1 INTRODUCTION

1.1 Background to the Study

A principal recommendation of the Port and Airport Development Strategy Study (PADS) was that the majority of Hong Kong's future port requirements will be accommodated in the Lantau Port at northeast Lantau and in the Western harbour off the east coast of Lantau Island. In mid 1991 two studies, collectively referred to as the Lantau Port and Western Harbour Development Studies (LAPH), investigated the feasibility of developing land and marine based port facilities on the north-eastern coast of Lantau and in the Western Harbour. The LAPH studies recommended that the Lantau Port be developed in four phases, each phase comprising one terminal with all four phases comprising seventeen berths.

In April 1993 the Land Development Policy Committee recommended that detailed planning and design for the first stage of development of Lantau Port should include the first 8 container berths as identified in LAPH studies. Two separate studies were enacted as (i) Lantau Port Development - Stage 1 - Container Terminals 10 and 11 - Preliminary Design and (ii) Lantau Port Development - Stage 1 - Container Terminals 10 and 11 - Ancillary Works. Both studies included environmental impact assessments and final EIA reports have been produced for both studies which have been discussed at the Advisory Committee on the Environment (ACE). The Lantau Port Stage I Preliminary Design Study modified the later phases of Container Terminal (CT) development (CT12 & 13) while retaining the initial phases (CT10 & 11) as proposed in the LAPH, save for the incorporation of additional noise attenuation structures to mitigate operation noise and visual impact on sensitive uses to the west. The arrangement of the full terminal development is shown in Figure 1.1.

This assignment is referred to as Agreement CE 50/94 Lantau Port Development Stage I - Design of the Reclamation and Edge Structures for Container Terminals 10 and 11 and Back-up areas. The objective of this assignment identified in the brief is to design and prepare complete sets of contract documents to provide two reclamation designs for CT10 and for CT11. The objective of the environmental assessment and reporting is to ensure that construction of the project can be carried out within acceptable levels of impact. Environmental Assessment and reporting are clearly defined in the brief as a distinct strand of the Project. The commencement date for the project is taken as 5th January 1995 and the formal agreement was signed on 19 January 1995. The arrangement of the works which will be studied in this assignment is shown in Figure 1.2.

During the LAPH and Stage I studies it was assumed that the majority of material required for the reclamation of Terminals would be supplied from the Tsing Chau Tsai (TCT) Megga Borrow Area. The rate of extraction required to meet programme requirements raised concerns and concurrent construction activities were predicted to raise air quality (dust) impact within Penny's Bay to levels in excess of the Air Quality Objectives (AQO). The LPD Steering Group therefore instructed the Consultants to assume that marine sand would be used for the reclamations of CT10 & CT11. In this study the marine sand source is still assumed, though the source has not been advised. This EIA will not include assessment of material source or the off-site disposal of dredged material.

1.2 Purpose of the Report

This EIA represents the third phase of environmental assessment for Container Terminals to be sited adjacent to Pennys Bay on Lantau Island. The earlier reports have investigated construction and operation of the terminals, particularly updating to take account of modifications to the construction and operating techniques which are anticipated. This EIA follows on from the earlier reports. Its focus is on the construction phase impacts and in particular a new reclamation technique which will involve dredging marine sediments prior to reclamation. Earlier studies assumed that sediments would be left in-situ. This EIA will draw on findings of the earlier, Government endorsed, studies and the intermediate reporting carried out as part of this study.

The requirements of this report are identified in the project brief. They are to :

a) satisfy the requirements of the Brief in respect of the prediction and assessment of impacts, and identification of mitigation measures;
b) describe the monitoring and audit programme requirements;
c) provide the contract specifications for the detailed design, construction and operation of the works;
d) outline the study findings, conclusions and recommendations.

1.3 Associated Reporting

This report represents the last reporting requirement of this Environmental Impact Assessment. An Environmental Monitoring and Audit Manual has been produced as a stand alone document. The Manual also includes an Appendix which identifies specification clauses which can be incorporated into contract documentation to ensure that the Container Terminals are constructed with minimal impact on the environment.

1.4 Structure of the Report

The report has been written in nine sections and a technical appendix. This section provides a broad introduction to the study.

Section 2 Is a description of the project and the immediate environment.
Section 3 Is a description of the construction activities and programme.
Section 4 Is an assessment of marine water quality issues.
Section 5 Is an assessment of construction noise issues.
Section 6 Is an assessment of construction air quality issues.
Section 7 Discusses solid and liquid waste management.
Section 8 Briefly discusses ecology, cultural and heritage issues.
Section 9 Is a summary and conclusion.

Appendix A Comprises a number of sub-sections containing supporting technical information on Section 4 (Water Quality).

Water quality modelling generated a considerable quantity of hard copy output (over 350 individual items), including tidal velocity vector plots, time history plots, contour plots and time series plots for suspended solids, mud deposits, dissolved oxygen, nutrients and water quality [BOD, E.coli, Chlorophyll, Ammoniacal Nitrogen and Organic Nitrogen]. This information is held in a calculation output document with copies held by EPD and CED only.

Figure No 1.1 : The Lantau Port Developments

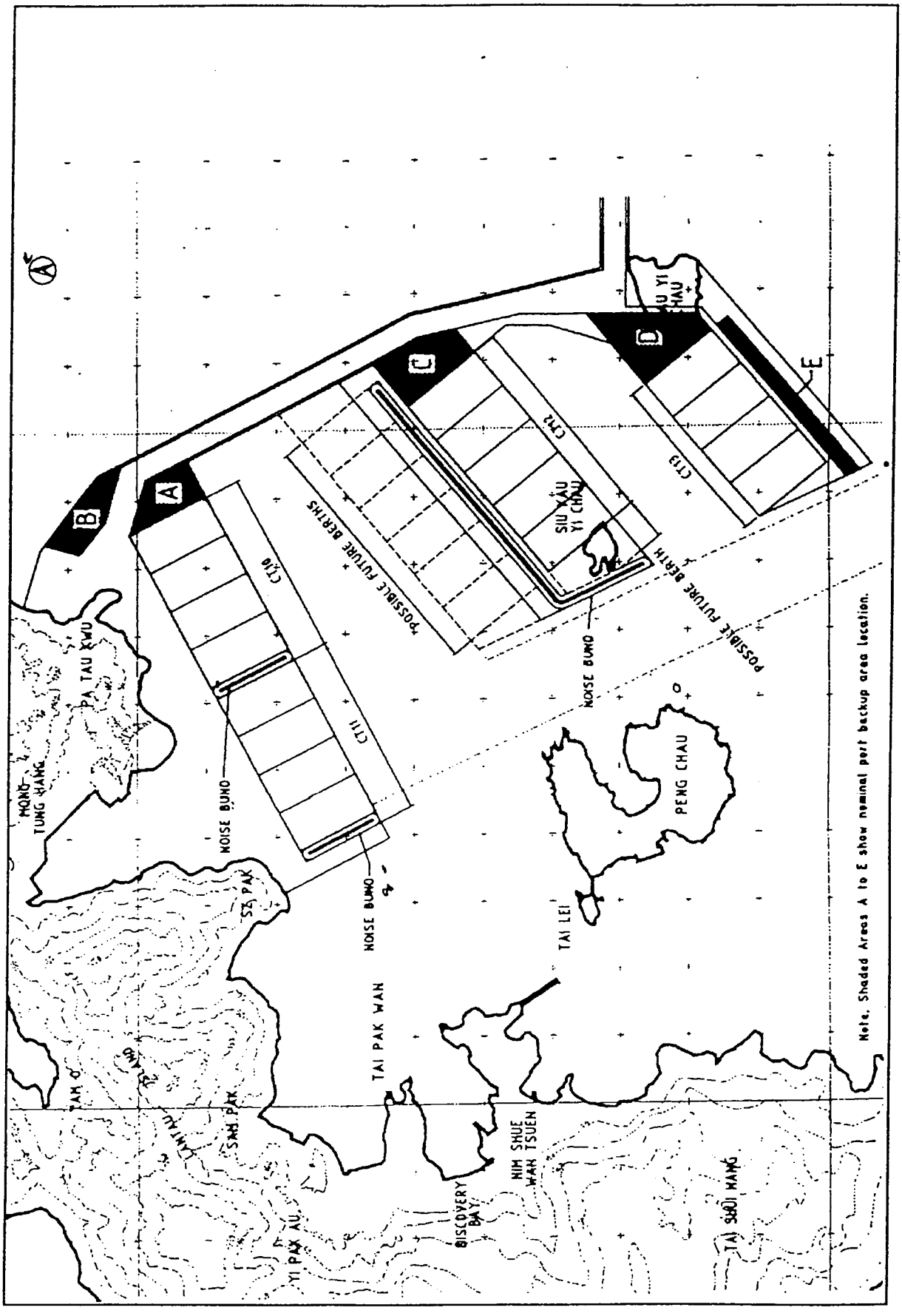

Figure No 1.2 : The CT 10 & 11 Study Elements