Cable Duct Crossing at Po Chue Tam, Tai O

Project Profile

382706/B&V/PP/003/Issue 1

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1. BASIC INFORMATION

1.1 Project Title

1.1.1 Cable Duct Crossing at Po Chue Tam, Tai O, Lantau Island (hereinafter referred to as the Project).

1.2 Purpose and Nature of the Project

1.2.1 In view of the steady increase in electricity demand, CLP Power Hong Kong Limited (CLP) has planned to strengthen the capacity and reliability of electricity in Tai O. At present, there exists only one set of 11kV cable circuit at Po Chue Tam which is laid on the riverbed. The cable is partly exposed during low tide period and poses hazard as well as security issues. In addition, the existing cable is more than 30 years old and deteriorating. New cable circuits are therefore necessary to ensure continuous electricity supply to the Tai O area. Most of the new cable circuits have been constructed in stages. A short section of the cable circuit crossing Tai O Creek is required to connect the circuits.

1.2.2 The purpose of the Project is to lay about 90m cable circuits crossing Tai O Creek at Po Chue Tam, Tai O, Lantau Island.

1.3 Name of the Project Proponent

1.3.1 CLP Power Hong Kong Limited (CLP).

1.4 Location and Scale of the Project and History of the Site

1.4.1 The Project is located at Po Chue Tam in the northern part of Tai O, Lantau Island (***Figure 1***).

1.4.2 The Project comprises laying of about 90m of 11kV cable circuits consisting of three individual cables (inside a cable duct respectively) at Po Chue Tam. About 70m of the cable ducts will be laid across Tai O Creek. The remaining 20m will be laid along the existing footpaths of Kat Hing Back Street and Sun Ki Street. The proposed extent of the works is indicated in ***Figure 2***. After laying the duct, the cables will be installed inside the ducts. The proposed cable circuits will connect to the existing cable circuit system at Kat Hing Back Street and Sun Ki Street.

1.4.3 For the 70m cable duct to be laid across Tai O Creek, the typical daily works practice is summarised below:

- hand excavation of a section of trench of about 10m-20m in length during low tide when the riverbed is exposed;
- placing three 150mm diameter cable duct and concrete protection tiles in the excavated trench; and
- backfill with original excavated materials.

1.4.4 For safety reason, hand excavation across Tai O Creek will only be conducted during low tide. Excavation during rainy weather or submerged condition will not be allowed under any circumstances.

1.4.5 The existing condition of Tai O Creek at the Project area is generally disturbed. The riverbed is tidal sediment as well as sediment from upstream flow of Tai O Creek. Runoff from the stilt houses along Tai O Creek flows through the area during ebb tide. Small

boats pass through the site during high tide. Some individual mangrove stands are located in the vicinity of the site near the east bank. Human activity including extraction of oyster and clam digging were observed during site visits. The existing 11kV cable was laid across Tai O Creek in the 1970s.

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

1.5.1 Since the excavation works for the cable trench is below high water marks, such works would be considered as dredging operation. The Project is thus a designated project under C.12, Schedule 2, Part I of the Environmental Impact Assessment Ordinance (EIAO) (Cap.499), since the dredging operation is less than 500m from the nearest boundary of a Conservation Area (CA) (***Figure 4***) zoned under the approved Tai O Fringe Outline Zoning Plan – S/I-TOF/2. According to Section 10 of the EIAO, application for an Environmental Permit (EP) is required for the construction of the Project.

1.6 Name and Telephone Number of Contact Person

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2. OUTLINE OF PLANNING AND IMPLEMENTATION PROGRAMME

2.1 Project Planning and Implementation

2.1.1 The Project will be led and managed by CLP. Construction of the works will be undertaken by contractor to be appointed by CLP.

2.2 Need of the Project

2.2.1 The Project is required due to the following reasons:

(a) Visual intrusion of exposed cable.
(b) Minimize risk and hazard to public due to the exposed cable.
(c) Aged cable (laid more than 30 years ago) posing potential risk on security and reliability of power supply to Tai O.

2.2.2 CLP has consulted the Tai O Rural Committee and local green group. Both parties supported the Project.

2.3 Consideration of Alternatives

Consideration of Alternative Locations

2.3.1 Alternative locations for laying the cable duct are not possible due to the following reasons:

(a) Part of Tai O is an island separated from main Lantau Island by Tai O Creek, laying the cable across Tai O Creek is therefore unavoidable.
(b) There are 2 existing footpath accesses. However, the footbridge at Wing On Street is a drawbridge while the Sun Ki Bridge is a wooden bridge. Laying the cable along these bridges is not feasible from an engineering point of view.
(c) Both banks of Tai O Creek are already largely occupied by stilts houses.
(d) Works should avoid impacting the existing seawall as it would involve substantial construction and stabilisation works.

2.3.2 The current proposed cable duct crossing location is therefore the most suitable location in terms of engineering feasibility, fewer disturbances to villagers and minimizing environmental impact.

Consideration of Alternative Construction Methods

2.3.3 The use of horizontal directional drilling (HDD) was previously considered for the installation of the cable duct across Tai O Creek without the need to excavate the riverbed. HDD works were conducted in November 2011 by the contractor, but all eight drilling attempts failed to complete the pilot hole due to presence of boulders.

2.3.4 Other no-dig techniques were considered not practicable due to the larger scale construction equipment / works and longer construction period involved resulting in more environmental nuisances as well as vibration impact to the nearby Yeung Hau Temple. These are summarised in ***Table 2.1*** below.

Table 2.1
Options for Alternative Construction Methods

Alternative Construction Methods	Considerations
Horizontal Directional Drilling (HDD) Tunnel Boring Machine (TBM) Pipe Jacking	• Mini-HDD was conducted in 2011. All attempts were unsuccessful due to presence to boulders. The chance of encountering boulders at other nearby locations is high. • Avoid the need to excavate across Tai O Creek. • Two working pits with working ramp are required. Larger construction works area needed. Possibility of encroaching onto nearby CA zone. • Require larger sized equipment. Need marine access via barge and temporary access road to deliver machinery and construction materials due to limited access, narrow alley and congested footpath at Tai O. • Substantial noise, air emission and visual impacts from construction equipment and works site. More construction waste generated. • More workers and longer construction period of about 10 months. • Stability concern of the platform and seawall adjacent to Yeung Hau Temple and vibration impact to the Temple due to presence of large construction equipment.
Overhead Line (OHL)	• Need to construct wooden poles along the circuit route. • Overhead line is not preferred due to safety and reliability considerations. • Visual intrusion from presence of overhead line.
Water Jetting	• Not suitable due to shallow water depth. • Potential marine ecological impact during water jetting. • Dredging/excavation work is still required near the landing points.

2.3.5 The proposed manual excavation of trench across Tai O Creek is considered to be more practical with minimal construction effort and minimum environmental impacts. It is therefore considered to be the preferred option.

2.4 Project Timetable

2.4.1 The Project is planned to commence in the 1st / 2nd quarter of 2017. The cable duct laying works across Tai O Creek will be carried out in sections when the riverbed is exposed during low tide period.

2.4.2 The cable laying works across Tai O Creek is envisaged to be completed in about 4-7 working days. With reference to the Hong Kong Observatory tidal information for Tai O, the number and duration of low tide event during normal working days and hours in Q1-Q2 2017 as shown in ***Appendix D*** demonstrate there are adequate window of time to conduct the works during low tide.

2.4.3 The remaining cable laying works along the existing footpaths would be completed in about 7 working days.

2.5 Interactions with Broader Programme or Other Projects

2.5.1 The Drainage Services Department (DSD) project – "PWP Item 354DS Outlying Islands Sewerage, Stage 2: Upgrading of Cheung Chau and Tai O Sewage Collection, Treatment and Disposal Facilities" is planned at Tai O. The project involves upgrading the sewerage collection, treatment and disposal facilities in Tai O. According to the project profile for application of EIA study brief (PP-406/2009) submitted by DSD, no works under this sewerage project are located near the proposed cable works. No cumulative effect is thus expected.

2.5.2 There are no other major projects in the vicinity of the Project with overlapping implementation programmes that will have significant environmental impacts.

3. MAJOR ELEMENTS OF THE SURROUNDING ENVIRONMENT

3.1 Existing and Planned Sensitive Receivers and Sensitive Parts of the Natural Environment

3.1.1 The proposed works is located in Tai O Creek near Po Chue Tam at the northern part of Tai O, Lantau Island. Existing site condition is shown in ***Figure 3***.

3.1.2 Tai O is a fishing town located on the western side of Lantau Island. It is also a famous tourist spot for its stilt houses ('*pang uk*' 棚屋). The main village areas are located mostly on the banks of the Tai O Creek and congregate at the middle and southern parts of Tai O. The northern part of Tai O is largely undeveloped.

3.1.3 Most of the works areas are not covered by any OZPs. Part of the cable circuit at Kat Hing Back Street will be located in land use zoned as Open Space (O) and part of the cable circuit at Sun Ki Street will be located in land use zoned as Undetermined (U) on the approved Tai O Fringe OZP No. S/I-TOF/2 (***Figure 4***). Other land uses in the nearby area include Conservation Area (CA) and Government, Institution or Community (G/IC).

3.1.4 There is no known planning permission or development in the vicinity of the Project. Nonetheless, relevant sensitive receivers from the above land uses have been considered as appropriate. The locations of the identified sensitive receivers are shown in ***Figure 5***.

Noise

3.1.5 The area surrounding the Project is largely rural and natural in character with no major noise sources identified. The representative Noise Sensitive Receiver (NSR) is Yeung Hau Temple (NSR1) adjacent to the site (16m) and the stilt houses (NSR2) located about 85m from the Project site (***Figure 5***).

Air Quality

3.1.6 No major source of air pollution is identified in the vicinity of the Project site. There are no roads in the village areas of Tai O. The DSD's Tai O No. 2 Sewage Pumping Station and Tai O Imhoff Tank are located approximately 140m and 360m away from the Project. The representative Air Sensitive Receivers (ASRs) as shown in ***Figure 5*** include Yeung Hau Temple (16m) (ASR1), sitting-out area (60m) (ASR2) and the stilt houses (85m) (ASR3).

Water Quality

3.1.7 Site observation indicated the water quality of Tai O Creek is generally good. However, village effluent and runoff discharging into Tai O Creek is also noted. The Water Sensitive Receivers (WSRs) include the secondary contact recreation subzone (WSR1) and marine waters of North Western Water Control Zone (WSR2) (***Figure 5***).

Ecology

3.1.8 The area nearby the Project site is largely developed and disturbed. Kat Hing Back Street and Sun Ki Street are paved footpaths with low ecological value. The riverbed at Tai O Creek is also disturbed area and affected by village effluent and runoff from upstream stilt houses. Some waterbird species, which are species of conservation importance but commonly found in Hong Kong, were recorded in the Study Area in low abundance. Both

sides of the riverbank near the Project site have been formed with concrete. Only low abundant intertidal fauna consisting of common and widespread species are found on the site. Some mangrove stands are found in the vicinity near the east bank. Desktop review and ecological survey of the area near the Project site is presented in ***Appendix A*** and ***Appendix B***. The surrounding area within 500m from the Project site consists of some ecologically sensitive areas such as CA and CPA (***Figure 4***). However, these sensitive areas will not be affected by the Project due to the small scale and localized nature of the works.

Fisheries

3.1.9 There is no Fish Culture Zone within and near the Project site or its surrounding area. Apart from shipping fairways and marine exclusion areas, most of the open waters north of Lantau are utilised as fishing grounds. Besides the fishing grounds, the following fisheries resources are located in North Lantau waters:

- New artificial reefs to be deployed in the proposed Marine Park at the Brothers; and
- Important spawning grounds for commercial fisheries resources at the Brothers and Lung Kwu Chau.

3.1.10 Within the North Lantau waters, there are some areas of higher capture fisheries production, including the waters around Tai O, around the Brothers and around Sha Chau and Lung Kwu Chau. All these areas are unlikely to be affected by the Project due to the long distances and the small scale of construction involved.

Cultural Heritage

3.1.11 The Project site does not fall into any cultural heritage sites. The location of the known heritage resources in the surrounding area near the Project Site is shown in ***Figure 7***.

3.1.12 There are two sites of archaeological interest in Tai O area, namely Tai O (AM96-0736) and Tai O Fu Shan (AM02-1674). Both are located about 120m from the Project site. Salt production in Tai O was one of the earliest industrial activities recorded in Hong Kong. The salt fields in the Tai O area are amongst the few remaining salt fields in Hong Kong. The proposed cable circuit at Sun Ki Street is about 20m away from the disused salt fields in the vicinity.

3.1.13 A Grade 1 historic building – Yeung Hau Temple is located about 7m from the proposed cable circuit at Kat Hing Back Street. Yeung Hau Temple was built in 1699 of the Qing dynasty. The temple is in Qing vernacular style having two halls in the middle with a covered courtyard in between. It is one of the three Hau Wong Temples on Lantau and the best preserved. Its original building structure, fixtures and features are generally well maintained. Renovation was last conducted in 1988 and it is in good condition without unauthentic added structure.

A Grade 3 historic building – Wing Hing Petrol Station, built before 1941, is located about 100m from the proposed cable circuit. Located at No. 99C Kat Hing Back Street, Wing Hing Petrol Station is a licenced dangerous goods store in Tai O first owned by Chan Iu. It is rumoured that the Station was once used as a prison by the Japanese Army during the War.

Another Grade 3 historic structure – Shrine with Stone Dog, is located about 265m from the proposed cable circuit. This shrine, located adjacent to the structure at No. 75 Kat Hing Back Street, is a granite statue fashioned in the shape of a dog and is believed to be laid here before 1899.

Tai O is home to the Tanka people who built their houses on stilts along the waterways. The stilt houses are important component of the fishing village character of Tai O as well as cultural heritage of Tai O. The Project is more than 80m away from these stilt houses. The stilt houses of Tai O have been included in AMO's list of new items and categories but the grading is still pending.

Landscape and Visual

3.1.14 Tai O is bounded by the Lantau North Country Park in the east and south, and natural coastline in the north and west. The main village area is located in the middle and southern part of Tai O. The northern part is natural in character comprising mainly of mangroves, wetlands, woodlands and disused salt fields. The Project site consists of paved access track (Kat Hing Back Street and Sun Ki Street) and riverbed. Existing site conditions are shown in ***Figure 3***. The visual envelope (zone of visual influence) of the works site and the visual sensitive receivers (VSRs) are shown in ***Figure 8***. Brief descriptions of the VSRs are listed in ***Table 3.2*** below.

Table 3.2
Visual Sensitive Receivers (VSRs)

VSR Reference	Approximate Distance to Proposed Works	Description
VSR1 – residents of village houses	80m	These VSRs have full and frequent view of the site. The existing view is of fair quality and good alternative view of the nearby wooded knoll at Po Chue Tam, hill slopes and coastal waters are available. The number of VSRs is few in numbers. These VSRs are considered to have medium sensitivity to change.
VSR2 – users of sitting-out area and pedestrians along Kat Hing Back Street	60m (for sitting-out area) adjacent (for pedestrians)	
VSR3 – visitors to Yeung Hau Temple	adjacent	
VSR4 – pedestrians along Sun Ki Street	adjacent	

3.2 Major Elements of Surrounding Environment and Land Uses which might affect the Project

3.2.1 The Project site is on paved access track and riverbed. According to the historical aerial photographs, the Project area has remained undeveloped.

4. POSSIBLE IMPACTS ON THE ENVIRONMENT

4.1 Outline of Processes Involved

4.1.1 The proposed works involve laying of about 90m long 11kV cable ducts across Tai O Creek and along the existing footpaths. The length of the proposed cable circuit across Tai O Creek is about 70m. Trench excavation, laying of cable ducts and backfill of the trench will be carried out in sections when the riverbed is exposed during low tide period. As safety measure, no excavation works across Tai O Creek will be allowed during high tide when the works area is underwater. It is expected about 10m-20m section can be constructed during each low tide period. The cable duct consists of galvanised steel pipe of 150mm diameter. The cable trench across Tai O Creek will be approximately 1.5m in width (maximum) and 1m in depth (maximum). A layer of protection concrete tiles will be laid above the cable duct before backfilling. The trench will be backfilled with original excavated material and reinstated to its original condition. Such construction method is a common practice adopted widely for laying of cable duct in sections. Upon commissioning of the new cable circuits, the exposed section of the existing cable will be cut and removed.

4.1.2 The cable trench along the footpaths will be approximately 650mm in width and 650mm in depth. Existing ramp at Kat Hing Back Street and staircase at Sun Ki Street will be temporarily removed and reinstated after construction. A layer of protection concrete tiles will be laid above the cable duct before backfilling. The trench will be backfilled with original excavated material and reinstated to its original condition. The new cables will be installed into the ducts upon completion of cable duct laying works.

4.1.3 Given the small scale works involved and restricted access at Tai O, only small hand-held tools will be used. All materials and equipment will be delivered to the site using hand trolley. Existing concrete surface of the access track (Kat Hing Back Street and Sun Ki Street) will be demolished using hand-held electric breaker. Excavation of the cable trench, laying of the steel cable ducts, backfilling, reinstatement and installation of the cable circuits will be conducted manually. For the cable duct section across Tai O Creek, works will be conducted in short section and reinstated after each working day when the riverbed is exposed during low tide. No night time works is required.

4.2 Summary of Potential Environmental Impacts

4.2.1 The potential environmental impacts are mainly associated with the construction works as described in the following sections. No environmental impact is expected during operation of the cable circuits.

4.3 Possible Environmental Impacts during Construction Phase

Noise

4.3.1 A construction noise calculation has been conducted at Yeung Hau Temple to demonstrate no adverse construction noise impact to the closest noise sensitive receiver during construction (***Appendix C***). As the works would only employ small sized equipment mainly for breaking of concrete surface during the works on the footpath (e.g. hand-held electric breaker and portable generator), adverse construction noise impact is not expected. Nonetheless, standard pollution control measures as described in ***Section 5.1.1*** will be implemented.

Air Quality

4.3.2 Given the small minor works involved, it is expected that only about $5m^3$ of broken concrete will be generated from the removal of the concrete surface of the footpath. Excavated materials will be stockpiled on site for reuse as backfilling materials. Only minimal dusty material is therefore expected during construction. Dust suppression measures as recommended in the Air Pollution Control (Construction Dust) Regulation is expected to be effective in controlling dust on site. No adverse dust impact would be expected at nearby air sensitive receivers.

Water Quality

4.3.3 Potential turbid water may be generated from the excavated trench along the footpath. Given the small scale works involved, the amount of turbid water will be negligible. The contractor will be required to follow the recommended best management practices stipulated in ProPECC PN 1/94 – "Construction Site Drainage" to avoid and minimise the potential water quality impact from site effluent.

4.3.4 Topographic survey indicated the riverbed profile is about 1.85mPD to 3.28mPD. According to the Hong Kong Observatory predicted tide level at Tai O, there are numerous occasions in each month that low tide level situation of 0.8mPD or below (during normal working day and time) occurs for several hours. A summary of available low tide condition at Tai O during daytime and normal working days in Q1-Q2 2017 as well as the riverbed profile from the topographic survey is shown in ***Appendix D***. It is therefore feasible to conduct the works across Tai O Creek during low tide when the works location is not in submerged condition. Sand bags will be used to provide localised diversion of existing river flow where necessary. Water pump will be deployed if required to provide a safe working condition during excavation. For safety reason, excavation during rainy weather or submerged condition will not be allowed under any circumstances.

4.3.5 No adverse water quality impact to the WSRs is therefore expected.

Waste Management

4.3.6 It is expected that only about $5m^3$ of broken concrete will be generated which will be disposed to public fill reception facilities. All the remaining excavated materials including riverbed materials will be reused as backfilling materials. As no large machineries will be used during construction, no chemical waste is expected from maintenance of equipment. Refuse generated by the workers will be removed from site at the end of each work day. No adverse waste management issue is expected.

Landscape and Visual

4.3.7 The proposed cable duct alignment has been design to ensure the surrounding vegetation (including mangroves) and trees will not be affected (***Figure 2***). During construction, potential temporary visual impact is expected from the excavated trench, temporary stockpiles of excavated materials and presence of few equipment. For the section of works across Tai O Creek, all works will be reinstated at the end of each working day before the next high tide. Given the small works area, small number of construction equipment and short construction period involved, the landscape and visual impact arising during construction phase is expected to be localised and transient. The magnitude of change to the visual environment during this transient period is considered to be small. Good site management practice as recommended in ***Section 5*** will be implemented to minimise the potential visual impact during construction. Upon completion of the works, the works site

will be reinstated to its original condition. No significant adverse landscape and visual impact is therefore expected.

Ecology

4.3.8 The Project will only temporarily affect very small area of mudflat, watercourse bed and urbanised/disturbed habitats. No direct impact on CPA, CA and other recognised sites of conservation importance is anticipated. No removal of mangrove will be necessary. For the cable duct section across Tai O Creek, works will be conducted in short section and reinstated after each working day during low tide. Only limited intertidal fauna which are common species and of low abundance will be affected by the works. Adverse ecological impact is unlikely.

4.3.9 Works will be conducted during low tide when the works location is not in submerged condition. Excavation during rainy weather and submerged condition will not be allowed. The trench will be reinstated with original riverbed material to its original condition. The potential water quality impact due to discharge of turbid water during construction is anticipated to be minimal. The Sha Chau and Lung Kwu Chau Marine Park is more than 10 km from the Project Site. Hence it is very unlikely the Marine Park will be adversely impacted by change in water quality due to the Project.

Fisheries

4.3.10 As stated in ***Section 4.3.5***, adverse water quality impact is not expected. As the Project site is located in the intertidal area with shallow water depth (varies from 0m to 1m), no fishing operations would occurred and no fishing operations will be affected. In addition, the Project is over 10 km from Fish Culture Zone and other fisheries resources. No adverse fisheries impact is therefore expected.

Cultural Heritage

4.3.11 The proposed cable circuit alignment is situated at Tai O Creek and at the existing access tracks (Kat Hing Back Street and Sun Ki Street) with disturbance from previous utility works. In addition, the works are located at about 120m away from the known archaeological sites in the Tai O area. The Project is therefore evaluated as having no potential archaeological impact.

4.3.12 A short section of the proposed cable circuit at Kat Hing Back Street is located about 7m away from the Grade 1 historic building – Yeung Hau Temple. The proposed works will consist of surface breaking and excavation of trench. Surface breaking will be conducted using small hand-held breaker, while excavation will be conducted manually. No direct impact to the building structure will result from the proposed works. Potential indirect impact during surface breaking and excavation may only result if any works is conducted immediately adjacent to this building.

4.3.13 The other known heritage resources are located further away from the Project. Given the large distance separation and small scale works involved, adverse impact is not expected.

4.3.14 While no adverse impact to the Grade 1 historic building – Yeung Hau Temple is expected during construction of the cable duct, good site practice as detailed in ***Section 5*** has been agreed with AMO and will be implemented as additional precautionary measures to protect this building.

Others

4.3.15 Night-time construction – all construction works will be performed during normal working hours only.

4.3.16 Traffic generation – no traffic impact is expected.

4.3.17 Dangerous goods – no dangerous goods will be involved.

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

5.1 Environmental Protection Measures during Construction Phase

Noise

5.1.1 The contractor will be required to adopt the following standard pollution control measures during construction.

- Silenced equipment should be used as far as possible.
- Only well-maintained equipment should be operated on-site and equipment should be serviced regularly.
- Mobile equipment should be sited as far away from noise sensitive receivers as possible.
- Equipment that may be in intermittent use should be shut down between works period or should be throttled down to a minimum.
- Equipment known to emit noise strongly in one direction should, where possible, be orientated so that noise is directed away from the nearby sensitive receivers.
- Movable noise barrier should be effectively utilized, where available, to screen noise from construction equipment.
- Noisy construction activities, such as surface breaking, should be scheduled to less sensitive hours during the day, e.g. midday.

Air Quality

5.1.2 The effect of dust generated from the construction works is expected to be insignificant with the implementation of proper dust control measures such as regularly water spraying of exposed site surface and covering of any dusty material stockpiles to reduce dust emissions. The contractor will be required to comply with the control measures stipulated in the Air Pollution Control (Construction Dust) Regulation and implement all the required dust control measures.

5.1.3 With the implementation of these measures, dust would be controlled to within the acceptable levels.

Water Quality

5.1.4 The contractor will be required to follow the best management practice stipulated in EPD's ProPECC PN 1/94 – "Construction Site Drainage". Open stockpiles of construction materials on sites will be covered with tarpaulin or similar fabric during rainstorms and surrounded by sand bag barriers. Works at Tai O Creek will be conducted and completed in short sections during each low tide period and not in submerged condition.

5.1.5 With the implementation of these measures, no adverse water quality impact during the construction phase is expected.

Waste Management

5.1.6 The contractor will be required to sort all C&D materials and waste into different categories for reuse on site, recycling and disposal at designated public fill reception facilities or landfills. Broken concrete will be removed from site and disposed at public fill reception facilities. Excavated materials will be reuse on-site as backfill. All refuse will be removed from site at the end of each working day. All excavated sediment from Tai O Creek will be reused as backfill. No offsite disposal of sediment is required.

5.1.7 With proper implementation of the recommended waste management measures, no adverse waste impact during the construction phase is expected.

Landscape and Visual

5.1.8 The contractor will be required to implement the following good site management practice during construction:

- Workers should be briefed to avoid impacting the existing vegetation and trees outside the works area.
- Site cleanliness and tidiness should be maintained at all times.
- The extent of works and construction time should be minimized as far as possible.
- Construction waste should be properly managed.
- All works area should be promptly reinstated to its original condition upon completion of works.

5.1.9 With the implementation of the above practice, landscape and visual impact during construction is expected to be negligible.

Ecology

5.1.10 As part of this Project works practice, works across Tai O Creek will be conducted during low tide when the works location is not in submerged condition. The excavated trench will be reinstated with the original riverbed sediment at the end of each working day.

5.1.11 By adopting the above works practice, no ecological impact during construction is expected.

Fisheries

5.1.12 As no fisheries impact is expected during construction phase, no environmental protection measure is necessary other than adopting the Project works practice stated above.

Cultural Heritage

5.1.13 While no adverse impact to the Grade 1 historic building – Yeung Hau Temple is expected during construction of the cable duct, the following good site practice agreed with AMO will be implemented as precautionary measures to further protect this historic building when works are conducted at Kat Hing Back Street.

- No disturbance or damage in any form should be made to Yeung Hau Temple including the forecourt and the adjacent seawall.
- The proposed cable works should be constructed using hand-held tools only. The contractor should reinstate the Yeung Hau Temple forecourt floor finishes in matching to the original condition if any.

- A condition survey to the Yeung Hau Temple should be carried out by qualified building surveyor or engineer in advance of works and a report should be compiled. The report should contain description of the structure, identification of fragile elements, an appraisal of the condition and working methods, proposed vibration monitoring and any precautionary measures.
- Vibration monitoring should also be undertaken during the construction works to ensure that safe maximum level of 5 mm/s is adopted for the Yeung Hau Temple.
- The condition survey report and the vibration monitoring results should be submitted to AMO for comment.

5.2 Environmental Monitoring and Audit

5.2.1 Adverse environmental impact is not anticipated, therefore specific environmental monitoring is not necessary.

5.2.2 An independent checker will be employed to audit the implementation of all environmental protection measures recommended and to confirm full compliance through audit report to EPD upon completion of the construction works.

5.3 Possible Severity, Distribution and Duration of Environmental Impacts

5.3.1 With the implementation of the recommended Project works practice, good site practice and environmental protection measures during construction phase, adverse environmental impact is not anticipated. No environmental impact is anticipated during operation stage.

5.4 History of Similar Projects

5.4.1 There are no similar projects for reference.

6. SUMMARY OF ENVIRONMENTAL ASPECTS AND ENVIRONMENTAL PROTECTION MEASURES

6.1 Summary of Environmental Aspects and Environmental Protection Measures

6.1.1 The environmental protection measures of relevant environmental aspects to be implemented during the construction phase of the Project are summarized in ***Table 6.1*** below.

Table 6.1
Summary of Potential Environmental Aspects and Proposed Environmental Protection Measures

Potential Environmental Aspects	Summary of Environmental Protection Measures	Implementation Agent	Relevant Section in the Project Profile
Construction Phase			
Noise	Adopt standard pollution control measures.	Contractor	5.1.1
Air quality	Comply with the control measures in the Air Pollution Control (Construction Dust) Regulation for works along footpath.	Contractor	5.1.2
Water quality	Follow best management practices in ProPECC PN 1/94 for works along footpath. Adopt Project works practice of conducting works during low tide for works across Tai O Creek.	Contractor	5.1.4
Waste	Sort all C&D materials and waste for reuse, recycling and disposal. Reuse of excavated materials as backfill. Remove all refuse from site at the end of each working day.	Contractor	5.1.6
Landscape and visual	Implement good site management practice.	Contractor	5.1.8
Ecology	Adopt Project works practice of conducting works during low tide for works across Tai O Creek.	Contractor	5.1.10
Fisheries	Adopt Project works practice of conducting works during low tide for works across Tai O Creek.	Contractor	5.1.12
Cultural heritage	Implementation of the precautionary measures as agreed with AMO.	Contractor	5.1.13

7. USE OF PREVIOUS APPROVED EIA REPORTS

7.1 Previous Approved EIA Reports

7.1.1 No previous EIA report has been approved or submitted for the Project.

8. CONCLUSION

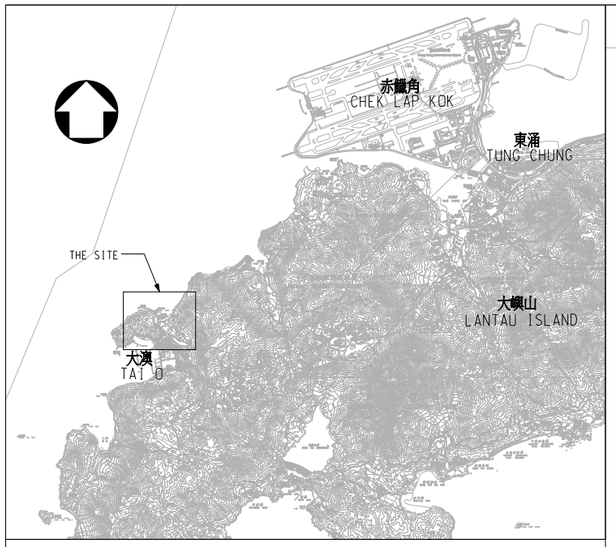
8.1 Conclusion

8.1.1 The predicted environmental impacts from the implementation of the proposed Project are unlikely to be adverse and the mitigation measures described in this Project Profile meet the requirements of the Technical Memorandum on Environmental Impact Assessment Process (EIAO-TM).

8.1.2 This Project Profile has been prepared to seek permission from the Director of Environmental Protection under Section 5(11) of the EIAO to apply directly for an Environmental Permit.

END OF TEXT

FIGURES



KEY PLAN 位置圖
A3 1:150000

804 000 E

813 500 N

813 000 N

渠務署大澳隔化池
DSD TAI O IMHOFF TANK

狗伸地
KAU SAN TEI

吉慶街 KAT HING BACK STREET

寶珠潭
PO CHUE TAM

新基街
SUN KI STREET

新基大橋
SAN KI BRIDGE

大澳新基
TAI O SAN KI

大澳
TAI O

大澳新沙
TAI O SAN SHA

大澳沙仔面
TAI O SHA CHAI MIN

吉慶街 KAT HING STREET

行人橋
FOOTBRIDGE

大澳大涌
TAI O TAI CHUNG

大澳永安街
TAI O WING ON STREET

龍軒苑
LUNG HIN COURT

龍田
LUNG TIN ESTATE

大澳道 TAI O ROAD

石仔坳
SHEK TSAI PO

石仔坳街 SHEK TSAI PO STREET

圖例:
LEGEND:

擬建電纜管道
PROPOSED CABLE DUCT CROSSING (TENTATIVE)

現有電纜管道
EXISTING CLP CABLE DUCT ROUTE

Rev	Date	Description of revision	Des'd	Chkd	Rd/Vd	Appd
REVISIONS						

	initials	date		initials	date
Designed	MC	01/15	Drawn	SZ	01/15
Checked	VT	01/15	Reviewed Verified	AK	01/15
Approved					

Project title
大澳寶珠潭電纜管道工程
CABLE DUCT CROSSING AT PO CHUE TAM, TAI O

Contract title
OUTLINE AGREEMENT NO. 4600003274
TRANMISSION CABLE ROUTE SELECTION CONSULTANCY SERVICES

Drawing title
工程位置圖
GENERAL LOCATION PLAN

Drawing Reference No. 圖一 FIGURE 1
Revision -

Scale A1 1:2500
A3 1:5000

CLP 中電

BLACK & VEATCH HONG KONG LIMITED
博威工程顧問有限公司

Plot Date = 1/4/2016

CAD Filename = Y:\Daily Work\20160104b\FIGURE 1.dgn

803 850 E
803 900 E
803 950 E
813 400 N
813 350 N
813 300 N

吉慶後街 KAT HING BACK STREET
KAT HING BACK STREET 2.5
新基街 SUN KI STREET
SUN KI STREET 4
SUN KI STREET 7

楊侯古廟（一級歷史建築物）
YEUNG HAU TEMPLE
(GRADE 1 HISTORIC BUILDING)

楊侯古廟

現有斜路會臨時清除並於竣工後恢復原狀
EXISTING RAMP WOULD BE TEMPORARY REMOVED AND REINSTATED AFTER CONSTRUCTION

連接現有電纜
CONNECT TO EXISTING CABLE CIRCUIT

電纜管道路線（於低潮採用明坑挖掘方法敷設）
ALIGNMENT FOR INSTALLATION OF CABLE DUCT CROSSING BY OPEN TRENCH METHOD DURING LOW TIDE PERIOD

現有電纜
EXISTING CLP CABLE

連接現有電纜
CONNECT TO EXISTING CABLE CIRCUIT

現有樓梯會臨時清除並於竣工後恢復原狀
EXISTING STAIRCASE WOULD BE TEMPORARY REMOVED AND REINSTATED AFTER CONSTRUCTION

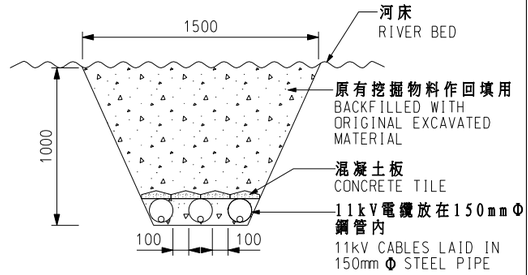
池塘
POND

海堤
Sea Wall

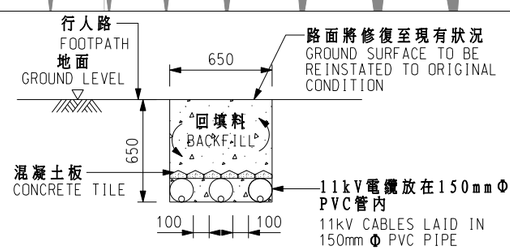
TS
INC
HWM
CLP
SW
LIGHT
PCCW
E
H
L

狗仲地
KAU SAN TEI
寶珠潭
PO CHUE TAM
THE SITE
大澳
TAI O

KEY PLAN 位置圖
A1 1:5000
A3 1:10000



橫過大澳河電纜管道截面
TYPICAL CROSS SECTION OF CABLE DUCT ACROSS TAI O CREEK
SCALE A1 1:20
A3 1:40



行人路電纜管道截面
TYPICAL CROSS SECTION OF CABLE DUCT ALONG FOOTPATH
SCALE A1 1:20
A3 1:40

註：
NOTES：

工程不可以在被海水淹沒情況下進行
1. WORKS SHALL NOT BE CONDUCTED IN SUBMERGED CONDITION.

手挖明坑須用原有挖掘物料作回填用並在敷設電纜管道後恢復工地到原有狀況
2. HAND DUG TRENCH SHALL BE BACKFILLED WITH ORIGINAL EXCAVATED MATERIAL TO ITS ORIGINAL CONDITION AFTER LAYING OF THE CABLE DUCT.

圖例：
LEGEND：

擬建電纜管道
PROPOSED CABLE DUCT CROSSING (TENTATIVE)

現有電纜
EXISTING CLP CABLE

紅樹林
MANGROVES

樹
TREES

Rev	Date	Description of revision	Des'd	Chkd	Rd/Vd	Appd
REVISIONS						

	initials	date		initials	date
Designed	MC	01/15	Drawn	SZ	01/15
Checked	VT	01/15	Reviewed Verified	AK	01/15
Approved					

Project title
大澳寶珠潭電纜管道工程
CABLE DUCT CROSSING AT PO CHUE TAM, TAI O

Contract title
OUTLINE AGREEMENT NO. 4600003274
TRANMISSION CABLE ROUTE SELECTION CONSULTANCY SERVICES

Drawing title
擬建大澳寶珠潭電纜管道
PROPOSED CABLE DUCT CROSSING AT PO CHUE TAM, TAI O

Drawing Reference No.	圖二 FIGURE 2	Revision
Scale	A1 1:250 A3 1:500	-

CLP 中電

BLACK & VEATCH HONG KONG LIMITED
博威工程顧問有限公司

Plot Date = 6/1/2016
CAD Filename = Y:\Daily Work\20160601d\FIGURE 2.dgn

1 YUENG HAU TEMPLE
楊侯古廟

2 VIEW OF WORKS AREA DURING LOW TIDE
退潮時工地的狀況

3 EXISTING RAMP TO BE REMOVED AND REINSTATED AFTER CONSTRUCTION
現有斜路會臨時清除並於竣工後恢復原狀

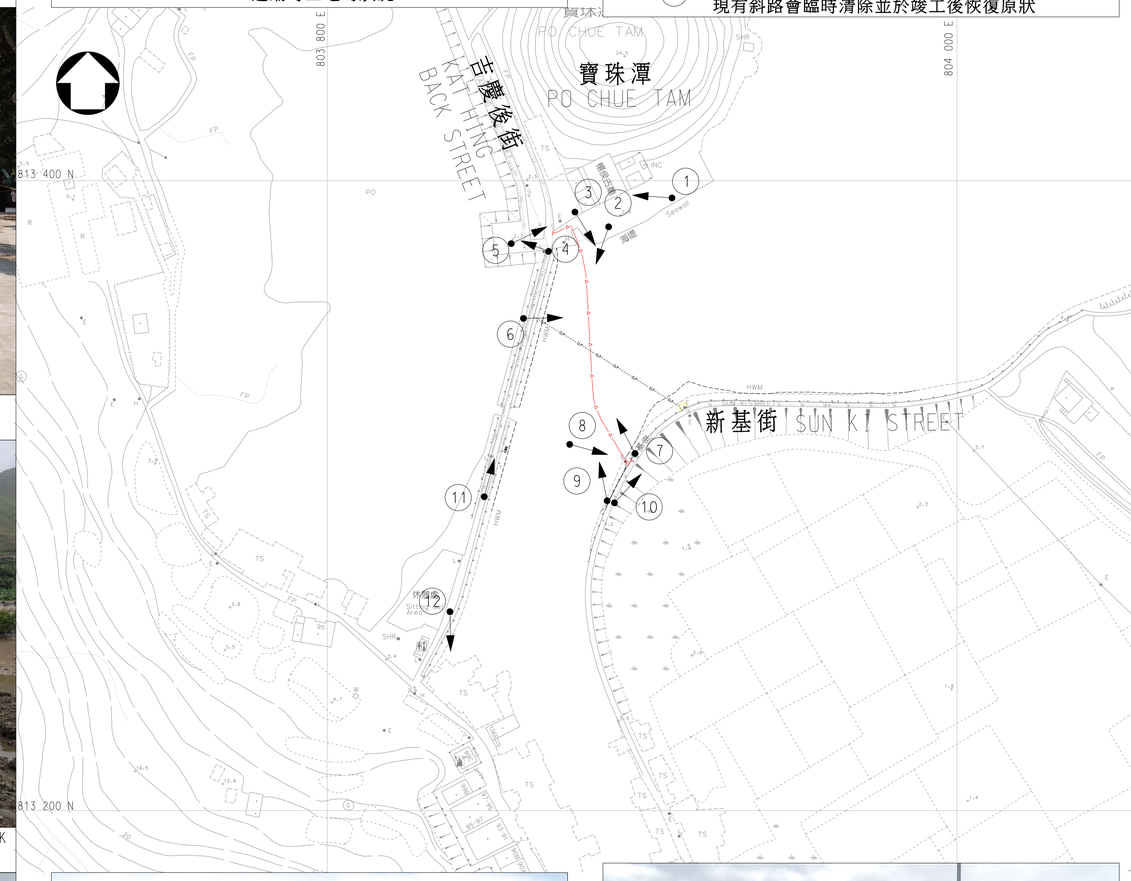
4 KAT HING BACK STREET
吉慶後街

12 EXISTING STILT HOUSES
現有棚屋

5 VIEW OF WORKS AREA NEAR YEUNG HAU TEMPLE
工地及楊侯古廟的狀況

VIEW OF KAT HING BACK STREET, PO CHUE TAM AND TAI O CREEK
11 吉慶後街,寶珠潭及大澳涌現貌

6 PARTLY EXPOSED EXISTING CABLE
現有露出電纜



10 SUN KI STREET
新基街

9 EXISTING MANGROVES ADJACENT TO PROJECT SITE
鄰近工程項目的現有紅樹林

8 EXISTING STAIRCASE TO BE REMOVED AND REINSTATED AFTER CONSTRUCTION
現有樓梯臨時清除並於竣工後恢復原狀

7 VIEW OF WORKS AREA DURING LOW TIDE
退潮時工地的狀況

圖例:
LEGEND:

擬建電纜管道
PROPOSED CABLE DUCT CROSSING (TENTATIVE)

現有電纜管道
CLP EXISTING CLP CABLE DUCT ROUTE

Rev	Date	Description of revision	Des'd	Chkd	Rd/Vd	Appd

REVISIONS

	initials	date		initials	date
Designed	MC	01/15	Drawn	SZ	01/15
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Approved

Project title
大澳寶珠潭電纜管道工程
CABLE DUCT CROSSING AT PO CHUE TAM, TAI O

Contract title
OUTLINE AGREEMENT NO. 4600003274
TRANMISSION CABLE ROUTE SELECTION CONSULTANCY SERVICES

Drawing title
工程項目的現有狀況
EXISTING SITE CONDITIONS

Drawing Reference No. 圖三 FIGURE 3
Revision -

Scale A1 1:1000
A3 1:2000

CLP 中電

BLACK & VEATCH HONG KONG LIMITED
博威工程顧問有限公司

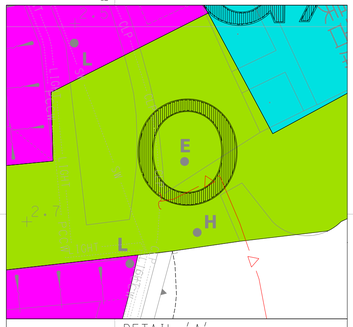
Plot Date = $DATE$
CAD Filename = $FILE$

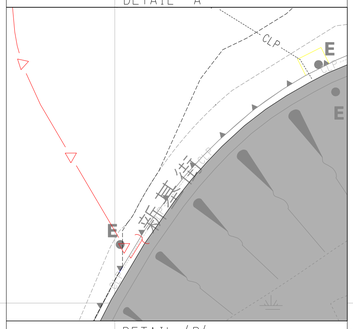
803 400 E
803 600 E
803 800 E
804 000 E
804 200 E
804 400 E
813 600 N
813 400 N
813 200 N

渠務署大澳隔化池
DSD TAI O IMHOFF TANK

OU
CPA
G/IC
狗伸地 KAU SAN TEI
CA
寶珠潭 PO CHUE TAM
吉慶後街 KAT HING BACK STREET
O
GB
U
R(D)
V
C
新基街 SUN KI STREET
大澳 TAI O
大澳新基 TAI O SAN KI
大澳新沙 TAI O SAN SHA
大澳沙仔面 TAI O SHA CHAI MIN
石仔坊街 SHEK TSAI PO STREET

DETAIL 'A'
DETAIL 'B'





註：
NOTES：

大澳邊緣分區計劃大綱核准圖編號 S/I-TOF/2
APPROVED TAI O FRINGE OUTLINE ZONING PLAN NO. S/I-TOF/2.

大澳市中心分區計劃大綱草圖編號S/I-TOTC/1.
DRAFT TAI O TOWN CENTRE OUTLINE ZONING PLAN NO. S/I-TOTC/1.

圖例：
LEGEND：

- 擬建電纜管道 PROPOSED CABLE DUCT CROSSING (TENTATIVE)
- 現有電纜管道 EXISTING CLP CABLE DUCT ROUTE
- CA 自然保育區 CONSERVATION AREA
- CPA 海岸保護區 COASTAL PROTECTION AREA
- G/IC 政府,機構或社區 GOVERNMENT, INSTITUTION OR COMMUNITY
- GB 綠化地帶 GREEN BELT
- O 休憩用地 OPEN SPACE
- OU 其他指定用途 OTHER SPECIFIED USES
- U 未決定用途 UNDETERMINED
- R(D) 住宅(丁類) RESIDENTIAL (GROUP D)
- V 鄉村式發展 VILLAGE
- C 商業 COMMERCIAL

Rev	Date	Description of revision	Des'd	Chkd	Rd/Vd	Appd

REVISIONS

	initials	date		initials	date
Designed	MC	01/15	Drawn	SZ	01/15
Checked	VT	01/15	Reviewed Verified	AK	01/15

Approved

Project title
大澳寶珠潭電纜管道工程
CABLE DUCT CROSSING AT PO CHUE TAM, TAI O

Contract title
OUTLINE AGREEMENT NO. 4600003274
TRANMISSION CABLE ROUTE SELECTION CONSULTANCY SERVICES

Drawing title
大澳寶珠潭土地用途
LAND USE ZONING AT PO CHUE TAM, TAI O

Drawing Reference No. 圖四 FIGURE 4
Revision -

Scale A1 1:1500
A3 1:3000

CLP 中電

BLACK & VEATCH HONG KONG LIMITED
博威工程顧問有限公司

Plot Date = 2/6/2016
CAD Filename = Y:\Daily Work\20160215\FIGURE 4.dgn

803 400 E
803 600 E
803 800 E
804 000 E
804 200 E
804 400 E
813 600 N
813 400 N
813 200 N
813 000 N

西北區水質管制海域
MARINE WATERS OF
NORTH WESTERN WATER CONTROL ZONE
(WSR 2)

次級接觸康樂活動分區
SECONDARY CONTACT
RECREATION SUBZONE
(WSR 1)

渠務署大澳隱化池
DSD TAI O
IMHOFF TANK

狗伸地
KAU SAN TEI

海岸保護區
COASTAL PROTECTION AREA

寶珠潭
PO CHUE TAM

楊侯古廟（一級歷史建築物）
YEUNG HAU TEMPLE
(GRADE 1 HISTORIC
BUILDING)

ASR 1/NSR 1

ASR 2

ASR 3/NSR 2

自然保育區
CONSERVATION AREA

新基街 SUN KI STREET

大澳涌
TAI O CREEK

石仔埗街 SHEK TSAI PO STREET

大澳新基 TAI O SAN KI

大澳 TAI O

大澳新沙 TAI O SAN SHA

大澳沙仔面 TAI O SHA CHAU MIN

大澳三涌 TAI O SAM CHUNG

大澳墳場 TAI O CEMETERY

大澳警署會館所 Tai O Police Club House

大澳電話局 Tai O Exchange

大澳大會堂 Tai O Assembly Hall

大澳遊樂場 Tai O Recreation Ground

足球場 Football Field

士多房 Store House

大澳石圍角污水處理廠 Tai O Shek Wai Kok Sewage Treatment Works

大澳沙仔面污水處理廠 Tai O Sha Chau Min Sewage Treatment Works

圖例：
LEGEND:

擬建電纜管道
PROPOSED CABLE DUCT
CROSSING (TENTATIVE)

現有電纜管道
EXISTING CLP CABLE
DUCT ROUTE

Rev	Date	Description of revision	Des'd	Chkd	Rd/Vd	Appd

REVISIONS

	initials	date		initials	date
Designed	MC	01/15	Drawn	SZ	01/15
Checked	VT	01/15	Reviewed Verified	AK	01/15

Approved

Project title

大澳寶珠潭電纜管道工程
CABLE DUCT CROSSING
AT PO CHUE TAM, TAI O

Contract title

OUTLINE AGREEMENT NO. 4600003274
TRANMISSION CABLE ROUTE SELECTION
CONSULTANCY SERVICES

Drawing title

敏感受體位置圖
LOCATION OF SENSITIVE RECEIVERS

Drawing Reference No. 圖五 FIGURE 5

Revision -

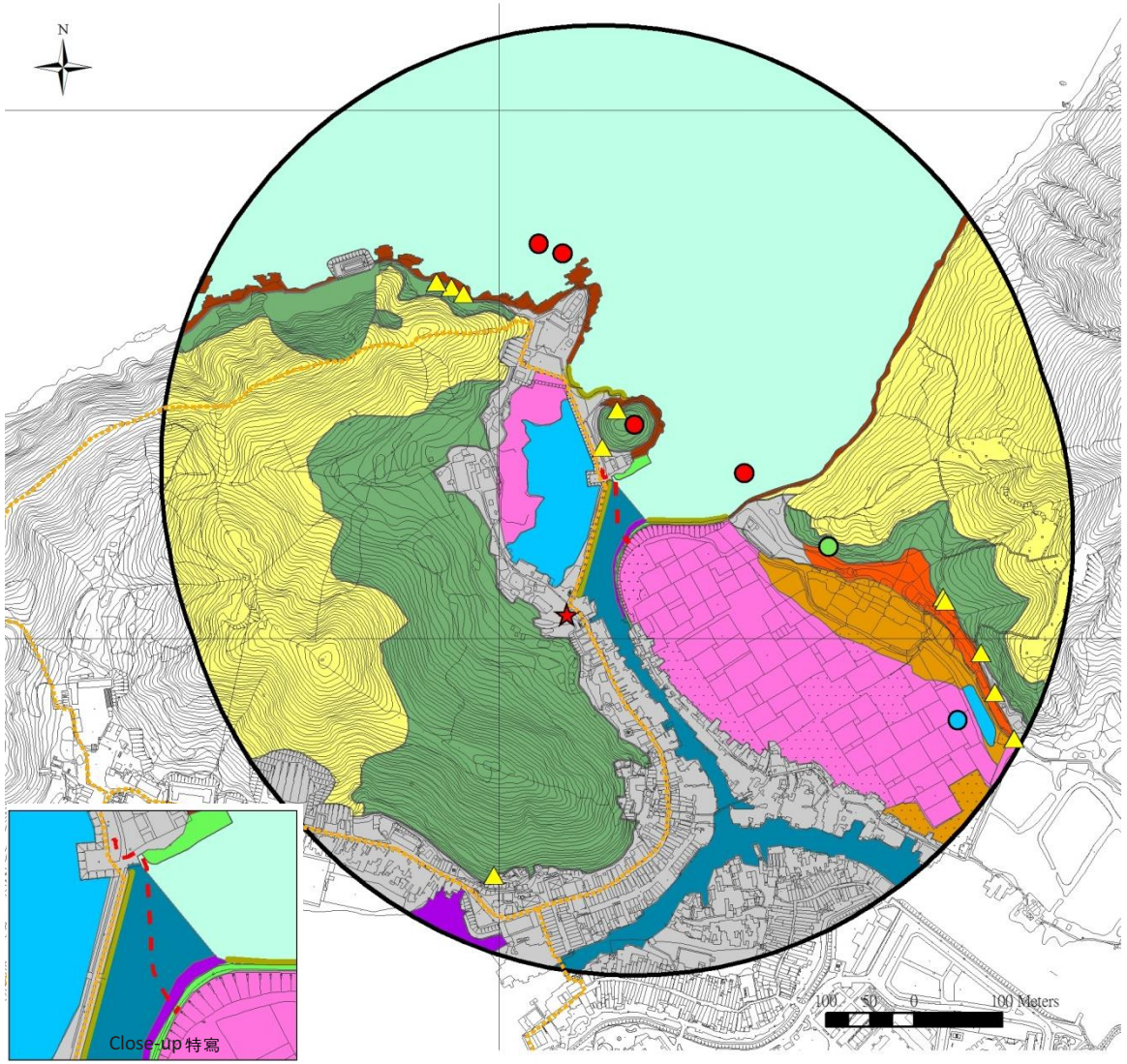
Scale A1 1:1500
A3 1:3000

CLP 中電

BLACK & VEATCH HONG KONG LIMITED
博威工程顧問有限公司

Plot Date = 2/16/2016

CAD Filename = Y:\Daily Work\20160215\FIGURE 5 .dgn



- Tai O Butterfly Hotspot 大澳蝴蝶熱點
- Tai O Egretry 大澳鷺鳥林
- Agricultural Land 農地
- Mangrove 紅樹林
- Marsh/Reedbed 沼澤/蘆葦叢
- Mudflat 灘塗
- Shrubland/Grassland 灌叢/草地
- Woodland 林地
- Urbanised/Disturbed 城市化/受干擾
- Watercourse 河道
- Pond 魚塘
- Rocky Shore 岩岸
- Seawall 海堤
- Coastal Waters 沿海水域
- Boulder Shore 巨石岸邊
- Malaisia scandens 牛筋藤
- Black Kite 黑鳶
- Common Emerald Dove 綠翅金鳩
- Greater Coucal 褐翅鴉鵑
- Proposed cable duct crossing 擬建電纜管道
- 500m Study Area 500米評估範圍

Rev	Date	Description of revision	Des'd	Ckd	Rd'Vd	Appd
REVISIONS						

	initials	date		initials	date
Designed			Drawn		
Checked			Reviewed Verified		
Approved					

Project title
大澳寶珠灣電纜管道工程
CABLE DUCT CROSSING
AT PO CHUE TAM, TAI O

Contract title
OUTLINE AGREEMENT NO. 4600003274
TRANMISSION CABLE ROUTE SELECTION
CONSULTANCY SERVICES

Drawing title
生境圖和鷺鳥林、蝴蝶熱點及
具保育價值物種的位置
Habitat Map and Locations of Tai O
Egretry, Butterfly Hotspot and Species of
Conservation Concern

Drawing Reference No. Figure 6 圖六 | Revision

Scale

CLP 中電

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博威工程顧問有限公司

Plot Date = 3/10/2014

CAD Filename = T:\Manuel\2706-6094-AI.dgn

圖例：
LEGEND:

擬建電纜管道
PROPOSED CABLE DUCT CROSSING (TENTATIVE)

現有電纜管道
EXISTING CLP CABLE DUCT ROUTE

803 600 E
803 800 E
804 000 E
804 200 E
813 400 N
813 200 N
813 000 N

楊侯古廟（一級歷史建築物）
YEUNG HAU TEMPLE (GRADE 1 HISTORIC BUILDING)

大澳具考古研究價值的地點
TAI O SITE OF ARCHAEOLOGICAL INTEREST

大澳虎山具考古研究價值的地點
TAI O FU SHAN SITE OF ARCHAEOLOGICAL INTEREST

永慶火油倉（三級歷史建築物）
WING HING PETROL STATION (GRADE 3 HISTORIC BUILDING)

石狗神壇（三級歷史建築物）
SHRINE WITH STONE DOG (GRADE 3 HISTORIC BUILDING)

大澳棚屋
STILT HOUSES AT TAI O

荒廢鹽田
DISUSED SALT FIELDS (INDICATIVE LOCATION)

寶珠潭 PO CHUE TAM

永慶街 WING HING BACK STREET

新基街 SUN KI STREET

大澳二號污水泵房 Tai O No.2 Sewage Pumping Station

排水口 Outfall

休憩處 Sitting-out Area

墓地 Graves

棚屋 Stilt House

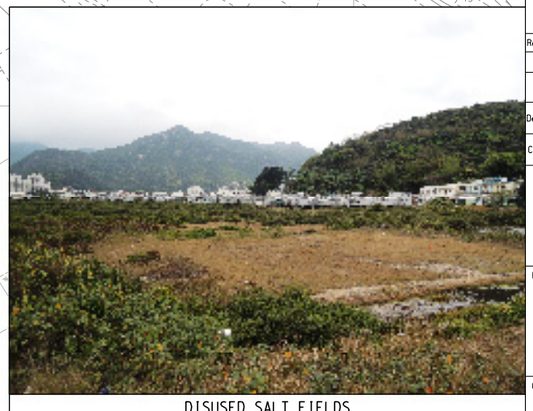
大澳新墟 TAI O SAN KI

大澳 TAI O

YUENG HAU TEMPLE
楊侯古廟

WING HING PETROL STATION
永慶火油倉

SHRINE WITH STONE DOG
石狗神壇



DISUSED SALT FIELDS
荒廢鹽田

STILT HOUSES AT TAI O
大澳棚屋

Rev	Date	Description of revision	Des'd	Chkd	Rd/Vd	Appd
REVISIONS						

	initials	date		initials	date
Designed	MC	01/15	Drawn	SZ	01/15
Checked	VT	01/15	Reviewed Verified	AK	01/15
Approved					

Project title

大澳寶珠潭電纜管道工程
CABLE DUCT CROSSING AT PO CHUE TAM, TAI O

Contract title

OUTLINE AGREEMENT NO. 4600003274
TRANMISSION CABLE ROUTE SELECTION CONSULTANCY SERVICES

Drawing title

工程項目附近的已知文化遺產
LOCATION OF KNOWN HERITAGE RESOURCES NEAR THE PROJECT

Drawing Reference No.	Revision
圖七 FIGURE 7	-

Scale: A1 1:1000, A3 1:2000

CLP 中電

BLACK & VEATCH HONG KONG LIMITED
博威工程顧問有限公司

Plot Date = 1/5/2016

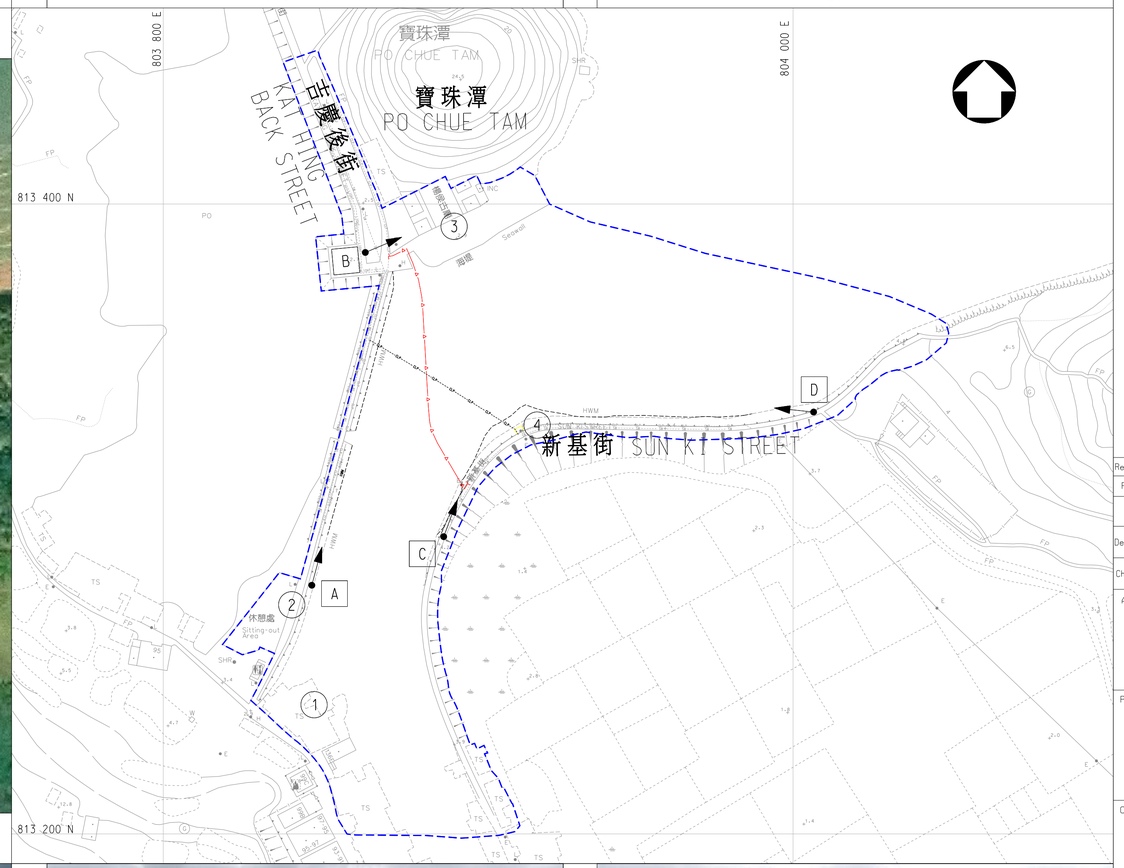
CAD Filename = Y:\Daily Work\20160104b\FIGURE 7 .dgn

① VSR1 - RESIDENTS OF VILLAGE HOUSES
村屋居民

② VSR2 - USERS OF SITING-OUT AREA/PEDESTRIANS ALONG KAT HING BACK STREET
休憩場地使用者/吉慶後街行人

③ VSR3 - VISITORS TO YEUNG HAU TEMPLE
楊侯古廟遊客

④ VSR4 - PEDESTRIANS ALONG SUN KI STREET
新基街行人



A TYPICAL VIEW OF THE SITE FROM VSR1, VSR2
從VSR1,VSR2望向工程項目的景色

B TYPICAL VIEW OF THE SITE FROM VSR3
從VSR3望向工程項目的景色

C TYPICAL VIEW OF THE SITE FROM VSR4
從VSR4望向工程項目的景色

D TYPICAL VIEW OF THE SITE FROM VSR4
從VSR4望向工程項目的景色

圖例:
LEGEND:

擬建電纜管道
PROPOSED CABLE DUCT CROSSING (TENTATIVE)

現有電纜管道
EXISTING CLP CABLE DUCT ROUTE

視覺影響區
VISUAL ENVELOPE

① 視覺敏感受體
VISUAL SENSITIVE RECEIVERS (VSR)

A 視覺敏感受體望向工程項目的景色
VIEW OF THE SITE FROM THE VSR

Rev	Date	Description of revision	Des'd	Chkd	Rd/Vd	Appd
REVISIONS						

	initials	date		initials	date
Designed	MC	01/15	Drawn	SZ	01/15
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Approved					

Project title
大澳寶珠潭電纜管道工程
CABLE DUCT CROSSING AT PO CHUE TAM, TAI O

Contract title
OUTLINE AGREEMENT NO. 4600003274
TRANMISSION CABLE ROUTE SELECTION CONSULTANCY SERVICES

Drawing title
視覺影響區及視覺敏感受體
VISUAL ENVELOPE AND VISUAL SENSITIVE RECEIVERS

Drawing Reference No. 圖八 FIGURE 8
Revision -

Scale A1 1:1000
A3 1:2000

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BLACK & VEATCH HONG KONG LIMITED
博威工程顧問有限公司

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APPENDIX A
Desktop Study and Ecological Survey of the Surrounding Areas near the Project

APPENDIX A
DESKTOP STUDY AND ECOLOGICAL SURVEY OF THE SURROUNDING AREAS NEAR THE PROJECT

1.1 Desktop Study

1.1.1 A Coastal Protection Area (CPA) is located about 110m from the Project Site (***Figure 5***). This zone, located at the northern coastline of Tai O, is intended to conserve, protect and retain the natural coastlines and the sensitive coastal natural environment, including attractive geological features, physical landform or area of high landscape, scenic or ecological value, with a minimum of built development.

1.1.2 Mangroves west of Kat Hing Back Street and the small knoll north of Yeung Hau Temple, and mangroves east of Sun Ki Street (disused salt fields) are zoned as Conservation Area (CA) (***Figure 5***), and are adjacent to the Project Site. This zone is intended to protect and retain the existing natural landscape, ecological or topographical features of the area for conservation, educational and research purposes and to separate sensitive natural environment such as Country Park from the adverse effects of development.

1.1.3 The Tai O Egretry is located on a wooded hillside near Po Chue Tam, about 120m southwest of the Project Site (***Figure 6***). Little Egret *Egretta garzetta* and Black-crowned Night Heron *Nycticorax nycticorax* were reported nesting in this egretry, and the nesting population was considered low. The Tai O Egretry was abandoned in 2008 (Anon. 2008), and no nesting was recorded since then (Anon. 2009, 2010, 2011, 2012, 2013, 2014, 2015).

1.1.4 The Tai O Sheltered Boat Anchorage EIA recorded mangrove and Tai O Creek as part of the habitats within their Study Area (Scott Wilson 2000). No upland habitats were included in the EIA. The intertidal estuary of Tai O Creek lies to the east and north of the salt fields. Mangroves occur in various locations at Tai O, including the marshes to the north of Tai O Creek, abandoned fish ponds, the disused salt fields and the tidal riparian zone of Tai O Creek.

1.1.5 Part of the "Tai O Butterfly Hotspot" falls within the Assessment Area (Chan *et al*. 2012) (***Figure 6***). Fifty-one species of butterfly were recorded in this hotspot. Butterfly species of conservation importance included Common Archduke *Lexias pardalis*, Oriental Striped Blue *Leptotes plinius* and Common Albatross *Appias albina*. The larval foodplants of Common Archduke (*Cratoxylum cochinchinense*) and Oriental Striped Blue (*Plumbage zeylanica*) were reported in the hillsides of Tai O (Chan *et al*. 2012).

1.1.6 Tai O is the only two sites outside Inner Deep Bay where the Mangrove Water Snake *Enhydris bennettii*, has been recorded in Hong Kong (Chan *et al*. 2006). The other site is Tung Chung. This species has a narrow global distribution, being found only along the coast of southern China between Hainan and Fujian Province. Though Mangrove Water Snake is considered of "local concern" by Fellowes *et al*. (2002), but it is only listed as "least concern" by China Red List and "data deficient" in IUCN. It is not a Protected Animal in Mainland nor in CITES appendices.

1.1.7 A few beaches such as Tung Chung and Shui Hau in Lantau are still inhabited by a small number of horseshoe crab juveniles. Some locations of Lantau, including Tai O, are considered as high possibility for spawning grounds of horseshoe crabs due to the frequent records of adults caught in nearby offshore waters (Huang *et al*. 1998).

1.2 Ecological Survey

1.2.1 Ecological surveys were conducted within the 500m of the Project between March and May 2014, covering dry and wet seasons. Habitats recorded included agricultural land, mangrove, marsh/reedbed, mudflat, shrubland/grassland, woodland, urbanised/disturbed, watercourse, pond, rocky shore, seawall and coastal waters. A habitat map of the survey area is presented in ***Figure 6***. The survey recorded 167 plants species, 48 bird species, 2 mammal species, 2 reptile species, 1 amphibian species, 41 butterfly species, 10 dragonfly species, 4 fish species and 47 species of intertidal fauna within the survey area (***Appendices B1 – B7***). Most of the recorded species are widespread and locally common in Hong Kong. Species of conservation concern recorded include *Malaisia scandens*, Black-crowned Night Heron, Chinese Pond Heron, Eastern Cattle Egret, Grey Heron, Great Egret, Little Egret, Black Kite, Wood Sandpiper, Common Emerald Dove and Greater Coucal. All were recorded outside the Project Site and present in low abundance. Diversity of intertidal fauna within the Project Site was low (***Appendix B8***). No intertidal fauna of conservation importance was recorded within the survey area, including the Project Site. Photographs of the Project Site and habitats found in the survey area are shown in ***Appendix B9***.

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APPENDIX B
Results of Ecological Survey

APPENDIX B
RESULTS OF ECOLOGICAL SURVEY

Appendix B1 Plant Species recorded within the Assessment Area

Scientific Name	中文名稱	Growth Form	Native	Conservation Status
Acacia confusa	臺灣相思	Tree	Exotic	Common, widely planted
Acanthus ilicifolius	老鼠簕	Shrub	Native	Common
Acronychia pedunculata	山油柑	Tree	Native	Common
Acrostichum aureum	鹵蕨	Herb	Native	Common
Adiantum malesianum	南洋鐵線蕨	Herb	Native	Common
Aegiceras corniculatum	桐花樹	Shrub	Native	Common
Ageratum conyzoides	藿香薊	Herb	Exotic	Common
Aglaia odorata	小葉米仔蘭	Shrub	Exotic	Common, landscape species
Albizia chinensis	楹樹	Tree	Native	Common, landscape species
Aleurites moluccana	石栗	Tree	Exotic	Common, landscape species
Allamanda schottii	黃蟬	Shrub	Exotic	Common, landscape species
Aloe vera	蘆薈	Herb	Exotic	Common, landscape species
Alpinia zerumbet	豔山薑	Herb	Native	Common
Alyxia sinensis	鏈珠藤	Climber	Native	Common
Ampelopsis heterophylla	牯嶺蛇葡萄	Climber	Native	Common
Ananas comosus	鳳梨	Herb	Exotic	Common
Annona squamosa	番荔枝	Tree	Exotic	Common, fruit tree
Apluda mutica	水蔗草	Herb	Native	Common
Aporusa dioica	銀柴	Tree	Native	Common
Artocarpus macrocarpon	菠蘿蜜	Tree	Exotic	Common, fruit tree
Asparagus cochinchinensis	天門冬	Herb	Native	Common
Atalantia buxifolia	酒餅簕	Shrub	Native	Common
Atriplex maximowicziana	海濱藜	Herb	Native	Common
Avicennia marina	海欖雌	Shrub	Native	Common
Bauhinia blakeana	洋紫荊	Tree	Native	Common
Bidens alba	白花鬼針草	Herb	Exotic	Common
Blechnum orientale	烏毛蕨	Herb	Native	Common
Bombax ceiba	木棉	Tree	Exotic	Common, landscape species
Brassica chinensis	青菜	Herb	Exotic	Common
Breynia fruticosa	黑面神	Shrub	Native	Common
Bridelia tomentosa	土蜜樹	Shrub	Native	Common
Carica papaya	番木瓜	Tree	Exotic	Common, cultivated
Carmona microphylla	基及樹	Shrub	Exotic	Common, landscape species
Caryota ochlandra	魚尾葵	Tree	Exotic	Common, landscape species

Scientific Name	中文名稱	Growth Form	Native	Conservation Status
Casuarina equisetifolia	木麻黃	Tree	Exotic	Common
Catharanthus roseus	長春花	Shrub	Exotic	Common, landscape species
Celtis sinensis	朴樹	Tree	Native	Common, also planted
Cerbera manghas	海杧果	Tree	Native	Common
Chrysalidocarpus lutescens	散尾葵	Shrub	Exotic	Common, landscape species
Cinnamomum camphora	樟	Tree	Native	Common, also widely planted
Citrus maxima	柚	Tree	Exotic	Common, cultivated
Clausena lansium	黃皮	Tree	Exotic	Common, cultivated
Clerodendrum inerme	假茉莉	Shrub	Native	Common
Clerodendrum japonicum	赪桐	Shrub	Exotic	Common
Cratoxylum cochinchinense	黃牛木	Tree	Native	Common
Cyclosorus interruptus	間斷毛蕨	Herb	Native	Common
Dalbergia millettii	香港黃檀	Climber	Native	Common
Daphniphyllum calycinum	牛耳楓	Tree	Native	Common
Delonix regia	鳳凰木	Tree	Exotic	Common
Dendrotrophe frutescens	寄生藤	Climber	Native	Common
Derris trifoliata	魚藤	Climber	Native	Common
Desmodium heterocarpon	假地豆	Shrub	Native	Common
Desmos chinensis	假鷹爪	Shrub	Native	Common
Dianella ensifolia	山菅蘭	Herb	Native	Common
Dicranopteris pedata	芒萁	Herb	Native	Common
Dimocarpus longan	龍眼	Tree	Exotic	Common, cultivated
Duranta erecta	假連翹	Climber	Exotic	Common, landscape species
Elephantopus scaber	地膽草	Herb	Native	Common
Elephantopus tomentosus	白花地膽草	Herb	Native	Common
Embelia laeta	酸藤子	Climber	Native	Common
Epipremnum aureum	綠蘿	Climber	Exotic	Common
Eurya nitida	細齒葉柃	Shrub	Native	Common
Ficus hirta	粗葉榕	Shrub	Native	Common
Ficus microcarpa	榕樹	Tree	Native	Common
Ficus superba	筆管榕	Tree	Native	Common, cultivated
Ficus variegata	青果榕	Tree	Native	Common
Ficus virens	黃葛樹	Tree	Native	Common
Gymnanthera oblonga	海島藤	Climber	Native	Common
Hibiscus rosa-sinensis	朱槿	Shrub	Exotic	Common, landscape species
Hibiscus tiliaceus	黃槿	Tree	Native	Common
Hylocereus undatus	量天尺	Herb	Exotic	Common
Ilex asprella	梅葉冬青	Shrub	Native	Common
Ilex pubescens	毛冬青	Shrub	Native	Common

Scientific Name	中文名稱	Growth Form	Native	Conservation Status
Imperata cylindrica	絲茅	Herb	Native	Common
Inula cappa	羊耳菊	Herb	Native	Common
Ipomoea batatas	番薯	Herb	Exotic	Common
Ipomoea cairica	五爪金龍	Climber	Exotic	Common
Ipomoea pes-caprae	厚藤	Herb	Native	Common
Jatropha integerrima	全緣葉珊瑚	Shrub	Exotic	Common
Juniperus chinensis	圓柏, 檜	Tree	Exotic	Restricted
Kandelia obovata	秋茄樹	Shrub	Native	Common
Lagerstroemia speciosa	大花紫薇	Tree	Native	Common, landscape species
Lantana camara	馬纓丹	Shrub	Exotic	Common
Leucaena leucocephala	銀合歡	Tree	Exotic	Common
Ligustrum sinense	山指甲	Tree	Native	Common
Liriope spicata	山麥冬	Herb	Native	Common
Litchi chinensis	荔枝	Tree	Exotic	Common
Litsea glutinosa	潺槁樹	Tree	Native	Common
Litsea monopetala	假柿木薑子	Tree	Native	Restricted, sometimes planted
Litsea rotundifolia	圓葉豺皮樟	Shrub	Native	Common
Lophostemon confertus	紅膠木	Tree	Exotic	Common, widely planted
Lumnitzera racemosa	欖李	Shrub	Native	Restricted
Lygodium japonicum	海金沙	Herb	Native	Common
Lygodium scandens	小葉海金沙	Herb	Native	Common
Macaranga tanarius	血桐	Tree	Native	Common
Malaisia scandens	**牛筋藤**	**Climber**	**Native**	**Rare**
Mallotus paniculatus	白楸	Tree	Native	Common
Mangifera indica	芒果	Tree	Exotic	Common, cultivated
Manilkara zapota	人心果	Tree	Exotic	Common, cultivated
Melaleuca quinquenervia	白千層	Tree	Exotic	Common, widely planted
Melastoma candidum	野牡丹	Shrub	Native	Common
Melastoma sanguineum	毛蠳	Shrub	Native	Common
Melia azedarach	苦楝	Tree	Exotic	Common
Michelia x alba	白蘭	Tree	Exotic	Common, landscape species
Microcos paniculata	破布葉	Shrub	Native	Common
Microstegium ciliatum	剛莠竹	Herb	Native	Common
Mikania micrantha	薇甘菊	Herb	Exotic	Common
Millettia nitida	亮葉崖豆藤	Climber	Native	Common
Musa x paradisiaca	大蕉	Herb	Exotic	Common, cultivated
Mussaenda pubescens	玉葉金花	Climber	Native	Common
Neyraudia reynaudiana	類蘆	Herb	Native	Common
Opuntia stricta	仙人掌	Herb	Exotic	Common

Scientific Name	中文名稱	Growth Form	Native	Conservation Status
Oxalis corniculata	酢漿草	Herb	Native	Common
Paederia scandens	雞矢藤	Climber	Native	Common
Pandanus tectorius	露兜樹	Shrub	Native	Common
Panicum maximum	大黍	Herb	Exotic	Common
Panicum repens	鋪地黍	Herb	Native	Common
Parthenocissus dalzielii	異葉爬山虎	Climber	Exotic	Common
Passiflora foetida	龍珠果	Climber	Exotic	Common
Phoenix hanceana	刺葵	Tree	Native	Common
Phragmites australis	蘆葦	Herb	Native	Common
Phyllanthus cochinchinensis	越南葉下珠	Shrub	Native	Common
Pinus elliottii	愛氏松	Tree	Exotic	Common, widely planted
Pinus massoniana	馬尾松	Tree	Native	Common
Plantago major	車前草	Herb	Native	Common
Pluchea indica	闊苞菊	Shrub	Native	Common
Plumbago zeylanica	白花丹	Shrub	Native	Common
Psychotria asiatica	九節	Tree	Native	Common
Pteridium aquilinum	蕨	Herb	Native	Common
Pteris semipinnata	半邊旗	Herb	Native	Common
Pyrus calleryana	豆梨	Tree	Native	Common
Rhaphiolepis indica	石斑木	Shrub	Native	Common
Rhapis excelsa	棕竹	Shrub	Native	Common
Rhododendron pulchrum	錦繡杜鵑	Shrub	Exotic	Common, landscape species
Rhodomyrtus tomentosa	桃金娘	Shrub	Native	Common
Rhus chinensis	鹽膚木	Tree	Exotic	Common
Rhus succedanea	木蠟樹	Shrub	Native	Common
Rhynchelytrum repens	紅毛草	Herb	Exotic	Common
Rubus parvifolius	茅莓	Shrub	Native	Common
Saccharum officinarum	甘蔗	Herb	Exotic	Common, cultivated
Sageretia thea	雀梅藤	Shrub	Native	Common
Sapium sebiferum	烏桕	Tree	Native	Common
Schefflera heptaphylla	鵝掌柴	Tree	Native	Common
Serissa serissoides	白馬骨	Shrub	Exotic	Common, landscape species
Sesuvium portulacastrum	海馬齒	Herb	Native	Common
Sida rhombifolia	白背黃花稔	Shrub	Native	Common
Smilax china	菝葜	Climber	Native	Common
Smilax glabra	土茯苓	Climber	Native	Common
Solena amplexicaulis	茅瓜	Climber	Native	Common
Stephania longa	粪箕篤	Climber	Native	Common
Sterculia lanceolata	假蘋婆	Tree	Native	Common

Scientific Name	中文名稱	Growth Form	Native	Conservation Status
Suaeda australis	南方鹼蓬	Shrub	Native	Common
Tadehagi triquetrum	葫蘆茶	Shrub	Native	Common
Thuja orientalis	側柏	Tree	Exotic	Common, landscape species
Trema orientalis	異色山黃麻	Tree	Native	Common
Tridax procumbens	羽芒菊	Herb	Exotic	Common
Tylophora ovata	娃兒藤	Climber	Native	Common
Uvaria macrophylla	紫玉盤	Climber	Native	Common
Vitex rotundifolia	白背蔓荊	Shrub	Native	Common
Wedelia biflora	孿花蔞蓂菊	Herb	Native	Common
Wedelia trilobata	三裂葉蔞蓂菊	Herb	Exotic	Common
Wikstroemia indica	了哥王	Shrub	Native	Common
Zanthoxylum avicennae	簕欓花椒	Tree	Native	Common
Zanthoxylum nitidum	兩面針	Climber	Native	Common
Zingiber officinale	薑	Herb	Exotic	Common
Zoysia sinica	中華結縷草	Herb	Native	Common

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Appendix B2 Bird Species recorded in the Assessment Area

Common Name	*Scientific Name*	中文名稱	Abundance	Commonness	Distribution	Conservation Status
Black-crowned Night Heron	*Nycticorax nycticorax*	夜鷺	2	Common resident and winter visitor	Widely distributed in Hong Kong	Fellowes *et al*. (2002): (LC)
Chinese Pond Heron	*Ardeola bacchus*	池鷺	1	Common resident	Widely distributed in Hong Kong	Fellowes *et al*. (2002): PRC, (RC)
Eastern Cattle Egret	*Bubulcus coromandus*	牛背鷺	4	Resident and common passage migrant.	Widely distributed in Hong Kong	Fellowes *et al*. (2002): (LC)
Grey Heron	*Ardea cinerea*	蒼鷺	11	Common winter visitor	Found in Deep Bay area, Starling Inlet, Kowloon Park, Cape D'Aguilar	Fellowes *et al*. (2002): PRC
Great Egret	*Ardea alba*	大白鷺	1	Common resident and winter visitor	Widely distributed in Hong Kong	Fellowes *et al*. (2002): PRC, (RC)
Little Egret	*Egretta garzetta*	小白鷺	9	Common resident	Widely distributed in coastal area throughout Hong Kong	Fellowes *et al*. (2002): PRC, (RC)
Black Kite	*Milvus migrans*	黑鳶	2	Common resident and winter visitor.	Widely distributed in Hong Kong	Fellowes *et al*. (2002): (RC); Cap. 586; Class 2 Protected animal of China; Listed in Appendix 2 of CITES
White-breasted Waterhen	*Amaurornis phoenicurus*	白胸苦惡鳥	1	Common resident	Widely distributed in wetland throughout Hong Kong	Nil
Wood Sandpiper	*Tringa glareola*	林鷸	1	Common passage migrant and winter visitor	Widely distributed in wetland area throughout Hong Kong	Fellowes *et al*. (2002): LC
Common Sandpiper	*Actitis hypoleucos*	磯鷸	2	Common passage migrant and winter visitor	Widely distributed in wetland area throughout Hong Kong	Nil
Domestic Pigeon	*Columba livia*	原鴿	6	Common resident	Widely distributed in urban area throughout Hong Kong	Nil
Spotted Dove	*Spilopelia chinensis*	珠頸斑鳩	5	Abundant resident	Widely distributed in Hong Kong	Nil
Common Emerald Dove	*Chalcophaps indica*	綠翅金鳩	1	Scarce but widespread resident. woodland throughout Hong Kong	Widely distributed in Hong Kong	China Red Data Status: Vulnerable

Common Name	*Scientific Name*	中文名稱	Abundance	Commonness	Distribution	Conservation Status
Greater Coucal	*Centropus sinensis*	褐翅鴉鵑	3	Common resident	Widely distributed in Hong Kong	Class 2 Protected animal of China; China Red Data Status: Vulnerable
Asian Koel	*Eudynamys scolopaceus*	噪鵑	3	Common resident	Widely distributed in Hong Kong	Nil
Plaintive Cuckoo	*Cacomantis merulinus*	八聲杜鵑	1	Uncommon summer visitor	Widely distributed in open area throughout Hong Kong	Nil
Large Hawk Cuckoo	*Hierococcyx sparverioides*	大鷹鵑	1	Common passage migrant and summer visitor	Widely distributed in woodland throughout in Hong Kong	Nil
Indian Cuckoo	*Cuculus micropterus*	四聲杜鵑	1	Uncommon summer visitor	Widely distributed in Hong Kong	Nil
House Swift	*Apus nipalensis*	小白腰雨燕	2	Abundant spring migrant and locally common resident	Widely distributed in Hong Kong	Nil
White-throated Kingfisher	*Halcyon smyrnensis*	白胸翡翠	1	Uncommon passage migrant	Widely distributed in Hong Kong	Nil
Common Kingfisher	*Alcedo atthis*	普通翠鳥	1	Common passage migrant and winter visitor	Widely distributed in wetland habitat throughout Hong Kong	Nil
Long-tailed Shrike	*Lanius schach*	棕背伯勞	1	Common resident	Widely distributed in open areas throughout Hong Kong	Nil
Black Drongo	*Dicrurus macrocercus*	黑卷尾	1	Common summer visitor	Widely distributed in open area throughout Hong Kong	Nil
Red-billed Blue Magpie	*Urocissa erythroryncha*	紅嘴藍鵲	1	Common resident	Widely distributed in woodland edges throught Hong Kong	Nil
Eurasian Magpie	*Pica pica*	喜鵲	2	Common resident	Widely distributed in Hong Kong	Nil
Large-billed Crow	*Corvus macrorhynchos*	大嘴烏鴉	5	Common resident	Widely distributed in Hong Kong	Nil
Cinereous Tit	*Parus major*	大山雀	7	Common resident	Widely distributed in Hong Kong	Nil
Red-whiskered Bulbul	*Pycnonotus jocosus*	紅耳鵯	7	Abundant resident	Widely distributed in Hong Kong	Nil
Chinese Bulbul	*Pycnonotus sinensis*	白頭鵯	17	Abundant resident	Widely distributed in Hong Kong	Nil
Sooty-headed Bulbul	*Pycnonotus aurigaster*	白喉紅臀鵯	2	Uncommon resident	Widely distributed in open areas throughout Hong Kong	Nil
Barn Swallow	*Hirundo rustica*	家燕	5	Abundant passage migrant	Widely distributed in	Nil

Common Name	*Scientific Name*	中文名稱	Abundance	Commonness	Distribution	Conservation Status
				and summer visitor	Hong Kong	
Dusky Warbler	*Phylloscopus fuscatus*	褐柳鶯	1	Common passage migrant and winter visitor	Widely distributed in shrubland and waterside vegetation throughout Hong Kong	Nil
Pallas's Leaf Warbler	*Phylloscopus proregulus*	黃腰柳鶯	1	Common winter visitor	Found in woodland throughout Hong Kong	Nil
Yellow-browed Warbler	*Phylloscopus inornatus*	黃眉柳鶯	1	Common winter visitor	Found in woodland throughout Hong Kong	Nil
Yellow-bellied Prinia	*Prinia flaviventris*	黃腹鷦鶯	2	Common resident	Widely distributed in Hong Kong	Nil
Common Tailorbird	*Orthotomus sutorius*	長尾縫葉鶯	4	Common resident	Widely distributed in Hong Kong	Nil
Masked Laughingthrush	*Garrulax perspicillatus*	黑臉噪鶥	5	Abundant resident	Widely distributed in shrubland throughout Hong Kong	Nil
Japanese White-eye	*Zosterops japonicus*	暗綠繡眼鳥	12	Abundant resident	Widely distributed in Hong Kong	Nil
Crested Myna	*Acridotheres cristatellus*	八哥	3	Common resident	Widely distributed in Hong Kong	Nil
Black-collared Starling	*Gracupica nigricollis*	黑領椋鳥	2	Common resident	Widely distributed in Hong Kong	Nil
Blue Whistling Thrush	*Myophonus caeruleus*	紫嘯鶇	1	Common resident	Widely distributed in shrubland and woodland throughout Hong Kong	Nil
Grey-backed Thrush	*Turdus hortulorum*	灰背鶇	1	Common winter visitor	Widely distributed in woodland throughout Hong Kong	Nil
Oriental Magpie Robin	*Copsychus saularis*	鵲鴝	4	Abundant resident	Widely distributed in Hong Kong	Nil
Fork-tailed Sunbird	*Aethopyga christinae*	叉尾太陽鳥	1	Common resident	Widely distributed in Hong Kong	Nil
Eurasian Tree Sparrow	*Passer montanus*	樹麻雀	36	Abundant resident	Widely distributed in Hong Kong	Nil
Scaly-breasted Munia	*Lonchura punctulata*	斑文鳥	1	Common resident	Widely distributed in Hong Kong	Nil
White Wagtail	*Motacilla alba*	白鶺鴒	1	Common passage migrant and winter visitor	Widely distributed in Hong Kong	Nil
Olive-backed Pipit	*Anthus hodgsoni*	樹鷚	1	Common passage migrant and winter visitor	Widely distributed in Hong Kong	Nil

Notes:
Level of concern: LC = local concern, PRC = potential regional concern, RC = regional concern
Letters in parentheses indicate that the assessment is on the basis of restrictedness in breeding and/or roosting sites rather than in general occurrence.

References of "Conservation Status":

AFCD (2015) AFCD Website (Last Review Date: September 2015).

Fellowes, J.R., Lau, M.W.N., Dudgeon, D., Reels, G.T., Ades, G.W.J., Carey, G.J., Chan, B.P.L., Kendrick, R.C., Lee, K.S., Leven, M.R., Wilson, K.D.P. and Yu, Y.T. (2002) Wild animals to watch: terrestrial and freshwater fauna of conservation concern in Hong Kong. *Memoirs of the Hong Kong Natural History Society* 25, 123-159.

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Protection of Endangered Species of Animals and Plants Ordinance (Cap. 586).

Appendix B3 Mammal, Reptile and Amphibian Species recorded in the Assessment Area

Common Name	*Scientific Name*	中文名稱	Abundance	Commonness	Distribution	Conservation Status
Mammal						
Domestic Dog	*Canis lupus*	野狗	++	Common	Widely distributed in urban and countryside areas throughout Hong Kong	Nil
Domestic Cat	*Felis catus*	野貓	++	Uncommon	Widely distributed in urban and countryside areas throughout Hong Kong	Nil
Reptile						
Changeable Lizard	*Calotes versicolor*	變色樹蜥	+	Common	Widely distributed throughout Hong Kong	Nil
Long-tailed Skink	*Mabuya longicaudata*	長尾南蜥	+	Common	Widely distributed throughout Hong Kong	Nil
Amphibian						
Asian Common Toad	*Bufo melanostictus*	黑眶蟾蜍	+	Very common	Widely distributed throughout Hong Kong	Nil

References of "Conservation Status":

AFCD (2015) AFCD Website (Last Review Date: September 2015).

Chan, K.F., Cheung, K.S., Ho, C.Y., Lam, F.N., Tang, W.S., Lau, W.N. and Bogadek, A. (2005) *A Field Guide to the Amphibians of Hong Kong*. Agriculture, Fisheries and Conservation Department, Friends of the Country Parks and Cosmos Books Ltd.

Fellowes, J.R., Lau, M.W.N., Dudgeon, D., Reels, G.T., Ades, G.W.J., Carey, G.J., Chan, B.P.L., Kendrick, R.C., Lee, K.S., Leven, M.R., Wilson, K.D.P. and Yu, Y.T. (2002) Wild animals to watch: terrestrial and freshwater fauna of conservation concern in Hong Kong. *Memoirs of the Hong Kong Natural History Society* 25, 123-159.

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Shek, C.T. (2006) *A Field Guide to the Terrestrial Mammals of Hong Kong*. Agriculture, Fisheries and Conservation Department, Friends of the Country Parks and Cosmos Books Ltd.

Wang, S. (1998) *China Red Data Book of Endangered Animals: Mammalia*. Science Press, Beijing.

Zhao, E.M. (1998) *China Red Data Book of Endangered Animals: Amphibia & Reptilia*. Science Press, Beijing.

Appendix B4 Butterfly Species recorded in the Assessment Area

Common Name	*Scientific Name*	中文名稱	Abundance	Commonness	Distribution in Hong Kong	Conservation Status
Forest Hopper	*Astictopterus jama*	腌翅弄蝶	1	Common	Widely distributed throughout the grassland in Hong Kong	Nil
Chestnut Angle	*Odontoptilum angulatum*	角翅弄蝶	1	Common	Widely distributed in shrubland and woodland throughout Hong Kong	Nil
Plum Judy	*Abisara echerius*	蛇目褐蜆蝶	1	Very common	Widely distributed throughout Hong Kong	Nil
Common Hedge Blue	*Acytolepis puspa*	鈕灰蝶	3	Common	Widely distributed throughout Hong Kong	Nil
Lime Blue	*Chilades lajus s*	紫灰蝶	1	Common	Widely distributed throughout Hong Kong	Nil
Pale Grass Blue	*Pseudozizeeria maha*	酢漿灰蝶	1	Very common	Widely distributed throughout Hong Kong	Nil
Punchinello	*Zemeros flegyas*	波蜆蝶	1	Common	Widely distributed throughout Hong Kong	Nil
Dark Grass Blue	*Zizeeria karsandra*	吉灰蝶	1	Uncommon	Found in scattered localities, including High Junk Peak, Kat O, Po Toi Island, Shek Mun Kap, Lai Chi Wo, Yung Shue O	Nil
Red Lacewing	*Cethosia biblis*	紅鋸蛺蝶	1	Uncommon	Widely distributed throughout Hong Kong	Nil
Rustic	*Cupha erymanthis*	黃襟蛺蝶	2	Very common	Widely distributed throughout Hong Kong	Nil
Common Mapwing	*Cyrestis thyodamas*	網絲蛺蝶	1	Common	Widely distributed in woodland area throughout Hong Kong	Nil
Common Tiger	*Danaus genutia*	虎斑蝶	1	Common	Widely distributed throughout Hong Kong	Nil
Large Faun	*Faunis eumeus*	串珠環蝶	10	Common	Widely distributed in woodland throughout Hong Kong	Nil
Red Ring Skirt	*Hestina assimilis*	黑脈蛺蝶	2	Common	Widely distributed in woodland throughout Hong Kong	Nil
Great Egg-fly	*Hypolimnas bolina*	幻紫斑蛺蝶	1	Common	Widely distributed throughout Hong	Nil

Common Name	*Scientific Name*	中文名稱	Abundance	Commonness	Distribution in Hong Kong	Conservation Status
					Kong	
Peacock Pansy	*Junonia almana*	美眼蛺蝶	1	Common	Widely distributed in abandoned grassland and abandoned agricultural field throughout Hong Kong	Nil
Blue Admiral	*Kaniska canace*	琉璃蛺蝶	2	Common	Widely distributed throughout Hong Kong	Nil
Banded Tree Brown	*Lethe confusa*	白帶黛眼蝶	1	Common	Widely distributed in woodland throughout Hong Kong	Nil
Dark Evening Brown	*Melanitis phedima*	睇暮眼蝶	1	Uncommon	Widely distributed in woodland throughout Hong Kong	Nil
Dark Brand Bush Brown	*Mycalesis mineus*	小眉眼蝶	1	Very common	Widely distributed in woodland throughout Hong Kong	Nil
Common Sailer	*Neptis hylas*	中環蛺蝶	1	Very common	Widely distributed throughout Hong Kong	Nil
Glassy Tiger	*Parantica aglea*	絹斑蝶	1	Common	Widely distributed throughout Hong Kong	Nil
Shan Nawab	*Polyura nepenthes*	忘憂尾蛺蝶	1	Uncommon	Found in scattered localities, including Cloudy Hill, Shing Mun, Tai Po Kau, Victoria Peak, Lai Chi Wo, Pak Sha O	Nil
Black Prince	*Rohana parisatis*	羅蛺蝶	2	Common	Widely distributed throughout the woodland in Hong Kong	Nil
Common Five-ring	*Ypthima baldus*	矍眼蝶	1	Very common	Widely distributed in grassland throughout Hong Kong	Nil
Straight Five-ring	*Ypthima lisandra*	黎桑矍眼蝶	1	Common	Widely distributed throughout Hong Kong	Nil
Common Mime	*Chilasa clytia*	斑鳳蝶	1	Common	Widely distributed throughout Hong Kong	Nil
Tailed Jay	*Graphium agamemnon*	統帥青鳳蝶	1	Common	Widely distributed throughout Hong Kong	Nil
Common Bluebottle	*Graphium sarpedon*	青鳳蝶	3	Very common	Widely distributed throughout Hong Kong	Nil
Chinese Peacock	*Papilio bianor*	碧鳳蝶	1	Common	Widely distributed throughout Hong Kong	Nil

Common Name	*Scientific Name*	中文名稱	Abundance	Commonness	Distribution in Hong Kong	Conservation Status
Lime Butterfly	*Papilio demoleus*	達摩鳳蝶	1	Common	Widely distributed throughout Hong Kong	Nil
Red Helen	*Papilio helenus*	玉斑鳳蝶	6	Very common	Widely distributed throughout Hong Kong	Nil
Great Mormon	*Papilio memnon*	美鳳蝶	1	Very common	Widely distributed throughout Hong Kong	Nil
Paris Peacock	*Papilio paris*	巴黎翠鳳蝶	1	Very common	Widely distributed throughout Hong Kong	Nil
Common Mormon	*Papilio polytes*	玉帶鳳蝶	15	Very common	Widely distributed throughout Hong Kong	Nil
Spangle	*Papilio protenor*	藍鳳蝶	1	Very common	Widely distributed throughout Hong Kong	Nil
Five-bar Swordtail	*Pathysa antiphates*	綠鳳蝶	1	Common	Widely distributed throughout Hong Kong	Nil
Indian Cabbage White	*Pieris canidia*	東方菜粉蝶	5	Very common	Widely distributed throughout Hong Kong	Nil
Mottled Emigrant	*Catopsilia pyranthe*	梨花遷粉蝶	1	Very common	Widely distributed throughout Hong Kong	Nil
Common Grass Yellow	*Eurema hecabe*	寬邊黃粉蝶	1	Very common	Widely distributed throughout Hong Kong	Nil
Great Orange Tip	*Hebomoia glaucippe*	鶴頂粉蝶	1	Common	Widely distributed throughout Hong Kong	Nil

References of "Conservation Status":

AFCD (2015) AFCD Website (Last Review Date: September 2015).

Chan, R.H.S., Chau, W.K., Cheung, W.K., Chow, S.M., Ho, J.S.C., Kan J.S.C., Lau, S.W.H. and Ng, E.K.L. (2012) *Encyclopedia of Hong Kong Butterflies – Search for Butterflies*. Hong Kong Lepidopterist's Society, Hong Kong.

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IUCN (2015) The IUCN Red List of Threatened Species. Version 2015-3. http://www.iucnredlist.org

Protection of Endangered Species of Animals and Plants Ordinance (Cap. 586).

Appendix B5 Dragonfly Species recorded in the Assessment Area

Common Name	Scientific Name	中文名稱	Abundance	Commonness	Distribution in Hong Kong	Conservation Status
Orange-tailed Midget	*Agriocnemis femina oryzae*	杯斑小蟌	3	Abundant	Widely distributed in disused paddy fields, marshes, ditches and ponds	Nil
Wandering Midget	*Agriocnemis pygmaea*	黃尾小蟌	2	Common	Widely distributed in marshes and weedy margins of ponds throughout Hong Kong	Nil
Orange-tailed Sprite	*Ceriagrion auranticum ryukyuanum*	琉球橘黃蟌	2	Abundant	Widely distributed in ponds and marshes throughout Hong Kong	Nil
Common Bluetail	*Ischnura senegalensis*	褐斑異痣蟌	2	Abundant	Widely distributed in all wetland habitats except fast flowing rivers throughout Hong Kong	Nil
Blue Dasher	*Brachydiplax chalybea flavovittata*	藍額疏脈蜻	1	Common	Widely distributed in marshes and weedy ponds throughout Hong Kong	Nil
Asian Amberwing	*Brachythemis contaminata*	黃翅蜻	1	Abundant	Widely distributed in weedy ponds and sluggish streams	Nil
Red-faced Skimmer	*Orthetrum chrysis*	華麗灰蜻	1	Abundant	Widely distributed in pools and marshy areas adjacent to flowing streams throughout Hong Kong	Nil
Common Blue Skimmer	*Orthetrum glaucum*	黑尾灰蜻	1	Abundant	Widely distributed in streams, conduits, drainage channels, seepages and road gutters throughout Hong Kon	Nil
Marsh Skimmer	*Orthetrum luzonicum*	呂宋灰蜻	1	Abundant	Widely distributed in abandoned paddies, marshy swampy and boggy locations	Nil
Wandering Glider	*Pantala flavescens*	黃蜻	12	Abundant	Widely distributed in all wetland habitats throughout Hong Kong	Nil

References of "Conservation Status":

AFCD (2015) AFCD Website (Last Review Date: September 2015).

Fellowes, J.R., Lau, M.W.N., Dudgeon, D., Reels, G.T., Ades, G.W.J., Carey, G.J., Chan, B.P.L., Kendrick, R.C., Lee, K.S., Leven, M.R., Wilson, K.D.P. and Yu, Y.T. (2002) Wild animals to watch: terrestrial and freshwater fauna of conservation concern in Hong Kong. *Memoirs of the Hong Kong Natural History Society* 25, 123-159.

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Tam, T.W., Leung, K.K., Kwan, B.S.P., Wu, K.K.Y., Tang, S.S.H., So, I.W.Y., Cheng, J.C.Y., Yuen, E.F.M., Tsang, Y.M. and Hui, W.L. (2011) *Field Guide to the Dragonflies of Hong Kong*. Agriculture, Fisheries and Conservation Department, Hong Kong.

Appendix B6 Fish Species found in the Qualitative Survey within the Assessment Area

Common Name	Scientific Name	中文名稱	Relative Abundance	Commonness	Conservation Status
Spottail Needlefish	*Tylosurus strongylurus*	圓頜針魚	+	Common	Nil
Mullet	*Mugil* sp.	鱚魚	+++	Common	Nil
Jarbua Terapon	*Terapon jarbua*	細鱗鯛	+	Common	Nil
Mud-skipper	*Periophthalmus cantonensis*	彈塗魚	+++	Common	Nil

Notes:
Relative abundance: + Rare, ++ Moderate, +++ Abundant

References of "Conservation Status":

V.L.F. Lee, S.K.S. Lam, F,K.Y. Ng, T.K.T. Chan and M.L.C. Young. (2004) *Field Guide to the Freshwater Fish of Hong Kong*. Agriculture, Fisheries and Conservation Department, Hong Kong.

Yue, P.Q. and Chen, Y.Y. (1998) *China Red Data Book of Endangered Animals: Pisces*. Science Press, Beijing.

Appendix B7 Intertidal Fauna found in the Qualitative Survey within the Assessment Area

Class	Order	Family	Genus/Species	中文名稱	Relative Abundance	Conservation Status
Anthozoa	Actiniaria	Haliplanellidae	*Haliplanella lineata*	放射擬邊海葵	+	Nil
Bivalvia	Arcoida	Arcidae	*Barbatia virescens*	青蚶	++	Nil
Bivalvia	Veneroida	Veneridae	*Cyclina sinensis*	青蛤	+	Nil
Bivalvia	Veneroida	Veneridae	*Geloina erosa*	掉地蛤	+	Nil
Bivalvia	Mytiloida	Mytilidae	*Perna viridis*	青口	+	Nil
Bivalvia	Ostreoida	Ostreidae	*Saccostrea cucullata*	石蠔	+++	Nil
Bivalvia	Mytiloida	Mytilidae	*Septifer virgatus*	條紋隔貽貝	+	Nil
Crustacea	Decapoda	Alpheidae	*Alpheus* sp.	鼓蝦	+	Nil
Crustacea	Thoracica	Balanidae	*Balanus amphitrite*	紋藤壺	+	Nil
Crustacea	Thoracica	Scalpellidae	*Capitulum mitella*	龜足	+	Nil
Crustacea	Decapoda	Diogenidae	*Clibanarius* sp.	細螯寄居蟹	+	Nil
Crustacea	Decapoda	Xanthidae	*Leptodius exaratus*	火紅皺蟹	+	Nil
Crustacea	Isopoda	Ligiidae	*Ligia exotica*	海蟑螂	++	Nil
Crustacea	Decapoda	Ocypodidae	*Macrophthalmus* sp.	大眼蟹	+	Nil
Crustacea	Decapoda	Grapsidae	*Metopograpsus* sp.	大額蟹	+	Nil
Crustacea	Decapoda	Grapsidae	*Parasesarma pictum*	斑點相手蟹	+	Nil
Crustacea	Decapoda	Grapsidae	*Perisesarma bidens*	雙齒近相手蟹	+	Nil
Crustacea	Thoracica	Tetraclitidae	*Tetraclita squamosa*	鱗笠藤壺	+	Nil
Crustacea	Decapoda	Ocypodidae	*Tmethypocoelis ceratophora*	角眼切腹蟹	+	Nil
Crustacea	Decapoda	Ocypodidae	*Uca arcuata*	弧邊招潮蟹	+	Nil
Crustacea	Decapoda	Ocypodidae	*Uca lactea*	清白招潮蟹	+++	Nil
Gastropoda	Sorbeoconcha	Batillariidae	*Batillaria multiformis*	多形灘棲螺	+++	Nil
Gastropoda	Sorbeoconcha	Batillariidae	*Batillaria zonalis*	縱帶灘棲螺	+++	Nil
Gastropoda	Archaeogastropoda	Acmaeidae	*Cellana grata*	斗嫁(虫戚)	++	Nil
Gastropoda	Archaeogastropoda	Acmaeidae	*Cellana toreuma*	嫁(虫戚)	+	Nil
Gastropoda	Sorbeoconcha	Potamididae	*Cerithidea diadjariensis*	查加擬蟹守螺	+++	Nil
Gastropoda	Neritoida	Neritidae	*Clithon oualaniensis*	奧萊彩螺	++	Nil
Gastropoda	Neritoida	Neritidae	*Clithon faba*	豆彩螺	+	Nil
Gastropoda	Mesogastropoda	Littorinidae	*Echinolittorina radiata*	粒結節濱螺	+++	Nil
Gastropoda	Mesogastropoda	Littorinidae	*Echinolittorina trochoides*	塔結節濱螺	+++	Nil
Gastropoda	Mesogastropoda	Littorinidae	*Littoraria articulata*	粗糙濱螺	+	Nil

Class	Order	Family	Genus/Species	中文名稱	Relative Abundance	Conservation Status
Gastropoda	Mesogastropoda	Littorinidae	*Littoraria melanostoma*	黑口濱螺	+	Nil
Gastropoda	Vetigastropoda	Turbinidae	*Lunella coronata*	朝鮮花月冠小月螺	++	Nil
Gastropoda	Vetigastropoda	Trochoidae	*Monodonta labio*	單齒螺	++	Nil
Gastropoda	Sorbeoconcha	Nassariidae	*Nassarius festivus*	秀麗織紋螺	++	Nil
Gastropoda	Neritoida	Neritidae	*Nerita albicilla*	漁舟蜑螺	+	Nil
Gastropoda	Neritoida	Neritidae	*Nerita polita*	錦蜑螺	+	Nil
Gastropoda	Archaeogastropoda	Lottiidae	*Nipponacmea concinna*	高笠貝	++	Nil
Gastropoda	Patellogastropoda	Acmaeidae	*Patelloida pygmaea*	矮擬帽貝	++	Nil
Gastropoda	Sorbeoconcha	Planaxidae	*Planaxis sulcatus*	平軸螺	++	Nil
Gastropoda	Littorinimorpha	Vermetidae	*Serpulorbis imbricatus*	覆瓦小蛇螺	+	Nil
Gastropoda	Basommatophora	Siphonariidae	*Siphonaria japonica*	日本菊花螺	+	Nil
Gastropoda	Basommatophora	Siphonariidae	*Siphonaria laciniosa*	松菊花螺	+	Nil
Gastropoda	Stenoglossa	Muricidae	*Thais clavigera*	疣荔枝螺	++	Nil
Osteichthyes	Perciformes	Periophthalmidae	*Periophthalmus cantonensis*	彈塗魚	+++	Nil
Polychaeta	Sabellida	Serpulidae	*Hydroides* sp.	盤管蟲	+	Nil
Polychaeta			Polychaete	多毛綱蟲	+	Nil

Notes:
Relative abundance: + = Rare, ++ = Moderate, +++ = Abundant

References of "Conservation Status":

Fong, T.C.W., V.C.S. Lai, and H.T.H. Lui (2005) *Estuarine Organisms – Mangrove, Mudflat and Seagrass Bed*. Hong Kong Discovery

Lai, V.C.S., T.C.W. Fong, and H.T.H. Lui (2006) *Hard Shore Organisms – Rocky Shore and Boulder Shore.* Hong Kong Discovery

Appendix B8 Quantitative Survey of Intertidal Fauna within Project Site

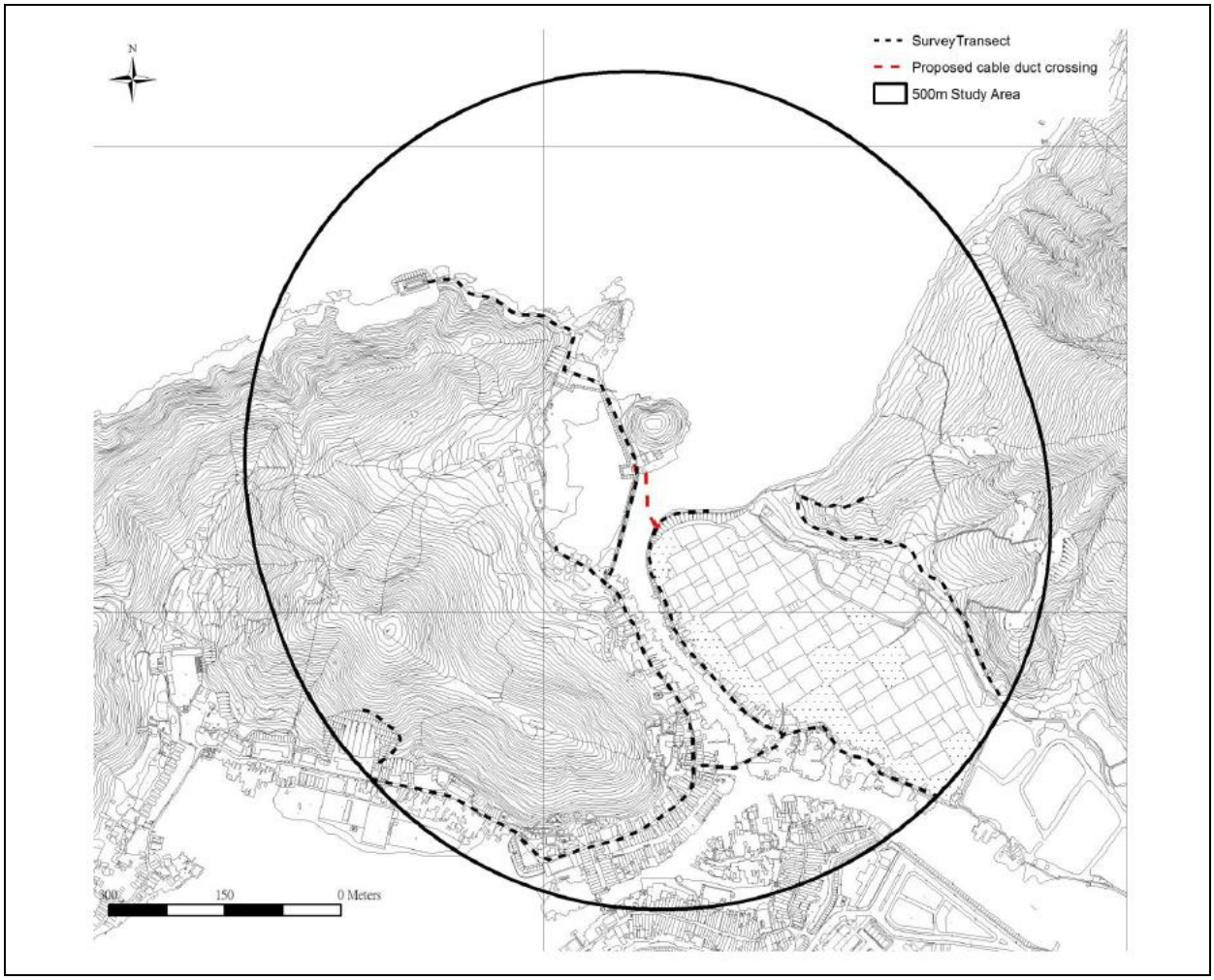
Season	Tidal level	Species no.	Abundance	Evenness	Shannon Diversity
Dry	High	9	252	0.4	0.8
	Mid	8	226	0.5	1.1
	Low	8	131	0.5	1.1
Wet	High	7	399	0.2	0.4
	Mid	6	219	0.8	1.4
	Low	5	28	0.6	1.0

Appendix B9 Photographs of Project Site and Habitats found in the Assessment Area

<table>
<tr><td>  </td><td>  </td></tr>
<tr><td>Project Site</td><td>Agricultural Land</td></tr>
<tr><td>  </td><td>  </td></tr>
<tr><td>Mangrove</td><td>Marsh/Reedbed</td></tr>
<tr><td>  </td><td>  </td></tr>
<tr><td>Shrubland/Grassland</td><td>Woodland</td></tr>
</table>

	
Urbanised/Disturbed	**Watercourse**
	
Pond	**Rocky Shore (Boulder)**
	
Seawall	**Coastal Waters**

Appendix B10 Location of Survey Transect



APPENDIX C
Construction Noise Calculation

APPENDIX C
CONSTRUCTION NOISE CALCULATION

1.1 Introduction

1.1.1 This is a simple calculation to demonstrate the construction noise of the proposed cable duct can fulfil the construction noise criteria without the need for mitigation measures.

1.2 Noise Sensitive Receiver

1.2.1 The nearest noise sensitive receiver (NSR) for the purpose of the noise calculation is Yeung Hau Temple. The assessment point is located at the main entrance (about 16m from the works) where worshipping is normally conducted (*see* ***Figure A*** *and* ***Photo A***). Residential NSRs are generally more than 85m from the works. The location of the NSR is shown in ***Figure 5***.

1.3 Daytime Construction Noise Criteria

1.3.1 All construction works will be conducted during normal daytime period only. The daytime construction noise criteria of 75 dB(A) with reference to the EIAO-TM has been applied.

1.4 Sources of Noise Emission

1.4.1 As confirmed with the Engineer and CLP, laying of the cable duct will generally be conducted manually. Powered Mechanical Equipment (PME) will be used only to break up the concrete surface for the landward portion of the cable duct. The works will be conducted intermittently and therefore a 50% on-time usage is assumed. The type and number of PME and its on-time usage have been reviewed by the Engineer and CLP and are considered to be practicable in carrying out the works. The PME to be employed are listed below.

Powered Mechanical Equipment	Number	Sound Power Level	On-time Usage	Corrected Sound Power Level	Total Sound Power Level
Hand-held electric breaker	1	105 dB(A)$^{+}$	50%	102 dB(A)	103 dB(A)
Portable generator	1	100 dB(A)$^{++}$	50%	97 dB(A)	

Notes:
$^{+}$ Hand-held electric breaker with Noise Emission Label showing a sound power level ≤ 105 dB(A) with reference to existing Construction Noise Permit (source: Construction Noise Permit in force in EPD website).
$^{++}$ Sound power level of portable generator with reference to "Sound Power Levels of Other Commonly used PME" (source: Guidance Notes for Licence Application in EPD website).

1.5 Corrections

Corrections for Distance Attenuation

1.5.1 The NSR is about 16m away from the works. According to Table 5 of Technical Memorandum on Noise from Construction Work other than Percussive Piling, the correction for distance attenuation at 16m is -32 dB(A).

Corrections for the Effect of Barriers

1.5.2 No barrier effect has been considered.

Corrections for Acoustic Reflections

1.5.3 A +3 dB(A) correction has been included in the calculation.

1.6 Calculated Construction Noise Level

1.6.1 The calculated construction noise level is tabulated below.

Total sound power level of powered mechanical equipment	103 dB(A)
Correction for distance attenuation	-32 dB(A)
Correction for effects of barrier	N/A
Correction for acoustic reflections	+3 dB(A)
Calculated Construction Noise Level	74 dB(A)

1.6.2 The calculated construction noise level at Yeung Hau Temple is about **74 dB(A)** which is within the daytime construction noise criteria of 75 dB(A). Residential NSRs which are more than 85m away from the works will have much lower construction noise level.

1.7 Conclusion

1.7.1 The construction noise level of the Project is expected to be within the daytime construction noise criteria. As good site practice, standard noise pollution control measures will be implemented.

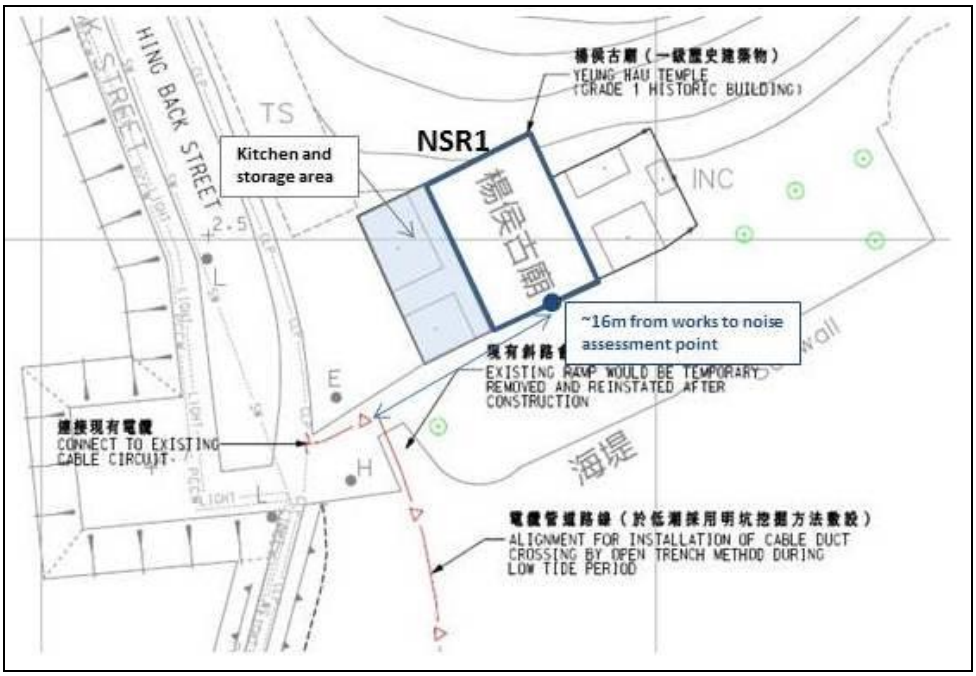


Figure A

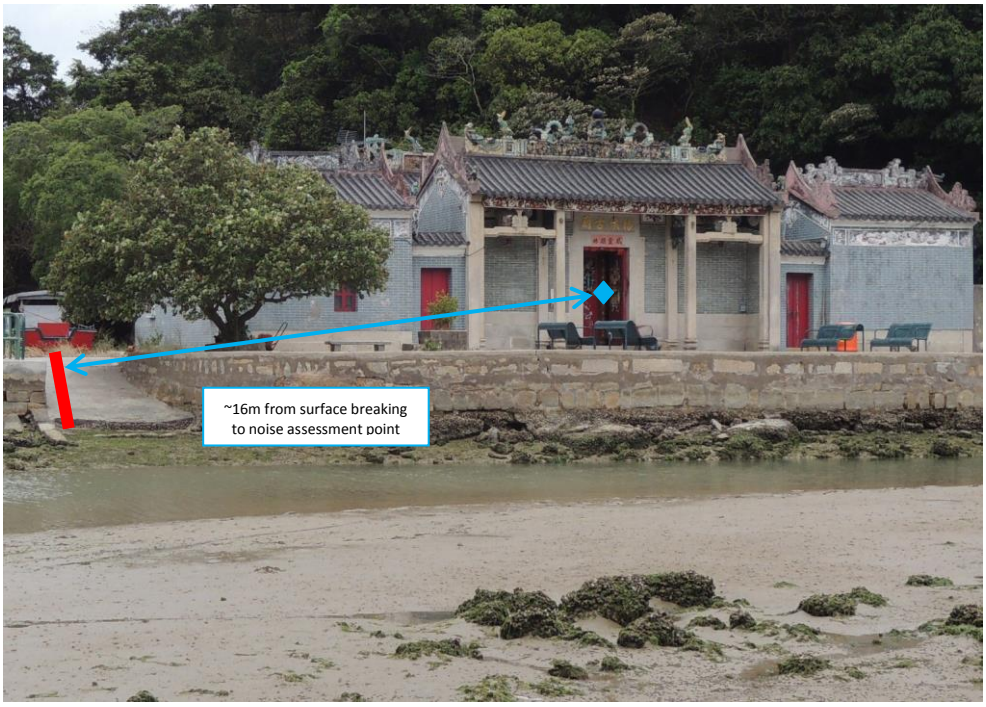


Photo A

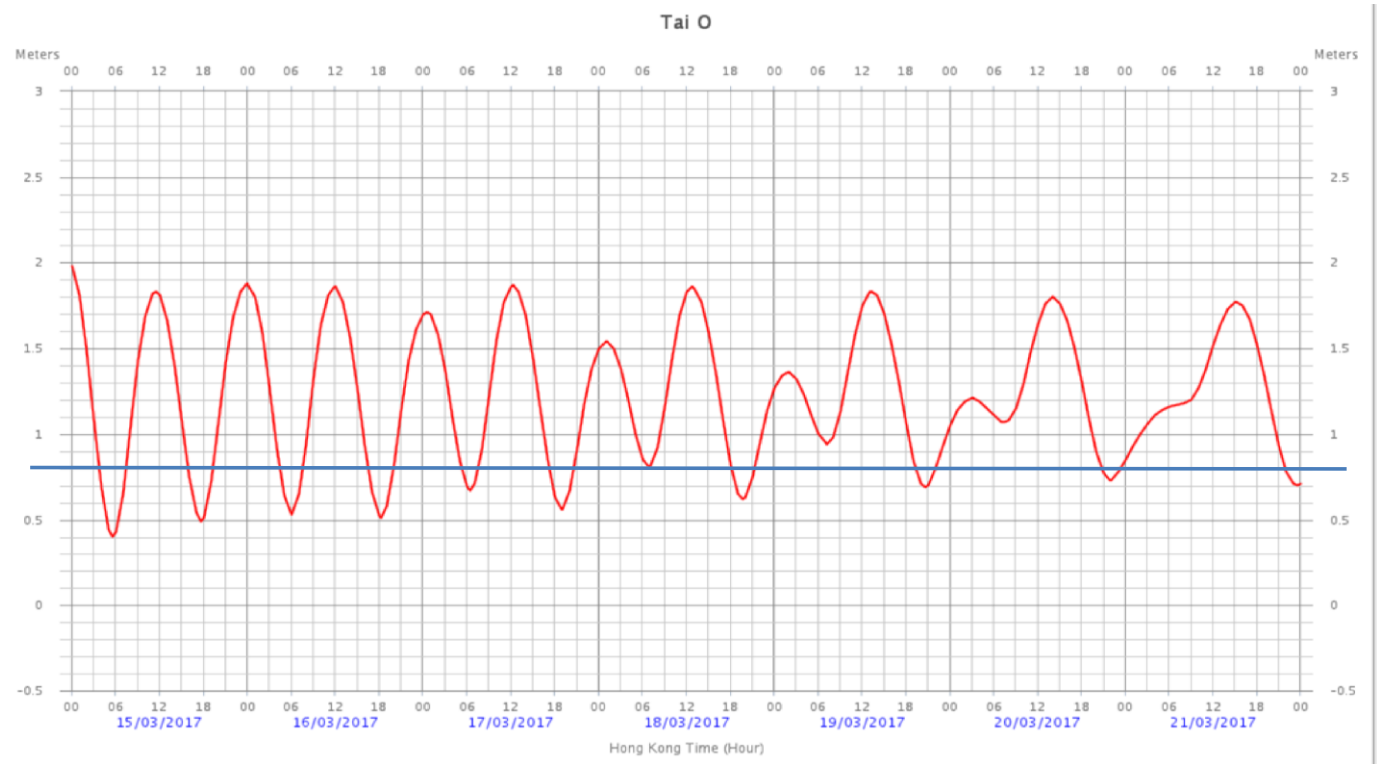
APPENDIX D
Summary of available low tide condition (at 0.8 mPD and below) during daytime and normal working days in Q1-Q2 2017 and Riverbed Profile from Topographic Survey

APPENDIX D

Summary of available low tide condition (at 0.8 mPD* and below)
during daytime and normal working days in Q1-Q2 2017

date	date	duration (hours)
29-Mar-17	Wed	4
30-Mar-17	Thu	4
31-Mar-17	Fri	3
	total	**11**
10-Apr-17	Mon	3
11-Apr-17	Tue	3
12-Apr-17	Wed	4
13-Apr-17	Thu	4
24-Apr-17	Mon	2
25-Apr-17	Tue	3
26-Apr-17	Wed	4
27-Apr-17	Thu	4
28-Apr-17	Fri	4
29-Apr-17	Sat	3
	total	**34**
8-May-17	Mon	3
9-May-17	Tue	4
10-May-17	Wed	4
11-May-17	Thu	4
12-May-17	Fri	4
13-May-17	Sat	4
23-May-17	Tue	3
24-May-17	Wed	4
25-May-17	Thu	5
26-May-17	Fri	5
27-May-17	Sat	4
	total	**44**
7-Jun-17	Wed	4
8-Jun-17	Thu	4
9-Jun-17	Fri	5
10-Jun-17	Sat	4
12-Jun-17	Mon	4
13-Jun-17	Tue	3
21-Jun-17	Wed	4
22-Jun-17	Thu	4
23-Jun-17	Fri	5
24-Jun-17	Sat	5
26-Jun-17	Mon	4
	total	**46**

Notes:
Source: Hong Kong Observatory predicted tide at Tai O station (http://www.hko.gov.hk/tide/predtide.htm)
* Tide height is normally expressed in metre above the Chart Datum (mCD) which is 0.146m below the Hong Kong Principal Datum (mPD). For conservative estimation, mCD and mPD are assumed to be the same for this assessment.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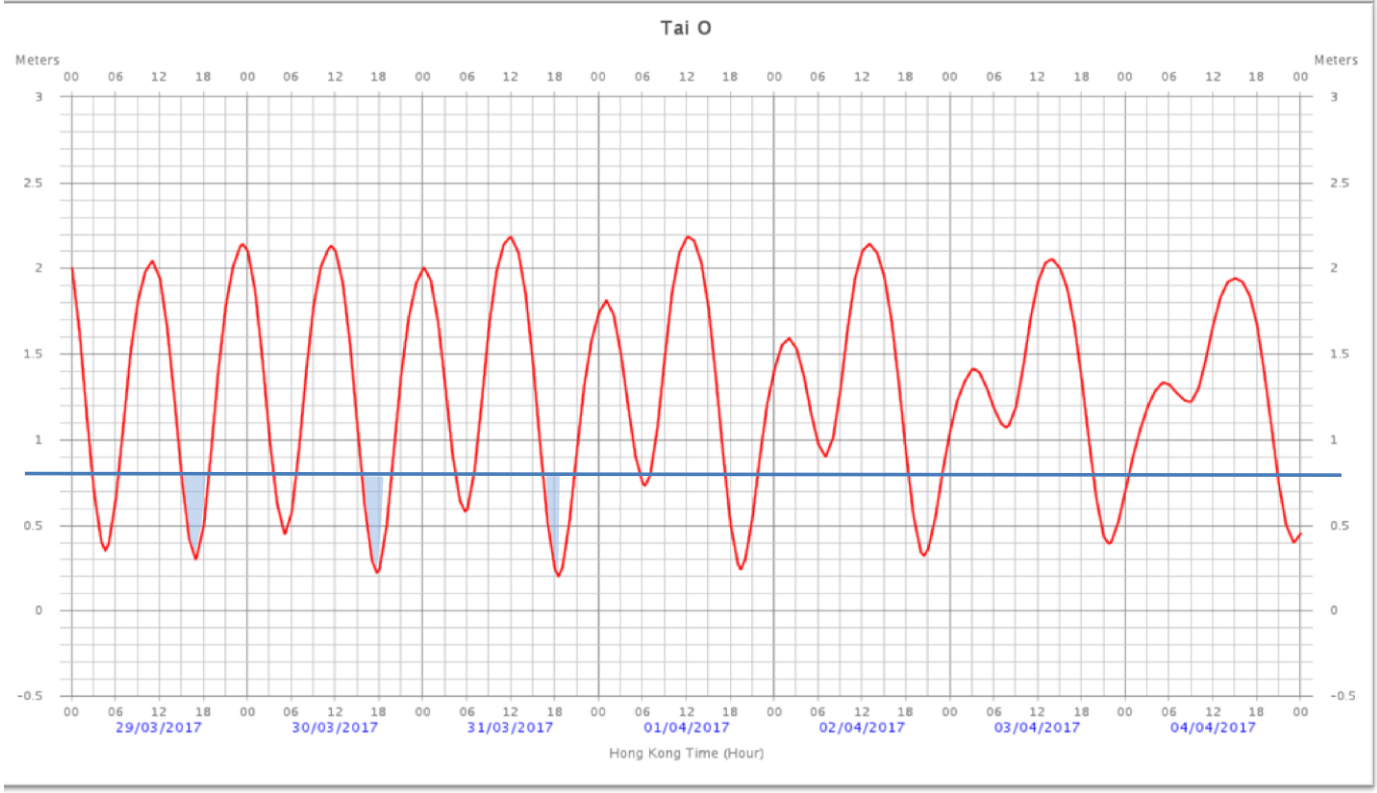
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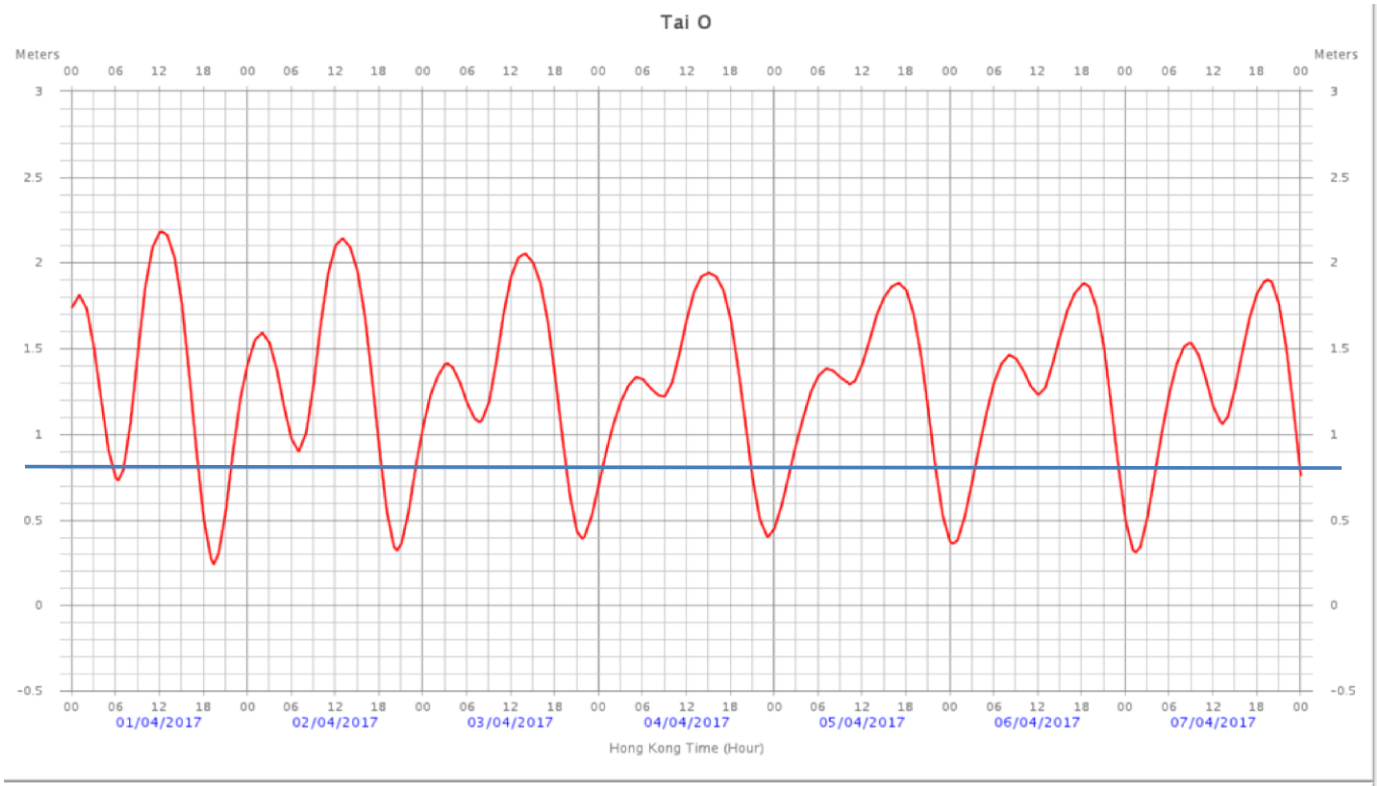
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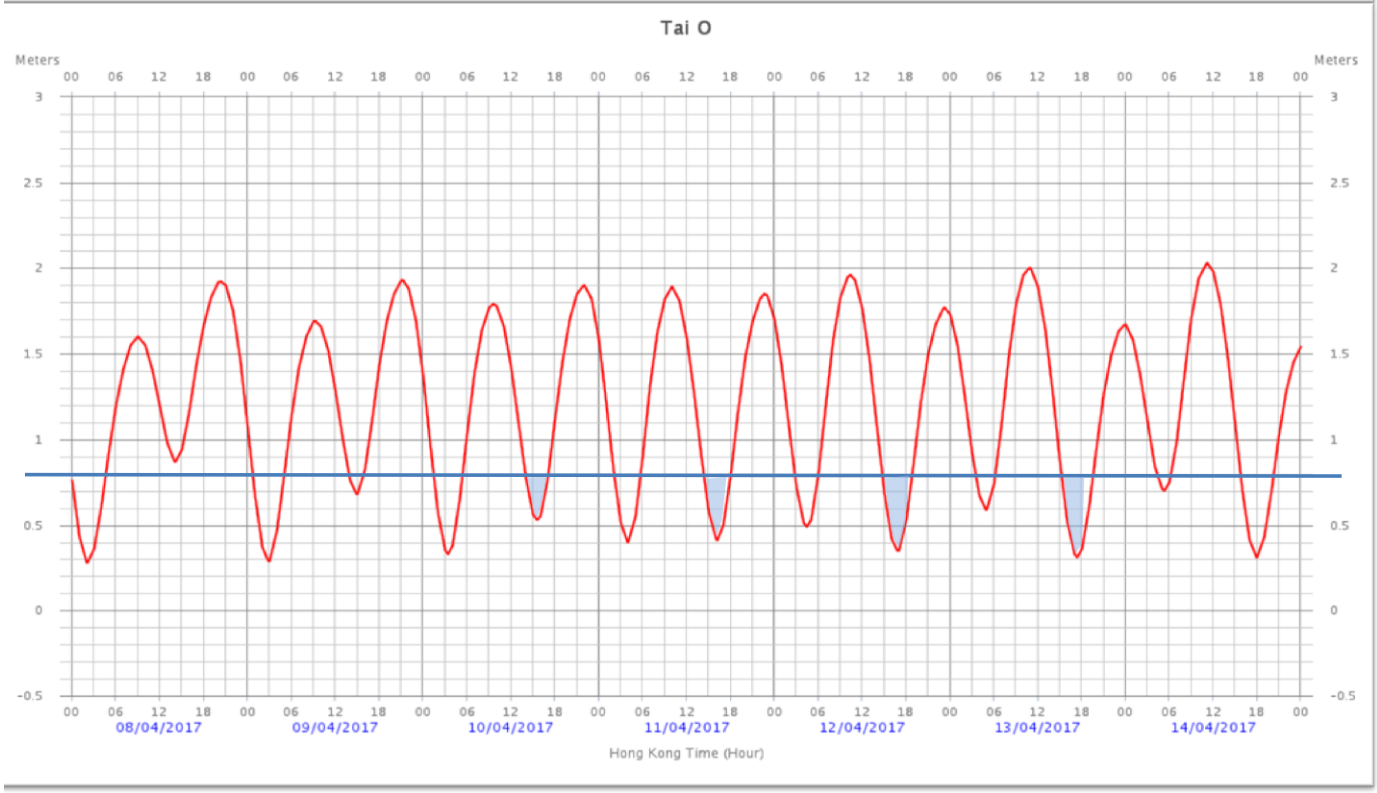
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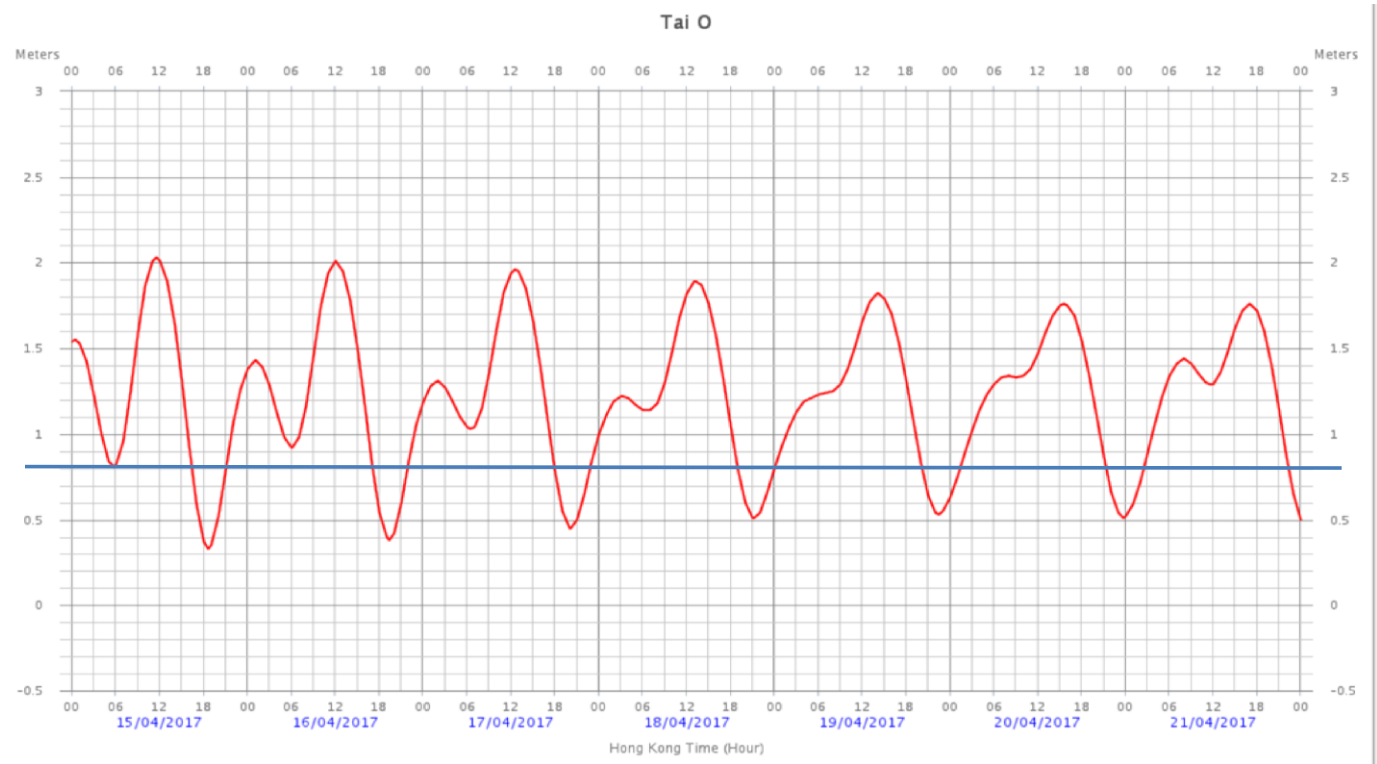
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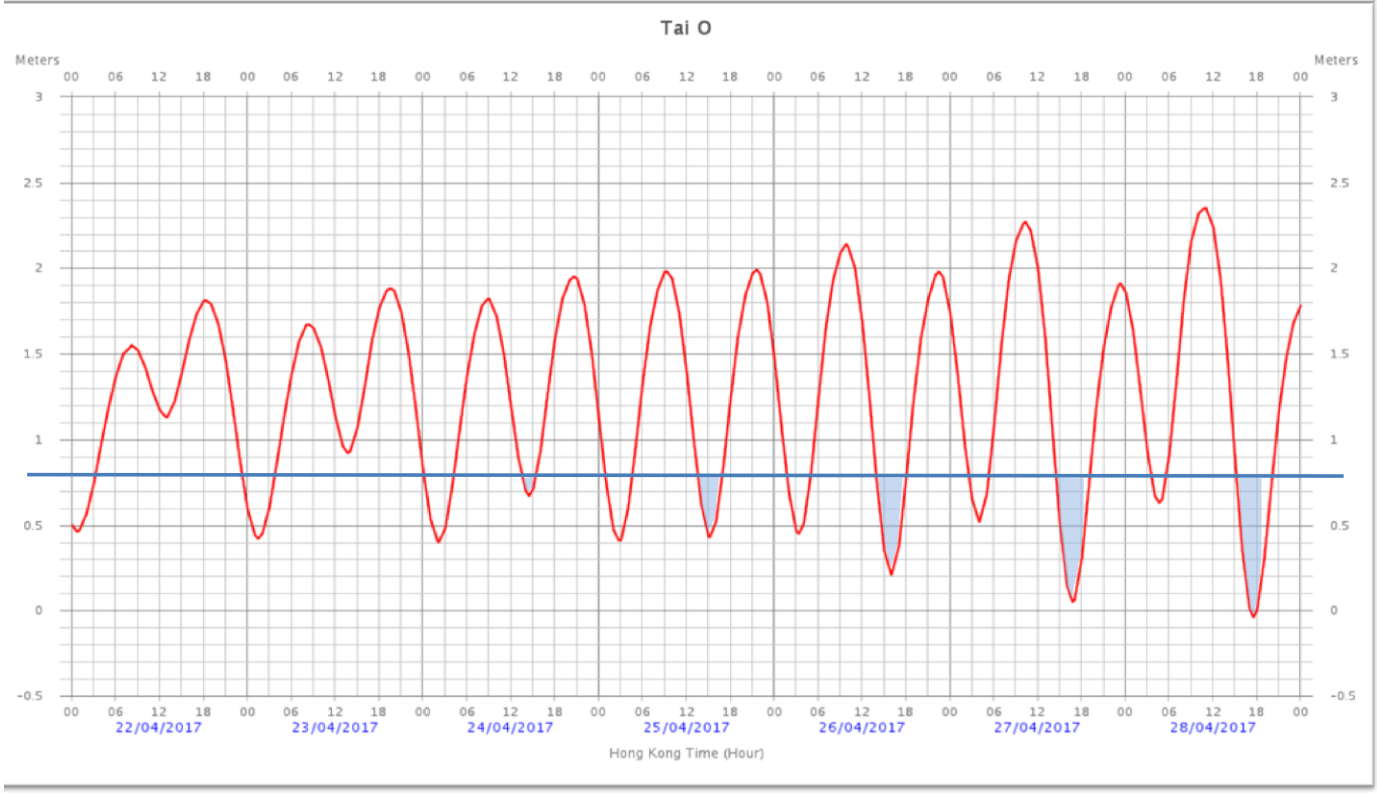
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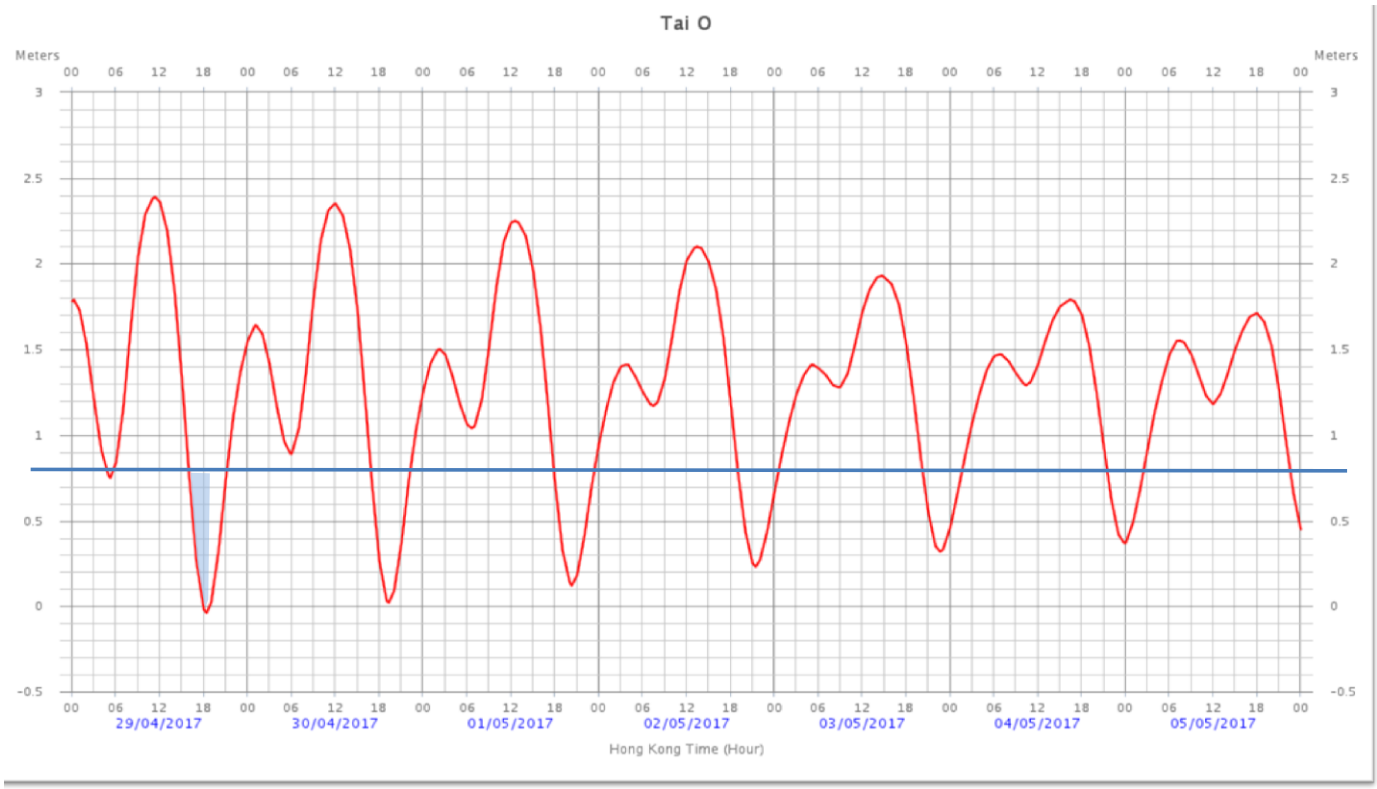
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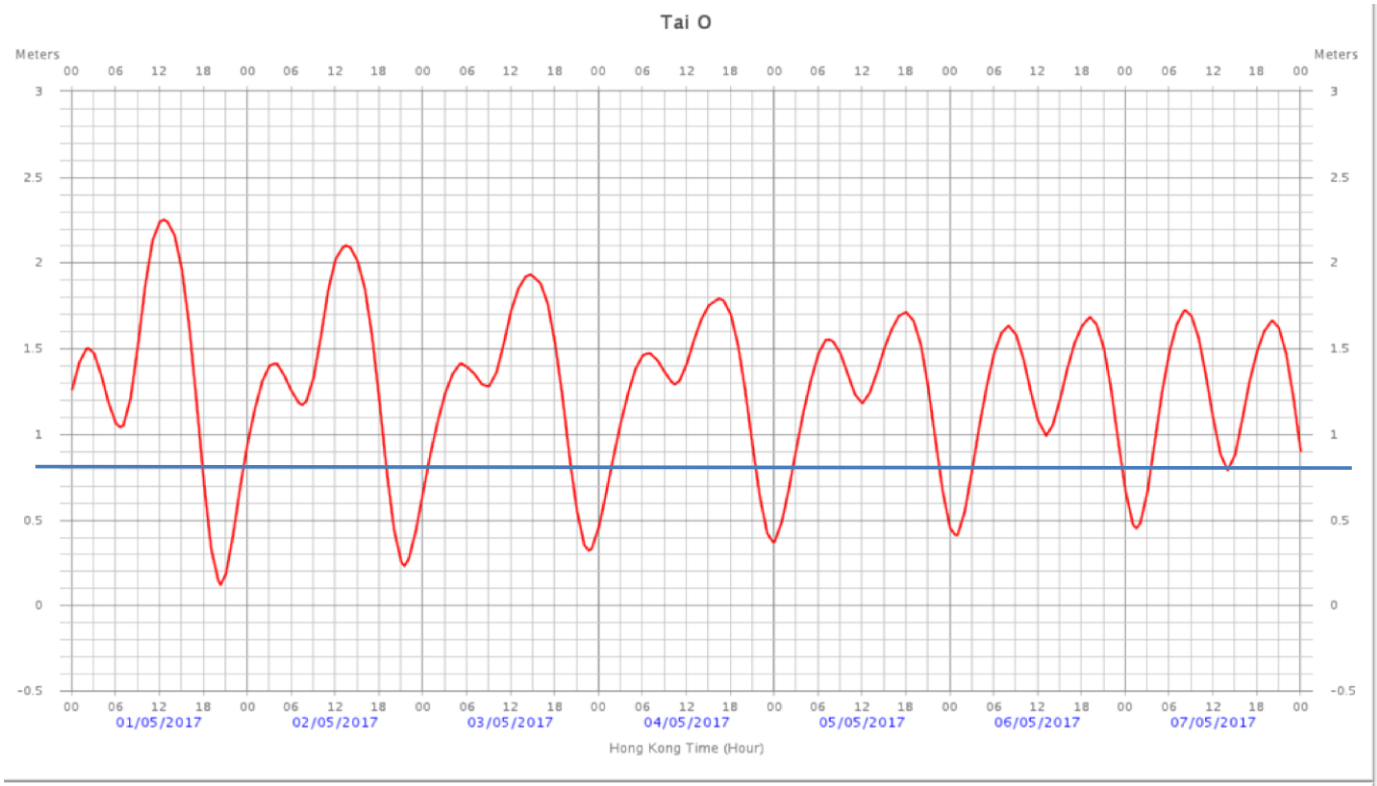
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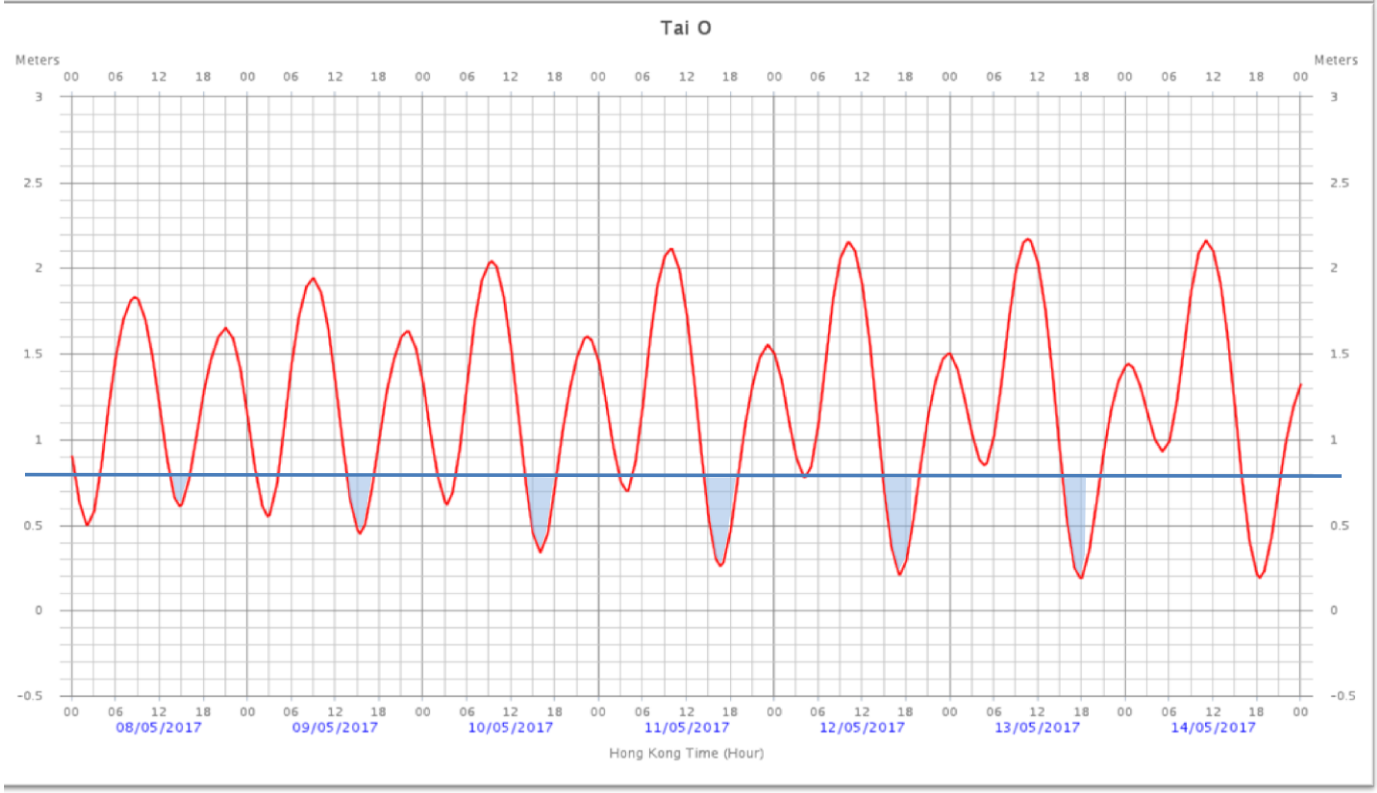
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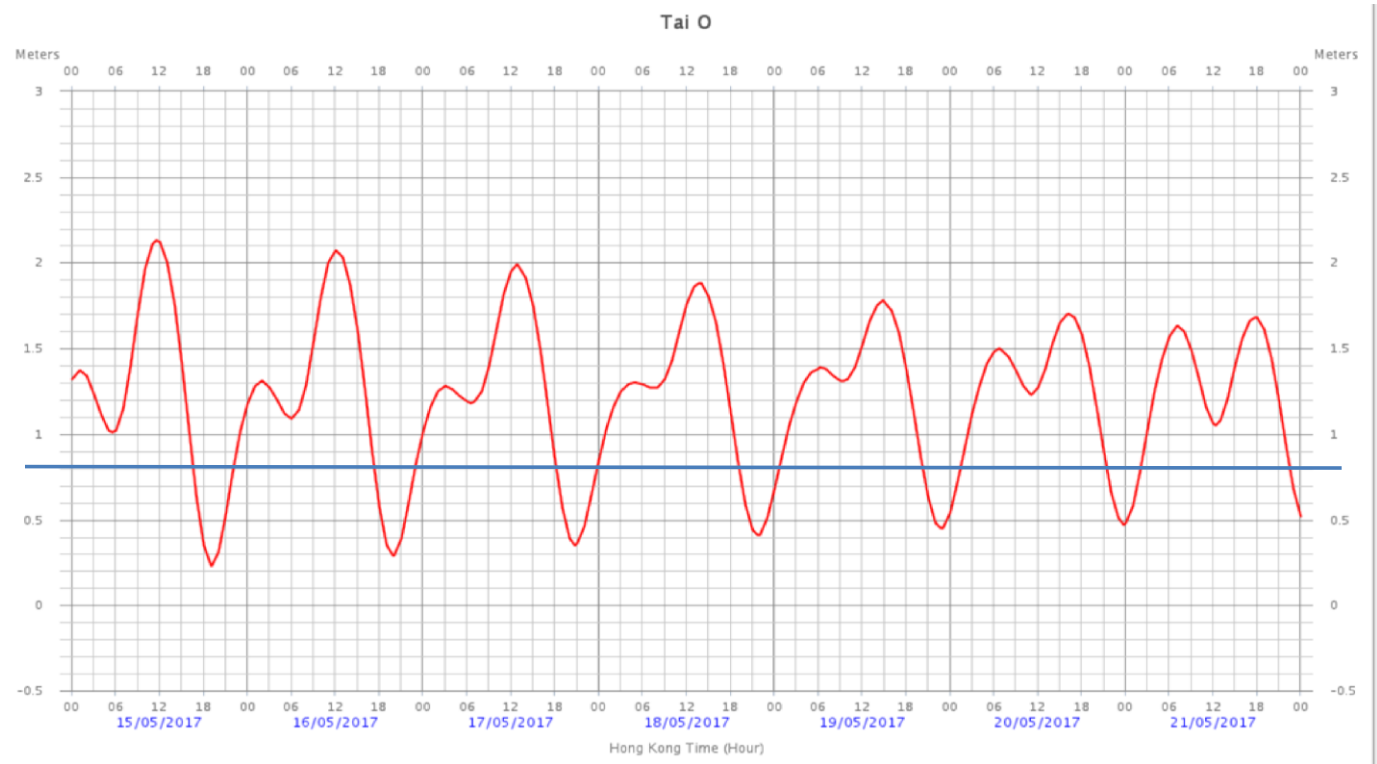
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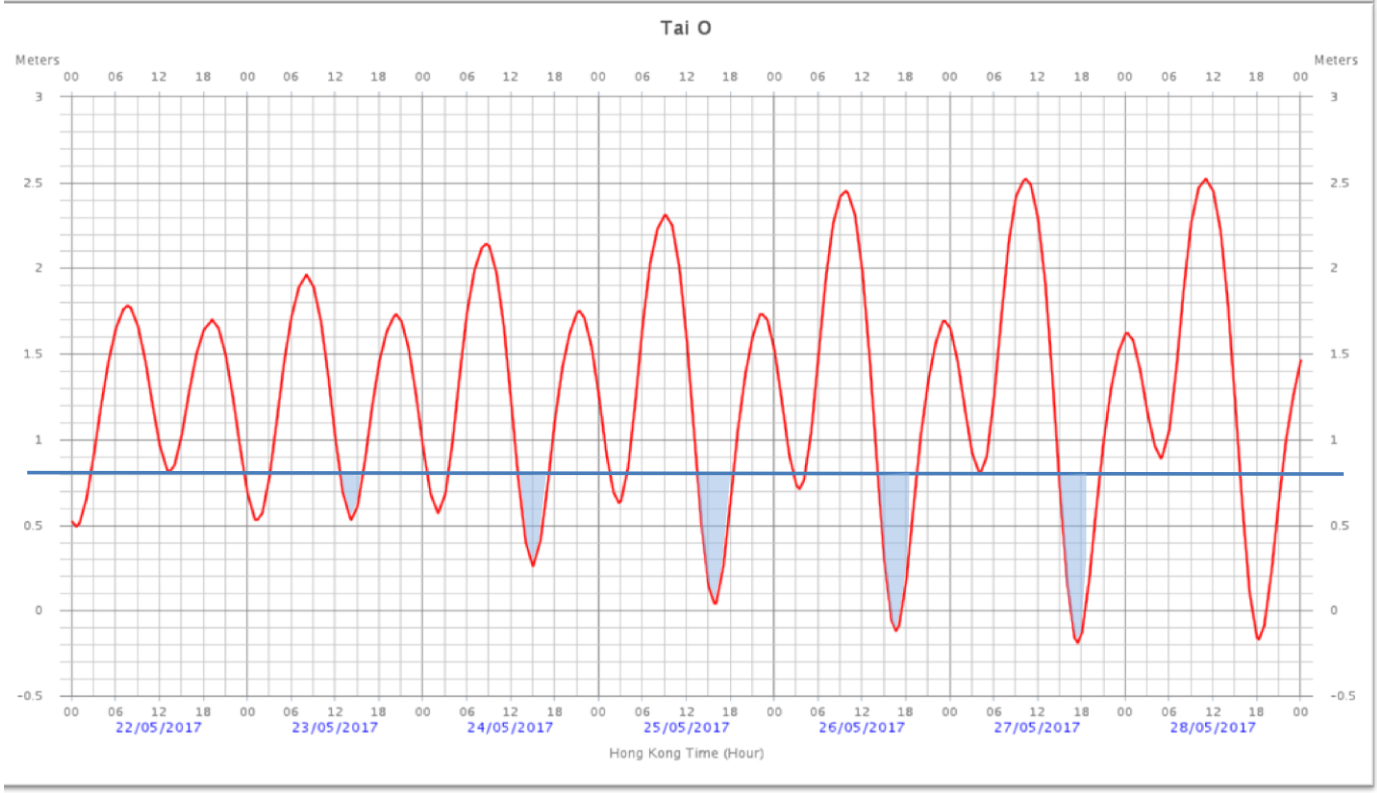
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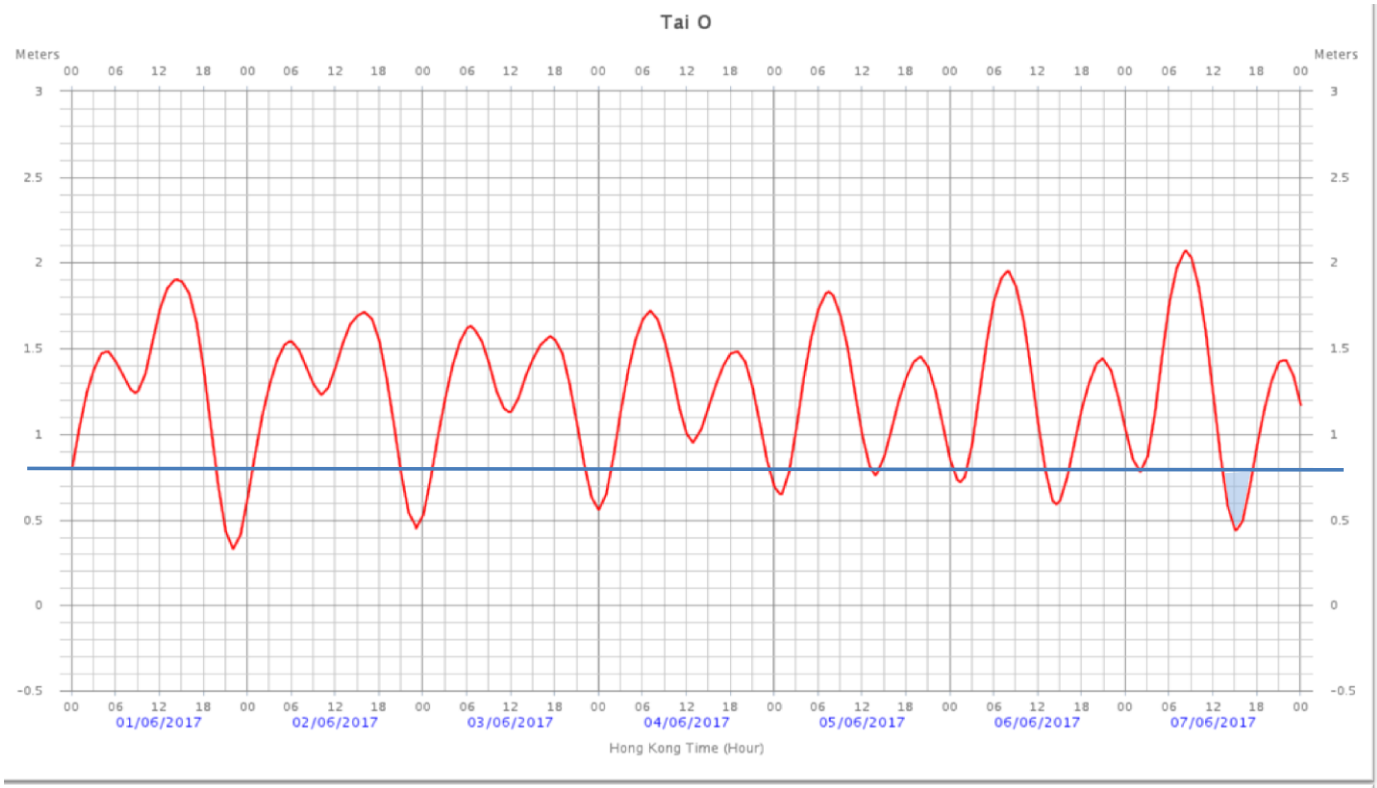
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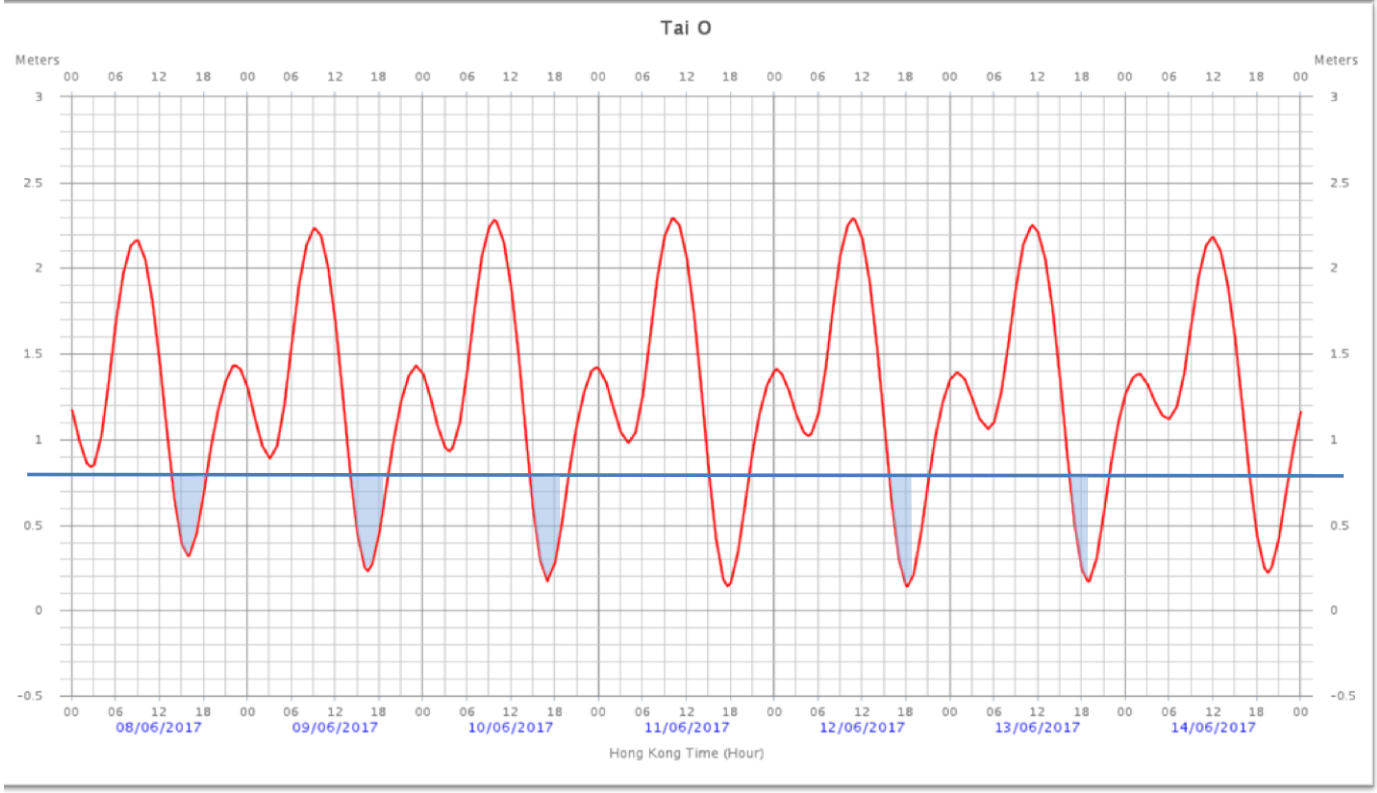
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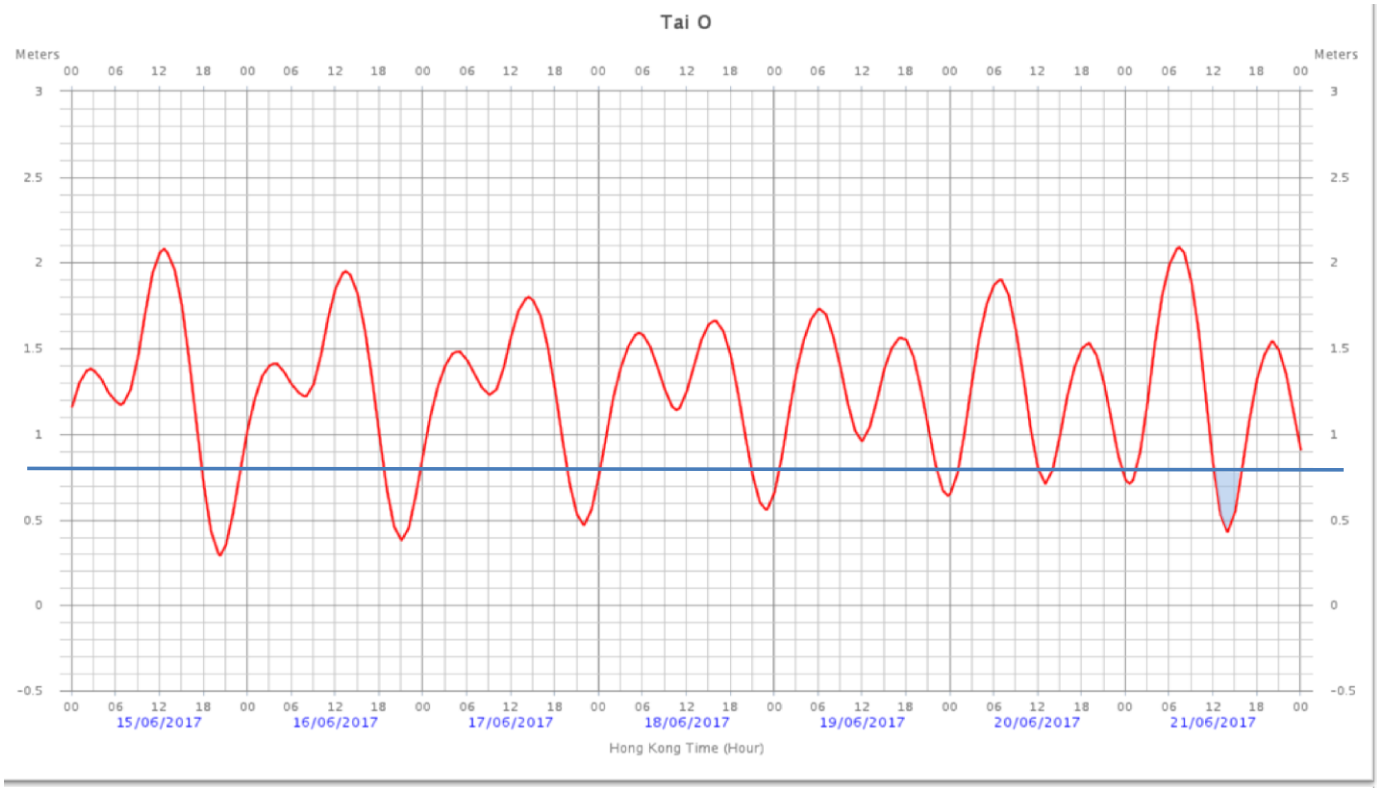
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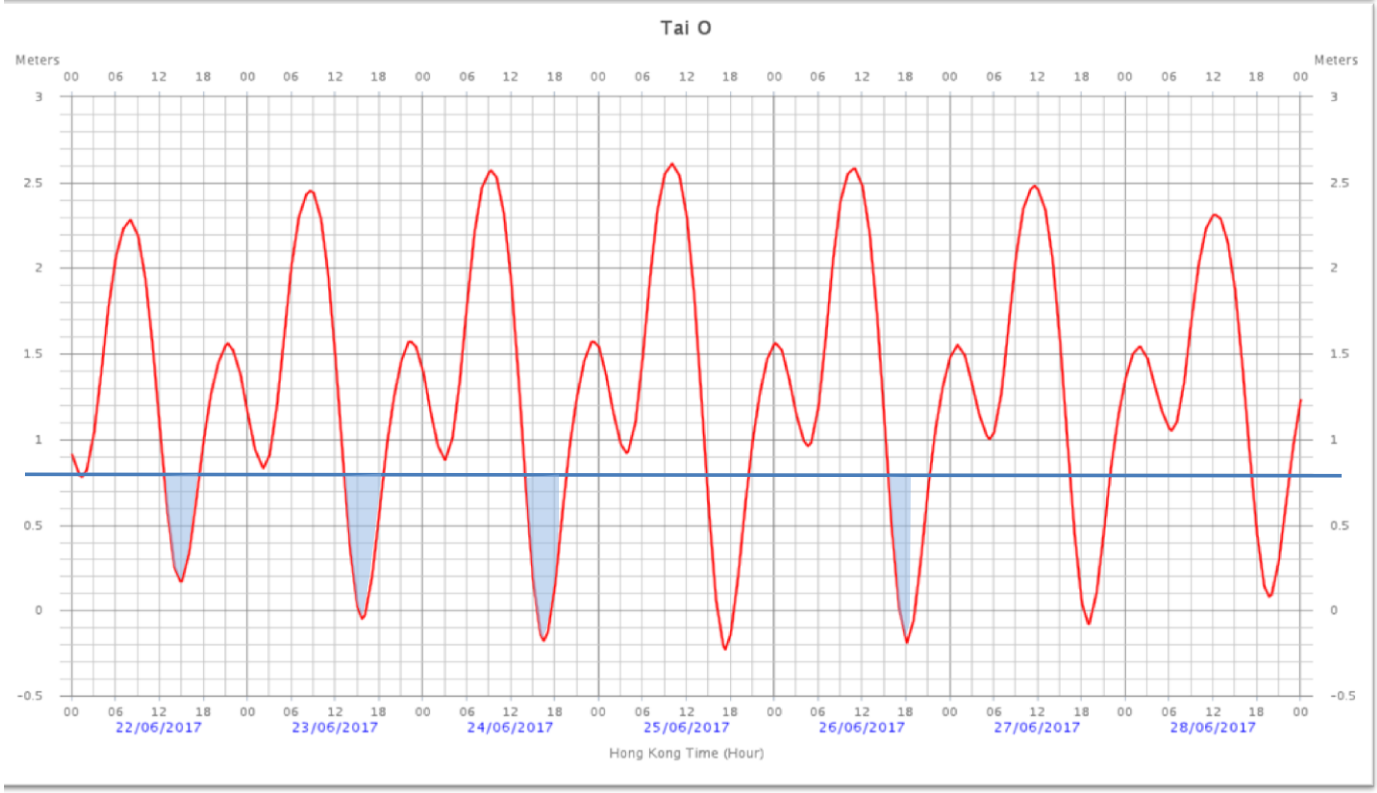
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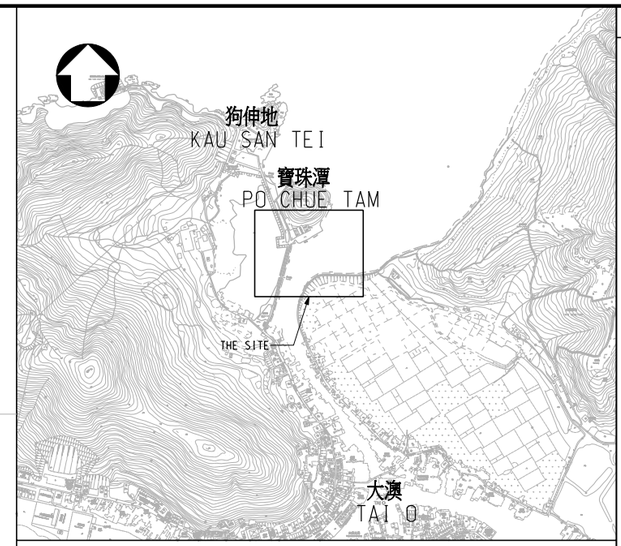

KEY PLAN 位置圖
A3 1:10000

圖例：
LEGEND：

- 擬建電纜管道 PROPOSED CABLE DUCT CROSSING (TENTATIVE)
- 現有電纜 EXISTING CLP CABLE
- 扶手，圍欄 HAND RAILING, FENCE
- 渠 CHANNEL WITH FLOW DIRECTION
- 建築物及遮篷 PERMANENT BUILDING AND CANOPY
- 人工斜坡 ARTIFICIAL SLOPE
- 樹 / 紅樹林 TREE / MANGROVE
- 電纜 CABLE
- 高程點(mPD) SPOT LEVEL(mPD)

ABBREVIATION:

BN	BENCH
CONC	CONCRETE
EP	ELECTRIC POLE
FB	FLOWER BED
FH	FIRE HYDRANT
FP	FOOTPATH
IL	INVERT LEVEL
LP	LAMP POST
MT	MANHOLE (TELEPHONE)
RS	ROAD SIGN
T1	TREE NO.
TP	TELEPHONE POLE
UC	U-CHANNEL
VG	VALVE - GAS
SW	SEAWALL
KB	KERB BOTTOM

Rev	Date	Description of revision	Des'd	Chkd	Rd/Yd	Appd

REVISIONS

	initials	date		initials	date
Designed	MC	05/16	Drawn	SZ	05/16
Checked	CTW	05/16	Reviewed Verified	AK	05/16

Approved

Project title

大澳寶珠潭電纜管道工程
CABLE DUCT CROSSING AT PO CHUE TAM, TAI O

Contract title

OUTLINE AGREEMENT NO. 4600003274
TRANMISSION CABLE ROUTE SELECTION CONSULTANCY SERVICES

Drawing title

擬建大澳寶珠潭電纜管道地形測量結果
RESULTS OF TOPOGRAPHIC SURVEY FOR PROPOSED CABLE DUCT CROSSING AT PO CHUE TAM, TAI O

Drawing Reference No.	Revision
草圖一 SKETCH 1	-

Scale: A1 1:250, A3 1:500

CLP 中電

BLACK & VEATCH HONG KONG LIMITED
博威工程顧問有限公司

Plot Date = 5/25/2016

CAD Filename = Y:\Daily Work\20160524J\sketch 1.dgn