

Section 16 Planning Application for

**Proposed Temporary Retrievable Tiebacks for a Period of 3 Years in
“Conservation Area” Zone at Lots 15 RP (Part), 18 (Part) and 19 (Part) in
D.D. 207 and Adjoining Government Land, Sai Sha,
Shap Sz Heung, New Territories**

Planning Statement

(February 2025)

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EXECUTIVE SUMMARY

BACKGROUND AND PURPOSE OF SUBMISSION

This planning application is submitted to the Town Planning Board (the Board) under Section 16 (S16) of the Town Planning Ordinance (the Ordinance) to seek permission for proposed temporary retrievable tiebacks for a period of 3 years in "Conservation Area" zone at Lots 15 RP (Part), 18 (Part) and 19 (Part) in D.D. 207 and Adjoining Government Land, Sai Sha, Shap Sz Heung, New Territories (the Application Site). The proposed temporary retrievable tiebacks are in support of the basement construction of an adjoining comprehensive development approved under previous application Nos. A/NE-SSH/120-1 and A/NE-SSH/142, as well as for the purpose of protecting the slope in "Conservation Area" zone.

The approved comprehensive development comprises three portions (Sites A, B and C), with Site A still undergoing early site works. With a view to facilitating green construction and ensuring a safer working environment, the Applicant proposes to introduce a tieback system for basement construction in Site A, in replacement of the conventional strutting system. In order to implement the proposed tieback system, it would be necessary to install temporary retrievable tiebacks slightly extending beyond the boundary of Site A into the underground areas zoned "CA" to the west, which is the subject of the current application.

THE PROPOSED TIEBACK SYSTEM

The Application Site, i.e. the extent of proposed temporary retrievable tiebacks that falls within "CA" zone, covers an underground area of about 2,172m². Each proposed temporary retrievable tieback will have a maximum diameter of 219mm and with a length ranging from 14 to 31m, and will be inserted at a 30-degree angle from the pile wall within Site A of the development site outwards to the adjoining hillslope.

The proposed tiebacks are temporary and retrievable in nature. Upon completion of the basement construction in Site A, the tiebacks will be removed from the soil, preventing obstruction to any future underground works and minimising any potential impacts.

KEY JUSTIFICATIONS AND MERITS

The major development justifications and merits in support of the application are listed as follows:

- The proposed tieback system is in line with government's policy in promoting the use of cost-effective construction technologies;
- The proposed tieback system only involves private lots owned by the Applicant and adjoining Government Land. It serves as a better alternative to conventional strutting system in terms of construction site safety, construction time, environmental sustainability, traffic impact / road safety and cost effectiveness;
- Tieback systems have already been successfully adopted in various construction projects in Hong Kong and thus the proposed adoption will not set any undesirable precedent;
- The proposed tieback system covers only a small underground area within the Application Site and is temporary and retrievable in nature, ensuring minimal disturbance (if any) to the "CA" zone;
- The proposed tieback extent has been carefully determined in consideration of the surrounding environment to avoid existing graves and vegetation; and
- The proposed tieback system has carefully taken into account the considerations of structural, and ecological and landscape aspects.

In light of the supporting evidence presented in this Planning Statement, the Board is cordially invited to consider the subject application favourably.

行政摘要

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

申請背景及目的

申請人現根據城市規劃條例第 16 條 (第 131 章) 向城市規劃委員會 (下稱「城規會」) 遞交規劃申請，在劃為「自然保育區」地帶的新界十四鄉西沙丈量約份第 207 約地段第 15 號餘段 (部分)、第 18 號 (部分)、第 19 號 (部分) 及毗連政府土地 (下稱「申請地點」)，擬議臨時可移除錨杆 (為期 3 年)，以推進毗鄰已核准綜合發展 (規劃申請編號 A/NE-SSH/120-1 及 A/NE-SSH/142) 的地庫建設及保護「自然保育區」地帶內的斜坡。

已核准綜合發展由三個地盤組成 (地盤 A、B、C)，其中地盤 A 仍在進行前期工程。為了促進綠色建設及確保更安全的工作環境，申請人現建議在地盤 A 引入錨杆系統，以取代傳統的支柱系統作地庫建設。而為了實施擬議的錨杆系統，申請人需將可移除錨杆臨時延伸至地盤 A 邊界之外的「自然保育區」地帶內，亦即是次申請的申請內容。

擬議錨杆系統

申請地點 (即位於「自然保育區」地帶內的擬議臨時可移除錨杆範圍) 面積覆蓋約 2,172 平方米的地底部分。擬議的臨時可移除錨杆最大直徑為 219 毫米，長度為 14 至 31 米。錨杆將以 30 度角從地盤 A 的邊界向外安裝至毗鄰山坡。

擬議的錨杆系統只屬臨時性質並可移除。當地盤 A 的地庫建設完成後，錨杆將從土壤中移除，以避免對任何未來的地下工程帶來阻礙，並最大限度地減少任何潛在的影響。

發展理據及增益

以下為支持是次規劃申請的發展理據及增益：

- 擬議錨杆系統符合政府推廣具成本效益的建造技術的政策；
- 擬議錨杆系統只牽涉申請人擁有的地段及政府土地。與傳統的支柱系統相比，擬議錨杆系統在工地安全、施工時間、環境的可持續性、交通影響/道路安全及成本效益方面均為更好的替代方案；
- 香港已有多個建築項目採用錨杆系統，因此擬議方案不會成為不良的先例；

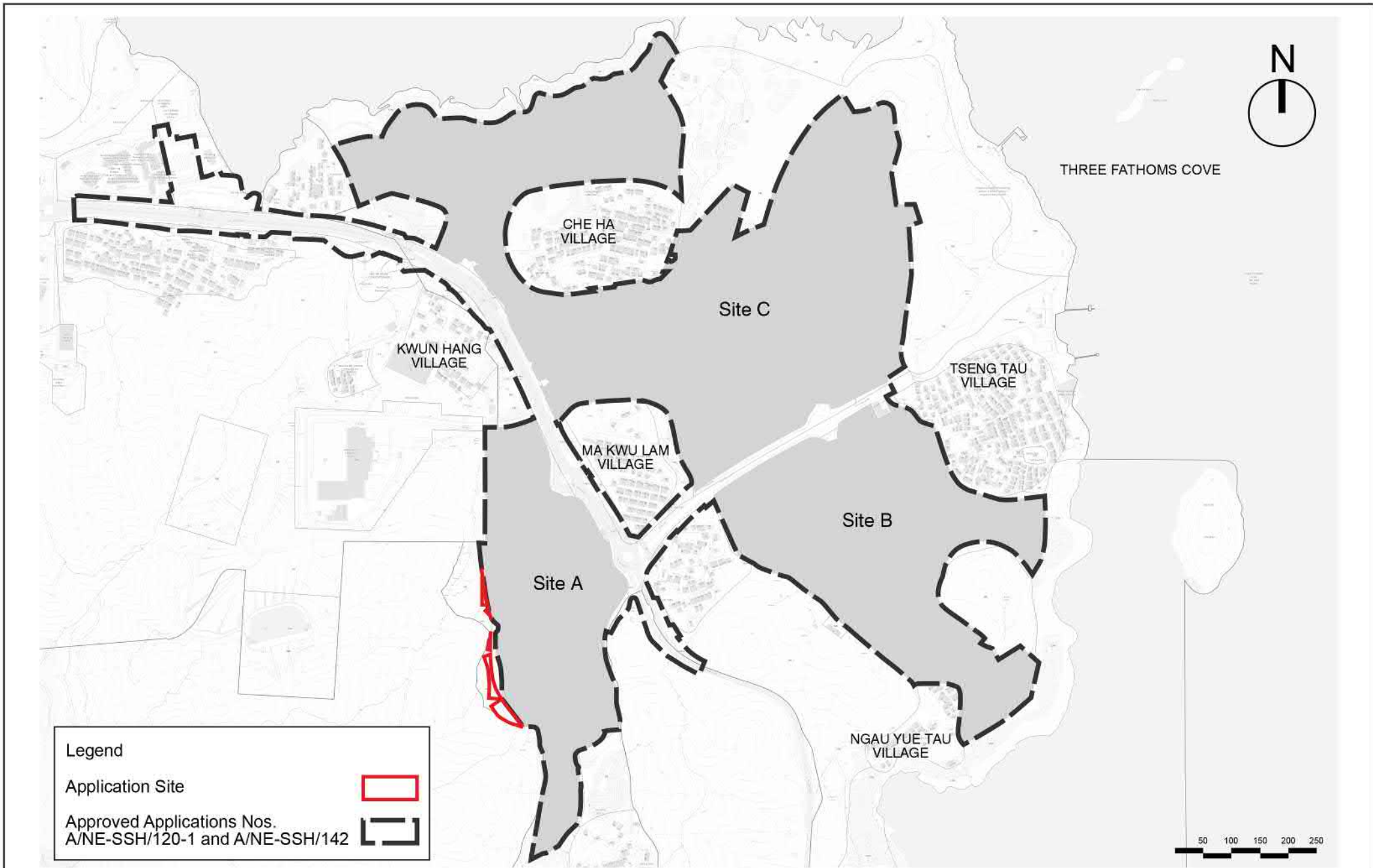
- 擬議錨杆系統只覆蓋申請地點的小部分地底，只屬臨時性質並可移除，因此對「自然保育區」地帶的潛在影響十分輕微；
- 擬議錨杆系統的範圍已仔細考慮到周邊環境，以避開現有的墳墓和植被；及
- 擬議錨杆系統已仔細考慮到結構、生態和園境方面的因素。

基於以上的發展理據現懇請城規會能對是次規劃申請予以贊同。

1 INTRODUCTION

1.1 Background

- 1.1.1 This planning application is submitted to the Town Planning Board (the Board) under Section 16 (S16) of the Town Planning Ordinance (the Ordinance) to seek permission for proposed temporary retrievable tiebacks for a period of 3 years at Lots 15 RP (Part), 18 (Part) and 19 (Part) in D.D. 207 and Adjoining Government Land, Sai Sha, Shap Sz Heung, New Territories (the Application Site). The Application Site falls within an area zoned "Conservation Area" ("CA") on the Approved Shap Sz Heung Outline Zoning Plan No. S/NE-SSH/11 (the OZP).
- 1.1.2 A S16 Planning Application (No. A/NE-SSH/120-1) was approved with conditions by the Director of Planning under the delegated authority of the Board on 14.10.2020 for a proposed comprehensive residential and commercial development with government, institution or community facilities with minor relaxation of gross floor area and building height restrictions at Tai Po Town Lots 157 RP, 253 S.A and 253 RP and Various Lots in D.D. 165, D.D. 207 and D.D. 218 and Adjoining Government Land, Sai Sha, Shap Sz Heung, New Territories. Subsequently, a S16 Planning Application (No. A/NE-SSH/142) for proposed amendments to the approved development scheme was approved with conditions by the Rural and New Town Planning Committee (RNTPC) of the Board (the Approved Comprehensive Development) (**Figure 1.1** refers). The Approved Comprehensive Development comprises three portions, with Sites A and B mainly for residential development and Site C mainly for recreational development. Subsequent to the planning approval, Site C has been substantially completed as "Go Park" whereas Site B is currently under construction. Site A (located within Lot No. TPTL 253 S.A), which adjoins the Application Site and relates to the current application, is still undergoing early site works.



1.1.3 In light of recent advancements in construction technology and with a view to facilitating green construction and ensuring a safer working environment, the Applicant has been actively exploring alternative construction methods for Site A. In particular, the Applicant proposes to introduce a tieback system (a form of excavation and lateral support system) for basement construction of the Approved Comprehensive Development in the adjoining "CDA" zone as well as for protecting the slope in the "CA" zone. The proposed tieback system is expected to offer various benefits in terms of construction site safety, cost effectiveness, works efficiency, environmental sustainability and more, which will be further discussed in **Section 3**.

1.1.4 In order to implement the proposed tieback system, temporary retrievable tiebacks will be installed from within Site A, an approved building lot primarily falling within "Comprehensive Development Area" ("CDA") zone. These tiebacks will extend to some underground areas of the adjacent hillslope zoned "CA". As temporary use or development of any land or building not exceeding a period of three years requires planning permission from the Board according to the Covering Notes of the OZP, the Applicant is submitting the subject S16 application for the proposed temporary tieback system within the "CA" zone for the Board's approval.

1.2 Report Structure

1.2.1 This Planning Statement includes the following sections:

- Section 2 describes the Application Site and its surrounding context, and reports the land status of the Application Site;
- Section 3 depicts the proposed temporary retrievable tieback in the Application Site and provides comparison with conventional strutting systems;
- Section 4 presents key considerations from landscape and ecological perspectives;
- Section 5 highlights the justifications of the proposed temporary retrievable tieback system; and
- Section 6 concludes the planning statement.

1.2.2 Other supplementary information are attached in **Appendices A to C2**.

Appendix A Tree Findings and Review Report

Appendix B Ecological Appraisal

Appendix C1 Letter from the Hong Kong Institution of Engineers to the Secretary for Development dated 18.6.2024

Appendix C2 Letter from the Secretary for Development to the Hong Kong Institution of Engineers dated 19.7.2024

2 SITE & SURROUNDING CONTEXT

2.1 Existing & Surrounding Uses of the Site

2.1.1 The Application Site comprises the underground area of four small strips of land zoned "CA" west of Site A of the Approved Comprehensive Development (**Figure 1.1** refers). The Application Site boundary indicates the area where the extent of the proposed temporary retrievable tiebacks, which will be inserted from the pile walls within Site A (zoned "CDA") outwards into the adjoining hillslope underground (zoned "CA"). The Application Site is currently partly occupied by an existing village path and partly vegetated.

2.2 Land Status

2.2.1 The Application Site involves only three private lots (namely, Lots 15 RP (Part), 18 (Part) and 19 (Part) in D.D. 207) all owned by the Applicant and some adjoining Government land.

3 THE SUBJECT MATTER – TEMPORARY RETRIEVABLE TIEBACKS IN “CA” ZONE

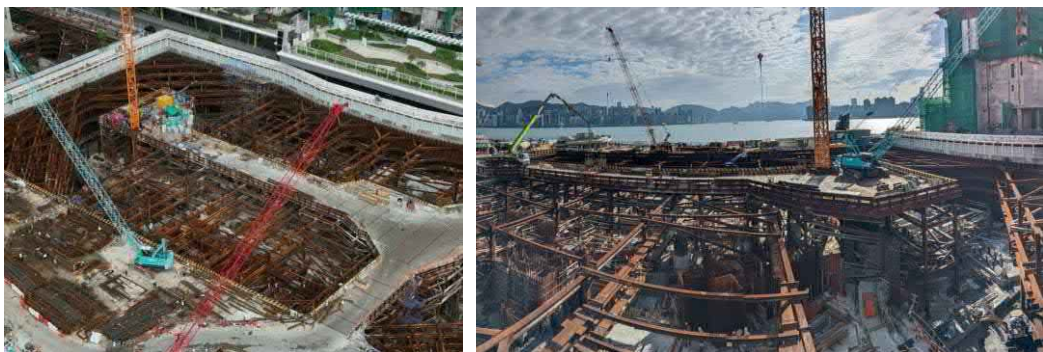
3.1 Background – Two Types of Excavation and Lateral Support (ELS) Systems

3.1.1 In Hong Kong, excavations are frequently undertaken for the construction of multi-level basements in development projects. To ensure stability and prevent adverse impacts on the surrounding environment, an excavation and lateral support (ELS) system is often necessary. Such a system provides crucial lateral support to the adjacent ground, preventing collapse or excessive deformation at the excavation site.

3.1.2 ELS systems come in various forms, each with its own advantages and considerations. While the conventional strutting system is the most widely adopted system in Hong Kong, an alternative ELS system, the tieback system, is proposed under the current application as a substitute for the conventional strutting approach.

Conventional Strutting System

3.1.3 The conventional strutting system is a method used to support excavation sites by placing horizontal struts between vertical pile walls that encircle the excavation area. These horizontal struts act as braces, supporting the pile walls against the pressure from the surrounding soil. This support is crucial for maintaining stability during the excavation process.



Reference Photos of Conventional Strutting System

Tieback System

- 3.1.4 Contrary to conventional strutting system, a tieback system does not require horizontal struts inside the construction site. Instead, it provides lateral support in excavations by utilising tiebacks that are installed into the soil behind the pile walls. These tiebacks transfer the lateral forces generated by the soil pressure to the anchor points, effectively stabilising the pile walls.



Reference Photo of Tieback System

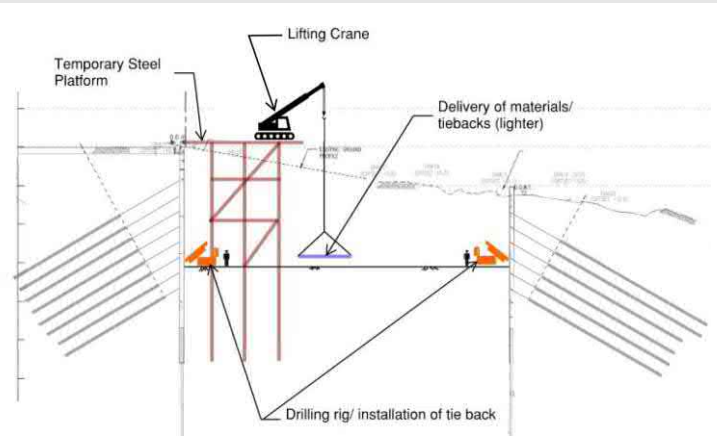
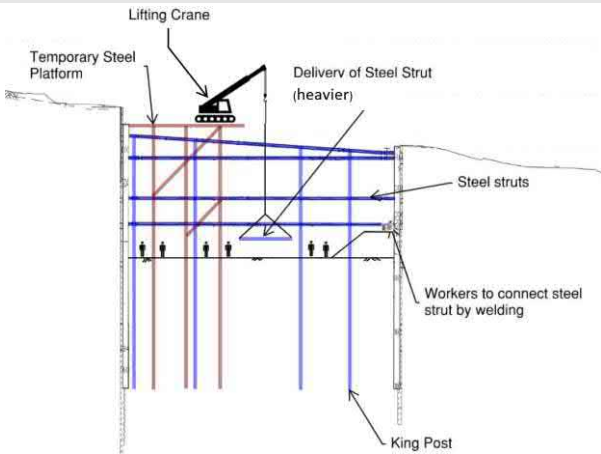
Workflow of the Two Systems

- 3.1.5 The following diagrams present a comparison of workflows of conventional strutting systems and tieback systems. In both scenarios, vertical pile walls are first installed around the excavation area prior to the commencement of excavation work. For conventional strutting systems, as soil excavation progresses, levels of struts are placed within development site to provide lateral support to the pile walls against the soil pressure, allowing the excavation to progress. As for tieback systems, instead of horizontal struts, tiers of tiebacks are installed at the pile walls projecting underground outside development site to stabilise the structure.

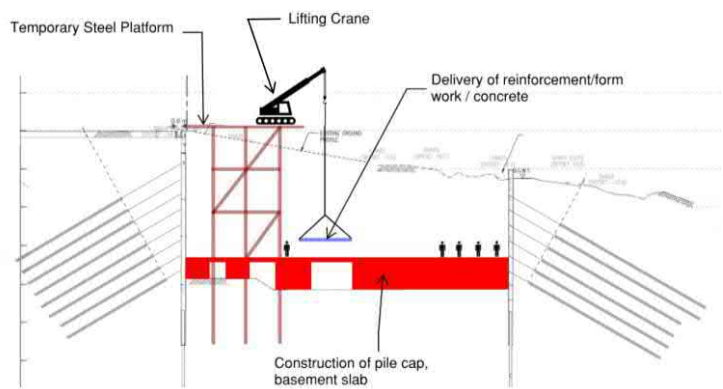
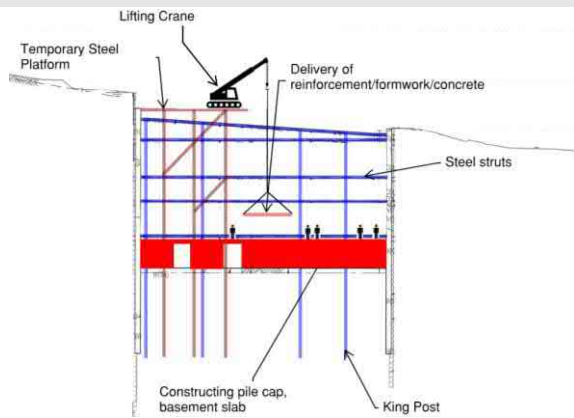
Conventional Strutting System

Tieback System

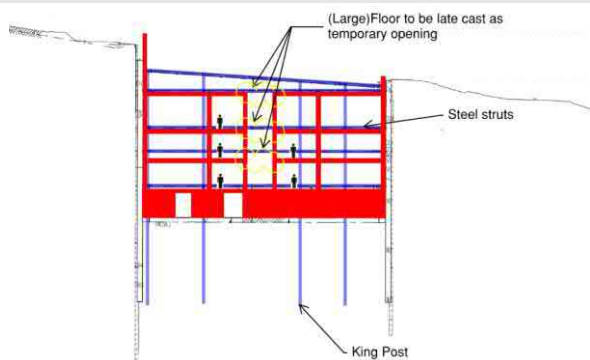
Excavation



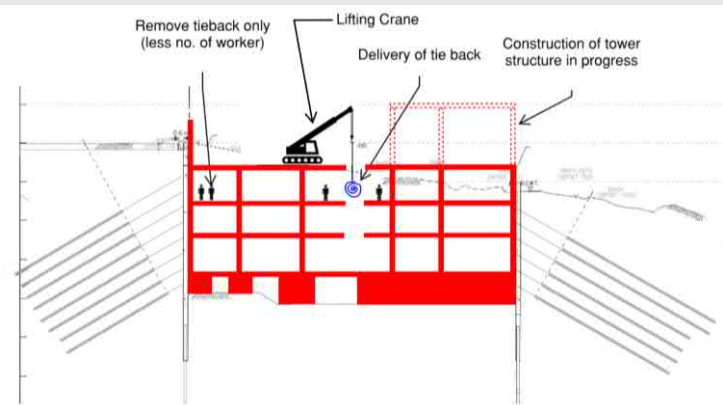
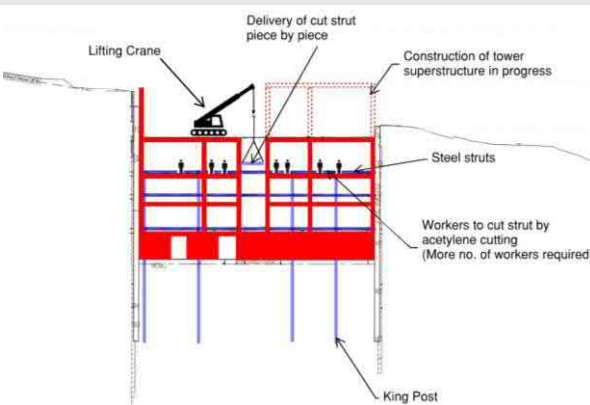
Commencement of Basement Construction



Completion of Basement Construction



Removal of Struts/Tiebacks



Indicative Workflow of Conventional Strutting System and Tieback System

3.2 Benefits of Tieback System over Conventional Strutting System

3.2.1 As tieback systems require the installation of tiebacks beyond development site boundaries, ownership issues for the land outside the development site have hindered the widespread adoption of tieback systems in construction projects in Hong Kong. Nevertheless, in scenarios where encroachment onto the adjacent land is found feasible, tieback systems could offer distinct advantages over the conventional strutting systems in terms of construction site safety, construction time, environmental sustainability, traffic impact / road safety and cost effectiveness. These advantages have been acknowledged by both the construction industry and the Government, as outlined in the correspondence between the Hong Kong Institution of Engineers (HKIE) and the Secretary for Development (**Appendices C1 and C2** refer). These advantages are detailed as follows:

Enhancing Construction Site Safety

3.2.2 Compared to conventional strutting systems, tieback systems provide a strut-free excavation works area to enhance construction site safety. Conventional strutting, which involves the installation of a complex, multi-level strutting structure within the construction site, requires more workforce. It also requires delivery, welding and cutting of heavy steel struts in restricted headroom and congested space, posing a higher risk in fire hazard and object falling. All these threaten construction workers.

3.2.3 In contrast, a tieback system eliminates the use of strutting structure and facilitates the creation of a spacious and unobstructed works area. It utilises lighter materials, reduces welding and cutting works, and requires fewer workers in a much more spacious worksite, thereby enhancing the safety of workers. The system also helps enhance stability of the slope during basement excavation, minimising unexpected ground movement to the surroundings and further contributing to construction site safety.

Shortening Construction Time

3.2.4 Another benefit of adopting a tieback system is to shorten construction time and thus minimising the duration of potential construction impact (if any) on surrounding areas. While conventional strutting systems require the installation of large amount of heavy and bulky steel struts, tiebacks are relatively easy and quick to install and can easily adapt to diverse soil conditions. The elimination of the complicated installation process for extensive strutting structures can reduce construction time by a few months, facilitating smoother project progress and reducing time delays and associated costs. By shortening the construction programme, potential disruptions from the construction site to neighbouring areas (such as Kwun Hang and Tai Tung Wo Liu villages) can also be minimised.

Promoting Environmental Sustainability

3.2.5 The adoption of tieback system also presents a more eco-friendly approach to construction practices, thereby promoting environmental sustainability. Conventional strutting systems consume large number of steel which is energy consuming in production process with a high level of carbon emission. In Hong Kong, conventional strutting systems involve intensive use of steel waling and struts, of which most are tailored-made for each particular construction site. This process generates a substantial amount of used struts that may not be reusable in other construction sites due to varying site configurations. In contrast, the proposed tieback system minimises the use of heavy and long span steel struts in basement construction, and instead utilises steel wires which will be removed after completion of excavation works and basement construction and may be recycled as far as practicable. In such a way, the use of tieback system could significantly reduce construction waste and carbon footprint, which is in line with the government's environmental objectives to reduce carbon emissions during the construction process, and will serve as a good example to promote a more sustainable construction industry.

Minimising Traffic Impact and Enhancing Road Safety

3.2.6 In addition to the reduction in construction materials, tieback systems also help mitigate traffic impact arising from construction activities and enhance road safety. When using conventional strutting systems, the transportation of long (usually 12m) and heavy steel struts to construction sites often involves a substantial number of

long vehicles, which can pose potential traffic impact on the surrounding road network and risks to other road users. In contrary, steel wires used in the proposed tieback system will be transported to the project site by normal-size trucks, with a significantly fewer amount of steel used compared with conventional strutting system. The proposed tieback system can thus reduce the traffic load and minimize the risk of traffic accidents.

Ensuring Cost Effectiveness

3.2.7 Tieback systems also stand out in comparison to conventional strutting systems in terms of cost effectiveness. By eliminating the need for extensive strutting structures, the proposed tieback system can significantly reduce material and labour costs, enhancing efficiency in resource management within construction projects.

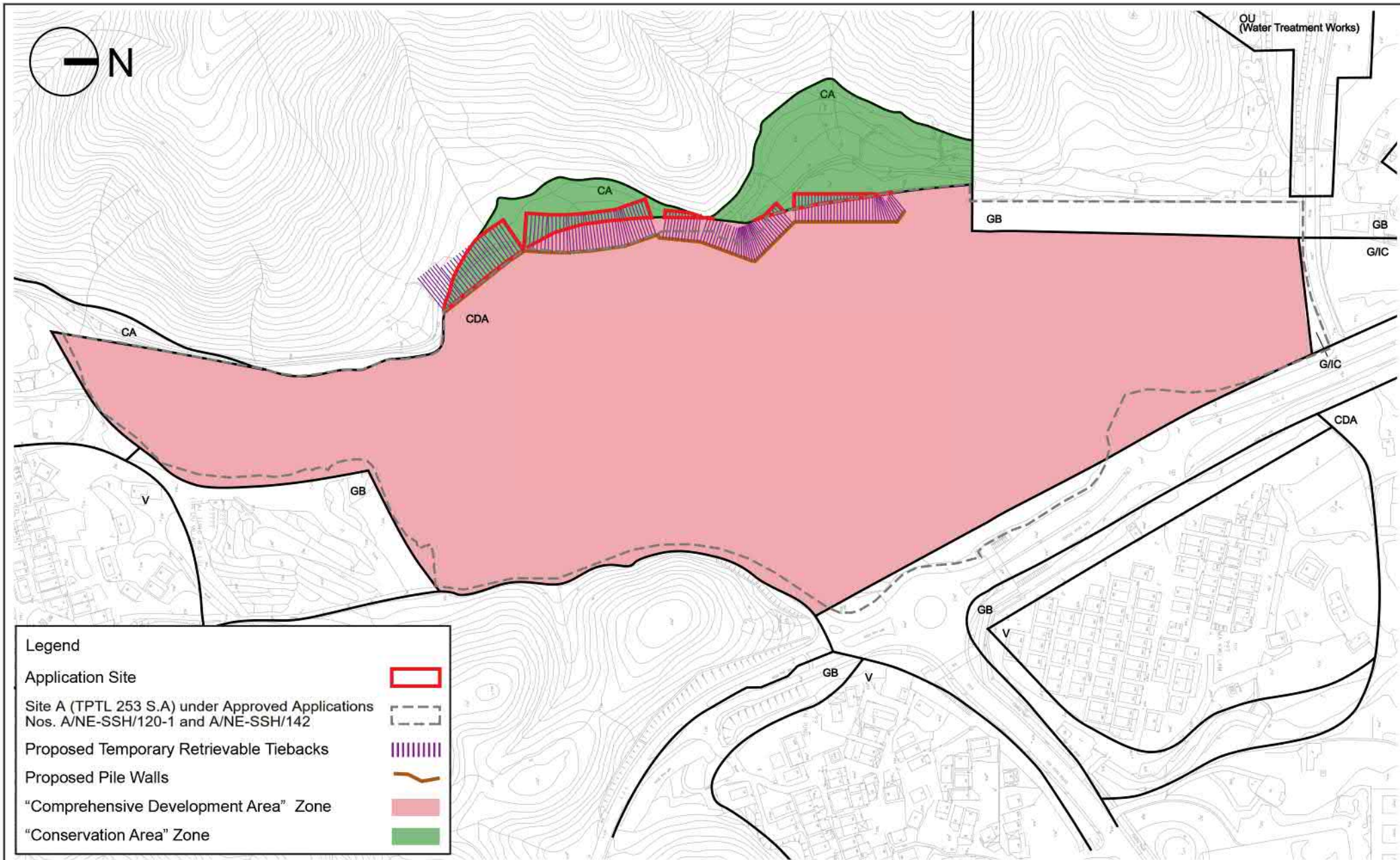
3.3 Proposed Tieback System under the Current Application

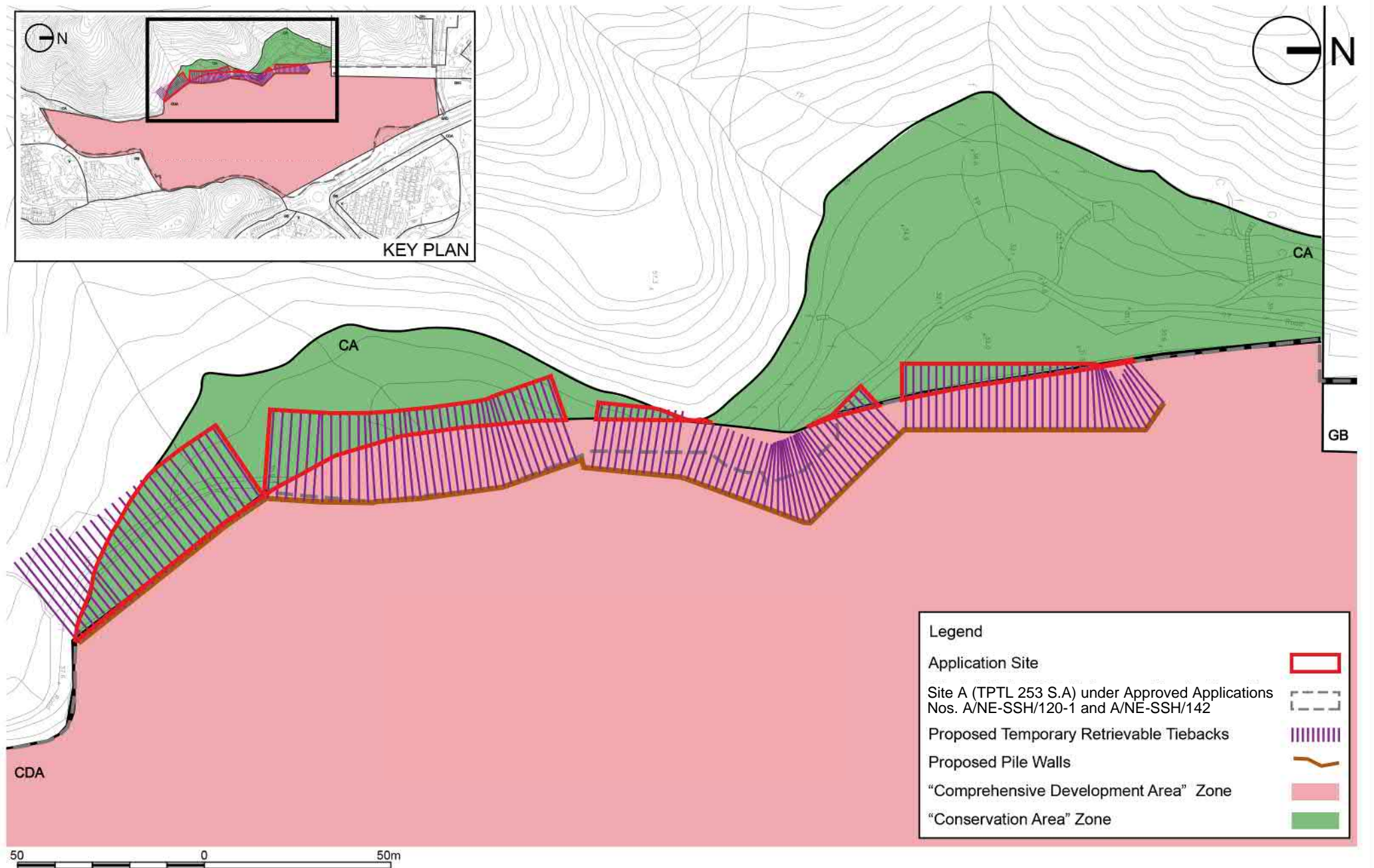
The Proposed Tieback System

3.3.1 With a view to facilitating green construction and ensuring a safer working environment, and noting the various benefits of tieback system as elaborated in **Section 3.2**, the Applicant wishes to adopt a tieback system for Site A to facilitate basement construction of the Approved Comprehensive Development in the adjoining "CDA" zone as well as for protecting the slope in the "CA" zone. The proposed temporary retrievable tiebacks will be provided underground along the western boundary of Site A, with its extent partially and temporarily overlapping with the adjoining "CA" zone. The temporary overlapping area (i.e. the Application Site) concerns only the underground area of about 2,172m² within the "CA" zone. **Figures 3.1 to 3.2** illustrate the proposed locations of the temporary retrievable tiebacks.

Installation of Tiebacks

3.3.2 As discussed in **Section 3.1**, when implementing a tieback system, vertical pile walls are first installed underground around the excavation area (i.e. within Site A under the Approved Scheme). Once soil excavation reaches the designated depth, the first layer of tiebacks is installed. The installation process involves drilling an inclined hole into the ground at the front of the pile wall, inserting the tieback anchor





Legend	
Application Site	
Site A (TPTL 253 S.A) under Approved Applications Nos. A/NE-SSH/120-1 and A/NE-SSH/142	
Proposed Temporary Retrievable Tiebacks	
Proposed Pile Walls	
"Comprehensive Development Area" Zone	
"Conservation Area" Zone	

50 0 50m

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Title Indicative Location of Proposed Temporary Retrievable Tiebacks (Underground)
(Detailed View)

Checked	DH	Drawn	PW
Rev	0	Date	Feb 2025
Scale	N/A	Figure	3.2

and the cable strands into the hole, and backfilling the hole with cement grout. The tieback will then be connected to the waling beam supporting the pile wall. While the excavated soil will not be used to backfill the tiebacks, they will be re-used in the project site as far as practicable or properly disposed of as construction materials at later stage.

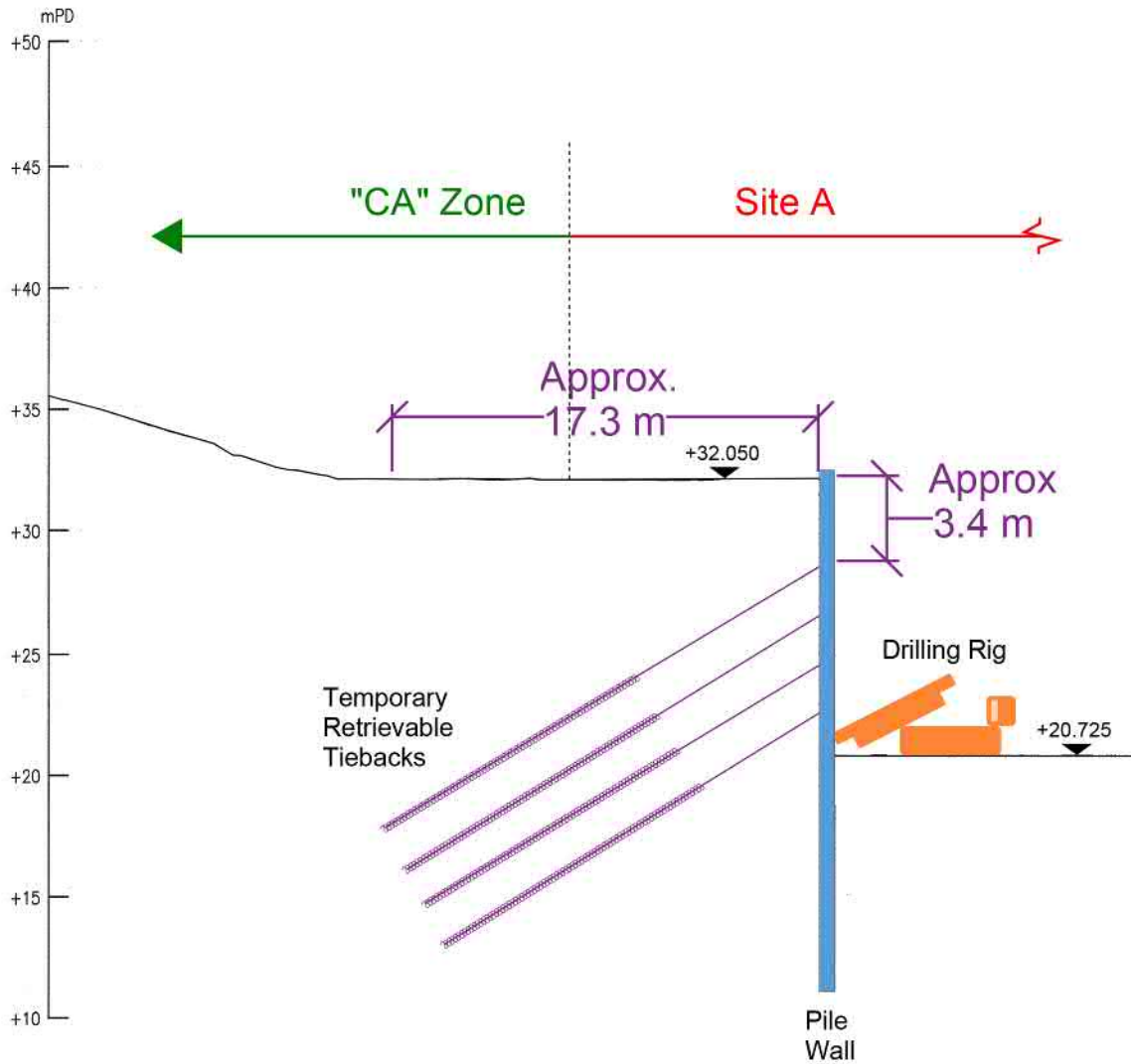
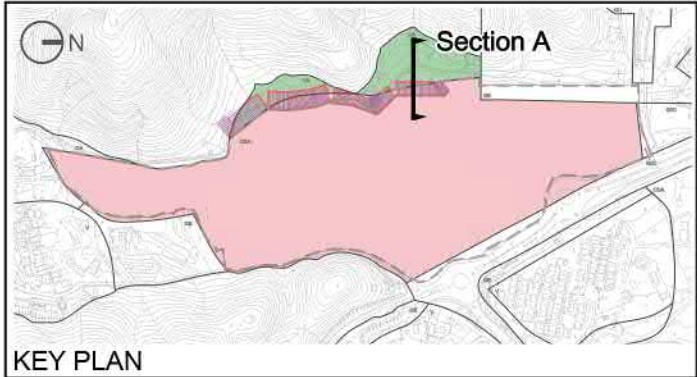
- 3.3.3 Each proposed temporary retrievable tieback will have a maximum diameter of 219mm and with a length ranging from 14 to 31m, and will be inserted at a 30-degree angle from the pile wall within Site A of the development site outwards to the adjoining hillslope. It is important to note that all tiebacks will be located underground and no above-ground work will be conducted within the "CA" zone. For illustrative purpose, **Figure 3.3** shows a section of the proposed temporary retrievable tiebacks. The details of the tiebacks are summarised in **Table 3.1**.

Table 3.1 – Details of the Proposed Temporary Retrievable Tiebacks

General	
Site Area (i.e. underground area of "CA" zone affected) (m ²) (about)	2,172
<ul style="list-style-type: none"> • Government Land (about) 	1,897
<ul style="list-style-type: none"> • Private Lots (about) 	275
Tieback Particulars	
Length of tieback (about)	14 to 31m
Dimension / diameter of tieback (about)	Max. 219mm
Insertion Angle (about)	30 degrees
Number of tiebacks (about)	480
Total amount of earth materials generated from drill holes (about)	110m ³

Carefully Determined Tieback Locations to Avoid Existing Graves and Vegetation

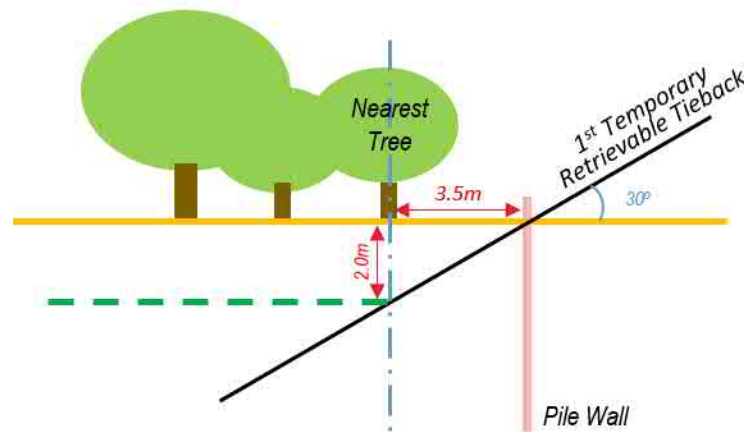
- 3.3.4 The locations and lengths of the proposed temporary tiebacks have been carefully determined by geotechnical engineers and relevant experts, taking into account the surrounding environment. Special attention has been given to avoid encroachment upon the boundary of the permitted burial ground to the west as far as practical. In cases where encroachment is inevitable, the tieback locations have been carefully adjusted to completely avoid the existing graves, minimizing potential conflicts.



Section A

Indicative Section A

3.3.5 In addition, a minimum 3.5m horizontal buffer distance will be maintained between the line of tieback installation and any existing vegetation. As illustrated in the diagram below, this 3.5m separation allows a minimum 2m vertical clearance from the ground level to existing trees, given a 30-degree angle of tieback insertion. Considering that majority of tree roots are generally located at the top 1m depth of soil¹, a 2m vertical distance would be enough to keep existing tree roots undisturbed.



Sectional Illustration of Tieback

Removal and Reuse of Tiebacks

3.3.6 The proposed tiebacks under the current application are made of steel wire and cement grout installed in ground with temporary steel casing. They are temporary in nature and are designed to be retrievable, allowing them to be removed from the "CA" zone once basement construction is completed and the lateral support they provide is no longer necessary at the excavation site. These steel wires, once removed from the ground, may be recycled as far as practicable or properly disposed of as construction waste. The completion of removal works will also be certified by engineers and photographic records will be retained.

¹ According to "Guidelines on Tree Preservation during Development (April 2015)" and "Guidelines on Soil Volume for Urban Trees" issued by Greening, Landscape and Tree Management Section (GLTMS) of Development Bureau, for common tree species, majority of tree roots (up to 90%) are typically found within top 1m soil surface.

3.4 Implementation

- 3.4.1 Upon approval of the current planning application, the Applicant will proceed with the excavation and basement construction works within Site A. The excavation works and installation of tiebacks will be carried out first, followed by the basement construction works. Upon completion of the basement construction works with permanent lateral support provided on Site A, the proposed temporary tiebacks within the Application Site / "CA" zone would be removed from within Site A. It is believed that the whole process of provision and removal of the proposed temporary tiebacks would take about 3 years for completion.

4 TECHNICAL CONSIDERATIONS

4.1 Landscape Considerations

4.1.1 A Tree Findings and Review Report (TFRR) has been prepared to assess the potential impact of the proposed temporary retrievable tiebacks on the existing tree groups. The details of the TFRR are summarised in **Appendix A**.

4.1.2 Existing trees within the Application Site consist of common native woodland species generally in poor condition or invasive species. No protected or rare species, Old and Valuable Trees (OVT), or "Champion Trees" have been identified. In the absence of extra-large or rare tree species, the tree root extent of existing woodland trees would generally be within the top 1m of the soil surface. Considering that the proposed temporary tiebacks will be installed underground without any above-ground construction works in the Application Site / "CA" zone, and given that a minimum 2m vertical clearance will be reserved between the soil surface and the proposed temporary tiebacks to be provided underground, there would be sufficient buffer to keep existing tree roots undisturbed by the proposed temporary tiebacks. In this regard, with careful planning of tieback installation method and implementation of tree protection measures such as regular tree monitoring and good control on contaminated surface run-off, no identifiable potential impact on the existing tree groups within the Application Site would be anticipated.

4.2 Ecological Considerations

4.2.1 An Ecological Appraisal has been prepared to assess the potential ecological impact of the proposed temporary retrievable tiebacks on the "CA" zone. The details of the Ecological Appraisal are summarised in **Appendix B**.

4.2.2 Compared with the conventional strutting system, the proposed tieback system will not create additional disturbance to existing surrounding vegetation and fauna, given its works within "CA" zone will be totally underground. A 3.5m horizontal buffer distance between the line of tieback installation and any existing vegetation will be maintained so as to provide a minimum 2m vertical clearance from the ground level to existing trees. As the works proceed, works within Site A will take place at even lower levels, and hence further away from the ground surface of the adjacent "CA" zone / Application Site. The pile walls provided in Site A will

effectively shield disturbance from Site A to the "CA" zone. As such, it is anticipated that the ecological impact arising from the proposed temporary tieback system would be negligible.

- 4.2.3 According to Q.1 of Part I of Schedule 2 of the Environmental Impact Assessment Ordinance (EIAO) (Cap. 499), all projects including earthworks and other building works partly or wholly in a conservation area will constitute a designated project (DP) under the EIAO unless it belongs to one of the exception items. While the proposed temporary retrievable tieback system partially encroaches onto "CA" zone, the rationale of adopting a tieback system is to provide sufficient soil stability to the steep hillslopes and to protect the natural habitat and vegetation within the "CA" zone against potential failure of existing geotechnical features. In this regard, the proposed temporary retrievable tieback system could be regarded as "slope works relating to the protection of conservation areas", which is an exemption item under Item Q.1(g) of Part I of Schedule 2 of the EIAO.

5 JUSTIFICATIONS

5.1 In line with government's policy in promoting the use of cost-effective construction technologies

5.1.1 In the 2024 Policy Address, the Government reaffirmed its determination to sustain efforts in land production by cutting red tapes and reducing costs. As part of this effort, a strategic study on construction costs is underway to propose improvement measures, such as facilitating local application of cost effective construction materials and technologies. In this connection, the proposed temporary tieback system for the Application Site, which serves as a more cost-effective alternative in providing lateral support in excavation and basement construction and slope stability, aligns seamlessly with the Government's initiative.

5.1.2 Additionally, as detailed in the letter from the Secretary for Development to the HKIE (**Appendix C2** refers), the Development Bureau (DevB) has been actively reviewing any streamlining development-related procedures to expedite housing and land supply. DevB is of the view that the use of tieback system in excavation could offer distinct advantages and would actively collaborate with relevant departments to facilitate the use of tieback systems in private development. The adoption of the proposed temporary tieback system is therefore fully in line with the Government's objectives and serves as a positive exemplar for future initiatives.

5.2 Serving as a better alternative to conventional strutting system

5.2.1 As discussed in **Sections 3.1 and 3.2**, in scenarios where encroachment onto the adjacent land is found feasible, which, in this case, involves only private lots owned by the Applicant and adjoining Government Land, tieback systems could offer distinct advantages over conventional strutting systems in terms of construction site safety, construction time, environmental sustainability, traffic impact / road safety and cost effectiveness. These benefits are summarised as follows:

(i) Enhancing Construction Site Safety

Compared to the conventional strutting systems, tieback systems will provide a more spacious, strut-free excavation works area. It utilises lighter materials, reduces welding and cutting works, and requires fewer workers in a much more spacious worksite, thereby enhancing the safety of workers. The fire hazard

risk due to welding process and the risk of falling and accidents are also reduced through the elimination of multi-level strutting system. The system also enhances stability of the slope within "CA" zone during basement excavation, minimizing unexpected ground movement to the surroundings.

(ii) Shortening Construction Time

Tieback systems can shorten construction time and hence minimising the effect on surrounding areas during construction period. Tiebacks are relatively easy and quick to install and can easily adapt to diverse soil conditions. It can reduce construction time by a few months, facilitating smoother project progress and reducing time delays and associated costs. By shortening the construction programme, disruptions to neighbouring areas can also be minimised.

(iii) Promoting Environmental Sustainability

The adoption of tieback system presents a more eco-friendly approach to construction practices to promote environmental sustainability. It reduces the use of construction materials and construction waste, thereby significantly reduces carbon footprints, which is in line with the government's environmental objectives to reduce carbon emissions during construction process and serves as a good example to promote a more sustainable construction industry.

(iv) Minimising Traffic Impact and Enhancing Road Safety

Tieback systems help mitigate traffic impacts generated by construction activities. It reduces the use of long vehicles for delivery of long, heavy and bulky steel struts, hence reducing potential road hazards and traffic congestion.

(v) Ensuring Cost Effectiveness

Tieback systems can ensure cost effectiveness by eliminating the need for extensive strutting structures, thereby reducing material and labour costs, enhancing efficiency in resource management within construction projects.

5.2.2 As shown from the correspondence between the Secretary for Development to HKIE (**Appendices C1 and C2** refer), the above-mentioned advantages of

temporary tieback systems have been acknowledged by both the construction industry and the government. These merits over conventional strutting system suggest that the proposed tieback system would be a more preferable option to provide lateral support in excavation and basement construction in Site A.

5.3 Tieback systems have already been adopted in various construction projects

5.3.1 While the conventional strutting system is the most commonly-adopted ELS system in Hong Kong, tieback systems have in fact already been used in a number of public and private development projects. As shown in the letter from the Secretary for Development (**Appendix C2** refers), with a view to fast-tracking the delivery of site formation works for public housing development, a memo of guidelines was issued by DevB in October 2022 regarding the use of soil nails scheme (i.e. tieback system), benefiting many public housing development projects.

5.3.2 In addition, the 2023-published Geotechnical Engineering Office (GEO) Publication No.1/2023 on "Deep Excavation Design and Construction" also detailed the use of tieback systems as temporary support measures in a number of construction projects and suggest its advantage of providing an excavation area free of strutting. Notable examples include the hillside excavation project in Stubbs Road, the construction of the Lung Shan Tunnel portal, the MTR viaduct in Wong Chuk Hang, the redevelopment of Grantham Hospital, among others. The successful application of tieback system in these projects suggests its reliability as an alternative to the conventional strutting system in providing lateral support, and that the proposed adoption of a tieback system will in no way set any undesirable precedent.

5.4 The limited works extent, along with the temporary and retrievable nature of the proposed tieback system, could minimise disturbance to "CA" zone

5.4.1 The proposed tieback system within the Application Site is small in scale, covering only the underground area of about 2,172m². It will not involve any above-ground works on the Application Site / "CA" zone. Furthermore, the proposed tieback system is temporary and retrievable in nature, allowing them to be removed from the soil once basement construction and slope stability works are completed. Under the current estimation, the whole basement construction and slope stability works period, including removal of the proposed tiebacks will take about 3 years for completion. In this regard, by limiting the works area [including their extent

and location (i.e. underground only)] and duration of provision of the proposed tieback system, the potential disturbance (if any) to "CA" zone will be minimised.

5.5 Proposed tieback extent has been carefully designed to avoid existing graves and vegetation

5.5.1 The locations and lengths of the proposed tiebacks have been carefully determined to avoid existing graves and vegetation. Encroachment into the adjoining permitted burial ground has been avoided as practical as possible. In cases where encroachment is inevitable, the tieback locations have been adjusted to completely avoid existing graves, minimizing potential conflicts. As for vegetation, a minimum 3.5m horizontal buffer distance will be maintained between the line of tieback installation and any existing vegetation. This buffer distance allows a minimum 2m vertical clearance underground so as to keep existing tree roots undisturbed.

5.6 Proposed tieback system has carefully taken into account the considerations of structural, landscape and ecological aspects

5.6.1 The proposed tieback system serves as an alternative ELS system for the basement construction in Site A and protecting the slope in "Conservation Area" zone. The current scheme was formulated after careful consideration from structural perspective to ensure adequate lateral support is provided by the tiebacks, as well as from landscape and ecological perspectives to minimise any potential impact on existing vegetation and ecology. As indicated by the findings of the Tree Findings and Review Report and the Ecological Appraisal, the proposed tieback system will be fully acceptable in landscape and ecological terms.

6 CONCLUSION

- 6.1 This planning application is submitted to the Board under S16 of the Ordinance to seek permission for proposed temporary retrievable tiebacks for a period of 3 years in "CA" zone at Lots 15 RP (Part), 18 (Part) and 19 (Part) in D.D. 207 and Adjoining Government Land, Sai Sha, Shap Sz Heung, New Territories.
- 6.2 The Applicant proposes to introduce a temporary retrievable tieback system for basement construction of the Approved Comprehensive Development in the adjoining "CDA" zone as well as for protecting the slope in the "CA" zone. In order to implement the proposed tieback system, it would be necessary to install temporary retrievable tiebacks extending beyond the boundary of the Approved Comprehensive Development, which includes the underground areas zoned "CA" to the west of Site A. As temporary use or development of any land or building not exceeding a period of three years requires planning permission from the Board, the Applicant is submitting the subject S16 application for the Board's approval.
- 6.3 Relevant reports on ecological and landscape impacts within the "CA" zone have been prepared and the findings concluded that there will be no insurmountable problems due to the proposed small-scale underground works.
- 6.4 The subject planning application is considered acceptable on the following grounds:-
- the proposed tieback system is in line with government's policy in promoting the use of cost-effective construction technologies;
 - the proposed tieback system only involves private lots owned by the Applicant and adjoining Government Land. It serves as a better alternative to conventional strutting system in terms of construction site safety, construction time, environmental sustainability, traffic impact / road safety and cost effectiveness;
 - tieback systems have already been successfully adopted in various construction projects in Hong Kong and thus the proposed adoption will not set any undesirable precedent;
 - the proposed tieback system covers only a small underground area within

the Application Site and is temporary and retrievable in nature, ensuring minimal disturbance (if any) to the "CA" zone;

- the proposed tieback extent has been carefully determined in consideration of the surrounding environment to avoid existing graves and vegetation; and
- the proposed tieback system has carefully taken into account the considerations of structural, ecological and landscape aspects.

6.5 In light of the above presented in this Planning Statement, the Board is cordially invited to consider the subject application favourably.

Appendix A

Tree Findings and Review Report

**Section 16 Planning Application for Proposed Temporary
Retrievable Tiebacks for a Period of 3 Years in
“Conservation Area” Zone at Lots 15 RP (Part), 18 (Part)
and 19 (Part) in D.D. 207 and Adjoining Government Land,
Sai Sha, Shap Sz Heung, New Territories**

Tree Findings and Review Report

FEBRUARY 2025

Landscape Government
Submission Consultant

Axxa Group Limited



axxa group

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- 5.0 Conclusion**

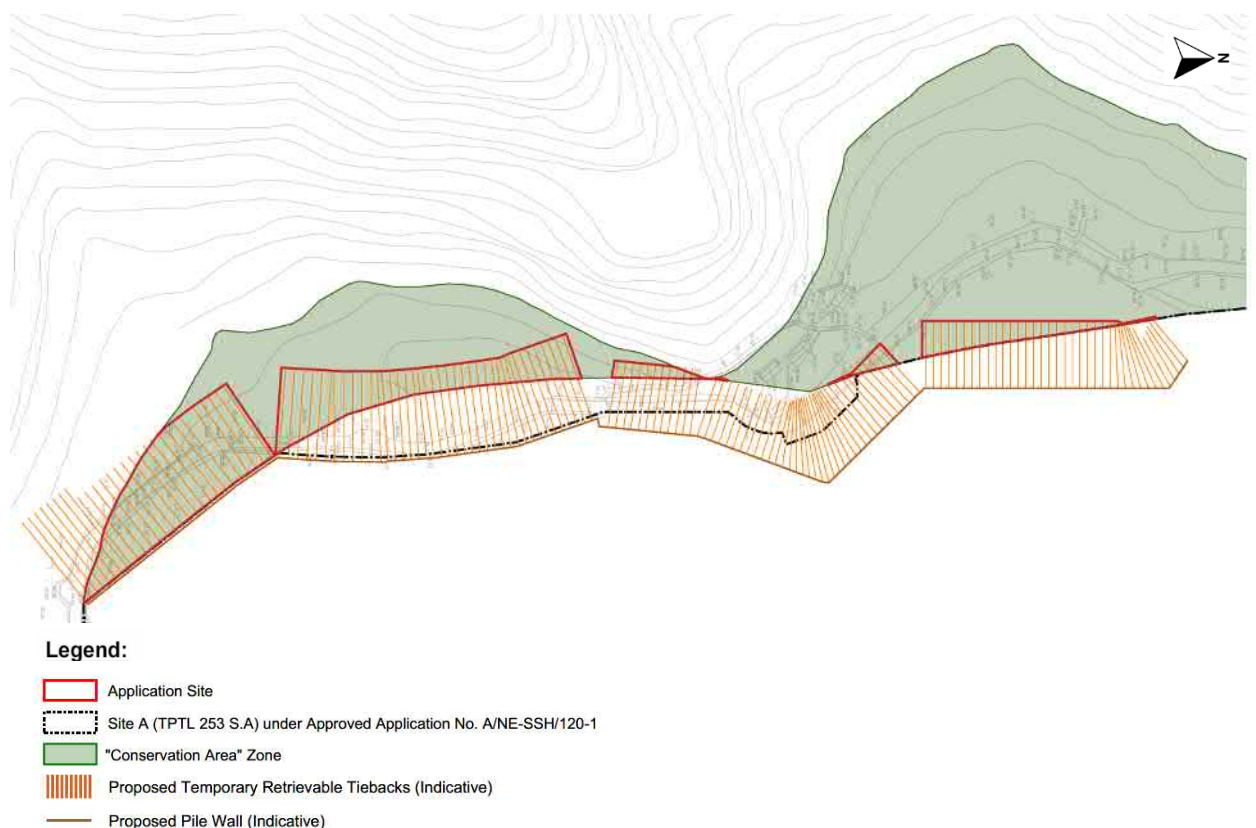
ATTACHMENT

- Attachment 1** Proposed Temporary Retrievable Tiebacks and Existing Tree Groups within the “Conservation Area” Zone (“CA”)

1.0 INTRODUCTION

- 1.1 This Tree Findings and Review Report is submitted to support Section 16 Planning Application for Proposed Temporary Retrievable Tiebacks for a Period of 3 Years in “Conservation Area” (“CA”) Zone at Lots 15 RP (Part), 18 (Part) and 19 (Part) in D.D.207 and Adjoining Government Land, Sai Sha, Shap Sz Heung, New Territories. The Application Site, with an area of about 2,172m², consists of “Conservation Area” (“CA”) zone partially adjoining to the western boundary of TPTL 203 S.A., i.e. Site A development area under approved application no. A/NE-SSH/120-1 and 142.
- 1.2 In order to facilitate environmentally sustainable construction and to ensure a safer construction environment, the Applicant proposes to introduce a tieback system (a form of excavation and lateral support system) for basement construction, in replacement of the conventional strutting system commonly adopted in construction sites in Hong Kong. During implementation of the proposed tieback system, it would be necessary to install temporary retrievable tiebacks from the pile walls within the lot boundary of TPTL 203 S.A., i.e. Site A development area, to underground areas of the “CA” zone to the west beyond the lot boundary. As temporary use or development of any land or building not exceeding a period of three years requires planning permission from the Town Planning Board (the Board) according to the Covering Notes of the OZP, the subject S16 planning application is hence submitted for the Board’s approval. Refer to **Figure 1** for the Application Site location.

Figure 1 Location of the “Conservation Area” (“CA”) and the proposed tieback underground extent



- 1.3 This report intends to provide an overall tree survey finding on existing vegetations located within the proposed tieback underground extent in the Conservation Area (“CA”), and to demonstrate that no identifiable potential impact on existing tree groups would be anticipated with careful planning of tieback locations and soil nail installation method.

1.4 Relevant government circulars and guidelines as listed below have been observed in this report.

DEVB TC (W) No. 4/2020 Tree Preservation
DEVB TC (W) No. 5/2020 Registration and Preservation of Old and Valuable Trees in Hong Kong
DEVB TC (W) No. 6/2015 Maintenance of Vegetation and Hard Landscape Features
GLTMS of DevB (April 2015) Guidelines on Tree Preservation during Development
GLTMS of DevB (2023) Guidelines for Tree Risk Assessment and Management Arrangement (10th Edition)
GLTMS of DevB (June 2023) Guidelines on Soil Volume for Urban Trees
GEO Publication No.1/2011 Technical Guidelines on Landscape Treatment for Slopes
Webb, R. (1991) Tree Planting and Maintenance in Hong Kong. Standing Interdepartmental Landscape Technical Group, HKSAR Government, Hong Kong
Websites: Types of Registered Tree Management Personnel
https://www.greening.gov.hk/rstmp/en/types_of_registered_tree_management_personnel/index.html

2.0 PROPOSED TEMPORARY RETRIEVABLE TIEBACKS

2.1 The proposed installation of temporary retrievable tiebacks involves (i) works from above ground within Lot TPTL 203 S.A., *i.e.* Site A development area under relevant approved planning applications, and (ii) works into the underground of the adjacent "CA" zone under relevant OZP.

2.2 The construction is a standard practice as in other tieback systems in Hong Kong, including drilling of an angled hole through the completed pile wall within the development area of Site A, inserting tieback into an angled drillhole through the wall with grout into the drillhole. The proposed tiebacks have a maximum diameter of 219mm and lengths ranging from 14 to 31m, and will be installed downwards at about 30 degrees. No above-ground work will be conducted within the "CA" zone.

2.3 The proposed tiebacks are temporary and retrievable in nature. Upon completion of the basement construction in the development area of Site A, the tiebacks will be removed from the soil, preventing obstruction to any future underground works and minimising any potential impacts.

3.0 EXISTING TREE GROUPS IDENTIFICATION AND ASSESSMENT

3.1 Identification and Assessment of Existing Tree Groups

3.1.1 For the purpose of this report, tree groups located within the proposed tieback underground extent in the "CA" zone are assessed and studied. According to the tree survey carried out in July 2024, approximate **69** nos. of living trees are growing in groups within the plan of proposed tieback underground extent on existing steep hillslopes. Majority of them are frequently occurring common woodland species, such as *Aporosa dioica*, *Microcos nervosa*, *Macaranga spp.*, *Machilus velutina* and *Cinnamomum camphora*.

3.1.2 As observed, Tree Group 1 (TG1) and Tree Group 2 (TG2) are characterized by presence of native evergreen woodland species *Aporosa dioica* and *Microcos nervosa*. Tree Group 3 (TG3) is dominated by exotic species such as *Leucaena leucocephala*. All groups are abundant with undergrowth shrubs and vines.

3.1.3 Please refer to **Figure 2** for location of existing tree groups and **Table 1** for overall species distribution of existing tree groups (Refer to **Attachment 1**).

Figure 2 Location of existing tree groups (TG1-TG3)

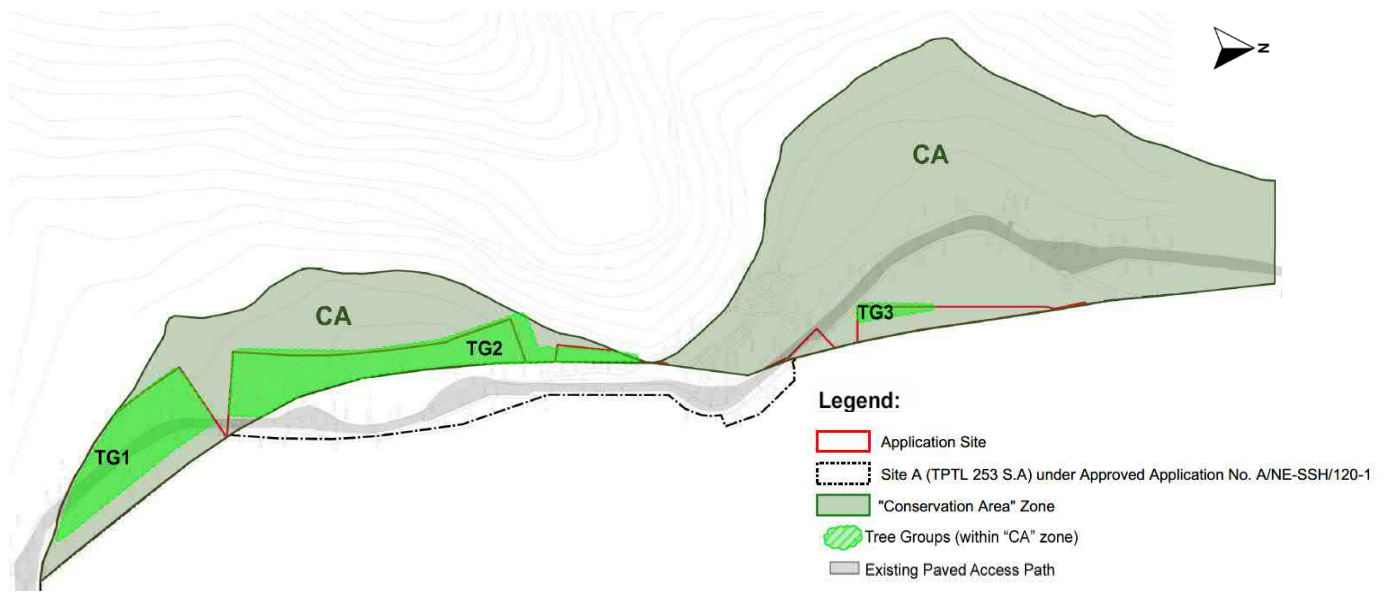


Table 1: Overall species distribution of existing tree groups

Scientific Name	Chinese Name	Percentage (%)	Quantity
<i>Aporosa dioica</i>	銀柴	18.84	13
<i>Leucaena leucocephala</i>	銀合歡	18.84	13
<i>Microcos nervosa</i>	布渣葉	13.04	9
<i>Macaranga spp.</i>	血桐屬	11.59	8
<i>Machilus velutina</i>	絨毛潤楠	5.8	4
<i>Cinnamomum camphora</i>	樟	4.35	3
<i>Machilus spp.</i>	潤楠屬	4.35	3
<i>Syzygium hancei</i>	韓氏蒲桃	4.35	3
<i>Syzygium jambos</i>	蒲桃	4.35	3
<i>Choerospondias axillaris</i>	南酸棗	2.9	2
<i>Sterculia lanceolata</i>	假蘋婆	2.9	2
<i>Acronychia pedunculata</i>	山油柑	1.45	1
<i>Antidesma bunius</i>	五月茶	1.45	1
<i>Rhus succedanea</i>	野漆樹	1.45	1
<i>Syzygium levinei</i>	山蒲桃	1.45	1
<i>Mallotus paniculatus</i>	白楸	1.45	1
<i>Tetradium glabrifolium</i>	棟葉吳茱萸	1.45	1
Total		100%	69

3.2 Condition of Existing Tree Groups

- 3.2.1 Most trees growing within the proposed tieback underground extent are in the vicinity of existing paved access path and located on the upsloping hillside. They are considered mature to immature woodland trees with poor to fair condition. Canopy height ranges from 4m to 17m. No trees are identified as protected or rare species, Old and Valuable Tree (OVT), and no “Champion Tree” has been identified within the site. Please refer to **Figures 3 and 4** for overall view of existing tree groups.

Figure 3 Existing tree groups with typical woodland species and with dense understory



Figure 4 Existing hard paved access path adjacent to the existing tree groups



4.0 NO IDENTIFIABLE IMPACT OF EXISTING UNDISTURBED TREE GROUPS WITH PROPOSED TEMPORARY RETRIEVABLE TIEBACKS

4.1 Understanding Tree Root Structure

- 4.1.1 For common tree species, majority of tree roots (up to 90%) are typically found within top 1m soil surface, as mentioned in “*Guidelines on Tree Preservation during Development (April 2015)*” and “*Guidelines on Soil Volume for Urban Trees*” issued by Greening, Landscape and Tree Management Section (GLTMS) of Development Bureau (DevB).
- 4.1.2 For the sloped “CA” zone, the solid bedrock is not located deep, and soft soil layer is expected to be thin. In other words, majority of tree roots in “CA” zone grow no more than 2m deep underground due to limited access to soft soil and air at such depth. The tieback system has been designed to take proactive avoidance approach to go downwards from Site A development area at 30 degrees into the “CA”’s lifeless, solid bedrock zone more than 15 meter below ground to avoid the “CA”’s upper 2m soil.

4.2 Reference for the Extent of Tree Roots to be Undisturbed

- 4.2.1 To maintain sustainable healthy tree growth in general, sufficient soil depth zone for tree rooting shall be undisturbed and adequately preserved over and above the conventional standard. Thus, the referencing principle of tree root preservation shall be referred to **para. 26** of "Registration and Preservation of Old and Valuable Trees" under DEVB TC(W) No. 5/2020, "A zone encompassing the tree along its (OVTs) dripline projecting vertically from the tree canopy and extending 2m below the ground level and 2m above the top of an OVT shall be designated as tree protection zone".

4.3 Relationship of Undisturbed Tree Groups and Proposed Tieback Installation

- 4.3.1 In light of the above, the proposed temporary retrievable tieback system, particularly its installation method, has taken into consideration the topographic levels along the upsloping hillside and tree root structure. It has also been designed in a way that existing tree groups and its roots within the proposed underground work extent will be undisturbed and untouched. The following measures are proposed with an aim to retaining existing woodland character without disturbance to existing tree groups:

The soil nails of the proposed temporary retrievable tieback system will be installed underground with an angle diverging from the root base of existing tree groups located on upside hillslope;

- No above-ground construction works will be conducted within the "CA" zone where existing tree groups are located;
- Soil nail locations are proposed as follow (Refer to **Figure 5**):

Vertical Positioning:

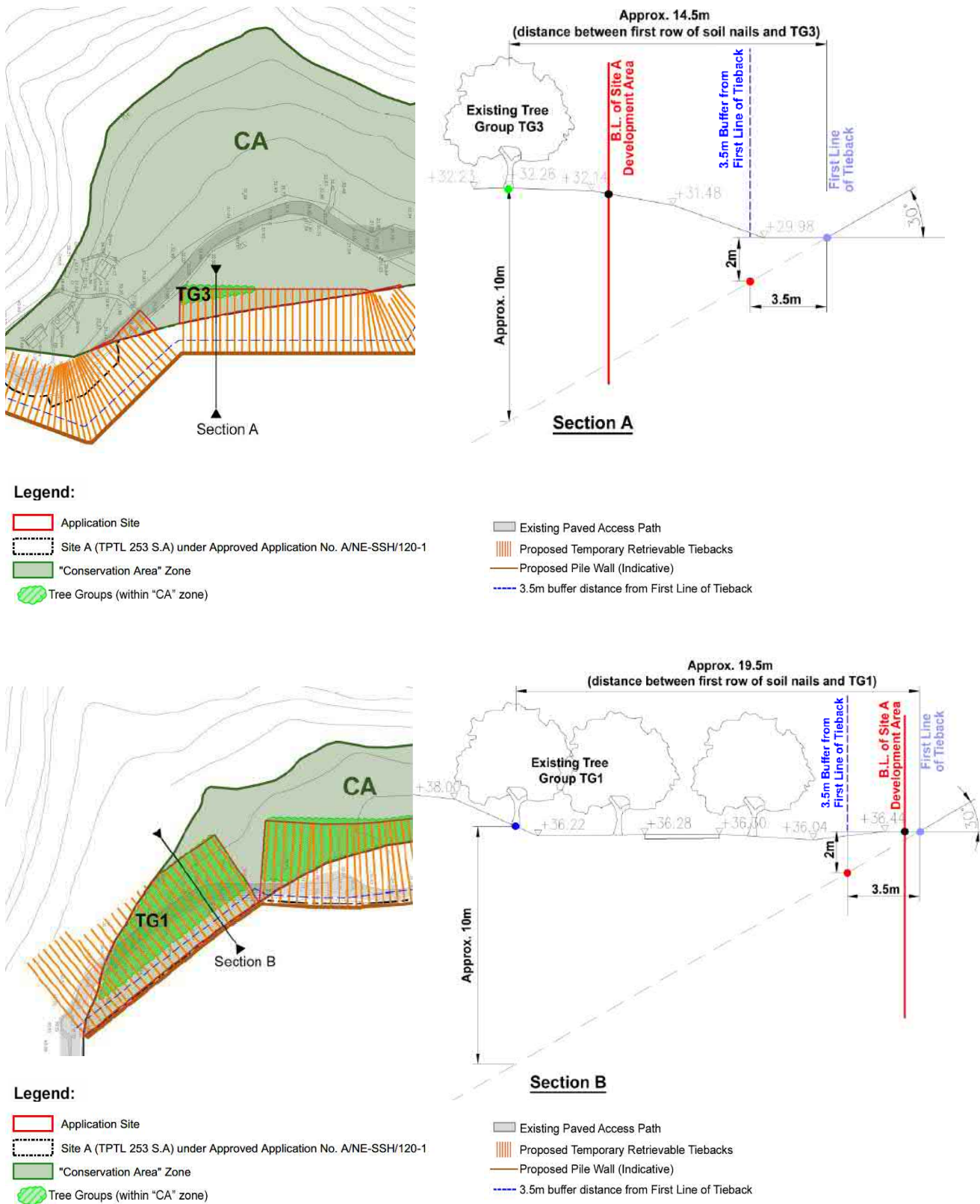
With a pre-requisite to maintain an undisturbed 2m tree root zone of any existing tree as discussed in **Section 4.2**, a physical distance of at least 3.5m shall be allowed when measuring horizontally from the first line of completed pile wall with a soil nail inclination angle of 30 degrees. As a good rule of thumb, this approach is sufficed to demonstrate that no existing tree roots would be affected by the proposed tieback soil nails.

As the soil nails going further downward at 30-degree inclination, the vertical distance between the root base of existing trees and the soil nails would be only increased. Because of this divergence in vertical distance, potential impact of soil nails on existing tree groups growing on steep slope can be considered negligible.

Planar Positioning:

Tie-back soil nails have been designed to be installed from and within the western boundary of development area of Site A outwards. Therefore, no above-ground construction works will be conducted within the "CA" zone.

Figure 5 Typical section showing the relationship between the proposed temporary retrievable tiebacks and existing undisturbed tree groups (refer to Attachment 1)

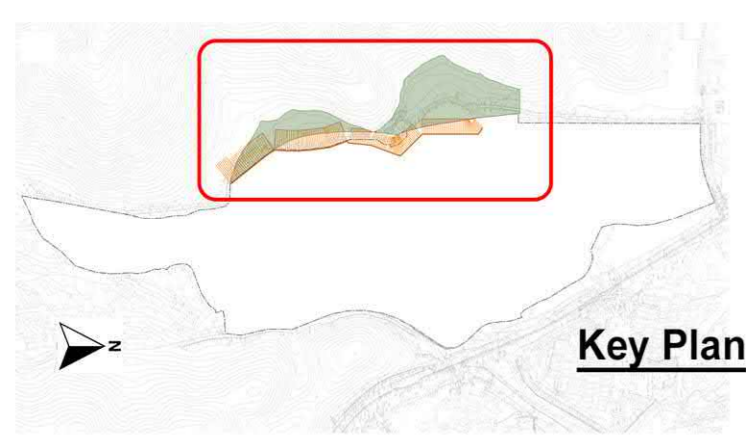


5.0 CONCLUSION

- 5.1 With the adoption of proposed temporary retrievable tieback along the western boundary of Site A development area facing “CA” zone, **NO** impact on existing untouched tree groups is anticipated.
- 5.2 First of all, all soil nails will be installed underground without any above-ground construction works in the “CA” zone. Secondly, given a 30-degree angle of tieback insertion, there is a minimum 3.5m horizontal buffer distance between the line of tieback installation within Site A and existing tree groups, and a minimum 2m vertical clearance on the upsloping topographic level of existing trees. It is important to note that the angles and depths of proposed soil nail will ensure that they are sufficiently away from tree roots and keep existing tree groups undisturbed and micro-environment untouched.
- 5.3 Furthermore, existing trees growing within the proposed tieback underground extent are either common native woodland species generally in poor condition or invasive species such as *Leucaena leucocephala*. In absence of extra-large or rare tree species, tree roots extent of existing woodland trees would be within top 1m soil surface. The refencing principle of 2m soil depth zone measuring vertically from soil surface will leave sufficient buffer for continuous tree rooting and provide undisturbed soil volume. Therefore, the evolution of local woodland within the “CA” zone will remain undisturbed.
- 5.4 With careful planning of tieback installation method, **NO** identifiable potential impact on existing tree groups would be anticipated.

ATTACHMENT 1

Proposed Temporary Retrievable Tiebacks and Existing Tree Groups within the “Conservation Area” Zone (“CA”)

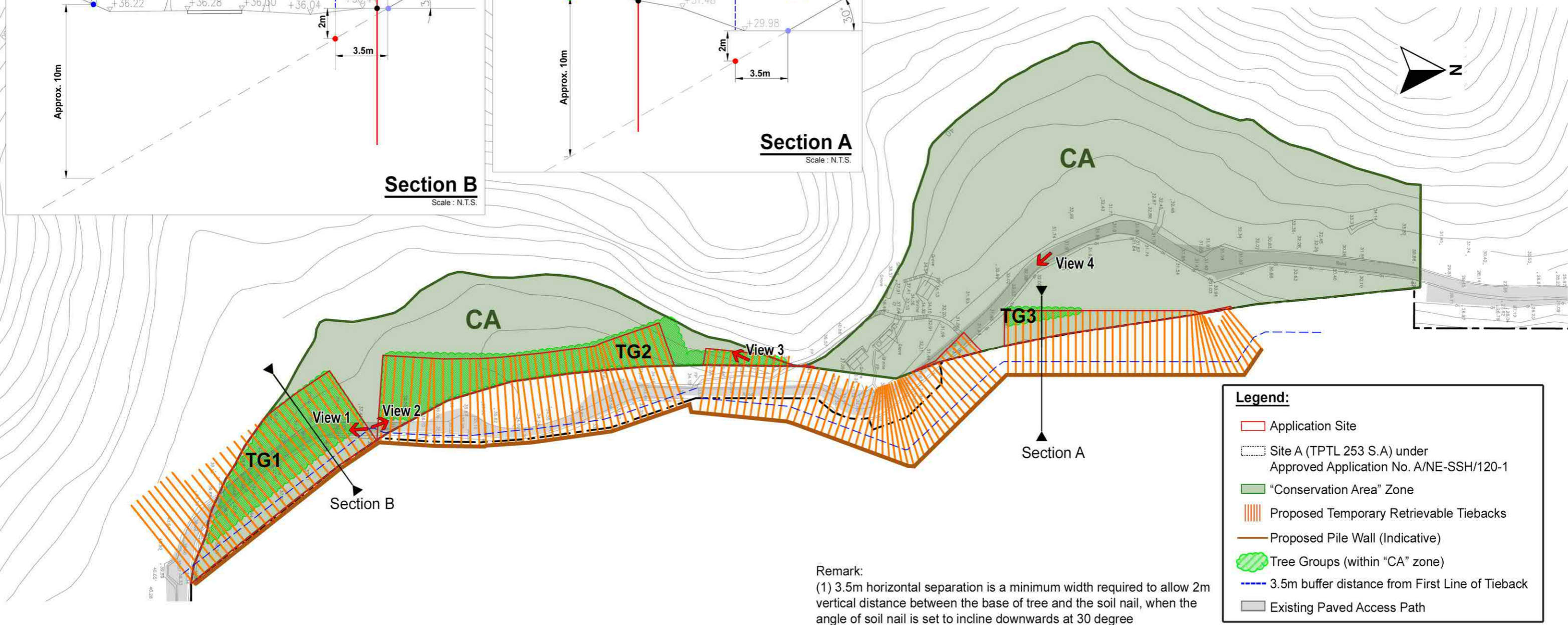
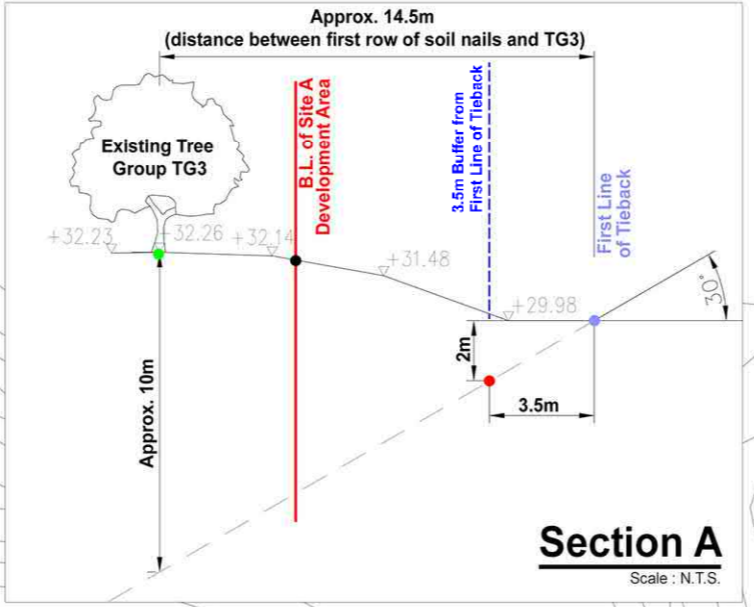
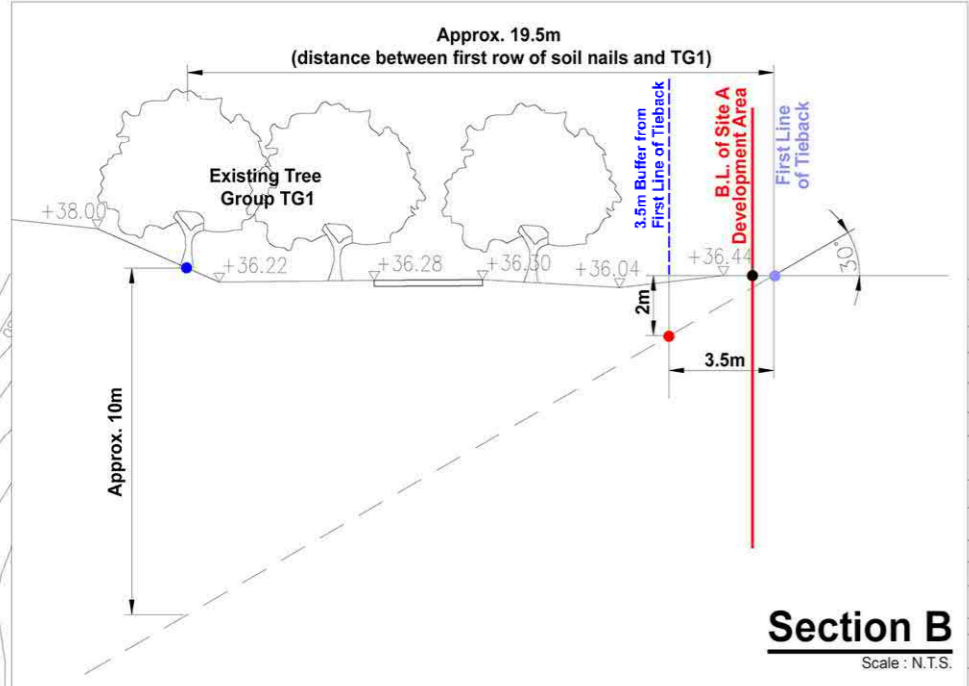


View 1

View 2

View 3

View 4



Legend:

- Application Site
- Site A (TPTL 253 S.A) under Approved Application No. A/NE-SSH/120-1
- "Conservation Area" Zone
- Proposed Temporary Retrievable Tiebacks
- Proposed Pile Wall (Indicative)
- Tree Groups (within "CA" zone)
- 3.5m buffer distance from First Line of Tieback
- Existing Paved Access Path

Remark:
(1) 3.5m horizontal separation is a minimum width required to allow 2m vertical distance between the base of tree and the soil nail, when the angle of soil nail is set to incline downwards at 30 degree

Appendix B

Ecological Appraisal

Section 16 Planning Application for Proposed Temporary Retrievable Tiebacks for a Period of 3 Years in “Conservation Area” Zone at Lots 15 RP (Part), 18 (Part) and 19 (Part) in D.D. 207 and Adjoining Government Land, Sai Sha, Shap Sz Heung, New Territories

Ecological Appraisal

Reference: REP-

Issue 01 | February 2025

This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 272008

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Appendices

No table of contents entries found.

1. Project Description

1.1 Purpose of the Project

1.1.1 Tieback scheme for excavation and lateral support (ELS) in construction sites is a better alternative due to its environmental friendliness and cost efficiency. Implementing a tieback system can improve construction site safety, reduce construction time, minimize traffic, and reduce waste production. In view of these advantages, tieback scheme is proposed as a substitution for the ELS used in Lot TPTL 253 S.A. (also known as “Site A” of the “CDA” under relevant approved planning applications).

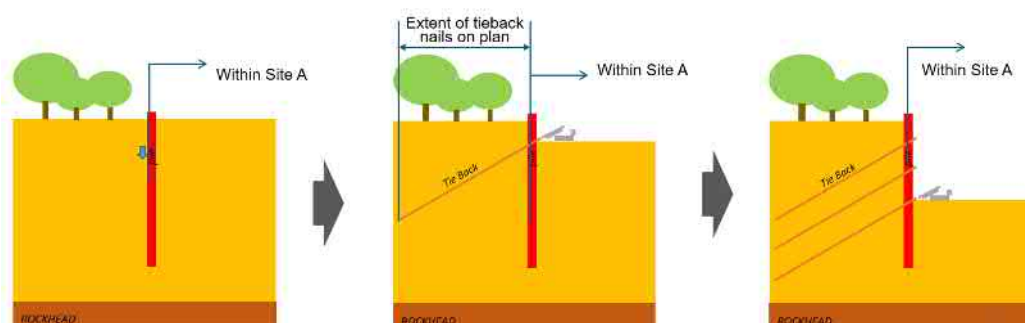
1.2 Brief Description of the Proposed Tieback System

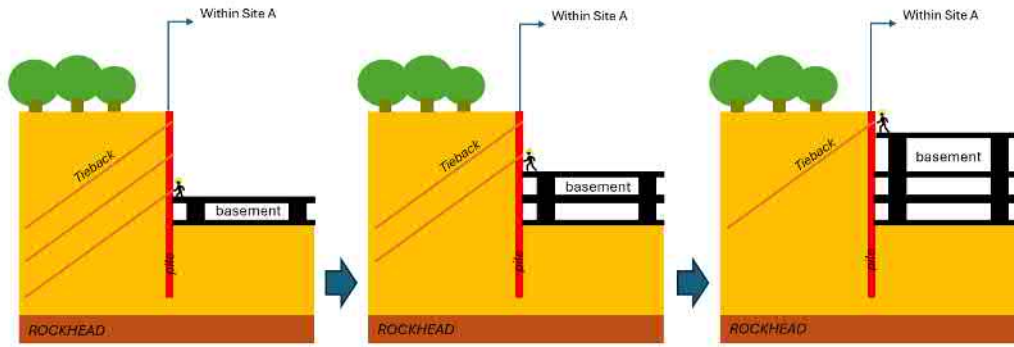
1.2.1 The proposed tieback system involves the works to be implemented:

- From the aboveground of Site A
- Into the underground of the adjacent “CA” under relevant OZP

1.2.2 The construction is a standard practice as in other tieback systems in Hong Kong, including those commonly adopted in urban areas and country parks. It will involves:

- **Step 1** – construct pile walls within Site A (already completed onsite)
- **Step 2** – drill the earth at 30-degree downward and install temporary, retrievable tieback nails into the underground of the “CA” via Site A
- **Step 3** – excavate down within Site A and repeat Step 2
- **Step 4** – construct lower basement within Site A
- **Step 5** – retrieve the tieback nails from the underground of “CA” via Site A
- **Step 6** – construct upper basement within Site A and repeat Step 5





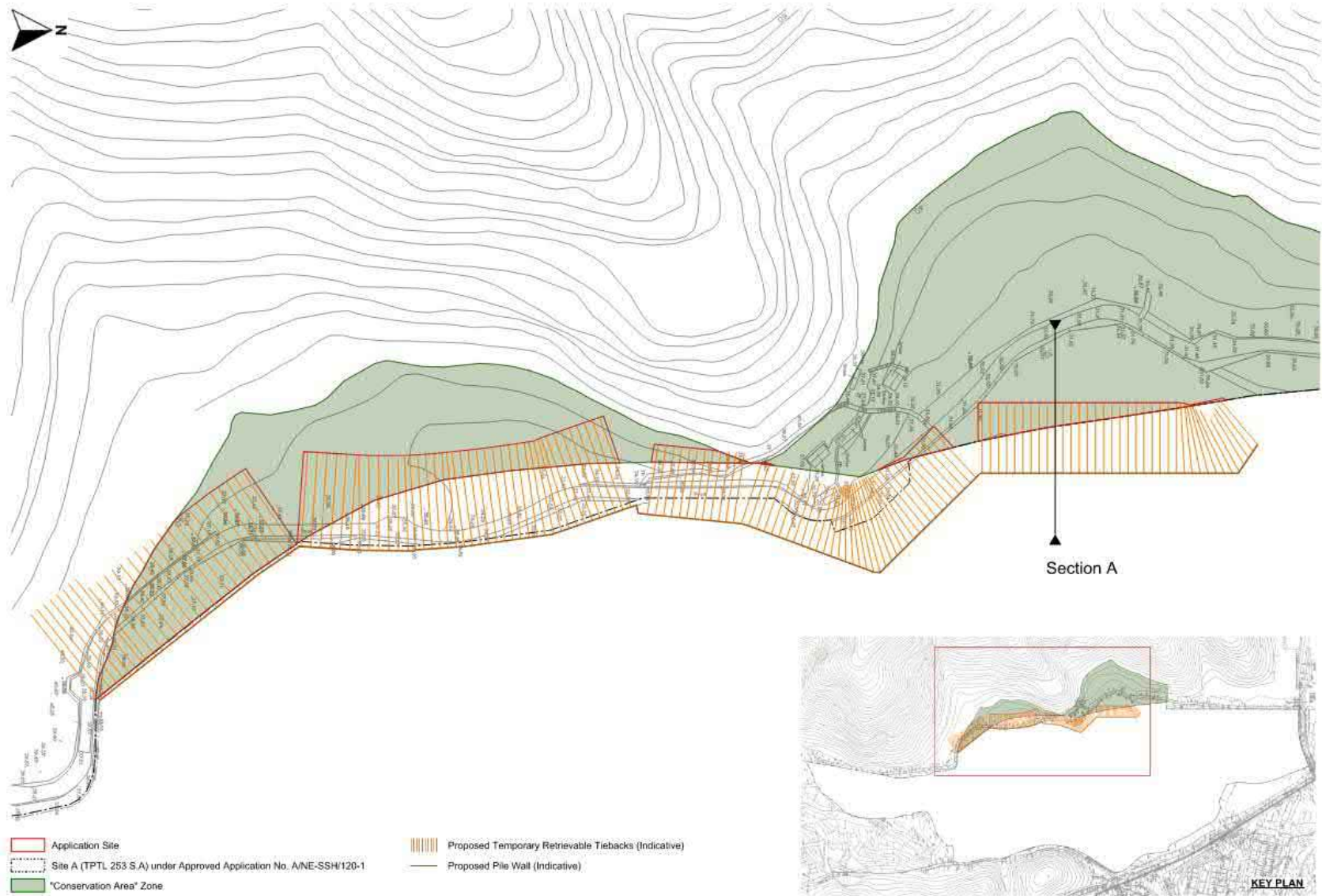
1.2.3 Approximate quantity and dimensions of the tieback system is provided in **Table 1.1**:

Table 1.1 Dimension of the Proposed Tieback System within “CA” zones

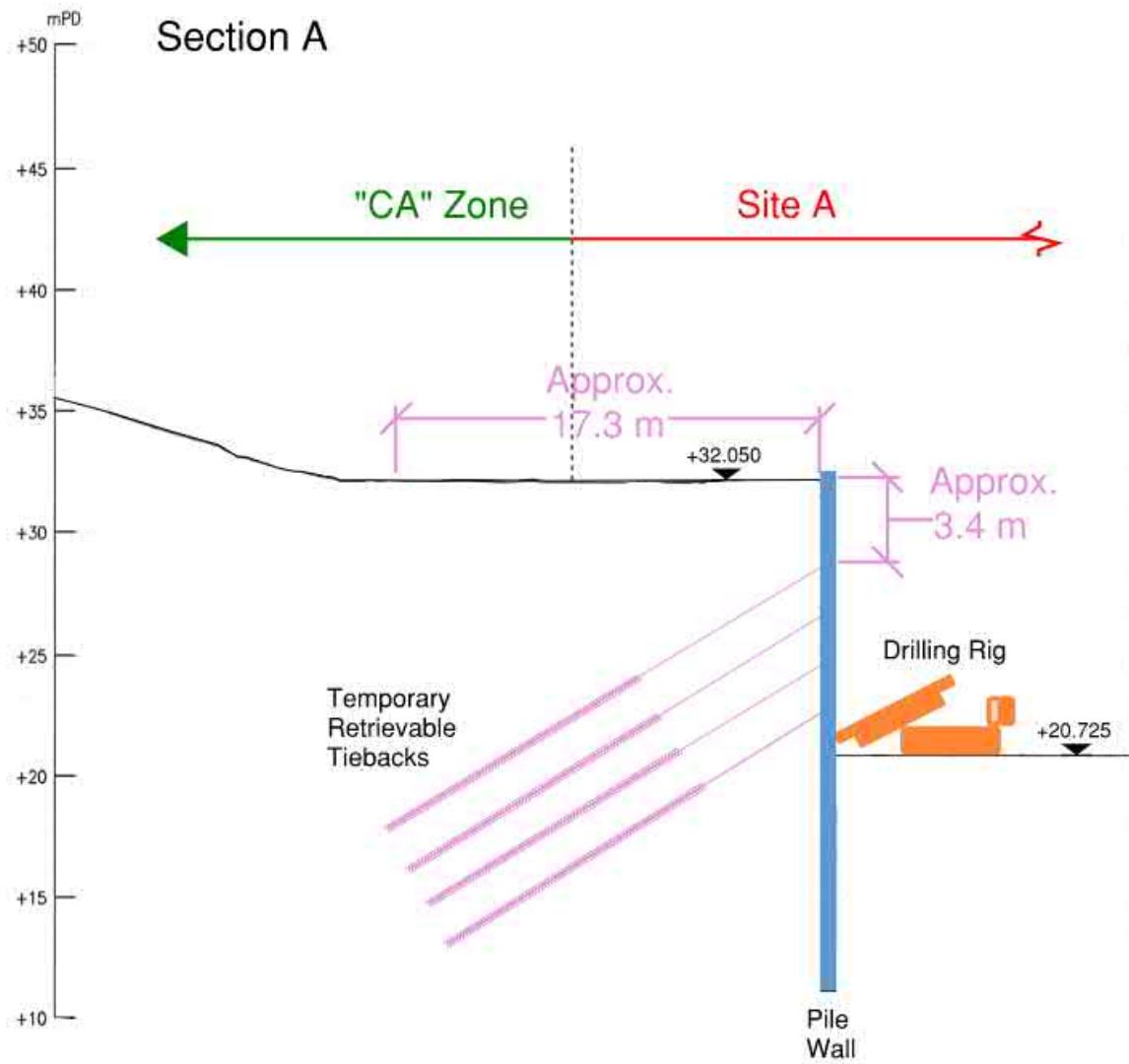
Aspect	Approx. Quantity / Dimension
Drillhole diameter	219mm
Number of tiebacks required within “CA” zones; all are retrievable	480
Length of the tieback nails	14 – 31m
Earth materials generated from the drill holes	110m ³

1.2.4 The majority of tree roots grow within top 1m soil. This is an ideal situation on ideal land. For the sloped “CA”, the solid bedrock is not located deep, and soft soil layer is expected to be thin; otherwise, the slope would have been flattened due to weathering and mass wasting in geological timeline scale. The tieback system has been designed to take proactive avoidance approach to go downwards from Site A at 30 degrees into the “CA”’s lifeless, solid bedrock zone more than 15 metre below ground to avoid the “CA”’s top 1m soil surface. Accurate plans and section are provided on **Figure 1.1.**, Section A.

Figure 1.1 Plan and Section of the Proposed Tieback System



Section 16 Planning Application for Proposed Temporary Retrievable Tiebacks for a Period of 3 Years in "Conservation Area" Zone at Lots 15 RP (Part), 18 (Part) and 19 (Part) in D.D. 207 and Adjoining Government Land, Sai Sha, Shap Sz Heung, New Territories



Section 16 Planning Application for Proposed Temporary Retrievable Tiebacks for a Period of 3 Years in "Conservation Area" Zone at Lots 15 RP (Part), 18 (Part) and 19 (Part) in D.D. 207 and Adjoining Government Land, Sai Sha, Shap Sz Heung, New Territories

2. Review of Ecological Impacts

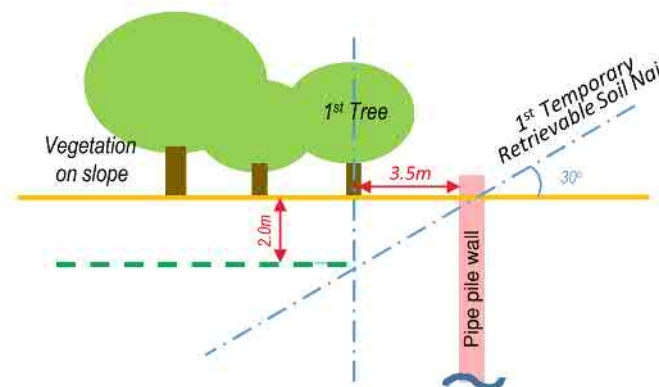
2.1 Construction Phase

2.1.1 Based on the ecological surveys conducted for the approved planning applications A/NE-SSH/120-1 and A/NE-SSH/142, habitats within the Project extent include secondary woodland, grassland/shrubland, watercourse, and developed area. In order to ensure no impacts on trees, the below approaches would be undertaken.

Table 2.1 Approaches to Install Tieback System to Avoid Impacts on Trees within "CA" Zones

Description	Engineering Approach
Buffer distance $\geq 3.5\text{m}$	A minimum 3.5m buffer distance will be maintained between the line of tieback installation and any existing vegetation. This 3.5m horizontal separation provides a minimum 2m vertical clearance from the ground level to existing trees, given a 30-degree angle of tieback insertion and assuming flat land. (see Figure 2.1)

Figure 2.1 Horizontal Buffer Distance and Vertical Separation



2.1.2 According to the broadbrush group tree survey recently conducted, no existing tree was found within the 3.5m horizontal buffer distance. Common tree species such as *Leucaena leucocephala* (銀合歡), *Syzygium hancei* (韓氏蒲桃), *Aporosa dioica* (銀柴), *Machilus velutina* (絨毛潤楠), *Mallotus paniculatus* (白楸) were found further up the hill in the "CA". Since the "CA" is on a slope higher than Site A, vertical separation between any tree and the tieback nails will be even larger. No tree will be adversely affected and no habitat loss due to tieback works is expected.

2.1.3 Compared with the conventional strut system, the proposed tieback system will not create additional disturbance to existing surrounding vegetation and fauna, given its works within "CA" zones will be totally underground. As the works proceed, works within Site A will take place at even lower levels. The pile walls within Site A will essentially shield disturbance from Site A to the "CA".

2.1.4 The tieback system has been designed to take proactive avoidance approach. Its anticipated ecological impact is expected to be **negligible**. No mitigation measure is required.

2.2 Operational Phase

2.2.1 The temporary tieback nails in the underground of the “CA” will be retrieved upon the completion of Site A’s basement. No adverse ecological impacts are anticipated.

Appendix C1

**Letter from the Hong Kong Institution of Engineers to the
Secretary for Development dated 18.6.2024**

18 June 2024

Ms LINN Hon Ho, Bernadette
Secretary for Development
Development Bureau
18/F, West Wing
Central Government Offices
2 Tim Mei Avenue
Tamar, Hong Kong

Dear Bernadette

Promoting the Use of Temporary Tie-Back Systems for Deep Excavations in Private Developments

We hope this letter finds you in good health and high spirits.

We are writing to bring your esteemed attention to the merits of utilizing tie-back system (which is an acceptable solution in public development) as an alternative to the traditional strutting system for deep excavations. Whilst these temporary tie-backs will be projected into adjoining government lands, which are entrusted to Lands Department (LandsD) and Highways Department (HyD), we firmly believe this construction methodology can significantly benefit the construction industry by enhancing site safety, cost-effectiveness, works efficiency and environmental sustainability. Please note that the temporary tie rods will be completely retracted/abandoned upon completion of basement structures without affecting the future development potentials and use of the government lands/properties.

Temporary tie-back system offers several distinct advantages that make it an attractive alternative to the traditional strutting system. Its merits are elaborated as below:

1. **Construction Site Safety:** The utilization of a tie-back system enhances site safety by providing lateral support to temporary earth retaining walls for a strut-free excavation works (Photo 1 refer) area which can certainly minimize hazards and accidents to people working under restricted headroom with closely spaced strutting in deep basement works (Photo 2 refer). The system also offers enhanced stability, minimizing unexpected ground movement, creating a safer working environment for construction personnel and facilitating the adoption of safer construction practices.
2. **Faster Construction:** The tie-back system enables faster construction by offering increased flexibility and adaptability. It can be efficiently adapted to various soil conditions and limited-access areas, facilitating smoother project progress and reducing time delays and associated costs. By enhancing construction program and minimizing disruptions to neighbouring areas, the system benefits both the construction industry and local community.

.../2

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18 June 2024

Ms LINN Hon Ho, Bernadette

3. Cost Effectiveness: Compared to the traditional strutting system which requires heavy and lengthy steel struts, the tie-back system reduces material and labour costs. The elimination of extensive excavation support structures translates into reduced construction time and associated expenses including site preliminaries. This cost-saving advantage contributes to more efficient resource allocation within construction projects.
4. Environmental Sustainability: The tie-back system presents a more eco-friendly approach to construction. By omitting heavy and long-span steel struts, the demand for steel production and transportation is significantly reduced. This reduction in carbon footprint aligns with the government's environmental objectives and promotes a more sustainable construction industry.
5. Traffic Impact: The adoption of a tie-back system minimizes traffic impact. The delivery of heavy and lengthy steel struts to construction sites often requires specialized vehicles and can cause disruptions to traffic flow, particularly in urban areas. By eliminating the need for such deliveries, the tie-back system reduces congestion and potential road hazards, creating a smoother experience for commuters and pedestrians alike.

Actually, similar Soil Nail System is recently adopted in Public Sector to fast-track the delivery of site formation for subsequent Public Housing Developments. Furthermore, there are also successful cases of utilizing temporary tie-back systems in the private sector, with the recently completed Hopewell Centre II project between Queen's Road East and Kennedy Road being a notable example (Photo 3 refer).

In conclusion, the merits of using temporary tie-back system for deep excavations are evident. By prioritizing construction site safety, faster construction, cost-effectiveness, environmental sustainability, and reduced traffic impact without compromising the development potential of government lands and properties, this alternative approach offers numerous benefits for both the construction industry and the community at large.

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18 June 2024

Ms LINN Hon Ho, Bernadette

Upon consideration of the above merits, we kindly request you to appeal your supporting departments, such as LandsD, BD, CEDD, HyD, and other related works departments (WDs) such as WSD, DSD, Planning Dept. and AFCD etc. to support the approval of ELS works with “Temporary Tie-back System” projected outside private building lots for private developments. We firmly believe that such a shift will contribute to safer, more efficient, and environmentally conscious construction practices. By doing so, we can ensure that our construction industry remains at the forefront of technological advancements while prioritizing safety, efficiency, and sustainability.

Thank you for your time and attention to this matter. We would welcome the opportunity to discuss this further or provide any additional information that would assist in promoting the acceptance and utilization of tie-back systems.

We have also submitted a similar letter to the Secretary for Transport and Logistics, advocating for the broader acceptance and utilization of tie-back systems. We are hopeful that the two government bureaux can work collaboratively to implement and facilitate the aforementioned enhancement measures for the benefit of Hong Kong.

We look forward to your positive response and the possibility of creating a more progressive construction landscape.

Thank you.

Yours sincerely



Ir Dr Barry LEE
President

c.c. Secretary for Transport and Logistics, Ir S H Lam
Under Secretary for Transport & Logistics, Ir C S Liu
Under Secretary for Development, Mr David Lam
Chairman of AP/RSE/RGE Committee of HKIE, Ir Terence Yau



Photo 1 : Tie-back system

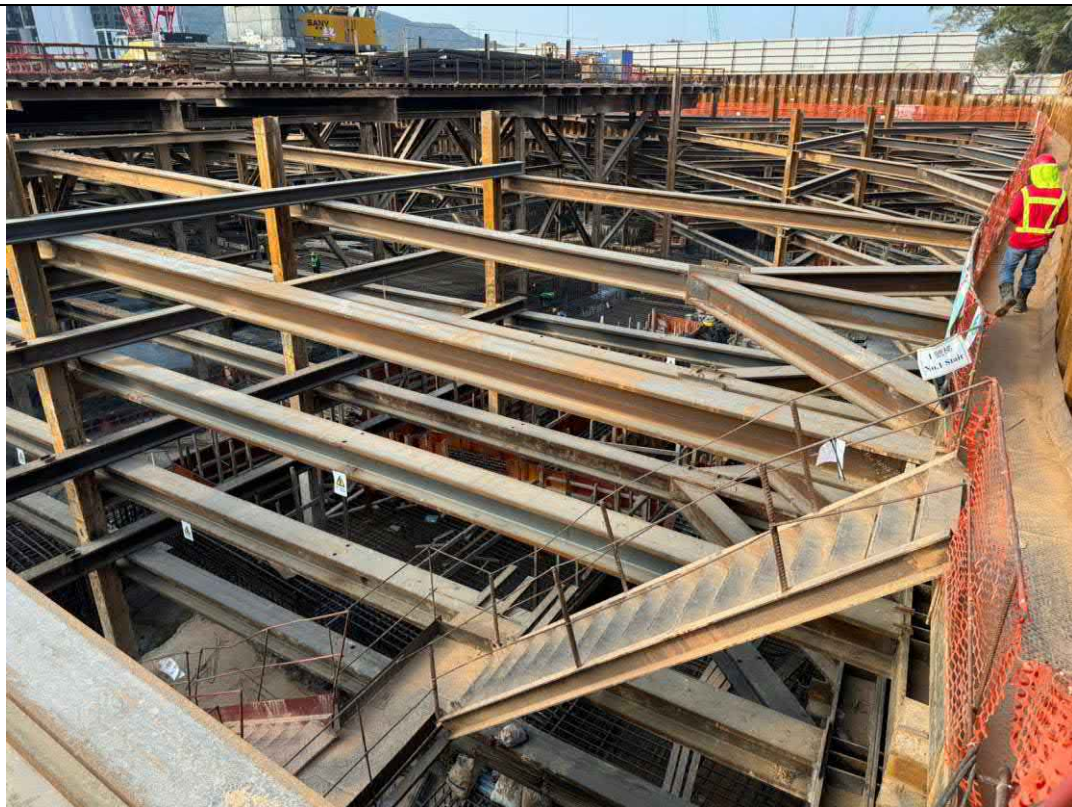


Photo 2: Strutting System



Photo 3: Temporary Tie-back of Hopewell Centre II

Appendix C2

**Letter from the Secretary for Development to the
Hong Kong Institution of Engineers dated 19.7.2024**

政府總部
發展局
工務科
香港添馬添美道 2 號
政府總部西翼



Works Branch
Development Bureau
Government Secretariat

West Wing, Central Government Offices,
2 Tim Mei Avenue, Tamar, Hong Kong

本局網址 Our Website: <http://www.devb.gov.hk>
本局檔號 Our Ref.: () in DEVB(PSGO) 60/2

電話 Tel No.: 3509 8331
傳真 Fax No.: 2537 1961
電郵 E-mail: josephkklo@devb.gov.hk

19 July 2024

The Hong Kong Institution of Engineers
9/F Island Beverley,
No. 1 Great George St.,
Causeway Bay, Hong Kong
(Attn: Ir Eric MA)

Dear Ir MA,

Promoting the Use of Temporary Tie-Back Systems For Deep Excavations in Private Developments

Thank you for your letter dated 18 June 2024 to the Secretary for Development providing your valuable views on the captioned.

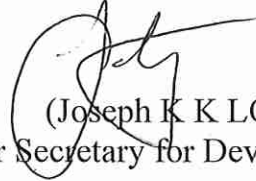
With fast-tracking housing and land supply being a high priority, the Development Bureau constantly keeps reviewing and streamlining development-related procedures. Among the measures taken, we issued a memo of guidelines on the use of the soil nails scheme to fast track the delivery of site formation works for public housing development in October 2022, benefiting a lot of public housing development projects.

We share your views that use of the tie back system, instead of the strutting system could benefit deep excavation in private developments in terms of site safety, cost effectiveness, works efficiency and environmental sustainability. In this regard, we would actively consider your proposal and collaborate with relevant departments to balance the views/needs of different stakeholders for facilitating the use of the tie-back system for deep excavations in private development.

We would like to take this opportunity to update you that we will establish the Building Technology and Research Institute (BTRI) by this year to promote innovation. Apart from research and development (R&D) activities for innovative materials, construction methods and technologies, etc., the BTRI will also devise standards, conduct testing and provide accreditation, in order to spearhead innovation in the construction industry and attract R&D talent to Hong Kong.

We look forward for your full support to the BTRI and our future events.

Yours sincerely,

A handwritten signature in black ink, appearing to be 'Joseph K K LO', written in a cursive style.

(Joseph K K LO)
for Secretary for Development