

PWP Item No. 2054GI (Part)
Construction of Lung Kwu Chau Jetty

Project Profile

1. Basic Information

1.1 Project Title

Construction of Lung Kwu Chau (LKC) Jetty

1.2 Purpose and Nature of Project

A Doppler VHF Omni-directional Range/Distance Measuring Equipment (DVOR/DME) Station is being operated on Lung Kwu Chau (LKC) to provide bearing/distance information to the approaching aircrafts to/from Chek Lap Kok Airport. The existing jetty at LKC is too small and of too shallow water depth to accommodate the CAD's vessels for transporting equipment and personnel for servicing and maintaining the DVOR/DME. Currently, the transportation has to rely on helicopters, which is however prohibited during night times and adverse weather conditions. Emergency repairing work is thus impossible during such periods. As a result, CAD has proposed to reconstruct the existing jetty to enable their repairing vessels to berth at the island during such periods.

1.3 Name of Project Proponent

Civil Engineering Department

1.4 Location and Scale of Project and History of Site

(i) The proposed site is located on the eastern coast of LKC as shown on the attached Drawing No. P20278-3 and falls within the gazetted Sha Chau and Lung Kwu Chau Marine Park.

(ii) The scope of this project comprises the following:

- a. construction of a precast concrete blockwork jetty of 10 m by 20 m with a single berth;
- b. construction of a concrete catwalk of approximately 62 m long;
- c. dredging of an approach channel to a level of -2.5 mCD in front of the berth;
- d. installation of miscellaneous facilities on the jetty, including lighting, navigation light, fendering, handrails, bollards, tide gauge, etc.; and
- e. demolition of the existing jetty upon completion of the proposed jetty.

Location of the existing jetty is shown on Drawing No. P20278-3.

(iii) The capital cost for the proposed jetty construction is estimated at about \$9 million.

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

This project profile only covers the project “Construction of Lung Kwu Chau Jetty”. In accordance with Item Q.1, Part I of Schedule 2 under the EIA Ordinance, this is a designated project since it involves dredging and building works wholly within the gazetted Sha Chau and Lung Kwu Chau Marine Park.

2. **Outline of Planning and Implementation Programme**

- 2.1 The planning and design of this project will be carried out by the project proponent while the construction works will be carried out by contractors and supervised by the project proponent. It is intended to engage consultants to undertake the environmental impact assessment (EIA) study.
- 2.2 CAD would like the pier to be completed as soon as possible. If EIA study is required, it is scheduled to commence in September 2000 for completion by April 2001. The construction of the pier is scheduled to commence in April 2002 for completion by January 2003.
- 2.3 It is expected that this project has no major interaction with other project.

3. **Possible Impacts on the Environment**

- 3.1 The major activities involved during the construction stage of the project are dredging for approach channel and foundation of the jetty and catwalk, filling rubble foundations, setting precast concrete blocks, placing bermstones, general concreting work and demolition of existing jetty. In this connection, noise, marine traffic, water quality, ecology and visual appearance may be of concern.

(i) Noise

The foundations of the jetty and catwalk are rubble mound structures on which precast concrete blocks will be placed up to the formation levels. The use of mechanically powered plant such as crane barges will not be of particular concern in the light of the small scale of the works. In addition, mitigation measures such as the use of quieter machinery and plant, proper maintenance of plant and good working practices, can further reduce the construction noise level. Notwithstanding the above, the contractor will be governed by the licensing conditions of construction noise permits issued under the Noise Control Ordinance.

(ii) Marine Traffic

Access to the site will be solely by sea as no vehicular access to the site is available. It is envisaged that marine traffic will be generated during the construction stage stemming from the transportation of construction materials and site personnel. However, the impact is considered insignificant because of the small number of marine plant involved for a project of this scale. Contractual provisions can also be stipulated to keep the marine traffic to a minimum.

(iii) Water Quality

Water turbidity will be increased during the dredging of the seabed and the placing of rubble foundations. However, the effect on water quality is considered to be insignificant because of the small quantities involved in and transient nature of the activities.

It is expected that dredging of about 1,600m³ and 4,200m³ marine deposits is required for the jetty and the approach channel respectively. Subject to further confirmation by ground investigation and laboratory testing, it is expected that all marine deposits to be removed are uncontaminated and will be properly disposed of in the designated marine dumping grounds. Accompanied with appropriate mitigation measures like the use of silt curtain to contain the sediment losses, the possible impacts on water quality due to dredging can be properly addressed and kept to a minimum.

Taking into account the coarse nature of rubble fill and the shallow water depth, the loss of fines as sediment plume will be insignificant.

The presence of the proposed jetty and catwalk may cause some degree of interference to the existing water circulation pattern. Having said that, by comparing the location and orientation of the proposed jetty to the contiguous landform, no major interception of water current is expected arising from the project.

(iv) Ecology

As the proposed jetty is located within the gazetted marine park, the loss of marine life habitats or other impacts to the ecology may be of concern.

As the proposed jetty is a replacement to the existing one, the net loss of natural coastal area is insignificant. The loss of natural seabed is also considered not significant owing to the small scale of the project. On the other hand, the use of rubble mounds as foundations for the jetty and catwalk can provide additional habitats for the fishes and other marine species.

During the construction phase of the project, the water quality will be closely monitored and controlled by the means as mentioned in item 3.1 (iii) above. As the site area will be enclosed by silt curtains throughout the marine works, and the construction period is relatively short (i.e. 9 months for whole construction, in which only about 3 to 5 months are for dredging and marine filling works), it is expected to have no significant and irreversible impact to the ecological conditions in the area.

(v) Visual Appearance

Consideration will be given at the design stage in order to harmonize the jetty structure with the natural environment, such as the use of granite facing at the vertical berthing face. Other than that, it is considered that there will not be any issue pertaining to visual impacts.

- 3.2 During the operation stage, the only activity at the proposed jetty will be the infrequent berthing and mooring of CAD's vessels for the purpose of servicing and maintaining the DVOR/DME. In this respect, it is considered that there will not be any significant impact.

4. Major Elements of the Surrounding Environment

- 4.1 Lung Kwu Chau is situated within the gazetted Sha Chau and Lung Kwu Chau Marine Park.
- 4.2 Due to the remoteness of the site, there is no residential development, education institution, place of worship, cultural heritage site, and the like in the proximity of the proposed jetty.

5. Environmental Protection Measures to be Incorporated in the Design and any Further Environmental Implications

- 5.1 Measures to mitigate possible environmental impacts will be incorporated in the design, and appropriate contract provisions will be included to minimize the possible impacts during the construction stage. It is expected that the impact on water quality during dredging will be of a transient nature. The effectiveness of the mitigation measures adopted will be closely monitored by implementing a water quality monitoring scheme.
- 5.2 Silt curtains will be installed to limit the spread of suspended sediment during dredging and underwater filling works. The release of suspended sediment to water column will be controlled by the minimum production rate to be specified in the contract for dredging work i.e. not exceeding 250 m³ per day (tentative). It will also be specified in the contract that no more than one dredger will be allowed to work on site at any time.
- 5.3 The provision of openings beneath the catwalk or the use of open type structure for the catwalk will be investigated at early design stage with a view to enhancing the water circulation in the vicinity.

- 5.4 A detailed programme for sampling and testing the dredged mud will be prepared and implemented to determine whether the mud is contaminated in accordance with WBTC No. 22/92. Licence for dumping the dredged mud shall be obtained from EPD prior to the commencement of the dredging works.
- 5.5 The rubble mound foundations will be adopted in the design of the jetty and the catwalk as far as possible to provide additional marine life habitats in the area.

6. Public Consultation

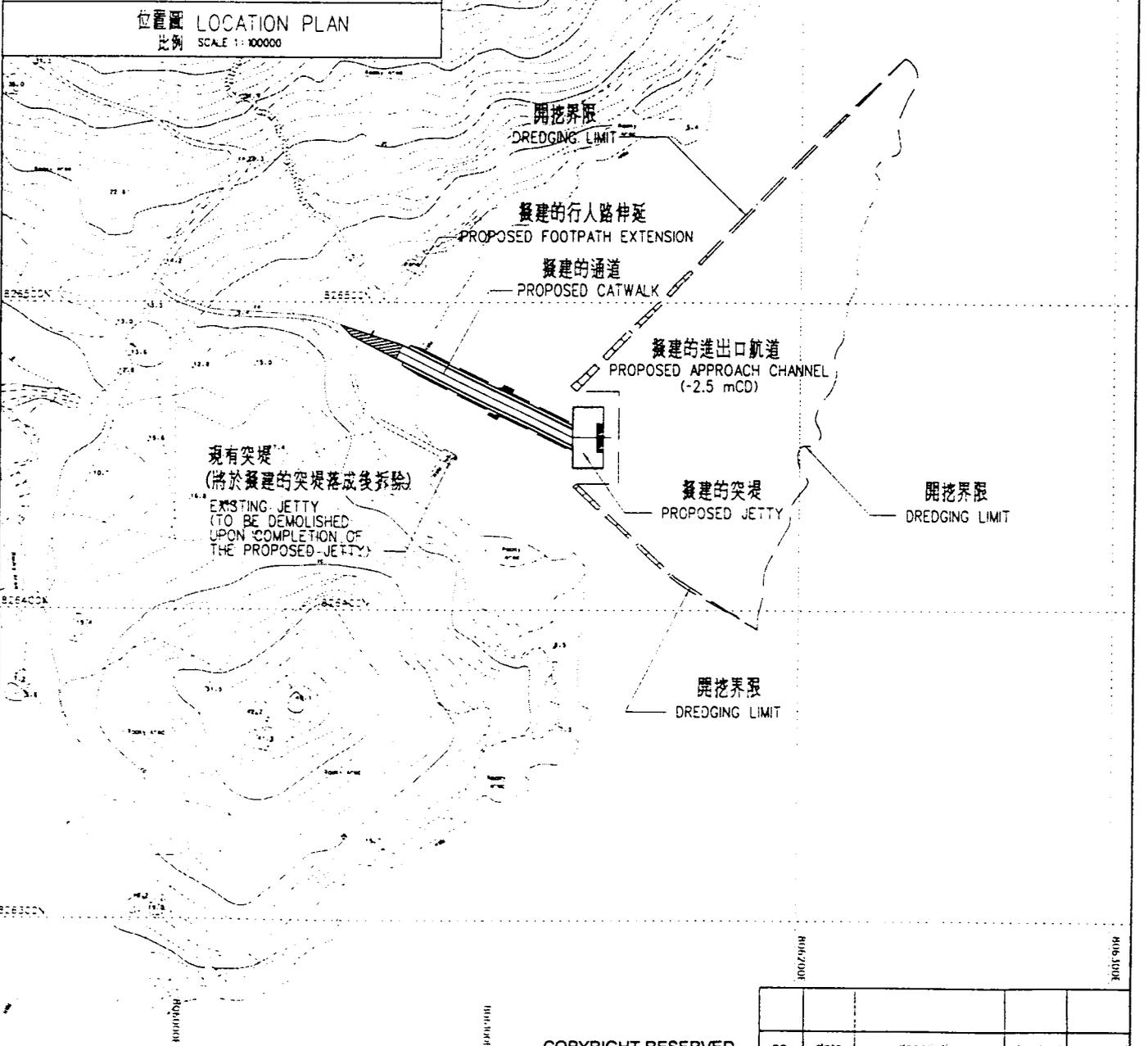
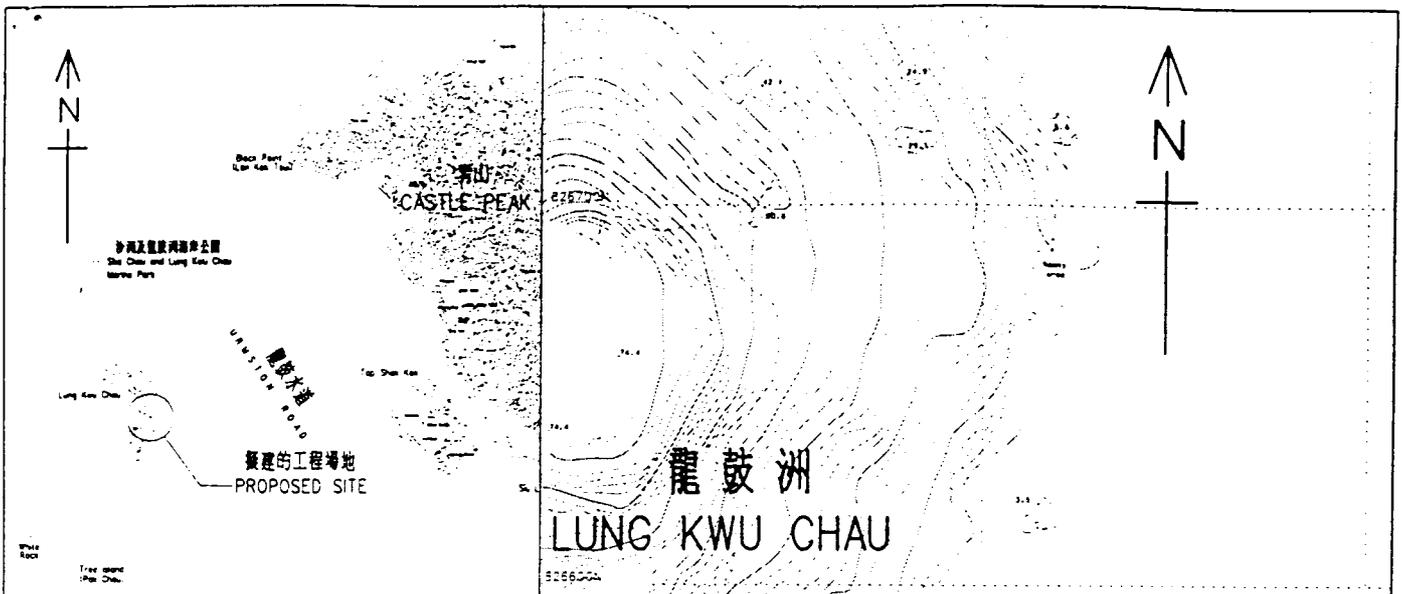
- 6.1 Proposed jetty construction at LKC was gazetted twice under the Foreshore and Sea-bed (Reclamations) Ordinance, one at a site on the eastern coast of LKC on 17.9.1993 and other at a site on the western coast on 15.4.1994. The proposal on eastern coast was objected by local villagers mainly on “fung shui” ground whilst the proposal on western coast was objected by Hong Kong Marine Conservation Society on environmental ground). Taking into account the local villagers’ comments, the present proposal of reconstructing the existing jetty at eastern coast was drawn up, which was then presented to the local villagers by Civil Aviation Department in collaboration with District Office (Tuen Mun) at a meeting in January 2000. Preliminary support from local villagers to the project was obtained in the meeting.



Attachments:

Drawing No. P20278-3

Port Works Division
Civil Engineering Department



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title
興建龍鼓洲突堤 -
作為環境影響評估研究的工程項目簡介
CONSTRUCTION OF LUNG KWU
CHAU JETTY -
PROJECT PROFILE FOR EIA STUDY

| | name | initial | date |
|----------|---|--------------|-----------|
| designed | K. C. NG | <i>KCN</i> | 18.5.2000 |
| drawn | T.L.TAI | <i>T.L.T</i> | 19.5.2000 |
| checked | K. C. NG | <i>KCN</i> | 22.5.2000 |
| approved | P. Y. LAW | <i>PLY</i> | 22.5.2000 |
| office | PORT WORKS DIVISION CIVIL ENGINEERING OFFICE | | |

| no. | date | description | checked | approved |
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drawing no. P20278-3 scale 1:2000



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DEPARTMENT
HONG KONG

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