AREA SHALL BE EXCAVATED UPON APPROVAL AND CONSENT OF EXCAVATION AND LATERAL SUPPORT PLAN WHICH IS UNDER SEPARATE SUBMISSION.
14. ALL STRUCTURAL STEEL TO BE GRADE S275 TO BS EN 10025.

NOTES ON TEMPORARY DRAINAGE

1. SUMP PUMP AND SUMP PIT SHALL BE PROVIDED FOR THE TEMPORARY DRAINAGE PURPOSE IF NECESSARY. ADEQUATE FILTERS SHALL BE PROVIDED TO PREVENT LOSS OF GROUND AS A RESULT OF PUMPING.
2. ALL TEMPORARY U-CHANNEL SHALL BE 1 IN 100 IN GRADIENT UNLESS OTHERWISE STATED.
3. SUMP PUMPING WITH SUFFICIENT CAPACITY SHALL BE PROVIDED AS DRAINAGE FOR THE TEMPORARY EXCAVATION.
4. LOCATION, NUMBERS AND METHOD OF INSTALLATION OF SUMP PUMPS SHALL BE PROPOSED BY THE CONTRACTOR AGREED WITH THE AP/RGE ON SITE.
5. WATER DISCHARGED FROM SUMP PUMPS SHALL BE DIRECTED TO SAND TRAP AND THEN GOVERNMENTS STORM WATER DRAINS. PERMITS FROM STATUTORY AUTHORITIES SHALL BE OBTAINED FOR WATER DISCHARGING.
6. A REGULAR MAINTENANCE OF SAND TRAP SHALL BE PROVIDED TO ENSURE NO LIKELIHOOD OF FLOODING OCCURRING FROM THE LOT ONTO THE ADJACENT PROPERTIES.
7. ALL SURFACE WATER SHALL BE DIVERTED AND COLLECTED WITHIN THE EXCAVATION AREA AND SHALL BE DISCHARGED BY SUMP PUMPS.

NOTES ON EXCAVATION

1. ALL TEMPORARY SOIL CUT SLOPES EXPOSED FOR LESS THAN A WEEK SHALL BE PROTECTED WITH NYLON SHEETS SECURED AGAINST WIND.
2. ALL TEMPORARY SOIL CUT SLOPES EXPOSED FOR A WEEK OR MORE SHALL BE PROTECTED BY 50mm THICK SPRAYED CONCRETE SURFACING OR OTHER APPROVED MATERIAL WITH WEEPHOLE. 50mm DIAMETER PVC WEEPHOLES SHALL BE BUILT IN AT 1.5m CENTRES IN EACH DIRECTION ON A STAGGERED PITCH AS THE WORK PROCEEDS.
3. MATERIAL THAT MAY CAUSE A LANDSLIDE OF THE TEMPORARY CUT SLOPE SHALL NOT BE STOCKPILED BEHIND THE CREST OF OR ON THE TEMPORARY CUT SLOPE.
4. OVER EXCAVATION IF ANY BELOW THE FINAL FORMATION LEVEL SHALL BE BACKFILLED WITH MASS CONCRETE.

NOTES ON GROUNDWATER TABLE

1. THE DESIGN GROUNDWATER TABLE IS ASSUMED TO BE ONE-THIRD OF SLOPE HEIGHT.

NOTES ON DUST CONTROL

1. THE CONTRACTOR SHALL SUBMIT FOR THE ENGINEER'S PRIOR APPROVAL. AT LEAST 2 WEEKS BEFORE COMMENCEMENT OF ANY WORK, METHOD STATEMENT IDENTIFYING OPERATIONS AND PLANTS LIKELY TO CASE AIR POLLUTION OR DUST EMISSIONS FROM THE SITE. TOGETHER WITH MEASURES TO BE IMPLEMENTED TO MITIGATE AND CONTROL SUCH POLLUTION AND EMISSION.
2. DURING THE COURSE OF DRILLING WORKS. THE WORKS SHALL BE TREATED WITH WATER OR SPRAYED WITH A WETTING AGENT.

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NOTES ON SITE SUPERVISION

1. THE TCP T5 SITE SUPERVISION PERSONNEL UNDER THE RGE'S STREAM SHALL SUBMIT REGULAR REPORTS OF HER/HIS FINDINGS AND RECOMMENDATIONS TO THE RGE. THE RGE SHALL FORMALLY SUBMIT THESE REPORTS TO THE BD AND PROVIDE A COPY TO THE GEO AT MONTHLY INTERVALS OR MORE FREQUENTLY AS NECESSARY.
2. TYPICAL CONTENTS OF THE REGULAR REPORTS PREPARED BY THE TCP T5 SITE SUPERVISION PERSONNEL SHALL INCLUDE THE FOLLOWING:
   (A) PROGRESS OF THE WORKS
   (B) RESULTS OF MONITORING DURING CONSTRUCTION
   (C) SITE OBSERVATIONS
   (D) INSPECTION RECORDS
   (E) REVIEW

CONCRETE WORKS

1. ALL CONCRETE WORKS TO BE GRADE 30D/20 TO COMPLY WITH CS2. MAXIMUM AGGREGATE SIZE = 20.
2. ALL STEEL REINFORCEMENT SHALL BE HIGH YIELD BAR TYPE 2 AND COMPLY WITH CS2.

PRECAUTIONS AGAINST HEAVY RAINFALL

1. PRIOR TO THE COMMENCEMENT OF WORKS, SURFACE WATER FLOWING INTO THE SITE FROM UPHILL SHALL BE INTERCEPTED AND SAFELY DISCHARGED FROM THE SITE. AT EACH INTERSECTION AND ABRUPT CHANGE IN DIRECTION OF SURFACE DRAINAGE CHANNELS AND ACCESSIBLE CATCHPIT SHALL BE PROVIDED. ALL DRAINAGE WORKS SHALL BE KEPT CLEAR OF DEBRIS.
2. WHERE PARTIALLY COMPLETED DRAINAGE WORKS DISCHARGE WITHIN THE SITE A TEMPORARY CONDUIT SHALL BE PROVIDED TO THE DISCHARGE POINT.

NOTES ON MONITORING

1. ALL THE CHECK POINTS SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF WORKS. THE INITIAL READINGS SHALL BE TAKEN AND SUBMITTED TO THE BUILDINGS DEPARTMENT AND THE AP/RGE PRIOR TO THE COMMENCEMENT OF WORKS. DURING THE PROCESSES OF WORKS, THE CHECK POINTS, PIEZOMETERS AND INCLINOMETERS SHALL BE MONITORED DAILY. ALL READINGS SHALL BE KEPT ON SITE AND SUBMITTED TO THE ENGINEER AND BUILDINGS DEPARTMENT BI-WEEKLY.
3. MONITORING SCHEDULE FOR WORKS
   IF THE ALERT LEVEL IS EXCEEDED, THE FREQUENCY OF MONITORING SHALL BE INCREASED TO TWICE DAILY TO GAUGE FURTHER MOVEMENT AND THE AP/RGE SHOULD BE INFORMED IMMEDIATELY.
   IF THE ALARM LEVEL IS EXCEEDED, THE WORKS AT AFFECTED AREAS SHALL CEASE AND AP/RGE SHALL BE INFORMED IMMEDIATELY AND PROPOSAL FOR PRECAUTIONARY MEASURES SHALL BE SUBMITTED TO AP/RGE FOR CONSIDERATION PRIOR TO RESUMING WORKS IN THE AFFECTED AREA.
   IF THE ACTION LEVEL IS EXCEEDED, THE WORKS AT THE AFFECTED AREA SHALL CEASE AND THE AP/RGE/BD/GEO/AMD SHALL BE NOTIFIED. A REVIEW OF VALIDITY OF THE DESIGN ASSUMPTIONS AND METHOD, AND REMEDIAL PROPOSAL, SHALL BE SUBMITTED TO THE SATISFACTION OF BD. THE WORKS IN THE AFFECTED AREA SHALL NOT BE RESUMED UNTIL THE APPROVAL FOR RECOMMENCEMENT HAS BEEN GIVEN.

MONITORING POINT	LOCATION	ALERT LEVEL	ALARM LEVEL	ACTION LEVEL
SETTLEMENT MARKER ON GROUND	~~SM4 TO SM8, SM10, SM16,17,18,20, SM4 (SA), SM3 (SA), SM26, SM27~~	5mm	10mm	15mm
PIEZOMETER	B5	11.5mPD	10.5mPD	9.5mPD
~~BUILDING SETTLEMENT MARKER~~	~~BS1 TO BS4, BS8 TO BS10~~	~~5mm~~	~~10mm~~	~~15mm~~
~~TILTING MARKER~~	~~BT1 TO BT4, BT10, BT11, BT12~~	~~1:1000~~	~~1:750~~	~~1:500~~
~~VIBRATION MONITORING~~	~~VM1 TO VM3, VM5~~	~~5.5mm/sec~~	~~6.5mm/sec~~	~~7.5mm/sec~~

SOIL NAIL PULL OUT TEST SCHEDULE

FEATURE NO.	TEST NAIL NO.	NAILS DIAMETER (mm)	LEVEL (mPD)	DRILLHOLE DIAMETER (mm)	FULL LENGTH (m)	GROUT LENGTH (m)	DIPPING ANGLE (DEGREES)	Ta (kN)	TDL1 (kN)	TDL2 (kN)	Tp (kN)
~~SSW-C/F6~~	~~TN1~~	~~25~~	~~+13.2~~	~~100~~	~~8.0~~	~~2.0~~	~~15~~	~~3~~	~~15~~	~~30~~	~~59~~
	~~TN2~~	~~25~~	~~+15.2~~	~~100~~	~~8.0~~	~~2.0~~	~~15~~	~~2~~	~~10~~	~~19~~	~~39~~
~~SSW-C/CR14~~	~~TN3~~	~~25~~	~~+7.5~~	~~100~~	~~10.0~~	~~2.0~~	~~15~~	~~4.5~~	~~33~~	~~61.5~~	~~90~~
	~~TN4~~	~~25~~	~~+9.0~~	~~100~~	~~10.0~~	~~2.0~~	~~15~~	~~45~~	~~33~~	~~61.5~~	~~90~~

SOIL NAIL SCHEDULE

SECTION	SOIL NAIL NO.	NAILS DIAMETER (mm)	TENTATIVE LEVEL (mPD)	TENTATIVE NOS. OF NAILS	MINIMUM DESIGN LENGTH (m)	DIPPING ANGLE (DEGREES)	HORIZONTAL SPACING (m)	DRILLHOLE DIAMETER (mm)	ALLOWABLE STAGGERING FORCE (kN/m)	NAIL HEAD SIZE (mmXmm)
~~SECTION A-A~~	~~A-A~~	~~25~~	~~+13.2~~	~~9~~	~~8.0~~	~~15~~	~~1.5~~	~~100~~	~~21.0~~	600X600X250
	~~B-B~~	~~25~~	~~+15.2~~	~~8~~	~~8.0~~	~~15~~	~~1.5~~	~~100~~	~~13.0~~	
~~SECTION 3-3~~	~~L1-L10~~	~~25~~	~~+4.5~~	~~2~~	~~8.0~~	~~15~~	~~1.5~~	~~100~~	~~15.0~~	600X600X250
	~~M8-M21~~	~~25~~	~~+7.5~~	~~2~~	~~10.0~~	~~15~~	~~1.5~~	~~100~~	~~30.0~~	
	~~N21-N22~~	~~25~~	~~+9.0~~	~~2~~	~~10.0~~	~~15~~	~~1.5~~	~~100~~	~~30.0~~	

ALLOWABLE BEARING PRESSURE

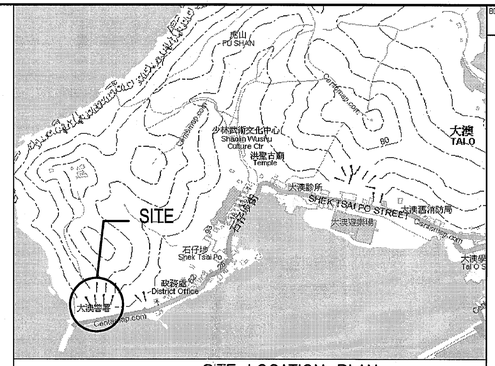
1. ALLOWABLE BEARING PRESSURE FOR FOOTING NO. F1 (FOR GLASS ENCLOSURE) = 85kPa
2. ALLOWABLE BEARING FOR FOOTING NO. F8 = 160kPa
3. ALL FOOTING SHALL BE FOUNDED ON COMPLETELY DECOMPOSED TUFF

ALLOWABLE LOADING FOR PORTABLE WATER TANK AND COOLING TOWER

1. ALLOWABLE LOADING FOR PORTABLE WATER TANK = 12kPa
2. ALLOWABLE LOADING FOR COOLING TOWER OF AIR CONDITION SYSTEM = 10kPa

NOTES ON SOIL NAILS

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2. THE MINIMUM DIAMETER OF THE DRILLHOLE FOR SOIL NAIL INSTALLATION SHALL BE 100mm UNLESS OTHERWISE STATED. TOLERANCE OF ANGLE SHALL BE ±2° AIR OR FOAM FLUSH MEDIUM MUST BE USED DURING DRILLING, WATER SHALL NOT BE USED FOR FLUSHING.
3. THE SOIL NAILS SHALL BE INSTALLED WITHIN 24 HOURS OF COMPLETION OF THE DRILLING UNLESS OTHERWISE AGREED BY THE ENGINEER'S REPRESENTATIVE. DRILLHOLE SHALL BE CLEARED OF ALL DEBRIS IMMEDIATELY BEFORE GROUTING.
4. STEEL BAR FOR SOIL NAILS IS TO BE 25mm DIAZ HIGH YIELD TENSILE STEEL BAR TO CS2 : 1995 WITH A WORKING STRESS OF 230 N/mm². ULTIMATE TENSILE STRESS SHALL BE 460 N/mm². REINFORCEMENT TO COMPLY WITH CS2:1995.
5. CENTRALIZES SHALL BE PROVIDED AT 1500mm SPACING ALONG THE STEEL BAR TO ENSURE A MINIMUM GROUT COVER OF 30mm ALL AROUND TO THE STEEL BAR.
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9. ALL SOIL NAIL AND OTHER STEEL COMPONENTS ARE TO BE HOT DIP GALVANIZED TO BS EN ISO 1461:1999. THE THICKNESS OF ZINC COATING SHALL BE A MINIMUM OF 610g/m².


SITE
SHEK TSAI PO STREET
大澳
TAI O
石仔埔
Shek Tsai Po
大澳警署
Tai O S
大澳警區
District Office
大澳街市
Tai O Market
大澳消防局
Tai O Fire Station
大澳消防局
Tai O Fire Station
大澳郵政局
Tai O Post Office
大澳街市
Tai O Market
大澳警署
Tai O Police Station
大澳警區
District Office
大澳公廁
Tai O Public Toilet
大澳公廁
Tai O Public Toilet
大澳公廁
Tai O Public Toilet

BD Reference No. : BD 22-3/3022/09 (HU) (SF)

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9. THE EXACT BOUNDARY OF THE WORKS SITE AND THE WORKS AREA SHALL BE CONFIRMED BY THE ENGINEER ON SITE.
10. ALL MONITORING WORKS REQUIRED FOR THE PROPOSED WORKS SHALL REFER TO DRAWING NO. P093113/ELS02.
11. THE REQUIREMENT FOR SITE SUPERVISION SHALL FOLLOW THAT STIPULATED IN THE CODE OF PRACTICE FOR SITE SUPERVISION 2005.
12. SOIL PROPERTIES

MATERIALS	COHESION C'(kPa)	FRICTION ANGLE Ø'(°)	UNIT WEIGHT (kN/m³)
FILL	0	32	19
RESIDUAL SOIL	0	32	19
COLLUVIUM	8	28	19
CDT	4	36	17

13. SLOPE AREA SHALL BE EXCAVATED UPON APPROVAL AND CONSENT OF EXCAVATION AND LATERAL SUPPORT PLAN WHICH IS UNDER SEPARATE SUBMISSION.
14. ALL STRUCTURAL STEEL TO BE GRADE S275 TO BS EN 10025.

NOTES ON TEMPORARY DRAINAGE

1. SUMP PUMP AND SUMP PIT SHALL BE PROVIDED FOR THE TEMPORARY DRAINAGE PURPOSE IF NECESSARY. ADEQUATE FILTERS SHALL BE PROVIDED TO PREVENT LOSS OF GROUND AS A RESULT OF PUMPING.
2. ALL TEMPORARY U-CHANNEL SHALL BE 1 IN 100 IN GRADIENT UNLESS OTHERWISE STATED.
3. SUMP PUMPING WITH SUFFICIENT CAPACITY SHALL BE PROVIDED AS DRAINAGE FOR THE TEMPORARY EXCAVATION.
4. LOCATION, NUMBERS AND METHOD OF INSTALLATION OF SUMP PUMPS SHALL BE PROPOSED BY THE CONTRACTOR AGREED WITH THE AP/RGE ON SITE.
5. WATER DISCHARGED FROM SUMP PUMPS SHALL BE DIRECTED TO SAND TRAP AND THEN GOVERNMENTS STORM WATER DRAINS. PERMITS FROM STATUTORY AUTHORITIES SHALL BE OBTAINED FOR WATER DISCHARGING.
6. A REGULAR MAINTENANCE OF SAND TRAP SHALL BE PROVIDED TO ENSURE NO LIKELIHOOD OF FLOODING OCCURRING FROM THE LOT ONTO THE ADJACENT PROPERTIES.
7. ALL SURFACE WATER SHALL BE DIVERTED AND COLLECTED WITHIN THE EXCAVATION AREA AND SHALL BE DISCHARGED BY SUMP PUMPS.

NOTES ON EXCAVATION

1. ALL TEMPORARY SOIL CUT SLOPES EXPOSED FOR LESS THAN A WEEK SHALL BE PROTECTED WITH NYLON SHEETS SECURED AGAINST WIND.
2. ALL TEMPORARY SOIL CUT SLOPES EXPOSED FOR A WEEK OR MORE SHALL BE PROTECTED BY 50mm THICK SPRAYED CONCRETE SURFACING OR OTHER APPROVED MATERIAL WITH WEEPHOLE. 50mm DIAMETER PVC WEEPHOLES SHALL BE BUILT IN AT 1.5m CENTRES IN EACH DIRECTION ON A STAGGERED PITCH AS THE WORK PROCEEDS.
3. MATERIAL THAT MAY CAUSE A LANDSLIDE OF THE TEMPORARY CUT SLOPE SHALL NOT BE STOCKPILED BEHIND THE CREST OF OR ON THE TEMPORARY CUT SLOPE.
4. OVER EXCAVATION IF ANY BELOW THE FINAL FORMATION LEVEL SHALL BE BACKFILLED WITH MASS CONCRETE.

NOTES ON GROUNDWATER TABLE

1. THE DESIGN GROUNDWATER TABLE IS ASSUMED TO BE ONE-THIRD OF SLOPE HEIGHT.

NOTES ON DUST CONTROL

1. THE CONTRACTOR SHALL SUBMIT FOR THE ENGINEER'S PRIOR APPROVAL, AT LEAST 2 WEEKS BEFORE COMMENCEMENT OF ANY WORK, METHOD STATEMENT IDENTIFYING OPERATIONS AND PLANTS LIKELY TO CAUSE AIR POLLUTION OR DUST EMISSIONS FROM THE SITE, TOGETHER WITH MEASURES TO BE IMPLEMENTED TO MITIGATE AND CONTROL SUCH POLLUTION AND EMISSION.
2. DURING THE COURSE OF DRILLING WORKS, THE WORKS SHALL BE TREATED WITH WATER OR SPRAYED WITH WETTING AGENT.

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NOTES ON SITE SUPERVISION

1. THE TCP TS SITE SUPERVISION PERSONNEL UNDER THE RGE'S STREAM SHALL SUBMIT REGULAR REPORTS OF HER/HIS FINDINGS AND RECOMMENDATIONS TO THE RGE. THE RGE SHALL FORMALLY SUBMIT THESE REPORTS TO THE BD AND PROVIDE A COPY TO THE GEO AT MONTHLY INTERVALS OR MORE FREQUENTLY AS NECESSARY.
2. TYPICAL CONTENTS OF THE REGULAR REPORTS PREPARED BY THE TCP TS SITE SUPERVISION PERSONNEL SHALL INCLUDE THE FOLLOWING:
   (A) PROGRESS OF THE WORKS
   (B) RESULTS OF MONITORING DURING CONSTRUCTION
   (C) SITE OBSERVATIONS
   (D) INSPECTION RECORDS
   (E) REVIEW

CONCRETE WORKS

1. ALL CONCRETE WORKS TO BE GRADE 30D/20 TO COMPLY WITH CS2. MAXIMUM AGGREGATE SIZE = 20.
2. ALL STEEL REINFORCEMENT SHALL BE HIGH YIELD BAR TYPE 2 AND COMPLY WITH CS2.

PRECAUTIONS AGAINST HEAVY RAINFALL

1. PRIOR TO THE COMMENCEMENT OF WORKS, SURFACE WATER FLOWING INTO THE SITE FROM UPHILL SHALL BE INTERCEPTED AND SAFELY DISCHARGED FROM THE SITE. AT EACH INTERSECTION AND ABRUPT CHANGE IN DIRECTION OF SURFACE DRAINAGE CHANNELS AND ACCESSIBLE CATCHPIT SHALL BE PROVIDED. ALL DRAINAGE WORKS SHALL BE KEPT CLEAR OF DEBRIS.
2. WHERE PARTIALLY COMPLETED DRAINAGE WORKS DISCHARGE WITHIN THE SITE A TEMPORARY CONDUIT SHALL BE PROVIDED TO THE DISCHARGE POINT.

NOTES ON MONITORING

1. ALL THE CHECK POINTS SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF WORKS. THE INITIAL READINGS SHALL BE TAKEN AND SUBMITTED TO THE BUILDINGS DEPARTMENT AND THE AP/RGE PRIOR TO THE COMMENCEMENT OF WORKS. DURING THE PROCESSES OF WORKS, THE CHECK POINTS, PIEZOMETERS AND INCLINOMETERS SHALL BE MONITORED DAILY. ALL READINGS SHALL BE KEPT ON SITE AND SUBMITTED TO THE ENGINEER AND BUILDINGS DEPARTMENT BI-WEEKLY.
3. MONITORING SCHEDULE FOR WORKS
   IF THE ALERT LEVEL IS EXCEEDED, THE FREQUENCY OF MONITORING SHALL BE INCREASED TO TWICE DAILY TO GAUGE FURTHER MOVEMENT AND THE AP/RGE SHOULD BE INFORMED IMMEDIATELY.
   IF THE ALARM LEVEL IS EXCEEDED, THE WORKS AT AFFECTED AREAS SHALL CEASE AND AP/RGE SHALL BE INFORMED IMMEDIATELY AND PROPOSAL FOR PRECAUTIONARY MEASURES SHALL BE SUBMITTED TO AP/RGE FOR CONSIDERATION PRIOR TO RESUMING WORKS IN THE AFFECTED AREA.
   IF THE ACTION LEVEL IS EXCEEDED, THE WORKS IN THE AFFECTED AREA SHALL CEASE AND THE AP/RGE/BD/GEO/MD SHALL BE NOTIFIED. A REVIEW OF VALIDITY OF THE DESIGN ASSUMPTIONS AND METHOD, AND REVISED PROPOSAL SHALL BE SUBMITTED TO THE SATISFACTION OF BD. THE WORKS IN THE AFFECTED AREA SHALL NOT BE RESUMED UNTIL THE APPROVAL FOR RECOMMENCEMENT HAS BEEN GIVEN.

MONITORING POINT	LOCATION	ALERT LEVEL	ALARM LEVEL	ACTION LEVEL
SETTLEMENT MARKER ON GROUND	SM1 TO SM5, SM6, SM16,17,18,20, SM-(SA)-SM5-(SA) S_{M-1}, S_{M-2}	5mm	10mm	15mm
PIEZOMETER	B5	11.5mPD	10.5mPD	9.5mPD
BUILDING SETTLEMENT MARKER	BS1 TO BS4, BS8 TO BS10	5mm	10mm	15mm
TILTING MARKER	BT1 TO BT4, BT10, BT11, BT12	1/1000	1/750	1/500
VIBRATION MONITORING	VM1 TO VM3, VM5	5.5mm/sec	6.5mm/sec	7.5mm/sec

SOIL NAIL PULL OUT TEST SCHEDULE

FEATURE NO.	TEST NAIL NO.	NAILS DIAMETER (mm)	LEVEL (mPD)	DRILLHOLE DIAMETER (mm)	FULL LENGTH (m)	GROUT LENGTH (m)	DIPPING ANGLE (DEGREES)	To (kN)	TDL1 (kN)	TDL2 (kN)	Tc (kN)
RSW-C/F6	TN1	25	+15.2	100	8.0	2.0	15	3	15	30	56
	TN2	25	+15.2	100	8.0	2.0	15	2	10	19	39
RSW-C/F11	TN3	25	+7.5	100	10.0	2.0	15	4.5	33	61.5	99
	TN4	25	+9.0	100	10.0	2.0	15	19	38	61.5	99

SOIL NAIL SCHEDULE

SECTION	SOIL NAIL NO.	NAILS DIAMETER (mm)	TENTATIVE LEVEL (mPD)	TENTATIVE NOS. OF NAILS	MINIMUM DESIGN LENGTH (m)	DIPPING ANGLE (DEGREES)	HORIZONTAL SPACING (m)	DRILLHOLE DIAMETER (mm)	ALLOWABLE STAGGERING FORCE (kN/m)	NAIL HEAD SIZE (mmXmm)
SECTION A-A	A-A	25	+13.2	9	8.0	15	1.5	100	21.0	600X600X250
	B-B	25	+15.2	8	8.0	15	1.5	100	19.0	
SECTION B-B	LN1-LN8	25	+4.5	8	8.0	15	1.5	100	15.9	600X600X250
SECTION C-C	M16-M21	25	+7.5	7	10.0	15	1.5	100	30.0	
	M21-M22	25	+9.0	2	10.0	15	1.5	100	30.0	

ALLOWABLE BEARING PRESSURE

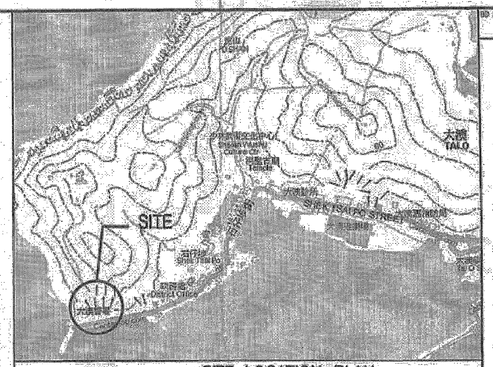
1. ALLOWABLE BEARING PRESSURE FOR FOOTING NO. F1 (FOR GLASS ENCLOSURE) = 85kPa
2. ALLOWABLE BEARING FOR FOOTING NO. F8 = 150kPa
3. ALL FOOTING SHALL BE FOUNDED ON COMPLETELY DECOMPOSED TUFF.

ALLOWABLE LOADING FOR PORTABLE WATER TANK AND COALING TOWER

1. ALLOWABLE LOADING FOR PORTABLE WATER TANK = 12kPa
2. ALLOWABLE LOADING FOR COOLING TOWER OF AIR CONDITION SYSTEM = 10kPa

NOTES ON SOIL NAILS

1. THE SOIL NAILS SHALL BE INSTALLED PERPENDICULAR TO THE GENERAL SLOPE FACE UNLESS OTHERWISE NOTED OR INSTRUCTED BY THE ENGINEER.
2. THE MINIMUM DIAMETER OF THE DRILLHOLE FOR SOIL NAIL INSTALLATION SHALL BE 100mm UNLESS OTHERWISE STATED. TOLERANCE OF ANGLE SHALL BE ±2°. AIR OR FOAM FLUSH MEDIUM MUST BE USED DURING DRILLING. WATER SHALL NOT BE USED FOR FLUSHING.
3. THE SOIL NAILS SHALL BE INSTALLED WITHIN 24 HOURS OF COMPLETION OF THE DRILLING UNLESS OTHERWISE AGREED BY THE ENGINEER'S REPRESENTATIVE. DRILLHOLE SHALL BE CLEARED OF ALL DEBRIS IMMEDIATELY BEFORE GROUTING.
4. STEEL BAR FOR SOIL NAILS IS TO BE 25mm DIA2. HIGH YIELD TENSILE STEEL BAR TO CS2 : 1995 WITH A WORKING STRESS OF 230 N/mm². ULTIMATE TENSILE STRESS SHALL BE 460 N/mm². REINFORCEMENT TO COMPLY WITH CS2:1995.
5. CENTRALIZERS SHALL BE PROVIDED AT 1500mm SPACING ALONG THE STEEL BAR TO ENSURE A MINIMUM GROUT COVER OF 35mm ALL AROUND TO THE STEEL BAR.
6. CEMENT GROUT SHALL BE A 1:2(SSN MIX HAVING A 28 DAY CUBE STRENGTH OF 30MPa AND THE WATER CEMENT RATIO SHALL NOT EXCEED 0.45.
7. GROUT IS TO BE INJECTED UNDER MINIMUM PRESSURE TO LIMIT POTENTIAL DISTURBANCE AT THE SITE. (MIN. PRESSURE IS TAKEN TO BE THE AVERAGE CONFINING PRESSURE AT THE SOIL NAIL LEVEL PLUS 10N).
8. CEMENT GROUT SHALL BE DISCHARGED FROM THE BOTTOM OF DRILLHOLE BY MEANS OF A GROUT PIPE. GROUTING SHALL PROCEED AT A SLOW STEADY RATE AND SHALL CONTINUE UNTIL INJECTED GROUT OF THE SAME COMPOSITION AND CONSISTENCY AS THAT MIXED HAS BEEN EMERGING FROM THE OUTLET FOR AT LEAST ONE MINUTE.
9. ALL SOIL NAIL AND OTHER STEEL COMPONENTS ARE TO BE HOT DIP GALVANIZED TO BS EN ISO 1461:1999. THE THICKNESS OF ZINC COATING SHALL BE A MINIMUM OF 610g/m².


SITE
TAI O
SHEK TSAI PO STREET
SHEK TSAI PO
TAI O POLICE STATION
TAI O HERITAGE HOTEL
TAI O POLICE STATION QUARTERS
TAI O HERITAGE MUSEUM
TAI O HERITAGE HOTEL ANNEX
TAI O HERITAGE HOTEL ANNEX
TAI O HERITAGE HOTEL ANNEX

BD Reference No. : BD 22-3/3022/09 (HU) (SF)

LEGEND:

- SITE BOUNDARY
- SLOPE FEATURE BOUNDARY
- BH-1 — EXISTING BOREHOLES (BY LAMS GEOTECHNICS LTD. 1984)
- BH/14/1 — EXISTING BOREHOLES (BY LAMS GEOTECHNICS LTD. 2001)
- B1 — EXISTING BOREHOLES (BY TYSAN FOUNDATION LTD. 2008)
- T1 — EXISTING TRIAL PITS (BY TYSAN FOUNDATION LTD. 2008)
- SS1 — EXISTING SLOPE STRIPPING (BY LAMS GEOTECHNICS LTD. 1985)
- SS1/14/1 — EXISTING SLOPE STRIPPING (BY LAMS GEOTECHNICS LTD. 2001)
- AS-BUILT SOIL NAIL
- TN1 — AS-BUILT PULL-OUT TEST NAILS (TN1 TO TN3)
- R1 — SOIL NAIL TO BE CONSTRUCTED UNDER ARCH.S.D. AGREEMENT NO. ASD/PSB/PM1 /PM3/03/08
- SM7 — SETTLEMENT MARKERS
- BT3 — AS-BUILT TILTING MARKER
- BS3 — AS-BUILT BUILDING SETTLEMENT MARKER
- VM1 — AS-BUILT VIBRATION MONITORING POINT
- SM1-(SA) — SETTLEMENT MARKER (INSTALLED DURING STRUCTURAL ASSESSMENT STAGE)
- PROPOSED PLANTER Box
- PROPOSED TOE WALL

CHAN Tzemy
Registered Geotechnical Engineer
ROE 1205

"The works shown on these plans are Type II works (Site Formation Works) in respect of which consent is applied for the purpose of Fast Track consent application under regulation 33 of the Building (Administration) Regulations."

MAK CHI CHEUNG, PETER
Bach. BASS. PRC(A. RIBA. AKAA
REGISTERED ARCHITECT, AP(List 1)

Rev.	Stat.	Description	Date	By	Chk.	Ver'd
E	IFS	BD SUBMISSION (AMENDMENT NO. 2)	01/11	LC	ML	MN
D	IFS	BD APPROVAL	15/04/10			
C	IFS	BD SUBMISSION (AMENDMENT NO. 1)	03/10	LC	ML	MN
B	IFS	AMENDMENT NO.1	01/10	LC	ML	MN
A	IFT	BD APPROVED DRAWING	11/09	LC	ML	MN
-	IFS	BD SUBMISSION	09/09	LC	ML	MN

Revisions

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CONSULTING ENGINEERS LTD
Civil Structural Geotechnical Environmental
10 / F., Greatmany Centre, 109 - 115 Queen's Road East, Wanchai, Hong Kong. Tel : 2528 6217 Fax : 2865 2857
Authorized Person / Registered Structural Engineer :

Project :

REVITALISATION SCHEME CONVERSION OF OLD TAI O POLICE STATION INTO TAI O HERITAGE HOTEL

Drawing Title :

SITE FORMATION PLAN

Drawn :	LC	Date : 12/09	Job No. :	091427	
Checked :	ML	Date : 12/09	Cad File :	P093113_ELS02E	
Approved :	MN	Date : 12/09	Scale :	1:150	
Drawing No. :	P093113/ELS02		Rev.	E	

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Plan Approved
YU Po-mei, Clarice
Senior Building Surveyor
for BUILDING AUTHORITY
- 1 MAR 2011

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B.D. DESIGN
BUILDING DEPARTMENT

FOR INFORMATION ONLY NOT FOR APPROVAL

SOIL NAILS FOR INFORMATION ONLY NOT FOR APPROVAL

DEVELOPED ELEVATION A

FEATURE NO. 9SW-C/F3
FEATURE NO. 9SW-C/F5
FEATURE NO. 9SW-C/F6
FEATURE NO. 9SW-C/C15
FEATURE NO. 9SW-C/C14
FEATURE NO. 9SW-C/C13
FEATURE NO. 9SW-C/C6

PLINTH FOR PROPOSED PORTABLE WATER TANK AND PUMP
PLINTH FOR A/C UNIT

SHEK TSAI PO STREET

BD Reference No.:
BD 22-3/3022/09 (HU) (SF)

LEGEND:

- SITE BOUNDARY
- SLOPE FEATURE BOUNDARY
- BH-1 EXISTING BOREHOLES (BY LAMS GEOTECHNICS LTD. 1984)
- DH/TP-1 EXISTING BOREHOLES (BY LAMS GEOTECHNICS LTD. 2001)
- B1 EXISTING BOREHOLES (BY TYSAN FOUNDATION LTD. 2008)
- T1 EXISTING TRIAL PITS (BY TYSAN FOUNDATION LTD. 2008)
- SS1 EXISTING SLOPE STRIPPING (BY LAMS GEOTECHNICS LTD. 1985)
- SS1/14/1 EXISTING SLOPE STRIPPING (BY LAMS GEOTECHNICS LTD. 2001)
- ANCHORED SOIL NAIL
- TN1 AS-BUILT PULL-OUT TEST NAILS (TN1 TO TN6)
- SN1 SOIL NAIL TO BE CONSTRUCTED UNDER ARCH.S.D. AGREEMENT NO. ASD/PSB/PM1 /PM3/03/08
- SM2 SETTLEMENT MARKERS
- BT3 AS-BUILT TILTING MARKER
- BS3 AS-BUILT BUILDING SETTLEMENT MARKER
- VM1 AS-BUILT VIBRATION MONITORING POINT
- SM1-(SA) SETTLEMENT MARKER (INSTALLED DURING STRUCTURAL ASSESSMENT STAGE)
- PROPOSED PLANTER BOX
- PROPOSED TOE WALL

GHAN Henry
Registered Geotechnical Engineer
RGE 12/05

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Registered Geotechnical Engineer
RGE 12/05

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MAK CHI CHEUNG, PETER
B.Arch., BAAS, FHKIA, FRIA, AAIAA
REGISTERED ARCHITECT, AP(List 1)

RECORD PLAN

Rev	Status	Description	Date	By	Ch'k	Ver'd
E	IFS	BD SUBMISSION (AMENDMENT NO. 2)	01/11	LC	ML	MN
D	IFS	BD APPROVAL	15/04/10			
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A	IFT	BD APPROVED DRAWING	11/09	LC	ML	MN
-	IFS	BD SUBMISSION	09/09	LC	ML	MN

Revisions

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12 / F., Greatmay, Belilios Bay, Hong Kong. Tel : 2529 8201 Fax : 2865 2871

Authorized Person / Registered Structural Engineer :

Project :
REVITALISATION SCHEME CONVERSION OF OLD TAI O POLICE STATION INTO TAI O HERITAGE HOTEL

Drawing Title :
SITE FORMATION PLAN

Drawn :	LC	Date :	12/09	Job No. :	091427
Checked :	ML	Date :	12/09	Cad File :	P093113_ELS02E
Approved :	MN	Date :	12/09	Scale :	1:150
Drawing No. :	P093113/ELS02				Rev. E

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Record Plan
This plan is the same as that approved by Building Department on 1/3/2011

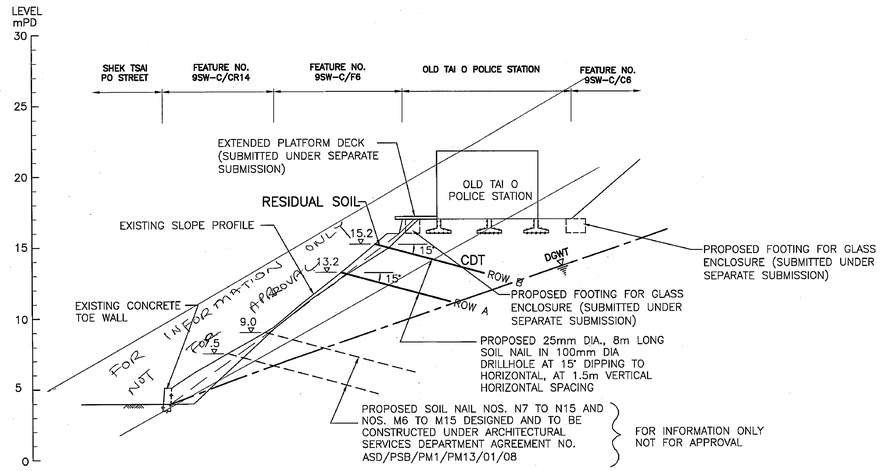
MAK CHI CHEUNG, PETER
B.Arch., BAAS, FHKIA, FRIA, AAIAA
REGISTERED ARCHITECT, AP(List 1)

Plan Approved

YU Po-mei, Clarice
Senior Building Surveyor
for BUILDING AUTHORITY

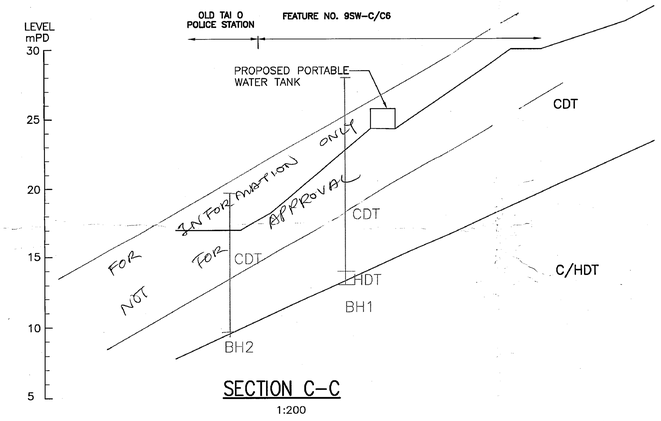
- 1 MAR 2011

FEATURE NO. 9SW-C/C5
FEATURE NO. 9SW-C/F3
FEATURE NO. 9SW-C/C15
FEATURE NO. 9SW-C/F5
FEATURE NO. 9SW-C/F6
FEATURE NO. 9SW-C/R14
FEATURE NO. 9SW-C/R13
PLINTH FOR PROPOSED PRESSURE WATER TANK AND PUMP
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SOIL NAILS FOR INFORMATION ONLY NOT FOR APPROVAL
SHEK TSAI PO STREET
ZIM FEB - 2



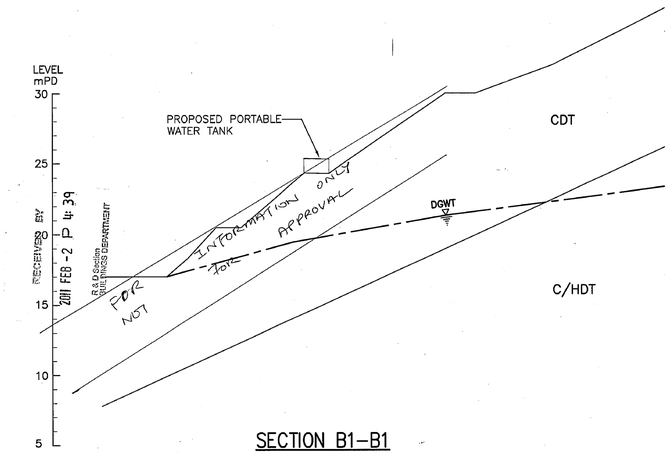
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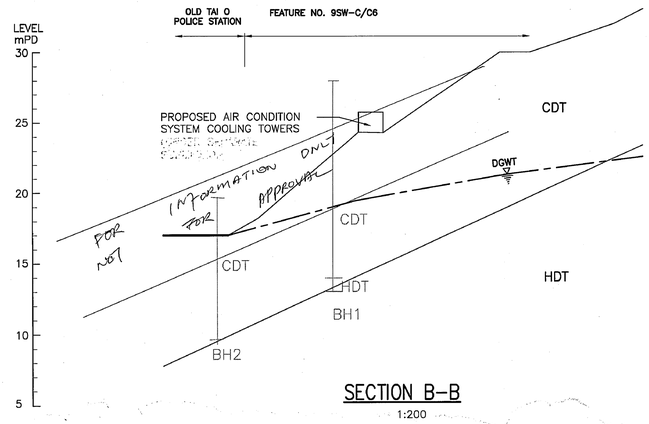
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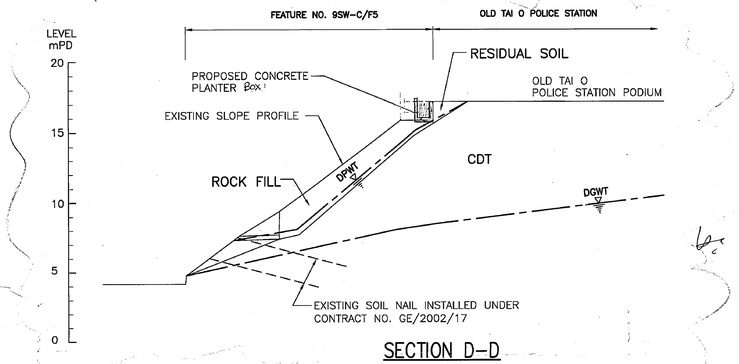
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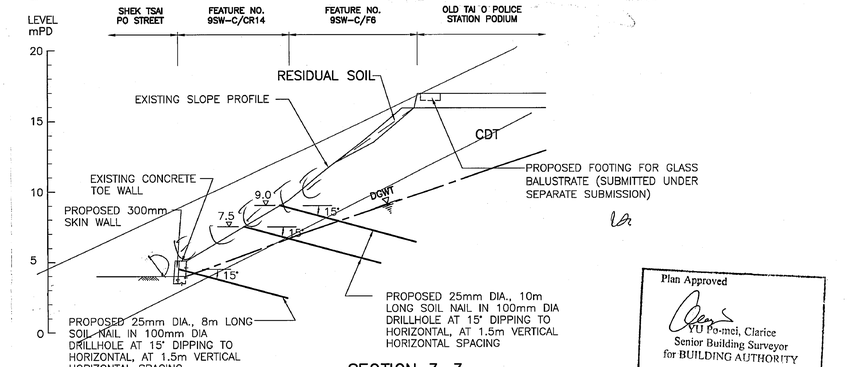
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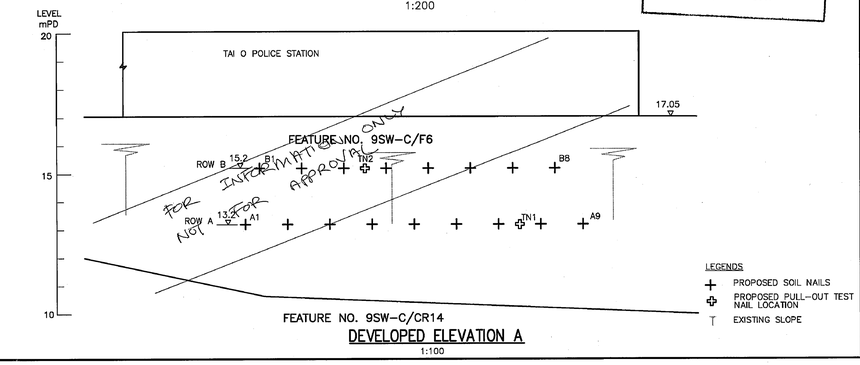
SECTION D–D

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SECTION 3–3

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DEVELOPED ELEVATION A

1:100

Plan Approved
YU Po-mei, Clarice
Senior Building Surveyor
for BUILDING AUTHORITY
– 1 MAR 2011

BD Reference No. :
BD 22-3/3022/09 (HU) (SF)

CHAN Henry
Registered Geotechnical Engineer
RGE 12/03

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Rev	Sta.	Description	Date	By	Chk.	Ver'd
E	IFS	BD SUBMISSION (AMENDMENT NO. 2)	01/11	LC	ML	MN
D	IFS	BD APPROVAL	15/04/10			
C	IFS	BD SUBMISSION (AMENDMENT NO. 1)	03/10	LC	ML	MN
B	IFS	AMENDMENT NO.1	01/10	LC	ML	MN
A	IFA	DRAWING	11/09	LC	ML	MN
–	IFS	BD SUBMISSION	09/09	LC	ML	MN

Revisions

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Authorized Person / Registered Structural Engineer :

Project :

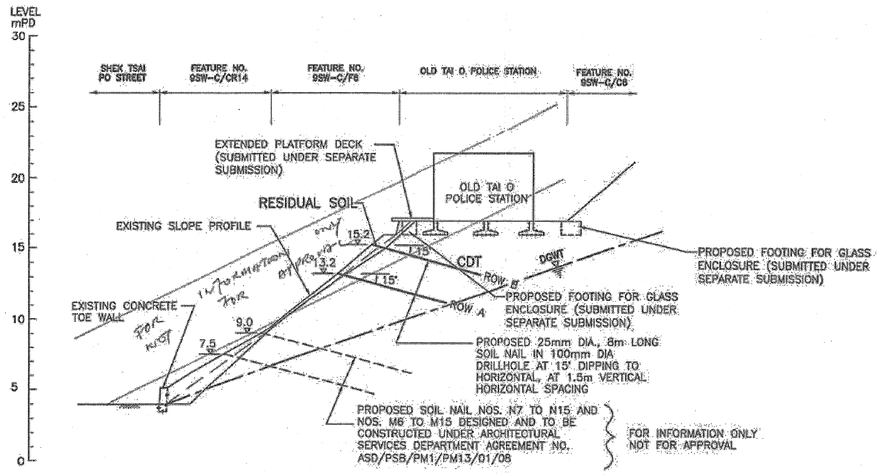
REVITALISATION SCHEME CONVERSION OF OLD TAI O POLICE STATION INTO TAI O HERITAGE HOTEL

Drawing Title :

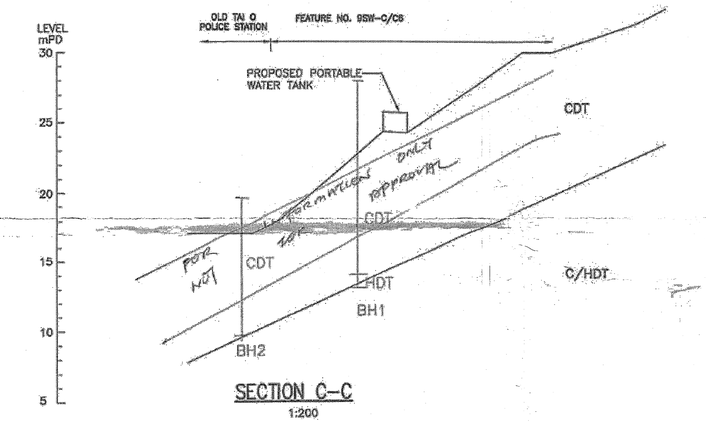
SECTIONS FOR SITE FORMATION

Drawn :	LC	Date :	12/09	Job No. :	091427
Checked :	ML	Date :	12/09	Cad File :	P093113_ELS03E
Approved :	MN	Date :	12/09	Scale :	AS SHOWN
Drawing No. :	P093113/ELS03			Rev.	E

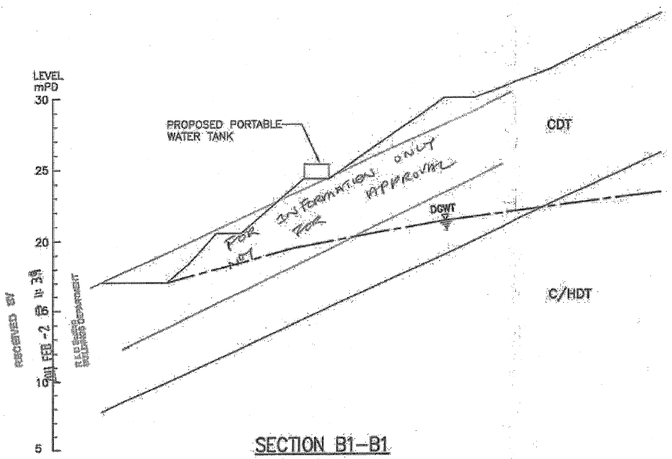
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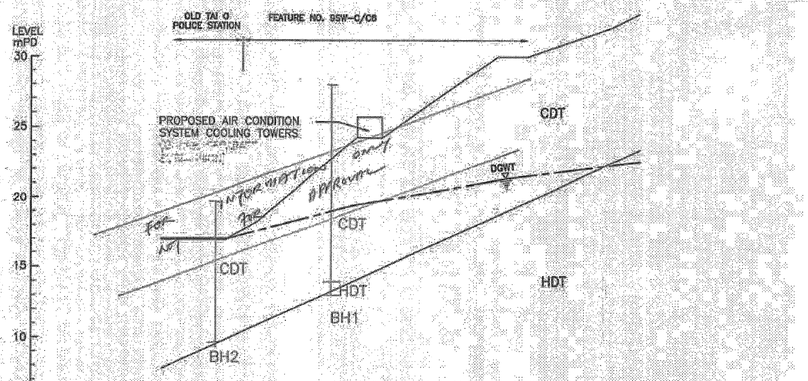
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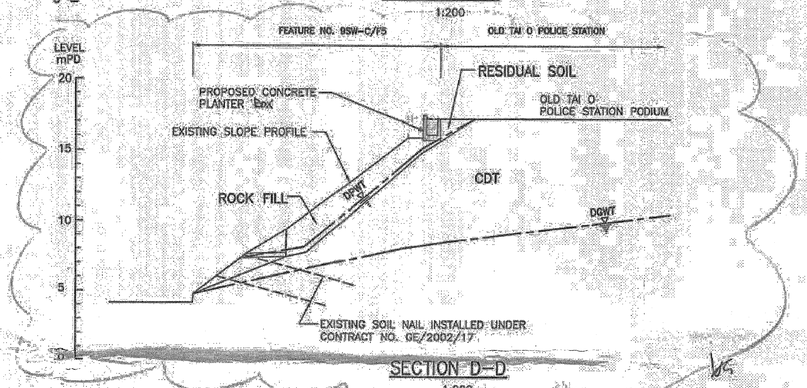
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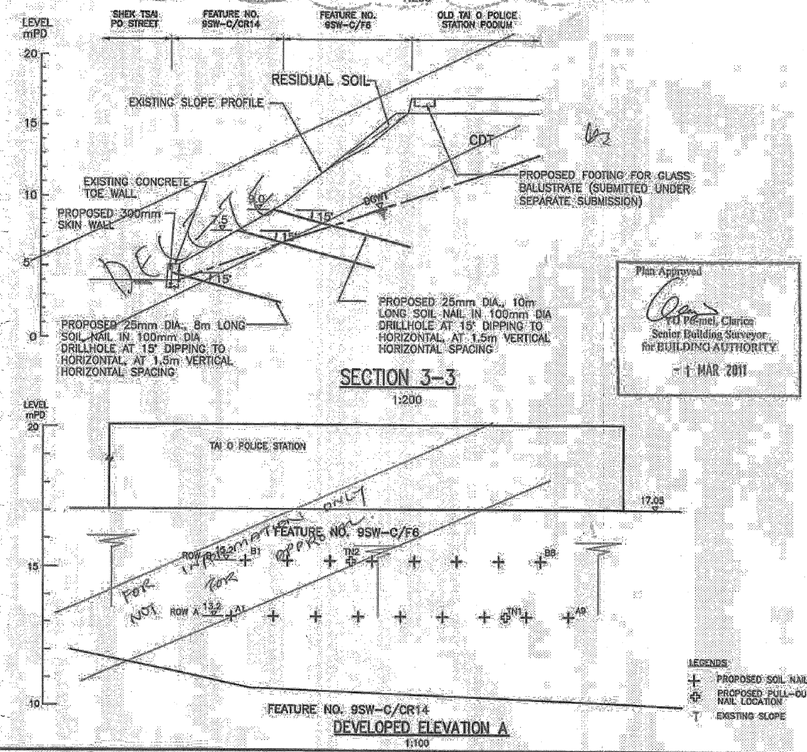
SECTION B1–B1
1:200



SECTION B–B
1:200



SECTION D–D
1:200



SECTION 3–3
1:200

DEVELOPED ELEVATION A
1:100

Plan Approved
for BUILDING AUTHORITY
- 1 MAR 2011

BD Reference No. :
BD 22-3/3022/09 (HU) (SF)

"The works shown on these plans are Type II works (Site Formation Works) in respect of which consent is applied for the purpose of Fast Track consent application under regulation 33 of the Building (Administration) Regulations."

CHAN Henry
Registered Geotechnical Engineer
RGE 12/05

RECORD PLAN

E	IFS	BD SUBMISSION (AMENDMENT NO. 2)	01/11	LC	ML MN
D	IFS	BD APPROVAL	15/04/10	-	- -
C	IFS	BD SUBMISSION (AMENDMENT NO. 1)	03/10	LC	ML MN
B	IFS	AMENDMENT NO.1	01/10	LC	ML MN
A	IFA	DRAWING	11/09	LC	ML MN
-	IFS	BD SUBMISSION	08/09	LC	ML MN
Rev	Stat.	Description	Date	By	Chk. Appd

Revisions

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CONSULTING ENGINEERS LTD
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19 / F., Bonham Strand Trade Centre, 180 - 183 Queen's Road East, Wanchai, Hong Kong. Tel : 2529 8012 Fax : 2865 8057

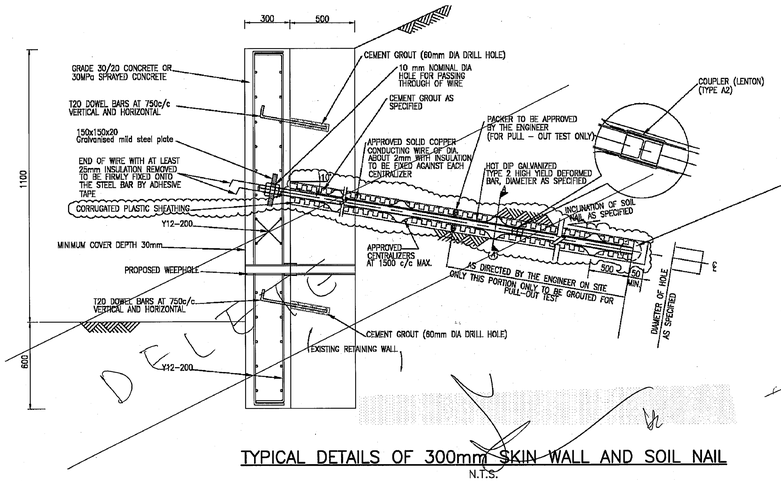
Authorized Person / Registered Structural Engineer :

Project :
REVITALISATION SCHEME CONVERSION OF OLD TAI O POLICE STATION INTO TAI O HERITAGE HOTEL

Drawing Title :
SECTIONS FOR SITE FORMATION

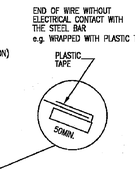
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Approved :	MN	Date :	12/09	Scale :	AS SHOWN
Drawing No. :	P093113/ELS03			Rev.	E

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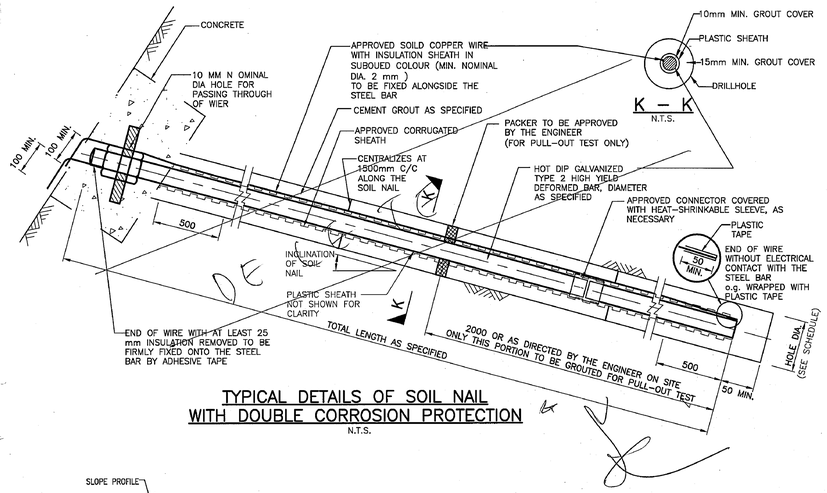
TYPICAL DETAILS OF 300mm SKIN WALL AND SOIL NAIL

N.T.S.



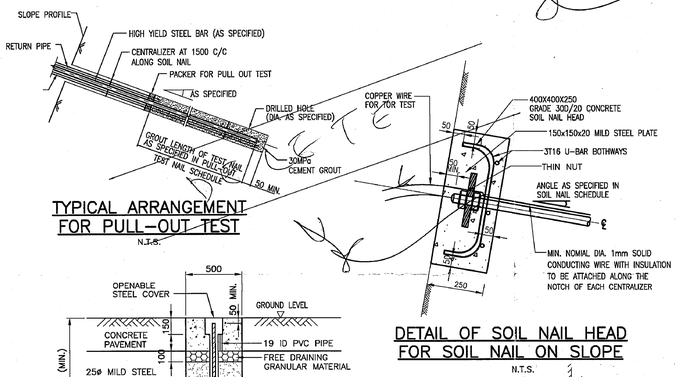
NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. DRILLHOLE SHALL BE COMPLETELY FILLED WITH GROUT TO THE FINISHED SLOPE SURFACE.
3. MINIMUM GROUT COVER OF 20mm SHALL BE PROVIDED TO THE BAR.
4. PROTRUSION OF WIRE SHALL BE PROVIDED IF NAIL LENGTH CHECKING AFTER CASTING OF SOIL NAIL HEAD IS REQUIRED.
5. THE CONDUCTING WIRE AND HEAT-SHRINKABLE SLEEVE SHALL BE OMITTED FOR SOIL NAILS UNDER PULL OUT TEST.



TYPICAL DETAILS OF SOIL NAIL WITH DOUBLE CORROSION PROTECTION

N.T.S.



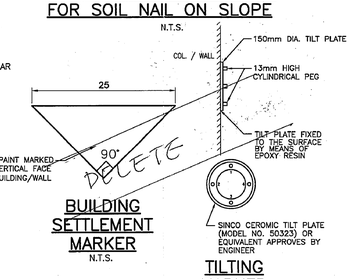
TYPICAL ARRANGEMENT FOR PULL-OUT TEST

N.T.S.

DETAIL OF SOIL NAIL HEAD FOR SOIL NAIL ON SLOPE

GROUND SETTLEMENT MARKER

N.T.S.



BUILDING SETTLEMENT MARKER

N.T.S.

TILTING MARKER

N.T.S.

TYPICAL DETAILS OF PLANTER

N.T.S.

TYPICAL DETAILS OF PIEZOMETER

N.T.S.

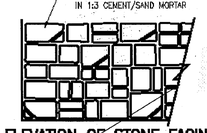
CONSTRUCTION SEQUENCE FOR PLANTER

1. REMOVE EXISTING ROCKFALL RETAIN AND EROSION CONTROL MAT ON THE FACE OF FEATURE NO. 6SW-C/F5.
2. EXCAVATE TO 175mm (MIN) BELOW THE EXISTING FACE LEVEL TO FORM THE BASE OF THE PLANTER FOR BINDING LAYER AND COMPACTION OF PLANTER BASE.
3. CONTRUCT THE PLANTER.

ELEVATION A1-A1
1:50

ELEVATION OF STONE FACING ON SLOPE SURFACE (RANDOM PATTERN)

N.T.S.



NOTES FOR STONE FACING TO CONCRETE SURFACES

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. A TRIAL PANEL OF SIZE 1m x 1m SHALL BE PREPARED FOR ENGINEER'S APPROVAL.
3. WEEPHOLES SHALL BE PROVIDED AS 1.2m c/c HORIZONTALLY AND VERTICALLY, THEY SHALL BE CONSTRUCTED OF SINGLE CONTINUOUS PVC PIPES EXTENDED TO THE OUTER FACE OF THE ENGINEER'S AGREEMENT, WATER TIGHT SOCKETED JOINTS MAY BE PROVIDED AS AN ALTERNATIVE.
4. ALTERNATIVE TREATMENT TO CONCRETE SURFACE INCLUDES RIB FINISH, LARGE BLOCK PATTERN, APPLICATION OF PAINT AND SPRAYED GRANITE.

"The works shown on these plans are Type II works (Site Formation Works) in respect of which consent is applied for the purpose of Fast Track consent application under regulation 33 of the Building (Administration) Regulations."

Plan Approved
YU Po-mei, Clarice
Senior Building Surveyor
for BUILDING AUTHORITY
- 1 MAR 2011

BD Reference No. : BD 22-3/3022/09 (HU) (SF)

NOTES ON CONCRETE AND REINFORCEMENT

1. CONCRETE GRADE FOR ALL CONCRETE STRUCTURES SHALL BE 30D/20.
2. ALL TESTING AND SAMPLING OF CONCRETE SHALL COMPLY WITH CS1:1990 BY A LABORATORY ACCREDITAL UNDER HOKLAS.
3. MINIMUM FOR CONCRETE SHALL 50mm.
4. REINFORCEMENT SHALL COMPLY WITH CS2:1995 WITH MINIMUM YIELD STRENGTH:
   - HIGH YIELD (TYPE T) = 460MPa
   - HOT ROLLED MILD STEEL (TYPE R) = 250MPa
5. CALLING UP FOR REINFORCEMENT:

   20 T 20-150 B1 ABR
   - NUMBER OF BAR
   - TYPE OF BAR
   - BAR DIAMETER
   - ADDITIONAL INFORMATION
   - POSITION OF BARS
   - SPACING OF BARS

6. BAR REINFORCEMENT FROM EACH BATCH SHOULD NOT FIXED UNTIL TESTING OF THE BATCH HAS BEEN COMPLTED IN ACCORDANCE WITH CS:1995, AND TEST CERTIFICATES SUBMITTED TO THE RSE.
7. LOOSE RUST, EXCESSIVE FLAKY RUST OR MILL-SCALE ON REINFORCEMENT MUST BE REMOVED BY WIRE BRUSHING, BADLY CORRODED, DAMAGED OR SCALING STEEL SHOULD NOT BE USED.
8. SUFFICIENT NUMBERS OF SPACERS, CHAIRS AND SUCH OTHER SUPPORTS AS MAY BE NECESSARY SHOULD BE PROVIDED TO MAINTAIN THE REINFORCEMENT IN THE CORRECT LOCATION AS SHOWN IN THE APPROVED PLANS AND TO MAINTAIN THE SPCIFIED MINIMUM COVER AT ALL POSITIONS. SPCAERS AND CHAIRS SHOULD BE PLACED AT A MAXIMUM SPACING OF 1.5m. HOWEVER, IN THE CASE PF 20mm DIAMETER OR SMALLER BARS THE SPACING FO CHAIRS AND SPACERS SHOULD BE SUITABLY REDUCED TO AVIOD SAGGING.
9. SUFFICIENT NUMBER OF INTERSECTING AND LAPPING BARS SHOULD BE TIED BY TYING WIRE, TYING DEVICES OR CLIPS TO PREVENT MOVEMENT OF THE REINFORCEMENT. THE ENDS OF TYING WIRE, TYING DEVICES AND CLIPS SHOULD NOT ENCROACH INTO THE COVER TO REINFORCEMENT.
10. LAPS AND JOINTS IN REINFORCEMENT SHOULD BE LOCATED ONLY AT THE SPECIFIED POSITION. REINFORCEMENT CONNECTORS MAY ONLY BE USED WHERE SPECIFIED OR AS OTHERWISE AGREED WITH THE RSE. THEY SHOULD BE FIXED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS AND USING EQUIPMENT RECOMMENDED BY MANUFACTURER.
11. REINFORCEMENT WHICH IS FREE-STANDING SHOULD BE SECURED IN POSITION AND BRACED TO PREVENT MOVEMENT DUE TO WIND AND OTHER LOADS. PREFABRICATED REINFORCEMENT CAGES SHOULD BE ADEQUATELY SUPPORTED AND BRACED BEFORE LIFTING.
12. THE REGISTERED CONTRACTOR SHOULD INFORM THE REGISTERED STRUCTURAL ENGINEER TO INSPECT ALL REINFORCEMENT AFTER FIXING AND WELL IN ADVANCE OF CONCRETING TO ALLOW FOR ANY NECESSARY RECTIFICATION.
13. THE REGISTERED GENERAL BUILDING CONTRACTOR SHOULD ENSURE THAT THE FIXING OF REINFORCEMENT IS CARRIED OUT IN ACCORDANCE WITH THE APPROVED PLANS, AND THAT NO DISPLACEMENT OF REINFORCEMENT TAKES PLACE DURING PLACEMENT AND COMPACTION OF CONCRETE.
14. PFA SHALL COMPLY WITH BS 3892 PART 1 EXCEPT THAT THE CRITERION FOR MAXIMUM WATER REQUIREMENT MAY NOT APPLY. THE PERCENTAGE OF PFA SHALL NOT EXCEED 25% BY MASS OF THE CEMETTIOUS CONENT, UNLESS NOTED OTHERWISE.
15. THE REACTIVE ALKALI CONTENT OF CONCRETE EXPRESSED AS THE EQUIVALENT SODIUM OXIDE CONTENT/CUBIC METRE OF CONCRETE SHOULD NOT EXCEED 3.0kg WHEN DETERMINED IN ACCORDANCE WITH THE SPECIFICATION ITEMS GIVEN IN APPENDIX A OF PNAP NO.180.

(HENRY KWOK)
Registered Geotechnical Engineer
RGE 12/05

Rev.	Stat.	Description	Date	By	Chk.	Ver'd
E	IFS	BD SUBMISSION (AMENDMENT NO. 2)	01/11	LC	ML	
D	IFS	BD APPROVAL	15/04/10			
C	IFS	BD SUBMISSION (AMENDMENT NO. 1)	03/10	LC	ML	MN
B	IFA	AMENDMENT NO.1	01/10	LC	ML	MN
A	IFA	BD APPROVED DRAWING	11/09	LC	ML	MN
–	IFS	BD SUBMISSION	09/09	LC	ML	MN

Revisions

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Civil . Structural . Geotechnical . Environmental
10 / F., Greatmany Centre, 109 - 115 Queen's Road East, Wanchai, Hong Kong. Tel : 2528 6217 Fax : 2865 2657

Authorized Person / Registered Structural Engineer :

Ir HAW Tin-kai, Ricky
Registered Structural Engineer (RSE 22/00)

Project :

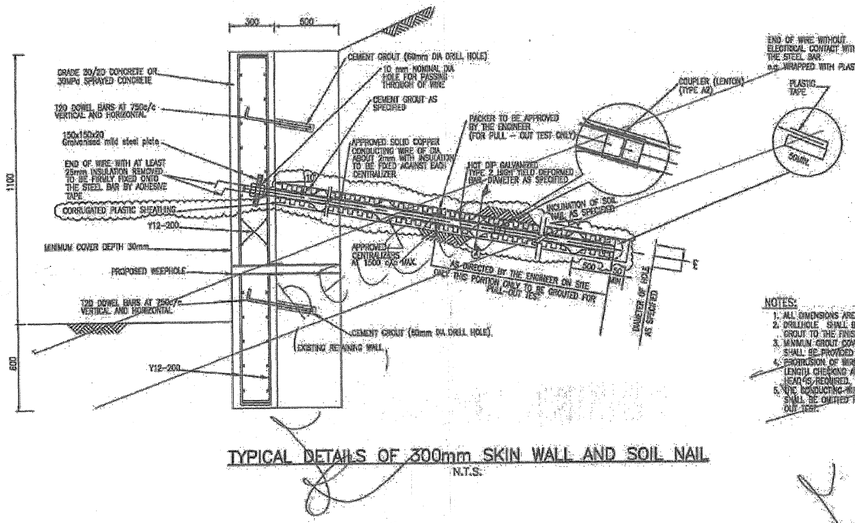
REVITALISATION SCHEME CONVERSION OF OLD TAI O POLICE STATION INTO TAI O HERITAGE HOTEL

Drawing Title :

TYPICAL DETAILS

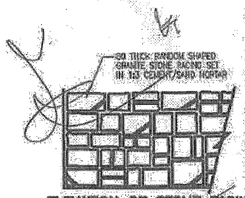
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Approved :	MN	Date : 12/09	Scale :	N.T.S	
Drawing No. :	P093113/ELS04			Rev.	E

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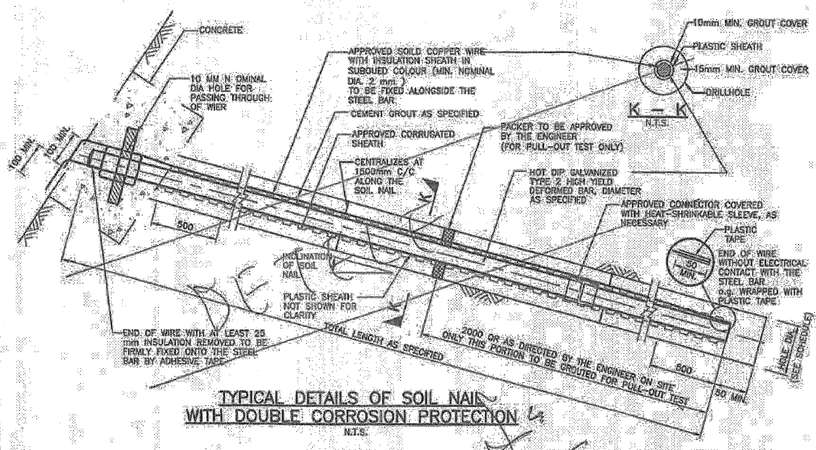
TYPICAL DETAILS OF 300mm SKIN WALL AND SOIL NAIL
N.T.S.

NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. DRILLHOLE SHALL BE COMPLETELY FILLED WITH GROUT TO THE FINISHED SLOPE SURFACE.
3. MINIMUM GROUT COVER OF 30mm SHALL BE PROVIDED TO THE BAR.
4. PROTRUSION OF WIRE SHALL BE PROVIDED IF WIRE LENGTH CHECKED AFTER CASING OF SOIL NAIL HEAD IS REMOVED.
5. THE CONDUCTING WIRE AND HEAT-SHRINKABLE SLEEVE SHALL BE OMITTED FOR SOIL NAILS UNDER PULL OUT TEST.

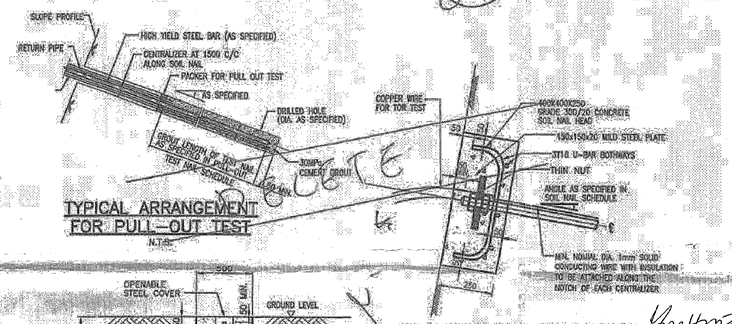


ELEVATION OF STONE FACING ON SLOPE SURFACE (RANDOM PATTERN)
N.T.S.

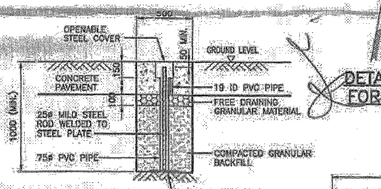
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4. ALTERNATIVE TREATMENT TO CONCRETE SURFACE NOTES RIB FINISH, LARGE BLOCK PATTERN, APPLICATION OF PAINT AND SPRAYED GRANITE.



TYPICAL DETAILS OF SOIL NAIL WITH DOUBLE CORROSION PROTECTION
N.T.S.



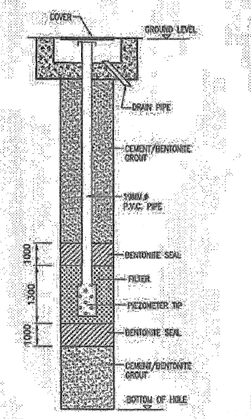
TYPICAL ARRANGEMENT FOR PULL-OUT TEST
N.T.S.



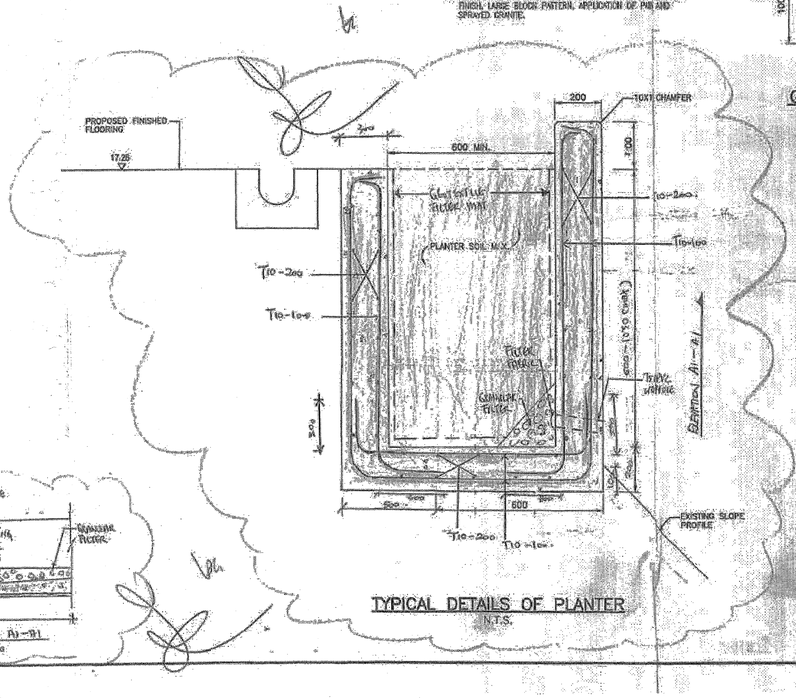
GROUND SETTLEMENT MARKER
N.T.S.



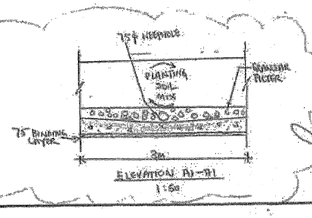
BUILDING SETTLEMENT MARKER
N.T.S.



TYPICAL DETAILS OF PIEZOMETER
N.T.S.



TYPICAL DETAILS OF PLANTER
N.T.S.



CURRENT ROOFTOP SOLUTION FOR PLANTER
1. REMOVE EXISTING ROOFING, NETTING AND EXISTING CONCRETE MAT ON THE DECK (REFERENCE NO. 90W-C/FS).
2. CONCRETE TO 175mm (MIN.) BELOW THE DECK LEVEL TO FORM THE PLANTER.

RECEIVED 2 FEB 2011

BD References No.: BD 22-3/3022/09 (HU) (SF)

NOTES ON CONCRETE AND REINFORCEMENT

1. CONCRETE GRADE FOR ALL CONCRETE STRUCTURES SHALL BE 30D/20.
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   – HIGH YIELD (TYPE T) = 460MPa
   – HOT ROLLED MILD STEEL (TYPE R) = 250MPa
5. CALLING UP FOR REINFORCEMENT:

20 T 20-150 B1 ABR
NUMBER OF BAR
TYPE OF BAR
BAR DIAMETER
ADDITIONAL INFORMATION
POSITION OF BARS
SPACING OF BARS

6. BAR REINFORCEMENT FROM EACH BATCH SHOULD NOT FIXED UNTIL TESTING OF THE BATCH HAS BEEN COMPLETED IN ACCORDANCE WITH CS:1995, AND TEST CERTIFICATES SUBMITTED TO THE RSE.
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8. SUFFICIENT NUMBERS OF SPACERS, CHAIRS AND SUCH OTHER SUPPORTS AS MAY BE NECESSARY SHOULD BE PROVIDED TO MAINTAIN THE REINFORCEMENT IN THE CORRECT LOCATION AS SHOWN IN THE APPROVED PLANS AND TO MAINTAIN THE SPECIFIED MINIMUM COVER AT ALL POSITIONS. SPACERS AND CHAIRS SHOULD BE PLACED AT A MAXIMUM SPACING OF 1.5m. HOWEVER, IN THE CASE OF 20mm DIAMETER OR SMALLER BARS THE SPACING FOR CHAIRS AND SPACERS SHOULD BE SUITABLY REDUCED TO AVOID SAGGING.
9. SUFFICIENT NUMBER OF INTERSECTING AND LAPPING BARS SHOULD BE TIED BY TYING WIRE, TYING DEVICES OR CLIPS TO PREVENT MOVEMENT OF THE REINFORCEMENT. THE ENDS OF TYING WIRE, TYING DEVICES AND CLIPS SHOULD NOT ENCROACH INTO THE COVER TO REINFORCEMENT.
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15. THE REACTIVE ALKALI CONTENT OF CONCRETE EXPRESSED AS THE EQUIVALENT SODIUM OXIDE CONTENT/CUBIC METRE OF CONCRETE SHOULD NOT EXCEED 3.0kg WHEN DETERMINED IN ACCORDANCE WITH THE SPECIFICATION ITEMS GIVEN IN APPENDIX A OF PNAP NO.160.

CHAN Henry
Registered Geotechnical Engineer
RGE 12/05

CHAN Henry
Registered Geotechnical Engineer
RGE 12/05

RECORD PLAN

E	WS	BD SUBMISSION (AMENDMENT NO. 2)	01/11	LC	ML
D	WS	BD APPROVAL	19/04/10		
C	WS	BD SUBMISSION (AMENDMENT NO. 1)	03/10	LC	ML MN
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A	WS	BD APPROVED DRAWING	11/09	LC	ML MN
–	WS	BD SUBMISSION	06/09	LC	ML MN
Rel	Stat.	Description	Date	By	Chk. by

Revisions

ESA 工程顧問有限公司
CONSULTING ENGINEERS LTD
Civil / Structural / Geotechnical / Environmental
Tel : 2595 6277 Fax : 2865 2627

Authorised Person / Registered Structural Engineer :

Plan Approved
for BUILDING AUTHORITY
-1 MAR 2011

"The works shown on these plans are Type II works (Site Formation Works) in respect of which consent is applied for the purpose of Fast Track consent application under regulation 33 of the Building (Administration) Regulations."

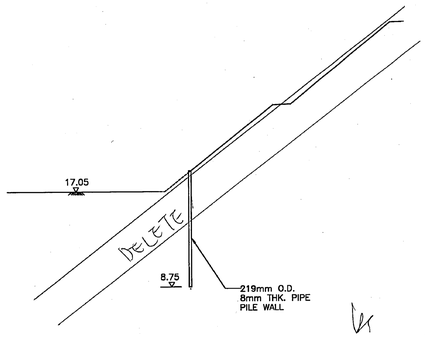
Project :
REVITALISATION SCHEME CONVERSION OF OLD TAI O POLICE STATION INTO TAI O HERITAGE HOTEL

Drawing Title :
TYPICAL DETAILS

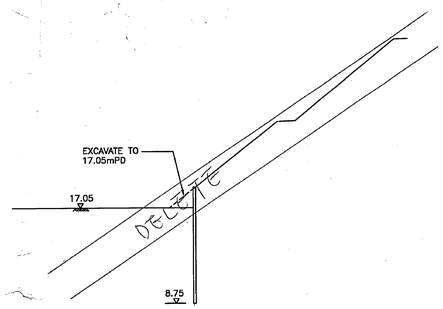
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Approved :	MN	Date :	12/09	Scale :	N.T.S
Drawing No. :	P093113/ELS04			Rev. :	E

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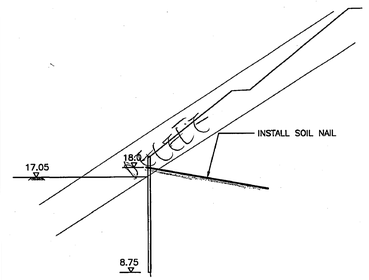
CONSTRUCT SEQUENCE FOR AREA BEHIND WATER TANK



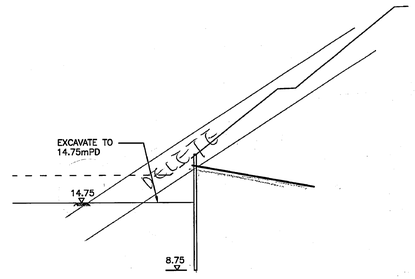
1) INSTALL PIPE PILE AT 400mm C/C TO +8.75mPD.



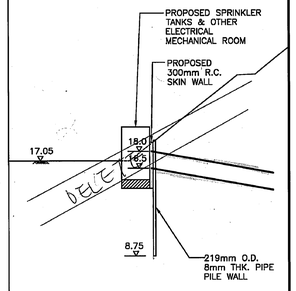
2) EXCAVATE THE SLOPE TO LEVEL OF EXISTING GROUND LEVEL (+17.05mPD)



3) INSTALL SOIL NAIL AT LEVEL +18.0mPD



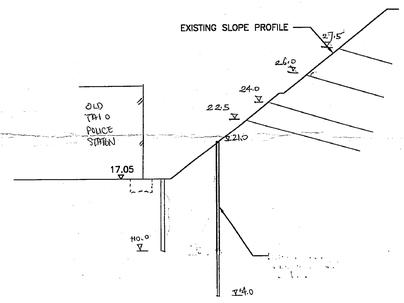
4) EXCAVATE THE SLOPE TO LEVEL +14.75mPD



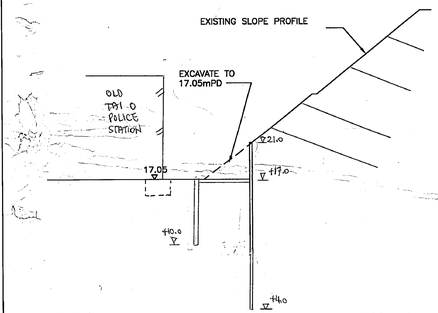
5) INSTALL SOIL NAIL AT +16.5mPD, CONSTRUCT 300mm SKIN WALL, CONSTRUCT FOOTING AND NEW BUILDING STRUCTURE.

BD Reference No. :

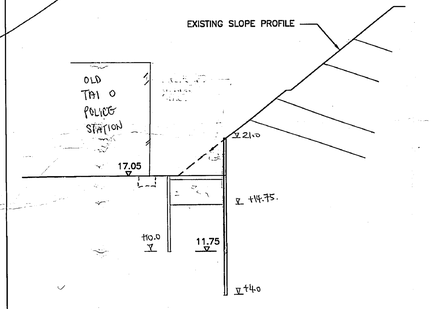
CONSTRUCT SEQUENCE . . . . . FOR SITE FORMATION



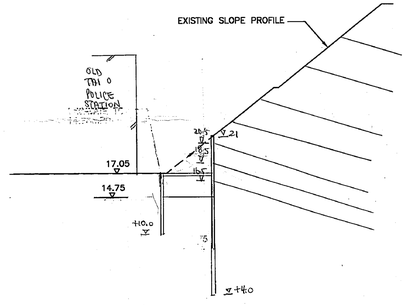
1) INSTALL SOLDIER PILE WALL AT 875mm C/C TO +4.0 mPD
INSTALL SOIL NAIL IN SLOPE AREA



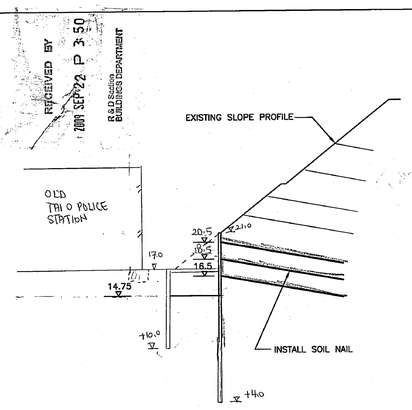
2) UPON APPROVAL AND CONSENT OF EXCAVATION AND LATERAL SUPPORT PLAN, EXCAVATE TO +17.0 mPD, INSTALL SCROT AT +17.0 mPD AND CONTINUE EXCAVATION BELOW THE +17.0 mPD.



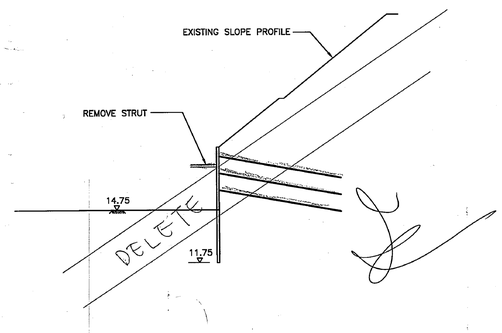
3) EXCAVATE TO LEVEL +14.75 mPD UPON APPROVAL AND CONSENT OF EXCAVATION AND LATERAL SUPPORT PLAN



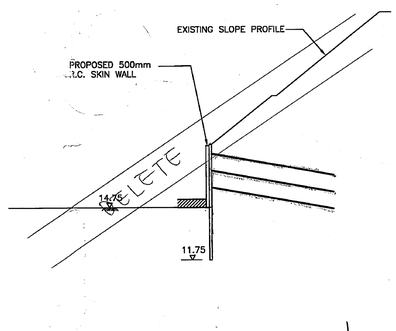
4) INSTALL SOIL NAILS AT +20.5mPD, +18.5 mPD AND +16.5mPD UPON APPROVAL AND CONSENT OF EXCAVATION AND LATERAL SUPPORT PLAN



5) CONSTRUCT SKIN WALL AND CONTINUE SITE FORMATION WORK FOR NEXT STAGE UPON APPROVAL AND CONSENT OF EXCAVATION AND LATERAL SUPPORT PLAN



6) REMOVE CORNER STRUT.



6) INSTALL 500mm R.C. SKIN WALL AND CONSTRUCT PROPOSED BUILDING STRUCTURES,

Plan Approved
YU Po-mei, Clarice
Senior Building Surveyor
for BUILDING AUTHORITY
19 NOV 2009

CHAN Henry
Registered Geotechnical Engineer
RGE 12/05

Ir LAW Kin Kei, Ricky
Registered Structural Engineer (RSE 22/09)

Rev.	Stat.	Description	Date	By	Chk.	Ver'd
–	IFT	BD SUBMISSION	09/09	LC	ML	MN

Revisions

ESA 工程顧問有限公司
CONSULTING ENGINEERS LTD
Civil . Structural . Geotechnical . Environmental
10 / F., Greatmany Centre, 109 - 115 Queen's Road East, Wanchai, Hong Kong. Tel : 2528 8217 Fax : 2865 2657

Authorized Person / Registered Structural Engineer :

Project :

REVITALIZATION SCHEME TO CONVERSION OF OLD TAI O POLICE STATION INTO TAI O HERITAGE HOTEL.

Drawing Title :

CONSTRUCTION SEQUENCE . . . . . FOR SITE FORMATION

Drawn :	LC	Date :	08/09	Job No. :	081401
Checked :	ML	Date :	08/09	Cad File :	081401_ELS05.dwg
Approved :	MN	Date :	08/09	Scale :	AS SHOWN
Drawing No. :	P093113/ELS05			Rev.	–

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Proposed Access (Inclined Lift) for the Existing Residential Development in "Green Belt" and "Residential (Group C) 1" Zones at No. 17 Bowen Road, Mid-Levels, Hong Kong

(Pre-submission)

Comments	Responses
Comments from Antiquities and Monuments Office (Contact Person: Mr. LEUNG Yu Hin, Tel: 2655 0810)	
The proposed application site is located in the close vicinity to a declared monument, namely the 21-Arch Section of the Bowen Aqueduct. Prior consultation with AMO should be made if there are any works, development, redevelopment or rezoning proposals that may affect the said declared monument and its immediate environs. Appropriate mitigation measures should be properly devised and implemented to ensure that the structural stability and integrity of the declared monument will not be adversely affected throughout the proposed works. AMO would provide comments on the proposed works from the heritage conservation perspective upon receipt of future departmental referrals.	Noted. The declared monument and its immediate environs will not be affected by the Proposal.
Comments from Transport Department (Contact Person: Ms. Annie Ka-yuet TANG, Tel: 2829 5458)	
It is understood that the proposed inclined lift is located away from public road connecting the RoW of the private lot and the lot itself not serving as a public access. TD therefore is not in a position to comment on the planning permission regarding the inclined lift within "GB" and "R(C)" zones on private and government land falling outside TD's management ambit.	Noted.
As per the traffic impact to Bowen Road, the applicant is reminded to consider the appropriate traffic and transport arrangements to support the construction of the proposed development under the given land conditions. Vehicles accessing certain section of Bowen Road or accessing Bowen Road via Bowen Drive must hold a valid restriction / prohibition zone permit where appropriate.	Noted.

Comments	Responses
Comments from Highways Department (Contact Person: Ms. Iris S S CHEUNG, Tel: 2231 5618)	
(i) The loading and unloading of materials and machinery, the access path of the construction details should be provided to this office especially structural maintenance team for comment as HF10 is located at the vicinity of the construction site;	Noted. The relevant materials will be submitted in later stage when details of proposed works are available.
(ii) The proposed method statement including the foundation plan, Hoarding and Drainage Plan should be provided to this office to ensure the minimum disturbance to existing carriageway and footpath;	Noted. The relevant materials will be submitted in later stage when details of proposed works are available.
(iii) Bowen Road is currently a major jogging path at Peak, the proposed construction works should minimize the effect to the pedestrians and traffic flow to Bowen Road;	Noted.
(iv) Currently there is a mesh fence for providing security at Bowen Road, you should also seek comments from Police when the details of the proposed works have been ready for consideration.	Noted.
Comments from Environmental Protection Department (Contact Person: Mr. Kelvin Ki-fung CHOI, Tel: 2835 1594)	
(i) Estimated quantities of excavated materials, if any, to be generated from the proposed works;	Excavated materials will be generated mainly from erection of lift pit for proposed access lift. The estimated quantities are approximately $15m^3$ (lift pit size: 5m x2m x1.5m) below ground level, comprising rock and soil. All excavated materials will be removed from site and properly disposed.
(ii) Any access road or haul road would be formed for the proposed works;	No access road or haul road will be formed for the proposed works.
(iii) Whether standard mitigation measures and good site practices for the construction works will be adopted.	Yes, and proper monitoring by consultant teams will be arranged to ensure standard mitigation measures and good site practices for the construction works will be adopted.
Comments from Geotechnical Engineering Office, Civil Engineering and Development Department (Contact Person: Mr. T.K. TSE, Tel: 2762 5384)	
It is noted that the maximum gradient across the site is greater than 15°. The applicant is required to submit a Geotechnical Planning Review Report (GPRR) in support of the planning application. The essential contents of a GPRR are given in the attached GEO Advice Note (**Annex**).	Noted. A GPRR (**Appendix 3**) has been conducted and enclosed for review.

Comments	Responses
Comments from Drainage Services Department (Contact Person: Mr. Calvin Lo, Tel: 3101 2364)	
1. In principle, we have no adverse comment on the proposed access (Inclined Lift) works from the public drainage maintenance viewpoint. In addition, the Authorized Person (AP) of the applicant is reminded of the following general comments:-	Noted.
2. It is the developer's responsibility to identify/locate the existing government sewers and stormwater drains to which drainage connections from his site are to be proposed. The AP should verify the existence of any drains/sewers/utilities and also their exact locations, levels and alignments on site in order to ascertain the positions and levels of the proposed manholes and the associated connection works. The AP should also verify that the existing government drains/sewer, to which connections are proposed, are in normal working conditions and capable of taking the discharge from the site. Besides, for any excavation works over or in close vicinity to existing government drains/sewers, the AP should notify DSD in writing at least 14 working days before backfilling the excavation works and arrange joint site inspection with DSD prior to covering up. The AP is also reminded that any person wilfully, except with the permission in writing of the Authority, or negligently damages, alters, disconnects or otherwise interferes with any public sewer or drain or any connection therewith, shall be guilty of an offence under Section 6 of Public Health and Municipal Services Ordinance (Cap 132).	Noted.
3. This Department will only take over those public drainage facilities constructed on government land (except for right of way) with proper access, located downstream of the terminal manholes and falling outside the boundary of private lots / other facilities owned by other parties.	Noted.
4. The AP is required to liaise with relevant utility undertakers to obtain the latest records, plans and alignments of their utilities in order to ensure the feasibility of the proposed drainage works. The AP is also required to excavate inspection pits and conduct utility detection to verify the alignments of utilities shown in such utility records if considered necessary.	Noted.

Comments	Responses
5. Appropriate sedimentation tanks for proper treatment of site discharge should be provided, properly maintained and operated.	Noted.
6. Should any undue settlement or damage of the existing public drainage installations be detected, the piling/foundation/excavation works should be stopped immediately by the developer who shall report the matter to the Building Authority and this Department as soon as possible. In the event of any damage caused to the existing public drainage installations by the above works, the developer should be responsible for making good the damage at his own cost and to our satisfaction.	Noted.
7. Under the Water Pollution Control Ordinance (Cap 358), discharge of wastewater into stormwater drains is not permitted. The AP shall ensure that the proposed sewerage works shall convey all wastewater, including but not limited to those wastes generated by the domestic use of toilets, water closets, baths, showers, sinks, basins and other sanitary and kitchen fitments, through the sewage terminal manhole(s) to the public sewers. Besides, to ensure the sustainability of the public sewerage network, the AP shall ensure that the surface runoff within the development site will be collected and discharged via a stormwater drainage system and not be drained to the public sewerage network.	Noted.
Comments from Water Supplies Department (Contact Person: Mr. Terry LAW, Tel: 2152 5737)	
Please note that there are some existing fresh water mains within the site and are affected by the proposed development. Free access should be allowed for WSD at any time to carry out operation and maintenance of these water mains. In case the project proponent considers that diversion of these water mains is required, they should study the feasibility of diverting these water mains. If diversion is considered feasible, the project proponent should submit their proposal for WSD's consideration and approval. The water mains diversion work shall be carried out by the project proponent at their own cost to the satisfaction of WSD. WSD will only carry out the connection works to the existing network and the associated connection cost should be borne by the project proponent.	Noted.

Comments	Responses
Comments from Fire Services Department (Contact Person: Mr. QIU Yi, Tel: 2733 5845)	
He has no specific comment on the proposal subject to fire service installations and water supplies being provided to the satisfaction of Director of Fire Services.	Noted.
Detailed fire safety requirements will be formulated upon receipt of the formal submission of general building plans.	Noted.
The provision of emergency vehicular access in the subject work shall comply with the standard as stipulated in Section 6, Part D of the Code of Practice for Fire Safety in Buildings 2011, which is administered by the Buildings Department.	Noted.
Nevertheless, should the proposed work affect any provision of emergency vehicular access to nearby buildings, the consultant should make a separate enquiry to his Department to ensure the feasibility of the work.	Noted. The emergency vehicular access to nearby buildings will not be affected by the Proposal.
Comments from Urban Design and Landscape, Planning Department (Contact Person: Ms. Vanessa TSANG, Tel: 3565 3942; Mr. NGAI Chak-man, Tel: 3565 3955)	
Visual Aspect 2. According to the Supporting Planning Statement (SPS), the Site, with an area of about 89.6m^2, involves a proposed access (i.e. inclined lift, with a dimension of approx. 2.2m in height and 1.5m in width) and the associated works area. The proposed access with a length of about 32m is positioned adjacent to the existing gate at the lower section of the right of way (about +127.6mPD) extending to the platform of Caronia (about +146mPD). The applicant may wish to provide visual illustrations of the proposed access to support the claim of having “negligible physical and visual impact onto the surrounding area” in the “GB” zone.	Noted. Visual illustrations have been provided to support the claim of having “negligible physical and visual impact onto the surrounding area” (**Figure 3.3** of **SPS**).
3. Our comments are made based on the existing available information of this pre-submission enquiry. We reserve our detailed comments upon receipt of the visual illustrations, if any.	Noted.

Comments	Responses
Landscape Aspect General Comments 2. Based on the aerial photo of 2024, the Site is located in an area of Residential Urban Fringe landscape character comprising woodlands within the "GB" zone, fitness trails, tennis courts and residential buildings. The proposed use is not entirely incompatible with the existing landscape character of the Site.	Noted.
3. With reference to para. 2.1.2, the Site is primarily a vegetated slope with portion occupied by a temporary manual conveying system. According to the aerial photo of 2024, there are some existing tree(s)/vegetation within the Site. The applicant stated that there will be no adverse landscape impact in para. 5.1.2. It is mentioned in the table under para. 4.4.1 that "only 1 no. of tree of common species will be affected" and the "affected will be transplanted in the immediate surrounding. However, no further information on tree survey, impact on existing trees/landscape resources and proposed mitigation measures/tree treatment is provided in the pre-submission. However, the tree proposed to be transplanted may be located on slope, the feasibility of obtaining a viable rootball and the tree location should be elaborated with tree survey information and tree photos. Moreover, the receptor site location should be indicated.	A Landscape Proposal and Tree Survey has been carried out and enclosed for review (**Appendix 2** refers). Upon further review, a total of 11 nos. of tree have been identified within a 3m buffer of the Site. Amongst which, 5 nos. are proposed to be felled and 8 nos. of compensatory trees are proposed in the immediate surroundings. Please refer to the **Appendix 2** for details.
Advisory Comments 4. The applicant should be advised that approval of the application does not imply approval of tree works such as pruning, transplanting, felling and compensatory/ new tree planting. The applicant is reminded to seek approval for any proposed tree works from relevant departments prior to commencement of the works.	Noted.
5. The applicant is reminded that approval of the application does not imply approval of the site coverage of greenery requirements under BD's PNAP APP-152. The site coverage of greenery calculation should be submitted separately to BD/LandsD for approval.	Noted.

Comments	Responses
Comments from Electrical and Mechanical Services Department (Contact Person: Mr. Henry CHEUNG, Tel: 2808 3692)	
Electricity Safety Please be advised that he have no particular comment on the document from electricity supply safety aspect. However, in the interests of public safety and ensuring the continuity of electricity supply, the parties concerned with planning, designing, organizing and supervising any activity near the underground cable under the mentioned document should approach the electricity supplier (i.e. HK Electric) for the requisition of cable plans to find out whether there is any underground cable within and/or in the vicinity of the concerned site. They should also be reminded to observe the Electricity Supply Lines (Protection) Regulation and the "Code of Practice on Working near Electricity Supply Lines" established under the Regulation when carrying out works in the vicinity of the electricity supply lines.	Noted. Relevant electricity supplier will be contacted in later stage when details of proposed works are available.
Comments from Hong Kong Police Force (Contact Person: Mr. LUI Che-ho, Philip, Tel: 2860 1003)	
The construction company must provide staff to regulate on-site traffic.	Noted. Staff to regulate on-site traffic will be provided.
Construction vehicles should not be parked outside the site in a way which causes obstruction or blockage of the road.	Noted.
Comments from Lands Department (Contact Person: Ms. Phoebe TAI, Tel: 2835 1635)	
2. The proposed inclined lift and the associated works ("Proposed Access Lift") falls within portion of Inland Lot No. 2460 ("the Lot") and part of the right of way designated for the Lot under lease ('the Right of Way"). The Lot is held under a Government lease for a term of 75 years from 24.12.1923 renewable for 75 years. According to the lease conditions, development on the Lot is restricted to one house of European type with a maximum height of thirty five feet and its exterior elevation and disposition require approval under lease. Besides, the Lessee shall construct a road or path within the Right of Way and shall uphold and maintain such road or path and everything forming portion of it or appertaining to it to the satisfaction of Director of Public Works.	Noted.

Comments	Responses
3. Apart from the above, the Proposed Access Lift also falls within Government land and would affect Slope Feature No. 11SW-D/1400 maintained by the owner of the Lot. The area of the Proposed Access Lift as stated in para. 4.1.1 of the PS i.e. approx. 86.2m^2, is subject to survey and our comment on such is reserved.	Noted. Please be clarified that the Development Site Area as stated in **para. 4.1.1** of **SPS** is approx. 89.6m^2.
4. According to para. 3.1.1 of the PS, the Proposed Access Lift provides a barrier-free access to enhance accessibility for the residents of the Lot. In this regard, advice from relevant departments, including TD and BD should be sought. Besides, as the Proposed Access Lift would affect the existing slope, expert advice from GEO, CEDD and SMS, Lands D should be sought as to whether the Proposed Access Lift would adversely affect the slope stability. Subject to the advice of relevant B/Ds, the Roads (Works, Use and Compensation) Ordinance (Cap. 370) may need to be invoked in order to effect the Proposed Access Lift. In this connection, subject to para. 6 below, the applicant has to but all relevant costs (e.g. Government administrative costs and compensation) for processing the Proposed Access Lift, under Cap. 370.	Noted.
5. While the applicant has not mentioned the future maintenance and management of the Proposed Access Lift subject to para.6 below, the applicant (i.e. the Lot owner) should take up the responsibilities of maintenance and management of the Proposed Access Lift including the portion / area falling within Government land.	Noted.
6. The Proposed Access Lift to be erected within the Lot, the Right of Way and the adjacent Government land is considered non-compliance with the lease conditions. If planning application is approved, the owner of the Lot needs to apply for a lease modification and/or other appropriate land documentation to implement the subject proposal. However, we must stress that there is no guarantee that such application will be approved, and if such application is approved by this department, acting in its capacity. as the landlord, at its discretion, it will be subject to such terms and conditions, including payment of premium and fees as imposed by this department.	Noted.

Comments	Responses
Comments from Buildings Department (Contact Person: Ms. Rita LEE, Tel: 3106 8265)	
Detailed comments on compliance with the Buildings Ordinance and allied regulations will be given upon formal building plans submission.	Noted.
For the general building plan submission of the related structure, under normal procedures, BD (as the focal point of Centralizing Processing System) will forward the submission to all relevant departments for seeking comments within their respective jurisdictions.	Noted.

Compiled by: KTA Planning Limited
Date: 17 March 2026