



The Government of the Hong Kong Special Administrative Region

**Civil Engineering and Development
Department**

**Development of a Bathing Beach at Lung Mei,
Tai Po**

Project Profile

December 2005

**Development of a Bathing Beach at Lung Mei, Tai Po
Project Profile**

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Development of a Bathing Beach at Lung Mei, Tai Po Project Profile

1. Basic Information

1.1 Project Title

Development of a Bathing Beach at Lung Mei, Tai Po.

1.2 Purpose and Nature of the Project

The ex-Provisional Regional Council (ex-PRC) considered that one swimming pool complex in Tai Po was insufficient and hence suggested developing a bathing beach at Lung Mei, Tai Po. On 12 May 1998, the Culture, Recreation and Sports Committee of ex-PRC approved funding for the Architectural Services Department (ArchSD) to study the feasibility of developing an artificial beach at Lung Mei. In December 1999, ArchSD commissioned Maunsell Consultants Asia Limited to conduct the Feasibility Study for Beach Improvement Works in Lung Mei, Tai Po (Study). The Study, completed in mid 2001, concluded that it was technically feasible to construct a bathing beach at Lung Mei.

The Tai Po District Council (TPDC) considers that the existing swimming facilities at the Tai Po Swimming Pool Complex are insufficient to meet the local demand. Furthermore, there is no beach facility in the east region of the New Territories, except Sai Kung District which is however far away from Tai Po District. Members supported the project scope and urged for early implementation of the project. In a Legislative Council case conference on 20 April 2004, Members requested the Government to accord priority to this project.

1.3 Name of Project Proponent

Home Affairs Bureau is the policy bureau. Leisure and Cultural Services Department (LCSD) is the client department.

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

Lung Mei is adjacent to Tai Mei Tuk which is a popular leisure area with the provision of a lot of outdoor activities, such as cycling, barbecue, windsurfing and other water sports, and has attracted a lot of visitors, especially during holidays. The proposed bathing beach would complement the facilities provided in Tai Mei Tuk area and attract more visitors to the area. Drawing Nos. PW-SK05-175 showing the location and general layout of the beach is attached at **Appendix A**. The works comprise the following:

- (a) a 200m long beach with a groin at each end of the beach;
- (b) a beach building includes :
 - (i) public changing rooms and toilets;
 - (ii) shower rooms;
 - (iii) equipment/machinery stores for catamarans, motorized boats, beach transporters, beach cleansing and sand levelling machines, etc;
 - (iv) dangerous goods stores; and
 - (v) ancillary facilities including management office, lookout/surveillance post, first aid room, staff changing room/toilet, staff room/pantry, store rooms, etc.
- (c) retaining structures;
- (d) refuse collection point;
- (e) outdoor shower facilities;
- (f) lookout towers;
- (g) shark prevention net;
- (h) a fee-paying public car park for about 100 private cars, 10 motorcycles and 10 coaches;
- (i) landscaped areas;
- (j) drainage diversion of an existing box culvert and Lo Tsz River; and
- (k) sewerage construction works.

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

The project will involve dredging of less than 500,000 m³ and will be carried out at a distance less than 500m from the Conservation Area at Tai Mei Tuk. There is an existing mangrove area that has been designated as a Site of Special Scientific Interest (SSSI) located in a distance of within 500m to the west of the proposed diversion works of Lo Tsz River. The project is a designated project according to Item C.12 of Part I, Schedule 2 of the Environmental Impact Assessment (EIA) Ordinance.

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1.6 Name and Telephone Number of Contact Persons

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Civil Engineering and Development Department

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2. Outline of Planning and Implementation Programme

Civil Engineering and Development Department (CEDD) is the works agent for the overall planning, detailed design and works supervision of civil engineering works of the project. The associated building and landscaping works will be designed and supervised by Architectural Services Department (ArchSD).

The tentative implementation programme is as follows:

Appointment of Environmental Consultants	01/2006 to 04/2006
EIA, DIA and TIA Studies	04/2006 to 06/2007
Gazette under Foreshore and Seabed (Reclamations) Ordinance and Road (Works, Use and Compensation) Ordinance	12/2006 to 11/2007
Design and Tender Documents	04/2007 to 07/2008
Tendering	07/2008 to 11/2008
Construction	11/2008 to 11/2010

The proposed project is also dependent upon the timely delivery of DSD's sewerage improvement project at Lung Mei namely PWP 4125DS (Part) Tolo Harbour Sewerage of Unsewered Areas Stage I Phase IIC, which is tentatively scheduled for completion by 2010.

3. Baseline Conditions

3.1 Air Quality

The site is situated in a rural area with no polluting industry in the vicinity. Air pollution is mainly attributed to traffic emission from Ting Kok Road. As the area is very exposed, it is believed that air quality is not a major problem.

3.2 Noise

Similarly with air quality, the main source of noise nuisance comes from Ting Kok Road and the bus terminal near Wong Chuk Tsuen. Noise from marine traffic is expected to be insignificant.

3.3 Water Quality

There is no commercial and industrial activities and, hence, there is no pollution from these sectors. The proposed beach is embraced by a natural stream course “Lo Tsz River” and an existing box culvert to the west and east respectively. It is supposed that the discharge from them is mainly surface run-off, which is the main source of pollution. The area currently has no sewerage system. The pollution load may be flushed down from the villages in the vicinity into the beach area during heavy rainfall.

There are also potential sources of pollution from Yim Tin Tsai (East) Fish Culture Zone at a distance of about 2.0km from the proposed beach site, but their contribution is expected to be negligible.

The water quality of Lung Mei Beach was generally ranked as fair. Rainfall may be one of the major factors affecting the beach water quality, and a short-term deterioration in beach water quality may be detected during and after heavy rain especially in area where extensive unsewered premises are found in the hinterland.

Drainage Services Department is planning a sewerage improvement project at Lung Mei and targets for completion by 2010.

Assessment of potential water pollution during operation stage due to discharges from nearby existing village houses, commercial developments, marine culture activities and the beach facilities should be conducted in order to address the long term water pollution problem and propose mitigation measures.

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3.4 Ecology

The eastern boundary of Ting Kok Site of Special Scientific Interest (SSSI) is at about 431m from the proposed river diversion works of Lo Tsz River. Ting Kok SSSI is the fourth largest mangrove stand in Hong Kong in which there are 13 plant species¹. The mangrove stand is dominated by *Kandelia obovata* and *Aegiceras corniculatum*, with a few irregularly spaced *Avicennia marina* in the middle part of the stand. The stand has high fauna diversity, and 39 benthic species have been identified.

Apart from the SSSI, the area in the vicinity of Lung Mei consists of a mixed variety of habitats including woodlands, grasslands, shrublands, abandoned fields, farmlands, roadside plantation, coastal vegetation, intertidal soft shore, mangrove, coastal waters, streams and human habitation. The area of the proposed beach is currently an intertidal soft shore, which is exposed during low tide and is inundated by water during high tide. In addition, the proposed site is at a distance of about 490m from the Conservation Area at Tai Mei Tuk.

Subject to detailed ecological impact assessment, the key areas of ecological concern may include the Ting Kok SSSI and the Conservation Area. Other habitats which may be of potential ecological concern include a feng shui woods at Ting Kok at a distance of about 850m away, the abandoned fields in the vicinity and section of Lo Tsz River affected by the proposed river diversion works. Their ecological value including intertidal and subtidal marine habitats shall be subjected to further field investigation.

3.5 Visual and Landscape

Lung Mei is covered by the Ting Kok Outline Zoning Plan (OZP) No. S/NE-TK/10 and is zoned "Open Space" ("O"). There is a large area of open space. Lung Mei Beach is overlooking the Plover Cove on the south while the elevated backdrop of ridges and peaks is dominated by the Pat Sin Leng on the north. The proposed beach building is a two-story building and other structures are low rise. They will blend in well with the environment and the impact of proposed development on the future outlook of the area is considered minimal.

¹ Tam, F.Y. and WONG, Y.S. (2000). Field Guide to Hong Kong Mangroves. City University of Hong Kong Press.

4. Sensitive Receivers

The area is a recreational arena with Tai Mei Tuk Water Sports Centre to the southeast of the site and a bicycle track running along Ting Kok Road. Village type development is found to the north of the proposed development at Lo Tsz Tin, Lung Mei, Wong Chuk Tsuen and Tai Mei Tuk.

Residents and tourists of the area are identified as the existing sensitive receivers with respect to air, noise, visual and landscape impacts. Those involved in water sports (secondary exposure) such as canoeing and windsurfing are subjected to water quality impact.

Sensitive receivers of potential ecological impacts include the Ting Kok SSSI and the feng shui woodland at Ting Kok. The mangrove plant species of Ting Kok SSSI is shown in **Appendix B**. The mangrove community show the remarkable morphological and physiological adaptation to the substratum. Mangrove ecosystems also support a large diversity of animals, which are found on the mangrove trees and in the intertidal soft shore. Ting Kok SSSI also supports a diverse fauna as shown in **Appendix C**.

The beach development works will involve dredging and filling works. The volume of dredged material and sand fill is estimated to be 29,500m³ and 47,200m³ respectively. The water current in the area is relatively calm and it is expected that impacts on far field sensitive receiver at Yim Tin Tsai (East) Fish Culture Zone is not significant. However, a detailed water quality impact assessment including sediment plume modelling and hydrodynamic assessment should be conducted during the EIA stage to verify the anticipated localised impact.

Ma Shi Chau Special Area to the south of the site is an area of geological interest. In view of its distant location and nature of the proposed works, the impacts on the special area are considered to be negligible.

Location of sensitive receivers are shown in **Appendix D**.

5. Possible Impacts on the Environment

Possible impacts on the environment at both the construction and operation stages are outlined in the following sections.

Construction Impacts

5.1 Air Quality

Air quality impacts include traffic emissions and pollution from construction vehicles and barges. Dredging and laying of imported sand on seashore will generate dust nuisance. The construction of beach building and car park will also create air quality impacts affecting the surrounding sensitive receivers. The size of the impacts shall be determined at the EIA stage.

Construction air quality impacts may be mitigated by inclusion of appropriate contract clauses for dust minimisation and suppression in the works contract and the implementation of good site practices. It is recommended that vehicles transporting sand to the site should be covered to avoid dust impact.

5.2 Noise

Noise impact during the construction phase will be predominated by construction noise from the earth moving, dredging, sand laying activities on the beach and construction of beach building and car park. The construction may involve the use of power mechanical equipment such as bulldozer, excavator and lorry. In order to alleviate the potential noise impact, noise mitigation measures such as use of quiet plant and construction method, site hoarding and good site practice are recommended. It is expected that the plant noise will not be significant if appropriate mitigation measures are taken.

5.3 Water Quality

Dredging and filling will increase the turbidity and suspended solids while dissolved oxygen will decrease. Construction of groins will also have potential impacts on coastal water quality. Site run-off and discharge of wastewater from the construction site should be minimized through implementation of proper site practices.

Although the beach development works will modify the existing coastline, the hydrodynamics within Plover Cove is unlikely to be affected due to the small extent and the slow tidal current in the vicinity of Lung Mei Beach. Considering the shallow water and slow flow current in the bay, the sediment plume associated with sand laying and dredging is unlikely to have any major impact on the sensitive receiver at Yim Tin Tsai (East) Fish Culture Zone, which is 2km away. However, sediment plume generated from marine construction activities may pose an adverse impact on the Ting Kok SSSI, which is to the west of the proposed works. Hence, it is recommended that sediment plume modelling and hydrodynamic assessment should be performed during

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the EIA stage to ensure that the Ting Kok SSSI will not be adversely affected by the proposed works as well as to verify the predicted impact on the SSSI, Fish Culture Zone and nearby ecological sensitive receivers such as corals along the Tolo Channel. Good site practices to prevent contaminant release and spillage resulting from marine construction should be taken. Silt curtain should be used to contain sediment loss during dredging and filling works.

5.4 Waste

Site preparation works will result in generation of various types of wastes such as construction materials, vegetation spoil, soil, rock and concrete, etc. Throughout the construction period, general refuse such as food scraps, paper and empty containers, will also be generated from the workforce. However, the impact arising from these wastes is expected to be minimal. It is recommended that different types of wastes should be sorted, stored, transported and disposal of separately. Waste should be re-used on-site to minimise off-site disposal.

The proposed site is in rural area and is not located close to industrial and commercial areas. There is no shipyard or boat repair and maintenance work activities in the vicinity. The main sources of water quality pollution are from surface runoff from the existing roads and overflow septic tanks and soakaway systems from villages. It is expected that the level of contamination in the soft shore is very low. The procedure for seeking approval to dredge/excavate sediment in particular the rationale for dredging and the management framework for marine disposal of such sediment shall be in accordance with ETWB TCW No. 34/2002. The locations of disposal sites for uncontaminated mud and contaminated mud will be determined by Marine Fill Committee accordingly.

5.5 Ecology

The proposed site is currently an intertidal soft shore, which is exposed during low tide and is inundated by water during high tide. Loss of the existing intertidal and subtidal habitats and the associated living organisms due to the beach development works would be of concern. The change in water quality parameters such as suspended solids and dissolved oxygen during dredging and sand laying works, will also have potential impacts on the marine ecology. Noise and dust generated from the construction activities may disturb the animals, in particular birds and plants in the nearby areas including Ting Kok SSSI, Conservation Area at Tai Mei Tuk, feng shui woodland at Ting Kok. In order to assess the degree of these potential impacts arising from the proposed beach development works, a detailed ecological impact assessment should be carried out during the EIA stage. Potential ecological impacts on the Lo Tsz River during the construction phase should also be assessed during the EIA stage.

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The proposed site is also scattered with trees and vegetations. It is expected that the trees would likely be affected during the construction works. The need to preserve trees is stated in ETWB TC No. 29/2004. If necessary, a tree felling application, in accordance with WBTC No. 14/2002, should be prepared. A tree survey will be required during the EIA stage.

5.6 Visual and Landscape

Since the proposed site is predominated open space, visual and landscape impacts during construction may be significant but the impacts are expected to be transient. Residents, tourist and users of water sports centre will be affected. As hoarding will be erected at the site boundary, temporary visual screen may also be used to shield the construction activities if found necessary.

Operation Impacts

5.7 Air Quality

The proposed beach development is identified as air sensitive use. It is estimated that the number of users is 2,000 per day with a peak attendance of 4,000 users per day during holidays. Traffic emission arising from the traffic along Ting Kok Road will have potential impact on the beach users. A buffer zone should be provided to minimise the impacts from road traffic emission. The proposed car park can act as a buffer to traffic emission. It is recommended that a minimum of 10m landscaping should be provided on the eastern side of the beach where there is no car park area to act as a buffer. If such measures are implemented, no further air quality impact assessment will be required to assess impacts from road traffic emission during the operation phase.

5.8 Noise

Potential noise nuisance from the beach users on the nearby villages may be anticipated, in particular during swimming seasons. In light of the proposed beach setting, which is at a level below the Ting Kok Road, no significant noise nuisance arising from the beach users is expected. However, noise nuisance arising from public announcement system is considered to be minor and only happens during emergency cases. Since the activities on the beach normally occur during the daytime, noise nuisance during the night-time is considered negligible.

5.9 Water Quality

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No discharge outlet, either storm or foul drain, should be located near any bathing beach. It is recommended that the existing box culver to the east of the proposed site should be diverted. Drainage Impact Assessment (DIA) Study is required during the EIA stage to assess the impact of the proposed drainage works. Details of the proposed drainage diversion and upgrading works should be submitted to Drainage Services Department (DSD) for agreement.

The natural stream “Lo Tsz River” located immediate to the west may carry pollutants into the beach area. To prevent closure of the beach due to poor water quality arising from potential contamination from the catchment area of Lo Tsz River, diversion of the discharge from the stream may be required. In order to justify the needs and determine the constraints on the stream diversion, a detailed water quality assessment including an investigation into the degree of sewage contamination of the stream and its impact on the beach water quality is required during the EIA stage. If diversion is required, compensation of the stream may be required depending on the findings of the ecological survey conducted in the ecological impact assessment during the EIA stage. The design of the river channel should follow the Drainage Services Department Practice Note No. 1/2005 “Guidelines on Environmental Considerations for River Channel Design”.

The wastewater generated from the beach facilities will be discharged into foul sewer. A sewerage review should be conducted in the EIA stage to properly document the sources of wastewater flows from the proposed project. In addition, the design flows and parameters should be provided to DSD for agreement.

The surface run-off and pollutant washed from the beach building area and car park during rainfall will have potential impact on water quality if uncontrolled. Hence, sufficient surface channel shall be provided to prevent any uncontrolled surface run-off from entering into the sea.

The proposed project is also dependent upon the timely delivery of DSD’s sewerage improvement project at Lung Mei namely PWP 4125DS (Part) Tolo Harbour Sewerage of Unsewered Areas Stage I Phase IIC, which is tentatively scheduled for completion by 2010. This sewerage project will divert the contamination from septic tanks and soakaway system of the village development to the main trunk sewer. Therefore, the commissioning of the beach shall be after the completion of the sewerage project so that sewage contamination to the beach water are intercepted.

5.10 Waste

With the provision of refuse collection and disposal facilities, municipal waste generated by the beach users and visitors is expected to be insignificant.

5.11 Ecology

Disturbance may arise as a result of increased human activities, especially in the swimming season when the number of visitor is the greatest. Ecological impacts of the beach development due to increased human activities should be assessed and mitigation measures recommended in the EIA stage.

If diversion of the Lo Tsz River is necessary, potential impact on the ecology of the stream should also be assessed and compensation and/or mitigation measures should be recommended in the EIA stage.

The EIA study shall also include impact assessment during operational phase to nearby ecological and fisheries sensitive receivers due to change in water quality and hydrodynamic pattern.

5.12 Visual and Landscape

The coastline at Lung Mei will be modified after completion of the beach development but the extent of disruption is considered insignificant except a shoreline will become longer with two protruded groins and enlarged beach area. The Ting Kok SSSI, Conservation Area at Tai Mei Tuk and feng shui woodland at Ting Kok will remain intact. No adverse visual and landscape impact is expected.

6. Environmental Protection Measures to be Incorporated in the Design and Any Further Environmental Implications

6.1 Measures to Minimize Environmental Impacts

With reference to latest version of “Recommended Pollution Control Clauses for Construction Contracts”, the following measures will be carried out during construction and operation phases of the proposed project:

- appropriate contract clauses for dust minimisation and suppression and good site practices will be incorporated in the construction contract;

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- Use of quiet plant and construction method, site hoarding and good site practices will be specified in the construction contract to alleviate potential noise nuisance;
- Good site practices to prevent contaminant release and spillage resulting from marine construction should be taken;
- Silt curtain should be used to contain sediment loss during dredging and filling works;
- Site run-off and wastewater discharge from construction site should be minimized through implementation of proper site practices;
- Construction wastes should be sorted, stored, transported and disposal of separately. Waste should be re-used on site to minimise off-site disposal;
- Temporary visual screen will be used to shield the construction activities if found necessary;
- 10m buffer zone will be provided between the beach area and Ting Kok Road to minimise the impacts on beach users from road traffic emission;
- Sufficient surface channel shall be provided in the beach building area and car park to prevent any uncontrolled surface run-off from entering into the sea; and
- Sufficient refuse collection and disposal facilities should be provided to collect municipal waste generated by the beach users.

6.2 Further Environmental Implications

From Section 5, the following studies will be carried out to further evaluate the environmental implications of the project and to recommend mitigation measures:

- Sediment plume modelling and hydrodynamic assessment shall be performed to ensure that the Ting Kok SSSI, Yim Tin Tsai (East) Fish Culture Zone and nearby ecological sensitive receivers such as corals along the Tolo Channel will not be adversely affected;
- Ecological impact assessment on intertidal and subtidal marine habitats such as coral and marine benthic communities should be carried out;
- Detailed ecological impact assessment of the proposed site including Lo Tsz River, Ting Kok SSSI, Conservation Area at Tai Mie Tuk, feng shui woodland at Ting Kok shall be carried out;
- Ecological impacts of increased human activities shall also be assessed.
- Drainage Impact Assessment Study shall be carried out to assess the impact of the proposed drainage diversion works;
- Water quality assessment including an investigation into the degree of sewage contamination of the Lo Tsz River and its impact on the beach water quality shall be carried out;
- A sewerage review should be conducted to properly document the sources of wastewater flows generated by the beach facilities;
- Assessment of potential water pollution during operation stage due to discharges from nearby existing village houses, commercial developments, marine culture

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activities and the beach facilities should be conducted in order to address the long term water pollution problem and propose mitigation measures;

- The sedimentation situation in the beach area during the operation stage shall be assessed. If regular maintenance dredging is required, the frequency and extent of dredging together with the associated water quality impact shall be proposed;
- Preparation of habitat map (500m radius);
- The design of the diversion works for Lo Tsz River shall follow DSD Practice Note No. 1/2005 “Guidelines on Environmental Considerations for River Channel Design”;
- A tree survey shall be carried out. Registration of old and valuable trees and their preservation shall follow the requirements of ETWB TCW No. 29/2004; and
- The procedure for seeking approval to dredge sediment and management framework for marine disposal of such sediment shall follows the requirements of ETWB TCW No. 34/2002.

6.3 History of Similar Projects, Public Consultations, Public Interest and Political Sensitivity

The Recreation, Sports and Cultural Affairs Committee of TPDC was consulted on 14 July 2004 and 9 November 2005. Members supported the project scope and urged for early implementation of the project.

Through gazetting of the proposed project under the Foreshore and Seabed (Reclamations) Ordinance, the public likely to be affected by the project can express their views, which will subsequently be taken into consideration during the detailed design stage.

This a designated project under the Environmental Impact Assessment (EIA) Ordinance (Cap. 499). We undertake to comply with the EIA Ordinance requirements and to obtain an environmental permit for the project. Through the EIA process, public opinions and comments will be taken into consideration in the overall planning, design and construction stages of the project.

Representatives from World Wide Fund (Hong Kong), Kadoorie Farm & Botanic Garden Corporation and Green Power were briefed about the scope and implementation programme of the project on 31 October 2005.

Public interest and political sensitivity, especially from green groups, are expected.

7. Use of Previously Approved EIA Reports

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As there has been no designated project undertaken in the vicinity, no previously approved EIA report can be used.

8. References

Maunsell Consultants Asia (Limited) (2000). Feasibility Study for Beach Improvement at Lung Mei Beach, Tai Po - Final Preliminary Environmental Review. Architectural Services Department, HKSAR.

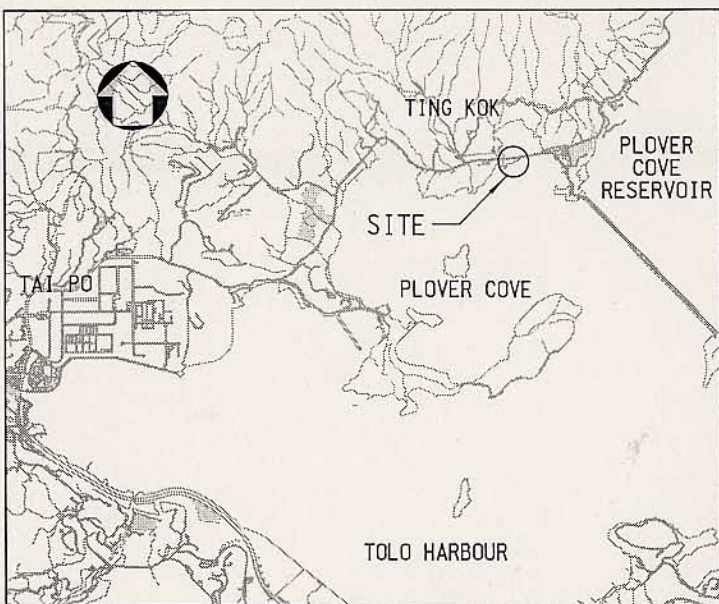
Tam, F.Y. and WONG, Y.S. (2000). Field Guide to Hong Kong Mangroves. City University of Hong Kong Press.

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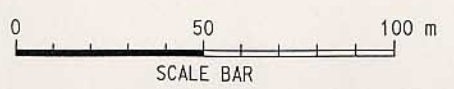
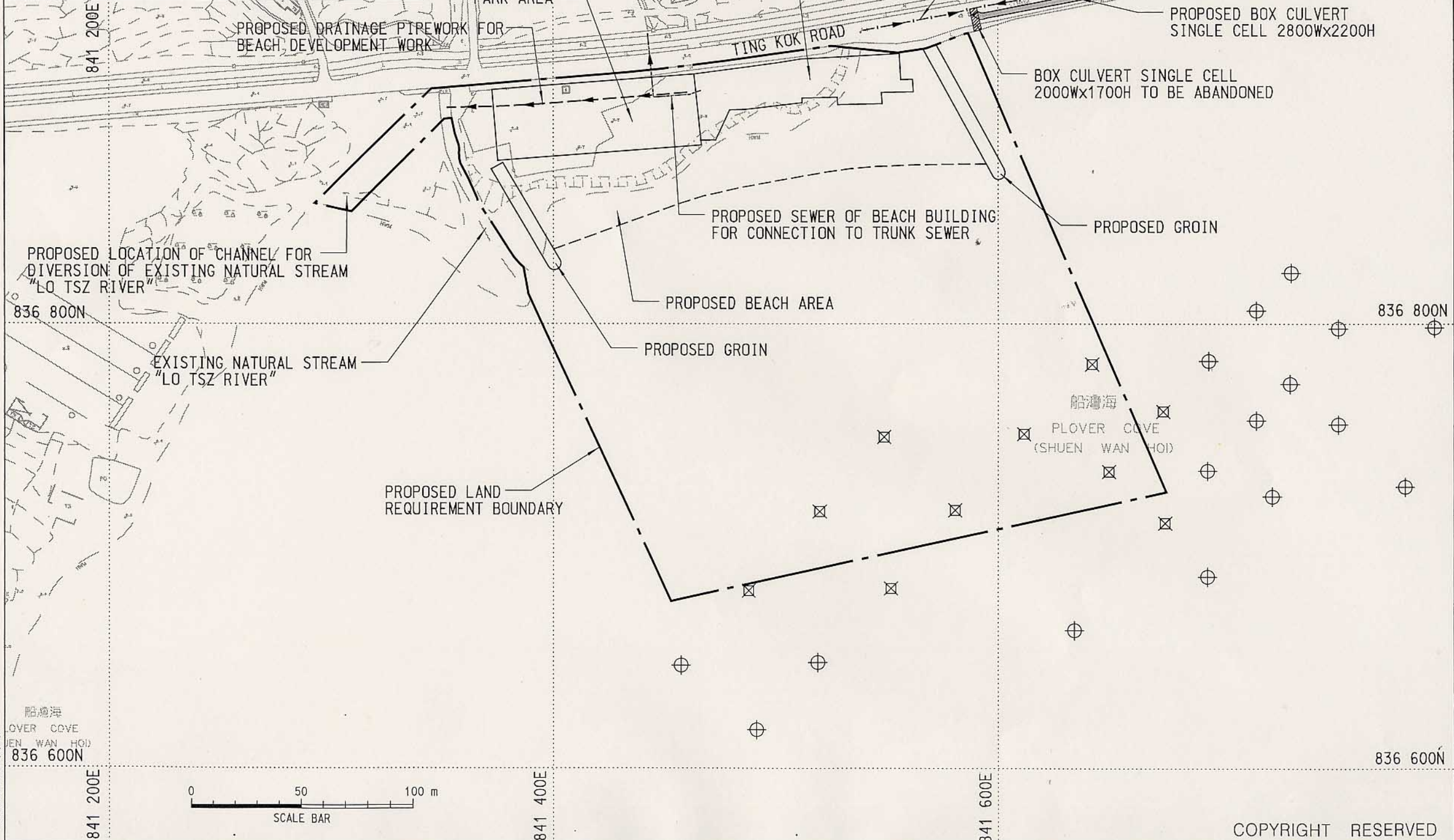
Appendix A

Drawing No. PW-SK05-175

Land Requirement Plan



KEY PLAN
SCALE : NOT TO SCALE



- NOTES :**
- ALL DIMENSIONS ARE IN MILLIMETRES.
 - ALL CO-ORDINATES REFER TO HONG KONG GEODETIC DATUM 1980 AND ARE IN METRES.

- LEGEND:**
- PROPOSED LAND REQUIREMENT BOUNDARY
 - ⊕ EXISTING MOORING
 - ⊗ EXISTING MOORING TO BE RELOCATED

no.	date	description	checked	approved
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REVISION

	name	initial	date
designed	C P WONG	<i>CPW</i>	21.11.05
drawn	M F YUEN	<i>yuen</i>	21.11.05
traced	M F YUEN	<i>yuen</i>	21.11.05
checked	W C LEUNG	<i>wcl</i>	30.11.05

approved

 (W.L. LAU)
 Chief Engineer
 date : 30.11.05

contract no.
 file no.
 project no.
 contract

drawing title
PROPOSED BEACH DEVELOPMENT WORK AT LUNG MEI BEACH - LAND REQUIREMENT PLAN

drawing no. **PW-SK05-175** scale **NOT TO SCALE**

office
 PORT WORKS DIVISION
 CIVIL ENGINEERING OFFICE



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Appendix B (Plant Community in Ting Kok SSSI)

A total of 13 plant species have been identified at Ting Kok SSSI¹, with 7 true or exclusive mangrove species, 2 associate or non-exclusive mangrove species, and 4 other non-mangrove species, which seem to have high conservation values.

True Mangrove

1. *Kandelia obovata* (L.) Druce (秋茄，水筆仔)
2. *Aegiceras corniculatum* (Linn.) Blanco (桐花樹)
3. *Excoecaria agallocha* L. (海漆)
4. *Acanthus ilicifolius* L. (老鼠筋)
5. *Avicennia marina* (Forsk.) Vierh. (白骨壤，海欖雌，海茄冬)
6. *Bruguiera gymnorrhiza* (L.) Poir (木欖)
7. *Lumnitzera racemosa* Willd. (欖李)

Associate Mangroves

1. *Clerodendrum inerme* (Linn.) Gaertn. (假茉莉，苦楮)
2. *Hibiscus tiliaceus* L. (黃槿)

Other Plant Species

1. *Pandanus tectorius* Sol. (露兜樹)
2. *Suaeda australis* (R. Br.) Moq. (南方鹹蓬)
3. *Derris trifoliata* Lour. (魚藤)
4. *Limonium sinense* (Girard) Kuntze (寶血草)

¹ Tam, F.Y. and WONG, Y.S. (2000). Field Guide to Hong Kong Mangroves. City University of Hong Kong Press.

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Appendix C (Animal Community in Ting Kok SSSI)

The ground-dwelling animals in Ting Kok mangrove stand is separated into three groups according to order of occurrence.² These are (1) common species (can be found in most of the mangrove stands in Hong Kong), (2) frequent species (can be found in some mangrove stands in Hong Kong), and (3) uncommon species (can only be found in Ting Kok mangrove stand).

Common Species

1. *Alpheus brevicristatus* (短脊鼓蝦)
2. *Cerithidea djadjariensis* (查加擬蟹守螺)
3. *Cerithidea microptera* (小翼擬蟹守螺)
4. *Cerithidea rhizophorarum* (紅樹擬蟹守螺)
5. *Clithon oualaniensis* (奧萊彩螺)
6. *Geloina erosa* (掉地蛤)
7. *Ligia exotica* (海蟑螂)
8. *Pagurus sp.* (寄居蟹)
9. *Periophthalmus cantonensis* (彈塗魚)
10. *Saccostrea cucullata* (僧帽牡蠣)
11. *Terebralia sulcata* (溝紋筍光螺)
12. *Uca chlorophthalmus crassipes* (粗腿綠眼招潮蟹)
13. *Barnacle species* (籐壺)
14. *Oyster species* (蠔, 牡蠣)

Frequent Species

1. *Batillaria multiformis* (多形灘榊螺)
2. *Batillaria zonalis* (縱帶灘榊螺)
3. *Cassidula plectroematoides* (絞孔冑螺)
4. *Cellana testudinaria* (龜嫁戚)
5. *Cerithidea cingulata* (珠帶擬蟹守螺)
6. *Cerithidea ornate* (彩擬蟹守螺)
7. *Clithon faba* (豆彩螺)
8. *Clypeomorus coralia* (桑堪螺)
9. *Fulvia sp.* (薄殼鳥蛤)

² Tam, F.Y. and WONG, Y.S. (2000). Field Guide to Hong Kong Mangroves. City University of Hong Kong Press.

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10. *Gafrarium tumidum* (凸加夫蛤)
11. *Nerita chamaeleon* (矮獅蛭螺)
12. *Nerita lineate* (黑綫蛭螺)
13. *Nerita yoldii* (齒紋蛭螺)
14. *Neritina (Dostia) violacea* (紫蛭螺)
15. *Pyramidella sp.* (小塔螺)
16. *Scylla serrata* (鋸緣青蟹)
17. *Clithon species* (彩螺)

Uncommon Species

1. *Acmaea sp.* (笠貝科)

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Appendix D

Drawing No. PW-SK05-174

- Location of Sensitive Receivers

