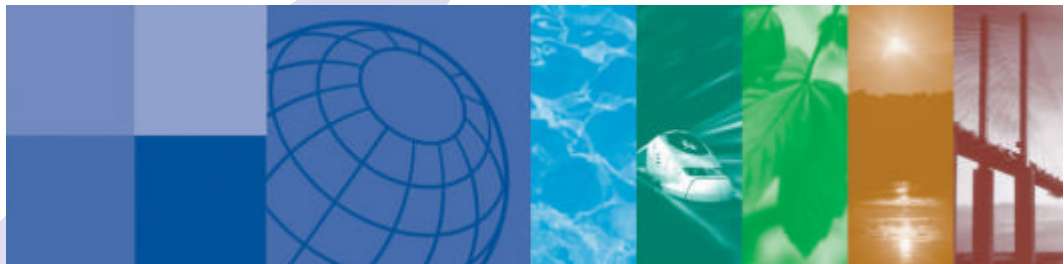


Halcrow China Limited

AGREEMENT NO. CE 59/2005 (EP)

Development of a Bathing Beach at Lung Mei, Tai Po
Environmental, Drainage and Traffic Impact
Assessments - Investigation
EIA Study Report - Executive Summary

November 2007



**The Government of Hong Kong Special
Administrative Region
Civil Engineering and Development Department
Port Works Division**

Halcrow

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1 INTRODUCTION

1.1 Background

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. Therefore, in May 1998 the ex-PRC's Culture, Recreation and Sports Committee endorsed the implementation of a feasibility study commissioned by the Architectural Services Department (ArchSD), which commenced in late 1999 and completed in mid-2001, concluded that it was technically feasible to construct a bathing beach at Lung Mei.

Moreover, the Tai Po District Council (TPDC) also considered that the existing swimming facilities at the Tai Po Swimming Pool Complex were insufficient to meet the local demand. Moreover, there is no beach facility in the east region of the New Territories, except Sai Kung District which is quite distant from Tai Po District.

In light of the above, the TPDC strongly requested the development of a bathing beach at Lung Mei and members of the TPDC 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 Assignment. The Recreation, Sports and Cultural Affairs Committee of Tai Po District Council (TPDC) was consulted on 14 July 2004, where members supported the project scope and urged for early implementation of the project (the Proposed Beach Development). This project was one of the 25 projects identified for priority implementation in the Chief Executive's 2005 Policy Address and has the support of Home Affairs Bureau. It is considered that this Proposed Beach Development at Lung Mei will meet the increasing demand for swimming facilities. The beach can also serve a recreational function even during non-bathing season, ie playing in the sand, sunbathing and other beach activities.

Lung Mei is adjacent to a prominent leisure area, Tai Mei Tuk, with well-established facilities for holiday-makers and water-based recreation activities, which has attracted many visitors, in particular during public holidays. It is anticipated that the proposed bathing beach would complement the facilities already provided in the Tai Mei Tuk area.

The Port Works Division (PWD) of Civil Engineering and Development Department (CEDD) is the project vote controller. CEDD is also responsible for the overall planning, design and civil engineering construction of the Project. However, Architectural Services Department is responsible for design and construction of the beach building, car park and landscaping works. On 26 May 2006, CEDD appointed Halcrow China Limited (Halcrow), under Agreement No. CE 59/2005 (EP), to provide professional services in respect of "Development of a Bathing Beach at Lung Mei, Tai Po – Environmental, Drainage and Traffic Impact Assessments – Investigation" (hereafter called "the Assignment"). Halcrow has appointed their sub-consultant,

Environmental Resources Management (ERM) to provide the environmental services in respect of the Assignment.

1.2 Objectives and Scope of the EIA

This Project is a designated project according to Items C.2 and C.12 of Part I, Schedule 2 of the Environmental Impact Assessment Ordinance (*EIAO*) as reclamation works of the Project is more than 1 ha in size and its boundary as well as the dredging operation of the Project are less than 500m from the nearest boundary of an existing Site of Special Scientific Interest, Coastal Protection Area and Conservation Area and therefore, an Environmental Impact Assessment (EIA Study) is required under the *EIAO*. The construction and operation of this Project will therefore require an Environmental Permit.

The main objective of this EIA Study is to provide information on the nature and extent of environmental impacts arising from the construction and operation of the development of a bathing beach at Lung Mei, Tai Po and all related activities taking place concurrently.

The specific objectives for the EIA Study are set out in the EIA Study Brief (ESB138/2005), including construction phase air quality, noise, water quality, waste management, ecology, fisheries, landscape and visual impacts.

1.3 Approach to the Study

The EIA Study was conducted in accordance with the guideline on assessment methodologies provided in the Technical Memorandum on Environmental Impact Assessment Process (*EIAO-TM*). The general approach for the assessment included:

- Description of the baseline environmental conditions for the impact assessment;
- Identification of potential impacts;
- Evaluation of potential impacts; and
- Recommendation of mitigation measures and environmental and monitoring programme.

The assessments in this EIA Study are conducted using well-proven and internationally accepted methods based on the worst-case conditions associated with the construction and operation of the Project.

2 PROJECT DESCRIPTION

2.1 Construction and Operation of the Project

The location and general layout of the bathing beach development is shown on *Figure 2.1*.

The Project will involve the construction and operation of a bathing beach at Lung Mei, Tai Po (Proposed Beach Development). The beach will provide a facility for visitors for leisure and recreation. The Project will include the following facilities:

- Construction of a 200m long beach with a groyne at each end, which includes dredging and sandfilling works;
- Construction of one culvert at the eastern side of the beach and another small section of culvert and open drainage channel with gabion embankments at the western end, both to collect and divert surface runoff from upstream locations; and
- Construction of beach buildings with associated beach building facilities, kiosk and a fee-paying car park and associated road improvement works adjoining the facility.

2.2 Construction Programme

The construction works are anticipated to commence in December 2008 and the works are scheduled to be completed within two years, exclusive of delays due to issues such as inclement weather. The construction programme is shown in *Figure 2.2*. It should be noted that the Tolo Harbour Sewerage of Unsewered Areas Stage I Phase IIC (Agreement No. CE 18/94) will carry out works connecting the unsewered areas from Ting Kok village to Lung Mei village, which are in the vicinity of the bathing beach development. The sewerage construction works is scheduled to be completed prior to the operation of this Proposed Bathing Beach Development project. With the implementation of the sewerage connection (expect to be 60% connection rate) and the gazette of the Tolo Harbour Sewerage of Unsewered Areas Stage I Phase IIC (Agreement No. CE 18/94) including Lung Mei area, as part of the Sewerage Master Plan Works for Tolo Harbour Catchment, the water quality at Lung Mei will be improved and guaranteed, and facilitating the operation of this bathing beach.

3 ENVIRONMENTAL IMPACTS

The environmental impacts associated with the construction and operation of the Project are summarised in the following sections.

3.1 Construction Phase Air Quality

The construction phase air quality impact assessment indicates that dust generating activities and gaseous emissions from construction plant for the Proposed Beach Development may potentially cause air quality impacts to adjacent Air Sensitive Receivers (ASRs). The construction of the Proposed Beach Development involves site formation, localised widening of Ting Kok Road, building works, construction of gabion, groynes and culverts and sand filling for the beach. Excavation, dredging, filling, truck movements, materials handling and wind erosion of open stockpiles of dusty materials have been identified to be the key dust generating activities. In view of the small scale of the Proposed Beach Development and the small size of the worksite, no adverse fugitive dust impact is envisaged with the implementation of dust control measures and adoption of good site practices.

Potential air quality impacts associated with gaseous emissions of diesel-powered construction vehicles and equipment are expected to be relatively small as only a small number of diesel construction vehicles and plant will be operated in the limited works areas at any one time. The requirement for all construction plant to use ultra-low-sulphur diesel (ULSD) will further reduce the potential air quality impacts. The potential cumulative dust impacts from the contemporary occurrence of the Tolo Harbour Sewerage of Unsewered Areas Stage I Phase IIC project (Tolo Harbour Sewerage Improvement) works have been assessed, the cumulative dust impacts will expect to be minor.

To ensure compliance with the relevant dust criterion at the ASRs and implementation of appropriate control measures during the construction phase, a programme for dust monitoring and site audit has also been recommended.

3.2 Noise Impact

3.2.1 Construction Phase

Construction noise impact at the selected Noise Sensitive Receivers (NSRs) located proximately to the Proposed Beach Development has been predicted. Mitigation measures are required to be implemented to mitigate the construction noise impacts. Practicable mitigation measures, including use of quiet construction plant and movable noise barriers, have been recommended to be implemented for different work stages. With the implementation of mitigation measures, the mitigated construction noise levels at the representative NSRs are anticipated to comply with the construction noise criterion of 75 dB(A) throughout the construction period. Construction noise

monitoring has been recommended to ensure compliance with the construction noise criterion. The potential cumulative noise impacts from the contemporary occurrence of the Tolo Harbour Sewerage Improvement works have been considered, and the assessment result indicates that the cumulative construction noise level at the NSRs complies with the construction noise criterion of 75 dB(A).

Weekly noise monitoring will be carried out at the proposed monitoring stations during the construction phase to ensure the construction noise criterion is met. In addition, regular site audits twice a month will be conducted to ensure recommended mitigation measures are properly implemented.

3.2.2 Operational Phase

The predicted operational noise levels at the representative NSRs are expected to comply with the daytime criteria based on the assessment using a set of specified maximum SWLs for the fixed plant to be installed at the Proposed Beach Development. Attenuation measures, if required, will be provided to the fixed plant for achieving the guaranteed noise levels during the detailed design stage, and therefore operational phase noise monitoring is not required.

3.3 Water Quality

3.3.1 Construction Phase

The water quality modelling works have indicated that for both the dry and wet seasons, no exceedances of the Water Quality Objectives (WQO) and the evaluation criterion are predicted to occur during the dredging and sandfilling operations. The impact assessment has also shown that other land-based construction works, if properly controlled, are not expected to cause any adverse impacts to the surrounding waters and the sensitive receivers. With the implementation of the proposed mitigation measures and good site management practices, water quality impacts will be further minimised.

Marine water quality monitoring will be conducted to evaluate whether any impacts would be posed by the marine works on the surrounding waters during the undertaking of dredging and filling works.

3.3.2 Operational Phase

No operational impacts to water quality are expected to occur if mitigation measures are fully implemented. Considering that the improvement works, including the diversion of drains, the provision of groynes and with DSD's new sewerage system to be in place, the beach water quality is expected to be significantly improved. The proposed site is suitable to operate as a bathing beach with regard to the compliance with the WQO for *E. coli* and high likelihood of achieving Beach Grade 2 (Fair) standard during its operation phase. In addition to the improvement works, the operator will pay best effort to provide the greatest protection for the bathers. It is also noted that the Tolo Harbour Sewerage of Unsewered Areas Stage I Phase IIC (Agreement No. CE 18/94) including Lung Mei area, as part of the Sewerage Master Plan (SMP) Works, is expected to be gazetted prior to the operation of the Proposed Beach Development. This will further improve the water quality in the Lung Mei region since it is mandatory for new developments to connect to the public sewer. CEDD and LCSD will closely monitor the implementation programme of the village sewerage projects to achieve the target sewerage connection rate to communal sewers before the beach is put into operation.

In addition to the compliance with water quality standards, Lung Mei is considered to be the best location for the proposed beach development in view of the community demand and accessibility:

- **Community Demand:** There is no beach facility in the east region of the New Territories, except in the Sai Kung District, which is very far from Tai Po District. Moreover, the existing and future swimming facilities in the Tai Po areas could not satisfy the demand for a bathing beach. Therefore, the public has been requesting repeatedly to the LCSD for a beach development in the Tai Po District. Consequently, the Feasibility Study was carried out and identified in 2001 that the current project site as a feasible location for developing a bathing beach. In light of the above, the Tai Po District Council (TPDC) strongly requested the development of a bathing beach at Lung Mei and members of the TPDC 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 Assignment. This project was one of the 25 projects identified for priority implementation in the Chief Executive's 2005 Policy Address and has the support of Home Affairs Bureau. It is considered that this Proposed Beach Development at Lung Mei will meet such the increasing demand for swimming facilities. Moreover, the beach can serve a recreational function even during non-bathing season, ie playing in the sand, sunbathing and other beach activities.
- **Accessibility:** Lung Mei is located next to the existing road (Ting Kok Road) and at the sea front. The proposed Lung Mei beach facilities and carpark area will be highly accessible.

3.4 Waste Management

3.4.1 Construction Phase

It is anticipated that a total of approximate 10,500 m³ of marine sediment will be dredged. About 6,380 m³ of the sediments are uncontaminated and can be disposed of at the open sea disposal sites and about 2,620 m³ of the Category M sediment (which passed the biological screening) will be disposed of at dedicated open sea disposal sites. The remaining 1,500 m³ of the Category M (which failed the biological screening) will have to be disposed of at the confined marine disposal site at East Sha Chau. The final disposal site for the dredging sediments will be determined by the Marine Fill Committee (MFC) and a dumping licence will be obtained from Environmental Protection Department (EPD) prior to the commencement of the dredging works.

About 13,800 m³ of excavated materials will be generated during construction phase and 8,280 m³ (about 60%) of which will be reuse on-site. The surplus excavated soil will be reused in other concurrent construction projects in Hong Kong or disposed of at public fill reception facilities.

The anticipated quantities of demolition waste (470 m³), construction waste (225 m³), chemical wastes (a few hundred litres, mainly are used lube oils), sewage (6 m³ per day) and general refuse (65 kg per day) to be generated during the construction phase of the Project will be small. With the implementation of the general good construction site practices, the construction of the Proposed Beach Development will not cause adverse waste management or environmental impacts with respect to the criteria specified in the *EIAO-TM*. A waste monitoring and audit programme will be conducted to monitor and control construction contractors' performance on waste management.

3.4.2 Operational Phase

During the operational phase, it is estimated that a maximum of 10 m³ of sewage and 1,520 kg of general refuse will be produced each day by visitors during peak season. In view of the small quantity of sewage and general refuse to be generated and their proper disposal to foul sewer or transfer station/landfill, no adverse environmental impact associated with the management of these wastes is anticipated during the operation of the Proposed Beach Development.

3.5 Ecology

The ecological resources recorded within the Study Area include secondary woodland, shrubland, stream, channel, pond, sandy shore with backshore vegetation, village/modified area, mangrove, sandy shore and artificial/ disturbed shoreline, as well as subtidal soft and hard bottom and associated wildlife. Of these habitats, mangrove has high ecological value, secondary woodland has moderate to high ecological value and shrubland has moderate ecological value. The remaining habitats are of low to low to moderate ecological value.

A total of 3 coral species (including *Oulastrea crispate*, *Cyphastrea serailia* and *Psammocora superficialis*), which considered as common species in Hong Kong and 20 terrestrial species of conservation interest were recorded within the Study Area, including 2 plant species (Red Azalea and Incense Tree), 4 bird species (Black Kite, White-bellied Sea Eagle, Osprey and Created Goshawk), 13 uncommon butterfly species (Brown Pansy, Common Nawab, Danaid Egg-fly, Dark Evening Brown, Great Swift, Indian Palm Bob, Painted Jezebel, Plain Tiger, Silver Streak Blue, South China Bush Brown, Tailed Sulphur, White-edged Blue Baron and Yellow Orange Tip) and one reptile species (Common Rat Snake).

The Proposed Beach Development will be located mainly in low quality habitats, including village/modified area, sandy shore with backshore vegetation and channel. The potential construction and operational impacts on the natural habitats are considered to be low. The corals within the Study Area and area in the vicinity would not subject to any direct loss (due to construction works) or indirect loss (due to change of water quality). No adverse residual impacts are expected after the implementation of the recommended mitigation measures. The measures include the adoption of good construction practices and provision of mangrove seedling planting. These measures will reduce potential disturbance to the surrounding environment. Environmental monitoring and audit measures in form of regular checks as part of the site inspections will also be undertaken.

3.6 Fisheries

Information from a study on fishing operations in Hong Kong and the Agriculture, Fisheries and Conservation Department (AFCD) Port Survey 2001/2002 indicate that fisheries production values in the vicinity of the assessment area are generally medium. Fish culture zones are generally too remote to be affected by the construction and operation of the Proposed Beach Development.

3.6.1 Construction Phase

Significant construction phase impacts to fisheries resources and fishing operations are not expected to occur. Potential impacts to fisheries resources and fishing operations, as well as impacts to fish fry, may arise from the temporary and permanent loss of habitat due to dredging and sandfilling. Given the small size of marine habitat affected, the associated impacts to fisheries resources are considered as acceptable. Impacts arising from the proposed dredging or sandfilling works are predicted to be largely confined to the specific works areas and the predicted elevations in suspended sediment concentrations at the sensitive receivers are not predicted to cause exceedances of the assessment criterion.

Silt curtain will be provided during the dredging and sandfilling works in the marine water as precautionary measure. Adverse impacts to water quality are not predicted. Water quality monitoring will be conducted at Yim Tin Tsai (East) Fish Culture Zone during the dredging and sandfilling works.

3.6.2 Operational Phase

Significant operational phase impacts to fisheries resources and fishing operations are not expected to occur. Approximately 4.7 ha of coastal waters will be restricted for fishing operation during the operation of the beach. Adverse impacts to fisheries are not predicted to be significant given the small size of the affected area. Impact from sewage and wastewater discharge is not anticipated to occur as the sewage and wastewater generated from the beach building facilities will be discharged into the public sewer. No additional fisheries-specific mitigation measures are required during operation.

3.7 Landscape and Visual Impact

Three Landscape Character Areas (LCAs) were identified and the residual impacts on the LCA1 (Foreshore Landscape) will be *moderate*. For LCA2 (Inshore Waters Landscape), the residual impact will be *slight* and for LCA3 (Coastal Rural/Suburban Landscape) the residual impact will be *negligible*. Two new LCAs will also be created 'Recreational Beach Landscape' and 'Coastal Urban Recreational Landscape' as a consequence of the project.

Of the seven Landscape Resources (LRs) identified, there will be no *significant* residual impacts on any of the LR after the implementation of mitigation measures. There will be *moderate* residual impacts on Trees/Backshore Shrubland and the Sandy/Rocky Beach LR. There will be *slight* residual impacts on the Water LR and for the Shrubland, River, Road and Village, the residual impacts will be negligible. One new LR will also be created 'Sandy Beach' as a consequence of the project.

Four visually sensitive receivers (VSRs) including VSR 1 (Tai Mei Tuk), VSR 2 (Lung Mei Residents), VSR 3 (BBQ site) and VSR 4 (Lo Tsz Tin residents) were identified. The un-mitigated visual impacts for VSR 1 (Tai Mei Tuk), VSR 2 (Lung Mei Residents) and VSR 4 (Lo Tsz Tin residents) in operation stage will be *significant*. However, with the implementation of the mitigation measures, the impact will be more acceptable resulting in *moderate/significant* in Operation Day 1 and *moderate* in Operation Year 10. For VSR 3 (BBQ Site - West of the site), the unmitigated visual impacts will be *moderate/significant*. However, with the implementation of the mitigation measures, the impact will be reduced to *moderate* in Operation Day 1 and *slight* in Operation Year 10. In sum, the proposed beach development will inevitably change the existing waterfront view of the area. However, there will be no significant residual impacts for any VSRs. With the adoption of the mitigation measures, the residual impact will be reduced to a large extent and is considered acceptable.

There will be various lighting fixtures associated with the project, with the most visible light source being the carpark lighting. Whilst these lights will contribute to the general ambient light levels of the area, the impacts are not expected to be significant. According to *Annex 10 of the Technical Memorandum on the Environmental Impact Assessment Process (EIAO-TM)* the Landscape and Visual Impacts are considered *acceptable with mitigation*.

3.8 Environmental Monitoring and Audit

3.8.1 Construction Phase

Construction dust monitoring (in terms of Total Suspended Particulates) will be conducted once every 6 days at ASRs A4 (No. 101 Lung Mei Tsuen) and A6 (No. 79 Lo Tsz Tin Tsuen) to ensure the dust level compliance with relevant criterion.

Weekly noise monitoring at NSRs N1 to N4 (village houses Nos. 103 and 165A Lung Mei and Nos. 70 and 79 Lo Tsz Tin) will be carried out during the construction phase to ensure the noise level at the NSRs are compliance with the noise criterion. If house No. 101 Lung Mei (N2a) is changed to residential use, noise monitoring station should be moved from N2 to N2a.

Water quality monitoring (3 days per week) during baseline monitoring (prior to the dredging works), impact monitoring (during dredging and sandfilling works) and Post Project Monitoring (after completion of sandfilling work) will be conducted to verify the distance of sediment plume dispersion, to identify whether the potential exists for any indirect impacts to occur to ecological sensitive receivers and to ensure that any deteriorating water quality (including the Fish Culture Zone) is readily detected and timely action taken to rectify the situation. Details of the water quality monitoring

requirements and monitoring locations (including Yim Tin Tsai Fish Culture Zone) are presented in the Environmental Monitoring and Audit Manual.

A one day-time search of the Common Rat Snake within the land based Proposed Beach Development just before the commencement of the construction works will be undertaken. All recorded Common Rat Snake should be caught by hand and translocated to the shrubland at the north of the Study Area, immediately after the search. The Common Rat Snake search and translocation works should be undertaken by a qualified ecologist.

The following regular environmental site audit/inspection will be carried out to ensure:

- the dust control measures and good site practice recommended are adopted;
- the recommended noise mitigation measures are properly implemented;
- the recommended good construction site practices are adopted to minimise the potential ecological impacts;
- Waste streams are inspected to determine if wastes are being managed in accordance with the approved procedures and the site Waste Management Plan and all aspects of waste management including waste generation, storage, recycling, transport and disposal are audited; and
- the quality of the constructed landscape is maintained and inspection of the proposed plant material will be undertaken prior to delivery on site.

3.8.2 *Post-Construction Phase*

Monitoring for *E. coli* is recommended at the various locations including the outfalls of the culvert/channel and at the beach during within 6 weeks after the completion of the construction works. The purpose of the monitoring is to investigate the characteristics of *E. coli* loading in the box culverts and to establish relationship with *E. coli* levels in the beach.

Implementation programme of the village sewerage projects should be also monitored to achieve the target sewerage connection rate to communal sewers before the beach is put into operation.

3.8.3 *Operational Phase*

EPD has well established a comprehensive water quality monitoring programme for all gazetted beaches to detect any deterioration of beach water quality, which will also be implemented in this Lung Mei bathing beach. In case the Lung Mei beach water quality tends to be deteriorated and becomes not desirable for swimming, LCSD will close the beach temporarily until the beach water quality becomes suitable for

swimming. EPD will continue monitoring the beach water quality and provide LCSD the monitoring results.

In the event of red tide that may occur naturally, similar to the practice adopted for other gazetted beaches by Leisure and Cultural Services Department, Lung Mei Beach may be closed in accordance with the relevant procedures.

Mangrove seedling planting will be implemented and supervised by a suitably qualified botanist/ horticulturist before the operation of the Proposed Beach Development. The detailed mangrove planting proposal providing information of planting methodology, recipient site, planting species and mix, implementation programme, post-planting monitoring and personnel involved will be submitted to and approved by AFCD. After planting, one year monitoring will be undertaken to check the performance and health conditions of the planted individuals on a monthly basis. Remedial actions should be discussed with AFCD in the event of unsuccessful mangrove seedling planting.

Ongoing monitoring and maintenance to approved Hong Kong standards should be undertaken to ensure the long term health of the plant materials.

3.9 Overall Conclusion

The environmental impact assessment (covering air quality, noise, waste management, water quality, ecology, fisheries and landscape and visual) has concluded that no unacceptable environmental impacts are envisaged due to the construction and operation of the Proposed Beach Development.

No adverse residual air, noise, water quality, waste management and landscape and visual impacts are anticipated from the construction and operation of the Project with the implementation of the recommended mitigation measures and good site practices.

Although permanent loss of habitats (including backshore vegetation, village/modified area, intertidal and subtidal bottomed) and existing seabed are identified as residual ecological and fisheries impacts, the impacts are considered low/ negligible due to the low quality habitats and high mobility of faunal species and the fish can rehabilitate in the intertidal part of beach area. Thus, no long term unacceptable impacts on the environment are anticipated.

Lung Mei is considered to be the best location for the proposed beach development in view of the following:

- **Community Demand:** There is no beach facility in the east region of the New Territories, except in the Sai Kung District, which is very far from Tai Po District. Moreover, the existing and future swimming facilities in the Tai Po areas could not satisfy the demand for a bathing beach. Therefore, the public has been requesting repeatedly to the LCSD for a beach development in the Tai Po District. Consequently, the Feasibility Study was carried out and identified in 2001 that the current project site as a feasible location for developing a bathing beach.

In light of the above, the Tai Po District Council (TPDC) strongly requested the development of a bathing beach at Lung Mei and members of the TPDC 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 Assignment. This project was one of the 25 projects identified for priority implementation in the Chief Executive's 2005 Policy Address and has the support of Home Affairs Bureau. It is considered that this Proposed Beach Development at Lung Mei will meet the increasing demand for swimming facilities. Moreover, the beach can serve a recreational function even during non-bathing season, ie playing in the sand, sunbathing and other beach activities.

- **Accessibility:** Lung Mei is located next to the existing road (Ting Kok Road) and at the sea front. The proposed Lung Mei beach facilities and carpark area will be highly accessible.

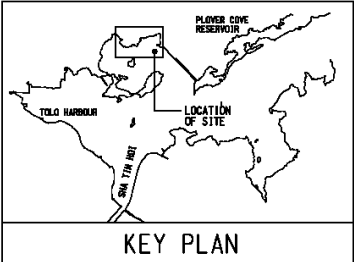
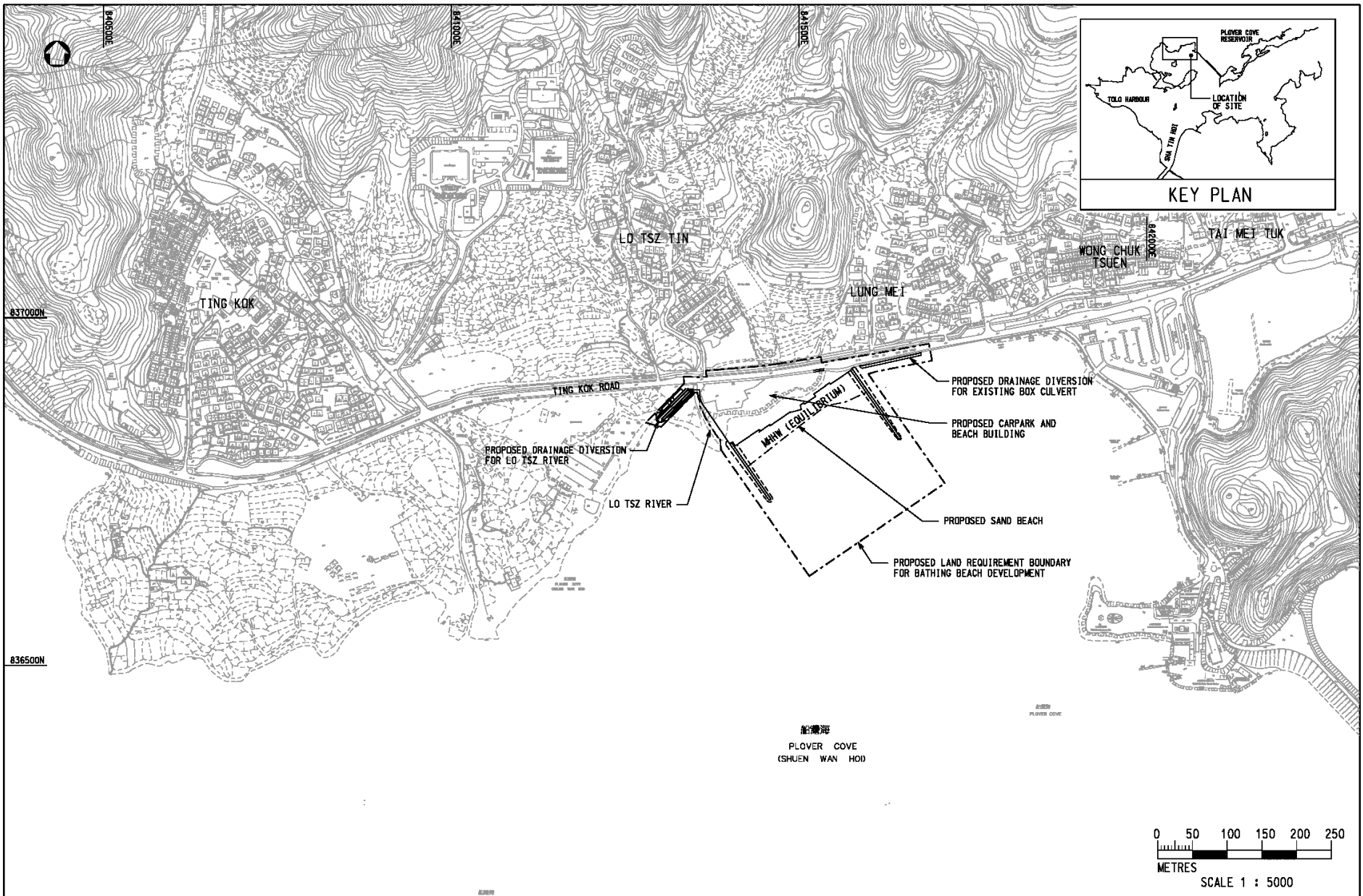
- **Compliance with Water Quality Standards:** The proposed improvement works of this Project involve the diversion of drains and the provision of groynes. Based on the results of the Water Quality Impact Assessment (refer to *Section 6*), these improvement works will significantly improve the water quality (ie with most of the time (over 86%) during bathing beach in operation phase, the weekly beach gradings of Lung Mei Beach will be of Grade 2 or Grade 3 which LCSD considers to be acceptable) of the Lung Mei beach area. The proposed site is hence considered to be suitable to operate as a bathing beach with regard to the compliance with the WQO for *E. coli*.

In addition, it is noted that the Tolo Harbour Sewerage of Unsewered Areas Stage I Phase IIC (Agreement No. CE 18/94) including Lung Mei area, as part of the Sewerage Master Plan (SMP) Works, is expected to be gazetted under Road (Works, Use and Compensation) Ordinances as applied by Water Pollution Control (Sewerage) Regulation prior to the operation of the Proposed Beach Development. This will further improve the water quality in the Lung Mei region since it is mandatory for new developments to connect to the public sewer. CEDD and LCSD will closely monitor the implementation programme of the village sewerage projects to achieve the target sewerage connection rate to communal sewers before the beach is put into operation.

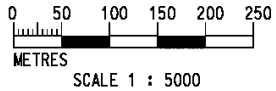
Within six weeks after the completion of the construction of the Proposed Beach Development, *E. coli* monitoring will be carried out twice per week at two diverted drains and EPD routine monitoring stations to examine the correlation of the pollution loading and the beach water quality (details refer to *Section 11.6* and the *EM&A Manual*). This information will be reviewed by LCSD to ensure the beach water quality is suitable for recreational purpose before the beach is put into operation.

EPD has well established a comprehensive water quality monitoring programme for all gazetted beaches to detect any deterioration of beach water quality, which will also be implemented in this Lung Mei bathing beach. In case the Lung Mei beach water quality tends to be deteriorated and becomes not desirable for swimming, LCSD will close the beach temporarily until the beach water quality becomes suitable for swimming. EPD will continue monitoring the beach water quality and provide LCSD the monitoring results.

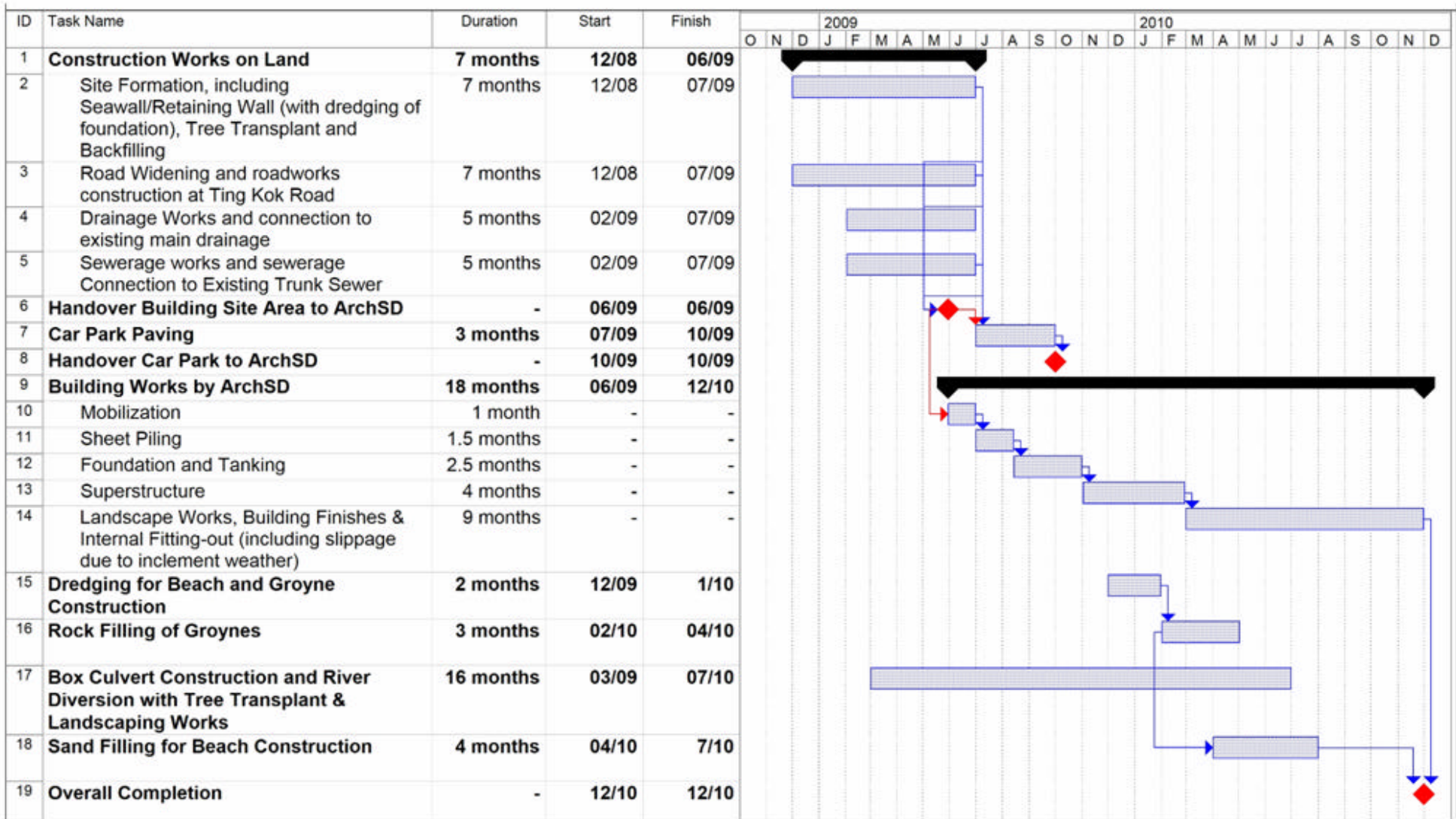
Figures



船灣海
 PLOVER COVE
 (SHUEN WAN HOI)



CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT	Consulting Engineer Halcrow China Ltd.	Environmental Resources Management as sub-consultant	Agreement No. CE 59/2005 (EP)	Figure Title	FIGURE 2.1									
			Project Title DEVELOPMENT OF A BATHING BEACH AT LUNG MEI, TAI PO	SITE LOCATION PLAN AND GENERAL LAYOUT	<table border="1"> <tr> <td>Checked:</td> <td>PS</td> <td>Scale:</td> <td>1:5000 @ A3</td> <td>Rev.:</td> <td>2</td> </tr> <tr> <td>Designed:</td> <td>YC</td> <td>Drawn:</td> <td>PF</td> <td>Date:</td> <td>14/03/2007</td> </tr> </table>	Checked:	PS	Scale:	1:5000 @ A3	Rev.:	2	Designed:	YC	Drawn:
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Programme Key Date
Task
Summary



Agreement No.: CE 59/2005(EP)
 Project Title: DEVELOPMENT OF A BATHING BEACH AT LUNG MEI, TAI PO

Figure Title: TENTATIVE CONSTRUCTION PROGRAMME

FIGURE 2.2			
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