

Framework Agreement No. CLP/603978/YCY Extension

Expanded Consultancy Services for 132 kV & 400 kV

Cable Routes Selection Study

Hammer Hill Substation to Po Lam Substation

Project Profile

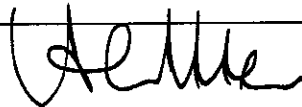
for

Cable Trough at Ma On Shan Country Park Near Tower 7

Ref. 2087/0/13/EIA/50/Issue 2

(CLP Project No. 02-923)

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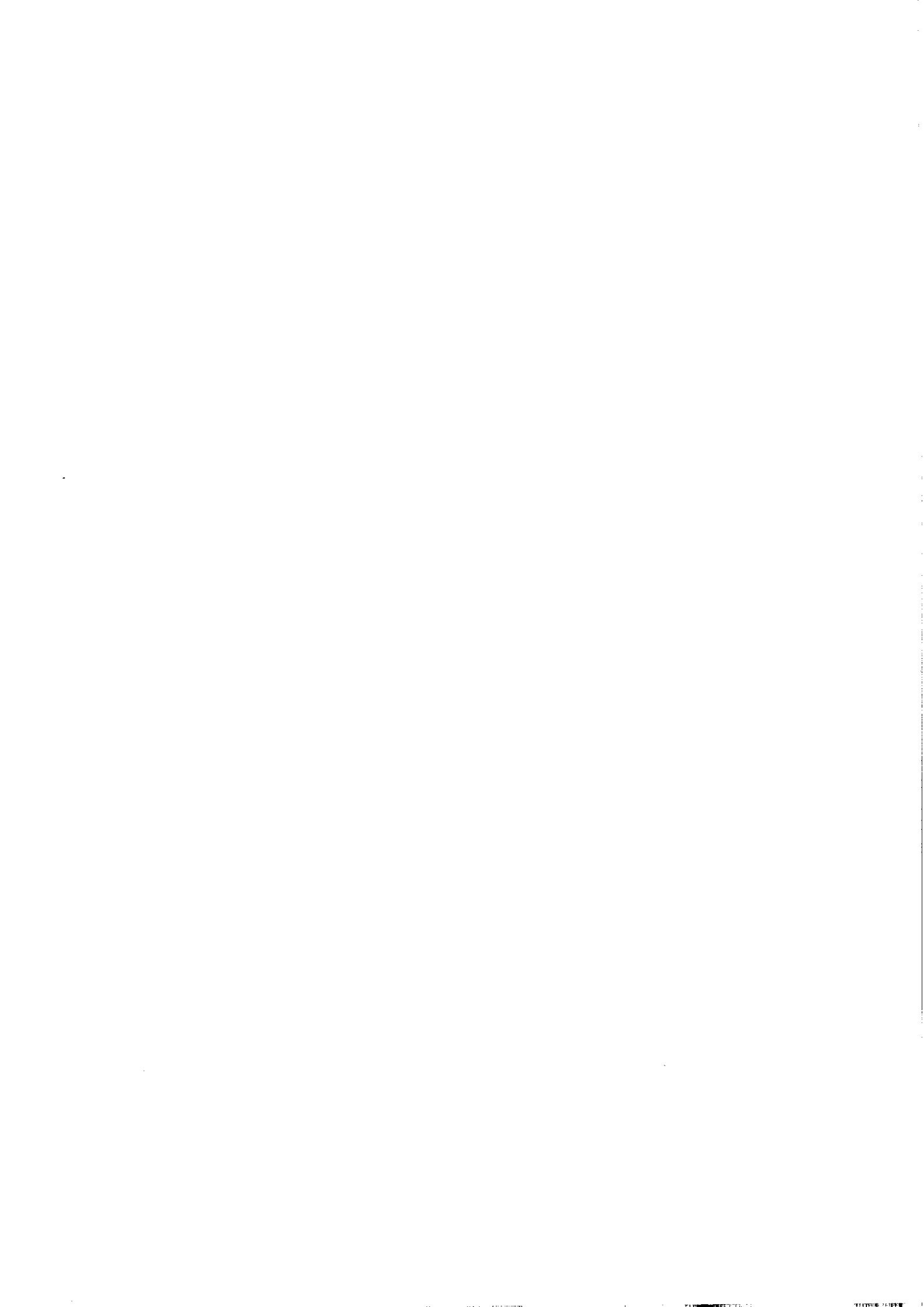


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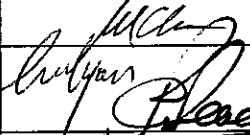
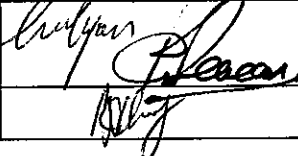

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CONTENTS

	Page
1. BASIC INFORMATION	1
1.1 Project Title	1
1.2 Purpose and Nature of the Project	1
1.3 Name of Project Proponent	1
1.4 Location and Scale of Project	1
1.5 Number and Types of Designated Projects to be covered by the Project Profile	2
1.6 Name and Telephone Number of Contact Persons	3
2. OUTLINE OF PLANNING AND IMPLEMENTATION PROGRAMME	3
2.1 Implementation and Planning of the Proposed Project	3
2.2 Project Time Table	3
2.3 Interactions with Broader Programme Requirements or Other Projects that shall be Considered	3
3. MAJOR ELEMENTS OF THE SURROUNDING ENVIRONMENT	3
3.1 Existing and Planned Sensitive Receivers and Sensitive Parts of the Natural Environment which might be affected by the Proposed Project	3
4. POSSIBLE IMPACTS ON THE ENVIRONMENT	9
4.1 Process Involved, including Process Flow Diagrams, Site Plans, Storage Requirements, and Information on Emissions and Discharges	9
4.2 Environmental Impact during Construction Phase	10
4.3 Environmental Impact during Operational Phase	13

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CONTENTS
(Continued)

	Page
5. ENVIRONMENTAL PROTECTION MEASURES TO BE INORPORATED IN THE DESIGN AND ANY FURTHER ENVIRONMENTAL IMPLICATIONS	14
5.1 Measures to Minimise Environmental Impacts	14
5.2 Comment on the Possible Severity, Distribution and Duration of Environmental Effects	16
5.3 Comment on any Further Implications	16
5.4 Use of Previous Approved EIA	16
6. CONCLUSION	16
END OF TEXT	16

FIGURES

Figure 1	Location of the Project
Figure 2	Habitat Map

PLATES

APPENDICES

Appendix 1	Tree Survey Report
Appendix 2	Recommended Pollution Control Clauses for Construction Contracts

1. BASIC INFORMATION

1.1 Project Title

1.1.1 Cable Trough at Ma On Shan Country Park Near Tower 7

1.2 Purpose and Nature of the Project

1.2.1 As part of a continuous effort to strive for improvement of services to the customers, CLP Power Hong Kong Limited (hereafter referred as CLP Power or CLP) have been upgrading and reinforcing their power network to enhance the supply reliability and to suit the customers demand. The outcomes from various stages of the processes *inter alia* are translated into the need to install additional cable circuits at various parts of the existing 132kV and 400kV networks.

1.2.2 A section of the existing 132kV underground cables between Hammer Hill Substation (S/S) and Po Lam S/S falls within the Ma On Shan Country Park area. These cables are approaching the end of their service life. It is therefore necessary to replace these aged cables with new 132kV cables to maintain the supply security and reliability.

1.2.3 The objective of this Project is to select a suitable cable route for the replacement cables between Tower 7 and Tower 8, that form a section of existing twin circuits from Hammer Hill S/S to Po Lam S/S (the Project). The preferred cable alignment for this Project consists of laying approximately 1 km long 132kV underground power cables between two existing CLP pylons (Towers 7 and 8) including construction of duct crossing, cable trough and associated landscaping works.

1.3 Name of Project Proponent

1.3.1 CLP Power Hong Kong Limited (CLP Power)

1.4 Location and Scale of Project

1.4.1 The proposed route for the 132kV underground cables will run down a slope from the base of the existing CLP pylon (Tower 7) next to the Clear Water Bay Road (CWBR), at the foot of Kowloon Peak (Fei Ngo Shan). A cable trough is recommended to accommodate the cables at the slope to best meet safety and security criteria. The cable alignment will cross CWBR and follow the slow lane of the west bound carriageway of CWBR.

- 1.4.2 The proposed cable route will turn to and run along the less trafficked Fei Ngo Shan Road at the junction with CWBR. Thereafter, it will follow Fei Ha Road and then run down a slope back into CWBR to continue its way further east.
- 1.4.3 The proposed cable route will then run along CWBR east bound slow lane carriageway towards Tower 8. Finally, it will cross CWBR in front of Tower 8 and then run up the hill slope before terminating at the foot of Tower 8. A cable trough will again be provided at the slope.
- 1.4.4 The proposed cable route is about 1 km long. The cables are to be laid by the conventional close-boarded trench, lay and cover method preferably along the footpaths except at road crossings. Where footpaths are already overly congested with other existing utilities, consideration has been given to lay the cables in the slow lane of the carriageway. In some cases, the cables will be drawn through preformed concrete duct blocks which will reduce the length of each section of excavation in carriageways, whereby minimising traffic impacts. If necessary, no-dig method may also be used. A small section of the cable route (approximately 50m long) from Tower 7 to CWBR lies within the Ma On Shan (MOS) Country Park.
- 1.4.5 No modification or upgrading of the existing electricity pylons or substations will be required for this Project.
- 1.4.6 Figure 1 shows the general location of the proposed cable route including the section within the MOS Country Park and its sectional view.

1.5 Number and Types of Designated Projects to be covered by the Project Profile

- 1.5.1 In accordance with Category Q.1 (b) of Part 1, Schedule 2 of the Environmental Impact Assessment Ordinance (EIAO), a section of the cable route (near Tower 7) is regarded as Designated Project (DP) as it encroaches on Ma On Shan (MOS) Country Park. Therefore, under the EIAO an Environmental Permit (EP) must be obtained by the project proponent prior to the commencement of the construction and operation of this DP.
- 1.5.2 This Project Profile will highlight the issues arising from the section of the cable route identified as DP (i.e. within the MOS Country Park).

1.6 Name and Telephone Number of Contact Persons

1.6.1 CLP Power Hong Kong Limited (CLP Power)

Post	Contact Person	Telephone Number
Project Manager	Mr Hui Chun Sing, Thomas	2678 6836
Project Engineer	Mr Man Yiu Kwan	2678 6193

2. OUTLINE OF PLANNING AND IMPLEMENTATION PROGRAMME

2.1 Implementation and Planning of the Proposed Project

2.1.1 The project proponent for this Project is CLP Power. Binnie Black & Veatch Hong Kong Limited (BBVHKL) has been commissioned by CLP Power to undertake the route selection investigation and the environmental study. A CLP Power appointed Contractor will carry out the construction upon receipt of an EP.

2.2 Project Time Table

2.2.1 According to the tentative programme, construction of the cable trough is scheduled for the period between September 2003 and February 2004 for a duration of about 6 months.

2.3 Interactions with Broader Programme Requirements or Other Projects that shall be Considered

None

3. MAJOR ELEMENTS OF THE SURROUNDING ENVIRONMENT

3.1 Existing and Planned Sensitive Receivers and Sensitive Parts of the Natural Environment which might be affected by the Proposed Project

Noise

3.1.1 The DP cable route lies to the north of Clear Water Bay Road within the MOS Country Park. Traffic noise along both the old and new Clear Water Bay Road dominates the background noise level. There are two schools in the area. The Good Hope School, which lies approximately 160m to the west, is topographically shielded by a slope. To the south-east, Kei Shun School is about 165m from the works area adjacent to Shun Lee Estate. It is at a lower elevation and is completely shielded by

the Clear Water Bay Road and nearby slopes. The nearest residential premises are the high rise buildings of Shun Lee Estate and the Shun Lee Discipline Services Quarter located about 180m to the south of the proposed works area. The Representative Noise Sensitive Receivers (NSRs) closest to the works area are shown in Figure 1 and tabulated in Table 1 below.

Table 1
Representative Noise Sensitive Receivers

NSR	Description	Approximate Distance from the Works Area (m)
1	Shun Lee Discipline Services Quarter	180
2	Lee Hang House, Shun Lee Estate	200

Air Quality

- 3.1.2 Air sensitive receivers are the same as those described for Noise above. The major air pollutant source is generated by the vehicle emissions from Clear Water Bay Road.

Water

- 3.1.3 There are no natural watercourses close to the works area. However, the works area is located next to an existing U-channel which drains into a nearby culvert.

Ecology

- 3.1.4 The Site is within a belt of woodland situated on a steep (south-facing) slope, rising towards Fei Ngo Shan (Kowloon Peak) above the New Clear Water Bay Road and Clear Water Bay Road.

Habitat

- 3.1.5 Within the Country Park, the proposed alignment largely follows an existing line of vegetation clearance associated with a drainage channel and a "path" between some trees rising up the slope, before joining the cutting made for the existing U-channel which protects the top of the shotcrete slope. The proposed alignment then follows the U-channel cutting westwards for 15-20m before joining the concrete access path to the pylon base. The ground for the U-channel was cleared for the construction of this minor drainage infrastructure, which over time has been re-colonised by shrubbery.

3.1.6 According to the floral species recorded along the proposed alignment, the habitat can be described as an "edge area" of the mixed secondary woodland/plantation. Several mature individuals of the exotic *Acacia confusa* were found - this is a common introduced species (originating in Australia) used locally for landscaping or forestry plantation. Other dominant native tree species include *Mallotus paniculatus*, *Litsea glutinosa*, *Cratoxylum cochinchinense*, *Bridelia tomentosa*, *Sterculia lanceolata* and *Phyllanthus emblica*. Aerial photographs of the area (dated: 7/12/1978 and 15/3/2001) were studied. These show that the tree line has advanced significantly during a 23-year period, and that the pylon was originally in an area of low shrub/grassland which has evolved into the current habitat of high shrub/trees.

3.1.7 Figure 2 shows the habitat map of the site and surrounding area (within 500m of the works area).

Flora

3.1.8 No protected species were found within or in the vicinity of the proposed alignment. Apart from the exotic *Acacia confusa*, other tree species recorded were native and common in secondary woodland in Hong Kong including *Mallotus paniculatus*, *Litsea glutinosa*, *Cratoxylum cochinchinense*, *Bridelia tomentosa*, *Sterculia lanceolata*, *Phyllanthus emblica*, *Rhus hypoleuca*, and *Microcos paniculata*. The shrubby undergrowth consists of *Lantana camara*, *Trema tomentosa*, *Ficus hirta*, *Ficus variolosa*, *Aporosa dioica*, *Rhodomyrtus tomentosa*, *Breynia fruticosa*, *Melastoma sanguineum*, *Litsea rotundifolia*, *Desmos chinensis*, *Psychotria asiatica*, *Eurya* sp. *Phyllanthus cochinchinensis*, *Tadehagi triquetrum* and *Ilex asprella*. Besides the *Lantana camara*, all the others are native species. *Lantana camara* originates from tropical America, and is now a very common shrub. Others are common shrubs in Hong Kong's scrubland or woodland understory habitats. Tree and shrub species recorded are listed in Table 2.

Table 2
Tree and Shrub Species recorded within the Site Area

Scientific Name	Plant Form	Naturalness
<i>Aporosa dioica</i>	S	N
<i>Breynia fruticosa</i>	S	N
<i>Desmos chinensis</i>	S	N
<i>Eurya</i> sp.	S	N
<i>Ficus hirta</i>	S	N
<i>Ficus variolosa</i>	S	N
<i>Ilex asprella</i>	S	N
<i>Lantana camara</i>	S	E

Scientific Name	Plant Form	Naturalness
<i>Litsea rotundifolia</i>	S	N
<i>Melastoma sanguineum</i>	S	N
<i>Phyllanthus cochinchinensis</i>	S	N
<i>Psychotria asiatica</i>	S	N
<i>Rhodomyrtus tomentosa</i>	S	N
<i>Tadehagi triquetrum</i>	S	N
<i>Trema tomentosa</i>	S	N
<i>Acacia confusa</i>	T	E
<i>Bridelia tomentosa</i>	T	N
<i>Cratoxylum cochinchinense</i>	T	N
<i>Litsea glutinosa</i>	T	N
<i>Mallotus paniculatus</i>	T	N
<i>Microcos paniculata</i>	T	N
<i>Phyllanthus emblica</i>	T	N
<i>Rhus hypoleuca</i>	T	N
<i>Sterculia lanceolata</i>	T	N

Notes:

Plant Form: S =Shrub, T =Tree;

Naturalness: N =Native, E =Exotic

Fauna

3.1.9 No mammals, birds, amphibians or reptiles were observed on-site during the visit on 3/9/2002.

3.1.10 Two butterflies (*Chilasia clytia* and *Mycalesis mineus*) were noted. These species are considered to be "common" and "very common" respectively (Young & Yiu, 2002)¹. A single dragonfly (*Pantala flavescens*) was observed at the base of the pylon. *P. flavescens* is said by Wilson (1995)² to be "undoubtedly the commonest dragonfly occurring in Hong Kong".

¹ Young, J.J & Yiu, V. (2002) *Butterfly Watching in Hong Kong*. Hong Kong Lepidopterists' Society.

² Wilson, K.D.P. (1995) *Hong Kong Dragonflies*. Urban Council, Hong Kong Government.

3.1.11 Table 3 provides an evaluation of species found within the site / habitat in accordance with the TM on EIA Process.

Table 3
Evaluation of Species found within the Site / Habitat

Criteria	Remarks
<i>Protection Status</i>	No species of restricted distribution or conservation concern were detected on-site.
<i>Distribution</i>	
<i>Rarity</i>	

Habitat Evaluation

3.1.12 Due to its location, immediately next to two busy roads which ascend a steep incline, the Site is highly disturbed by traffic noise, particularly by the noise from heavy buses, mini-buses and taxis struggling uphill in the lane closest to the Country Park boundary. Exhaust emission is also an additional ecologically limiting factor excluding organisms with a narrower range of tolerance from this location.

3.1.13 The habitat has been disturbed by the previous installation of the pylon, electricity sub-station (ESS) and access steps. In addition, measures to protect the cut slope from the effects of rainfall have introduced a concrete U-channel, sediment trap and shotcrete on the lower slopes to the roadside.

3.1.14 The vegetation is unremarkable, including plantation of exotics (*Acacia confusa*) and common secondary woodland colonisers. Four season surveys under a full EIA for the Site would probably reveal the presence of the hardiest and most common amphibians (such as the Common Asiatic Toad), and reptiles, and perhaps some common woodland birds (Bulbuls, Sparrows etc) and insects. Considering the existing ambient disturbance and the low diversity of flora, it is highly unlikely that any species of conservation interest would be discovered using this area as a breeding or nesting ground. Certainly, no signs of burrows or nests were found.

3.1.15 Table 4 provides an evaluation of the site / habitat in accordance with the TM on EIA Process.

Table 4
Evaluation of the Site / Habitat

Criteria	Remarks
<i>Naturalness</i>	The Site has been modified by Man, both by the plantation of exotic species and with infrastructure for slope stability, drainage and electricity transmission.
<i>Size</i>	The Site is small , linear and at the edge of the area of conservation (Ma On Shan Country Park)
<i>Diversity</i>	Moderate floral diversity, low faunal diversity.
<i>Rarity</i>	Around 40% of the HKSAR's landmass is upland Country Park, most of the lower slopes of which are woodland/plantation.
<i>Re-creatability</i>	As the habitat is modified and disturbed, recreation is not desirable.
<i>Fragmentation</i>	The Site is at the interface of the band of woodland at the edge of the Country Park and urban Kowloon.
<i>Ecological linkage</i>	These minor works will not disturb linkage with higher value habitats (uphill towards the core of the Country Park).
<i>Potential value</i>	The Site will always be disturbed by traffic using the adjacent Clear Water Bay Roads.
<i>Nursery /Breeding ground</i>	Not detected.
<i>Age</i>	Most of the tree planting within the Country Parks was carried out following WWII. Colonising shrubs will have followed the last infrastructure works within the last 15-20 years.
<i>Abundance of wildlife</i>	Three species of common insects observed

Landscape and Visual

3.1.16 The works area is located within the MOS Country Park and can be viewed from the existing high rise residential buildings of Shun Lee Estate and Shun Lee Discipline Services Quarter (Figure 1). It is within a belt of woodland situated on a steep (south-facing) slope, rising towards Fei Ngo Shan (Kowloon Peak) above the New Clear Water Bay Road and Clear Water Bay Road.

3.1.17 According to the habitat survey, the works area consists of an "edge area" of mixed secondary woodland/plantation. The works area has been disturbed by the previous installation of the pylon, ESS and access steps. In addition, drainage works to protect the cut slope has introduced a concrete U-channel, sediment trap and shotcrete on the lower slopes to the roadside.

Historical and Cultural

3.1.18 There are no declared monuments or historical buildings near the works area, therefore, impact on historical and cultural resources is not expected.

4. POSSIBLE IMPACTS ON THE ENVIRONMENT

4.1 Process Involved, including Process Flow Diagrams, Site Plans, Storage Requirements, and Information on Emissions and Discharges

4.1.1 The Project site plan is shown in Figure 1. It is expected that almost all of the proposed 1 km cables will be installed by the conventional lay and cover method preferably along the footpaths (except at road crossings). This is the most common method for utility installation. Where footpaths are already overly congested with other existing utilities, consideration has been given to lay the cables in the slow lane of the carriageway. However, this method will not be feasible in roads with heavy traffic because of the unacceptable traffic disruption. In this case, the duct block system (which would reduce the length of each section of excavation in carriageways and thereby minimising the traffic impacts) has been considered. If necessary, no-dig construction method may be used.

4.1.2 A localised encroachment on the MOS Country Park is unavoidable, as a section of the cable route will need to be connected to the existing CLP pylon (Tower 7) which lies within the Country Park.

4.1.3 The following considerations have been taken into account in the selection of the alignment of this section of the cables:

- to run alongside the existing footpath and U-channel which lie in mostly disturbed land with little or no vegetation;
- to avoid blocking the existing footpath which is for CLP Power maintenance access; and
- to avoid and minimise cutting of mature trees as far as possible.

4.1.4 The construction of the DP portion of the cable route involves site clearance, trench excavation, construction of concrete cable trough, cable laying, backfilling & reinstatement works and landscaping works. Given the small-scale works and space constraint, it is expected that the cable trough would be dug using a mini excavator (and in some cases by hand) while concrete would be supplied using on-site drum mixer. This would reduce the works area required and hence minimise the resulting impacts on MOS Country Park. The excavated spoils suitable as backfilling materials will be reused.

4.1.5 According to the current programme, construction work during restricted hours is not required.

4.1.6 The envisaged emissions and discharges during the construction and operation phases of the Project are discussed in the following sections.

4.2 Environmental Impact during Construction Phase

4.2.1 Potential environmental impacts during construction include ecology, noise, air quality, water quality, waste and landscape & visual impacts. Details of the potential impacts are discussed below.

Ecology

4.2.2 Some shrubs and trees will have to be cleared from the Site. Given the paucity of fauna resulting from the already disturbed nature of the Site (from previous works and ambient traffic noise), impacts to fauna are considered to be negligible. The proposed works would not affect any areas and/or habitats of ecological importance as listed in Note 2 and 3 of Appendix A in Annex 16 of the Technical Memorandum on EIA Process. Table 5 summarizes the ecological impact during construction phase.

Table 5
Summary of the Ecological Impact during Construction Phase

Criteria	Remarks
<i>Habitat quality</i>	The habitat is of low quality.
<i>Species</i>	Species diversity, richness and abundance were low (fauna) to moderate (flora). All species are commonly found in the HKSAR.
<i>Size/Abundance</i>	The Site is small, and only selective felling of exotic trees and secondary colonisers will be required.
<i>Duration</i>	Shrubs will naturally recolonise to the edge of the cable duct, in time.
<i>Magnitude</i>	The magnitude of the impact is considered to be very low.
<i>Reversibility</i>	The cable footprint is likely to be permanently hard landscaping thereafter. The works area beyond the permanent infrastructure will be encroached and naturally revert to shrubbery.

Noise

4.2.3 The Powered Mechanical Equipment (PME) used during construction will produce noise that may affect surrounding Noise Sensitive Receivers (NSRs). Given the small-scale works and site constraints, the amount of construction equipment is expected to be limited.

4.2.4 Construction activities and process flow involved that may generate noise impacts can be broadly divided as follow:

- site clearance;
- trench excavation;
- construction of cable trough;
- cable laying;
- backfilling and reinstatement works; and
- landscaping works.

4.2.5 Minor surface pneumatic breaking is also expected to remove small amounts of concrete and rocks.

4.2.6 The equipment required for each activity and its sound power level is tabulated below.

Table 6
Construction Equipment for DP Cable Route

Construction Activity	Equipment	TM Equipment Code	Number of Equipment	Sound Power Level, dB(A)	Total Sound Power Level, dB(A)
Surface breaking	Air compressor	001	1	100	108.6
	Hand-held breaker	024	1	108	
Site clearance / Trench excavation	Mini excavator	081	1	112	115.8
	Lorry (with crane)	141	1	112	
	Generator, standard	101	1	108	
	Water pump, submersible (electric)	283	2	85	
Construction of cable trough	Concrete drum mixer (petrol)	046	1	96	113.1
	Concrete vibrator	170	1	113	
Cable laying	Winch (petrol)	263	1	102	102.0
Backfilling and reinstatement works	Mini excavator	081	1	112	112.0
	Vibratory compactor	050	1	105	
Landscaping works	Mini excavator	081	1	112	115.0
	Lorry (with crane)	141	1	112	

TM = Technical Memorandum on Noise from Construction Work Other than Percussive Piling

4.2.7 The construction noise at the NSRs has been assessed in accordance with the methodology of the *Technical Memorandum on Noise from Construction Work Other than Percussive Piling*. The predicted noise levels as shown in Table 7 below indicate that construction noise level will meet the TM on EIA Process daytime noise criterion of 75 dB(A) at the closest NSRs. No mitigation measure is required.

Table 7
Predicted Noise Level

Noise Sensitive Receivers	Construction Activity	Total Sound Power Level, dB(A)	Distance, m	Predicted Noise Level, dB(A)
NSR 1	Surface breaking	108.6	180	58.5
	Site clearance / Trench excavation	115.8		65.7
	Construction of cable trough	113.1		63.0
	Cable laying	102.0		51.0
	Backfilling and reinstatement works	112.0		61.9
	Landscaping works	115.0		64.9
NSR 2	Surface breaking	108.6	200	57.6
	Site clearance / Trench excavation	115.8		64.8
	Construction of cable trough	113.1		62.1
	Cable laying	102.0		51.9
	Backfilling and reinstatement works	112.0		61.0
	Landscaping works	115.0		64.0

Notes:

Technical Memorandum on EIA Process daytime construction noise criterion for residential premises is 75 dB(A).

Air Quality

4.2.8 Construction activity such as excavation including temporary stockpiling of excavated material could generate dust especially during dry season and may cause minor localised air quality nuisance. However, given the small-scale work and large buffer distance from air sensitive receivers, adverse dust nuisance is not expected.

Water Quality

- 4.2.9 Water quality impacts may arise due to site effluent including site runoff and potential washouts, fuel contaminated fluids and improper site housekeeping, especially during the rainy season.

Waste

- 4.2.10 During construction, there will be a variety of construction and small quantities of demolition materials generated, such as excavated materials, chemical waste and refuse from construction workers. Inadequate waste management procedures may impose impacts on the environment.
- 4.2.11 It is expected that there would be approximately 200 m³ of inert materials (public fill) to be excavated. Out of these, public fill suitable as backfilling material will be reused. Therefore, the amount of public fill requiring disposal is expected to be minimal.

Landscape and Visual

- 4.2.12 There is no residential overview of the Works. The temporary vegetation clearance lies along the contour normal to the view from the top of the Shun Lee Discipline Services Quarter. The consequences of the vegetation clearance will not be distinguishable from the vegetation backdrop (see Plates 9 and 10).
- 4.2.13 A number of trees along the trough alignment would need to be felled during construction. The extent will be minimized as far as possible. As the works area is within the MOS Country Park, clearing of vegetation and tree felling may result in landscape & visual impact. The construction site may also pose a temporary and localised visual intrusion to the nearby residents. This will be limited to users of the nearby footpaths along CWBR. Since felling of some trees is unavoidable, a Tree Survey has been conducted. The results of the Survey together with the proposal on compensatory planting plan are attached in Appendix 1.
- 4.2.14 Reinstatement of the trough alignment with compacted earth spoil followed by hydroseeding will remove the immediate scar. Natural encroachment from the adjacent vegetation will then provide total rehabilitation of the habitat within a period of typically 5 years.

4.3 Environmental Impact during Operational Phase

- 4.3.1 Potential issue during the operational phase involves only the landscape & visual impact of the works area that has been cleared of vegetation during construction. No other operational impacts are expected.

5. ENVIRONMENTAL PROTECTION MEASURES TO BE INCORPORATED IN THE DESIGN AND ANY FURTHER ENVIRONMENTAL IMPLICATIONS

5.1 Measures to Minimise Environmental Impacts

Ecology

- 5.1.1 A Tree Survey has been conducted to identify the trees within the works area (Appendix 1). The survey did not reveal any unusually large or fine examples. Therefore a transplanting plan is not required. The history of the site shows that shrubs at the edge of the alignment will recolonise naturally in time. Specific ecological mitigation is probably unnecessary, but minor landscaping is an option to speed up the process of establishing floral cover. The proposed compensatory replanting of trees is provided in the Tree Survey (Appendix 1).
- 5.1.2 Nonetheless, the Contractor would be required to exercise care to avoid damage to the woodland areas outside the works boundary.

Noise

- 5.1.3 The predicted noise levels as shown in Table 7 indicate that construction noise level will meet the TM on EIA Process daytime noise criterion of 75 dB(A) at the closest NSRs. No mitigation measure is required.
- 5.1.4 Nonetheless, relevant pollution control clauses will be incorporated into the construction Contract so that environmental nuisance can be kept to a minimum. See Appendix 2 on the recommended pollution control requirements.

Air Quality

- 5.1.5 During construction, the Contractor will be required to observe the *Air Pollution Control (Construction Dust) Regulation* and implement all necessary mitigation measures to ensure that any dust impact on the air sensitive receivers would be brought to within the allowable limit. Relevant pollution control clauses will be incorporated into the construction Contract so that environmental nuisance can be kept to a minimum. See Appendix 2 on the recommended pollution control requirements.

Water Quality

- 5.1.6 The section of the DP cable route would be scheduled for construction during the dry season as far as practicable. The Contractor will be required to observe and comply with the *Water Pollution Control Ordinance* and its subsidiary regulation. The

Contractor will also be required to follow the mitigation measures and site practice for construction site drainage as stated in *ProPECC PN 1/94*. Interception of downslope flows from the natural slopes above the cable trench will be necessary to prevent washout of temporary stockpiled excavated materials which shall be stored on the downslope side of the trench. CLP Power's Contractors routinely install temporary chunam J-channels immediately upslope of the trench works. These will connect to the existing slope drainage system. Relevant pollution control clauses will be incorporated into the construction Contract so that environmental nuisance can be kept to a minimum. See Appendix 2 on the recommended pollution control requirements.

Waste

- 5.1.7 Excavated materials that are suitable for backfilling would be reused as fill. Only a small amount of excess public fill would be generated. The Contractor will be required to reuse the excess public fill in other projects before disposal at designated public filling area only as a last option. Since only a limited number of construction equipment would be used on-site, only small quantities of chemical waste may be generated from the maintenance of equipment. Relevant pollution control clauses will be incorporated into the construction Contract so that environmental nuisance can be kept to a minimum. See Appendix 2 on the recommended pollution control requirements.

Landscape and Visual

- 5.1.8 There is no residential overview of the Works. The temporary vegetation clearance lies along the contour normal to the view from the top of the Shun Lee Discipline Services Quarter. The consequences of the vegetation clearance will not be distinguishable from the vegetation backdrop (see Plates 9 and 10).
- 5.1.9 During construction, the visual intrusion of the works area is expected to be transient and localised visible only to those using the footpaths. The Contractor will be required to keep the works area tidy and ensure that any construction waste are properly stored and disposed of. Relevant pollution control clauses for Waste (such as site cleanliness and proper waste management) would reduce the impact to a minimum.
- 5.1.10 During operation stage, the cable trough would be covered with soil and reinstated to its original surface conditions. The history of the site shows that shrubs at the edge of the alignment will recolonise naturally in time. To speed up the process, the affected area would be hydroseeded and covered with biodegradable erosion control mat or other similar material to prevent erosion and washing away of the seeds.

5.1.11 Based on the findings of the Tree Survey, a total of 25 number of trees will need to be felled. Compensatory replanting of trees will be provided. Details of the Tree Survey is shown in Appendix 1.

5.2 Comment on the Possible Severity, Distribution and Duration of Environmental Effects

5.2.1 Although the works area is located within the Ma On Shan Country Park, its location is immediately next to two busy roads and is highly disturbed by traffic noise, exhaust emissions and existing engineering infrastructures. Ecological survey indicates the area consists mostly of native and common species.

5.2.2 The duration of the works will be short and will affect a localised area only. No adverse residual impacts on ecology, noise, air quality, water quality, waste or landscape & visual are predicted with the implementation of the mitigation measures as well as necessary pollution control clauses described above.

5.3 Comment on any Further Implications

5.3.1 None.

5.4 Use of Previous Approved EIA

5.4.1 None applicable.

6. CONCLUSION

6.1.1 In view of the findings that the potential environmental impacts arising from this Designated Project are considered to be minor. CLP Power intends to directly apply for an Environmental Permit under Section 5(11) of the EIA Ordinance (i.e. "The environmental impact of the designated project is unlikely to be adverse and the mitigation measures described in the project profile meet the requirements of the Technical Memorandum.").

END OF TEXT