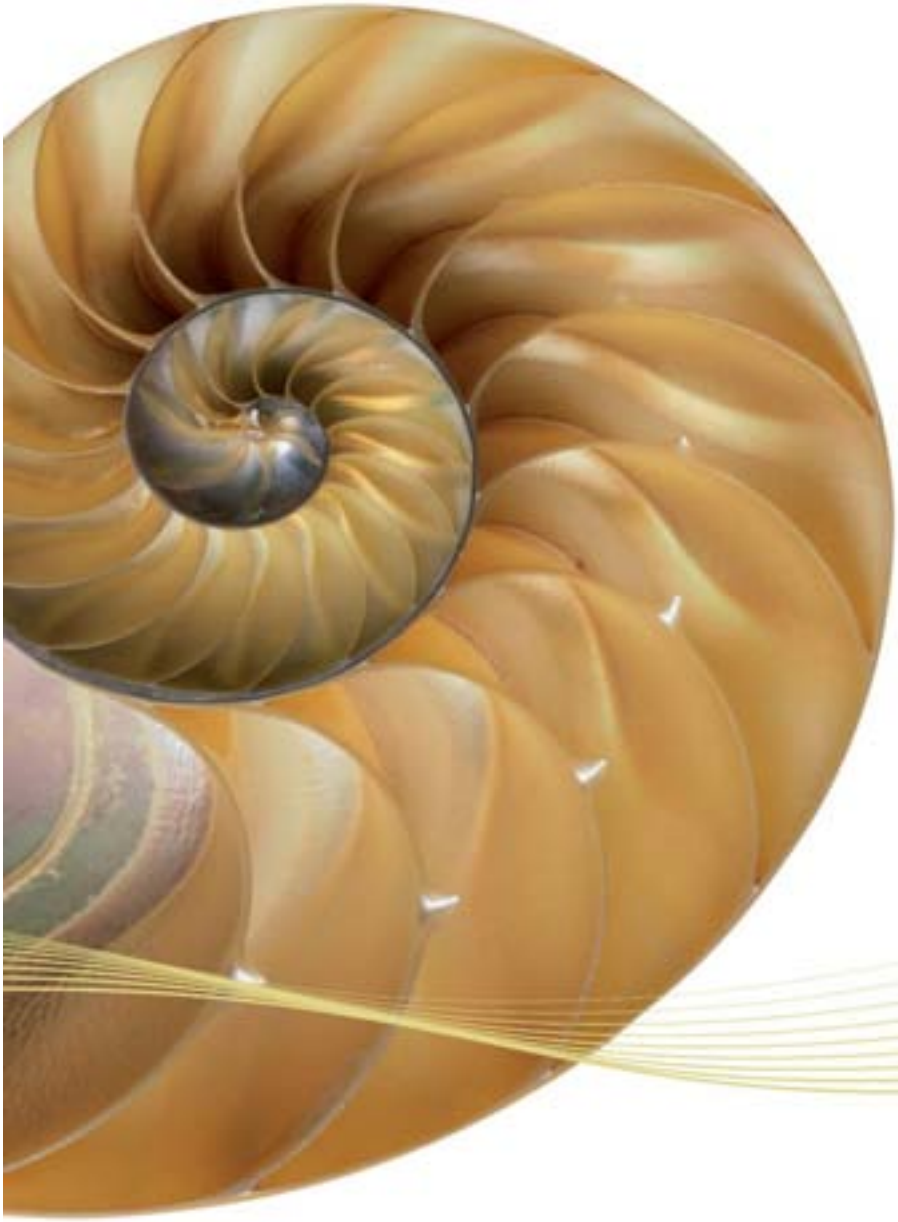

CLP 中電

Installation of the Proposed 132kV Cable Circuit Connecting with Ting Lai Road Substation and Pak Shek Kok Substation

連接汀麗路變電站至白石角變電站的132千伏特電纜鋪設工程

Project Profile

工程項目簡介

15 July 2010
2010年7月15日

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DRAFT PROJECT PROFILE
工程項目簡介(初稿)

CLP Power Hong Kong Limited
中華電力有限公司

Installation of the Proposed 132kV Cable Circuit Connecting with Ting Lai Road Substation and Pak Shek Kok Substation

連接汀麗路變電站至白石角變電站的132千伏特電纜鋪設工程

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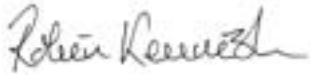
For and on behalf of 代表 ERM-Hong Kong, Limited 香港環境資源管理顧問有限公司	
Approved by: 批核 :	 簡樂文 (Dr Robin Kennish)
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Date: 日期 :	15 July 2010 2010年7月15日

Project Profile

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1 BASIC INFORMATION

1.1 PROJECT TITLE

Installation of the Proposed 132kV Cable Circuit Connecting with Ting Lai Road Substation and Pak Shek Kok Substation (hereafter called the Project).

1.2 NAME OF PROJECT PROPONENT

CLP Power Hong Kong Limited (CLP)

1.3 NAME AND TELEPHONE NUMBER OF CONTACT PERSON

Name : Mr Terence Chan

Title : Engineer I, Engineering Projects Department, CLP Power Hong Kong Limited

Phone No : 2678 7514 (office)

1.4 PURPOSE AND NATURE OF THE PROJECT

According to CLP's latest electricity load forecast and anticipated load growth for the coming few years, there will be an increasing demand in the Tai Po and Pak Shek Kok areas caused mainly by the new residential developments at Pak Shek Kok and, the extension of both the Science Park and the Chinese University of Hong Kong. The capacity of electricity supply networks in the above-mentioned areas is to be strengthened in order to ensure the supply reliability for nearby developments and in particular Nethersole Hospital.

In this regard, a new 132kV cable circuit connecting Ting Lai Road Substation and Pak Shek Kok Substation is required to be established, in order to meet the above-mentioned increasing electricity demand and to strengthen the electricity capacity. The proposed 132kV cable circuit will be laid along existing footpaths, cycle tracks and carriageways running alongside the Tolo Highway. The alignment of the proposed cable circuit is shown in *Figure 1.1*. General sectional drawings of the cable installation are shown in *Figure 1.2*.

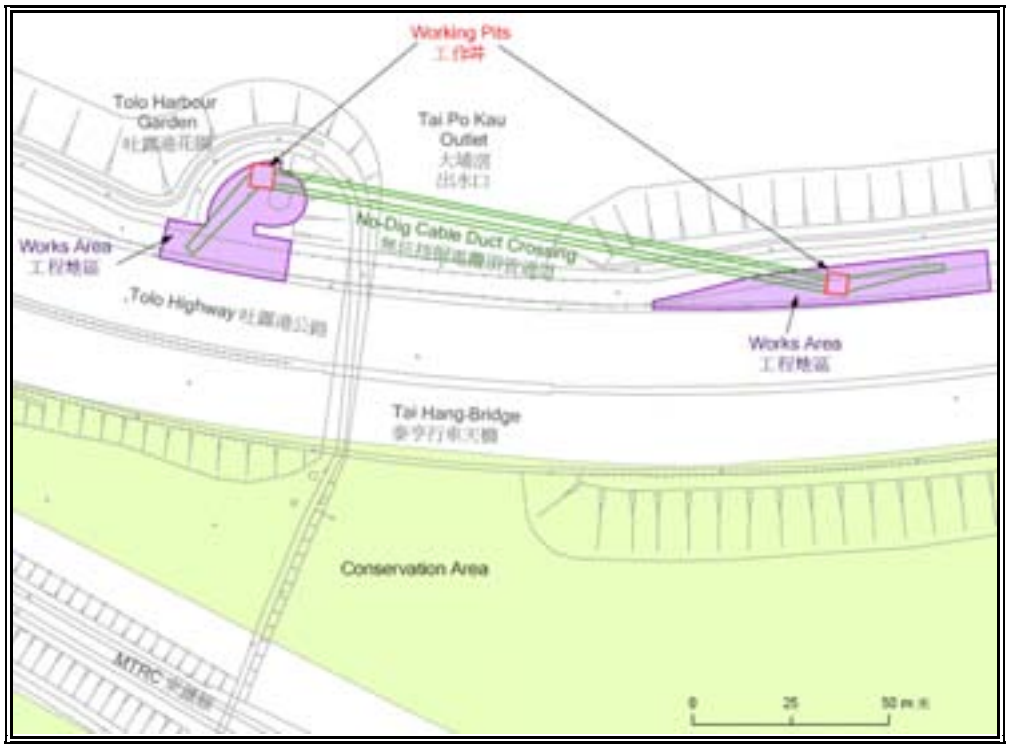
1.5 LOCATION AND SCALE OF PROJECT AND HISTORY OF THE PROJECT SITE

The Project Site is located within Tai Po district of the New Territories. *Figure 1.1* presents the Project Site and the construction works areas for the proposed cable circuit. The proposed cable circuit will be installed in eleven sections (S1-S11) with a length of approximately 450 m each (refer to *Figure 1.1*) and a total alignment length of approximately 5 km. The proposed cable circuit will be installed with a minimum 1 m thick cover and protected by concrete cable tiles with cable maker tapes on top (refer to *Figure 1.2*).

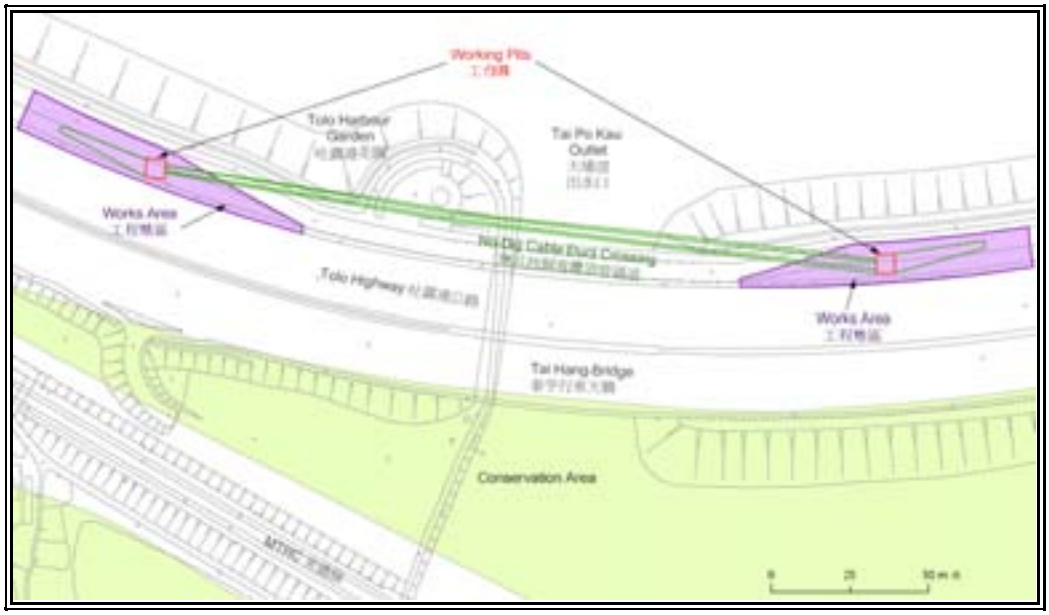
The proposed cable route starts at the existing Ting Lai Road Substation at the southern footpath of Ting Lai Road near the junction of Chung Nga Road Fu Heng Estate and Chung Nga Road Children's Playground are in the immediate neighbourhood. The cable circuit then runs along the footpath of Ting Kok Road, Nam Wan Road and Tai Po Tai Wo Road and crosses Lam Tsuen River via a no-dig cable duct crossing (southwestern side of Yuen Shin Park and the northwestern side of Kwong Yee House). It continues its ways along Yuen Shin Road and enters the southern cycle track of Tolo Highway, follows the footpath of Chong San Road and terminates at Pak Shek Kok Substation.

The whole alignment will be laid by trenching method (and will make use of existing ducts if available) except for the two proposed no-dig cable duct crossings Lam Tsuen River Channel (southern part of S4, refer to *Figure 1.3*) and underneath an outfall adjacent to Tai Hang Bridge within the Conservation Area (CA) (hereafter referred to as Tai Po Kau outlet, in southern part of S8) (refer to *Figure 1.4*). The trenching method is considered the most common and cost-effective option for utility installation underground and generally involves site clearance, road surface breaking (where applicable), and excavation, followed by cable installation. The trench will be backfilled and reinstated to the original condition upon completion of the works.

It should be noted that the proposed cable route is not allowed to run along the highway at sections S4 and S8. Different route options have been investigated to cross the Tai Po Kau outlet using no-dig cable duct crossings method including the installation of working pits at either Tolo Harbour Garden (Zone 3) or roadside planters of the cycle track to the west of Tai Po Kau outlet and north of Tai Hang Bridge (*Boxes 1.1 & 1.2)*.



Box 1.1 Map showing Option 1 for no-dig duct cable crossings at Tolo Harbour Garden outside Conservation Area in S8.

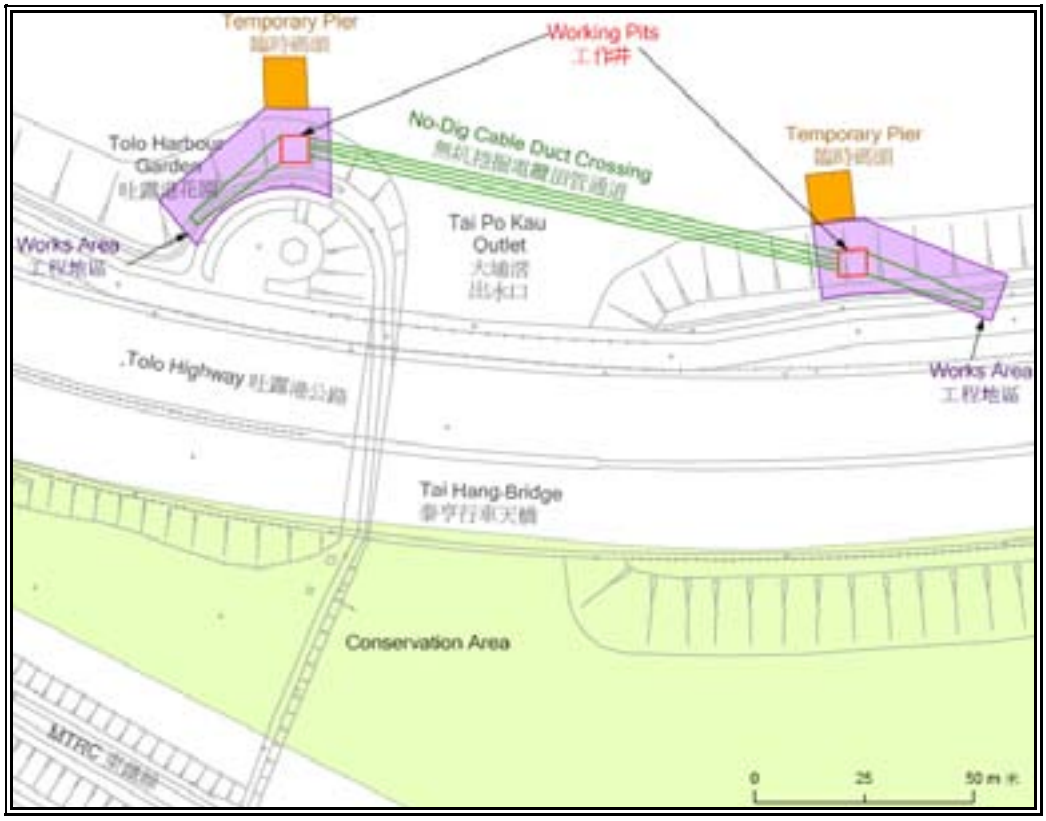


Box 1.2 Map showing Option 2 for no-dig duct cable crossings at Tolo Harbour Garden outside Conservation Area in S8.

However, these options are considered not feasible due to the following physical constraints:

- Construction of two working pits (each with size of 36 m^2 and depth of 17 m) will be required and hence large machinery will be utilised. This type of equipment requires sufficient working space which is not presently available.
- There will be a requirement for a works area that would infringe on the cycle track and also Tolo Highway. The potential exists with this option for unacceptable traffic impacts to Tolo Highway.

Another alternative is to locate the no-dig alignment outside the boundary of Tolo Garden Zone 3 but this would mean that the working pit would need to be constructed at the seawall (*Box 1.3*) with a minimal depth of 16.5m. According to the preliminary results of ground investigation, a layer of gravel and cobbles was found below 9m which may increase the construction difficulties. Construction of the working pits have the potential therefore impose higher safety and flooding risk.



Box 1.3 Map showing Option 3 for no-dig duct cable crossing outside Tolo Harbour Garden within Conservation Area in S8.

This option would require extensive excavation and marine works including grouting and construction of a temporary platform and hence is not preferred.

For the current proposal, working pits and cables will be installed in the CA to the west of Tai Po Kau outlet and south of Tai Hang Bridge (refer to F*igure 1.4*). The proposed cable route will be installed alongside the footpath underneath Tai Hang Bridge from Tolo Garden to the unallocated government land (currently a wasteland with limited vegetation) to the northeast of MTRC's railway. Two no-dig cable duct crossings will be installed across the channel and then across Tolo Highway. The depth of working pits is comparatively shallow (ie about 10m) and employment of small-scale equipment by the contractor is considered more feasible. The proposed route option will cause minimum traffic impact and public disturbance during construction and is therefore considered most viable.

The works areas will be restricted to 1m either side of the proposed cable route except for the no-dig cable duct crossings, which occupy approximately 550 m^2 and 700 m^2 of works areas (including areas for temporary stock pile) at southern part of S4 (ie Lam Tsuen River Channel) and S8 (ie Tai Po Kau outlet) respectively (refer to *Figures 1.3 & 1.4*). Small-scale excavation (total volume of approximately 13,000 m^3 for the whole project works and approximately 1,300 m^3 within the Conservation Area [(1)]) will be carried out for the construction of the cable trench, jacking pit and ramp, intermediate pit, receiving pit and ramp. Micro-tunnelling of two sleeve pipes will also be

(1) It is expected that about 15% of the total excavated volume will be reused onsite.

carried out by a tunnel boring machine. After cable duct installation with concrete surround, backfilling with sand / re-used soil will be conducted and the Project Site will finally be reinstated. It is expected that removal of 17 immature trees (including nine individuals of exotic *Acacia confusa* and eight individuals of invasive White Popinac *Leucaena leucocephala*) will be required for the Project and five individual planted / landscape trees (including three Hong Kong Orchid Tree *Bauhinia blakeana*, one African Mahogany *Khaya senegalensis* and one Triangle Palm *Neodypsis decaryi*) will be transplanted in order to facilitate the project construction works (see *Section 4.6* for details).

Key construction machineries to be employed for the Project will include:

- During trench excavation: crane lorry, concrete saw, excavator, generator, air compressor and breaker;
- During cable duct / cable installation: crane lorry, powered winch, electric winch and generator;
- During backfilling and reinstatement: crane lorry, generator, water pump, vibratory compactor, rammer, roller and dumper.
- During no-dig pit construction and pipe jacking: crane lorry, generator, water pump, air compressor, breaker, excavator, vibratory hammer, grouting machine, powered winch, power pad and tunnel boring machine (TBM); and,
- During backfilling and reinstatement for the no-dig working pits: crane lorry, generator, water pump, rammer, roller, dumper, excavator and vibratory hammer.

1.5.1 Proposed Works within Conservation Area

Along the cable section S8, a short section (~180 m) of the proposed cable will pass through the Conservation Area (CA). As mentioned previously, no-dig cable duct crossings will be installed from the west of Tai Po Kau outlet and south of Tai Hang Bridge within the CA. This construction method and route option is considered the most viable since it will cause minimum traffic impact and public disturbance during construction. Ecological and water quality impacts associated with this option are also minimised by avoiding marine works. Key equipment used and work sequences within the CA zone are presented as follows:

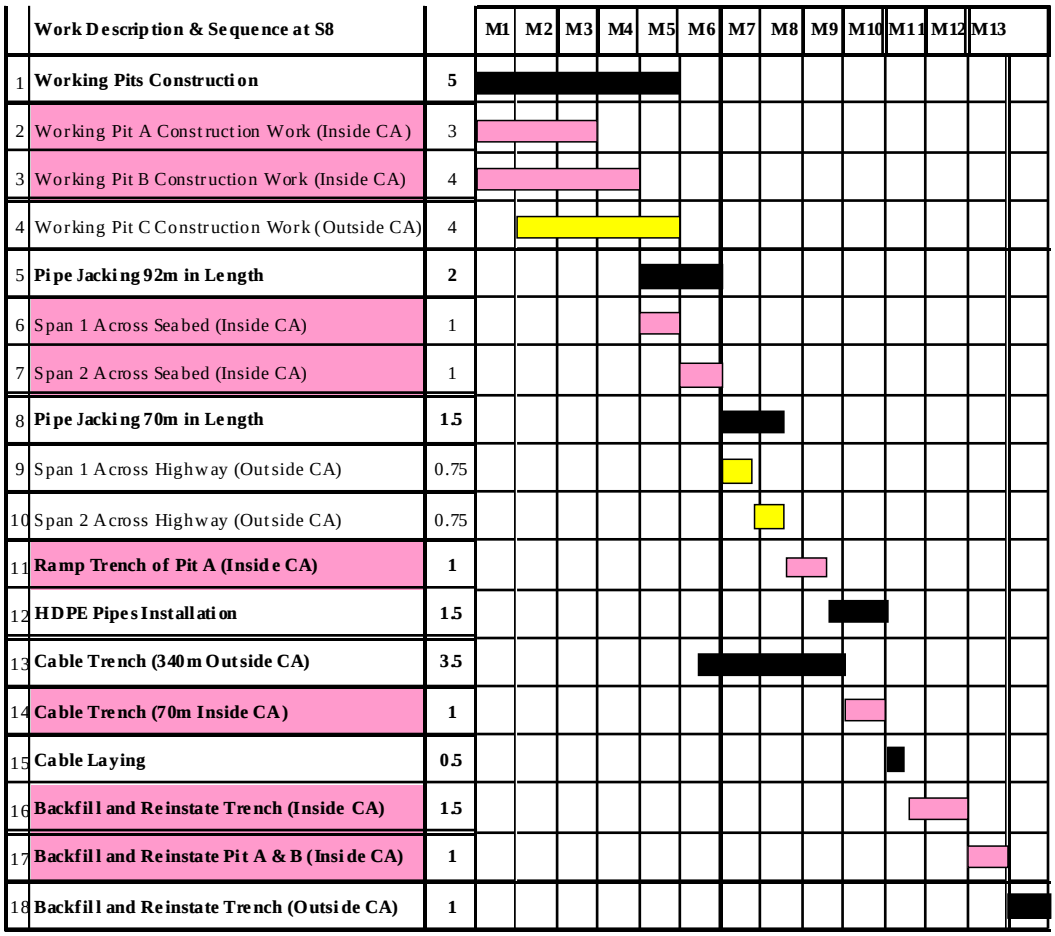
Key Construction Equipment

- During trench excavation: crane lorry, concrete saw, excavator, generator, air compressor and breaker;
- During cable duct / cable installation: crane lorry, powered winch, electric winch and generator;
- During backfilling and reinstatement: crane lorry, generator, water pump, vibratory compactor, rammer, roller and dumper;

- During no-dig pit construction and pipe jacking: crane lorry, generator, water pump, air compressor, breaker, excavator, vibratory hammer, grouting machine, powered winch, power pad and tunnel boring machine (TBM); and,

- During backfilling and reinstatement for the no-dig working pits: crane lorry, generator, water pump, rammer, roller, dumper, excavator and vibratory hammer.

Work Sequences



The duration of the works involved within the CA zone is expected to be about 13 months.

The overall construction period of the proposed 132kV cable circuit will last for about 24 months. The proposed cable circuit will be unmanned. During its operation, emergency repair will only be required on an *ad hoc* basis at an extremely low frequency. The emergency repair will mostly be light-duty work using hand tools and small-scale equipment restricted within the works areas as shown in *Figure 1.1.*

1.6 *NUMBER AND TYPES OF DESIGNATED PROJECTS TO BE COVERED BY THE PROJECT PROFILE*

The proposed 132kV cable circuit connecting Ting Lai Road Substation and Pak Shek Kok Substation is classified as a Designated Project (DP) under Schedule 2, Part I, Category Q Item Q.1 of the *Environmental Impact Assessment Ordinance (EIAO)* – earthworks and other building works partly or wholly in a conservation area. According to *Section 5 (11)* of the *EIAO*, application for an Environmental Permit (EP) is required for the construction and operation of the Project.

This Project involves construction and operation of the proposed new 132kV cable circuit as described in *Section 1*. The overall construction period of the Project will last for about 24 months, and is tentatively scheduled to start in mid 2010 with operation (ie energization of cable circuit) expected to commence in mid 2012.

An indicative programme showing the key milestones for the Project as currently envisaged is provided in *Figure 2.1*.

Figure 2.1 Indicative Project Programme

No.	Activity Description	Year 1												Year 2									
		M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10
1	Excavation & Duct laying																						
2	Cable laying																						
3	Backfill & Reinstatement																						
4	Excavation & Duct laying (No-dig)																						
5	Backfill & Reinstatement (No-dig)																						

It should be noted that excavation and duct laying works may not be required in all cable sections if existing ducts are available as a result of other projects. For the purpose of this assessment, a worst case scenario in which all sections will require excavation and duct laying has been considered.

The Project Site is located next to an existing access road so all necessary equipment and materials will be delivered by truck to the Project Site. Construction for most of the cable sections will mainly utilise hand-held equipment / machineries and small-scale construction machineries will be employed for the no-dig cable duct construction works (see *Section 1.5*).

The existing environment of the Project Site within 500 m of the boundary of the Project and works areas is shown in *Figure 3.1*. The proposed route will be installed directly underneath the existing footpaths, cycle tracks and carriageways alongside the Tolo Highway. Developed areas including residential uses, schools, shopping market / plaza and waterfront park are mainly located to the north of the Study Area. Within the Study Area, the steep hillsides at Nam Hang, Fung Yuen and Tai Po Kau are zoned as "Green Belt" while the Tolo Pond Mangrove, the Tai Po Kau Headland and its adjacent intertidal ponds are zoned "Conservation Area" to protect and retain the existing natural landscape, ecological and topographical features. A short section (~180 m) of the proposed cable will pass through the "Conservation Area".

Built at a small islet called Yuen Chau Tsai in 1905, Island House is a declared monument protected under the *Antiquities and Monuments Ordinance* and is now used as a conservation studies centre. Island House is located adjacent to the proposed cable circuit in the central part of the Study Area [1]. In addition, there are three historic buildings within the Study Area, namely Tin Hau Temple, Old Police Bungalow and Tai Po Lookout.

(1) Antiquities and Monuments Office. Declared Monuments in Hong Kong. [*http://www.lcsd.gov.hk/CE/Museum/Monument/en/monuments_17.php*] Accessed in April 2010.

4.1 INTRODUCTION

4.1.1 Construction Phase

The construction of the Project is expected to involve trench excavation, pipe jacking, cable duct/cable installation, backfilling and reinstatement works. The arrangements will be:

- a limited number of powered mechanical equipment (PME) and hand-tools will be deployed for the construction works (please refer to *Section 4.3*);
- the PMEs and equipment to be demobilised, will be transported by trucks via Tolo Highway;
- the excavated materials generated from the trench and pipe jacking will be reused onsite and the remaining materials will be disposed of at an appropriate waste reception facility;
- Cable duct and cable installation will be carried out using a winch and grouting; and,
- for the construction of the working pit and cable trench, removal of 17 common exotic immature trees is required and five individual planted / landscape trees will be transplanted respectively. The ecological impact associated with the project works is discussed further in *Section 4.6*.

4.1.2 Operational Phase

Potential operational phase impacts are not expected as there will be no major works once the circuit is operational.

4.1.3 Summary of Potential Environmental Impacts arising from Project

A summary of potential environmental impacts arising from the Project during the construction and operation phases is presented in *Table 4.1*. The key potential construction phase impacts are related to air quality, noise, site runoff, waste and ecology. Further details on the consideration of the potential environmental impacts are provided in subsequent sections.

Table 4.1 *Potential Environmental Impacts Arising from the Project during Construction and Operational Phases*

Potential Impact	Construction	Operation
• Gaseous Emission	– (a)	–
• Dust	✓ (a)	–
• Odour	–	–
• Noise	✓	–
• Night-Time Operations	–	–
• Traffic	–	–
• Liquid Effluents, Discharge or Contaminated Runoff	✓	–
• Generation of Waste or By-products	✓	–
• Manufacturing, Storage, Use, Handling, Transport, or Disposal of Dangerous Goods	–	–
• Disposal of Spoil Material	✓	–
• Terrestrial Ecology	✓	–
• Landscape and Visual	–	–
• Cultural and Heritage	-	–
• Hazard to Life	–	–
• Cumulative Impacts	–	–

Note:
(a) '✓' = Possible; '–' = Not Expected

4.2 AIR QUALITY

4.2.1 Construction Phase

Excavation and filling will be required for the construction of the trench and pipe jacking. A total of approximately 13,000 m^3 of soil will be excavated for the whole alignment. Backfilling will also be required for the trench and pipe jacking. These construction works for different sections will not be undertaken at the same time.

Within the general 500m study area, air sensitive receivers (ASRs) have been identified and shown in *Figure 4.1*. Most of the identified ASRs are located at the northern part of the Study Area. In view of the small scale of construction works, sequencing works for different sections and limited generation of excavated spoil, dust impact is anticipated to be minor.

Dust control measures stipulated in the *Air Pollution Control (Construction Dust) Regulation* will be implemented during the construction works to control the potential fugitive dust emissions.

Good site practices, such as regular maintenance and checking of diesel power mechanical equipment will be adopted to avoid any black smoke emissions and to minimize gaseous emission.

With the adoption of the above measures no adverse air quality impact is expected to arise from the construction of the Project.

4.2.2 *Operational Phase*

No air emission is anticipated during the operation of the Project. The extremely low frequency emergency repair for the cable circuit will only involve the use of hand tools and small-scale equipment, adverse air quality impact is not anticipated during the operation of the Project.

4.3 *NOISE*

4.3.1 *Baseline Condition*

Background noise in the Study Area is dominated by traffic.

In accordance with the Outline Zoning Plan (OZP) for Tai Po (No. S/TP/21), the land uses of the surrounding areas were zoned as "Residential (Group A)" (R(A)), "Residential (Group B)" (R(B)), "Residential (Group C)" (R(C)), "Village Type Development" (V), "Conservation Area" (CA), "Other Specified Uses" (OU) for MTRC Railway, "Government/Institution/Community" (GIC), "Green Belt" (GB) and "Open Space" (O) (*Figure 4.2*).

4.3.2 *Noise Sensitive Receivers*

Representative Noise Sensitive Receivers (NSRs) have been identified in accordance with the criteria stipulated in *Annex 13* of the *Technical Memorandum on Environmental Impact Assessment Process* (*EIAO-TM*). The locations of these NSRs are presented in *Figure 4.3* and listed in *Table 4.2*.

Table 4.2 Representative Noise Sensitive Receivers

NSR No.	Description	Type of Use
R1	Heng Lung House, Fu Heng Estate	Residential
R2	Tai Yuen Hostel, Tai Yuen Estate	Residential
R3	Hong Man Court, Sun Hing Garden	Residential
R4	Block 17, Tai Po Centre	Residential
R5	Ming Yan House, Ming Nga Court	Residential
R6	Kwong Lai House, Kwong Fuk Estate	Residential
R7	Wang Shing House, Wang Fuk Court	Residential
R8	Care Village	Residential
R9	MTRC Staff Quarters Long Block	Residential
R10	Sea View Villa	Residential
R11	Private House	Residential
R12	Tower 11, Deerhill Villas	Residential
S1	HK Taoist Assn Ng Lai Wo Memorial School	School
S2	Tai Po Baptist Public School	School

4.3.3 *Construction Phase*

Construction Noise Criteria

Under the *EIAO*, potential noise impact arising from general construction works during normal working hours (ie 07:00 to 19:00 hrs on any day not being a Sunday or public holiday) at the openable windows of buildings is to

be assessed in accordance with the noise criteria specified in the *EIAO-TM*. The *EIAO-TM* noise standards are presented in *Table 4.3*.

Table 4.3 EIAO-TM Daytime Construction Noise Standards ($L_{eq,30\ min}$ dB(A))

Use	Noise Standard (dB(A))
Domestic Premises	75
Educational Institutions (normal periods)	70
Educational Institutions (during examination periods)	65

Should night-time works be required, the Contractor must apply for a Construction Noise Permit (CNP) and ensure full compliance with the requirements of the *Noise Control Ordinance* (*NCO) (Cap 400)*. The *Technical Memorandum on Noise from Construction Work other than Percussive Piling* (*GW - TM*) and *Technical Memorandum on Noise from Construction Work in Designated Areas Piling* (*DA-TM*) details the procedures adopted by the Environmental Protection Department (EPD) for assessing such an application.

Construction Activities and Programme

The use of Powered Mechanical Equipment (PME) during the construction phase of the Project may affect the nearby NSRs. The major construction activities will involve trench excavation, pipe jacking, cable duct / cable installation, backfilling and reinstatement works. The construction works will be carried out during daytime hours only, ie between 07:00 and 19:00 hours from Monday to Saturday (except public holidays). The construction noise assessment was undertaken based on the proposed construction plant inventory and works programme presented in *Annex A*. The Project Proponent has reviewed the programme and plant inventory, and has confirmed that they are reasonable and practicable for completing the Project within the scheduled timeframe.

Works Areas

For the purpose of the construction noise assessment, the entire construction site was divided into 11 separate works areas (S1-S11), with each works area expected to be operated for six to fourteen months as shown in the construction programme in *Annex A*. The 11 separate works areas are presented in *Figure 4.3*.

Assessment Methodology

The construction noise impact assessment was undertaken in accordance with the procedures outlined in the *GW-TM*, which is issued under the *NCO* and the *EIAO-TM*. The assessment methodology is summarised as follows:

- Locate representative NSRs that may be affected by the Project;
- Determine the plant teams for corresponding activities, based on the agreed plant inventory;

- Assign sound power levels (SWLs) to the Powered Mechanical Equipment (PME) proposed based on the *GW-TM* and list of SWLs of other commonly used PME [1] and BS 5228 [2];

- Calculate the correction factors based on the distance between the NSRs and the notional noise source position of the work sites;

- Apply corrections in the calculations, such as potential screening effects and acoustic reflection, if any; and

- Predict the construction noise levels at NSRs in the absence of any mitigation measures.

The potential noise impacts at NSRs were subsequently evaluated by comparing the predicted noise levels with the *EIAO-TM* day-time construction noise limits ($L_{eq,30min}$ dB(A)).

Assessment Assumption

Utilisation Rates

In reality, not all PME items within a work site will be operating at all times. The SWLs presented in *Annex A2* were applied to the noise calculations with the practical utilisation rates for the various PME items.

Scheduling of PME / Construction Activities

Some construction activities will take place in sequence rather than simultaneously within the respective works sites, ie only one group from Group 1 to Group 4 of PMEs should be operated at any one time.

Erection of Movable Noise Barriers

In view of the close proximity between NSRs R1 to R3, R5 to R7 and S1 to S2 and Sections 1, 2, 4 and 5 of the Project Site, movable noise barriers will be deployed at these Sections as far as practicable. The use of movable barrier for certain PME could generally provide a 5dB(A) reduction for movable PME and 10dB(A) for stationary PME. The superficial surface density of the material for the movable barrier will be no less than 10kg / m^2 and have no openings or gaps. The movable noise barrier will be about 3 to 5m tall and with a short cantilevered section on the top. The length of the barriers should be at least five times greater than its height.

Impact Assessment

The predicted façade noise levels due to the construction activities are calculated in accordance with the methodology described in *GW-TM*. The results indicated that the predicted façade noise levels are in the range of 36 to

(1) "Sound power levels of other commonly used PME" prepared by the Noise Control Authority (*http://www.epd.gov.hk/epd/english/application_for_licences/guidance/files/OtherSWLe.pdf*)

(2) British Standard "Noise and vibration control on construction and open sites, Part 1 Code of practice for basic information and procedures for noise and vibration control" BS 5228: Part 1.

75dB(A) and 31 to 65 dB(A) at R1 to R12 and S1 to S2, respectively, ie comply with the noise criteria described in *Table 4.3*. The results are summarised in *Table 4.4* with details of the calculations given in *Annex A3*.

Table 4.4 Predicted Construction Noise Levels During Daytime Period

NSR No.	Description	Predicted Noise Level, dB(A)	Noise Criterion, $L_{eq, 30min}$, dB(A)
R1	Heng Lung House, Fu Heng Estate	31 – 72	75
R2	Tai Yuen Hostel, Tai Yuen Estate	31 – 70	75
R3	Hong Man Court, Sun Hing Garden	32 – 75	75
R4	Block 17, Tai Po Centre	33 – 71	75
R5	Ming Yan House, Ming Nga Court	37 – 69	75
R6	Kwong Lai House, Kwong Fuk Estate	38 – 73	75
R7	Wang Shing House, Wang Fuk Court	39 – 75	75
R8	Care Village	43 – 66	75
R9	MTRC Staff Quarters Long Block	44 – 67	75
R10	Sea View Villa	42 – 69	75
R11	Private House	51 – 64	75
R12	Tower 11, Deerhill Villas	38 – 60	75
S1	HK Taoist Assn Ng Lai Wo Memorial School	31 – 65	70 / 65
S2	Tai Po Baptist Public School	31 – 60	70 / 65

As shown in *Figure 4.3*, a short section (~65 m) of the proposed cable will pass through the CA (southern part of S8), where R10 is identified as the closest NSR that is potentially most affected by the construction activities within this area. *Table 4.4* shows that the predicted construction noise levels at NSR R10 comply with the 75dB(A) noise criteria during the daytime period, therefore, no adverse noise impact is expected to arise from the construction activities to be carried out within the CA, ie S8.

4.3.4 Operational Phase

No fixed plant is expected during the operation of the Project, therefore no adverse operational noise impact is anticipated. The infrequent emergency repair will only involve the use of hand tools and small-scale equipment and the noise impact during such events is expected to be minimal.

4.4 WATER QUALITY

4.4.1 Construction Phase

Excavation will be required for the construction of trench and pipe jacking, and the excavated spoil will be disposed of offsite. Limited wastewater will be generated during the excavation works and during the pipe jacking when groundwater dewatering will be undertaken at cable sections S4 and S8.

No-dig cable duct crossing is proposed for the cable circuit sections at Lam Tsuen River Channel and at the Tai Po Kau outlet next to Tai Hang Bridge (see *Figure 4.4* for location). The no-dig cable duct crossings method was preferred to trenching for crossing rivers / water bodies because it did not disturb river / sea bed features and therefore impacts to water quality are expected to be minimal. A no-dig pit will first be constructed by small scale

excavation at the two ends of the crossing (*Figures 1.3 & 1.4* for general layout plan). Pipejacking method will be used for micro-tunnelling of the sleeve pipe (ie cable duct) which will be formed at minimum 3m below riverbed / seabed level by horizontal drilling using tunnel boring machine. The cable will then be laid inside the cable duct. Such method avoids open cut excavation and will not disturb the nearby water bodies. Disturbance associated with the excavation and pipejacking to the water quality of the Channel and Tolo Harbour is expected to be minimal and direct discharge of surface runoff to the nearby water bodies / existing drainage systems will not be allowed. Proper site control measures including the provision of a sedimentation tank will be implemented to avoid run-off of excavated materials into the Channel and Tolo Harbour during pit construction. Potential water quality impacts on Lam Tsuen River Channel and water bodies around Tai Hang Bridge are therefore not anticipated.

As there will be no construction works and no wastewater generated at the streams in Tai Po Kau villages (see *Figure 4.4* for location) and its vicinity, potential water quality impacts associated with the construction of the Project are not anticipated.

Overall, no marine works will be involved in the project and with the implementation of proper site runoff control measures (see *Section 5.3*) and considering the small scale of works activities and area, no adverse water quality impact is expected.

4.4.2 Operational Phase

No effluent / wastewater discharge will be generated during either the commissioning or the operation of the Project and therefore no water quality impact is anticipated.

4.5 WASTE MANAGEMENT

4.5.1 Construction Phase

The construction activities associated with the Project may generate the following broad categories of waste:

- Construction and demolition (C&D) materials – approximately 13,000 m^3 of excavated soil will be generated from excavation works along the whole alignment (approximately 5km) but about 15% of the total volume of excavated soil will be reused on site;
- Very small quantities of chemical waste, such as batteries and lubricating oils from the maintenance of construction equipment; and
- Small quantities of general refuse, including food waste from the on-site work force and packaging from the construction materials.

It is estimated that approximately 11,000 m^3 of spoil will be excavated by the trench method at the working rate of about 9 m^3 of spoil per day per section

assuming 24 working days a month. About 2,400 m^3 of spoil will be generated from the no-dig duct method (generally over 9-month period per section) which is about 5 m^3 of spoil per day per section assuming 24 working days a month. It is expected that about 15% of the excavated spoil generated by the whole project can be reused on site. General refuse will be taken away from the work site by the workers for proper disposal on a daily basis.

The construction activities will involve only a small number of construction equipment in each cable section. The quantities of chemical waste generated from regular maintenance of equipment should be negligible and no impact is expected in this respect. With proper housekeeping measures and refuse collection in place, minimal or no impact is expected to arise from refuse generated during the construction phase of the Project.

4.5.2 Operational Phase

With the infrequent need for emergency repair of the Project and the small number of workers involved, no waste management issue is anticipated during the operation of the Project.

4.6 ECOLOGY

4.6.1 Introduction

An ecological baseline survey was conducted in April 2010 within the Study Area (the area within 500 m from the Site boundary, see *Figure 4.4*). The ecological baseline conditions of the Study Area are presented in this section.

4.6.2 Environmental Legislation and Guidelines

The following legislation and guidelines provide the framework for the protection of species and habitats of ecological importance for ecological impact assessment in Hong Kong:

- *Forests and Countryside Ordinance (Cap 96)*;
- *Town Planning Ordinance (Cap 131)*;
- *Wild Animals Protection Ordinance (Cap 170)*;
- *Protection of Endangered Species of Animals and Plants Ordinance (Cap 586)*; and
- *Hong Kong Planning Standards and Guidelines Chapter 10 (HKPSG)*.

Reference was also made to the *Technical Memorandum on Environmental Impact Assessment Process (EIAO-TM)* issued under the EIAO in the evaluation of potential ecological impacts.

4.6.3 Literature Review of Ecological Characteristics of the Study Area

A literature review was conducted but there is limited ecological information available within the Study Area. A focussed field survey was conducted in

April 2010 to determine the existing ecological conditions within the Study Area.

4.6.4 Green Belt

Within the Study Area, the steep hillsides at Nam Hang, Fung Yuen and Tai Po Kau are zoned as "Green Belt" to protect the existing natural environmental from encroachment by urban development.

4.6.5 Conservation Area

The Tolo Pond Mangrove, the Tai Po Kau Headland and its adjacent intertidal ponds are zoned "Conservation Area" to protect and retain the existing natural landscape, ecological or topographical features. A short section (~ 180 m, in which only ~120 m of the cable route will disturb the ground surface during construction) of the proposed cable will pass through the Conservation Area.

4.6.6 Ecological Baseline Conditions

Habitat and Vegetation

Terrestrial habitats within the Study Area consisted of secondary woodland, orchard / village area, stream, channel, recreational pond, mangrove, developed / modified area and coastal area (*Figures 4.4 & 4.5*). Developed / modified area is the dominant habitat within the Study Area which consists of building structures, landscaped area including roadside plantation, waterfront park and gardens, disturbed areas and concrete paths. Numerous plantation areas were found on the cut-slopes, gardens and as continuous patch surrounding the building blocks and highway within the Study Area. The ecological value of developed / modified area is negligible to low. Secondary woodland was mainly found on the hill side at Cho Ma Wu and Tai Po Kau within the Study Area. The secondary woodland was likely originated from *Acacia* plantation but is now dominated by native plant species and is considered to be of moderate ecological value. Various orchard and village areas were found in the at Cho Ma Wu, Nam Hang, Ha Wong Yi Au and Tai Po Kau Lo Wai, which were comprised of village houses, landscaped areas, orchard and isolated and scattered small agriculture plots. Orchard / village area is considered of low ecological value. Two natural streams of low to moderate ecological value were found in the villages at Tai Po Kau and merged to the coastal area and freshwater pond. The Lam Tsuen River Channel and the Tai Po River Channel within the Study Area was considered to be of low ecological value. A recreational pond was located adjacent to Tai Po Kau Lo Wai village. A fringe of mangrove is located within the Conservation Area, and is considered of moderate ecological value.

One plant species of conservation interest, Green Ailanthus *Ailanthus fordii*, was recorded at the eastern artificial shore of the Tai Hang Bridge within the Conservation Area (see *Figure 4.6* for its location) during the survey. Green Ailanthus is protected under the *Forests and Countryside Ordinance* (Cap 96).

It can be commonly found and has been widely cultivated in Hong Kong as a roadside / ornamental tree.

The area of each habitat found within the Study Area and its corresponding ecological value are presented in *Table 4.6.* The full list of plant species recorded during both the ecological survey and the tree survey is presented in *Table B1* of *Annex B.*

Table 4.5 ***Area and Ecological Value of Each Habitat Identified within the Study Area***

Habitat	Total Area	Ecological Value	Description
Secondary Woodland	~96 ha	Moderate	Secondary woodland was mainly found at the hill side at Cho Ma Wu and Tai Po Kau within the Study Area. The secondary woodland was likely originated from *Acacia* plantation but is now dominated by native plant species. The age of the secondary woodland is estimated to be not more than 15 years. Common plant species recorded included *Acacia confusa, Macaranga tanarius, Choerospondias axillaris* and *Aleurites moluccana.* Neither rare nor protected plant species were recorded.
Orchard/ Village Area	~ 18 ha	Low	Various orchard and village areas were found in the at Cho Ma Wu, Nam Hang, Ha Wong Yi Au and Tai Po Kau Lo Wai, which were comprised of village houses, their landscaped area, orchard and isolated and scattered small farmland. Orchard/village area is considered of low ecological value. Most of the orchard/ village areas were occupied by exotic orchard shrubs, agriculture plants and weeds, such as *Carica papaya, Dimocarpus longan, Alocasia odora, Mikania micrantha* and *Bidens pilosa.* Neither rare nor protected plant species were recorded.
Developed /Modified Area	~ 266 ha	Low to Negligible	Developed/modified area is the dominant habitat within the Study Area which consists of building structures, landscaped area including roadside plantation, waterfront park and gardens, disturbed areas and concrete paths. Numerous plantation areas were found on the cut-slopes, gardens and as continuous patch surrounding the building blocks and highway within the Study Area. Most of the habitat was highly disturbed with limited vegetation cover. Common plant species recorded included *Cinnamomum camphora, Ficus microcarpa, Bauhinia blakeana, Allamanda schottii* and *Oxalis corniculata.* One plant species of conservation interest, Green Ailanthus *Ailanthus fordii*, was recorded at the eastern artificial shore of the Tai Hang Bridge within the Conservation Area during the survey. Green Ailanthus is protected under the *Forests and Countryside Ordinance* (Cap 96). It can be commonly found and has been widely cultivated in Hong Kong as roadside trees and ornamental trees.

Habitat	Total Area	Ecological Value	Description
Stream	~ 3.2 ha	Low to moderate	Two natural streams of low to moderate ecological value were found in the village area at Ta Po Kau and merged to the coastal area and freshwater pond. The stream was shallow and stream side vegetation was similar to those recorded in orchard/village area. Neither rare nor protected plant species were recorded.
Channel	~ 6 ha	Low	Lam Tsuen River Channel and the Tai Po River Channel within the Study Area. The vegetation was similar to those recorded in developed/modified area. Neither rare nor protected plant species were recorded.
Recreational Pond	~ 3 ha	Low	A recreational pond was located adjacent to the Tai Po Kau Lo Wai village. The vegetation was similar to those recorded in orchard/village area. Neither rare nor protected plant species were recorded.
Mangrove	~ 0.6 ha	Moderate	A fringe of mangrove was recorded within the Conservation Area. Plant species commonly found in this habitat included *Hibiscus tiliaceus, Kandelia obovata, Celtis sinensis, Cocculus orbiculatus* and *Clerodendrum inerme.* Neither rare nor protected plant species were recorded.
Project Site	Total length of ~5 km and works area for no-dig cable duct crossing of ~0.13 ha	Negligible to Low	The proposed cable route consists largely of developed area (over 97% of total cable length) and only a short section of route will pass through Channel (~90 m) and CA (~ 180m). Neither rare nor protected plant species were recorded. Only one individual tree of Triangle Palm *Neodypsis decaryi*, one individual tree of African Mahogany *Khaya senegalensis* and three individual trees of Hong Kong Orchid Tree *Bauhinia blakeana* were found located along the cable circuit (S4 & S8) will be transplanted during the construction of the Project (1).

Remark:

(1) According to the tree survey findings, 9 individuals of immature tree *Acacia confusa* and 8 individuals of immature tree *Leucaena leucocephala* will be removed at the western shore of Tai Hang Bridge within the Conservation Area. It should be noted that the Diameter at Breast Height (DBH) of these individuals was less than 95 mm.

General Wildlife

Most of the bird species recorded were abundant/common and widespread in Hong Kong (eg Spotted Dove *Streptopelia chinensis*, Barn Swallow *Hirundo rustica* and Red-whiskered Bulbul *Pycnonotus jocosus*). The full list of bird species recorded during the survey is presented in *Table B2* of *Annex B*.

Only one bird species of conservation interest, Black Kite *Milvus migrans*, was encountered within the Study Area during the survey. Black Kite was

recorded flying over a large area of the developed / modified area and therefore their locations cannot be shown. Black Kite is listed as CITES Appendix II and also listed as Class 2 Protected Animal of PRC. It is a common and widespread resident in Hong Kong.

No other faunal species of conservation interest were recorded during the survey.

4.6.7 Existing Conditions of the Project Site

The proposed cable circuit will mainly pass over paved areas within developed area including the existing footpaths, cycle tracks and carriageways. As mentioned, a short section of the alignment will also pass through the Lam Tsuen River Channel (~90 m) and Conservation Area (~180 m). No plant and fauna species of conservation interest were recorded along the alignment. Along the cable circuit and, three individual trees of Hong Kong Orchid Tree *Bauhinia blakeana*, one individual tree of African Mahogany *Khaya senegalensis* and one individual tree of Triangle Palm *Neodypsis decaryi* (all identified as planted / landscape trees) were found and will be transplanted during the construction of the Project. Within the Conservation Area, removal of 9 individuals of immature exotic tree *Acacia confusa* and 8 individuals of immature invasive tree White Popinac *Leucaena leucocephala* will be required for the construction of working pit at the western shore of Tai Hang Bridge. Since both tree species are common exotic species and White Popinac is considered an invasive species, it is recommended that 17 light standard native tree species Chinese Hackberry *Celtis sinensis* will be planted for compensation.

None of the faunal species recorded along the alignment are rare, protected or of conservation interest. The Project Site is considered of negligible to low ecological value.

4.6.8 Construction and Operational Phase Impacts

The potential impacts to the habitats affected by the Project are presented in *Table 4.6.*

Table 4.6 Potential Impacts to Habitats from the Project

Impacted Habitat	Length Impacted	Ecological Value	Overall Ecological Impact	Note
Areas within CA, all developed area	~ 180 m (only 120m of the ground section will be affected during construction)	Low to Moderate	Low	Removal of 9 individuals of immature exotic tree *Acacia confusa* and 8 individuals of immature invasive tree *Leucaena leucocephala* will be required for the construction of working pit. A total of 17 individuals of native tree species will be planted for compensation (1). Vegetation clearance will not be required during pipe jacking.
Lam Tsuen River Channel	~ 90 m (open cut excavation will be avoided and the nearby water bodies will not be disturbed)	Low	Low	Vegetation clearance for the installation works will not be required since the cable will be installed below riverbed level by horizontal drilling (pipe jacking method). All trees will be retained and not be affected.
Developed Area	Total length of ~ 5 km and works area for no-dig cable duct crossing of ~0.13 ha	Negligible to Low	Negligible	Areas are highly disturbed without ecological concern. Only three individual trees of Hong Kong Orchid Tree *Bauhinia blakeana*, one individual tree of African Mahogany *Khaya senegalensis* and one individual tree of Triangle Palm *Neodypsis decaryi* were found located along the cable circuit (S4 & S8) and will be transplanted during the construction of the Project.

Remark:

(1) According to the tree survey findings, 9 individuals of immature exotic tree *Acacia confusa* and 8 individuals of immature invasive tree White Popinac *Leucaena leucocephala* at the western shore of Tai Hang Bridge within the Conservation Area will be removed. It should be noted that the Diameter at Breast Height (DBH) of these individuals was less than 95 mm. Compensatory planting will be conducted by replanting of 17 light standard native tree species Chinese Hackberry *Celtis sinensis*.

Construction activities are expected to be small scale as presented in the table above. Impacts to individual plants will be minimised by retaining / translocation as far as possible. Within the Conservation Area, only a limited size area will be affected and disturbance to the habitat has been minimised by using the pipe-jacking method. The plant species of conservation interest, Green Ailanthus, identified within the Conservation Area will be retained and not be affected by the Project. Specific measures have been proposed to ensure no damage to this plant during the construction phase (see *Section 5.5*). No mangrove will also be affected by the Project. Impact associated with the Project on the mangrove and the plant species of

species conservation interest is therefore not anticipated. Based on the above assessment, the ecological impact during the construction phase is expected to be low.

Given there are extensive similar habitats in proximity, unacceptable impacts to the habitat and the associated species are not anticipated.

Operational Phase

Ecological impact is not anticipated during the operational phase as no major works will be undertaken.

4.6.9 Cumulative Impact

At present there are no planned concurrent projects within the Study Area, no cumulative impact is expected during the construction and operation phases.

4.7 CULTURAL HERITAGE

4.7.1 Introduction

This section presents the cultural heritage impact assessment resulting from the construction and operation of the proposed development. Appropriate mitigation measures have been recommended, where necessary, in order to mitigate any adverse impacts.

4.7.2 Environmental Legislation and Guidelines

The following legislation and guidelines are applicable to the assessment of impacts on sites of cultural heritage in Hong Kong:

- *Environmental Impact Assessment Ordinance (Cap. 499.S16), Technical Memorandum on the EIA Process, Annex 10 and 19 (EIAO TM) and Guidance Notes on Assessment of Impact on Sites of Cultural Heritage in EIA Studies;*
- *Antiquities and Monuments Ordinance (Cap. 53) (AM Ordinance);*
- *Guidelines for Cultural Heritage Impact Assessment (CHIA Guidelines); and*
- *Hong Kong Planning Standards and Guidelines (HKPSG).*

4.7.3 Assessment Methodology

The methodology adopted follows the CHIA Guidelines and comprised the following tasks.

Task 1 - Desk-top Study

A desk-top review was undertaken to compile a comprehensive inventory of cultural heritage resources as defined in the CHIA Guidelines. *Table 4.7* presents the classification of the cultural heritage resources.

Table 4.7 Categories of Cultural Heritage Resources

Categories	Description
Declared Monuments	Statutorily protected against the threat of development under the *Antiquities and Monuments Ordinance (AM Ordinance)* to enable preservation for posterity.
Deemed Monuments	They are sites identified by the Antiquities and Monuments Office (AMO) and agreements reached with the owners of the Monument to provide for specific measures to ensure preservation.
Existing / Proposed Graded Historic Buildings	Graded by the Antiquities Advisory Board (AAB) based on an internal guidelines adopted by the AAB and the AMO for the preservation of historic buildings. Existing / proposed graded historic buildings and government historic sites are included in this category. • Grade I - Buildings of outstanding merit, which every effort should be made to preserve if possible. • Grade II - Buildings of special merit; efforts should be made to selectively preserve. • Grade III - Buildings of some merit; preservation in some form would be desirable and alternative means could be considered if preservation is not practicable. • No Grade – Buildings Assessed and considered not to be graded as I, II or III.
Sites of Archaeological Interest	Sites with archaeological interest listed by AMO.
Other Cultural Heritage Resources	Cultural heritage resources falling outside the above categories but need to be addressed in accordance with the CHIA Guidelines. They comprise: • Unknown areas of Archaeological Interest not listed by AMO; • Historic Buildings and Structures; and • Landscape Features.

Information was obtained from the internet, the Hong Kong Heritage Discovery Centre Reference Library, public libraries and libraries of tertiary institutions. Footnotes are provided in relevant sections regarding materials referenced.

Task 2a - Built Heritage Survey

A built heritage survey was conducted to confirm the on-site condition of cultural heritage resources recorded by the AMO and identified from desktop research, and to identify any additional built heritage resources not recorded.

Photographic records and interviews with locals were conducted to obtain information in relation to the identified resources. The survey included the identification of:

- All pre-1950 buildings and structures;
- Selected Post-1950 buildings and structures of high architectural and historical significance; and

- Landscape features such as historical field patterns, traditional trackways, fish ponds, fung shui woodlands/trees, shrines and historical clan graves.

Site Coding System

A unique alphanumeric site code was allocated to each identified built heritage resource not recorded by AMO. Each code was prefixed with a two letter code "TP". For instance, TP1 refers to the first feature identified in Tai Po Kau. *Table 4.8* provides a list of these codes.

Table 4.8 Categories of Cultural Heritage Resources Not Recorded by AMO

Location	Site Code	Location	Site Code
Tai Po Kau	TP	Yuen Chau Tsai	YC
Ha Wong Yi Au	HW	Nam Hang	NH

Task 2b - Archaeological Survey

The proposed development is small in scale and located in disturbed area or reclaimed land with negligible archaeological potential, no archaeological survey is therefore considered necessary.

Task 3 - Impact Assessment & Recommendations of Mitigation Measures

Preservation in totality is taken as the first priority and the assessment has taken into account the requirement as specified in the CHIA Guidelines.

Potential direct and indirect impacts to the identified cultural heritage resources have been evaluated. Should potential impacts be identified, appropriate mitigation measures will be recommended.

4.7.4 Baseline Condition

A declared monument, Island House, is located by the proposed development (see *Figure 4.7*). It was built in 1905 and stood on a small islet called Yuen Chau Tsai near the head of Tolo Harbour, and was connected to the mainland by a causeway. The two-storey plastered building with open verandas is a classic example of the colonial architecture at the turn of the century. It was erected as quarters for government officers and was long associated with the former New Territories Administration. It is now used by the World Wide Fund for Nature as a Conservation Studies Centre. Photographic record is presented in *Figure C1a* in *Annex C1*.

No deemed monuments or Government Historic Sites were identified within 500m of the proposed cable route [1].

(1) Declared Monument as at 6 November 2009. Information on line; available from http://www.amo.gov.hk/form/DM_Mon_Map.pdf; Government Historic Sites Identified by AMO as at 7 December 2007. Information on line: available from http://www.amo.gov.hk/form/build_hia_government_historic_sites.pdf; List of Sites of Archaeological Interest as at 16 February 2009

Three graded historic buildings are identified within 500m of the proposed development and they are listed in *Table 4.9* below. Their photographic records are presented in *Figures C1b* to *C1d* in *Annex C1* and locations shown in *Figure 4.7*.

Table 4.9 Graded Historic Building within 500m of the Proposed Works Area (1)

Site Name	Description
Tai Po Lookout (大埔瞭望台) Construction Year: Early 1900s. Distance from the proposed alignment: 412 m	It is a **Grade I** historic building located in No. 11 Lookout Link, Tai Po Kau. The Lookout was designed and built by Lawrence Gibbs, a British civil engineer, in the early 1900s and was used as his residence afterwards. It is believed that he chose to build his house on the top of a hill in Tai Po regardless of the poor transport at that time, probably because of the beautiful views there. The tower in the Lookout was a water tower. From 1929 to 1933, the ownership of the Lookout changed and John Alexander Fraser finally owned it but he was interned and died in the Stanley camp during the Japanese Occupation. During World War II, the Lookout was used by the Japanese as a torture chamber. In December 1947, the land lot and the house were sold to the government. Since then it was used as the living quarters of government officials such as the Tai Po District Officers and the head of the Police Secret Service until 1996 when it was leased to the Society for AIDs Care as a residential centre for AIDS patients. In 2000 the Lookout reverted to its original purpose as a private residence. The Lookout is a colonial style one-storey flat-roofed building with an arched colonnaded verandah, a projecting portico (probably built at a later date) and a cylindrical watch tower which probably gives the building its name. A detached block of servants quarters is set at an angle to the side of the building. The buildings are situated on the top of a small hill served by driveway off Lookout Link. See *Figures C1b(i) and C1b(ii)*.
Old Police Bungalow Construction Year: 1909 Distance from the proposed alignment: 470m	It is a **Grade II** historic building located in Nos. 173 & 175 Kwong Fuk Road on the top of a hill opposite to Old Tai Po Police Station (舊大埔警署) and Old District Office North (舊北區理民府) which were also built around that period. The bungalow was the residence of four single police officers at the time when it was built. In the early post-World War II period, it provided accommodation to senior police officers such as the Divisional Superintendent of the New Territories (e.g. Norman Burgess Fraser) and the Senior Superintendent of Police (e.g. Alexander Lundie Gordon and Thomas Cashman). In 1991, the bungalow was taken over by Norwegian School (挪威學校) as a kindergarten. The detached servants' quarters and stable building were believed to have been built at the same time as the bungalow. A cannon is found in the southern part of the bungalow, facing Tolo Harbour. The bungalow is a single-storey building with a semi-basement; part of the building is raised and supported on brick arches. The walls are of Canton red bricks, and the huge pitched roof is of double pan-and roll Chinese tiling carried on hardwood rafters and China fir poles. The roof is hipped with wide overhanging eaves on ornamental brackets and central chimney stacks at the apex. Similar architectural style is adopted for the servants' quarters annex and the separate stable building in the grounds. See *Figure C1c*.

(1) Brief Information on Proposed Grade I Items. Information on line; available from http://www.amo.gov.hk/form/Brief_Information_on_proposed_Grade_I_Items.pdf; Brief Information on Proposed Grade II Items. Information on line; available from http://www.amo.gov.hk/form/Brief_Information_on_proposed_Grade_II_Items.pdf; Brief Information on Proposed Grade III Items. Information on line; available from http://www.amo.gov.hk/form/Brief_Information_on_proposed_Grade_III_Items.pdf

Site Name	Description
Tin Hau Temple, Tai Po Kau Hui Construction Year: The 30th year of the Kangxi reign (康熙, 1691) Distance from the proposed alignment: 452m	It is a **Grade III** historic building located in Tai Po Kau Hui (one of the oldest Market in the New Territories) built by the fishermen of Tai Po for the worship of Tin Hau. It was close to the sea but has become far away due to reclamation for development. The temple is a Qing vernacular building having two halls flanked with two side chambers for the worship of two other major deities, the Kwan Tai and Tam Kung. Past renovations have greatly modernized the building which roofs are in glazed green ceramic tile and external walls thickly plastered. Whilst its door frames and bases in granite blocks remain unchanged, its roofs are supported by a system of rafters and purlins. The ridge decorations have replaced by a set of ceramic dragons, a pearl and geometric patterns. The wall friezes on the façade are of the Eight Immortals (八仙). See *Figure C1d*.

Apart from the above built heritage listed by *AMO*, there is one archaeological site, the Yuen Chau Tsai (Island House) Archaeological Site, located adjacent to the proposed cable route (see *Figure 4.7*). The site boundary is identical to the Island House declared monument. The site was first reported by Mr. John Walden, who collected stone adzes and geometric pottery shards at the shoreline and the southern slope of Yuen Chau Tsai in 1960s. Field investigations also recovered prehistoric cultural remains from the site in the 1980s and 1990s.

The proposed works area is located in disturbed area or reclaimed land with negligible archaeological potential; no new archaeological findings are expected.

In addition to the above cultural heritage resources recorded by *AMO*, there are a number of built heritage sites identified within 500m of the proposed work area and they are presented in *Table 4.10*.

Table 4.10 *Built Heritage Sites Identified not Listed by AMO within 500m of the Proposed Works Area*

Site Code	Site Name	Description	Construction Year	Closest Distance from the proposed alignment (m)
TP01 to TP9	Residential Houses and a grave in Tai Po Kau	The village is not recorded in both 1688 and 1819 editions of the Xin'an Gazetteer. However, it appeared in the 1866 May of San On District. The village is now separated into Lo Wai and San Wai. There are two shrines, one clan grave and six traditional residential houses in the village. Their locations and photographic records are shown in *Figure C1e* in *Annex C1* and *Figure C2a* in *Annex C2*.	Qing Dynasty (by 1866)	306-414
HW01 to HW08	Residential Houses and an earth shrine of the Care Village	After the World War II, a number of non-profit making organization were in Hong Kong to assist local poor people and fishermen to establish their home. This village was one of the villages assisted by such organizations at the time after WWII. They were mostly fishermen of the area. There are a number of stone blocks built residential houses and an earth shrine identified in the village of historic value. Their locations and photographic records are shown in *Figure C1f* in *Annex C1* and *Figure C2b* in *Annex C2*.	After WWII	112-153
HW09-HW12	Ancestral Halls and Entrance Gate in Wong Yi Au village	The village is not recorded in both 1688 and 1819 editions of the Xin'an Gazetteer. However, it is marked as Wong-nai-au (黃坑凹) in the 1866 May of San On District. Now, the village is known as Wong Yi Au. There are three Chan Ancestral Halls and an entrance gate identified in the village. All of them have been renovated with modern materials. Their locations and photographic records are shown in *Figure C1g* in *Annex C1* and *Figure C2b* in *Annex C2*.	Qing Dynasty (by 1866)	443-492

Site Code	Site Name	Description	Construction Year	Closest Distance from the proposed alignment (m)
YC01	Tai Wong Yeh Temple	According to the plaques identified in the Temple, it was established by the fishermen of Yuen Chau Tsai village. Surname groups included So (蘇), Li (李), Tsui (徐), Chung (鍾) and Shek (石). It is renovated with modern materials. It is located within the Island House declared monument boundary. Its location and photographic record are shown in *Figure C1h* in *Annex C1* and *Figure C2c* in *Annex C2*.	Around 1889 and renovated in 1989 and 2001	11
NH01 to 12	Residential Houses and Village Committee House in Nam Hang	The village is recorded in the 1819 Xin'an Gazetteer. The population of the village during the 1900s were 220 and regards as Punti (local) village. According to the local informant, the village was established by the Lo(羅), Yau (邱) and Jim (詹) clans. There are eleven residential houses and the village committee house considered to have historic value identified in the village. Their locations and photographic records are shown in *Figures C1i and C1j* in *Annex C1* and *Figure C2d* in *Annex C2*.	Qing Dynasty (by 1819)	51-219

4.7.5 Evaluation of Impacts

Construction Phase

Since no deemed monuments and Government Historic sites were identified within 500m of the proposed works areas, no impact is anticipated.

The three graded historic buildings as listed in *Table 4.9* are located over 400m from the works area. No impact is anticipated.

Although the Island House declared monument site boundary is located next to the proposed works area, the building structure is located 50m from the works area and separated by soft ground, direct and indirect impacts are not anticipated.

Although the Tai Wong Yeh Temple (YC01) is located within the Island House declared monument boundary and located 11 m from the proposed works area, the works area is located along the existing bicycle track with higher

ground level and the Temple is separated by soft ground as shown in *Box 4.1* below. It is expected that the construction work undertaken in front of the Temple will only last for about one to two months. Direct or indirect impacts are not anticipated.

Box 4.1 Photo showing YC01 Location and the Proposed Cable Alignment.

In case any works of the Project encounter the declared monument boundary as shown in *Figure C2c in Annex C2*, the Project Proponent should obtain a permit granted by the Authority in accordance with *Section 6* of the *AM Ordinance* to carry out the work.

The closest built structure TP02 in Tai Po Kau is located 306m from the proposed cable alignment, no impact is anticipated due to large separation distance.

The closest built structure HW08 in Ha Wong Yiu Au is located 112 m from the proposed cable alignment, no impact is anticipated due to large separation distance.

The closest built structure NH07 in Nam Hang village is located 51 m from the proposed cable alignment, no impact is anticipated due to large separation distance.

Operational Phase

As the proposed cable will mainly be constructed underground, no cultural heritage impact is anticipated during the operational phase of the proposed development.

4.7.6 Residual Impacts

No cultural heritage impact is anticipated, no residual or cumulative impact is expected during the construction and operation of the proposed development.

4.7.7 Conclusions

A literature review supplemented by a built heritage survey and site inspection identified one declared monument, three graded historic buildings, one archaeological site and a number of built heritage sites in Nam Hang, Wong Yi Au, Yuen Chau Tsai and Tai Po Kau.

Aside from the Island House declared monument and the Yuen Chau Tsai (Island House) Archaeological Site and the Tai Wong Yeh Temple (YC01), the remaining built heritage sites are located over 51m from the proposed works areas. Due to the separation distance, short construction work period (about one to two months) and the small scale of the proposed works, no impact is anticipated.

With regard to the Island House declared monument, the proposed works area is located over 50m from the building structure site boundary, impacts are therefore not anticipated. However, in case any construction works of the Project encounter the declared monument boundary, a permit which is granted by the Authority in accordance with *Section 6* of the *AM Ordinance* is required in order to carry out the construction works.

No earth work will be conducted in Yuen Chau Tsai (Island House) Archaeological Site boundary, impacts are therefore not anticipated.

Impacts to Tai Wong Yeh Temple (YC01) is also not anticipated as it is close to the proposed works area, any potential construction vibration impact due to the small scale construction work will be reduced due to the soft ground in front of the temple.

Based on the assessment as presented above, no insurmountable cultural heritage impacts are anticipated during the construction and operational phase of the proposed development. No mitigation measures or environment monitoring and audit are required.

5 ENVIRONMENTAL PROTECTION MEASURES

5.1 AIR QUALITY

5.1.1 Construction Phase

The potential dust impacts associated with the construction of the Project will be mitigated through the implementation of construction site management practices for dust control detailed in the *Air Pollution Control (Construction Dust) Regulation*. These include watering of exposed soil surfaces, covering of stockpiles of dusty materials with impervious sheeting, watering during excavation and use of well-maintained construction equipment to avoid black smoke emissions.

5.1.2 Operational Phase

Since no operational air emission is anticipated, no mitigation measures are required.

5.2 NOISE

5.2.1 Construction Phase

No adverse noise impact is expected during the construction phase of the Project but good site practices will still be adopted as far as practicable by the Contractor to minimise noise emissions:

- Idling PME will be switched off;
- Noisy PME will be placed inside the cavern or sited as far away from the NSRs as practicable;
- Quiet PME will be used as far as practicable;
- Where possible, stored materials and temporary structures will be sited in practical locations to screen NSRs from noisy on-site construction activities; and
- Work sequences to avoid the simultaneous use of noisy PME in close proximity to NSRs will be planned ahead of the commencement of the works.

5.2.2 Operational Phase

Since no operational noise impact is anticipated, no mitigation measures are required.

5.3 WATER QUALITY

5.3.1 Construction Phase

Appropriate measures including the provision of sedimentation tanks and controlled wastewater discharge to the nearby water bodies will be implemented in accordance with the guidelines stipulated in Environmental Protection Department (EPD)'s *Practice Note for Professional Persons on Construction Site Drainage (ProPECC PN1/94)* during the construction works to properly control site run-off and drainage and to minimise potential water quality impacts.

Where appropriate, wastewater discharge licence will be applied and conditions / requirements will be complied with in accordance with the *Water Pollution Control Ordinance (WPCO) (Chapter 358)*.

5.3.2 Operational Phase

Since no operational phase water quality impact is anticipated, no mitigation measures are required.

5.4 WASTE MANAGEMENT

5.4.1 Construction Phase

To minimise the amount of construction waste, good site management practice will be adopted by the contractors of the Project and waste on-site will be properly segregated to increase the potential for reuse and recycling. Construction waste generated from the Project, if any, will be transported offsite by truck for proper disposal. Chemical waste generated during the construction of the Project, if any, will be properly stored in accordance with *Code of Practice on the Packaging, Labelling and Storage of Chemical Waste* by EPD before collection for disposal by a licensed Chemical Waste Collector. The quantity of general refuse to be generated on-site will be minimal owing to the small number of workers involved and will be taken away from the Site by the workers for proper disposal on a daily basis.

5.4.2 Operational Phase

Since no waste management issue is anticipated during the operation of the Project, no waste mitigation measures are required.

5.5 ECOLOGY

5.5.1 Construction Phase

Potential ecological impacts associated with the Project during the construction phase may potentially include disturbance of stream habitat and associated vegetation and wildlife. With the negligible to low ecological value of the habitat and high degree of disturbance in close vicinity of the Project Site, potential ecological disturbance caused by the Project is

anticipated to be minimal. Further ecological disturbance could be minimised by implementation of good construction practices which are listed as follow:

- Avoid potential impacts on trees whenever possible during the detailed design stage. It is expected that removal of 17 immature trees of exotic / invasive species will be required for the Project and five individual planted / landscape trees will be transplanted in order to facilitate the project construction works. Compensatory planting will be conducted by replanting of 17 light standard native tree species (Chinese Hackberry *Celtis sinensis*);

- Avoid any damage and disturbance to the plant species of conservation interest, Green Ailanthus, identified at the artificial shore to the east of the Tai Hang Bridge. A warning sign showing the name and the photo of this plant species will be established next to the plant during the construction phase so that construction workers will be aware of the location of this plant species and avoid any disturbance and damage to this plant.

- Avoid any damage and disturbance, particularly those caused by filling and illegal dumping to the surrounding natural habitats and especially those within the Conservation Area;

- Regularly check the Site boundaries to ensure that they are not breached and that no damage occurs to surrounding areas particularly the Conservation Area;

- Prohibit and prevent open fires within the site boundary during construction and provide temporary fire fighting equipment in the work areas; and

- Reinstate temporary work sites / disturbed areas, immediately after completion of the construction works.

5.5.2 Operational Phase

No ecological impact is anticipated during the operational phase.

5.6 CULTURAL HERITAGE

No cultural heritage impacts have been identified to arise from the construction and operation of the proposed cable route, no mitigation measures are therefore required.

6 COMMENT ON POSSIBLE SEVERITY, DISTRIBUTION AND DURATION OF ENVIRONMENTAL EFFECTS

The Project will involve the construction of a new cable circuit which will connect to the existing electricity substation. The selection of the Site has taken into consideration the nature of the area and mitigation measures have been proposed to further reduce potential environmental disturbances to sensitive receivers arising from the implementation of the Project.

The scale of the construction works is small, mainly utilising small-scale construction equipment / machineries and hand tools. The Project will be unmanned in the operational phase and will not impose any adverse environmental impacts during operation. Appropriate environmental mitigation measures have been identified and will be implemented. The overall environmental impacts potentially arising from the Project are therefore considered to be minor. With the implementation of appropriate environmental control measures discussed in the preceding section, no adverse residual environmental impacts are anticipated.

7 *USE OF PREVIOUSLY APPROVED EIA REPORTS/DIRECT ENVIRONMENTAL PERMIT APPLICATIONS*

No similar project or reference is made for this direct application of an Environmental Permit.

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1 基本資料

1.1 工程項目名稱

連接汀麗路變電站至白石角變電站的 132 千伏特電纜鋪設工程（以下簡稱「本工程項目」）。

1.2 工程項目倡議人名稱

中華電力有限公司（中電）

1.3 聯絡人姓名及電話號碼

姓名　　：陳自本

職銜　　：中華電力有限公司工程項目部一級工程師

電話號碼：2678 7514（辦公室）

1.4 工程項目的目的和性質

根據中電最新的電力負載預測和未來數年的增長預測，由於白石角的新建住宅項目，以及擴建科學園和香港中文大學，預計大埔和白石角區的電力需求將會持續增加。因此，在上述地區的電力供應網絡需要加強，以確保附近的發展，特別是那打素醫院的供電可靠性。

基於上述原因，有必要鋪設一條 132 千伏特的連接電纜，連接現有的汀麗路變電站與白石角變電站，以便紓緩上述的電力需求，並加強電網容量。擬建的 132 千伏特電纜會沿著大埔公路的行人路、單車徑和行車道鋪設。*圖 1.1* 展示了該電纜的鋪設路線。*圖 1.2* 則是電纜鋪設的橫切面圖。

1.5 工程項目的地點、規模和工程地項目地點的歷史

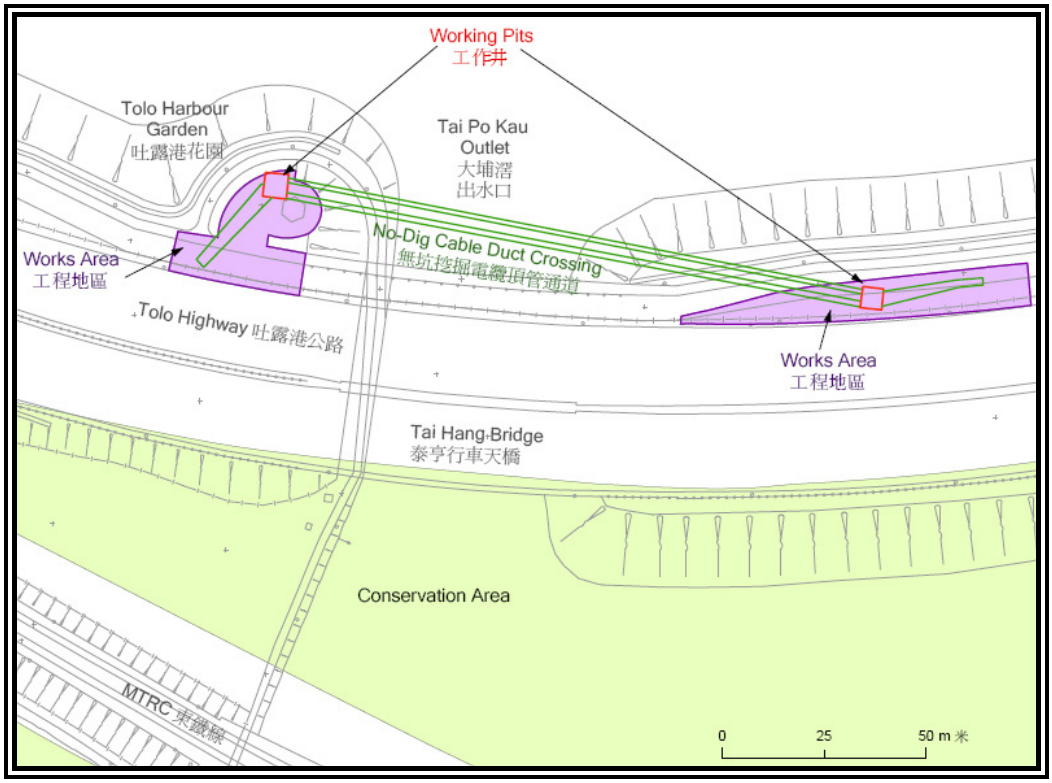
工程地點位於新界大埔區。*圖 1.1* 展示了擬建電纜的工程地點和施工地區。該電纜將會分作十一段（S1-S11）鋪設，每段約長 450 米（見*圖 1.1*），全長約 5 公里。鋪設的電纜之上會以最少 1 米厚的物料覆蓋，並以混凝土電纜磚保護，再在頂部貼上標示帶（見*圖 1.2*）。

擬建電纜鋪設路線的起點是現有的汀麗路變電站；該站位於頌雅路富亨村和頌雅路兒童遊樂場交界處附近的汀麗路南面行人路。電纜從起點開始，沿著汀角路行人路、南運路和大埔太和路伸延，並以一條無坑挖掘電纜頂管通道橫過林村河（即在完善公園西南面和廣義樓西北面）。然後，電纜會沿著完善路伸延，並進入吐露港公路南面的單車徑，再沿著創新路的行人路連接至現有的白石角變電站。

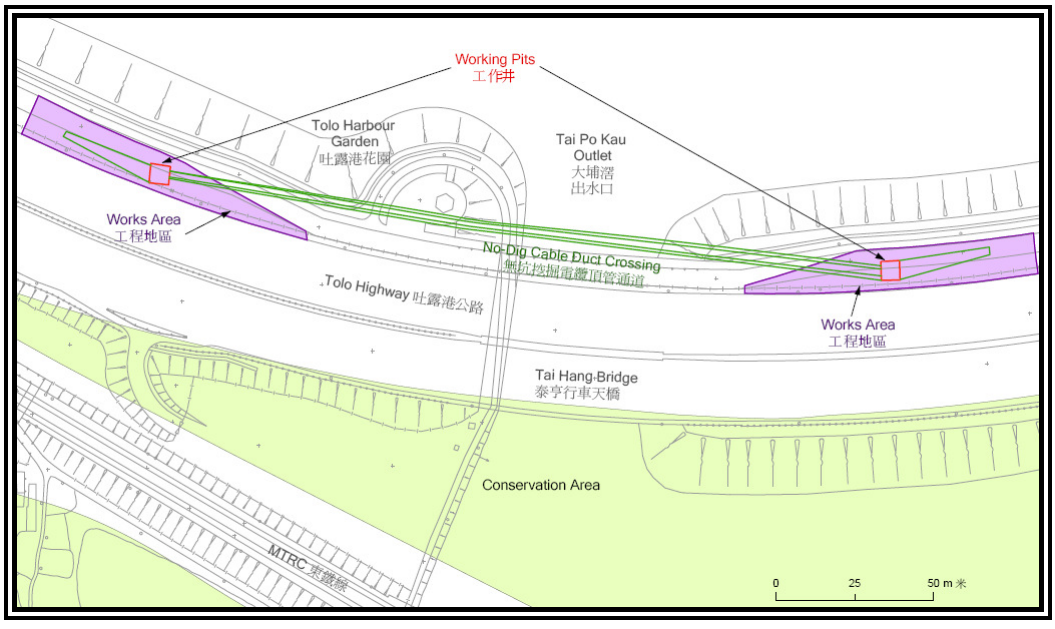
整條路線的電纜都會以挖槽法鋪設（並會使用任何現存的導管），但有兩處屬例外，即：橫過林村河的無坑挖掘電纜頂管通道（即在 S4 的南部，見*圖 1.3*）

和自然保育區內泰亨橋旁的渠口下面（即在 S8 南部，以下稱爲大埔滘渠口）（見*圖 1.4*）。挖槽法被公認爲公用事業地下安裝工程之最常見的和有效的方法。此方法一般包括工地清理、路面鑽破（如適用）、挖掘及鋪設電纜工作。在建造工程竣工後，電纜壕坑將被回填至原狀。

應予注意的，是擬建電纜鋪設路線的 S4 及 S8 段，都不可以沿著公路鋪設。本項目曾經研究沿不同的鋪纜路線，以無坑挖掘電纜頂管通過大埔滘渠口，其中包括在吐露港花園（第 3 區）或在大埔滘以西和泰亨橋以北的單車徑路邊花槽建造工作井（見*框 1.1 及 1.2*）。



框 1.1　地圖顯示在 S8 自然保育區外，吐露港花園無坑挖掘電纜頂管通道的替代方案一。

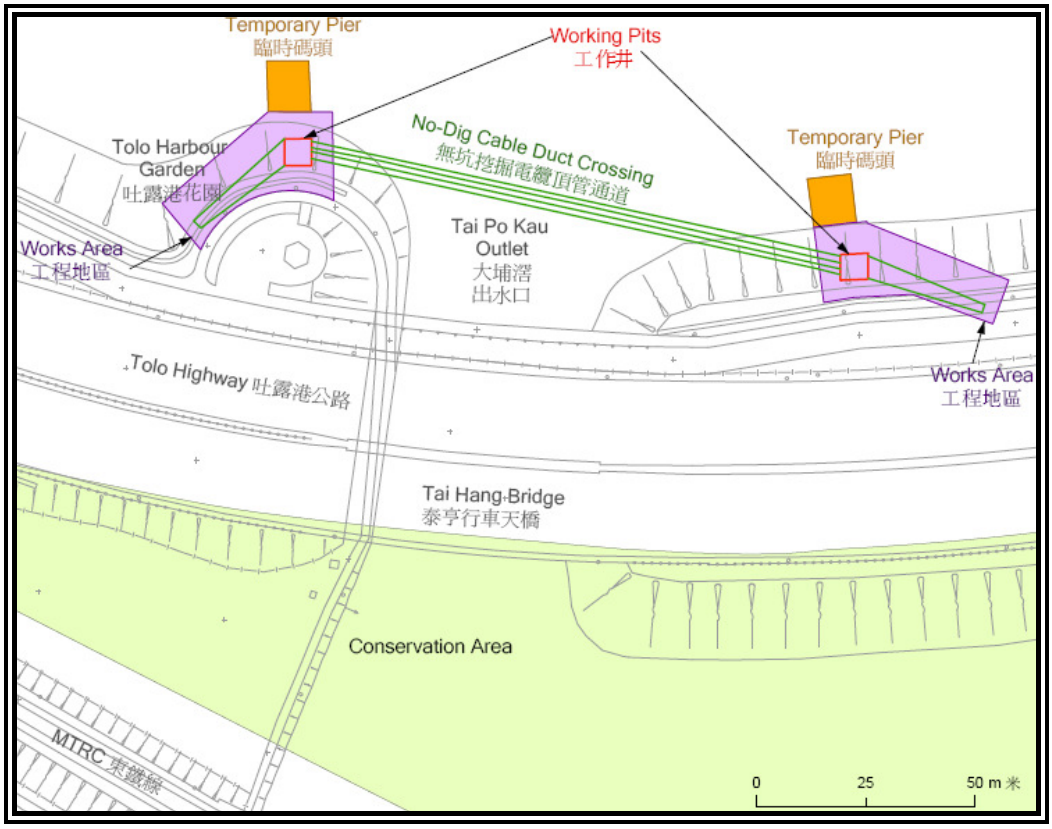


框 1.2　地圖顯示在 S8 自然保育區及吐露港花園外無坑挖掘電纜頂管通道的替代方案二。

然而，由於下列各項限制，這些方案都不可行：

- 需要建造兩個工作井（每個佔地 36 平方米，深 17 米），因此需要使用大型機器。這類設備需要有充足的工作空間，但工程區卻未能提供。
- 需要佔用部份單車徑和吐露港公路作爲工程區。這個方案可能會令吐露港公路受到不可接受的交通影響。

另一個方案是把無坑挖掘電纜頂管通道的鋪設路線安排在吐露花園第 3 區範圍外，但這個方案需要在海堤建造最小深 16.5 米工作井（見*框 1.3*）。根據初步勘探結果，約在九米深發現碎石層，這將會增加工程的難度。因此，建造工作井時亦將會增加安全及淹沒的風險。



框 1.3　地圖顯示在 S8 自然保育區及吐露港花園外無坑挖掘電纜頂管通道的替代方案三。

而且這個方案需要進行大規模的挖掘及海事工程，包括灌漿工程和建造一個臨時平台，因此並不可取。

按照現時的建議，工作井和電纜將會設在位於大埔滘渠口以西和泰亨橋以南的自然保育區內。擬建電纜鋪設路線會沿著泰亨橋下的行人路，從吐露港花園伸延至位於港鐵鐵路東北面的未劃撥政府土地（現時是一幅荒地，只有少量植物覆蓋）。另外，本項目將會裝設兩條無坑挖掘電纜頂管通道橫過林村河和吐露港公路。這些工作井相對較淺（約深 10 米），因此，承建商較有可能採用小型設備。這條電纜鋪設路線在施工期間會造成最少的交通影響和公眾滋擾，因此亦是最可行的方案。

工程區不會超出擬建電纜鋪設路線兩側的 1 米範圍內，只有無坑挖掘電纜頂管通道會佔用約 550 平方米和 700 平方米的工程區（包括臨時物料堆放區）；它們分別位於 S4 段的南部（即林村河）和 S8 段（即大埔滘渠口）（見*圖 1.2 及 1.3*）。在建造電纜壕坑、頂管井和斜道、中段井、接管井和斜道時，將會進行小規模的挖掘工程（整項工程挖掘出的總體積約達 13,000 立方米，而在自然保育區內挖掘出則約爲 1,300 立方米 (1)）。此外，本項目亦會使用隧道鑽挖機爲兩條套管進行微型隧道挖掘工程。在完成電纜頂管和電纜的鋪設工程，及以混凝土包裹頂管後，便會以沙或舊土回填於電纜壕坑內，然後把工程地點恢復原狀。預計本項目將移走 17 棵未成熟的樹木（包括九棵外來物種相思樹 *Acacia confusa*，8 棵入侵物種銀合歡 *Leucaena leucocephala*）。另外，有五棵人工種植／園景樹木（包括三棵洋紫荊 *Bauhinia blakeana*，一棵非洲桃花心木 *Khaya senegalensi* 和一棵三角棕櫚 *Neodypsis decaryi*），將會被移植，以便本項目施工（有關詳情，請參閱*第 4.6 節*）。

本工程項目將會使用的主要建築機器包括：

- 電纜壕坑挖掘期間：吊臂車、混凝土鋸、挖土機、發電機、空氣壓縮機和破土機；
- 在鋪設電纜管或電纜期間：吊臂車、絞車和發電機；
- 在回填和復原期間：吊臂車、發電機、水泵、振動壓路機、衝擊夯、壓路機和自卸車；
- 建造無坑挖掘工作井期間及以無坑挖掘電纜頂管通道期間：吊臂車、發電機、水泵、空氣壓縮機、破土機、挖土機、震錘、灌漿機、絞車、充電器和隧道鑽挖機；及
- 在回填和復原無坑挖掘工作井期間期間：吊臂車、發電機、水泵、衝擊夯、壓路機、自卸車、挖土機和震錘。

1.5.1 自然保育區內的工程

沿著電纜分段 S8 的擬建電纜中有一小段（約長 180 米）會經過自然保育區。如前所述，無坑挖掘電纜頂管通道將會在自然保育區內的大埔滘出口西面鋪設至泰亨橋的南部。此建造方法及電纜鋪設路線在施工期間會造成最少的交通影響和公眾滋擾，因此亦是最可行的方案。由於此建造方法避免進行海事工程，因此將減少對生態和水質的影響。有關在自然保育區內使的主要建築機器及有關的工作程序如下：

主要建築機器

- 電纜壕坑挖掘期間：吊臂車、混凝土鋸、挖土機、發電機、空氣壓縮機和破土機；
- 在鋪設電纜管或電纜期間：吊臂車、絞車和發電機；
- 在回填和復原期間：吊臂車、發電機、水泵、振動壓路機、衝擊夯、壓路機和自卸車；

(1) 預料總挖掘體積中，約有 15%的物料會在工程現場重新再用。

- 建造無坑挖掘工作井期間及以無坑挖掘電纜頂管通道期間：吊臂車、發電機、水泵、空氣壓縮機、破土機、挖土機、震錘、灌漿機、絞車、液壓系統和隧道鑽挖機；及
- 在回填和復原無坑挖掘工作井期間期間：吊臂車、發電機、水泵、衝擊夯、壓路機、自卸車、挖土機和震錘。

工作程序

	S8段的工作性質及程序		M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13
1	**工作井工程**	**5**													
2	工作井A 工程（自然保育區內）	3													
3	工作井B 工程（自然保育區內）	4													
4	工作井C 工程（自然保育區外）	4													
5	**無坑挖掘電纜頂管通道92米長**	**2**													
6	橫越海床跨度1（自然保育區內）	1													
7	橫越海床跨度2（自然保育區內）	1													
8	**無坑挖掘電纜頂管通道70米長**	**1.5**													
9	橫越高速公路跨度1（自然保育區外）	0.75													
10	橫越高速公路跨度2（自然保育區外）	0.75													
11	**斜坑工作井A（自然保育區內）**	**1**													
12	**高密度聚乙烯管鋪設**	**1.5**													
13	**電纜槽挖掘（自然保育區340米外）**	**3.5**													
14	**電纜槽挖掘（自然保育區70米內）**	**1**													
15	**電纜鋪設**	**0.5**													
16	**回填和復原電纜槽**	**1.5**													
17	**回填和復原工作井A 和井B （自然保育區內）**	**1**													
18	**回填和復原電纜槽（自然保育區外）**	**1**													

在自然保育區內的工程需時約 13 個月.

整個 132 千伏特電纜鋪設工程需時約 24 個月。擬建電纜無需人手操作。在日後的運行期間，電纜只需要偶爾進行緊急維修工作。這類維修工作大都是輕型工程，而且大都只在*圖 1.1* 所示的工程區內，使用輕型手動工具和小型設備。

1.6 工程項目簡介涵蓋的指定工程項目數目及種類

擬建之連接現有的汀麗路變電站至現有的白石角變電站的 132 千伏特電纜鋪設工程屬於「環境影響評估條例」（環評條例）的附表二第一部Q類 Q.1 項－全部或部份位於自然保育區內的土木工程和其他建築工程，因此是一個「指定工程項目」。根據環評條例*第 5(11)條*的規定，必須爲本工程項目的施工和運作請環境許可證。

本工程項目包括第 1 節所闡述新 132 千伏特電纜的建造和運作。整個施工期需時約爲 24 個月，暫定於 2010 年中動工，預計於 2012 年中啓用（即電纜通電）。

圖 2.1 顯示，是目前估計的大概工程計劃中的主要工序。

圖2.1 概略工程計劃

No.	Activity Description	Year 1												Year 2									
		M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10
1	挖掘纜槽及鋪設導管																						
2	鋪設電纜																						
3	回填及復原																						
4	挖掘工程及鋪設導管（非挖式）																						
5	回填及復原（非挖式）																						

應予注意的是，倘若某電纜分段已有其他工程所建造的電纜導管提供，便無需進行電纜壕坑挖掘工程和導管鋪設工程。然而，是次評估研究所考慮的是最壞情況，亦即所有電纜分段都需要進行壕坑挖掘和導管鋪設工程。

由於項目地點位於現有道路旁，因此，所有設備和物料都會以貨車運送。大部份電纜分段的建造工程都會使用輕型手動工具或機器進行；而非挖式電纜導管建造工程則會以小型建築設備進行（見*第 1.5 節*）。

圖 3.1 展示了本項目地點和工地邊界四周 500 米範圍內的現有環境。擬建的電纜會鋪設在吐露港公路沿線的現有行人路、單車徑和行車道下面。已發展地區包括住宅區、學校、購物市場或廣場和河畔公園等，大都位於研究區北面。在研究區內的南坑、鳳園和大埔滘等陡峭山坡都屬於「綠化地帶」；而吐露港紅樹林、大埔滘陸岬及其毗鄰的潮間池塘則被劃作爲「自然保育區」，以保存現有的天然景觀、生態系統和地形特色。擬建電纜中有一小段（約長 180 米）會經過自然保育區。

根據「古物及古蹟條例」的規定，建於 1905 年，坐落於元洲仔小島上的舊政務司官邸屬於法定古蹟。該建築物現時被用作自然環境保護研究中心。舊政務司官邸毗鄰研究區中部的擬建電纜 (1)。此外，研究區內還有三座歷史建築物，包括：天后廟、舊警察宿舍和大埔瞭望台。

(1) 古物古蹟辦事處。「香港法定古蹟」網頁。 [*http://www.lcsd.gov.hk/CE/Museum/Monument/en/monuments_17.php*] 於 2010 年 4 月瀏覽。

4 對環境可能造成的影響

4.1 引言

4.1.1 施工階段

估計本工程項目估計會包括壕坑挖掘、纜管推頂、導管或電纜鋪設、回填和復原等工程。有關這些工程的安排如下：

- 各項建造工程均會使用有限數量的機動設備和手工具（請參閱*第 4.3 節*）；
- 機動設備和需予棄置的設備，均會以貨車經吐露港公路運送；
- 挖掘壕坑和推頂纜管時所產生的挖掘物料都會在現場再用，而剩餘的物料會運棄置於適當的廢物接收設施；
- 導管和電纜都會採用絞車和灌漿法鋪設；及
- 在建造壕坑或工作井時，將分別移走 17 棵常見外來物種的未成熟樹木，及移植五棵人工種植或園景樹木。有關的生態影響會於*第 4.6 節*深入探討。。

4.1.2 運作階段

因電纜在運行期間不會進行大型工程，預計本項目在運行階段不會造成任何影響。

4.1.3 本項目的潛在環境影響摘要

表 *4.1* 羅列了本項目包括施工及運行階段的潛在環境影響。在施工階段的主要潛在影響是空氣質素、噪音、工地徑流、廢物和生態影響。有關潛在環境影響的其他細節，均於以後章節闡述。

表 4.1　本項目在施工和運行階段的潛在環境影響

潛在影響	施工階段	運作階段
• 氣體排放	– (a)	–
• 塵埃	✓ (a)	–
• 氣味	–	–
• 噪音	✓	–
• 夜間運行	–	–
• 交通	–	–
• 污水、廢水或受污染的徑流	✓	–
• 廢物或副產品	✓	–
• 危險物品的製造、儲存、使用、處理、運送或處置	–	–
• 廢棄物料的處置	✓	–
• 陸地生態	✓	–
• 景觀和視覺	–	–
• 文化遺產	–	–
• 對生命的危害	–	–
• 累積影響	–	–

附註：
(a) '✓' = 可能； '–' = 預計不會

4.2　空氣質素

4.2.1　施工階段

在建造壕坑和推頂纜管時，需要進行挖掘和填土工程。整條電纜的鋪設工程共會挖出約 13,000 立方米的泥土。而在建造壕坑和推頂纜管時，需要進行回填工程。不過，這些建造工程不會同時在各電纜分段進行。

圖 4.1 展示在研究區 500 米範圍內所發現的空氣質素敏感受體（ASRs）。大部分的空氣質素敏感受體都位於研究區北部。鑑於有關的建造工程規模細小，而且各個電纜分段亦會分期施工，再加上工程所產生的掘出泥土數量有限，因此，預計本項目只會造成很輕微的塵埃影響。

然而，在進行施工時，將會實施「空氣污染管制（建造工程塵埃）規例」所規定的塵埃控制措施，藉以控制可能飄散的塵埃。

同時，亦會採用良好施工方法，例如定期維修和檢查柴油驅動的機器，以免排放黑煙，並減少排出其他廢氣。

預計在實施上述措施後，本項目在施工期間將不會造成任何不良空氣質素影響。

4.2.2　運作階段

預計本項目在運作期間不會排放任何廢氣。電纜需要進行緊急修理的情況極少，而且只需要使用手工具和小型設備，因此，本項目在運作期間不會造成任何不良空氣質素影響。

4.3 噪音

4.3.1 基線情況

研究區的背景噪音主要來自車輛。

根據大埔分區計劃大綱圖（編號 S/TP/21），附近地區的土地用途地帶包括：「住宅（甲類）」、「住宅（乙類）」、「住宅（丙類）」、「鄉村式發展」、「自然保育區」、劃作港鐵公司鐵路的「其他指定用途」地區、「政府、機構或社區」、「綠化地帶」和「休憩用地」。

4.3.2 噪音感應強的地方

本項目按照「環境影響評估程序技術備忘錄」（環評技術備忘錄）*附錄 13* 所規定的準則，找出了具代表性的噪音感應強的地方。*表 4.2* 羅列這些地方。它們的位置則展示於*圖 4.3*。

表4.2 具代表性的噪音感應強的地方

噪音感應強的地方**編號**	**說明**	**用途類別**
R1	富亨村亨隆樓	住宅
R2	大元邨馬會匡智大元宿舍	住宅
R3	新興花園康民閣	住宅
R4	大埔中心 17 座	住宅
R5	明雅苑明欣閣	住宅
R6	廣福邨廣禮樓	住宅
R7	宏福苑宏盛閣	住宅
R8	美援新村	住宅
R9	港鐵員工宿舍長座	住宅
R10	海景山莊	住宅
R11	私人大宅	住宅
R12	鹿茵軒 11 座	住宅
S1	香港道教聯合會雲泉吳禮和紀念學校	學校
S2	大埔浸信會公立學校	學校

4.3.3 施工階段

建築噪音準則

根據「環評條例」，在正常工作時段內（即並非星期日或公眾假期的任何日子裏，從上午七時至下午七時）進行的一般建造工程，對建築物的可開啓窗戶可能造成的潛在噪音影響，均須按照「環評技術備忘錄」所註明的噪音準則予以評估。*表 4.3* 詳列了「環評技術備忘錄」的噪音標準。

表4.3 環評技術備忘錄日間建築噪造標準（30 分鐘等效連續聲級，分貝(A)）

用途	**噪音標準（分貝(A)）**
住宅樓宇	75
教育機構（正常時段）	70
教育機構（考試期間）	65

若有需要進行晚間工程，承建商必須申請建築噪音許可證，並須確保施工時完全符合「噪音管制條例」（第 400 章）的要求。「管制建築工程噪音（撞擊式打樁除外）技術備忘錄」和「管制指定範圍的建築工程噪音技術備忘錄」詳述了環境保護署（環保署）對於評估這類申請所採用的程序。

施工活動和計劃

本項目在施工階段所使用的機動設備可能會影響附近的噪音感應強的地方。主要的施工活動包括：挖掘壕坑、推頂纜管、鋪設導管或電纜、回填泥土和工地復原等工程。各項建築工程都只會在日間進行，即從星期一至星期六的上午七時至下午七時（公眾假期除外）。是次建築噪音評估，是根據*附錄 A* 所闡述的建議機動設備清單和工程計劃而進行。工程項目倡議者在檢視過工程計劃和機器施工時使用的機動設備清單後，證實確定兩者都屬合理地和可行地，而且可以讓本項目在預訂時間內完工。

工程地區

是次建築噪音評估把整個建築工地劃分爲 11 個工程地區（S1-S11），預計每個區都會運作六至十四個月。*附錄 A* 展示了每個區的施工計劃。*圖 4.3* 展示了 11 個施工地區的位置。

評估方法

是次建築噪音影響評估，是根據「管制建築工程噪音（撞擊式打樁除外）技術備忘錄」所闡述的程序進行。該備忘錄是根據「噪音管制條例」和「環評技術備忘錄」而發出。有關的評估方法摘述如下：

- 找出可能受本項目影響的具代表性噪音感應強的地方；
- 根據已獲認同的機動設備清單，決定各項工序所使用的機動設備組合；
- 根據「管制建築工程噪音（撞擊式打樁除外）技術備忘錄」和其他常用機動設備的聲功率級表 (1) 和 BS 5228 (2) 的建議，爲每項建議使用的擬訂聲功率級；
- 根據噪音感應強的地方與工地噪音來源估計位置之間的距離，計算修正系數；
- 對計算結果作出適當修正，例如潛在的屏障效果和聲音反射等（若有）；及
- 預測在不實施任何緩解措施的情況下，在噪音感應強的地方所受到的建築噪音聲級。

最後，把預測的噪音聲級與「環評技術備忘錄」的日間建築噪音上限（30 分鐘等效連續聲級分貝(A)）加以比較，藉此評估噪音感應強的地方可能受到的噪音影響。

(1) 由噪音管制監督擬定的「其它常見機動設備的聲功率級資料 」(*http://www.epd.gov.hk/epd/english/application_for_licences/guidance/files/OtherSWLe.pdf*)

(2) 英國標準「噪音和振動管制基本資料和程序的實務守則第一部份：建築及露天工地的噪音和振動管制」，BS 5228：第一部份。

評估假設

使用率

在現實中，工地內的機動設備不會在所有時間都全部運作。因此，進行評估時會按照每件機動設備的使用率，再配合*附錄 A2* 所羅列的聲功率級來計算噪音聲級。

機動設備／建築活動的時間編排

部份建築活動會按先後次序分別進行，而並非在工地內同時進行。換言之，從第 1 組至第 4 組機動設備中，在任何時間都只有一組在運作。

設置可移動隔音屏障

由於噪音感應強的地方 R1 至 R3、R5 至 R7 和 S1 至 S2 與項目地點第 1、2、4 和 5 分段之間的距離很近，因此，本項目將會在這些分段設置可移動的隔音屏障。在爲機動設備使用可移動隔音屏障後，可以令可移動機動設備的噪音減少 5 分貝(A)，及令固定機動設備的噪音減少 10 分貝(A)。製造移動隔音屏障的物料，其表面密度不可低於 10 公斤/平方米，亦不可有任何孔洞或空隙。可移動隔音屏障約高 3 至 5 米，其頂部是一段較短的懸臂。這些屏障的長度最少應是其高度的五倍。

影響評估

是次評估已按照「管制建築工程噪音（撞擊式打樁除外）技術備忘錄」所闡述的方法，預測因本項目施工活動所致的正面預測噪音聲級分貝。結果顯示，在噪音感應強的地方 R1 至 R12 和 S1 至 S2 的外牆噪音預測聲級分別介乎 36 至 75 分貝(A)和 31 至 65 分貝(A)，亦即符合*表 4.3* 所羅列的噪音準則。這些計算結果均羅列於*表 4.4*；計算的細節則於*附錄 A3* 闡述。

表4.4　日間建築噪音預測聲級

噪音感應強的地方**編號**	**說明**	**預計噪音聲級，分貝(A)**	**噪音標準，30 分鐘等效連續聲級，分貝(A)**
R1	富亨村亨隆樓	37 – 72	75
R2	大元村馬會匡智大元宿舍	38 – 70	75
R3	新興花園康民閣	38 – 75	75
R4	大埔中心 17 座	36 – 71	75
R5	明雅苑明欣閣	37 – 69	75
R6	廣福邨廣禮樓	38 – 73	75
R7	宏福苑宏盛閣	38 – 75	75
R8	美援新村	42 – 66	75
R9	港鐵員工宿舍長座	44 – 67	75
R10	海景山莊	43 – 69	75
R11	私人大宅	51 – 64	75
R12	鹿茵軒 11 座	39 – 60	75
S1	香港道教聯合會雲泉吳禮和紀念學校	37 – 65	70/65
S2	大埔浸信會公立學校	31 – 60	70/65

在*圖 4.3* 所示，擬建電纜中有一小段（約長 65 米）會經過自然保育區 (S8 的南部)，在此保育區範圍內，預料施工時最受影響且最近的噪音感應強的地方是

R10。*表 4.4* 展示了噪音感應強的地方 R10 的預計噪音聲級符合 75 分貝(A)的噪音準則，因此，在 S8 的自然保育區內，施工期間將不會造成不良的噪音影響。

4.3.4 運行階段

預計本項目在運行時無需使用任何固定機器，因此不會造成任何不良的噪音影響。偶爾需要進行的緊急修理工作亦只需使用手工具和小型設備，因此，這類工作只會產生極輕微的噪音影響。

4.4 水質

4.4.1 施工階段

建造壕坑和推頂纜管都需要進行挖掘工程。被挖出的棄土會運離工地處置。這些挖掘工程及在推頂纜管時進行地下水降水時，才會產生有限的廢水。

本項目建議在林村河和在泰亨橋旁的大埔滘渠口採用無坑挖掘電纜頂管通道（位置見*圖 4.4*）。無坑挖掘頂管較壕坑適合於橫過河流/水體，因爲此方法不直接影響河床或海床，所以預計只會對水質產生極輕微的影響。無坑挖掘電纜頂管通道方法，首先會以小型挖掘工程在橫過位置的兩端，建造一個無坑挖掘工作井。然後會在河床／海床下最少 3 米處，以隧道鑽挖機進行水平鑽挖，並採用纜管推頂法爲套管（即電纜頂管）進行微型隧道鑽挖工作。最後再把電纜鋪設在電纜導管內。這個方法可以避免使用明挖法，因此不會對附近水體造成滋擾。預估因挖掘工程及纜管推頂對河遁及吐露港的水質只會所造成極輕微的影響。而本項目亦不會將工程產生的地表徑流直接排放到附近的水體或現有排水系統。此外，本項目在施工期間，將實施適當的工地徑流控制措施（包括提供沉澱池），以免在建造工作井時，被挖掘的物料會隨著徑流進入林村河和吐露港。預計本項目對林村河和泰亨橋附近的水體的水質不會造成影響。

由於本項目不會在大埔滘村的河流及其附近（位置見*圖 4.4*）進行任何建造工程和排放廢水，因此預計本項目在施工期間不會造成潛在的水質影響。

概括而言，本項目不會進行任何海事工程，亦會實施適當的工地徑流控制措施(見*章節 5.3*)，鑑於本項目的工程規模和工程地區範圍均屬細小，因此，預計本項目不會造成不良的水質影響。

4.4.2 運作階段

本項目在測試及運行期間不會產生任何污水或廢水，因此不會造成水質影響。

4.5 廢物管理

4.5.1 施工階段

本項目的施工活動可能會產生下列廢物：

- 建築和拆卸物料（拆建物料）– 在整條電纜鋪設路線（長約 5 公里）進行的挖掘工程共會產生約 13,000 立方米的掘出泥土，其中約有 15%會在現場被重新再用。

- 維修各種建築設備會產生非常小量的化學廢物，例如電池和潤滑油；及
- 小量一般垃圾，包括由現場工作人員所產生的食物廢物，以及來自建材的包裝物料。

按每月有 24 個工作天計算，每個分段每天的壕坑挖掘工程將產生約 9 立方米的廢土，估計整個壕坑挖掘工程共會挖出約 11,000 立方米的廢土。當中，無坑挖掘電纜頂管通道法會產生約 2,400 立方米的廢土（每個分段一般需時超過 9 個月）。按每個月有 24 個工作天計算，每個分段每天會產生約 5 立方米泥土。預計整項工程所挖出的泥土中，約有 15%會在現場被重新再用。一般垃圾則會由工人每日攜離工地作適當處置。

每個電纜分段的建築工作都只需要小量的建造設備。定期維修這些設備所產生的化學廢物爲極少，預計不會對廢物管理造成任何影響。在實施適當的工地管理和垃圾收集措施後，本項目在施工階段所產生的垃圾，只會造成輕微的影響，甚至毫無影響。

4.5.2 運作階段

本項目在運作期間只需要偶爾進行緊急維修，而且所涉及的工人數量很少，因此，本項目在運作期間不會產生任何廢物管理事宜。

4.6 生態

4.6.1 引言

本項目於 2010 年 4 月，對研究區內（即工地界線四周 500 米以內的範圍，請參閱*圖 4.4*）進行了一次生態基線調查。本節闡述研究區內的生態基線環境。

4.6.2 環保法例和指引

以下各項法例和指引，爲香港具生態價值的物種和生境的生態影響評估，提供了一個法律架構。

- *林區及郊區條例（96 章）；*
- *城市規劃條例（131 章）；*
- *野生動物保護條例（170 章）；*
- *保護瀕危動植物物種條例（586 章）；及*
- *香港規劃標準與準則第 10 章。*

本項目在評估潛在生態影響時，亦參考了根據「環境影響評估條例」附屬的「環境影響評估程序技術備忘錄」（環評技術備忘錄）。

4.6.3 研究區生態特徵文獻探討

是次研究檢閱了有關本項目的文獻，但可用的有生態資料有限。因此，爲了確定研究區的現有生態情況，本項目在 2010 年 4 月進行了一次重點實地調查。

4.6.4 綠化地帶

在研究區內的南坑、鳳園和大埔滘等陡峭山坡都被劃定爲「綠化地帶」，以保護現有的天然環境及避免受到都市發展的影響。

4.6.5 自然保育區

吐露港紅樹林、大埔滘陸岬和毗鄰的潮間池塘都被劃作「自然保育區」，以便保護和保留現有的天然景觀、生態或地形特色。擬建電纜中，有一個較短的分段會經過「自然保育區」（長約 180 米，其中只有約 120 米會在施工時在地面進行）。

4.6.6 生態基線情況

生境和植物

研究區內的陸地生境包括：次生林地、果園／鄉村地區、河溪、水道、康樂池塘、紅樹林、已發展／經修改地區和沿岸地點（*圖 4.4* 和 *4.5*）。研究區內的主要生境是已發展／經修改地區，其中包括：建築物、園景美化區（包括路旁種植地帶）、水邊公園和花園、受滋擾地區和混凝土通道。研究區內的種植區很多，除了人工斜坡上和花園，街區四周和公路旁也有連續不斷的植林。已發展／經修改地區的生態價值屬微不足道至偏低。次生林地則主要在祖麻湖和大埔滘的山坡。這些次生林地可能源自人工種植的洋槐，但現在以本土植物爲主，其生態價值屬中等。在祖麻湖、南坑、下黃宜坳和大埔滘老圍都發現多個果園和鄉村地區，當中有村屋、園景區、果園和零散的小塊農地。這些果園／鄉村地區只具有偏低的生態價值。大埔滘的鄉村內有兩條具偏低至中等生態價值的天然河溪，分別流入海岸和淡水池塘內。在研究區內的林村河和大埔河的生態價值屬偏低。大埔滘老圍村旁有一個康樂用的池塘。自然保育區內有一小片紅樹林，具有中等生態價值。

是次調查在研究區內的自然保育區泰亨橋東面的人工海堤錄得的常綠臭椿（*Ailanthus fordii*）（受香港法例 96 章保護）爲具保育價值的植物。常綠臭椿在香港屬常見物種，並已被廣泛種植在路邊和成爲觀賞樹木。

在研究區內發現的各個生境的面積和相應的生態價值均羅列於*表 4.5*。*附錄 B* 的*表 B1* 則羅列了在生態調查和樹木調查中記錄到的所有植物物種。

表4.5 在研究區內各個生境的面積和生態價值

生境	總面積	生態價值	說明
次生林地	約 96 公頃	中等	次生林地主要是在研究區內的祖麻湖和大埔滘的山坡發現。這些次生林地可能源自人工種植的洋槐，但現在以本地植物爲主。 估計次生林地的年齡不超過 15 年。調查時錄得的常見植物包括：台灣相思(*Acacia confuse*)、血桐(*Macaranga tanariu*)、南酸棗(*Choerospondias axillaris)* 和石栗(*Aleurites moluccana)*。 次生林地內沒有發現任何稀有或受保護的植物。

生境	總面積	生態價值	說明
果園／鄉村地區	約 18 公頃	偏低	在祖麻湖、南坑、下黃宜坳和大埔滘老圍都發現多個果園和鄉村地區，當中有村屋、園景區、果園和零散的小塊農地。這些果園／鄉村地區只具有偏低的生態價值。 這果園／鄉村地區大都由外來的果樹和野草覆蓋，例如：木瓜(*Carica papaya*)、龍眼(*Dimocarpus longan*)、姑婆芋(*Alocasia odora*)、薇甘菊(*Mikania micrantha*)和白花鬼針草(*Bidens pilosa*)。 果園／鄉村地區內沒有發現任何稀有或受保護的植物。
已發展／經修改地區	約 266 公頃	偏低至微不足道	研究區內的主要生境是已發展／經修改地區，其中包括：建築物、園景美化區（包括路旁種植地帶）、水邊公園和花園、已受滋擾地區和混凝土通道。研究區內的種植區很多，不但設在人工斜坡上和花園裏，在街區四周和公路旁也有連續不斷的植林。這些生境大都已受嚴重滋擾，只有數量有限的植物覆蓋。 常見的植物種類包括：樟樹(*Cinnamomum camphora*)、細葉榕(*Ficus microcarpa*)、洋紫荊(*Bauhinia blakeana*)、黃蟬(*Allamanda schottii*)和酢漿草(*Oxalis corniculata*)。 已發展／經修改地區內的自然保育區泰亨橋東面的人工海堤錄得的常綠臭椿（*Ailanthus fordii*）（受香港法例 96 章保護）爲具保育價值的植物。常綠臭椿在香港屬常見物種，並已被廣泛種植在路邊和成爲觀賞樹木。
河溪	約 3.2 公頃	偏低至中等	大埔滘的鄉村內有兩條具偏低至中等生態價值的天然河溪，分別流入海岸和淡水池塘內。河溪水淺，兩旁的植物均與果園／鄉村地區所錄得的植物相若。 河溪內沒有發現任何稀有或受保護的植物。
水道	約 6 公頃	偏低	在研究區內的林村河和大埔河。 這裏的植物均與已發展／經修改地區所錄得的植物相若。 是次調查內沒有發現任何稀有或受保護的植物。
康樂用池塘	約 3 公頃	偏低	大埔滘老圍村旁有一個康樂用的池塘。 這裏的植物均與果園／鄉村地區所錄得的植物相若。 康樂用池塘內沒有發現任何稀有或受保護的植物。
紅樹林	約 0.6 公頃	中等	自然保育區內有一小片紅樹林。 這裏的常見植物包括：黃槿(*Hibiscus tiliaceus*)、秋茄樹(*Kandelia obovata*)、朴樹(*Celtis sinensis*)、木防己(*Cocculus orbiculatus*)和苦郎樹(*Clerodendrum inerme*)。 紅樹林內沒有發現任何稀有或受保護的植物。
項目地點	全長約 5 公里，以及非挖式電纜導管引渡設施的工程區約 0.13 公頃。	微不足道至偏低	擬建電纜鋪設路線沿途大都是已發展地區（超過電纜總長度的 97%），只有一小段路線會經過水道（約 90 米）和自然保育區（約 180 米）。 項目地點範圍內沒有發現任何稀有或受保護的植物。 在電纜鋪設路線沿途（S4 和 S8）發現一株三角椰子(*Neodypsis decaryi*)、一株非洲桃花心木(*Khaya senegalensi*)和三株洋紫荊(*Bauhinia blakeana*)。在本項目施工時，會把它們移植別處(1)。

備註:

(1) 根據樹木調查結果，在自然保育區內泰亨橋的西部海堤所紀錄的九株未成熟的相思樹和 8 株未成熟的銀合歡樹將會被移除。但要注意的是這些未成熟的樹木的胸徑均小於 95 毫米。

一般野生動物

是次調查記錄到的鳥類大都是香港數量較多或常見和分佈廣泛的種類（例如：珠頸斑鳩 (*Streptopelia chinensis*)、家燕 (*Hirundo rustica*) 和紅耳鵯 (*Pycnonotus jocosus*)）。是次調查所錄得的全部鳥類，均羅列於*附錄 B* 的*表 B2*。

調查期間在研究區內只遇到一種具保育價值的鳥類，麻鷹 (*黑鳶*，*Milvus migrans*)。被發現時，那些麻鷹在一個面積頗大的已發展／經修改地區上空飛翔，因此未能顯示其位置。麻鷹已被列入「瀕危物種貿易公約」附件 II，亦是中國的二級受保護動物。牠是香港常見和分佈廣泛的留鳥。

調查期間沒有錄得其他具保育價值的動物。

4.6.7 項目地點的現況

擬建電纜主要會經過已發展地區的已鋪設地面，包括現有行人路、單車徑和行車道。如上文所述，會有一個短分段經過林村河（約 90 米）和自然保育區（約 180 米）。這段電纜沿線沒有錄得任何具保育價值的植物和動物。調查期間在電纜沿線所發現的三株洋紫荊(*Bauhinia blakean*)、一株非洲桃花心木(*Khaya senegalensis*)和一株三角椰子(*Neodypsis decaryi*)（均屬於人工種植／園景樹木）在本項目施工時，會被移植至別處。

在自然保育區範圍內，本項目在進行建造工作井時，在自然保育區內泰亨橋的西部海堤，將會移除九株未成熟的外來物種相思樹(*Acacia confusa*)和八株未成熟的入侵物種銀合歡樹(*Leucaena leucocephala*)。由於被移除的樹木均是常見外來物種而銀合歡樹是一種入侵物種，因此，本項目建議種植 17 株本土物種朴樹 (*Celtis sinensis*)，以作種植補償。

在電纜沿線所記錄到的動物都不是稀有、受保護或具保育價值的物種。項目地點範位內的生態價值屬微不足道至偏低。

4.6.8 施工和運作階段的影響

本項目對各種生境的潛在影響均羅列於*表 4.6*。

表4.6　　本項目對各種生境的潛在影響

受影響生境	受影響長度	生態價值	整體生態影響	備註
自然保育區內的部份地區、所有已發展地區	約 180 米（只有 120 米的地面分段會在施工期間受影響）	偏低至中等	偏低	本項目在進行建造工作井時，在自然保育區內泰亨橋的西部海堤，將會移除九株未成熟的外來物種相思樹(*Acacia confusa*)和八株未成熟的入侵物種銀合歡樹(*Leucaena leucocephala*)。由於被移除的樹木均是常見外來物種而銀合歡樹是一種入侵物種，因此，本項目建議種植 17 株本土物種朴樹(*Celtis sinensis*)，以作種植補償。 由於電纜會以管道推頂法裝設於海床水平之下，因此無需爲此工程清理植物。
林村河	約 90 米（不會進行明挖工程；附近水體也不會受到滋擾）	偏低	偏低	由於電纜會以水平鑽挖工程（頂管推頂法）裝設於河床之下，因此無需為此工程清理植物。 所有樹木均會被保留及受到影響。
已發展地區	全長約 5 公里，無坑挖掘電纜頂管通道的工程區約 0.13 公頃。	微不足道至偏低	微不足道	這些地區均已受嚴重滋擾，並沒有生態價值。 在電纜沿線（S4 和 S8）只發現三株洋紫荊(*Bauhinia blakeana*)、一株非洲桃花心木(*Khaya senegalensis*)和一株三角椰子(*Neodypsis decaryi*)，它們都會在項目施工時被移植。

備註:

(1) 根據樹木調查結果，在自然保育區內泰亨橋的西部海堤所紀錄的九株未成熟的外來物種相思樹和 8 株未成熟的入侵物種銀合歡樹將會被移除。但要注意的是這些未成熟的樹木的胸徑均小於 95 毫米。本項目將會種植 17 株輕型標準的本土物種朴樹(*Celtis sinensis*)，以作種植補償。

預計建築工程的規模會很小。本項目會盡量予以保留／移植，務求減少該等植物所受到的影響。自然保育區內亦只有很小的範圍會受本項目所影響，而且本項目會使用丁頂道推頂方法來減少對生境的滋擾。本項目亦不會影響任何紅樹林。因此，預計本項目在施工階段期間只會造成較低的生態影響。

由於附近有很多相似的生境，因此，預計本項目不會對研究區內的生境及其相關物種造成不可接受的影響。

運行階段

本項目在運行階段不會進行任何操作活動，因此不會造成生態影響。

4.6.9　　累積影響

現時研究區內沒有任何已規劃於同期進行的項目，因此預計本項目在施工和運行階段都不會出現累積影響。

4.7 文化遺產

4.7.1 引言

本節闡述本項目在施工和運作時可能產生的文化遺產影響評估結果。此外，亦在有需要的地方建議了適當的緩解措施來緩解任何不良影響。

4.7.2 環保法例和指引

下列法例和指引，都適用於評估香港的文化遺產地點所受到的影響：

- 「環境影響評估條例」（第 499 章 S16 條）、「環境影響評估程序」附錄 10 和 19，以及「評估對文化遺產地點影響的指南」；
- 「古物及古蹟條例」（第 53 章）；
- 「文化遺產影響評估指引」；及
- 「香港規劃標準與準則」。

4.7.3 評估方法

是次評估研究所採用的方法，已依循「文化遺產影響評估指引」，並包括下列工作。

工作 1 – 卓面研究

是次研究根據「文化遺產影響評估指引」內的定義，檢閱了相關文獻，並整理出一份文化遺產資源清單。*表 4.7* 羅列了文化遺產資源的類別。

表4.7 文化遺產資源種類

類別	說明
法定古蹟	受「古物及古蹟條例」保護，免受發展威脅，及可保留予後代享用。
認定古蹟	這是由古物古蹟辦事處識別的地點，並與業主達成協議，爲該古蹟提供特定措施，以確保古蹟得以保存。
現有／建議的已評級歷史建築物	由古物諮詢委員會根據該委員會和古物古蹟辦事處所採用的內部指引予以評級，以便保存的歷史建築文物。現存／建議的「已評級歷史建築文物」和「政府文物地點」均屬此一類別。 • 一級歷史建築 – 具特別重要價值而可能的話須盡一切努力予以保存的建築物。 • 二級歷史建築 – 具特別價值而須有選擇性地予以保存的建築物。 • 三級歷史建築 – 具若干價值， 並宜於以某種形式予以保存的建築物； 如保存並不可行則可以考慮其他方法。 • 無級別建築 – 已被評估而不屬於一、二或三級的建築物。
具考古價值地點	古物古蹟辦事處所羅列具考古價值的地點。

類別	說明
其他文化遺產資源	不屬於上述類別，但根據「文化遺產影響評估指引」必須處理的文化遺產資源。它們包括： • 古物古蹟辦事處尚未列出，但具考古價值的地區； • 歷史建築物和結構；及 • 景觀特色。

有關的資料均取自互聯網、香港文物探知館參考圖書館、公共圖書館和大專院校的圖書館。在相關的章節中，均有註腳說明這些材料的來源。

工作 2a – 歷史建築調查

是次研究進行了一項歷史建築調查，用以確定古物古蹟辦事處所記錄到和文獻研究所找到的文化遺產資源的實地情況，並找出未被記錄的其他歷史建築資源。

調查時透過拍照和訪問當地人來取得已知文物的相關資料。是次調查需要找出下列歷史建築：

- 在 1950 年前建成的所有建築物和結構；
- 在 1950 年後建成，而且具有較高建築價值和歷史價值的選定建築物和結構；及
- 景觀特色，例如具歷史意義的田野模式、傳統小徑、魚塘、風水林／樹、神龕和具歷史意義的宗族墓地。

地點代號系統

是次調查爲每個辨認出而古物古蹟辦事處未有記錄的歷史建築資源配上一個以字母和數字組成的獨有地點代號。每個代號前面都加上一個由 "TP" 這兩個字母組成的代號。例如，TP1 代表在大埔滘找到的第一項歷史建築資源。*表 4.8* 羅列了這些代號。

表4.8　古物古蹟辦事處未記錄的文化遺產資源種類別

位置	地點代號	位置	地點代號
大埔滘	TP	元洲仔	YC
下黃宜坳	HW	南坑	NH

工作 2b – 考古調查

本項目規模細小，而且位於已受滋擾地區或填海土地，並無考古潛質，所以無需進行考古調查。

工作 3 – 影響評估及建議緩解措施

完整地保存文物建築是本項目最優先考慮的事宜。是次評估亦已符合「文化遺產影響評估指引」中的要求。

是次評估研究，已就本項目對已知的文化遺產資源可能造成的直接和間接影響加以評估。若發現有潛在影響，便會建議適當的緩解措施。

4.7.4 基線情況

本項目附近有一個法定古蹟：前政務司官邸（見*圖 4.7*）。這項古蹟建於 1905 年，位於一個名爲元洲仔的小島上，鄰近吐露港口，只有一條長堤與陸地連接。這座官邸樓高兩層，建有游廊，具典型的二十世紀初殖民地建築風格。建築物原本作爲政府官員的宿舍之用，長久以來都與新界民政息息相關。現已改作世界自然基金會的自然環境保護研究中心。有關該建築物的照片，請參閱*附錄 C1* 的*圖 C1a*。

在這條擬建電纜鋪設路線四周 500 米範圍內，沒有任何認定古蹟或政府文物地點 (1)。

在這個擬建發展項目四周的 500 米範圍內，有三座已評級歷史建築文物，它們的相關歷史資料已羅列於*表 4.9*。三座建築的照片展示於*附錄 C1* 內的*圖 C1b* 至 *C1d*；而位置則展示於*圖 4.7*。

表4.9 建議工程區四周 500 米範圍內的已評級歷史建築文物 (2)

地點名稱	說明
大埔瞭望台 建成年份：1900 年代初 與擬建電纜路線距離：412 米	這是<u>一級</u>歷史建築，座落於大埔滘瞭望里 11 號。大埔瞭望台由英國工程師傑斯（Lawrence Gibbs）建於 1900 年代作住宅用途。據說這位工程師當時不計較交通不便的情況，決意要把房子建於大埔這座山頭上，可能是喜歡這裏風景優美。瞭望台內的塔是座水塔。從 1929 至 1933 年間，這裏業權更迭，最後由 John Alexander Fraser 擁有。可是他於日治時代被囚於赤柱營房，並死於營中。第二次世界大戰期間，日軍把瞭望台用作刑訊室。該地段及大宅於 1947 年 12 月售予政府。自此，這座建築物都被用作政府官員的官邸，例如大埔民政事務專員和警隊 Secret Service 主管。到 1996 年，政府將該建築物租予愛滋寧養服務協會，作爲愛滋病患者的住宿療養中心。至 2000 年，瞭望台再次改爲私人住宅。 這是一座單層平頂建築，設有拱形石柱游廊和一個突出的門廊（可能是後來加建），還有一座圓柱形的瞭望塔。此塔可能是這座建築物被稱作「瞭望台」的原因。大宅旁有一座獨立的僕人宿舍，斜向而立。這些建築物均位於一座小山丘上，由一條行車道連接瞭望里。見*圖 C1b*。
舊警察宿舍 建成年份：1909 與擬建電纜鋪設路線距離：470m	這是一座<u>二級</u>歷史建築，位於廣福道 173 和 175 號山頂，對面是於同期建成的舊大埔警署和舊北區理民府。該平房在建成時，是作爲四名未婚警官的住所。在二次世界大戰後初期，一些高級警官亦曾入住，例如新界分區警司（如 Norman Burgess Fraser）和高級警司（如 Alexander Lundie Gordon 和 Thomas Cashman）。該宿舍於 1991 交予挪威學校開辦幼稚園。獨立的僕人宿舍和馬廄相信都是與宿舍平房同期建造。在平房南部有一尊大炮，面向吐露港。 宿舍平房是一座單層建築物，另有半地庫式的底層；平房的一部份略高，由磚砌拱門支撐。平房的牆身以廣州紅磚砌成；巨型的「金」字屋頂則是以中式瓦片正反雙層互扣地，覆蓋在由杉柱支撐著的硬木屋椽上。還有寬闊的屋檐由裝飾性的托架承托。屋脊頂部的中央部份設有煙囪。僕人宿舍和馬廄也採用類似的建築風格。見*圖 C1c*。

(1) 在 2009 年 11 月 6 日的法定古蹟。網上資料，可於以下網址取得：http://www.amo.gov.hk/form/DM_Mon_Map.pdf；截至 2007 年 12 月 7 日爲止，被古物古蹟辦事處識別的政府文物地點。網上資料，可於以下網址取得： http://www.amo.gov.hk/form/build_hia_government_historic_sites.pdf; 截至 2009 年 2 月 16 日爲止的具考古價值地點清單。

(2) 建議一級歷史建築文物簡介。網上資料，可於以下網址取得：http://www.amo.gov.hk/form/Brief_Information_on_proposed_Grade_I_Items.pdf；建議一級歷史建築文物簡介。網上資料，可於以下網址取得：http://www.amo.gov.hk/form/Brief_Information_on_proposed_Grade_II_Items.pdf；建議三級歷史建築文物簡介。網上資料，可於以下網址取得：http://www.amo.gov.hk/form/Brief_Information_on_proposed_Grade_III_Items.pdf

地點名稱	說明
大埔舊墟天后廟 建成年份：康熙三十年（1691年） 與擬建電纜鋪設路線距離：452m	這是一座<u>三級</u>歷史建築，位於大埔舊墟（新界最古老的墟市之一），由大埔漁民興建，以供奉天后。這廟原本位於海邊，但因填海發展的關係，現已遠離海岸。 該廟是清朝的鄉土建築，共分兩進，另有兩個耳房用作供奉關帝和譚公。 該座建築物因過去的修葺變得極爲現代化，屋頂以綠瓦覆蓋，外牆髹以厚灰。門框和基座仍舊以花崗岩製成，屋頂則由一系列的椽和樑承托。屋脊的裝飾物則換作一整套的陶製龍飾、珍珠和幾何圖案。正面的牆頂飾帶是八仙畫像。見*圖C1d*。

上表所列的都是古物古蹟辦事處有記錄的文物建築，但除此之外，還有一個毗鄰擬建電纜鋪設路線的考古遺址，即元洲仔（前政務司官邸）考古遺址（見*圖4.7*）。遺址的邊界與前政務司官邸法定古蹟的邊界完全一樣。該遺址是由John Walden 先生率先報導。他在 1960 年代於元洲仔的海岸線和南面山坡收集到石製扁斧和幾何形的陶片。在 1980 和 1990 年的實地勘察，亦在該遺址採掘到史前的文化遺物。

然而，現時擬建的工程區位於已受滋擾的地區或填海而得的土地上，並無考古潛力，因此，預計不會有新的考古發現。

除了上述各項古物古蹟辦事處有記錄的文化遺產資源外，擬建工程區四周 500 米範圍內，仍有多項文物建築。它們的資料均羅列於*表 4.11*。

表 4.10　在擬建工程區四周 500 米範圍內而古物古蹟辦事處未有列出的文物建築地點

地點代號	地點名稱	說明	建成年份	與擬建電纜鋪設路線最短距離（米）
TP01 至 TP9	大埔滘的社壇、住宅和一個墳墓	在 1688 年和 1819 年編纂的新安縣誌中，都沒有記載這條村。然而，卻在 1866 年 5 月的新安縣誌中出現。該村現時與老圍和新圍分開。該處有兩座社壇、一個宗族墓地和六間傳統住宅。有關它們的位置和照片，請參閱*附錄 C1* 的*圖 C1e* 和附錄 *C2* 的*圖 C2a*。	清朝（約 1866 年）	306-414
HW01 至 HW08	美援新村的住宅和一座社壇	在第二次世界大戰後，有多個非牟利團體在香港幫助本地的貧民和漁民建立家園。這個村落是在第二次世界大戰後獲得這類機構協助的村落之一。村民大都是區內的漁民。在這條具歷史價值的村落中，有多間住宅石屋和一座社壇。有關它們的位置和照片，請參閱*附錄 C1* 的*圖 C1f* 和*附錄 C2* 的*圖 C2b*。	第二次世界大戰後	112-153

地點代號	地點名稱	說明	建成年份	與擬建電纜鋪設路線最短距離（米）
HW09-HW12	黃宜坳村的祠堂和圍門	在 1688 年和 1819 年編纂的新安縣誌中，都沒有提及這條村落。然而，在 1866 年 5 月的新安縣誌中，它被標誌爲黃坑凹。該村現時名爲黃宜坳。村內有三個陳氏宗祠和一座圍門，全都曾以現代物料翻新。有關它們的位置和照片，請參閱附錄 C1 的圖 C1g 和附錄 C2 的圖 C2b。	清朝（約 1866 年）	443-492
YC01	元洲仔大王爺廟	根據廟內的匾額所載，該廟是由元洲仔村的漁民興建，其中包括蘇、李、徐、鍾和石姓等族人。該廟曾以現代物料翻新。該建築物位於前政務司官邸法定古蹟的範圍內。有關它的位置和照片，請參閱附錄 C1 的圖 C1h 和附錄 C2 的圖 C2c。	約建於 1889 年，並於 1989 年和 2001 進行翻新	11
NH01 至 12	南坑的住宅和村公所	1819 年的新安縣誌已有該村落的記錄。根據當地知情者所述，這條村落是由羅、邱和詹三族建立。村內共有十一間住宅，以及具有歷史價值的村公所。有關它們的位置和照片，請參閱*附錄 C1* 的*圖 C1i* 和*附錄 C2* 的*圖 C2d*。	清朝（約 1819 年）	51-219

影響評估

施工階段

由於在擬建工程地區的 500 米範圍內沒有發現任何法定古蹟和政府文物地點，因此，因此預計本項目不會對文化遺產造成影響。

表 4.9 所羅列的三座已評級歷史建築文物均距離工程區超過 400 米。因此，預計這些歷史建築不會受到影響。

雖然前政務司官邸法定古蹟地點的邊界毗鄰擬建工程地區，但建築物本身距離工程區約 50 米，並有軟地分隔，因此，本項目不會對此古蹟造成直接和間接影響。

雖然位於法定古蹟範圍內的元洲仔大王爺廟（YC01）距離擬建工程地區 11 米，但工程地區是位於現有的單車徑側，地勢比該廟的位置較高，而且與該廟之間有軟地分隔，一如*框 4.1* 所示。因此，預計不會受到本項目影響。

框 4.1　顯示 YC01 位置和擬建電纜鋪設路線的照片

若是項工程有任何工作會在*附錄 C2* 的*圖 C2c* 顯示的法定古蹟範圍內進行，項目倡議人必須根據「古物及古蹟條例」向有關當局申請許可証進行。

在大埔滘區最接近的建築 TP02 距離擬建電纜鋪設路線約 306 米。由於距離較遠，預計不會受到本項目影響。

下黃宜坳區最接近的建築物 HW08 距離擬建電纜鋪設路線約 112 米。由於距離較遠，預計不會受到本項目影響。

南坑村最接近的建築物 NH07 距離擬建電纜鋪設路線約 51 米。由於距離較遠，預計不會受到本項目影響。

運行階段

由於擬建電纜主要鋪設於地底，因此，本項目在運作階段不會對文化遺產造成影響。

4.7.5　剩餘影響

由於本項目不會造成任何文化遺產影響，因此，在施工和運行期間，也不會產生剩餘或累積影響。

4.7.6　總結

是次研究進行了文獻檢閱、歷史建築調查和實地勘察，結果在南坑、黃宜坳、元洲仔和大埔滘找到一項法定古蹟、三項已評級歷史建築文物、一個考古遺址和多個文物建築地點。

除了前政務司官邸法定古蹟、元洲仔（前政務司官邸）考古遺址和元洲仔大王爺廟（YC01）之外，其餘文物建築地點均位於擬建工程區 51 米以外。由於相隔距離較遠，施工期短（一至兩個月）而且擬建工程規模細小，預計不會受到任何影響。

至於前政務司官邸法定古蹟方面，擬建工程區距離這個地點的邊界超過 50 米，因此，預計不會受到工程影響。然而，若是項工程的施工工作會進入法定古蹟範圍內進行，必須根據「古物及古蹟條例」向有關當局申請許可証進行。

本項目在元洲仔（前政務司官邸）考古遺址範圍內不會進行土方工程，因此該遺址不會受到影響。

雖然元洲仔大王爺廟（YC01）鄰近擬建工程區，但該廟前有軟質土壤會把該項小規模建築工程所產生的任何震動降低，因此預計該廟不會受到影響。

根據上述各項評估結果，預計本項目在施工和運行階段，都不會對文化遺產造成不可緩解的影響。因此，本項目無需實施任何緩解措施，或環境監察與審核計劃。

5 環境保護措施

5.1 空氣質素

5.1.1 施工階段

本項目在施工期間會實施「空氣污染管制（建造工程塵埃）規例」所闡述的建築工地控制塵埃管理方法，藉此緩解潛在的塵埃影響。這些措施包括在外露的泥土表面洒水、以不透氣布料覆蓋多塵的物料堆、在進行挖掘工程時灑水，以及使用有妥善維修保養的建造設備，以避免排放黑煙。

5.1.2 運作階段

預計本項目在運行期間不會排放廢氣，因此無需實任何施緩解措施。

5.2 噪音

5.2.1 施工階段

預計本項目在施工階段不會產生不良的噪音影響，但承建商仍會盡量採用良好施工方法來減低噪音：

- 暫時不用的機動設備會被關上；
- 高噪音的機動設備會被放置於隔音罩內或盡量遠離噪音感應強的地方；
- 盡量使用低噪音機動設備；
- 會盡量把存放的物料和臨時結構安排在適當位置，以便爲噪音感應強的地方擋隔工地的高噪音建築工作。
- 在動工前妥善規劃工作次序，以免在貼近噪音感應強的地方同時使用多部高噪音機動設備。

5.2.2 運行階段

預計本項目在運行期間不會造成噪音影響，因此無需實任何施緩解措施。

5.3 水質

5.3.1 施工階段

本項目在進行建築工程時，會按照環境保護署（環保署）的專業人士實務守則「建築工地的排水渠」（*ProPECC PN1/94*）所闡述指引，實施適當措施(包括提供沉澱池及控制污水排放到附近水體)，藉以妥善控制工地徑流和排水，以減少潛在水質影響。

在適當情況下，本項目將根據水污染管制條例（第 358 章），申請廢水排放牌照及牌照列出的條件或要求。

5.3.2 運行階段

預計本項目在運行階段不會造成水質影響，因此無需實任何施緩解措施。

5.4 廢物管理

5.4.1 施工階段

爲了盡量減少建築廢物的數量，本項目的承建商會採用良好工地管理方法，把工地的廢物妥當地分類，以便增加重新再用和循環再造的機會。由本項目產生的任何建築廢物，都會以貨車運送至工地外作適當處置。本項目在施工期間若產生化學廢物，均會按照環保署的「包裝、標識及存放化學廢物的工作守則」妥善地存放，然後由持牌化學廢物收集商予以收集和處置。由於工程所需的工人數目較少，因此可能產生的一般垃圾數量亦會很少，並會由工人每日攜離工地作妥善處置。

5.4.2 運行階段

預計本項目在運行期間不會產生廢物管理事宜，因此無需實施任何緩解措施。

5.5 生態

5.5.1 施工階段

本項目在施工階段的潛在生態影響可能會包括對河溪生境及其植物和野生動物的滋擾。由於這些生境的生態價值屬於微不足道至偏低，而且項目地點附近已經受到嚴重滋擾，因此，預計本項目可能造成的生態滋擾只屬極輕微。然而，仍可透過實施下列各項良好施工方法來進一步減少生態滋擾：

- 在詳細設計階段盡量設法避免本項目對樹木的潛在影響。預計本項目需移除 17 株未成熟的樹木。而有五棵人工種植／園景樹木將會被移植，以便進行施工。本項目將會種植 17 株輕型標準的本土物種朴樹(*Celtis sinensis*)，以作種植補償。

- 在泰亨橋東面的人工海堤，避免對具保育價值的植物物種，常綠臭椿，進行任何破壞和干擾。在施工期間，本項目將會在常綠臭椿的位置建立警告標誌，顯示此物種的名字和照片，以確保建築工人知道其位置，避免任何干擾和破壞。

- 避免破壞和滋擾附近的天然生境，必須禁止在項目工程範圍內(特別是自然保育區)進行填土和非法傾倒廢物。

- 經常檢查工地界線(特別是在自然保育區內)，以確保沒有被破壞，而且附近地區亦沒有受損。

- 在施工期間，工地範圍內必須禁止和預防出現明火，並須在工程地區內提供臨時消防設備；及

- 在完成建造工程後，必須立即把臨時工地／受滋擾地區恢復原貌。

5.5.2 運行階段

本項目在運行階段不會造成任何生態影響。

5.6 文化遺產

本項目在施工和運作期間，都不會造成文化遺產影響，因此無需實施任何緩解措施。

本項目會鋪設一條新電纜，連接至現有的變電站。在選擇工程地點時，已經考慮該地區的性質，並建議了適當的緩解措施，務求能夠進一步減少本項對敏感受體的潛在環境滋擾。

建造工程的規模細小，只需要使用小型建造設備／機器和手工具。本項目在運行階段無需人手，因此不會造成任何不良環境影響。是次研究已經找出適當的環境影響緩解措施，並會在項目中實施。因此，本項目對環境可能造成的整體影響屬於輕微。預計在實施上文所探討的適當環境控制措施後，不會造成不良的剩餘環境影響。

7 使用先前通過的環評報告或環境許可證直接申請書

這次直接申請環境許可證，沒有使用或參考任何相近的項目。

Figures

附圖

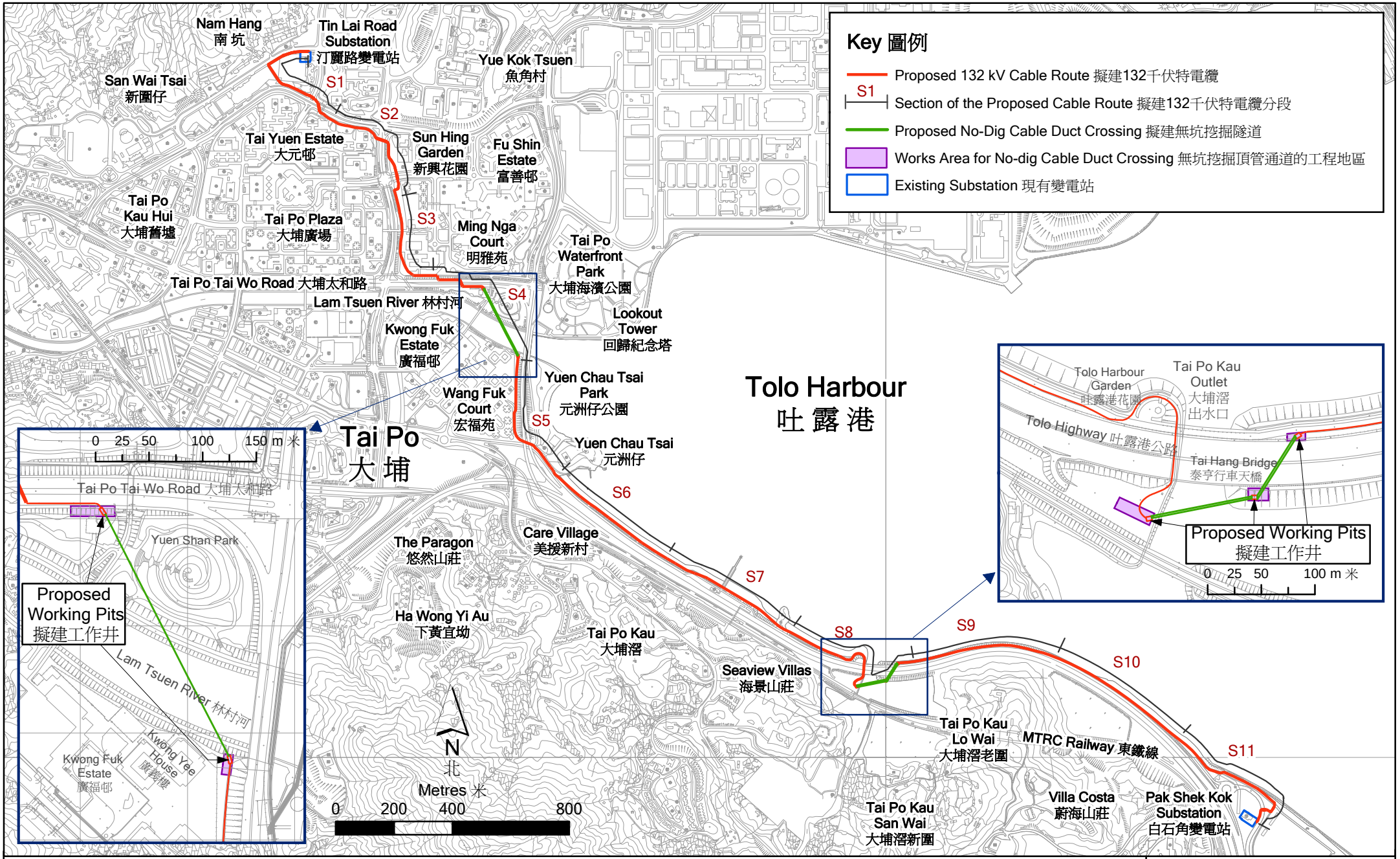


Figure 1.1
圖1.1

Installation of the Proposed 132 kV Cable Circuit Connecting with Ting Lai Road Substation and Pak Shek Kok Substation
連接汀麗路變電站至白石角變電站的1 3 2 千伏特電纜鋪設工程

File: 0113919_cable overview.mxd
Date: 15/04/2010

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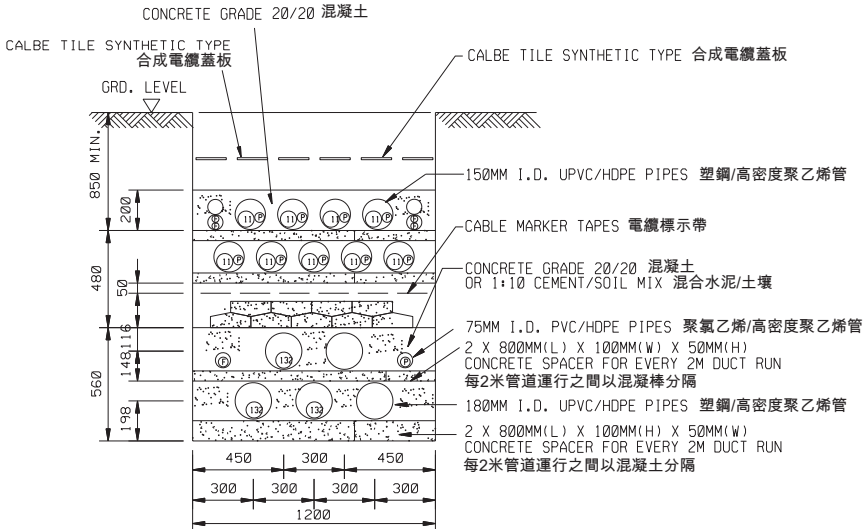
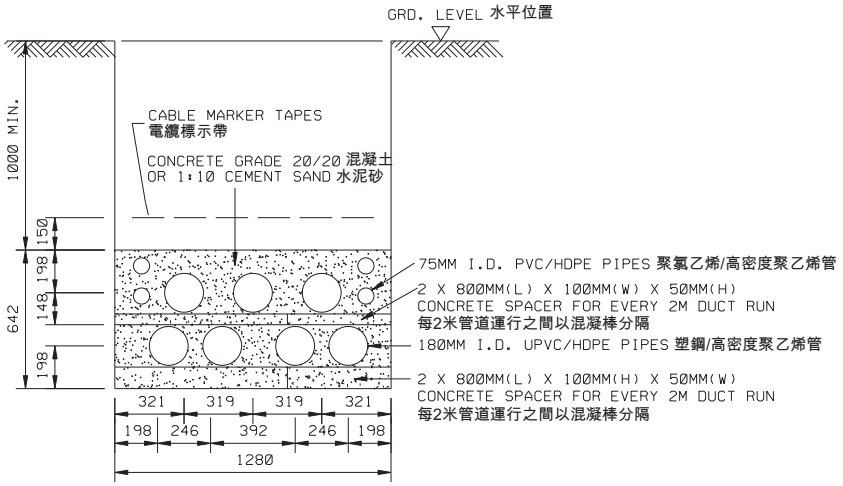


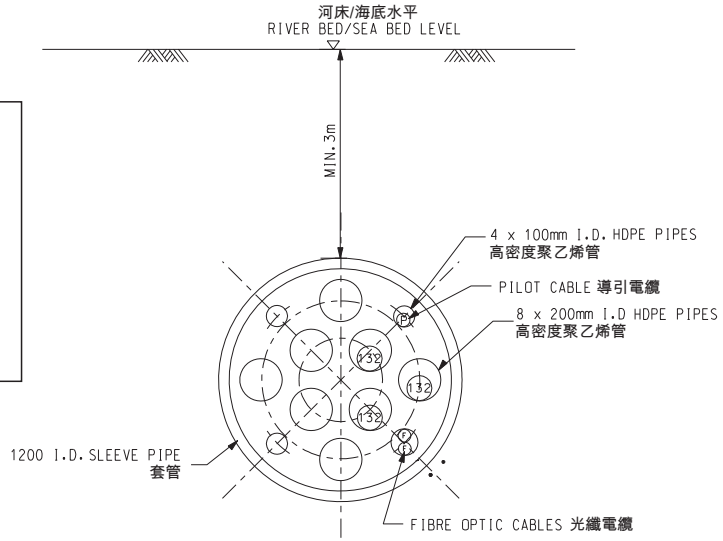
Typical Section under Cycle Track / Footpath
單車徑 / 行人路切面圖



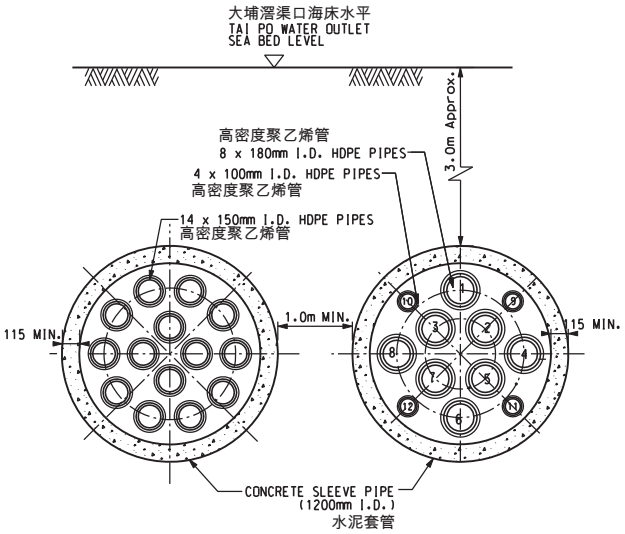
Typical Section under Carriageway
行車道切面圖

LEGEND 圖例：

- (132) 132kV POWER CABLE 132千伏特電纜
- Ⓟ PILOT CABLE 導引電纜
- Ⓕ FIBRE OPTIC CABLE 光纖電纜



Typical Section under No-Dig Cable Duct Crossing (Section 4)
無坑挖掘頂管通道切面圖 (第四段)



Typical Section under No-Dig Cable Duct Crossing (Section 8)
無坑挖掘頂管通道切面圖 (第八段)

Not to Scale

Figure 1.2
圖 1.2

Typical Sectional Drawings of Cable Installation
電纜鋪設切面圖

FILE: 0113919a-chi
DATE: 07/07/2010

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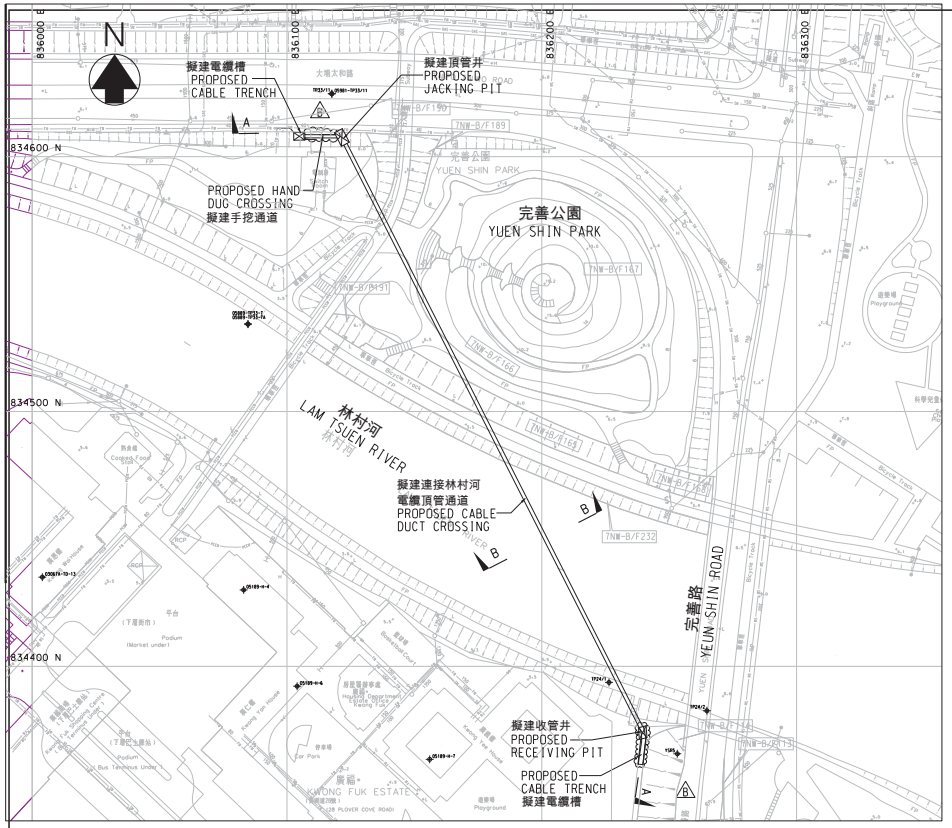


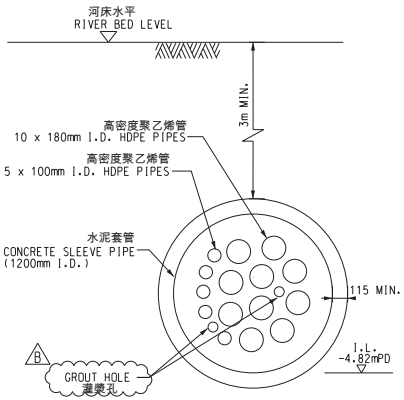
LOCATION PLAN 位置圖

SCALE A1 1:1000
A3 1:2000

LEGEND 圖例

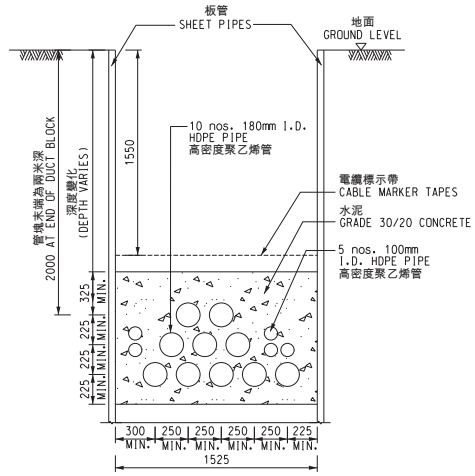
擬建電纜頂管通道
PROPOSED CABLE DUCT CROSSING IN SLEEVE PIPE

擬建頂管/接收井
PROPOSED JACKING/RECEIVING PIT



SECTION B-B

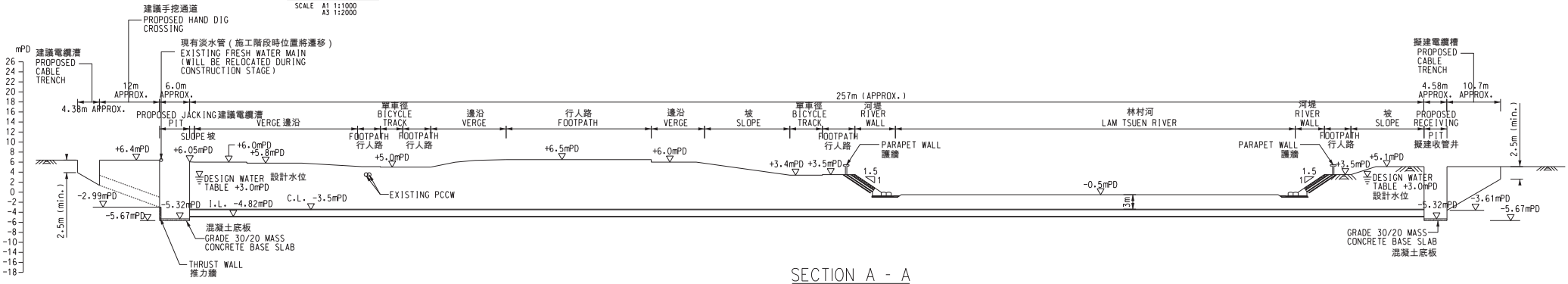
(ALL DIMENSIONS ARE IN mm)
N.T.S.



電纜頂管塊

TYPE I CABLE DUCT BLOCK

SCALE A1 1:25
A3 1:50



SECTION A - A

SCALE A1 1:500
A3 1:1000

Figure 1.3
圖 1.3

General Layout Plan of Cable Duct Crossing at Lam Tsuen River
連接林村河電纜頂管的總體佈局

FILE: 0113919b-chi
DATE: 07/07/2010

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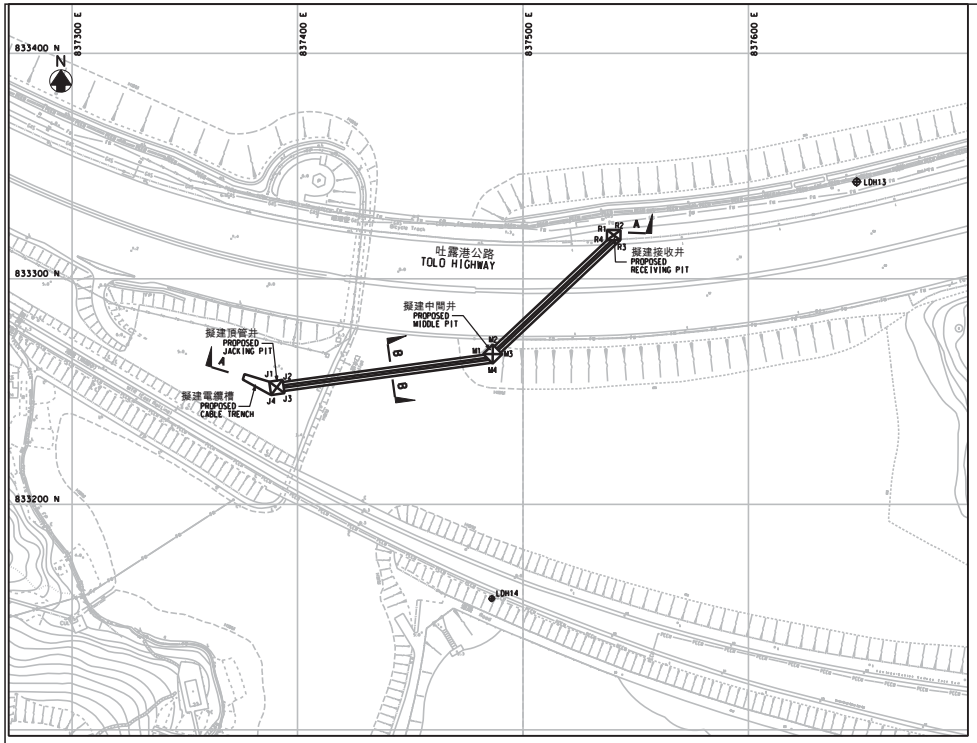
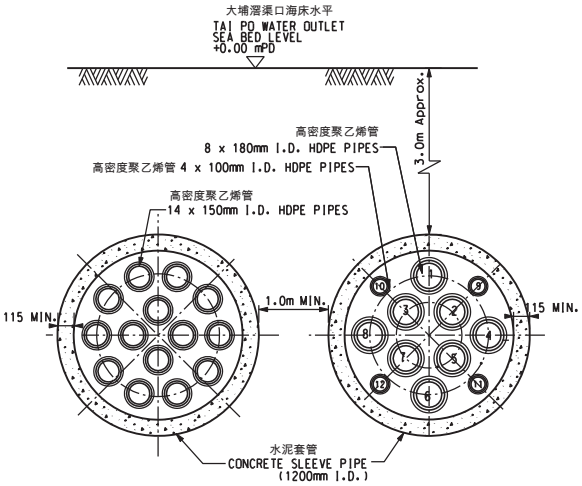


LOCATION PLAN 位置圖

SCALE A1 1:1000
A3 1:2000



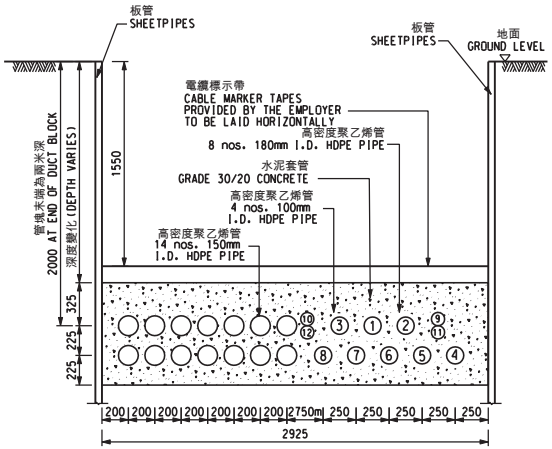
SECTION B-B

(ALL DIMENSIONS ARE IN mm)
N.T.S.

LEGEND 圖例

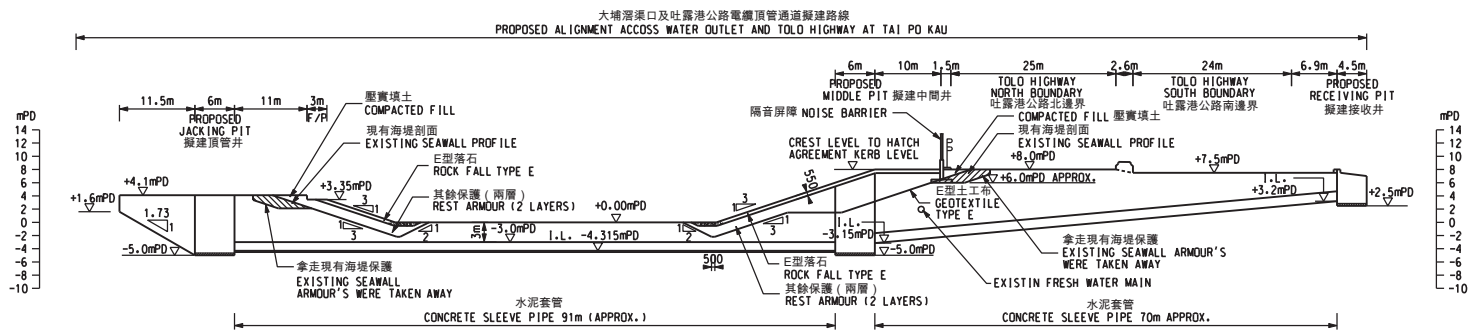
PROPOSED CABLE DUCT CROSSING IN SLEEVE PIPE 電纜頂管通道

PROPOSED JACKING/RECEIVING PIT 擬建頂管/接管井



TYPE II CABLE DUCT BLOCK 電纜管塊

SCALE A1 1:25
A3 1:50



SECTION A - A

SCALE A1 1:500
A3 1:1000

Figure 1.4
圖 1.4

General Layout Plan of Cable Duct Crossing at Tai Po Kau Outlet
大埔滘渠口電纜頂管通道的總體佈局

FILE: 0113919c-chi
DATE: 07/07/2010

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Cho Ma Wu
祖麻湖

Nam Hang
南坑

Fu Heng Estate
富亨邨

San Wai Tsai
新圍仔

Tin Lai Road Substation
汀麗路變電站

Fung Yuen
鳳園

Yue Kok Tseun
魚角村

Tai Po Industrial Estate
大埔工業邨

Yim Tin Tsai Fish Culture Zone
鹽田仔魚類養殖區

Tai Yuen Estate
太元邨

Sun Hing Garden
新興花園

Fu Shin Estate
富善邨

Tin Hau Temple (Grade III)
天后宮 (三級歷史建築物)

Tai Po Kau Hui
大埔舊墟

Tai Po Plaza
大埔廣場

Ming Nga Court
明雅苑

Tai Po Waterfront Park
大埔海濱公園

Tai Po Tai Wo Road 大埔太和路

Lam Tsuen River 林村河

Lookout Tower
回歸紀念塔

Kwong Fuk Estate
廣福邨

Yuen Chau Tsai Park
元洲仔公園

Old Police Bungalow (Grade II)
舊警察宿舍 (二級歷史建築物)

Wang Fuk Court
宏福苑

Tolo Harbour 吐露港

Tai Po
大埔

Yuen Chau Tsai
元洲仔

The Paragon
悠然山莊

Care Village
美援新邨

Ha Wong Yi Au
下黃宜坳

Tai Po Kau Outlet
大埔滘出水口

Seaview Villas
海景山莊

Tai Po Kau
大埔滘

Tai Po Kau Lo Wai
大埔滘老圍

MTRC Railway
港鐵東鐵線

Tai Po Kau San Wai
大埔滘新圍

Villa Costa
蔚海山莊

Pak Shek Kok Substation
白石角變電站

Tai Po Lookout (Grade I)
大埔瞭望台
(一級歷史建築物)

Key 圖例

- Proposed 132 kV Cable Route 擬建132千伏特電纜
- Works Area for No-dig Cable Duct Crossing 無坑挖掘頂管通道的工程地區
- Study Area 研究區
- Existing Substation 現有變電站
- Green Belt 綠化地帶
- Conservation Area 自然保育區
- Island House Declared Monument/ Yuen Chau Tsai (Island House) Archaeological Site 元洲仔法定古蹟/考古遺址
- ★ Graded Historic Building 已評級歷史建築

N
北

Metres 米
0 250 500 1,000

Figure 3.1
圖3.1

Existing Environment and Study Area Boundary
現有環境及研究區界線

File: 0113919_archaeology_chinese.mxd
Date: 03/06/2010

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ASR 空氣質素敏感受體	Location 地點	Type of Land Uses 土地用途
A1	Nam Hang Village 南坑村	Village Type Development 鄉村式發展
A2	Tai Ping Industrial Centre 太平工業中心	Other Specified Uses 其他指定用途
A3	Fu Heng Estate 富亨邨	Residential 住宅
A4	Tai Yuen Estate 大元邨	Residential 住宅
A5	Spastics Associated Elaine Field School 香港耀能協會賽馬會田綺玲學校	Government/ Institution/ Community 政府,機構或社區
A6	Sun Hing Garden 新興花園	Residential 住宅
A7	Tai Po Centre 大埔中心	Residential 住宅
A8	NTN Regional Headquarters 新界北警察總部	Government/ Institution/ Community 政府,機構或社區
A9	Kwong Fuk Estate 廣福邨	Residential 住宅
A10	Tai Po Waterfront Park 大埔海濱公園	Open Space 休憩用地
A11	Fung Leung Kit Memorial Secondary School 馮梁結紀念中學	Residential 住宅
A12	Yuen Chau Tsai Park 元洲仔公園	Open Space 休憩用地
A13	Island House 元洲仔	Other Specified Uses 其他指定用途
A14	CARE Village 美援新村	Green Belt 綠化地帶
A15	MTRC Staff Quarters 地鐵員工宿舍	Residential 住宅
A16	Seaview Villa 海景山莊	Residential 住宅
A17	Private House 私人大宅	Residential 住宅
A18	Villa Costa 蔚海山莊	Residential 住宅
A19	Deerhill Bay 鹿茵軒	Residential 住宅
A20	Science Park 科學園	Residential 住宅
A21	Cycling Track from Science Park to Tai Po 由科學園至大埔之單車徑	--

Cho Ma Wu 祖嫲湖
Fung Yuen 鳳園
Fu Heng Estate 富亨邨
Nam Hang 南坑
A1
A3
Tin Lai Road Substation 汀麗路變電站
San Wai Tsai 新圍仔
A2
A5
Yue Kok Tseun 魚角村
Tai Po Industrial Estate 大埔工業邨
A4
Tai Yuen Estate 大元邨
Sun Hing Garden 新興花園
Fu Shin Estate 富善邨
Tai Po Kau Hui 大埔舊墟
Tai Po Plaza 大埔廣場
A7
A6
Ming Nga Court 明雅苑
A8
A10
Tai Po Waterfront Park 大埔海濱公園
Tai Po Tai Wo Road 大埔太和路
Lam Tsuen River 林村河
Lookout Tower 回歸紀念塔
A9
Kwong Fuk Estate 廣福邨
A11
A12
Yuen Chau Tsai Park 元洲仔公園
Wang Fuk Court 宏福苑
Tolo Harbour 吐露港
Tai Po 大埔
A13
Yuen Chau Tsai 元洲仔
The Paragon 悠然山莊
Care Village 美援新村
A14
Ha Wong Yi Au 下黃宜坳
A15
Tai Po Kau Outlet 大埔滘出水口
A16
Seaview Villas 海景山莊
A17
Tai Po Kau 大埔滘
Tai Po Kau Lo Wai 大埔滘老圍
MTRC Railway 港鐵東鐵線
A21
Villa Costa 蔚海山莊
Pak Shek Kok Substation 白石角變電站
Tai Po Kau San Wai 大埔滘新圍
A18
A19
A20

Key 圖例

- Air Sensitive Receiver 空氣質素敏感受體
- Proposed 132 kV Cable Route 建議132千伏特電纜
- Study Area 研究區
- Existing Substation 現有變電站

N 北

Metres 米

0 250 500 1,000

Figure 4.1
圖4.1

Air Sensitive Receivers
空氣質素敏感受體

File: 0113919_ASR_chi.mxd
Date: 03/06/2010

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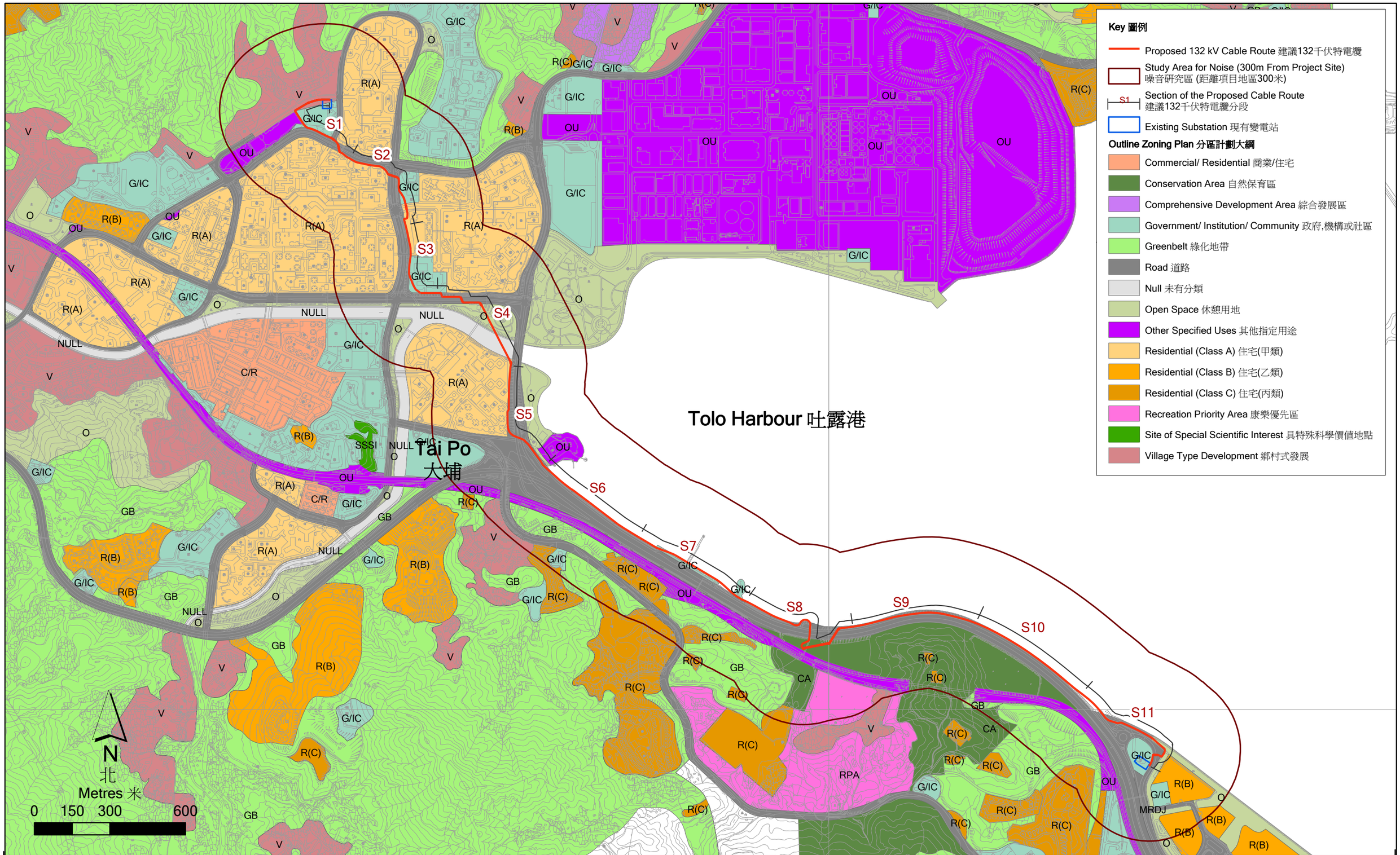

Figure 4.2
圖4.2

Extract from Outline Zoning Plan S/TP/21 - Tai Po
分區計劃大綱圖編號S/TP/21 - 大埔

File: 0113919_OZP_chi.mxd
Date: 03/06/2010

Environmental Resources Management

NSR No. 噪音敏感受體	Description 簡介	Type of Use 土地用途
R1	Heng Lung House, Fu Heng Estate 富亨邨亨隆樓	Residential 住宅
R2	Tai Yuen Hostel, Tai Yuen Estate 大元邨匡智大元宿舍	Residential 住宅
R3	Hong Man Court, Sun Hing Garden 新興花園康民閣	Residential 住宅
R4	Block 17, Tai Po Centre 大埔中心第十七座	Residential 住宅
R5	Ming Yan House, Ming Nga Court 明雅苑明欣閣	Residential 住宅
R6	Kwong Lai House, Kwong Fuk Estate 廣福邨廣禮樓	Residential 住宅
R7	Wang Shing House, Wang Fuk Court 宏福苑宏盛閣	Residential 住宅
R8	Care Village 美援新村	Residential 住宅
R9	MTRC Staff Quarters Long Block 地鐵職員宿舍	Residential 住宅
R10	Sea View Villa 海景山莊	Residential 住宅
R11	Private House 私人住宅	Residential 住宅
R12	Tower 11, Deerhill Villas 鹿茵軒第十一座	Residential 住宅
S1	HK Taoist Assn Ng Lai Wo Memorial School 香港道教聯合會吳禮和紀念學校	School 學校
S2	Tai Po Baptist Public School 浸信會公立學校	School 學校

Key 圖例

- Noise Sensitive Receiver 噪音敏感受體
- Proposed 132 kV Cable Route 建議132千伏特電纜
- Study Area for Noise (300m from Project Site) 噪音研究區(距離項目範圍300米)
- S1 Section of the Proposed Cable Route 建議132千伏特電纜分段
- Existing Substation 現有變電站

N 北

Metres 米

0 150 300 600

Figure 4.3
圖4.3

Locations of Noise Sensitive Receivers (NSRs)
噪音敏感受體位置圖

File: 0113919_NSR_sections_photo_chi.mxd
Date: 03/06/2010

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Key 圖例

Proposed 132 kV Cable Route 擬建132千伏特電纜

Works Area for No-dig Cable Duct Crossing
無坑挖掘頂管通道的工程地區

Study Area 研究區

Existing Substation 現有變電站

Conservation Area 保育區

Habitat 生境

Secondary Woodland 次生林

Stream 河溪

Channel 渠道

Orchard/Village Area 果園/鄉村區

Developed/Modified Area 已發展/已修地區

Recreational Pond 康樂池塘

Mangrove 紅樹

Cho Ma Wu
租麻湖

Nam Hang
南坑

Fu Heng Estate
富亨邨

San Wai Tsai
新圍仔

Tin Lai Road Substation
汀麗路變電站

Yue Kok Tseun
魚角村

Tai Yuen Estate
大元邨

Sun Hing Garden
新興花園

Fu Shin Estate
富善邨

Tai Po Kau Hui
大埔舊墟

Tai Po Plaza
大埔廣場

Ming Nga Court
明雅苑

Tai Po Waterfront Park
大埔海濱公園

Tai Po Tai Wo Road
大埔太和路

Lam Tsuen River 林村河

Lookout Tower
回歸紀念塔

Kwong Fuk Estate
廣福邨

Yuen Chau Tsai Park
元洲仔公園

Wang Fuk Court
宏福苑

Tai Po
大埔

Yuen Chau Tsai
元洲仔

The Paragon
悠然山莊

Care Village
美援新村

Ha Wong Yi Au
下黃宜坳

Tolo Harbour
吐露港

Tai Po Kau Outlet
大埔滘出口

Seaview Villas
海景山莊

Tai Po Kau
大埔滘

Tai Po Kau Lo Wai
大埔滘老圍

MTRC Railway
港鐵東鐵線

Villa Costa
蔚海山莊

Tai Po Kau San Wai
大埔滘新圍

Pak Shek Kok Substation
白石角變電站

N
北

Metres 米

0 250 500 1,000

Figure 4.4
圖4.4

Habitat Map of the Study Area
研究區之生境地圖

File: 0113919_habitat_chi.mxd
Date: 03/06/2010

Environmental Resources Management

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Secondary Woodland 次生林

Channel 渠道

Stream 河溪

Orchard/Village Area 果園/鄉村區

Developed/Modified Area 已發展/已修地區

Mangrove 紅樹

Figure 4.5
圖 4.5

Photographic Records of Various Habitats Identified within the Study Area
研究區內之主要生境地的相片紀錄

Ref: 0113919_Figure4.5_habitat photos.doc

ERM

Cho Ma Wu
祖麻湖
Nam Hang
南坑
Fu Heng Estate
富亨邨
San Wai Tsai
新圍仔
Tin Lai Road Substation
汀麗路變電站
Yue Kok Tseun
魚角村
Tai Yuen Estate
大元邨
Sun Hing Garden
新興花園
Fu Shin Estate
富善邨
Tai Po Kau Hui
大埔舊墟
Tai Po Plaza
大埔廣場
Ming Nga Court
明雅苑
Tai Po Waterfront Park
大埔海濱公園
Tai Po Tai Wo Road
大埔太和路
Lam Tsuen River 林村河
Lookout Tower
回歸紀念塔
Kwong Fuk Estate
廣福邨
Yuen Chau Tsai Park
元洲仔公園
Wang Fuk Court
宏福苑
Tai Po
大埔
Yuen Chau Tsai
元洲仔
The Paragon
悠然山莊
Care Village
美援新村
Ha Wong Yi Au
下黃宜坳
Tolo Harbour
吐露港
Tai Po Kau Outlet
大埔滘出口
Seaview Villas
海景山莊
Tai Po Kau
大埔滘
Tai Po Kau Lo Wai
大埔滘老圍
MTRC Railway
港鐵東鐵線
Villa Costa
蔚海山莊
Tai Po Kau San Wai
大埔滘新圍
Pak Shek Kok Substation
白石角變電站

Key 圖例

- Proposed 132 kV Cable Route 建議132千伏特電纜
- Works Area for No-dig Cable Duct Crossing 無坑挖掘隧道的工程地區
- Study Area 研究區
- Existing Substation 現有變電站
- Conservation Area 保育區

Plant Species of Conservation Interest 具保育價值之植物品種

- Green Ailanthus 常綠臭椿

Habitat 生境

- Secondary Woodland 次生林
- Stream 河溪
- Channel 渠道
- Orchard/Village Area 果園/鄉村區
- Developed/Modified Area 已發展/已修地區
- Recreational Pond 康樂池塘
- Mangrove 紅樹

N
北

Metres 米
0 250 500 1,000

Figure 4.6
圖4.6

Species of Conservation Interest Recorded within Study Area
研究區內錄得之具保育品種

File: 0113919_species of conservation interest_chi.mxd
Date: 03/06/2010

Environmental Resources Management

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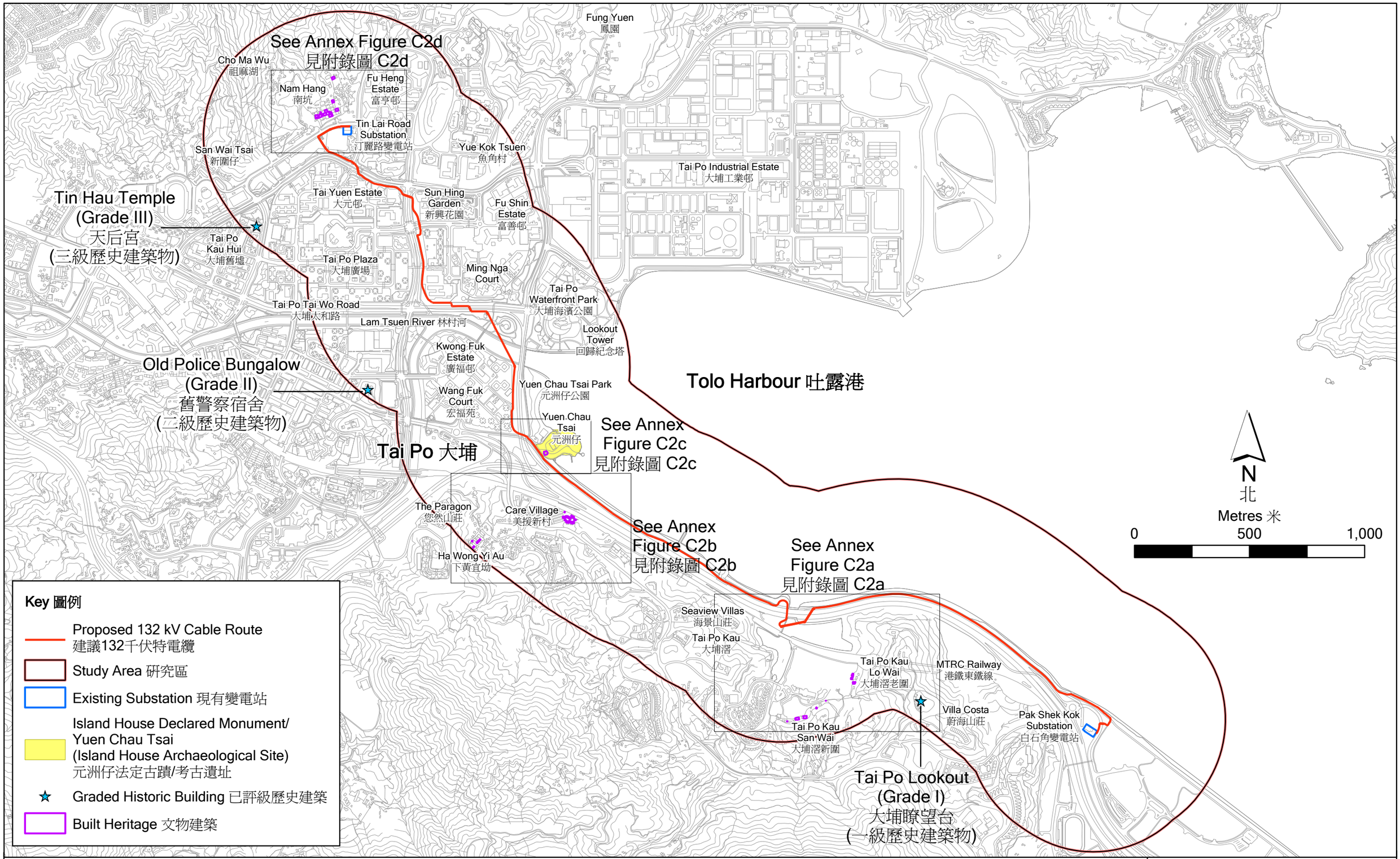

Figure 4.7
圖4.7

Cultural Heritage Resources within 500m of the Proposed Site
項目範圍5 0 0 米內的文化遺產資源

File: 0113919_Built Heritage_overall_rev_chi.mxd
Date: 02/06/2010

Environmental Resources Management

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Annex A
附錄A

Noise Impact - Supporting Information

噪音影響 – 輔助資料

Annex A1 : Preliminary Construction Programme

No.	Activity Description	2010									2011												2012	
		Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb
	Daytime Period																							
I)	**Section 1**																							
1	Excavation & Duct laying																Y	Y	Y	Y				
2	Cable laying																				Y			
3	Backfill & Reinstatement																					Y		
II)	**Section 2**																							
1	Excavation & Duct laying												Y	Y	Y	Y								
2	Cable laying																Y							
3	Backfill & Reinstatement																	Y						
III)	**Section 3**																							
1	Excavation & Duct laying		Y	Y	Y	Y																		
2	Cable laying						Y																	
3	Backfill & Reinstatement							Y																
IV)	**Section 4**																							
1	Excavation & Duct laying						Y	Y	Y															
2	Cable laying									Y														
3	Backfill & Reinstatement										Y													
4	Excavation & Duct laying	Y	Y	Y	Y	Y	Y	Y	Y	Y														
5	Backfill & Reinstatement										Y	Y												
V)	**Section 5**																							
1	Excavation & Duct laying				Y	Y	Y	Y																
2	Cable laying								Y															
3	Backfill & Reinstatement									Y														
VI)	**Section 6**																							
1	Excavation & Duct laying		Y	Y	Y	Y																		
2	Cable laying						Y																	
3	Backfill & Reinstatement							Y																
VII)	**Section 7**																							
1	Excavation & Duct laying											Y	Y	Y	Y									
2	Cable laying															Y								
3	Backfill & Reinstatement																Y							
VIII)	**Section 8**																							
1	Excavation & Duct laying																Y	Y	Y	Y				
2	Cable laying																				Y			
3	Backfill & Reinstatement																					Y		
4	Excavation & Duct laying									Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y				
5	Backfill & Reinstatement																					Y	Y	
IX)	**Section 9**																							
1	Excavation & Duct laying					Y	Y	Y	Y															
2	Cable laying									Y														
3	Backfill & Reinstatement										Y													
X)	**Section 10**																							
1	Excavation & Duct laying	Y	Y	Y	Y																			
2	Cable laying					Y																		
3	Backfill & Reinstatement						Y																	
XI)	**Section 11**																							
1	Excavation & Duct laying															Y	Y	Y	Y					
2	Cable laying																			Y				
3	Backfill & Reinstatement																				Y			

Proposed 132kV Cable Circuit Connecting with Ting Lai Road Substation and Pak Shek Kok Substation

Annex A2-1 : Construction Plant Inventory

No.	Activities	Plant	TM Ref. / BS / Other Ref. [1]	No. of PME	On-time %	Type of Noise Control[3]	Noise reduction, dB(A)	Unit SWL,	SWL, dB(A)	Total SWL, dB(A)[2]	Groups[4]	
I)	**Section 1**											
	Daytime Period											
1	**Excavation & Duct laying**	Lorry with crane	EPD/PME/36	1	60%			105	103	**106**	**1**	**103**
		Generator, super silenced, 70dB(A) at 7m	CNP 103	1	50%			95	92		**2**	**101**
		Breaker, hand-held mass > 10 kg and < 20 kg	CNP 024	1	50%	Noise Barrier	-5	108	100		**2**	
		Air compressor, air flow < 10 cubic.m / min	CNP 001	1	50%	Noise Barrier	-5	100	92		**2**	
		Saw / groover, concrete (petrol)	CNP 203	1	40%	Noise Barrier	-5	115	106		**3**	**106**
		Tracked Excavator/loader	BS C3 97	1	70%	Noise Barrier	-5	105	98		**4**	**98**
2	**Cable laying**	Lorry with crane	EPD/PME/36	1	60%			105	103	**103**	**1**	**103**
		Generator, super silenced, 70dB(A) at 7m	CNP 103	1	50%			95	92		**2**	**100**
		Electric Winch	CNP 262	1	50%			95	92		**2**	
		Powered Winch	CNP 263	1	50%			102	99		**2**	
3	**Backfill & Reinstatement**	Lorry with crane	EPD/PME/36	1	60%			105	103	**103**	**1**	**103**
		Generator, super silenced, 70dB(A) at 7m	CNP 103	1	50%			95	92		**2**	**99**
		Water Pump	CNP 281	1	50%			88	85		**2**	
		Compactor, vibratory	CNP 050	1	70%	Noise Barrier	-5	105	98		**2**	
		Power rammer (petrol)	CNP 169	1	70%	Noise Barrier	-5	108	101		**3**	**101**
		Road roller	BS C8 30	1	70%	Noise Barrier	-5	101	94		**4**	**101**
		Dumper	CNP 066	1	70%	Noise Barrier	-5	106	99		**4**	

Notes:

[1] BS - British Standard BS 5228:1997, Part 1 Noise and Vibration Control on Construction and Open Sites
Other Ref. - SWLs refer to other PME documented by the Noise Control Authority (EPD/PME/no.)
(http://www.epd.gov.hk/epd/english/application_for_licences/guidance/files/OtherSWLe.pdf)

[2] The figures are rounded-up to a whole number.

[3] Noise barrier for mobile PME -5dB(A)

[4] Only one group from Group 1 to Group 4 will be operated at any one time.

Proposed 132kV Cable Circuit Connecting with Ting Lai Road Substation and Pak Shek Kok Substation

Annex A2-2 : Construction Plant Inventory

No.	Activities	Plant	TM Ref. / BS / Other Ref. [1]	No. of PME	On-time %	Type of Noise Control[3]	Noise reduction, dB(A)	Unit SWL,	SWL, dB(A)	Total SWL, dB(A)[2]	Groups[4]	
II)	**Section 2**											
	Daytime Period											
1	**Excavation & Duct laying**	Lorry with crane	EPD/PME/36	1	60%			105	103	**103**	**1**	**103**
		Generator, super silenced, 70dB(A) at 7m	CNP 103	1	50%			95	92		**2**	**101**
		Breaker, hand-held, mass > 10kg and < 20kg	CNP 024	1	50%	Noise Barrier	-5	108	100		**2**	
		Air compressor, air flow < 10 cubic.m / min	CNP 001	1	50%	Noise Barrier	-5	100	92		**2**	
		Saw / groover, concrete (petrol)	CNP 203	1	20%	Noise Barrier	-5	115	103		**3**	**103**
		Tracked Excavator/loader	BS C3 97	1	70%	Noise Barrier	-5	105	98		**4**	**98**
2	**Cable laying**	Lorry with crane	EPD/PME/36	1	60%			105	103	**103**	**1**	**103**
		Generator, super silenced, 70dB(A) at 7m	CNP 103	1	50%			95	92		**2**	**100**
		Electric Winch	CNP 262	1	50%			95	92		**2**	
		Powered Winch	CNP 263	1	50%			102	99		**2**	
3	**Backfill & Reinstatement**	Lorry with crane	EPD/PME/36	1	60%			105	103	**103**	**1**	**103**
		Generator, super silenced, 70dB(A) at 7m	CNP 103	1	50%			95	92		**2**	**99**
		Water Pump	CNP 281	1	50%			88	85		**2**	
		Compactor, vibratory	CNP 050	1	70%	Noise Barrier	-5	105	98		**2**	
		Power rammer (petrol)	CNP 169	1	70%	Noise Barrier	-5	108	101		**3**	**101**
		Road roller	BS C8 30	1	70%	Noise Barrier	-5	101	94		**4**	**101**
		Dumper	CNP 066	1	70%	Noise Barrier	-5	106	99		**4**	

Notes:

[1] BS - British Standard BS 5228:1997, Part 1 Noise and Vibration Control on Construction and Open Sites
Other Ref. - SWLs refer to other PME documented by the Noise Control Authority (EPD/PME/no.)
(http://www.epd.gov.hk/epd/english/application_for_licences/guidance/files/OtherSWLe.pdf)

[2] The figures are rounded-up to a whole number.

[3] Noise barrier for mobile PME -5dB(A)

[4] Only one group from Group 1 to Group 4 will be operated at any one time.

Proposed 132kV Cable Circuit Connecting with Ting Lai Road Substation and Pak Shek Kok Substation

Annex A2-3 : Construction Plant Inventory

No.	Activities	Plant	TM Ref. / BS / Other Ref. [1]	No. of PME	On-time %	Type of Noise Control[3]	Noise reduction, dB(A)	Unit SWL,	SWL, dB(A)	Total SWL, dB(A)[2]	Groups[4]	
III)	**Section 3**											
	Daytime Period											
1	**Excavation & Duct laying**	Lorry with crane	EPD/PME/36	1	60%			105	103	**112**	**1**	**103**
		Generator, super silenced, 70dB(A) at 7m	CNP 103	1	50%			95	92		**2**	**106**
		Breaker, hand-held, mass > 10kg and < 20kg	CNP 024	1	50%			108	105		**2**	
		Air compressor, air flow < 10 cubic.m / min	CNP 001	1	50%			100	97		**2**	
		Saw / groover, concrete (petrol)	CNP 203	1	50%			115	112		**3**	**112**
		Tracked Excavator/loader	BS C3 97	1	70%			105	103		**4**	**103**
2	**Cable laying**	Lorry with crane	EPD/PME/36	1	60%			105	103	**105**		
		Generator, super silenced, 70dB(A) at 7m	CNP 103	1	50%			95	92			
		Electric Winch	CNP 262	1	50%			95	92			
		Powered Winch	CNP 263	1	50%			102	99			
3	**Backfill & Reinstatement**	Lorry with crane	EPD/PME/36	1	60%			105	103	**106**	**1**	**103**
		Generator, super silenced, 70dB(A) at 7m	CNP 103	1	50%			95	92		**2**	**104**
		Water Pump	CNP 281	1	50%			88	85		**2**	
		Compactor, vibratory	CNP 050	1	70%			105	103		**2**	
		Power rammer (petrol)	CNP 169	1	70%			108	106		**3**	**106**
		Road roller	BS C8 30	1	70%			101	99		**4**	**106**
		Dumper	CNP 066	1	70%			106	104		**4**	

Notes:

[1] BS - British Standard BS 5228:1997, Part 1 Noise and Vibration Control on Construction and Open Sites
Other Ref. - SWLs refer to other PME documented by the Noise Control Authority (EPD/PME/no.)
(http://www.epd.gov.hk/epd/english/application_for_licences/guidance/files/OtherSWLe.pdf)

[2] The figures are rounded-up to a whole number.

[3] Noise barrier for mobile PME -5dB(A)

[4] Only one group from Group 1 to Group 4 will be operated at any one time.

Proposed 132kV Cable Circuit Connecting with Ting Lai Road Substation and Pak Shek Kok Substation

Annex A2-4 : Construction Plant Inventory

No.	Activities	Plant	TM Ref. / BS / Other Ref. [1]	No. of PME	On-time %	Type of Noise Control[3]	Noise reduction, dB(A)	Unit SWL,	SWL, dB(A)	Total SWL, dB(A)[2]	Groups[4]	
IV)	**Section 4**											
	Daytime Period											
1	**Excavation & Duct laying**	Lorry with crane	EPD/PME/36	1	60%			105	103	**107**	**1**	**103**
	(Main Trench)	Generator, super silenced, 70dB(A) at 7m	CNP 103	1	50%			95	92		**2**	**101**
		Breaker, hand-held, mass > 10kg and < 20kg	CNP 024	1	50%	Noise Barrier	-5	108	100		**2**	
		Air compressor, air flow < 10 cubic.m / min	CNP 001	1	50%	Noise Barrier	-5	100	92		**2**	
		Saw / groover, concrete (petrol)	CNP 203	1	50%	Noise Barrier	-5	115	107		**3**	**107**
		Tracked Excavator/loader	BS C3 97	1	70%	Noise Barrier	-5	105	98		**4**	**98**
2	**Cable laying**	Lorry with crane	EPD/PME/36	1	60%			105	103	**103**	**1**	**103**
	(Main Trench)	Generator, super silenced, 70dB(A) at 7m	CNP 103	1	50%			95	92		**2**	**100**
		Electric Winch	CNP 262	1	50%			95	92		**2**	
		Powered Winch	CNP 263	1	50%			102	99		**2**	
3	**Backfill & Reinstatement**	Lorry with crane	EPD/PME/36	1	60%			105	103	**103**	**1**	**103**
	(Main Trench)	Generator, super silenced, 70dB(A) at 7m	CNP 103	1	50%			95	92		**2**	**99**
		Water Pump	CNP 281	1	50%			88	85		**2**	
		Compactor, vibratory	CNP 050	1	70%	Noise Barrier	-5	105	98		**2**	
		Power rammer (petrol)	CNP 169	1	70%	Noise Barrier	-5	108	101		**3**	**101**
		Road roller	BS C8 30	1	70%	Noise Barrier	-5	101	94		**4**	**101**
		Dumper	CNP 066	1	70%	Noise Barrier	-5	106	99		**4**	
4	**Excavation & Duct laying**	Lorry with crane	EPD/PME/36	1	60%			105	103	**108**	**1**	**108**
	(No-dig)	Generator, super silenced, 70dB(A) at 7m	CNP 103	1	50%			95	92		**1**	
		Water Pump	CNP 281	1	50%			88	85		**1**	
		Air compressor, air flow < 10 cubic.m / min	CNP 001	1	50%			100	97		**1**	
		Breaker, hand-held mass > 10 kg and < 20 kg	CNP 024	1	50%	Noise Barrier	-5	108	100		**1**	
		Tracked Excavator/loader	BS C3 97	1	70%	Noise Barrier	-5	105	98		**1**	
		Vibratoary Hammer	EPD/PME/18	1	70%	Noise Barrier	-5	115	108		**2**	**108**
		Grouting Machine	EPD/PME/15	1	70%	Noise Barrier	-5	105	98		**1**	
		Powered Winch	CNP 263	1	70%			102	100		**1**	
		Power Pad	EPD/PME/20	1	70%			100	98		**3**	**101**
		Tunnel Boring Machine	[1-a]	1	70%	Underground	-10	109	97		**3**	
5	**Backfill & Reinstatement**	Lorry with crane	EPD/PME/36	1	60%			105	103	**108**	**1**	**105**
	(No-dig)	Generator, super silenced, 70dB(A) at 7m	CNP 103	1	50%			95	92		**1**	
		Water Pump	CNP 281	1	50%			88	85		**1**	
		Power rammer (petrol)	CNP 169	1	70%	Noise Barrier	-5	108	101		**1**	
		Vibration Roller	CNP 186	1	70%	Noise Barrier	-5	108	101		**2**	**105**
		Dumper	CNP 066	1	70%	Noise Barrier	-5	106	99		**2**	
		Tracked Excavator/loader	BS C3 97	1	70%	Noise Barrier	-5	105	98		**2**	
		Vibratoary Hammer	EPD/PME/18	1	70%	Noise Barrier	-5	115	108		**3**	**108**

Notes:

[1] BS - British Standard BS 5228:1997, Part 1 Noise and Vibration Control on Construction and Open Sites
Other Ref. - SWLs refer to other PME documented by the Noise Control Authority (EPD/PME/no.)
(http://www.epd.gov.hk/epd/english/application_for_licences/guidance/files/OtherSWLe.pdf)

[1-a] Reference was made to "Kowloon Southern Link Environmental Impact Assessment (Register No. AEIAR-083/2005)"

[2] The figures are rounded-up to a whole number.

[3] Noise barrier for mobile PME -5dB(A)
Underground -10dB(A)

[4] Only one group from Group 1 to Group 4 will be operated at any one time.

Proposed 132kV Cable Circuit Connecting with Ting Lai Road Substation and Pak Shek Kok Substation

Annex A2-5 : Construction Plant Inventory

No.	Activities	Plant	TM Ref. / BS / Other Ref. [1]	No. of PME	On-time %	Type of Noise Control[3]	Noise reduction, dB(A)	Unit SWL,	SWL, dB(A)	Total SWL, dB(A)[2]	Groups[4]	
V)	**Section 5**											
	Daytime Period											
1	**Excavation & Duct laying**	Lorry with crane	EPD/PME/36	1	30%			105	100	**100**	**1**	**100**
		Generator, super silenced, 70dB(A) at 7m	CNP 103	1	40%			95	91		**2**	**100**
		Breaker, hand-held, mass > 10kg and < 20kg	CNP 024	1	40%	Noise Barrier	-5	108	99		**2**	
		Air compressor, air flow < 10 cubic.m / min	CNP 001	1	40%	Noise Barrier	-5	100	91		**2**	
		Saw / groover, concrete (petrol)	CNP 203	1	10%	Noise Barrier	-5	115	100		**3**	**100**
		Tracked Excavator/loader	BS C3 97	1	70%	Noise Barrier	-5	105	98		**4**	**98**
2	**Cable laying**	Lorry with crane	EPD/PME/36	1	30%			105	100	**100**	**1**	**100**
		Generator, super silenced, 70dB(A) at 7m	CNP 103	1	50%			95	92		**2**	**100**
		Electric Winch	CNP 262	1	50%			95	92		**2**	
		Powered Winch	CNP 263	1	50%			102	99		**2**	
3	**Backfill & Reinstatement**	Lorry with crane	EPD/PME/36	1	30%			105	100	**100**	**1**	**100**
		Generator, super silenced, 70dB(A) at 7m	CNP 103	1	50%			95	92		**2**	**99**
		Water Pump	CNP 281	1	50%			88	85		**2**	
		Compactor, vibratory	CNP 050	1	70%	Noise Barrier	-5	105	98		**2**	
		Power rammer (petrol)	CNP 169	1	40%	Noise Barrier	-5	108	99		**3**	**99**
		Road roller	BS C8 30	1	70%	Noise Barrier	-5	101	94		**4**	**98**
		Dumper	CNP 066	1	30%	Noise Barrier	-5	106	96		**4**	

Notes:

[1] BS - British Standard BS 5228:1997, Part 1 Noise and Vibration Control on Construction and Open Sites
Other Ref. - SWLs refer to other PME documented by the Noise Control Authority (EPD/PME/no.)
(http://www.epd.gov.hk/epd/english/application_for_licences/guidance/files/OtherSWLe.pdf)

[2] The figures are rounded-up to a whole number.

[3] Noise barrier for mobile PME -5dB(A)

[4] Only one group from Group 1 to Group 4 will be operated at any one time.

Proposed 132kV Cable Circuit Connecting with Ting Lai Road Substation and Pak Shek Kok Substation

Annex A2-6 : Construction Plant Inventory

No.	Activities	Plant	TM Ref. / BS / Other Ref. [1]	No. of PME	On-time %	Type of Noise Control[3]	Noise reduction, dB(A)	Unit SWL,	SWL, dB(A)	Total SWL, dB(A)[2]	Groups[4]	
VI)	**Section 6**											
	Daytime Period											
1	**Excavation & Duct laying**	Lorry with crane	EPD/PME/36	1	60%			105	103	**112**	**1**	**103**
		Generator, super silenced, 70dB(A) at 7m	CNP 103	1	50%			95	92		**2**	**106**
		Breaker, hand-held, mass > 10kg and < 20kg	CNP 024	1	50%			108	105		**2**	
		Air compressor, air flow < 10 cubic.m / min	CNP 001	1	50%			100	97		**2**	
		Saw / groover, concrete (petrol)	CNP 203	1	50%			115	112		**3**	**112**
		Tracked Excavator/loader	BS C3 97	1	70%			105	103		**4**	**103**
2	**Cable laying**	Lorry with crane	EPD/PME/36	1	60%			105	103	**105**		
		Generator, super silenced, 70dB(A) at 7m	CNP 103	1	50%			95	92			
		Electric Winch	CNP 262	1	50%			95	92			
		Powered Winch	CNP 263	1	50%			102	99			
3	**Backfill & Reinstatement**	Lorry with crane	EPD/PME/36	1	60%			105	103	**106**	**1**	**103**
		Generator, super silenced, 70dB(A) at 7m	CNP 103	1	50%			95	92		**2**	**104**
		Water Pump	CNP 281	1	50%			88	85		**2**	
		Compactor, vibratory	CNP 050	1	70%			105	103		**2**	
		Power rammer (petrol)	CNP 169	1	70%			108	106		**3**	**106**
		Road roller	BS C8 30	1	70%			101	99		**4**	**106**
		Dumper	CNP 066	1	70%			106	104		**4**	

Notes:

[1] BS - British Standard BS 5228:1997, Part 1 Noise and Vibration Control on Construction and Open Sites
Other Ref. - SWLs refer to other PME documented by the Noise Control Authority (EPD/PME/no.)
(http://www.epd.gov.hk/epd/english/application_for_licences/guidance/files/OtherSWLe.pdf)

[2] The figures are rounded-up to a whole number.

[3] Noise barrier for mobile PME -5dB(A)

[4] Only one group from Group 1 to Group 4 will be operated at any one time.

Proposed 132kV Cable Circuit Connecting with Ting Lai Road Substation and Pak Shek Kok Substation

Annex A2-7 : Construction Plant Inventory

No.	Activities	Plant	TM Ref. / BS / Other Ref. [1]	No. of PME	On-time %	Type of Noise Control[3]	Noise reduction, dB(A)	Unit SWL,	SWL, dB(A)	Total SWL, dB(A)[2]	Groups[4]	
VII)	**Section 7**											
	Daytime Period											
1	**Excavation & Duct laying**	Lorry with crane	EPD/PME/36	1	60%			105	103	**112**	**1**	**103**
		Generator, super silenced, 70dB(A) at 7m	CNP 103	1	50%			95	92		**2**	**106**
		Breaker, hand-held, mass > 10kg and < 20kg	CNP 024	1	50%			108	105		**2**	
		Air compressor, air flow < 10 cubic.m / min	CNP 001	1	50%			100	97		**2**	
		Saw / groover, concrete (petrol)	CNP 203	1	50%			115	112		**3**	**112**
		Tracked Excavator/loader	BS C3 97	1	70%			105	103		**4**	**103**
2	**Cable laying**	Lorry with crane	EPD/PME/36	1	60%			105	103	**105**		
		Generator, super silenced, 70dB(A) at 7m	CNP 103	1	50%			95	92			
		Electric Winch	CNP 262	1	50%			95	92			
		Powered Winch	CNP 263	1	50%			102	99			
3	**Backfill & Reinstatement**	Lorry with crane	EPD/PME/36	1	60%			105	103	**106**	**1**	**103**
		Generator, super silenced, 70dB(A) at 7m	CNP 103	1	50%			95	92		**2**	**104**
		Water Pump	CNP 281	1	50%			88	85		**2**	
		Compactor, vibratory	CNP 050	1	70%			105	103		**2**	
		Power rammer (petrol)	CNP 169	1	70%			108	106		**3**	**106**
		Road roller	BS C8 30	1	70%			101	99		**4**	**106**
		Dumper	CNP 066	1	70%			106	104		**4**	

Notes:

[1] BS - British Standard BS 5228:1997, Part 1 Noise and Vibration Control on Construction and Open Sites
Other Ref. - SWLs refer to other PME documented by the Noise Control Authority (EPD/PME/no.)
(http://www.epd.gov.hk/epd/english/application_for_licences/guidance/files/OtherSWLe.pdf)

[2] The figures are rounded-up to a whole number.

[3] Noise barrier for mobile PME -5dB(A)

[4] Only one group from Group 1 to Group 4 will be operated at any one time.

Proposed 132kV Cable Circuit Connecting with Ting Lai Road Substation and Pak Shek Kok Substation

Annex A2-8 : Construction Plant Inventory

No.	Activities	Plant	TM Ref. / BS / Other Ref. [1]	No. of PME	On-time %	Type of Noise Control[3]	Noise reduction, dB(A)	Unit SWL,	SWL, dB(A)	Total SWL, dB(A)[2]	Groups[4]	
VIII)	**Section 8**											
	Daytime Period											
1	**Excavation & Duct laying (Main Trench)**	Lorry with crane	EPD/PME/36	1	60%			105	103	**112**	**1**	**103**
		Generator, super silenced, 70dB(A) at 7m	CNP 103	1	50%			95	92		**2**	**106**
		Breaker, hand-held, mass > 10kg and < 20kg	CNP 024	1	50%			108	105		**2**	
		Air compressor, air flow < 10 cubic.m / min	CNP 001	1	50%			100	97		**2**	
		Saw / groover, concrete (petrol)	CNP 203	1	50%			115	112		**3**	**112**
		Tracked Excavator/loader	BS C3 97	1	70%			105	103		**4**	**103**
2	**Cable laying (Main Trench)**	Lorry with crane	EPD/PME/36	1	60%			105	103	**105**		
		Generator, super silenced, 70dB(A) at 7m	CNP 103	1	50%			95	92			
		Electric Winch	CNP 262	1	50%			95	92			
		Powered Winch	CNP 263	1	50%			102	99			
3	**Backfill & Reinstatement (Main Trench)**	Lorry with crane	EPD/PME/36	1	60%			105	103	**106**	**1**	**103**
		Generator, super silenced, 70dB(A) at 7m	CNP 103	1	50%			95	92		**2**	**104**
		Water Pump	CNP 281	1	50%			88	85		**1**	
		Compactor, vibratory	CNP 050	1	70%			105	103		**2**	
		Power rammer (petrol)	CNP 169	1	70%			108	106		**3**	**106**
		Road roller	BS C8 30	1	70%			101	99		**4**	**106**
		Dumper	CNP 066	1	70%			106	104		**4**	
4	**Excavation & Duct laying (No-dig)**	Lorry with crane	EPD/PME/36	1	60%			105	103	**113**	**1**	**111**
		Generator, super silenced, 70dB(A) at 7m	CNP 103	1	50%			95	92		**1**	
		Water Pump	CNP 281	1	50%			88	85		**1**	
		Air compressor, air flow < 10 cubic.m / min	CNP 001	1	50%			100	97		**1**	
		Breaker, hand-held mass > 10 kg and < 20 kg	CNP 024	1	50%			108	105		**1**	
		Tracked Excavator/loader	BS C3 97	1	70%			105	103		**1**	
		Vibratoary Hammer	EPD/PME/18	1	70%			115	113		**2**	**113**
		Grouting Machine	EPD/PME/15	1	70%			105	103		**1**	
		Powered Winch	CNP 263	1	70%			102	100		**1**	
		Power Pad	EPD/PME/20	1	70%			100	98		**3**	**101**
		Tunnel Boring Machine	[1-a]	1	70%	Underground	-10	109	97		**3**	
5	**Backfill & Reinstatement (No-dig)**	Lorry with crane	EPD/PME/36	1	60%			105	103	**113**	**1**	**108**
		Generator, super silenced, 70dB(A) at 7m	CNP 103	1	50%			95	92		**1**	
		Water Pump	CNP 281	1	50%			88	85		**1**	
		Power rammer (petrol)	CNP 169	1	70%			108	106		**1**	
		Vibration Roller	CNP 186	1	70%			108	106		**2**	**110**
		Dumper	CNP 066	1	70%			106	104		**2**	
		Tracked Excavator/loader	BS C3 97	1	70%			105	103		**2**	
		Vibratoary Hammer	EPD/PME/18	1	70%			115	113		**3**	**113**

Notes:

[1] BS - British Standard BS 5228:1997, Part 1 Noise and Vibration Control on Construction and Open Sites
Other Ref. - SWLs refer to other PME documented by the Noise Control Authority (EPD/PME/no.)
(http://www.epd.gov.hk/epd/english/application_for_licences/guidance/files/OtherSWLe.pdf)

[1-a] Reference was made to "Kowloon Southern Link Environmental Impact Assessment (Register No. AEIAR-083/2005)"

[2] The figures are rounded-up to a whole number.

[3] Noise barrier for mobile PME -5dB(A)
Underground -10dB(A)

[4] Only one group from Group 1 to Group 4 will be operated at any one time.

Proposed 132kV Cable Circuit Connecting with Ting Lai Road Substation and Pak Shek Kok Substation

Annex A2-9 : Construction Plant Inventory

No.	Activities	Plant	TM Ref. / BS / Other Ref. [1]	No. of PME	On-time %	Type of Noise Control[3]	Noise reduction, dB(A)	Unit SWL,	SWL, dB(A)	Total SWL, dB(A)[2]	Groups[4]	
IX)	**Section 9**											
	Daytime Period											
1	**Excavation & Duct laying**	Lorry with crane	EPD/PME/36	1	60%			105	103	**112**	**1**	**103**
		Generator, super silenced, 70dB(A) at 7m	CNP 103	1	50%			95	92		**2**	**106**
		Breaker, hand-held, mass > 10kg and < 20kg	CNP 024	1	50%			108	105		**2**	
		Air compressor, air flow < 10 cubic.m / min	CNP 001	1	50%			100	97		**2**	
		Saw / groover, concrete (petrol)	CNP 203	1	50%			115	112		**3**	**112**
		Tracked Excavator/loader	BS C3 97	1	70%			105	103		**4**	**103**
2	**Cable laying**	Lorry with crane	EPD/PME/36	1	60%			105	103	**105**		
		Generator, super silenced, 70dB(A) at 7m	CNP 103	1	50%			95	92			
		Electric Winch	CNP 262	1	50%			95	92			
		Powered Winch	CNP 263	1	50%			102	99			
3	**Backfill & Reinstatement**	Lorry with crane	EPD/PME/36	1	60%			105	103	**106**	**1**	**103**
		Generator, super silenced, 70dB(A) at 7m	CNP 103	1	50%			95	92		**2**	**104**
		Water Pump	CNP 281	1	50%			88	85		**2**	
		Compactor, vibratory	CNP 050	1	70%			105	103		**2**	
		Power rammer (petrol)	CNP 169	1	70%			108	106		**3**	**106**
		Road roller	BS C8 30	1	70%			101	99		**4**	**106**
		Dumper	CNP 066	1	70%			106	104		**4**	

Notes:

[1] BS - British Standard BS 5228:1997, Part 1 Noise and Vibration Control on Construction and Open Sites
Other Ref. - SWLs refer to other PME documented by the Noise Control Authority (EPD/PME/no.)
(http://www.epd.gov.hk/epd/english/application_for_licences/guidance/files/OtherSWLe.pdf)

[2] The figures are rounded-up to a whole number.

[3] Noise barrier for mobile PME -5dB(A)

[4] Only one group from Group 1 to Group 4 will be operated at any one time.

Proposed 132kV Cable Circuit Connecting with Ting Lai Road Substation and Pak Shek Kok Substation

Annex A2-10 : Construction Plant Inventory

No.	Activities	Plant	TM Ref. / BS / Other Ref. [1]	No. of PME	On-time %	Type of Noise Control[3]	Noise reduction, dB(A)	Unit SWL,	SWL, dB(A)	Total SWL, dB(A)[2]	Groups[4]	
X)	**Section 10**											
	Daytime Period											
1	**Excavation & Duct laying**	Lorry with crane	EPD/PME/36	1	60%			105	103	**112**	**1**	**103**
		Generator, super silenced, 70dB(A) at 7m	CNP 103	1	50%			95	92		**2**	**106**
		Breaker, hand-held, mass > 10kg and < 20kg	CNP 024	1	50%			108	105		**2**	
		Air compressor, air flow < 10 cubic.m / min	CNP 001	1	50%			100	97		**2**	
		Saw / groover, concrete (petrol)	CNP 203	1	50%			115	112		**3**	**112**
		Tracked Excavator/loader	BS C3 97	1	70%			105	103		**4**	**103**
2	**Cable laying**	Lorry with crane	EPD/PME/36	1	60%			105	103	**105**		
		Generator, super silenced, 70dB(A) at 7m	CNP 103	1	50%			95	92			
		Electric Winch	CNP 262	1	50%			95	92			
		Powered Winch	CNP 263	1	50%			102	99			
3	**Backfill & Reinstatement**	Lorry with crane	EPD/PME/36	1	60%			105	103	**106**	**1**	**103**
		Generator, super silenced, 70dB(A) at 7m	CNP 103	1	50%			95	92		**2**	**104**
		Water Pump	CNP 281	1	50%			88	85		**2**	
		Compactor, vibratory	CNP 050	1	70%			105	103		**2**	
		Power rammer (petrol)	CNP 169	1	70%			108	106		**3**	**106**
		Road roller	BS C8 30	1	70%			101	99		**4**	**106**
		Dumper	CNP 066	1	70%			106	104		**4**	

Notes:

[1] BS - British Standard BS 5228:1997, Part 1 Noise and Vibration Control on Construction and Open Sites
Other Ref. - SWLs refer to other PME documented by the Noise Control Authority (EPD/PME/no.)
(http://www.epd.gov.hk/epd/english/application_for_licences/guidance/files/OtherSWLe.pdf)

[2] The figures are rounded-up to a whole number.

[3] Noise barrier for mobile PME -5dB(A)

[4] Only one group from Group 1 to Group 4 will be operated at any one time.

Proposed 132kV Cable Circuit Connecting with Ting Lai Road Substation and Pak Shek Kok Substation

Annex A2-11 : Construction Plant Inventory

No.	Activities	Plant	TM Ref. / BS / Other Ref. [1]	No. of PME	On-time %	Type of Noise Control[3]	Noise reduction, dB(A)	Unit SWL,	SWL, dB(A)	Total SWL, dB(A)[2]	Groups[4]	
XI)	**Section 11**											
	Daytime Period											
1	**Excavation & Duct laying**	Lorry with crane	EPD/PME/36	1	60%			105	103	**112**	**1**	**103**
		Generator, super silenced, 70dB(A) at 7m	CNP 103	1	50%			95	92		**2**	**106**
		Breaker, hand-held, mass > 10kg and < 20kg	CNP 024	1	50%			108	105		**2**	
		Air compressor, air flow < 10 cubic.m / min	CNP 001	1	50%			100	97		**2**	
		Saw / groover, concrete (petrol)	CNP 203	1	50%			115	112		**3**	**112**
		Tracked Excavator/loader	BS C3 97	1	70%			105	103		**4**	**103**
2	**Cable laying**	Lorry with crane	EPD/PME/36	1	60%			105	103	**105**	**1**	
		Generator, super silenced, 70dB(A) at 7m	CNP 103	1	50%			95	92		**2**	
		Electric Winch	CNP 262	1	50%			95	92		**2**	
		Powered Winch	CNP 263	1	50%			102	99		**2**	
3	**Backfill & Reinstatement**	Lorry with crane	EPD/PME/36	1	60%			105	103	**106**	**1**	**103**
		Generator, super silenced, 70dB(A) at 7m	CNP 103	1	50%			95	92		**2**	**104**
		Water Pump	CNP 281	1	50%			88	85		**2**	
		Compactor, vibratory	CNP 050	1	70%			105	103		**2**	
		Power rammer (petrol)	CNP 169	1	70%			108	106		**3**	**106**
		Road roller	BS C8 30	1	70%			101	99		**4**	**106**
		Dumper	CNP 066	1	70%			106	104		**4**	

Notes:

[1] BS - British Standard BS 5228:1997, Part 1 Noise and Vibration Control on Construction and Open Sites
Other Ref. - SWLs refer to other PME documented by the Noise Control Authority (EPD/PME/no.)
(http://www.epd.gov.hk/epd/english/application_for_licences/guidance/files/OtherSWLe.pdf)

[2] The figures are rounded-up to a whole number.

[3] Noise barrier for mobile PME -5dB(A)

[4] Only one group from Group 1 to Group 4 will be operated at any one time.

Annex A3-1 : Summary of Predicted Noise Levels during Daytime Period

	NSR Location	EIAO-TM Noise Criteria, dB(A)	Predicted Construction Noise Level (dB(A))																						Max. CNL, dB(A)
			2010									2011												2012	
			Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	
R1	Heng Lung House, Fu Heng Estate	75	37	45	45	45	45	41	42	39	38	38	38	59	59	59	59	72	72	72	72	68	68	31	72
R10	Sea View Villa	75	42	53	53	53	56	55	55	54	66	66	68	68	68	68	67	69	68	68	68	57	67	66	69
R11	Private House	75	60	60	60	60	63	64	63	63	61	61	59	59	59	59	59	62	61	61	61	51	60	59	64
R12	Tower 11, Deerhill Villas	75	58	58	58	58	51	52	41	40	39	40	40	39	39	39	60	60	60	60	53	55	39	38	60
R2	Tai Yuen Hostel, Tai Yuen Estate	75	38	47	47	47	47	42	43	40	39	39	39	64	64	64	64	70	70	69	69	66	66	31	70
R3	Hong Man Court, Sun Hing Garden	75	43	74	74	74	74	66	68	46	45	44	44	75	75	75	75	75	75	42	42	38	39	32	75
R4	Block 17, Tai Po Centre	75	55	71	71	71	71	65	66	58	56	56	55	58	58	58	58	58	58	41	41	36	38	33	71
R5	Ming Yan House, Ming Nga Court	75	66	68	68	68	68	69	69	69	68	68	67	48	48	48	46	48	47	47	47	37	45	44	69
R6	Kwong Lai House, Kwong Fuk Estate	75	66	67	67	72	72	73	73	73	72	67	66	51	51	51	48	50	49	49	49	38	47	46	73
R7	Wang Shing House, Wang Fuk Court	75	57	61	61	75	75	75	75	75	75	58	58	52	52	52	49	51	49	49	49	39	48	47	75
R8	Care Village	75	48	66	66	66	66	60	61	52	54	53	60	60	60	60	54	56	53	53	53	43	52	51	66
R9	KCRC Staff Quarters Long Block	75	44	61	61	61	62	56	57	51	58	58	67	67	67	67	62	64	60	60	60	49	59	58	67
S1	HK Taoist Assn Ng Lai Wo Memorial	70/65	36	45	45	45	45	41	42	39	38	38	38	55	55	55	55	65	65	65	65	62	62	31	65
S2	Tai Po Baptist Public School	70/65	48	51	51	60	60	59	59	60	59	49	49	41	41	41	39	41	40	40	39	31	38	36	60

Annex A3-2

Construction Noise Assessment

NSR: R1 Heng Lung House, Fu Heng Estate

No.	Activity Description	SWL dB(A)[2]	Distance m	Corr. for distance dB(A)[1][2]	Corr. For Topo dB(A)[3]	Corr. for façade dB(A)	Predicted Construction Noise Level (dB(A))																						Max. CNL dB(A)
							2010									2011												2012	
							Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	
	Daytime Period																												
I)	**Section 1**																												
1	Excavation & Duct laying	106	29.6	-37	0	3																72	72	72	72				
2	Cable laying	103	29.6	-37	0	3																				68			
3	Backfill & Reinstatement	103	29.6	-37	0	3																					68		
II)	**Section 2**																												
1	Excavation & Duct laying	103	88.5	-47	0	3												59	59	59	59								
2	Cable laying	103	88.5	-47	0	3																59							
3	Backfill & Reinstatement	103	88.5	-47	0	3																	59						
III)	**Section 3**																												
1	Excavation & Duct laying	112	425.8	-61	-10	3		44	44	44	44																		
2	Cable laying	105	425.8	-61	-10	3						37																	
3	Backfill & Reinstatement	106	425.8	-61	-10	3							39																
IV)	**Section 4**																												
1	Excavation & Duct laying	107	723.2	-65	-10	3						35	35	35															
2	Cable laying	103	723.2	-65	-10	3									31														
3	Backfill & Reinstatement	103	723.2	-65	-10	3										31													
4	Excavation & Duct laying	108	723.2	-65	-10	3	36	36	36	36	36	36	36	36	36														
5	Backfill & Reinstatement	108	723.2	-65	-10	3										36	36												
V)	**Section 5**																												
1	Excavation & Duct laying	100	1127.5	-69	-10	3				24	24	24	24																
2	Cable laying	100	1127.5	-69	-10	3								24															
3	Backfill & Reinstatement	100	1127.5	-69	-10	3									24														
VI)	**Section 6**																												
1	Excavation & Duct laying	112	1528.8	-72	-10	3		33	33	33	33																		
2	Cable laying	105	1528.8	-72	-10	3						26																	
3	Backfill & Reinstatement	106	1528.8	-72	-10	3							28																
VII)	**Section 7**																												
1	Excavation & Duct laying	112	1964.8	-74	-10	3											31	31	31	31									
2	Cable laying	105	1964.8	-74	-10	3															24								
3	Backfill & Reinstatement	106	1964.8	-74	-10	3																26							
VIII)	**Section 8**																												
1	Excavation & Duct laying	112	2431.0	-76	-10	3																29	29	29	29				
2	Cable laying	105	2431.0	-76	-10	3																				22			
3	Backfill & Reinstatement	106	2431.0	-76	-10	3																					24		
4	Excavation & Duct laying	113	2431.0	-76	-10	3									31	31	31	31	31	31	31	31	31	31	31	31			
5	Backfill & Reinstatement	113	2431.0	-76	-10	3																					31	31	
IX)	**Section 9**																												
1	Excavation & Duct laying	112	2802.0	-77	-10	3					28	28	28	28															
2	Cable laying	105	2802.0	-77	-10	3									21														
3	Backfill & Reinstatement	106	2802.0	-77	-10	3										23													
X)	**Section 10**																												
1	Excavation & Duct laying	112	3171.0	-78	-10	3	27	27	27	27																			
2	Cable laying	105	3171.0	-78	-10	3					20																		
3	Backfill & Reinstatement	106	3171.0	-78	-10	3						21																	
XI)	**Section 11**																												
1	Excavation & Duct laying	112	3664.7	-79	-10	3															26	26	26	26					
2	Cable laying	105	3664.7	-79	-10	3																			19				
3	Backfill & Reinstatement	106	3664.7	-79	-10	3																				20			
	Predicted Noise Level during Daytime Period, dB(A)						37	45	45	45	45	41	42	39	38	38	38	59	59	59	59	72	72	72	72	68	68	31	72

Note:

[1] Distance Correction for PMEs = $10*\log(2*PI*r^2)$

[2] The figures are rounded-up to a whole number.

[3] Correction of 10 dB(A) provided where there is no direct line of sight from the NSR to the works section

Annex A3-3

Construction Noise Assessment

NSR: R2 Tai Yuen Hostel, Tai Yuen Estate

No.	Activity Description	SWL dB(A)[2]	Distance m	Corr. for distance dB(A)[1][2]	Corr. For Topo dB(A)[3]	Corr. for façade dB(A)	Predicted Construction Noise Level (dB(A))																					Max. CNL dB(A)
							2010									2011												2012
							Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	
	Daytime Period																												
I)	**Section 1**																												
1	Excavation & Duct laying	106	38.7	-40	0	3																69	69	69	69				
2	Cable laying	103	38.7	-40	0	3																				66			
3	Backfill & Reinstatement	103	38.7	-40	0	3																					66		
II)	**Section 2**																												
1	Excavation & Duct laying	103	49.3	-42	0	3												64	64	64	64								
2	Cable laying	103	49.3	-42	0	3																64							
3	Backfill & Reinstatement	103	49.3	-42	0	3																	64						
III)	**Section 3**																												
1	Excavation & Duct laying	112	364.6	-59	-10	3		46	46	46	46																		
2	Cable laying	105	364.6	-59	-10	3						39																	
3	Backfill & Reinstatement	106	364.6	-59	-10	3							40																
IV)	**Section 4**																												
1	Excavation & Duct laying	107	652.7	-64	-10	3						36	36	36															
2	Cable laying	103	652.7	-64	-10	3									32														
3	Backfill & Reinstatement	103	652.7	-64	-10	3										32													
4	Excavation & Duct laying	108	652.7	-64	-10	3	37	37	37	37	37	37	37	37	37														
5	Backfill & Reinstatement	108	652.7	-64	-10	3										37	37												
V)	**Section 5**																												
1	Excavation & Duct laying	100	1061.9	-69	-10	3				25	25	25	25																
2	Cable laying	100	1061.9	-69	-10	3								25															
3	Backfill & Reinstatement	100	1061.9	-69	-10	3									24														
VI)	**Section 6**																												
1	Excavation & Duct laying	112	1456.5	-71	-10	3		34	34	34	34																		
2	Cable laying	105	1456.5	-71	-10	3						27																	
3	Backfill & Reinstatement	106	1456.5	-71	-10	3							28																
VII)	**Section 7**																												
1	Excavation & Duct laying	112	1898.4	-74	-10	3											31	31	31	31									
2	Cable laying	105	1898.4	-74	-10	3															24								
3	Backfill & Reinstatement	106	1898.4	-74	-10	3																26							
VIII)	**Section 8**																												
1	Excavation & Duct laying	112	2370.4	-75	-10	3																30	30	30	30				
2	Cable laying	105	2370.4	-75	-10	3																				22			
3	Backfill & Reinstatement	106	2370.4	-75	-10	3																					24		
4	Excavation & Duct laying	113	2370.4	-75	-10	3									31	31	31	31	31	31	31	31	31	31	31				
5	Backfill & Reinstatement	113	2370.4	-75	-10	3																					31	31	
IX)	**Section 9**																												
1	Excavation & Duct laying	112	2748.6	-77	-10	3					28	28	28	28															
2	Cable laying	105	2748.6	-77	-10	3									21														
3	Backfill & Reinstatement	106	2748.6	-77	-10	3										23													
X)	**Section 10**																												
1	Excavation & Duct laying	112	3127.2	-78	-10	3	27	27	27	27																			
2	Cable laying	105	3127.2	-78	-10	3					20																		
3	Backfill & Reinstatement	106	3127.2	-78	-10	3						22																	
XI)	**Section 11**																												
1	Excavation & Duct laying	112	3621.5	-79	-10	3															26	26	26	26					
2	Cable laying	105	3621.5	-79	-10	3																			19				
3	Backfill & Reinstatement	106	3621.5	-79	-10	3																				20			
	Predicted Noise Level during Daytime Period, dB(A)						38	47	47	47	47	42	43	40	39	39	39	64	64	64	64	70	70	69	69	66	66	31	70

Note:

[1] Distance Correction for PMEs = $10*\log(2*PI*r^2)$

[2] The figures are rounded-up to a whole number.

[3] Correction of 10 dB(A) provided where there is no direct line of sight from the NSR to the works section

Annex A3-4

Construction Noise Assessment

NSR: R3 Hong Man Court, Sun Hing Garden

No.	Activity Description	SWL dB(A)[2]	Distance m	Corr. for distance dB(A)[1][2]	Corr. For Topo dB(A)[3]	Corr. for façade dB(A)	Predicted Construction Noise Level (dB(A))																						Max. CNL dB(A)
							2010									2011												2012	
							Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	
	Daytime Period																												
I)	**Section 1**																												
1	Excavation & Duct laying	106	329.1	-58	-10	3																41	41	41	41				
2	Cable laying	103	329.1	-58	-10	3																				37			
3	Backfill & Reinstatement	103	329.1	-58	-10	3																					37		
II)	**Section 2**																												
1	Excavation & Duct laying	103	14.5	-31	0	3												75	75	75	75								
2	Cable laying	103	14.5	-31	0	3																75							
3	Backfill & Reinstatement	103	14.5	-31	0	3																	75						
III)	**Section 3**																												
1	Excavation & Duct laying	112	46.6	-41	0	3		74	74	74	74																		
2	Cable laying	105	46.6	-41	0	3						66																	
3	Backfill & Reinstatement	106	46.6	-41	0	3							68																
IV)	**Section 4**																												
1	Excavation & Duct laying	107	329.6	-58	-10	3						42	42	42															
2	Cable laying	103	329.6	-58	-10	3									37														
3	Backfill & Reinstatement	103	329.6	-58	-10	3										37													
4	Excavation & Duct laying	108	329.6	-58	-10	3	43	43	43	43	43	43	43	43	43														
5	Backfill & Reinstatement	108	329.6	-58	-10	3										43	43												
V)	**Section 5**																												
1	Excavation & Duct laying	100	721.6	-65	-10	3				28	28	28	28																
2	Cable laying	100	721.6	-65	-10	3								28															
3	Backfill & Reinstatement	100	721.6	-65	-10	3									28														
VI)	**Section 6**																												
1	Excavation & Duct laying	112	1128.9	-69	-10	3		36	36	36	36																		
2	Cable laying	105	1128.9	-69	-10	3						29																	
3	Backfill & Reinstatement	106	1128.9	-69	-10	3							30																
VII)	**Section 7**																												
1	Excavation & Duct laying	112	1558.2	-72	-10	3											33	33	33	33									
2	Cable laying	105	1558.2	-72	-10	3															26								
3	Backfill & Reinstatement	106	1558.2	-72	-10	3																28							
VIII)	**Section 8**																												
1	Excavation & Duct laying	112	2022.1	-74	-10	3																31	31	31	31				
2	Cable laying	105	2022.1	-74	-10	3																				24			
3	Backfill & Reinstatement	106	2022.1	-74	-10	3																					25		
4	Excavation & Duct laying	113	2022.1	-74	-10	3									32	32	32	32	32	32	32	32	32	32	32	32				
5	Backfill & Reinstatement	113	2022.1	-74	-10	3																					32	32	
IX)	**Section 9**																												
1	Excavation & Duct laying	112	2394.3	-76	-10	3					29	29	29	29															
2	Cable laying	105	2394.3	-76	-10	3									22														
3	Backfill & Reinstatement	106	2394.3	-76	-10	3										24													
X)	**Section 10**																												
1	Excavation & Duct laying	112	2770.1	-77	-10	3	28	28	28	28																			
2	Cable laying	105	2770.1	-77	-10	3					21																		
3	Backfill & Reinstatement	106	2770.1	-77	-10	3						23																	
XI)	**Section 11**																												
1	Excavation & Duct laying	112	3264.4	-78	-10	3															27	27	27	27					
2	Cable laying	105	3264.4	-78	-10	3																			20				
3	Backfill & Reinstatement	106	3264.4	-78	-10	3																				21			
	Predicted Noise Level during Daytime Period, dB(A)						43	74	74	74	74	66	68	46	45	44	44	75	75	75	75	75	75	42	42	38	39	32	75

Note:

[1] Distance Correction for PMEs = $10*\log(2*PI*r^2)$

[2] The figures are rounded-up to a whole number.

[3] Correction of 10 dB(A) provided where there is no direct line of sight from the NSR to the works section

Annex A3-5

Construction Noise Assessment

NSR: R4 Block 17, Tai Po Centre

No.	Activity Description	SWL dB(A)[2]	Distance m	Corr. for distance dB(A)[1][2]	Corr. For Topo dB(A)[3]	Corr. for façade dB(A)	Predicted Construction Noise Level (dB(A))																						Max. CNL dB(A)
							2010									2011												2012	
							Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	
	Daytime Period																												
I)	**Section 1**																												
1	Excavation & Duct laying	106	387.0	-60	-10	3																39	39	39	39				
2	Cable laying	103	387.0	-60	-10	3																				36			
3	Backfill & Reinstatement	103	387.0	-60	-10	3																					36		
II)	**Section 2**																												
1	Excavation & Duct laying	103	96.2	-48	0	3												58	58	58	58								
2	Cable laying	103	96.2	-48	0	3																58							
3	Backfill & Reinstatement	103	96.2	-48	0	3																	58						
III)	**Section 3**																												
1	Excavation & Duct laying	112	63.6	-44	0	3		71	71	71	71																		
2	Cable laying	105	63.6	-44	0	3						64																	
3	Backfill & Reinstatement	106	63.6	-44	0	3							65																
IV)	**Section 4**																												
1	Excavation & Duct laying	107	255.9	-56	0	3						54	54	54															
2	Cable laying	103	255.9	-56	0	3									50														
3	Backfill & Reinstatement	103	255.9	-56	0	3										50													
4	Excavation & Duct laying	108	255.9	-56	0	3	55	55	55	55	55	55	55	55	55														
5	Backfill & Reinstatement	108	255.9	-56	0	3										55	55												
V)	**Section 5**																												
1	Excavation & Duct laying	100	667.2	-64	-10	3				29	29	29	29																
2	Cable laying	100	667.2	-64	-10	3								29															
3	Backfill & Reinstatement	100	667.2	-64	-10	3									28														
VI)	**Section 6**																												
1	Excavation & Duct laying	112	1057.8	-68	-10	3		37	37	37	37																		
2	Cable laying	105	1057.8	-68	-10	3						29																	
3	Backfill & Reinstatement	106	1057.8	-68	-10	3							31																
VII)	**Section 7**																												
1	Excavation & Duct laying	112	1501.5	-72	-10	3											33	33	33	33									
2	Cable laying	105	1501.5	-72	-10	3															26								
3	Backfill & Reinstatement	106	1501.5	-72	-10	3																28							
VIII)	**Section 8**																												
1	Excavation & Duct laying	112	1977.6	-74	-10	3																31	31	31	31				
2	Cable laying	105	1977.6	-74	-10	3																				24			
3	Backfill & Reinstatement	106	1977.6	-74	-10	3																					26		
4	Excavation & Duct laying	113	1977.6	-74	-10	3									33	33	33	33	33	33	33	33	33	33	33	33				
5	Backfill & Reinstatement	113	1977.6	-74	-10	3																					33	33	
IX)	**Section 9**																												
1	Excavation & Duct laying	112	2364.0	-75	-10	3					30	30	30	30															
2	Cable laying	105	2364.0	-75	-10	3									22														
3	Backfill & Reinstatement	106	2364.0	-75	-10	3										24													
X)	**Section 10**																												
1	Excavation & Duct laying	112	2757.0	-77	-10	3	28	28	28	28																			
2	Cable laying	105	2757.0	-77	-10	3					21																		
3	Backfill & Reinstatement	106	2757.0	-77	-10	3						23																	
XI)	**Section 11**																												
1	Excavation & Duct laying	112	3251.5	-78	-10	3															27	27	27	27					
2	Cable laying	105	3251.5	-78	-10	3																			20				
3	Backfill & Reinstatement	106	3251.5	-78	-10	3																				21			
	Predicted Noise Level during Daytime Period, dB(A)						55	71	71	71	71	65	66	58	56	56	55	58	58	58	58	58	58	41	41	36	38	33	71

Note:

[1] Distance Correction for PMEs = $10*\log(2*PI*r^2)$

[2] The figures are rounded-up to a whole number.

[3] Correction of 10 dB(A) provided where there is no direct line of sight from the NSR to the works section

Annex A3-6

Construction Noise Assessment

NSR: R5 Ming Yan House, Ming Nga Court

No.	Activity Description	SWL dB(A)[2]	Distance m	Corr. for distance dB(A)[1][2]	Corr. For Topo dB(A)[3]	Corr. for façade dB(A)	Predicted Construction Noise Level (dB(A))																					Max. CNL dB(A)
							2010									2011												2012
							Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	
	Daytime Period																												
I)	**Section 1**																												
1	Excavation & Duct laying	106	706.7	-65	-10	3																34	34	34	34				
2	Cable laying	103	706.7	-65	-10	3																				31			
3	Backfill & Reinstatement	103	706.7	-65	-10	3																					31		
II)	**Section 2**																												
1	Excavation & Duct laying	103	366.9	-59	-10	3												37	37	37	37								
2	Cable laying	103	366.9	-59	-10	3																37							
3	Backfill & Reinstatement	103	366.9	-59	-10	3																	37						
III)	**Section 3**																												
1	Excavation & Duct laying	112	154.7	-52	0	3		63	63	63	63																		
2	Cable laying	105	154.7	-52	0	3						56																	
3	Backfill & Reinstatement	106	154.7	-52	0	3							58																
IV)	**Section 4**																												
1	Excavation & Duct laying	107	71.0	-45	0	3						65	65	65															
2	Cable laying	103	71.0	-45	0	3									61														
3	Backfill & Reinstatement	103	71.0	-45	0	3										61													
4	Excavation & Duct laying	108	71.0	-45	0	3	66	66	66	66	66	66	66	66	66														
5	Backfill & Reinstatement	108	71.0	-45	0	3										66	66												
V)	**Section 5**																												
1	Excavation & Duct laying	100	353.5	-59	0	3				44	44	44	44																
2	Cable laying	100	353.5	-59	0	3								44															
3	Backfill & Reinstatement	100	353.5	-59	0	3									44														
VI)	**Section 6**																												
1	Excavation & Duct laying	112	768.7	-66	0	3		49	49	49	49																		
2	Cable laying	105	768.7	-66	0	3						42																	
3	Backfill & Reinstatement	106	768.7	-66	0	3							44																
VII)	**Section 7**																												
1	Excavation & Duct laying	112	1183.9	-69	0	3											46	46	46	46									
2	Cable laying	105	1183.9	-69	0	3															38								
3	Backfill & Reinstatement	106	1183.9	-69	0	3																40							
VIII)	**Section 8**																												
1	Excavation & Duct laying	112	1643.9	-72	0	3																43	43	43	43				
2	Cable laying	105	1643.9	-72	0	3																				35			
3	Backfill & Reinstatement	106	1643.9	-72	0	3																					37		
4	Excavation & Duct laying	113	1643.9	-72	0	3									44	44	44	44	44	44	44	44	44	44	44				
5	Backfill & Reinstatement	113	1643.9	-72	0	3																					44	44	
IX)	**Section 9**																												
1	Excavation & Duct laying	112	2017.3	-74	0	3					41	41	41	41															
2	Cable laying	105	2017.3	-74	0	3									34														
3	Backfill & Reinstatement	106	2017.3	-74	0	3										35													
X)	**Section 10**																												
1	Excavation & Duct laying	112	2400.8	-76	0	3	39	39	39	39																			
2	Cable laying	105	2400.8	-76	0	3					32																		
3	Backfill & Reinstatement	106	2400.8	-76	0	3						34																	
XI)	**Section 11**																												
1	Excavation & Duct laying	112	2895.4	-77	-10	3															28	28	28	28					
2	Cable laying	105	2895.4	-77	-10	3																			21				
3	Backfill & Reinstatement	106	2895.4	-77	-10	3																				22			
	Predicted Noise Level during Daytime Period, dB(A)						66	68	68	68	68	69	69	69	68	68	67	48	48	48	46	48	47	47	47	37	45	44	69

Note:

[1] Distance Correction for PMEs = $10*\log(2*PI*r^2)$

[2] The figures are rounded-up to a whole number.

[3] Correction of 10 dB(A) provided where there is no direct line of sight from the NSR to the works section

Annex A3-7

Construction Noise Assessment

NSR: R6 Kwong Lai House, Kwong Fuk Estate

No.	Activity Description	SWL dB(A)[2]	Distance m	Corr. for distance dB(A)[1][2]	Corr. For Topo dB(A)[3]	Corr. for façade dB(A)	Predicted Construction Noise Level (dB(A))																					Max. CNL dB(A)
							2010									2011												2012
							Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	
	Daytime Period																												
I)	**Section 1**																												
1	Excavation & Duct laying	106	1086.3	-69	-10	3																30	30	30	30				
2	Cable laying	103	1086.3	-69	-10	3																				27			
3	Backfill & Reinstatement	103	1086.3	-69	-10	3																					27		
II)	**Section 2**																												
1	Excavation & Duct laying	103	746.7	-65	-10	3												31	31	31	31								
2	Cable laying	103	746.7	-65	-10	3																30							
3	Backfill & Reinstatement	103	746.7	-65	-10	3																	30						
III)	**Section 3**																												
1	Excavation & Duct laying	112	449.8	-61	-10	3		44	44	44	44																		
2	Cable laying	105	449.8	-61	-10	3						37																	
3	Backfill & Reinstatement	106	449.8	-61	-10	3							38																
IV)	**Section 4**																												
1	Excavation & Duct laying	107	72.8	-45	0	3						65	65	65															
2	Cable laying	103	72.8	-45	0	3									61														
3	Backfill & Reinstatement	103	72.8	-45	0	3										61													
4	Excavation & Duct laying	108	72.8	-45	0	3	66	66	66	66	66	66	66	66	66														
5	Backfill & Reinstatement	108	72.8	-45	0	3										66	66												
V)	**Section 5**																												
1	Excavation & Duct laying	100	16.3	-32	0	3				71	71	71	71																
2	Cable laying	100	16.3	-32	0	3								71															
3	Backfill & Reinstatement	100	16.3	-32	0	3									71														
VI)	**Section 6**																												
1	Excavation & Duct laying	112	359.5	-59	0	3		56	56	56	56																		
2	Cable laying	105	359.5	-59	0	3						49																	
3	Backfill & Reinstatement	106	359.5	-59	0	3							50																
VII)	**Section 7**																												
1	Excavation & Duct laying	112	797.0	-66	0	3											49	49	49	49									
2	Cable laying	105	797.0	-66	0	3															42								
3	Backfill & Reinstatement	106	797.0	-66	0	3																43							
VIII)	**Section 8**																												
1	Excavation & Duct laying	112	1278.6	-70	0	3																45	45	45	45				
2	Cable laying	105	1278.6	-70	0	3																				38			
3	Backfill & Reinstatement	106	1278.6	-70	0	3																					39		
4	Excavation & Duct laying	113	1278.6	-70	0	3									46	46	46	46	46	46	46	46	46	46	46				
5	Backfill & Reinstatement	113	1278.6	-70	0	3																					46	46	
IX)	**Section 9**																												
1	Excavation & Duct laying	112	1679.1	-72	0	3					43	43	43	43															
2	Cable laying	105	1679.1	-72	0	3									35														
3	Backfill & Reinstatement	106	1679.1	-72	0	3										37													
X)	**Section 10**																												
1	Excavation & Duct laying	112	2099.3	-74	0	3	41	41	41	41																			
2	Cable laying	105	2099.3	-74	0	3					33																		
3	Backfill & Reinstatement	106	2099.3	-74	0	3						35																	
XI)	**Section 11**																												
1	Excavation & Duct laying	112	2591.0	-76	-10	3															29	29	29	29					
2	Cable laying	105	2591.0	-76	-10	3																			22				
3	Backfill & Reinstatement	106	2591.0	-76	-10	3																				23			
	Predicted Noise Level during Daytime Period, dB(A)						66	67	67	72	72	73	73	73	72	67	66	51	51	51	48	50	49	49	49	38	47	46	73

Note:

[1] Distance Correction for PMEs = $10*\log(2*PI*r^2)$

[2] The figures are rounded-up to a whole number.

[3] Correction of 10 dB(A) provided where there is no direct line of sight from the NSR to the works section

Annex A3-8

Construction Noise Assessment

NSR: R7 Wang Shing House, Wang Fuk Court

No.	Activity Description	SWL dB(A)[2]	Distance m	Corr. for distance dB(A)[1][2]	Corr. For Topo dB(A)[3]	Corr. for façade dB(A)	Predicted Construction Noise Level (dB(A))																					Max. CNL dB(A)
							2010									2011												2012
							Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	
	Daytime Period																												
I)	**Section 1**																												
1	Excavation & Duct laying	106	1206.6	-70	-10	3																29	29	29	29				
2	Cable laying	103	1206.6	-70	-10	3																				26			
3	Backfill & Reinstatement	103	1206.6	-70	-10	3																					26		
II)	**Section 2**																												
1	Excavation & Duct laying	103	871.1	-67	-10	3												29	29	29	29								
2	Cable laying	103	871.1	-67	-10	3																29							
3	Backfill & Reinstatement	103	871.1	-67	-10	3																	29						
III)	**Section 3**																												
1	Excavation & Duct laying	112	570.8	-63	-10	3		42	42	42	42																		
2	Cable laying	105	570.8	-63	-10	3						35																	
3	Backfill & Reinstatement	106	570.8	-63	-10	3							36																
IV)	**Section 4**																												
1	Excavation & Duct laying	107	213.4	-55	0	3						55	55	55															
2	Cable laying	103	213.4	-55	0	3									51														
3	Backfill & Reinstatement	103	213.4	-55	0	3										51													
4	Excavation & Duct laying	108	213.4	-55	0	3	57	57	57	57	57	57	57	57	57														
5	Backfill & Reinstatement	108	213.4	-55	0	3										57	57												
V)	**Section 5**																												
1	Excavation & Duct laying	100	10.1	-28	0	3				75	75	75	75																
2	Cable laying	100	10.1	-28	0	3								75															
3	Backfill & Reinstatement	100	10.1	-28	0	3									75														
VI)	**Section 6**																												
1	Excavation & Duct laying	112	238.8	-56	0	3		59	59	59	59																		
2	Cable laying	105	238.8	-56	0	3						52																	
3	Backfill & Reinstatement	106	238.8	-56	0	3							54																
VII)	**Section 7**																												
1	Excavation & Duct laying	112	695.5	-65	0	3											50	50	50	50									
2	Cable laying	105	695.5	-65	0	3															43								
3	Backfill & Reinstatement	106	695.5	-65	0	3																45							
VIII)	**Section 8**																												
1	Excavation & Duct laying	112	1187.6	-69	0	3																46	46	46	46				
2	Cable laying	105	1187.6	-69	0	3																				38			
3	Backfill & Reinstatement	106	1187.6	-69	0	3																					40		
4	Excavation & Duct laying	113	1187.6	-69	0	3									47	47	47	47	47	47	47	47	47	47	47	47			
5	Backfill & Reinstatement	113	1187.6	-69	0	3																					47	47	
IX)	**Section 9**																												
1	Excavation & Duct laying	112	1601.6	-72	0	3					43	43	43	43															
2	Cable laying	105	1601.6	-72	0	3									36														
3	Backfill & Reinstatement	106	1601.6	-72	0	3										37													
X)	**Section 10**																												
1	Excavation & Duct laying	112	2038.8	-74	0	3	41	41	41	41																			
2	Cable laying	105	2038.8	-74	0	3					34																		
3	Backfill & Reinstatement	106	2038.8	-74	0	3						35																	
XI)	**Section 11**																												
1	Excavation & Duct laying	112	2526.7	-76	-10	3															29	29	29	29					
2	Cable laying	105	2526.7	-76	-10	3																			22				
3	Backfill & Reinstatement	106	2526.7	-76	-10	3																				23			
	Predicted Noise Level during Daytime Period, dB(A)						57	61	61	75	75	75	75	75	75	58	58	52	52	52	49	51	49	49	49	39	48	47	75

Note:

[1] Distance Correction for PMEs = $10*\log(2*PI*r^2)$

[2] The figures are rounded-up to a whole number.

[3] Correction of 10 dB(A) provided where there is no direct line of sight from the NSR to the works section

Annex A3-9

Construction Noise Assessment

NSR: R8 Care Village

No.	Activity Description	SWL dB(A)[2]	Distance m	Corr. for distance dB(A)[1][2]	Corr. For Topo dB(A)[3]	Corr. for façade dB(A)	Predicted Construction Noise Level (dB(A))																					Max. CNL dB(A)
							2010									2011												2012
							Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	
	Daytime Period																											
I)	**Section 1**																											
1	Excavation & Duct laying	106	1707.2	-73	-10	3																26	26	26	26				
2	Cable laying	103	1707.2	-73	-10	3																				23			
3	Backfill & Reinstatement	103	1707.2	-73	-10	3																					23		
II)	**Section 2**																											
1	Excavation & Duct laying	103	1370.3	-71	-10	3												25	25	25	25								
2	Cable laying	103	1370.3	-71	-10	3																25							
3	Backfill & Reinstatement	103	1370.3	-71	-10	3																	25						
III)	**Section 3**																											
1	Excavation & Duct laying	112	1070.7	-69	-10	3		36	36	36	36																		
2	Cable laying	105	1070.7	-69	-10	3						29																	
3	Backfill & Reinstatement	106	1070.7	-69	-10	3							31																
IV)	**Section 4**																											
1	Excavation & Duct laying	107	680.7	-65	0	3						45	45	45															
2	Cable laying	103	680.7	-65	0	3									41														
3	Backfill & Reinstatement	103	680.7	-65	0	3										41													
4	Excavation & Duct laying	108	680.7	-65	0	3	47	47	47	47	47	47	47	47	47														
5	Backfill & Reinstatement	108	680.7	-65	0	3										47	47												
V)	**Section 5**																											
1	Excavation & Duct laying	100	266.2	-56	0	3				47	47	47	47																
2	Cable laying	100	266.2	-56	0	3								47															
3	Backfill & Reinstatement	100	266.2	-56	0	3									46														
VI)	**Section 6**																											
1	Excavation & Duct laying	112	114.4	-49	0	3		66	66	66	66																		
2	Cable laying	105	114.4	-49	0	3						59																	
3	Backfill & Reinstatement	106	114.4	-49	0	3							60																
VII)	**Section 7**																											
1	Excavation & Duct laying	112	254.6	-56	0	3											59	59	59	59									
2	Cable laying	105	254.6	-56	0	3															52								
3	Backfill & Reinstatement	106	254.6	-56	0	3																53							
VIII)	**Section 8**																											
1	Excavation & Duct laying	112	738.6	-65	0	3																50	50	50	50				
2	Cable laying	105	738.6	-65	0	3																				42			
3	Backfill & Reinstatement	106	738.6	-65	0	3																					44		
4	Excavation & Duct laying	113	738.6	-65	0	3									51	51	51	51	51	51	51	51	51	51	51				
5	Backfill & Reinstatement	113	738.6	-65	0	3																					51	51	
IX)	**Section 9**																											
1	Excavation & Duct laying	112	1175.0	-69	0	3					46	46	46	46															
2	Cable laying	105	1175.0	-69	0	3									38														
3	Backfill & Reinstatement	106	1175.0	-69	0	3										40													
X)	**Section 10**																											
1	Excavation & Duct laying	112	1647.5	-72	0	3	43	43	43	43																			
2	Cable laying	105	1647.5	-72	0	3					35																		
3	Backfill & Reinstatement	106	1647.5	-72	0	3						37																	
XI)	**Section 11**																											
1	Excavation & Duct laying	112	2118.3	-75	-10	3															30	30	30	30					
2	Cable laying	105	2118.3	-75	-10	3																			23				
3	Backfill & Reinstatement	106	2118.3	-75	-10	3																				25			
	Predicted Noise Level during Daytime Period, dB(A)						48	66	66	66	66	60	61	52	54	53	60	60	60	60	54	56	53	53	53	43	52	51	66

Note:

[1] Distance Correction for PMEs = $10*\log(2*PI*r^2)$

[2] The figures are rounded-up to a whole number.

[3] Correction of 10 dB(A) provided where there is no direct line of sight from the NSR to the works section

Annex A3-10

Construction Noise Assessment

NSR: R9 KCRC Staff Quarters Long Block

No.	Activity Description	SWL dB(A)[2]	Distance m	Corr. for distance dB(A)[1][2]	Corr. For Topo dB(A)[3]	Corr. for façade dB(A)	Predicted Construction Noise Level (dB(A))																						Max. CNL dB(A)
							2010									2011												2012	
							Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	
	Daytime Period																												
I)	**Section 1**																												
1	Excavation & Duct laying	106	2071.0	-74	-10	3																25	25	25	25				
2	Cable laying	103	2071.0	-74	-10	3																				21			
3	Backfill & Reinstatement	103	2071.0	-74	-10	3																					21		
II)	**Section 2**																												
1	Excavation & Duct laying	103	1729.7	-73	-10	3												23	23	23	23								
2	Cable laying	103	1729.7	-73	-10	3																23							
3	Backfill & Reinstatement	103	1729.7	-73	-10	3																	23						
III)	**Section 3**																												
1	Excavation & Duct laying	112	1435.8	-71	-10	3		34	34	34	34																		
2	Cable laying	105	1435.8	-71	-10	3						27																	
3	Backfill & Reinstatement	106	1435.8	-71	-10	3							28																
IV)	**Section 4**																												
1	Excavation & Duct laying	107	1028.1	-68	0	3						42	42	42															
2	Cable laying	103	1028.1	-68	0	3									38														
3	Backfill & Reinstatement	103	1028.1	-68	0	3										38													
4	Excavation & Duct laying	108	1028.1	-68	0	3	43	43	43	43	43	43	43	43	43														
5	Backfill & Reinstatement	108	1028.1	-68	0	3										43	43												
V)	**Section 5**																												
1	Excavation & Duct laying	100	642.6	-64	0	3				39	39	39	39																
2	Cable laying	100	642.6	-64	0	3								39															
3	Backfill & Reinstatement	100	642.6	-64	0	3									39														
VI)	**Section 6**																												
1	Excavation & Duct laying	112	191.4	-54	0	3		61	61	61	61																		
2	Cable laying	105	191.4	-54	0	3						54																	
3	Backfill & Reinstatement	106	191.4	-54	0	3							56																
VII)	**Section 7**																												
1	Excavation & Duct laying	112	100.9	-48	0	3											67	67	67	67									
2	Cable laying	105	100.9	-48	0	3															60								
3	Backfill & Reinstatement	106	100.9	-48	0	3																61							
VIII)	**Section 8**																												
1	Excavation & Duct laying	112	338.5	-59	0	3																56	56	56	56				
2	Cable laying	105	338.5	-59	0	3																				49			
3	Backfill & Reinstatement	106	338.5	-59	0	3																					51		
4	Excavation & Duct laying	113	338.5	-59	0	3									58	58	58	58	58	58	58	58	58	58	58				
5	Backfill & Reinstatement	113	338.5	-59	0	3																					58	58	
IX)	**Section 9**																												
1	Excavation & Duct laying	112	778.8	-66	0	3					49	49	49	49															
2	Cable laying	105	778.8	-66	0	3									42														
3	Backfill & Reinstatement	106	778.8	-66	0	3										44													
X)	**Section 10**																												
1	Excavation & Duct laying	112	1263.1	-70	-10	3	35	35	35	35																			
2	Cable laying	105	1263.1	-70	-10	3					28																		
3	Backfill & Reinstatement	106	1263.1	-70	-10	3						29																	
XI)	**Section 11**																												
1	Excavation & Duct laying	112	1723.0	-73	-10	3															32	32	32	32					
2	Cable laying	105	1723.0	-73	-10	3																			25				
3	Backfill & Reinstatement	106	1723.0	-73	-10	3																				27			
	Predicted Noise Level during Daytime Period, dB(A)						44	61	61	61	62	56	57	51	58	58	67	67	67	67	62	64	60	60	60	49	59	58	67

Note:

[1] Distance Correction for PMEs = $10*\log(2*PI*r^2)$

[2] The figures are rounded-up to a whole number.

[3] Correction of 10 dB(A) provided where there is no direct line of sight from the NSR to the works section

Annex A3-11

Construction Noise Assessment

NSR: R10 Sea View Villa

No.	Activity Description	SWL dB(A)[2]	Distance m	Corr. for distance dB(A)[1][2]	Corr. For Topo dB(A)[3]	Corr. for façade dB(A)	Predicted Construction Noise Level (dB(A))																					Max. CNL dB(A)
							2010									2011												2012
							Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	
	Daytime Period																											
I)	**Section 1**																											
1	Excavation & Duct laying	106	2417.9	-76	-10	3																23	23	23	23				
2	Cable laying	103	2417.9	-76	-10	3																				20			
3	Backfill & Reinstatement	103	2417.9	-76	-10	3																					20		
II)	**Section 2**																											
1	Excavation & Duct laying	103	2076.0	-74	-10	3												22	22	22	22								
2	Cable laying	103	2076.0	-74	-10	3																21							
3	Backfill & Reinstatement	103	2076.0	-74	-10	3																	21						
III)	**Section 3**																											
1	Excavation & Duct laying	112	1785.4	-73	-10	3		32	32	32	32																		
2	Cable laying	105	1785.4	-73	-10	3						25																	
3	Backfill & Reinstatement	106	1785.4	-73	-10	3							26																
IV)	**Section 4**																											
1	Excavation & Duct laying	107	1375.2	-71	0	3						39	39	39															
2	Cable laying	103	1375.2	-71	0	3									35														
3	Backfill & Reinstatement	103	1375.2	-71	0	3										35													
4	Excavation & Duct laying	108	1375.2	-71	0	3	41	41	41	41	41	41	41	41	41														
5	Backfill & Reinstatement	108	1375.2	-71	0	3										41	41												
V)	**Section 5**																											
1	Excavation & Duct laying	100	999.5	-68	0	3				35	35	35	35																
2	Cable laying	100	999.5	-68	0	3								35															
3	Backfill & Reinstatement	100	999.5	-68	0	3									35														
VI)	**Section 6**																											
1	Excavation & Duct laying	112	541.4	-63	0	3		52	52	52	52																		
2	Cable laying	105	541.4	-63	0	3						45																	
3	Backfill & Reinstatement	106	541.4	-63	0	3							47																
VII)	**Section 7**																											
1	Excavation & Duct laying	112	133.9	-51	0	3											64	64	64	64									
2	Cable laying	105	133.9	-51	0	3															57								
3	Backfill & Reinstatement	106	133.9	-51	0	3																59							
VIII)	**Section 8**																											
1	Excavation & Duct laying	112	132.8	-50	0	3																65	65	65	65				
2	Cable laying	105	132.8	-50	0	3																				57			
3	Backfill & Reinstatement	106	132.8	-50	0	3																					59		
4	Excavation & Duct laying	113	132.8	-50	0	3									66	66	66	66	66	66	66	66	66	66	66				
5	Backfill & Reinstatement	113	132.8	-50	0	3																					66	66	
IX)	**Section 9**																											
1	Excavation & Duct laying	112	471.1	-61	0	3					54	54	54	54															
2	Cable laying	105	471.1	-61	0	3									46														
3	Backfill & Reinstatement	106	471.1	-61	0	3										48													
X)	**Section 10**																											
1	Excavation & Duct laying	112	967.4	-68	-10	3	37	37	37	37																			
2	Cable laying	105	967.4	-68	-10	3					30																		
3	Backfill & Reinstatement	106	967.4	-68	-10	3						32																	
XI)	**Section 11**																											
1	Excavation & Duct laying	112	1398.5	-71	-10	3															34	34	34	34					
2	Cable laying	105	1398.5	-71	-10	3																			27				
3	Backfill & Reinstatement	106	1398.5	-71	-10	3																				29			
	Predicted Noise Level during Daytime Period, dB(A)						42	53	53	53	56	55	55	54	66	66	68	68	68	68	67	69	68	68	68	57	67	66	69

Note:

[1] Distance Correction for PMEs = $10*\log(2*PI*r^2)$

[2] The figures are rounded-up to a whole number.

[3] Correction of 10 dB(A) provided where there is no direct line of sight from the NSR to the works section

Annex A3-12

Construction Noise Assessment

NSR: R11 Private House

No.	Activity Description	SWL dB(A)[2]	Distance m	Corr. for distance dB(A)[1][2]	Corr. For Topo dB(A)[3]	Corr. for façade dB(A)	Predicted Construction Noise Level (dB(A))																						Max. CNL dB(A)
							2010									2011												2012	
							Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	
	Daytime Period																												
I)	**Section 1**																												
1	Excavation & Duct laying	106	3007.9	-78	-10	3																21	21	21	21				
2	Cable laying	103	3007.9	-78	-10	3																				18			
3	Backfill & Reinstatement	103	3007.9	-78	-10	3																					18		
II)	**Section 2**																												
1	Excavation & Duct laying	103	2670.7	-77	-10	3												19	19	19	19								
2	Cable laying	103	2670.7	-77	-10	3																19							
3	Backfill & Reinstatement	103	2670.7	-77	-10	3																	19						
III)	**Section 3**																												
1	Excavation & Duct laying	112	2402.7	-76	-10	3		29	29	29	29																		
2	Cable laying	105	2402.7	-76	-10	3						22																	
3	Backfill & Reinstatement	106	2402.7	-76	-10	3							24																
IV)	**Section 4**																												
1	Excavation & Duct laying	107	1997.1	-74	0	3						36	36	36															
2	Cable laying	103	1997.1	-74	0	3									32														
3	Backfill & Reinstatement	103	1997.1	-74	0	3										32													
4	Excavation & Duct laying	108	1997.1	-74	0	3	37	37	37	37	37	37	37	37	37														
5	Backfill & Reinstatement	108	1997.1	-74	0	3										37	37												
V)	**Section 5**																												
1	Excavation & Duct laying	100	1682.5	-73	0	3				31	31	31	31																
2	Cable laying	100	1682.5	-73	0	3								31															
3	Backfill & Reinstatement	100	1682.5	-73	0	3									30														
VI)	**Section 6**																												
1	Excavation & Duct laying	112	1233.3	-70	0	3		45	45	45	45																		
2	Cable laying	105	1233.3	-70	0	3						38																	
3	Backfill & Reinstatement	106	1233.3	-70	0	3							40																
VII)	**Section 7**																												
1	Excavation & Duct laying	112	746.4	-65	0	3											50	50	50	50									
2	Cable laying	105	746.4	-65	0	3															42								
3	Backfill & Reinstatement	106	746.4	-65	0	3																44							
VIII)	**Section 8**																												
1	Excavation & Duct laying	112	307.0	-58	0	3																57	57	57	57				
2	Cable laying	105	307.0	-58	0	3																				50			
3	Backfill & Reinstatement	106	307.0	-58	0	3																					52		
4	Excavation & Duct laying	113	307.0	-58	0	3									59	59	59	59	59	59	59	59	59	59	59				
5	Backfill & Reinstatement	113	307.0	-58	0	3																					59	59	
IX)	**Section 9**																												
1	Excavation & Duct laying	112	159.3	-52	0	3					63	63	63	63															
2	Cable laying	105	159.3	-52	0	3									56														
3	Backfill & Reinstatement	106	159.3	-52	0	3										57													
X)	**Section 10**																												
1	Excavation & Duct laying	112	237.5	-55	0	3	59	59	59	59																			
2	Cable laying	105	237.5	-55	0	3					52																		
3	Backfill & Reinstatement	106	237.5	-55	0	3						54																	
XI)	**Section 11**																												
1	Excavation & Duct laying	112	638.3	-64	0	3															51	51	51	51					
2	Cable laying	105	638.3	-64	0	3																			44				
3	Backfill & Reinstatement	106	638.3	-64	0	3																				45			
	Predicted Noise Level during Daytime Period, dB(A)						60	60	60	60	63	64	63	63	61	61	59	59	59	59	59	62	61	61	61	51	60	59	64

Note:

[1] Distance Correction for PMEs = $10*\log(2*PI*r^2)$

[2] The figures are rounded-up to a whole number.

[3] Correction of 10 dB(A) provided where there is no direct line of sight from the NSR to the works section

Annex A3-13

Construction Noise Assessment

NSR: R12 Tower 11, Deerhill Villas

No.	Activity Description	SWL dB(A)[2]	Distance m	Corr. for distance dB(A)[1][2]	Corr. For Topo dB(A)[3]	Corr. for façade dB(A)	Predicted Construction Noise Level (dB(A))																						Max. CNL dB(A)
							2010									2011												2012	
							Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	
	Daytime Period																												
I)	**Section 1**																												
1	Excavation & Duct laying	106	3762.7	-79	-10	3															20	20	20	20					
2	Cable laying	103	3762.7	-79	-10	3																			16				
3	Backfill & Reinstatement	103	3762.7	-79	-10	3																				16			
II)	**Section 2**																												
1	Excavation & Duct laying	103	3426.3	-79	-10	3												17	17	17	17								
2	Cable laying	103	3426.3	-79	-10	3																17							
3	Backfill & Reinstatement	103	3426.3	-79	-10	3																	17						
III)	**Section 3**																												
1	Excavation & Duct laying	112	3159.0	-78	-10	3		27	27	27	27																		
2	Cable laying	105	3159.0	-78	-10	3						20																	
3	Backfill & Reinstatement	106	3159.0	-78	-10	3							21																
IV)	**Section 4**																												
1	Excavation & Duct laying	107	2753.0	-77	-10	3						23	23	23															
2	Cable laying	103	2753.0	-77	-10	3									19														
3	Backfill & Reinstatement	103	2753.0	-77	-10	3										19													
4	Excavation & Duct laying	108	2753.0	-77	-10	3	25	25	25	25	25	25	25	25	25														
5	Backfill & Reinstatement	108	2753.0	-77	-10	3										25	25												
V)	**Section 5**																												
1	Excavation & Duct laying	100	2429.7	-76	-10	3				18	18	18	18																
2	Cable laying	100	2429.7	-76	-10	3								18															
3	Backfill & Reinstatement	100	2429.7	-76	-10	3									17														
VI)	**Section 6**																												
1	Excavation & Duct laying	112	1974.1	-74	-10	3		31	31	31	31																		
2	Cable laying	105	1974.1	-74	-10	3						24																	
3	Backfill & Reinstatement	106	1974.1	-74	-10	3							26																
VII)	**Section 7**																												
1	Excavation & Duct laying	112	1478.4	-71	-10	3											34	34	34	34									
2	Cable laying	105	1478.4	-71	-10	3															26								
3	Backfill & Reinstatement	106	1478.4	-71	-10	3																28							
VIII)	**Section 8**																												
1	Excavation & Duct laying	112	1053.6	-68	-10	3																37	37	37	37				
2	Cable laying	105	1053.6	-68	-10	3																				29			
3	Backfill & Reinstatement	106	1053.6	-68	-10	3																					31		
4	Excavation & Duct laying	113	1053.6	-68	-10	3									38	38	38	38	38	38	38	38	38	38	38				
5	Backfill & Reinstatement	113	1053.6	-68	-10	3																					38	38	
IX)	**Section 9**																												
1	Excavation & Duct laying	112	694.7	-65	-10	3					40	40	40	40															
2	Cable laying	105	694.7	-65	-10	3									33														
3	Backfill & Reinstatement	106	694.7	-65	-10	3										35													
X)	**Section 10**																												
1	Excavation & Duct laying	112	294.1	-57	0	3	58	58	58	58																			
2	Cable laying	105	294.1	-57	0	3					50																		
3	Backfill & Reinstatement	106	294.1	-57	0	3						52																	
XI)	**Section 11**																												
1	Excavation & Duct laying	112	222.9	-55	0	3															60	60	60	60					
2	Cable laying	105	222.9	-55	0	3																			53				
3	Backfill & Reinstatement	106	222.9	-55	0	3																				55			
	Predicted Noise Level during Daytime Period, dB(A)						58	58	58	58	51	52	41	40	39	40	40	39	39	39	60	60	60	60	53	55	39	38	60

Note:

[1] Distance Correction for PMEs = $10*\log(2*PI*r^2)$

[2] The figures are rounded-up to a whole number.

[3] Correction of 10 dB(A) provided where there is no direct line of sight from the NSR to the works section

Annex A3-14

Construction Noise Assessment

NSR: S1 HK Taoist Assn Ng Lai Wo Memorial School

No.	Activity Description	SWL dB(A)[2]	Distance m	Corr. for distance dB(A)[1][2]	Corr. For Topo dB(A)[3]	Corr. for façade dB(A)	Predicted Construction Noise Level (dB(A))																					Max. CNL dB(A)
							2010									2011												2012
							Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	
	Daytime Period																												
I)	**Section 1**																												
1	Excavation & Duct laying	106	63.0	-44	0	3																65	65	65	65				
2	Cable laying	103	63.0	-44	0	3																				62			
3	Backfill & Reinstatement	103	63.0	-44	0	3																					62		
II)	**Section 2**																												
1	Excavation & Duct laying	103	142.8	-51	0	3												55	55	55	55								
2	Cable laying	103	142.8	-51	0	3																55							
3	Backfill & Reinstatement	103	142.8	-51	0	3																	55						
III)	**Section 3**																												
1	Excavation & Duct laying	112	468.4	-61	-10	3		44	44	44	44																		
2	Cable laying	105	468.4	-61	-10	3						36																	
3	Backfill & Reinstatement	106	468.4	-61	-10	3							38																
IV)	**Section 4**																												
1	Excavation & Duct laying	107	752.1	-66	-10	3						34	34	34															
2	Cable laying	103	752.1	-66	-10	3									30														
3	Backfill & Reinstatement	103	752.1	-66	-10	3										30													
4	Excavation & Duct laying	108	752.1	-66	-10	3	36	36	36	36	36	36	36	36	36														
5	Backfill & Reinstatement	108	752.1	-66	-10	3										36	36												
V)	**Section 5**																												
1	Excavation & Duct laying	100	1162.6	-69	-10	3				24	24	24	24																
2	Cable laying	100	1162.6	-69	-10	3								24															
3	Backfill & Reinstatement	100	1162.6	-69	-10	3									23														
VI)	**Section 6**																												
1	Excavation & Duct laying	112	1553.4	-72	-10	3		33	33	33	33																		
2	Cable laying	105	1553.4	-72	-10	3						26																	
3	Backfill & Reinstatement	106	1553.4	-72	-10	3							28																
VII)	**Section 7**																												
1	Excavation & Duct laying	112	1998.0	-74	-10	3											31	31	31	31									
2	Cable laying	105	1998.0	-74	-10	3															24								
3	Backfill & Reinstatement	106	1998.0	-74	-10	3																25							
VIII)	**Section 8**																												
1	Excavation & Duct laying	112	2472.1	-76	-10	3																29	29	29	29				
2	Cable laying	105	2472.1	-76	-10	3																				22			
3	Backfill & Reinstatement	106	2472.1	-76	-10	3																					24		
4	Excavation & Duct laying	113	2472.1	-76	-10	3									31	31	31	31	31	31	31	31	31	31	31				
5	Backfill & Reinstatement	113	2472.1	-76	-10	3																					31	31	
IX)	**Section 9**																												
1	Excavation & Duct laying	112	2852.3	-77	-10	3					28	28	28	28															
2	Cable laying	105	2852.3	-77	-10	3									21														
3	Backfill & Reinstatement	106	2852.3	-77	-10	3										22													
X)	**Section 10**																												
1	Excavation & Duct laying	112	3232.2	-78	-10	3	27	27	27	27																			
2	Cable laying	105	3232.2	-78	-10	3					20																		
3	Backfill & Reinstatement	106	3232.2	-78	-10	3						21																	
XI)	**Section 11**																												
1	Excavation & Duct laying	112	3726.6	-79	-10	3															26	26	26	26					
2	Cable laying	105	3726.6	-79	-10	3																			18				
3	Backfill & Reinstatement	106	3726.6	-79	-10	3																				20			
	Predicted Noise Level during Daytime Period, dB(A)						36	45	45	45	45	41	42	39	38	38	38	55	55	55	55	65	65	65	65	62	62	31	65

Note:

[1] Distance Correction for PMEs = $10*\log(2*PI*r^2)$

[2] The figures are rounded-up to a whole number.

[3] Correction of 10 dB(A) provided where there is no direct line of sight from the NSR to the works section

Annex A3-15

Construction Noise Assessment

NSR: S2 Tai Po Baptist Public School

No.	Activity Description	SWL dB(A)[2]	Distance m	Corr. for distance dB(A)[1][2]	Corr. For Topo dB(A)[3]	Corr. for façade dB(A)	Predicted Construction Noise Level (dB(A))																					Max. CNL dB(A)
							2010									2011												2012
							Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	
	Daytime Period																												
I)	**Section 1**																												
1	Excavation & Duct laying	106	1144.1	-69	-10	3																30	30	30	30				
2	Cable laying	103	1144.1	-69	-10	3																				27			
3	Backfill & Reinstatement	103	1144.1	-69	-10	3																					27		
II)	**Section 2**																												
1	Excavation & Duct laying	103	810.9	-66	-10	3												30	30	30	30								
2	Cable laying	103	810.9	-66	-10	3																30							
3	Backfill & Reinstatement	103	810.9	-66	-10	3																	30						
III)	**Section 3**																												
1	Excavation & Duct laying	112	510.3	-62	-10	3		43	43	43	43																		
2	Cable laying	105	510.3	-62	-10	3						36																	
3	Backfill & Reinstatement	106	510.3	-62	-10	3							37																
IV)	**Section 4**																												
1	Excavation & Duct laying	107	189.2	-54	-10	3						46	46	46															
2	Cable laying	103	189.2	-54	-10	3									42														
3	Backfill & Reinstatement	103	189.2	-54	-10	3										42													
4	Excavation & Duct laying	108	189.2	-54	-10	3	48	48	48	48	48	48	48	48	48														
5	Backfill & Reinstatement	108	189.2	-54	-10	3										48	48												
V)	**Section 5**																												
1	Excavation & Duct laying	100	66.2	-44	0	3				59	59	59	59																
2	Cable laying	100	66.2	-44	0	3								59															
3	Backfill & Reinstatement	100	66.2	-44	0	3									58														
VI)	**Section 6**																												
1	Excavation & Duct laying	112	305.7	-58	-10	3		47	47	47	47																		
2	Cable laying	105	305.7	-58	-10	3						40																	
3	Backfill & Reinstatement	106	305.7	-58	-10	3							42																
VII)	**Section 7**																												
1	Excavation & Duct laying	112	763.8	-66	-10	3											39	39	39	39									
2	Cable laying	105	763.8	-66	-10	3															32								
3	Backfill & Reinstatement	106	763.8	-66	-10	3																34							
VIII)	**Section 8**																												
1	Excavation & Duct laying	112	1256.2	-70	-10	3																35	35	35	35				
2	Cable laying	105	1256.2	-70	-10	3																				28			
3	Backfill & Reinstatement	106	1256.2	-70	-10	3																					29		
4	Excavation & Duct laying	113	1256.2	-70	-10	3									36	36	36	36	36	36	36	36	36	36	36	36			
5	Backfill & Reinstatement	113	1256.2	-70	-10	3																					36	36	
IX)	**Section 9**																												
1	Excavation & Duct laying	112	1670.0	-72	-10	3					33	33	33	33															
2	Cable laying	105	1670.0	-72	-10	3									25														
3	Backfill & Reinstatement	106	1670.0	-72	-10	3										27													
X)	**Section 10**																												
1	Excavation & Duct laying	112	2105.9	-74	-10	3	31	31	31	31																			
2	Cable laying	105	2105.9	-74	-10	3					23																		
3	Backfill & Reinstatement	106	2105.9	-74	-10	3						25																	
XI)	**Section 11**																												
1	Excavation & Duct laying	112	2594.3	-76	-10	3															29	29	29	29					
2	Cable laying	105	2594.3	-76	-10	3																			22				
3	Backfill & Reinstatement	106	2594.3	-76	-10	3																				23			
	Predicted Noise Level during Daytime Period, dB(A)						48	51	51	60	60	59	59	60	59	49	49	41	41	41	39	41	40	40	39	31	38	36	60

Note:

[1] Distance Correction for PMEs = $10*\log(2*PI*r^2)$

[2] The figures are rounded-up to a whole number.

[3] Correction of 10 dB(A) provided where there is no direct line of sight from the NSR to the works section

Annex B
附件B

Ecological Impact - Supporting Information
生態影響 – 輔助資料

Table表 B1 Plant Species Recorded during the Ecological and Tree Surveys
在調查期間發現的植物

Species Name 品種名稱	Chinese Name 中文名	Growth Form 生長型態	Status in HK 香港的情況
Cocculus orbiculatus	木防己	Climber	Common
Gymnanthera oblonga	海島藤	Climber	Common
Ipomoea cairica	五爪金龍	Climber	Very common
Mikania micrantha	薇甘菊	Climber	Very common
Paederia scandens	雞矢藤	Climber	Very common
Pueraria lobata	野葛	Climber	Common
Cyclosorus parasiticus	華南毛蕨	Fern	Very common
Pteris vittata	蜈蚣草	Fern	Very common
Ageratum conyzoides	勝紅薊	Herb	Common
Alocasia odora	海芋	Herb	Very common
Alpinia zerumbet cv. Variegata	花葉艷山薑	Herb	Common
Alysicarpus vaginalis	鏈莢豆	Herb	Very common
Amaranthus viridis	野莧	Herb	Very common
Asparagus densiflorus cv. Sprengeri	非洲天門冬	Herb	Very common
Bidens pilosa var. radiata	白花鬼針草	Herb	Very common
Emilia sonchifolia	一點紅	Herb	Very common
Gnaphalium pensylvanicum	匙葉鼠麴草	Herb	Common
Imperata koenigii	絲茅	Herb	Very common
Malvastrum coromandelianum	賽葵	Herb	Common
Mazus pumilus	通泉草	Herb	Restricted
Mimosa pudica	含羞草	Herb	Very common
Miscanthus sinensis	芒	Herb	Very common
Musa x paradisiaca	甘蕉	Herb	Common
Neyraudia reynaudiana	類蘆	Herb	Very common
Oxalis corniculata	酢漿草	Herb	Very common
Oxalis debilis subsp. corymbosa	紅花酢漿草	Herb	Very common
Pilea microphylla	小葉冷水花	Herb	Very common
Polygonum chinense	火炭母	Herb	Very common
Rorippa indica	蔊菜	Herb	Common
Sida cordata	長梗黃花稔	Herb	Restricted
Solanum americanum	少花龍葵	Herb	Very common
Solanum nigrum	龍葵	Herb	Common
Vernonia cinerea	夜香牛	Herb	Very common
Wedelia trilobata	三裂葉蟛蜞菊	Herb	Common
Youngia japonica	黃鵪菜	Herb	Very common
Acalypha wilkesiana	紅桑	Shrub	Common
Allamanda schottii	硬枝黃蟬	Shrub	Very common
Calliandra riparia	小朱纓花	Shrub	Common
Cassia bicapsularis	雙莢決明	Shrub	Common
Clerodendrum inerme	苦郎樹	Shrub	Common
Duranta erecta	假連翹	Shrub	Very common
Ixora javanica	爪哇龍船花	Shrub	Common
Lantana camara	馬纓丹	Shrub	Very common
Lantana montevidensis	小葉馬纓丹	Shrub	Common
Leucaena leucocephala	銀合歡	Shrub	Common

Species Name 品種名稱	Chinese Name 中文名	Growth Form 生長型態	Status in HK 香港的情況
Ligustrum sinense	山指甲	Shrub	Common
Malvaviscus arboreus var. penduliflorus	垂花懸鈴花	Shrub	Common
Murraya paniculata	九里香	Shrub	Common
Pittosporum tobira	海桐	Shrub	Common
Rhapis excelsa	棕竹	Shrub	Common
Rhododendron pulchrum	錦繡杜鵑	Shrub	Common
Rhododendron simsii	紅杜鵑	Shrub	Very common
Ricinus communis	蓖麻	Shrub	Common
Sageretia thea	雀梅藤	Shrub	Very common
Scaevola taccada	草海桐	Shrub	Very common
Bridelia tomentosa	土蜜樹	Shrub/Tree	Very common
Acacia auriculiformis	耳果相思	Tree	Common
Acacia confusa	台灣相思	Tree	Common
Aleurites moluccana	石栗	Tree	Common
Ailanthus fordii	常綠臭椿	Tree	Protected & Common
Artocarpus altilis	麵包樹	Tree	Common
Bauhinia blakeana	洋紫荊	Tree	Very common
Bauhinia variegata	宮粉羊蹄甲	Tree	Common
Bischofia javanica	秋楓	Tree	Common
Bombax ceiba	木棉	Tree	Common
Callistemon viminalis	串錢柳	Tree	Common
Carica papaya	番木瓜	Tree	Common
Caryota mitis	短穗魚尾葵	Tree	Common
Cassia fistula	臘腸樹	Tree	Common
Cassia siamea	鐵刀木	Tree	Common
Celtis sinensis	朴樹	Tree	Common
Choerospondias axillaris	南酸棗	Tree	Common
Chrysalidocarpus lutescens	散尾葵	Tree	Common
Cinnamomum camphora	樟	Tree	Common
Citrus maxima	柚	Tree	Common
Clausena lansium	黃皮	Tree	Common
Cleistocalyx nervosum	水翁	Tree	Common
Cordia dichotoma	破布木	Tree	Restricted
Delonix regia	鳳凰木	Tree	Common
Dimocarpus longan	龍眼	Tree	Common
Elaeocarpus balansae	大葉杜英	Tree	Common
Elaeocarpus hainanensis	水石榕	Tree	Common
Eriobotrya japonica	枇杷	Tree	Common
Erythrina variegata	刺桐	Tree	Common
Eucalyptus citriodora	檸檬桉	Tree	Common
Ficus binnendijkii	長葉榕	Tree	Restricted
Ficus elastica	印度榕	Tree	Common
Ficus fistulosa	水同木	Tree	Common
Ficus microcarpa	細葉榕	Tree	Common
Ficus variegata var. chlorocarpa	青果榕	Tree	Common
Hibiscus tiliaceus	黃槿	Tree	Very common
Jacaranda mimosifolia	藍花楹	Tree	Common
Kandelia obovata	秋茄樹	Tree	Very common

Species Name 品種名稱	Chinese Name 中文名	Growth Form 生長型態	Status in HK 香港的情況
Khaya senegalensis	非洲楝	Tree	Common
Koelreuteria henryi	台灣欒	Tree	Common
Lagerstroemia speciosa	大花紫薇	Tree	Common
Litsea glutinosa	潺槁	Tree	Very common
Litsea monopetala	假柿木薑子	Tree	Restricted
Lophostemon confertus	紅膠木	Tree	Common
Macaranga tanarius	血桐	Tree	Common
Mangifera indica	杧果	Tree	Common
Melaleuca quinquenervia	白千層	Tree	Very common
Michelia alba	白蘭	Tree	Very common
Morus alba	桑	Tree	Common
Neodypsis decaryi	三角椰子	Tree	Common
Peltophorum pterocarpum	盾柱木	Tree	Common
Phoenix roebelenii	日本葵	Tree	Common
Plumeria rubra	雞蛋花	Tree	Common
Pterocarpus indicus	紫檀	Tree	Common
Ravenala madagascariensis	旅人蕉	Tree	Common
Roystonea regia	王棕	Tree	Common
Schefflera heptaphylla	鵝掌柴	Tree	Very common
Schima superba	木荷	Tree	Common
Scolopia chinensis	刺柊	Tree	Common
Spathodea campanulata	火焰木	Tree	Common
Tectona grandis	柚木	Tree	Restricted
Thevetia peruviana	黃花夾竹桃	Tree	Common
Thuja orientalis	側柏	Tree	Common
Viburnum odoratissimum	珊瑚樹	Tree	Very common
Zanthoxylum avicennae	簕欓花椒	Tree	Common

生長型態: Climber=攀援植物; Herb=草本植物; Shrub=灌木; Tree=喬木

香港的情況: Very Common=十分常見; Common=常見; Restricted=受限制; P=受保護

Table表 B2 Bird Species Recorded during the Ecological Survey
在調查期間發現的雀鳥品種

Species Name品種名稱	Common Name 普通名稱	Commonness 普遍度	Main Status in HK 在香港的主要情況
Alcedo atthis	Common Kingfisher	C	PM, WV
Apus affinis	Little Swift	AW	R, SpM
Cacomantis merulinus	Plaintive Cuckoo	U and W	SV
Columbia livia	Rock Dove	CW	R
Copsychus saularis	Oriental Magpie Robin	AW	R
Egretta garzetta	Little Egret	CW	R
Egretta intermedia	Intermediate Egret	C	PM
Eudynamys scolopacea	Common Koel	CW	R
Hierococcyx sparverioides	Large Hawk Cuckoo	C	PM, SV
Hirundo rustica	Barn Swallow	AW	PM, SV
Milvus migrans	Black Kite	CW	R
Orthotomus sutorius	Common Tailorbird	CW	R
Passer montanus	Eurasian Tree Sparrow	AW	R
Pericrocotus flammeus	Scarlet Minivet	C	R
Pycnonotus jocosus	Red-whiskered Bulbul	AW	R
Pycnonotus sinensis	Chinese Bulbul	AW	R
Streptopelia chinensis	Spotted Dove	AW	R
Zosterops japonicus	Japanese White-eye	AW	R

Notes:

(1) All birds in Hong Kong are protected under the *Wild Animals Protection Ordinance* (Cap. 170) 所有野生雀鳥在香港受「野生動物保護條例」(香港法例第170章) 保護

(2) Commonness (follows AFCD) 普遍度(自漁護署): AW = Abundant & Widespread大量及廣泛, CW = Common & Widespread普遍廣泛, C = Common常見, U = Uncommon不常見, W = Widespread廣泛

(3) Status (follows AFCD) 居留狀況(自漁護署): R = Resident留鳥, WV = Winter Visitor冬候鳥, SV = Summer Visitor夏候鳥, PM = Passage Migrant遷徙鳥, SpM = Spring Migrant春候鳥

Annex C
附錄 C

Cultural Heritage – Supporting Information

文化遺產 – 補充資料

Annex C1
附錄C1

Photographic Records of Built Heritage

歷史建築相片記錄

Figure C1a – Island House (Declared Monument)

圖 C1a - 大埔元洲仔前政務司官邸 (法定古蹟)

Figure C1b(i) – Tai Po Lookout (Grade I) (Source: AMO Web Site)

圖 C1b(i) - 大埔瞭望台 (一級歷史建築) (資料來源::古物古蹟辦事處)

Figure C1b(ii) – Tai Po Lookout (Grade I) (Photo Took by the Entrance Gate)

圖 C1b(ii) –大埔瞭望台 (一級歷史建築) (從閘口處拍照)

Figure C1c – Old Police Bungalow (Grade II)

圖 C1c –舊警察宿舍 (二級歷史建築)

Figure C1d – Tin Hau Temple, Tai Po Kau Hui (Grade III)

圖 C1d –大埔舊墟天后宮（三級歷史建築)

TP01 - Earth Shrine 土地神壇

TP02 - Ruin in Tai Po Kau Lo Wai 大埔滘老圍廢屋

TP03 - Ruin in Tai Po Kau Lo Wai 大埔滘老圍廢屋

TP04 - Ruin in Tai Po Kau Lo Wai 大埔滘老圍廢屋

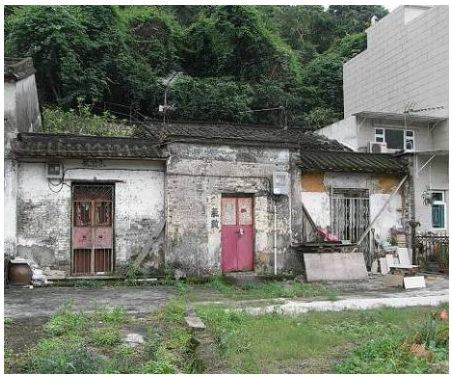
TP05 – Nos. 15-16 Tai Po Kau Lo Wai 大埔滘老圍15-16

TP06 – Earth Shrine 大王爺

Figure C1e(i) Residential Houses, Earth Shrine and Village Houses in Tai Po Kau Lo Wai (TP01 to TP06)

圖 C1e(i) 大埔滘老圍住宅，土地及村屋 (TP01至 TP06)

TP07 – Chan Clan Grave 陳氏墓地



TP08 – Nos. 9 to 12 Tai Po Kau San Wai 大埔滘新圍9至12號

TP09 - Ruin in Tai Po Kau San Wai 大埔滘新圍廢屋

Figure C1e(ii) Residential Houses, Earth Shrine and Village Houses in Tai Po Kau San Wai (TP07 to TP09)

圖 C1e(ii) 大埔滘新圍住宅，土地及村屋 (TP07至 TP09)

HW01 – Nos.1-20 Care Village 美援新村１至２０號

HW02 – No.82 Care Village 美援新村８２號

HW03 – No.49 Care Village 美援新村４９號

HW04 – Nos.47-48 Care Village 美援新村４７至４８號

HW05 – Nos.41-46 Care Village 美援新村４１至４６號

HW06 – Nos.31-40 Care Village 美援新村３１至４０號

HW07 – Nos.21-30 Care Village 美援新村２１至３０號

HW08 – Earth Shrines of Care Village 美援新村大王爺

Figure C1f Residential Houses and Earth Shrine in Care Village (HW01 to HW08)

圖 C1f 美援新村住宅及土地 (HW01 至 HW08)

HW09 – Chan Ancestral Hall (No. 46 Ha Wong Yi Au) 陳氏宗祠 (下黃宜坳４６號)

HW10 - Chan Ancestral Hall (No. 59 Ha Wong Yi Au) 陳氏宗祠(下黃宜坳５９號)

HW11 – Gate 圍門

HW12 - Chan Ancestral Hall (No. 37 Ha Wong Yi Au) 陳氏宗祠(下黃宜坳３７號)

Figure C1g Ancestral Halls and Entrance Gate in Wong Yi Au Village (HW09 to HW12)

圖 C1g 下黃宜坳村宗祠及圍門 (HW09 至 HW12)

Figure C1h Tai Wong Yeh Temple in Yuen Chau Tsai (YC01)

圖 C1h 元洲仔大王爺廟 (YC01)

NH01 – Nos.51-52 Nam Hang 南坑５１至５２號

NH02 – Nos.88-89 Nam Hang 南坑８８至８９號

NH03 – No.49 Nam Hang 南坑４９號

NH04 – No.48 Nam Hang 南坑４８號

NH05 – Nos.64-66 Nam Hang 南坑６４至６６號

NH06 – Nam Hang Village Office 南坑村公所

Figure C1i Residential Houses and Village Houses in Nam Hang (NH01 to NH06)

圖 C1i 南坑住宅及村屋 (NH01至NH06)

NH07 – Nos.23-25 Nam Hang 南坑２３至２５號

NH08 – Nos.41-44 Nam Hang 南坑４１至４４號

NH09 – No.60 Nam Hang 南坑６０號

NH10 – Nos.39-40 Nam Hang 南坑３９至４０號

NH11 – Nos.36-38 Nam Hang 南坑３６至３８號

NH12 – Nos.2-6 Nam Hang 南坑２至６號

Figure C1j Residential Houses and Village Houses in Nam Hang (NH07 to NH12)

圖 C1j 南坑住宅及村屋(NH07 至 NH12)

Annex C2
附錄 C2

1:1000 Plan Showing Locations of Built Heritage Sites

於1:1000平面圖顯示之歷史建築位置

Key

- Graded Historic Building
- Proposed 132 kV Cable Route
- 500m Study Area
- Built Heritage

TP1
TP2
TP3
TP4
TP5
TP6
TP7
TP8
TP9

TOLO HIGHWAY
Tai Po Kau
Lo Wai
Tai Po Kau

N

Meters
0
100
200

Figure C2a

1:1000 Plan Showing Built Heritage Sites Identified in Tai Po Kau

File: 0113919_Built Heritage1.mxd
Date: 19/04/2010

Environmental Resources Management

ERM

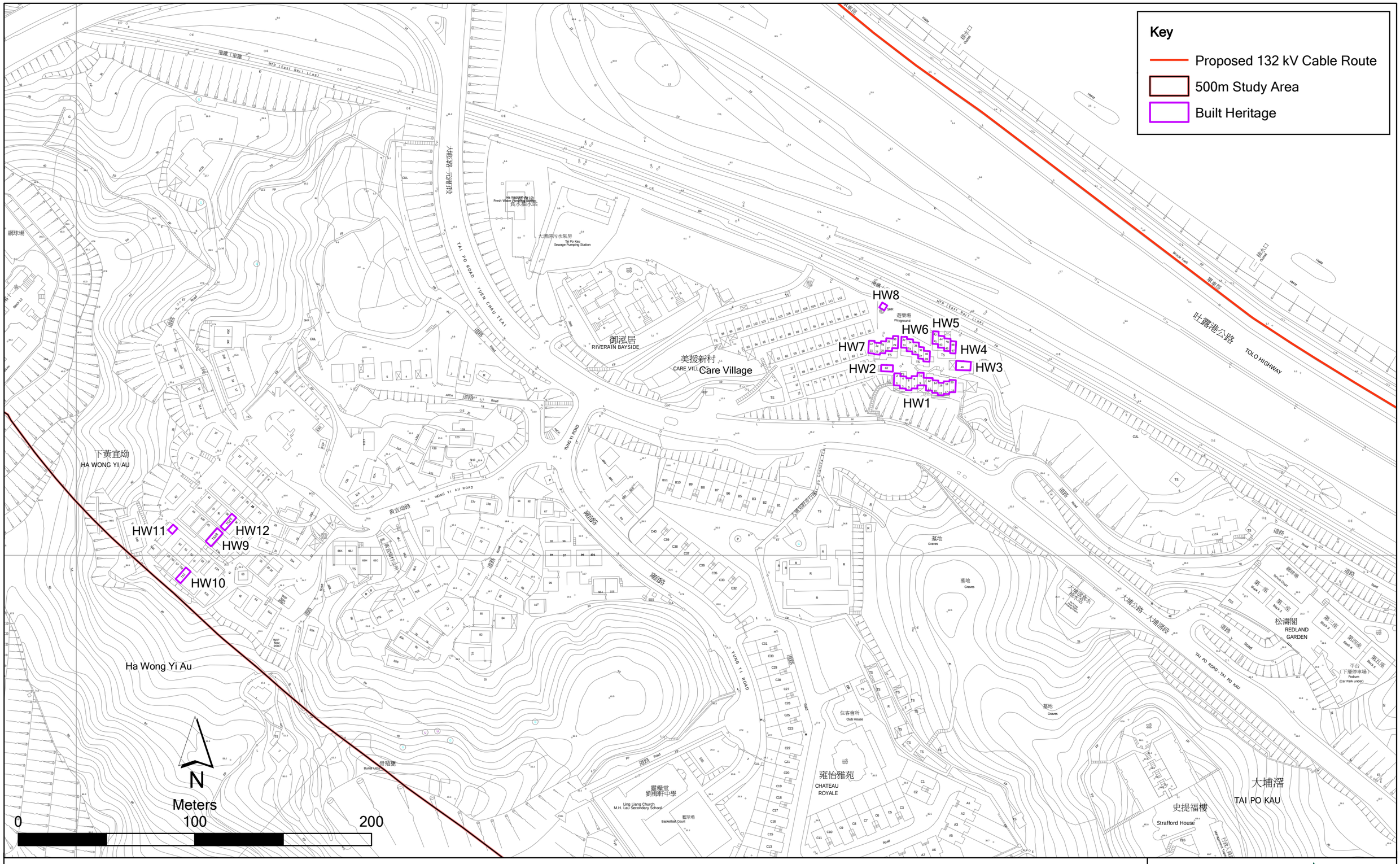


Figure C2b

1:1000 Plan Showing Built Heritage Sites Identified in Ha Wong Yi Au

File: 0113919_Built Heritage2.mxd
Date: 19/04/2010

Environmental Resources Management

ERM

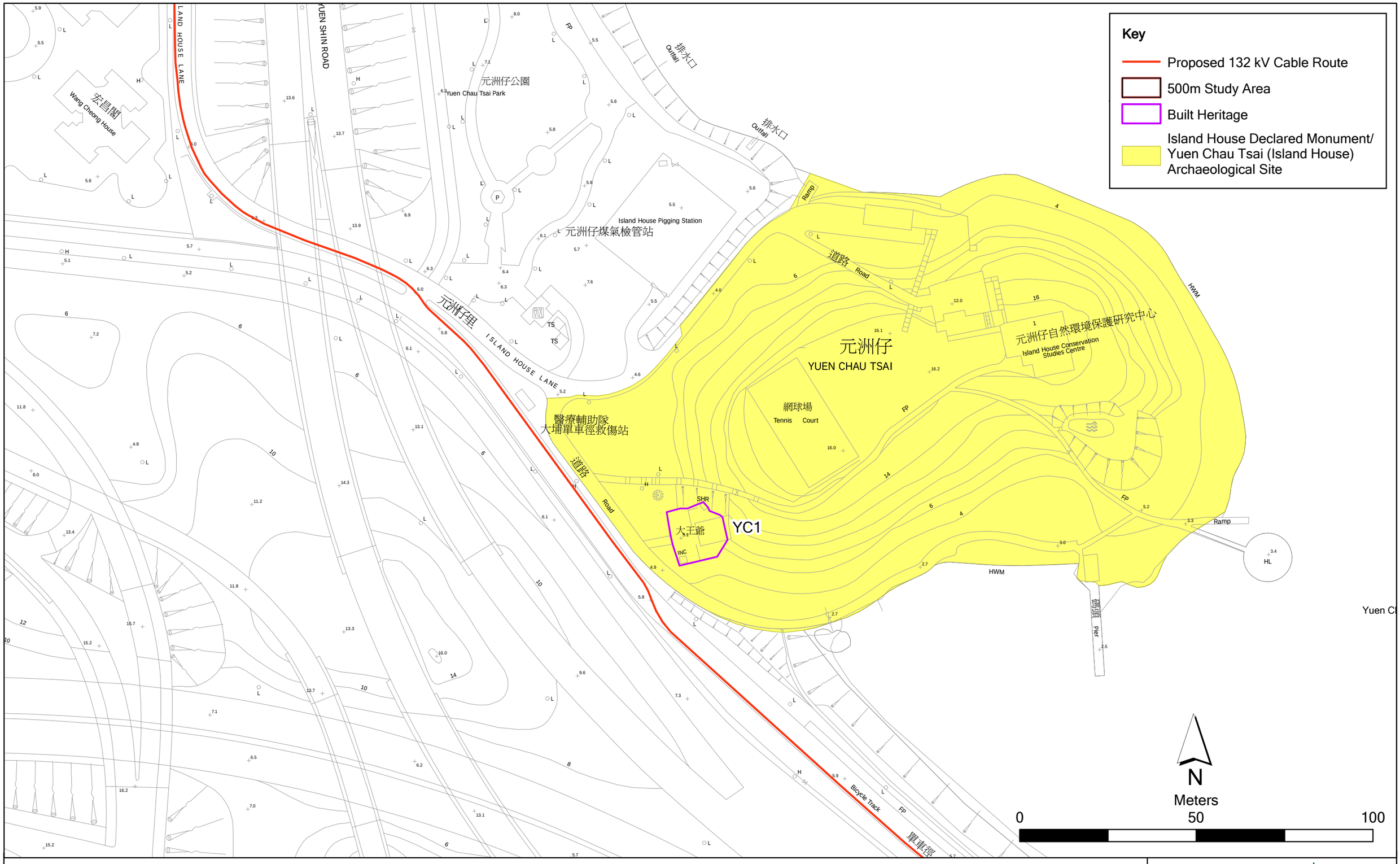


Figure C2c

1:1000 Plan Showing Built Heritage Sites Identified in Yuen Chau Tsai

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Date: 19/04/2010

Environmental Resources Management

ERM

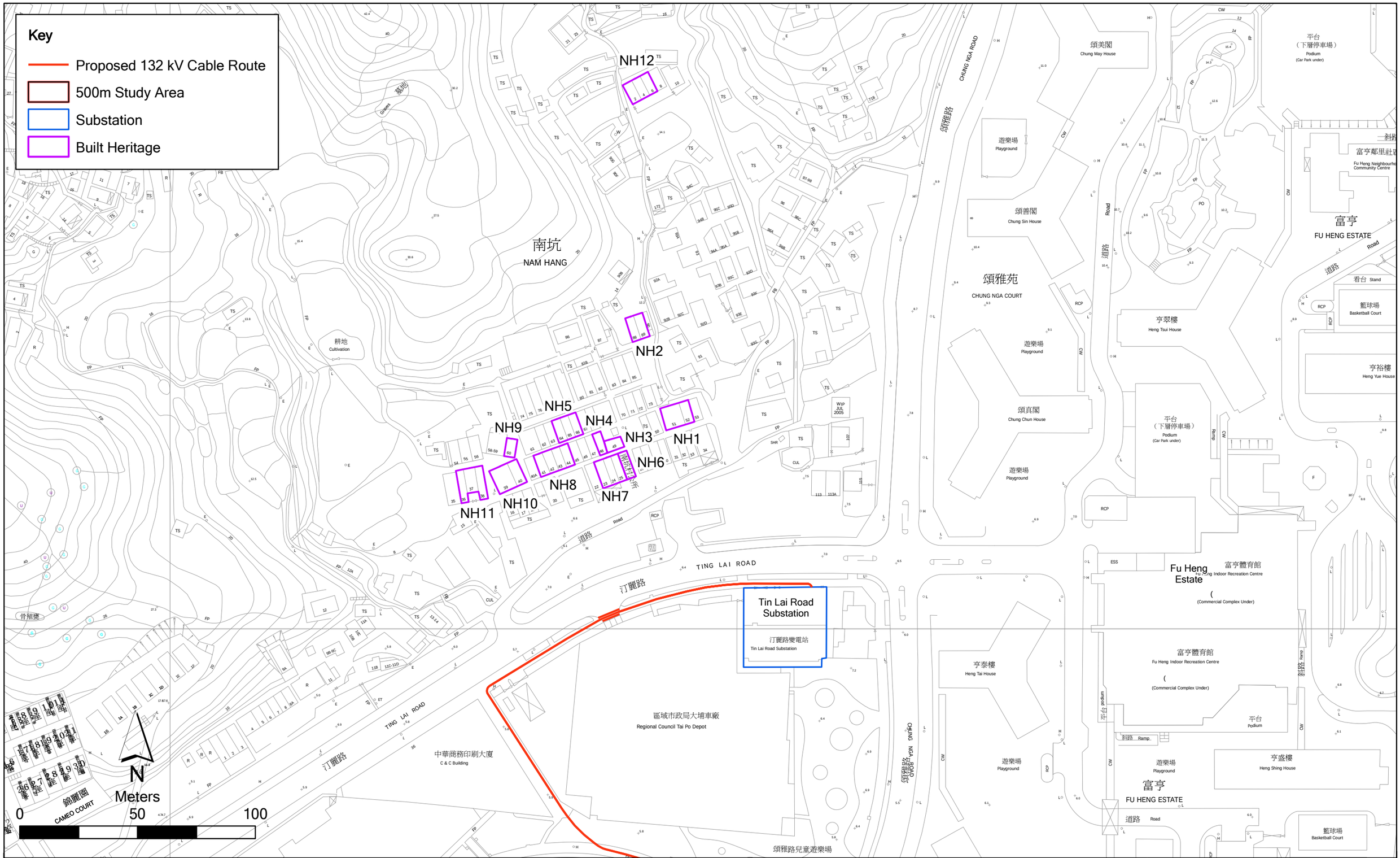

Figure C2d

1:1000 Plan Showing Built Heritage Sites Identified in Nam Hang

File: 0113919_Built Heritage4.mxd
Date: 19/04/2010

Environmental Resources Management

ERM