Civil Engineering Department
The Government of the Hong Kong Special Administrative Region

Agreement No. CE 68/99

Infrastructure for Penny's Bay Development Engineering Design and Construction

PROJECT PROFILE - DECOMMISSIONING OF CHEOY LEE SHIPYARD AT PENNY'S BAY

September 2000

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in association with
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PROJECT PROFILE

1. BASIC INFORMATION

1.1 Project Title

1.1.1 Decommissioning of Cheoy Lee Shipyard at Penny's Bay.

1.2 Purpose and Nature of the Project

1.2.1 The purpose of the project is to demolish all the buildings and structures, and to decommission the Cheoy Lee Shipyard. Where any land contamination is identified, the land will be decontaminated as appropriate.

1.3 Name of Project Proponent

1.3.1 Special Duties (Works) Division, Civil Engineering Department.

1.4 Location and Scale of Project

1.4.1 Cheoy Lee Shipyard (CLS) operations commenced in 1964, is located on the north and eastern shores of Penny's Bay, Lantau Island with a site area of about 19 hectares of land. The operations of CLS include a) boat manufacture and b) boat repair and maintenance. Description of processes and operations are highlighted in Section 4.2.

1.4.2 Adjacent to the subject site, there is an existing CLP Gas Turbine Station. A location plan of the site is shown in Figure 1.1.

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

1.5.1 The captioned Project consists of one designated project under Item 17 of Part II of Schedule 2 of the EIA Ordinance, i.e. a facility for ship building or repairing more than 1 ha in size or with a lifting capacity in excess of 20,000 tonnes.

1.6 Name and Telephone Number of Contact Person(s)

1.6.1 All queries regarding the project can be addressed to:

Chief Engineer
Special Duties (Works) Division, Civil Engineering Department
Tel No. ; Fax No.

Senior Engineer
Special Duties (Works) Division, Civil Engineering Department
Tel No. ; Fax No.

2. OUTLINE OF PLANNING AND IMPLEMENTATION PROGRAMME

2.1 General

2.1.1 The objectives of the decommissioning of CLS are to a) demolish existing structures; b) remove abandoned equipment and waste materials; c) clean up all contaminated areas at CLS; and d) implement appropriate mitigation measures as recommended in the decommissioning EIA to avoid/ minimise any adverse environmental impacts arising from the decommissioning of CLS, particularly the disposal of contaminated or hazardous materials, so that the site would be made safe and free of hazards for the planned future uses.

2.2 Responsibilities of Parties

2.2.1 CED is the overall Project Proponent, who oversees and manages the Project. The Project Proponent has commissioned Consultants to conduct site investigation and EIA study of this Designated Project. The decommissioning/ decontamination method will be formulated by the Government's Consultants and the Consultants appointed by Hongkong International Theme Parks Limited. The Project will be implemented by Contractor(s) to be appointed by the Project Proponent at the subsequent stages.

2.3 Project Time Table

2.3.1 Major project milestones are presented in Table 2.1.

Table 2.1 : Implementation Schedule Decommissioning of Cheoy Lee Shipyard

Task No.	Task Name	Start Date	End Date
1.	Environmental Impact Assessment, Site Investigation and Decommissioning Design	Dec 00 [Note 1]	Jun 02
2.	Decommissioning Works	Jul 02	Dec 02

2.4 Interactions with Other Projects

2.4.1 A large-scale international theme park will be constructed together with its related development on reclaimed land in Penny's Bay. Details of the theme park together with its essential associated infrastructure are as follows:

- Reclamation of about 290 ha. of land at Penny's Bay, construction of about 3.3 km seawall, two ferry piers and construction of about 1.5 km long open drainage channel;
- Construction and operation of a theme park of about 185 ha;

[Note 1] The availability of the Cheoy Lee Shipyard (CLS) is assumed by May 2001. However, this is subject to the following conditions:

(i.) Authorisation of the relevant road scheme could be obtained before 15.1.2001; and
(ii.) No extension of time is required for the clearance of the shipyard site.

- Construction and operation of an approximately 32 ha. Water Recreation Centre with a 12 ha. multi-function artificial lake, water-based and land-based recreational facilities and ancillary facilities, and other essential and supporting services and utilities;

- Construction and operation of a drainage channel which discharges into an area which is less than 300 m from the nearest boundary of the existing Pai Tau Kwu Archaeological Site;

- Construction of a 3.5 km district distributor, Resort Road, around the Theme Park plus 800 m pedestrian walkway between Phases I and II of the Theme Park;

- Construction of a 1.5 km section of expressway, Chok Ko Wan Link Road, from the existing Yam O interchange extending over the proposed Penny's Bay Roundabout;

- Construction of a 4 km primary distributor road, Road P2, from Yam O to the eastern Theme Park roundabout and associated access roads;

- Construction of a 3.6 km long rail line linking the Tung Chung Line at Yam O to the Theme Park;

- Construction of a Public Transport Interchange (PTI) for the Theme Park close to the Penny's Bay Station and a temporary PTI at Yam O rail station;

- Construction of two public ferry piers for alternative transport mode and a service quay on the southern waterfront; and

- Proposed slope formation and stabilisation, screening and landscaping works.

2.4.2 The CLS decommissioning is a critical activity to make space available for the construction of Chok Ko Wan Link Road, Road P2 and Water Recreation Centre. Major utility lines also pass through the west side of the site. However, the CLS continues to operate until April 2001. Full-scale site investigation to provide data for the EIA is not possible prior to that date. The date of availability of the CLS is dependent on the progress of the resumption and clearance programme.

3. POSSIBLE IMPACT ON THE ENVIRONMENT

3.1 General

3.1.1 A checklist summarising the environmental impacts that may arise during decommissioning of CLS is attached in Appendix A.

3.2 Air Quality

Dust

3.2.1 During the demolition stage of CLS, dust impact will arise from the demolition of existing structures, haul road emissions, open site erosion, as well as from operations of the temporary stockpiling area. In addition, asbestos-containing materials (ACM) may be present in the subject shipyard.

Emission

3.2.2 A low level of soil gas emission during decontamination stage of CLS will be expected from soil excavation.

3.3 Odour

3.3.1 Significant odour is not expected as the majority of contaminants in question are not of a volatile nature, e.g. heavy metals, lube oil.

3.4 Construction Noise

3.4.1 Construction noise will be generated by activities related to the decontamination and building demolition throughout the project period. However, the project site is remote and noise impacts from the project are not anticipated to be significant.

3.5 Night-time Operations

3.5.1 No night-time operations are planned at this stage. However, if night-time operation of the decontamination system is required, appropriate noise mitigation measures (e.g. noise barriers, silencers, etc.) will be adopted. Furthermore, any construction works to be carried out in restriction periods (including evening, night-time and holidays) shall be controlled under the Noise Control Ordinance.

3.6 Traffic Generation

3.6.1 The uncontaminated building debris arising from the decommissioning of Cheoy Lee Shipyard will be disposed of to public filling areas or public filling barging points by barge. The contaminated materials, depending on the quantities and level of contamination, will be disposed of to landfill sites or other sites for treatment subject to EPD's agreement. It is envisaged that both land and marine traffic will be generated during the decommissioning of CLS (quantities of waste will be estimated in the decommissioning EIA). However, contractual provisions can be stipulated to control the land and marine traffic.

3.7 Water Quality and Contaminated Runoff

3.7.1 Construction wastewater containing elevated levels of suspended solid will likely be generated as a result of surface runoff and domestic sewerage from the workforce will also be generated during decommissioning stage. In addition, the release of contaminated groundwater during decontamination is another concern. The decommissioning EIA will analyse the above issues and identify appropriate mitigation measures if necessary.

3.8 Solid Waste

3.8.1 Construction waste and building debris will be generated from the demolition works. Abandoned equipment including ship wreckage and on-site installations/ facilities will need to be removed during shipyard decommissioning. The decommissioning EIA will analyse any potential impacts and identify mitigation measures if necessary.

3.9 Hazardous Materials or Wastes

3.9.1 Surveys will be carried out to confirm the presence of asbestos containing materials (ACM), such that appropriate handling and removal procedures for ACM can be established.

3.9.2 The subject site may have been polluted by hazardous substances as a result of shipyard operations. Chemical wastes, including fuel, solvent, lub oil, paint, and scrap metal will be generated from the decontamination and site clearance. These wastes should be collected by licensed collectors and disposed of off-site at designated treatment centre.

3.9.3 Contaminated soil may arise from any site decontamination, which requires treatment or disposal.

3.10 Risk of Accident which would result in Pollution Hazard

3.10.1 Contaminated materials will be handled, transported and disposed of by the Contractor for the decontamination activities. Risk of accidents, which will result in pollution or soil/ groundwater re-contamination, will be addressed in decommissioning EIA.

3.11 Disposal of Spoil Material, including Potentially Contaminated Material

3.11.1 Building debris generated from the demolition works and contaminated soil arising from any site decontamination.

3.12 Disruption of Water Movement or Bottom Sediment

3.12.1 Neither dredging nor reclamation will be anticipated in this decommissioning project. Therefore, no significant impacts are expected.

3.13 Unsightly Visual Appearance

3.13.1 The presence of demolition equipment and stockpiled materials in works sites will be the potential sources of unsightly visual appearance. However, the visual impact from decommissioning of CLS will be temporary. Fences will be erected along boundary of

construction sites to minimise the impact. Furthermore, site cleanliness will be maintained and stockpiling of materials will be properly controlled to alleviate the impact. Therefore, no significant visual impact is expected.

3.14 Ecological Impact

Mong Tung Hang Stream and Freshwater Wetland

3.14.1 Potential indirect or direct impacts may arise during demolition of the shipyard buildings and excavation of the site, particularly on the Mong Tung Hang stream and the freshwater wetland which are located in close proximity to the shipyard site.

3.14.2 During demolition work, impacts from human disturbances due to tramping effects and material storage could arise, if uncontrolled. During excavation, siltation of stream due to site run-off and/or temporary dumping of excavated soil on stream or near streambank could have adverse impacts on the fauna and flora of the stream. Similarly, smothering of freshwater wetland species could result from dumping excavated soil, if uncontrolled.

Secondary woodland and Rare and Restricted Plant Species Located in the Backshore Vegetation on the West Side of Penny's Bay

3.14.3 Possible indirect impacts may arise during demolition and excavation due to increase in dust in the surrounding environment. Reclamation of the Bay has commenced in May 2000 and site formation for the Chok Ko Wan Link Road is scheduled to begin in 2001. According to the *Construction of an International Theme Park in Penny's Bay of North Lantau and its Essential Associated Infrastructures EIA*, transplantation of the rare and restricted herb species found in the backshore on the west side of Penny's bay was recommended. It is expected that the plants would have been relocated before the demolition of the shipyard. If such, no impact is anticipated on these rare/restricted species.

3.15 Cultural Heritage

3.15.1 A separate archaeological survey is required to be carried out in the subject shipyard (including area beneath the structures) by Antiquities and Monument Office (AMO) of Leisure & Cultural Services Department (LCSD) after demolition / decontamination. Impact on cultural heritage will therefore be addressed in that archaeological survey report.

4. MAJOR ELEMENTS OF THE SURROUNDING ENVIRONMENT

4.1 Sensitive Receivers

4.1.1 The existing sensitive receivers[NOTE 1] in the area include the following:

- CLP Gas Turbine Station located 45m to the southeast of CLS;
- Archaeological deposits within the CLS site;
- A secondary woodland between Ngong Shuen Au and Wan Tuk;
- Freshwater wetland located adjacent to the northeast boundary of the shipyard on the eastern side of Penny's Bay;
- Protected species pitcher plant *Nepenthes mirabilis* found in freshwater wetland;
- Rare herb species Fimbristylis complanata & Fimbrislysis acuminata found in freshwater wetland;
- A rare herb *Schoenus falcatus* found in backshore vegetation south of Wan Tuk on the western side of Penny's Bay;
- A restricted herb species *Eriocaulon merrilli* found in backshore vegetation south of Wan Tuk on the western side of Penny's Bay;
- The Mong Tung Hang Stream behind CLS; and
- Rare Rice Fish Oryzias latipes found in natural section of the Mong Tung Hang Stream.

4.1.2 The future sensitive receivers in the area include the following :

- Water Recreation Centre

4.2 Pollution Sources

4.2.1 The existing pollution source in the area include the following:

- CLP Gas Turbine Station located 45m to the southeast of CLS.

4.3 Existing and Past Land Uses of the Subject Site

4.3.1 CLS has been in operation since 1964 on reclaimed land leased from the Government. Its shipbuilding business includes a) fibreglass or glass-reinforced plastic boat manufacture, metal (usually steel or aluminium) boat manufacture, and boat repair and maintenance.

4.3.2 The ships and boats fabricated range from the smallest launches to ocean-going yachts,

NOTE 1 At the time of visit, some village houses adjacent to CLS were noted. However, these village houses were observed to be vacant and would not be regarded as sensitive receivers.

passenger ferries, tugs and luxury pleasure craft. The boat repair and maintenance includes general repair of boat hulls and superstructures, re-painting, and the repair, or removal for renovation, of marine engines.

4.3.3 The land use breakdown is as follows:

- 30% for buildings, workshops or offices;
- 15% for storage of fibreglass boat moulds, and
- 55% for general open areas and roads for access, storage, cranes, manoeuvring, slipways and open-air boat fabrication.

4.3.4 The following processes or operations have been undertaken at CLS:

- Foundry, casting and smelting activities to make boat fittings in electric furnace, milling furnace or aluminium smelter;
- Plating activities include anodising and electroplating and final polishing;
- Metalwork, metal sheet fabrication and shot blasting activities associated with the production of vessel;
- Fibreglass mould manufacture;
- Boat construction and finishing.

4.3.5 The land use history of this site prior to 1964 will be determined in the decommissioning EIA.

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

5.1 Mitigation Measures

Dust

5.1.1 During the demolition stage of the project, with the incorporation of the following dust suppression measures, no significant dust impacts are expected.

- Regular watering of exposed site surfaces, unpaved roads, and particularly dusty areas;
- Provision of side enclosure and covering of any aggregate or dusty material storage piles;
- All dusty vehicle and/ or vessel loads transported to, from and between site locations should be covered with tarpaulin;
- Speed controls for on-site vehicles; and
- Provisions of vehicle wheel and body washing stations.

Emission

5.1.2 Excavation will be carefully controlled to minimise soil gas emission. Moreover, site workers will be provided with adequate personal protective gears (e.g. vapour mask) during excavation of contaminated soil.

Noise

5.1.3 The demolition works are expected to be carried out by conventional method using mechanical breakers and jackhammers. In view of the remote location of the subject site, it is unlikely that noise from the demolition works would be a concern.

Water Quality

5.1.4 By implementing the Remediation Action Plan (RAP), with adequate site drainage according to good practices outlined in ProPECC PN 1/94 "Construction Site Drainage", the contaminated runoff and surface runoff could be controlled satisfactorily without adverse impact during demolition, decommissioning and decontamination.

Solid Waste Management

5.1.5 Waste management in the way of avoiding, minimising, reusing and recycling should be adopted to reduce waste generation. In addition, on site sorting of demolition debris will be carried out. Scrap metals or abandoned equipment will be recycled if possible.

5.1.6 The removal and disposal of contaminated wastes will be covered by the Remediation Action Pan (RAP). No significant impact is expected in this regard.

Land Contamination

5.1.7 Site inspection and review of background information will be conducted to provide a clear and detailed account of the relevant past land uses and land history in relation to possible land contamination. A Contamination Assessment Plan (CAP) will be prepared for EPD's agreement prior to the commencement of the land contamination site investigation work.

5.1.8 The presence of materials requiring special handling/ removal will be surveyed prior to or during demolition.

5.1.9 The nature and extent of land contamination will be characterised by collecting representative soil and groundwater samples. A Contamination Assessment Report (CAR) will be compiled to delineate the extent of land contamination and the associated environmental impacts. A Remediation Action Plan (RAP) will be devised to develop options for site decontamination, if required, to mitigate the impacts of soil and groundwater contamination.

5.1.10 Both the CAP, CAR and RAP will be prepared in accordance with EPD's guidance notes, namely: *"The Practice Note for Professional Persons ProPECC PN3/94 Contaminated Land Assessment and Remediation"* and *"Guidance Notes for Investigation and Remediation of Contaminated Sites of: Petrol Filling Stations, Boatyards, and Car Repair / Dismantling Workshops"* and will be submitted to EPD for approval. There should not be any significant residual impacts due to land contamination after the implementation of RAP.

Risk of Accident which would result in Pollution Hazard

5.1.11 Safety measures for the transportation, handling and disposal of contaminated materials will be identified in the decommissioning EIA to minimise the risk of accident.

5.1.12 The decommissioning Contractor is required to submit an accident Emergency Response Plan specifically to address risk of accident during transportation, handling and disposal of contaminated materials.

Unsightly Visual Appearance

5.1.13 Visual impacts from decommissioning activities will be of short duration. Fences will be erected along boundary of construction sites to minimise the impact. Furthermore, site cleanliness will be maintained and stockpiling of materials will be properly controlled to alleviate visual impact.

Ecology

5.1.14 According to the *Construction of an International Theme Park in Penny's Bay of North Lantau and its Essential associated Infrastructures EIA*, no direct impact from construction works is expected. However, mitigation measures such as erecting fences along the boundary of construction sites, adjustment of haul routes, storage and works areas, etc. will be adopted to avoid indirect impact arising from the decommissioning of CLS. As such, it is not expected to have significant direct/ indirect impact to the ecological conditions in the area.

5.2 Possible Severity, Distribution and Duration of Environmental Effects

Short Term Effect

5.2.1 Potential environmental impacts identified in Section 3 will only last for the decommissioning period tentatively from November 2002 to May 2003. As such the effects are considered to be temporary and short term. With the incorporation of appropriate mitigation measures, no insurmountable effects are anticipated.

Beneficial Effects

5.2.2 The proposed Project will transform the subject area from a shipyard to a Water Recreation Centre for tourism recreation purposes. It provides an opportunity to create a positive visual and landscape setting and to eliminate the negative environmental impacts associated with the shipyard operation.

5.3 Public Consultation to Date

5.3.1 The Advisory Council on the Environment (ACE) EIA sub-committee and ACE were consulted regarding the findings of EIA report entitled "*Construction of an International Theme Park in Penny's Bay of North Lantau together with its Essential Associated Infrastructures*" on 5th, 10th and 17th April 2000 and the report was subsequently approved by EPD on 28 April 2000 with conditions.

5.3.2 ACE raised concerns on the land contamination issues at the CLS and requested CED to conduct the decommissioning EIA and any necessary decontamination works prior to implementation of other projects within the site.

6. USE OF PREVIOUSLY APPROVED EIA REPORTS

6.1 References

6.1.1 Although no previously approved EIA has been conducted on the proposed project (Decommissioning of Cheoy Lee Shipyard), the following EIA reports that were approved on 28 April 2000 under EIAO will be referenced particularly for archaeological and cultural heritage, and land contamination issues:

Northshore Lantau Development Feasibility Study, Environmental Impact Assessment.

Construction of an International Theme Park in Penny's Bay of North Lantau and its Essential Associated Infrastructures, Environmental Impact Assessment.

6.2 Environmental Aspects Addressed in the Approved EIA Reports

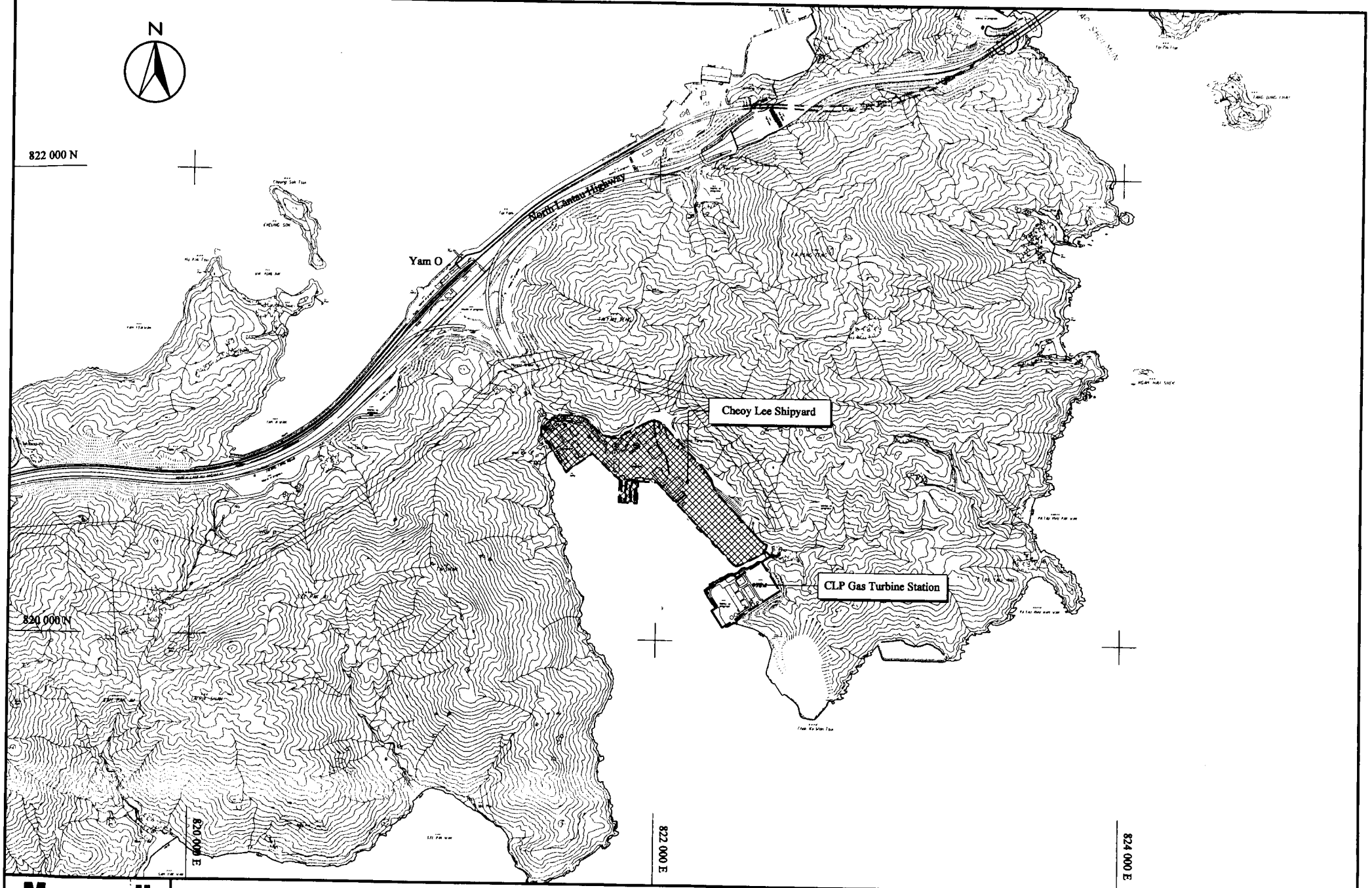
6.2.1 The EIA studies have identified all potential environmental impacts, assessed the extent of impacts and recommended mitigation measures associated with construction and operation of the Theme Park and its associated infrastructures. The areas of assessment included air, noise, water quality, waste management, terrestrial and marine ecology, fisheries, risk assessment, archaeological and cultural heritage, landscape and visual impacts, land contamination and territory-wide environmental implications.

APPENDIX A

CHECKLIST TO OUTLINE POSSIBLE IMPACT ON THE ENVIRONMENT

Possible impact on the environment that may arise during construction and operation of the project will be indicated by x (where impacts are anticipated) or ✓ (where no impacts are expected).

Gaseous emissions [x]
Dust [x]
Odour [x]
Noisy operations [x]
Night-time operations [✓]
Traffic generation [x]
Liquid effluents, discharges, or contaminated runoff [x]
Generation of waste or by-products [x]
Manufacture, storage, use, handling, transport, or disposal of dangerous goods, hazardous materials or wastes [x]
Risk of accidents which would result in pollution or hazard [x]
Disposal of spoil material, including potentially contaminated material [x]
Disruption of water movement or bottom sediment [✓]
Unsightly visual appearance [✓]
Ecological impacts [x]
Cultural Heritage [x]



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Location of Cheoy Lee Shipyard

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