
2 ENVIRONMENTAL CONTEXT

2.1 INTRODUCTION

In this section the area is described and set in its geographical and environmental context. The findings of earlier studies are reviewed to determine existing site conditions. Sensitive receivers likely to be affected by Container Terminal (CT)10 and CT11 developments are also identified.

CT10 and CT11 will be located on reclaimed land formed off the southern side of the Tsing Chau Tsai (TCT) peninsula of Lantau Island. Later phases of the development, CT12 and CT13, will be formed on linked island reclamations south of CT10 & CT11 in Discovery Bay. CT12 and CT13 will be connected to Lantau Island by bridge or causeway structures on the east side of the terminals

Existing developments in Penny's Bay are located on reclaimed land along the north and east shore of the Bay. Cheoy Lee Shipyard covers an area between Mong Tung Hang and Wan Tuk and the China Light and Power (CLP) Station is situated north of the headland at Chok Ko Wan Tsui. Quarry activity has removed the western tip of Pa Tau Kwu headland at the south of Pennys' Bay.

The main concentrations of population are residential areas at Discovery Bay and Peng Chau which are to the south west and south of the terminal developments respectively. The closest Sensitive Receivers (SR) are isolated properties on the east of the TCT peninsular at Fa Peng and Tso Wan. Residential areas on the island of Ma Wan are over 3 km northeast of the terminal site and shielded by local topography.

2.2 ENVIRONMENTAL BASELINE

During the Lantau Port and Western Harbour (LAPH) Studies an environmental baseline was established to define the existing site conditions. The baseline represents a snapshot of the existing conditions and the findings are reported in the chapter pertaining to a particular environmental indicator area. The LAPH data has been used in this study to define the environmental background. The remoteness of the site, general absence of industry and motor vehicles gives the area good air quality, a generally quiet noise background and reasonable water quality. In the following sections the broad findings are presented to outline the environmental conditions in the area prior to development.

2.2.1 AIR QUALITY

Monitoring of air quality in the study area at Discovery Bay and Peng Chau showed low levels of air pollutants indicating that air quality in the area was good. This assessment was based on comparison with the Air Quality Objectives (AQO).

Meteorological conditions have a significant influence on the movement of pollutants in the air. Prevailing winds experienced by Hong Kong are predominantly from the northeast, the main concentration of sensitive uses are southwest and are therefore downwind of the terminals. For approximately 25% of the year Hong Kong's weather is calm and could cause local air quality problems in the topographically confined area

of Penny's Bay.

2.2.2 NOISE

Noise monitoring was carried out at Penny's Bay, Discovery Bay and Peng Chau, and indicated that the noise environment is characteristic of a predominantly rural area. This has important implications in assessing noise impact. Limited industry including Cheoy Lee Shipyard, shipping, and CLP station are sources of existing noise impact.

2.2.3 WATER QUALITY

Marine water quality around the peninsular is dominated by the effects of the Pearl River which forms a major source of sediment, nutrients and industrial effluent in the area. The residential areas at Discovery Bay and Peng Chau discharge preliminary treated sewage into Discovery Bay. Cheoy Lee Shipyard discharges wastes into Penny's Bay and CLP station discharges sewage after secondary treatment. Other sources of water quality impact are generated by industrial and domestic discharges from the Hong Kong, Kowloon and Tsing Yi. Marine ecology was assessed in the LAPH Studies by a review of existing data and sampling at selected sites. Mariculture is carried out at Ma Wan Island to the north east of the TCT peninsular and there is local fishing activity south of Penny's Bay.

2.3 SENSITIVE RECEIVERS

In this section sensitive receivers with potential to be affected by construction and operation of the Lantau Port are identified and indicated in Figure 2.1 : Sensitive Receivers. The port site and adjacent area are essentially rural in character and support scenic and amenity areas, fishing activity, marine recreation, residential communities, and limited industry. Development of the port will change the predominantly rural nature of the area into one with a commercial-industrial character.

In summary, the LAPH Studies showed that residents of Discovery Bay and central Peng Chau would be the most severely affected Noise Sensitive Receivers (NSRs) during port operation. An assessment of port noise impacts at Hei Ling Chau and on Hong Kong Island indicated that these receivers are adequately protected by distance from excessive port noise. Scattered retreat homes on the northern headland of Peng Chau would be severely affected by port noise as would isolated village developments at Fa Peng and Tso Wan, on the eastern side of the Tsing Chau Tsai (TCT) peninsula. The LAPH Studies suggested that for the small number of receivers in these exposed positions, path and source mitigation would be impractical. Mitigation at the receiver was deemed the most reasonable approach for these noise sensitive receivers. The adjustments to the later phases of the terminals has brought activities closer to Hei Ling Chau and this is identified as an NSR for cumulative operation noise impact.

2.3.1 DISCOVERY BAY

Discovery Bay is a major residential development on Lantau Island lying 2.5 km west of the western terminal CT11. Access to Discovery Bay is by boat, there is no vehicular access to other areas on Lantau Island and only limited vehicle usage within the community. The development is a mix of high, medium and low rise housing with associated commercial development. Closest sensitive receivers to the terminal are sited

on a promontory south of the Ferry Terminal, called Peninsula Village. The closest sensitive receivers are located in a 17 storey high rise block at the eastern end of this promontory, Cherish Court on Capeland Drive. In addition there are new medium rise blocks being constructed north of Cherish Court at the eastern end of Caparidge Drive. At this point there is no topographic shielding between terminal and sensitive receiver.

Peninsula Village represents the southern boundary of the Discovery Bay development, other residential areas occupy bays and lower slopes of hillsides to the north. In the future there is further development planned at Yi Pak Bay on the northern side of Discovery Bay. There are no suitable Yi Pak development plans available for use in this study and two notional receivers have been identified to represent high rise blocks on the hillside at the rear of the development and low rise on new reclamation within Yi Pak Bay. This development style is in keeping with the present property mix adopted in Discovery Bay. The Sz Pak Tsui headland, immediately to the west of Penny's Bay provides some topographic shielding of the terminal to the planned development at Yi Pak. However, there is no topographic shielding to the established areas of Discovery Bay. Indicative NSRs are identified at Cherish and Twilight Court in Peninsular Village, Discovery Bay Plaza, Woodbury Court and Greenery Court. Figure 2.2 shows the location of the SR in Discovery Bay.

2.3.2 PENG CHAU

Peng Chau is an island off the east coast of Lantau. The population is concentrated in low and medium rise residential areas in the centre of the island, though there are isolated NSR on the headland which forms the northern part of the island. Topographic screening is provided by the northern promontory of Peng Chau which blocks the direct line of sight to the terminals from the central residential area. Two indicative receivers are identified in the main residential area and a single, representative, receiver on the promontory. The promontory receiver is the transmitter station and has been chosen to represent all receivers on the headland though it is noted that the majority of the receivers will be protected by screening topography to the north and east. The majority of the receivers on the headland are single storey dwellings. To accurately determine impact a detailed survey and assessment of individual properties will be required.

2.3.3 MA WAN

Ma Wan Island sustains two small communities on the west side of the island, and one of the 26 gazetted fish culture zones in the Territory. In the future it is noted that there is major residential development proposed for the island. The residential areas of Ma Wan are approximately 3 km north of the terminal site. There is topographic shielding between the CT and sensitive receiver provided by the TCT Peninsula and the southern uplands of Ma Wan.

2.3.4 TSING CHAU TSAI PENINSULA SETTLEMENTS

Fa Peng and Tso Wan represent two small, isolated villages on the east side of the TCT peninsula, immediately to the north of the terminals. They were identified as SR in the LAPH Studies and have been carried forward in these studies. There is significant screening of activities in the western end of the terminals and it is only the activity in the eastern terminal that will affect these SRs. However, they represent the closest sensitive receivers, with Fa Peng just over 1 Km from the closest point. During this project the

villages were visited to confirm the status of the NSR. The village of Fa Peng is deserted with dwellings derelict, many in a very poor state of repair. The buildings are sited on the south side of a river valley and the hillside to the south will shield dwellings from the majority of terminal activity. Tso Wan is still occupied and there is evidence of ongoing agricultural activity. Topography will again provide shielding to much of the terminal activity. The buildings in Tso Wan are a mix of traditional single storey village design with direct access into the main living space and some of more recent three storey design. The LAPH Studies suggested that for the small number of NSRs who are not relocated, measures to mitigate noise impact at the individual sensitive receivers should be considered in preference to source mitigation.

2.3.5 PENNY'S BAY

Penny's Bay is immediately north of the terminals and will be subject to the full impact of Terminal development. There are two existing users within Penny's Bay, Cheoy Lee Shipyard and the Penny's Bay Power Station, operated by CLP. The Cheoy Lee Shipyard will need to close prior to completion of the reclamation of Penny's Bay. Air intakes and the indoor air quality at the Bay Power station may be affected by elevated levels of dust generated by reclamation works.

Penny's Bay will be reclaimed as part of the LPD projects and commercial/industrial development will be encouraged. The CLP Station and site of Cheoy Lee Shipyard are identified as indicative SR for backup area developments in Penny's Bay, though they are not defined as NSR.

2.3.6 HEI LING CHAU

Hei Ling Chau is an island approximately 4 km south west of the Phase IV terminal. It has restricted access and is managed by the Correctional Services Department. It is home to four institutions: an Addiction Treatment Centre; Correctional Institution; Nei Kwu Detention Centre and Hei Ling Chau Detention Centre. The Addiction Treatment Centre and Correctional Institution are located on the north-west of the island. Nei Kwu and Hei Ling Chau Detention Centres are in the central-west and central-east section of the island respectively. Hei Ling Chau Detention Centre is understood to be unused at present.

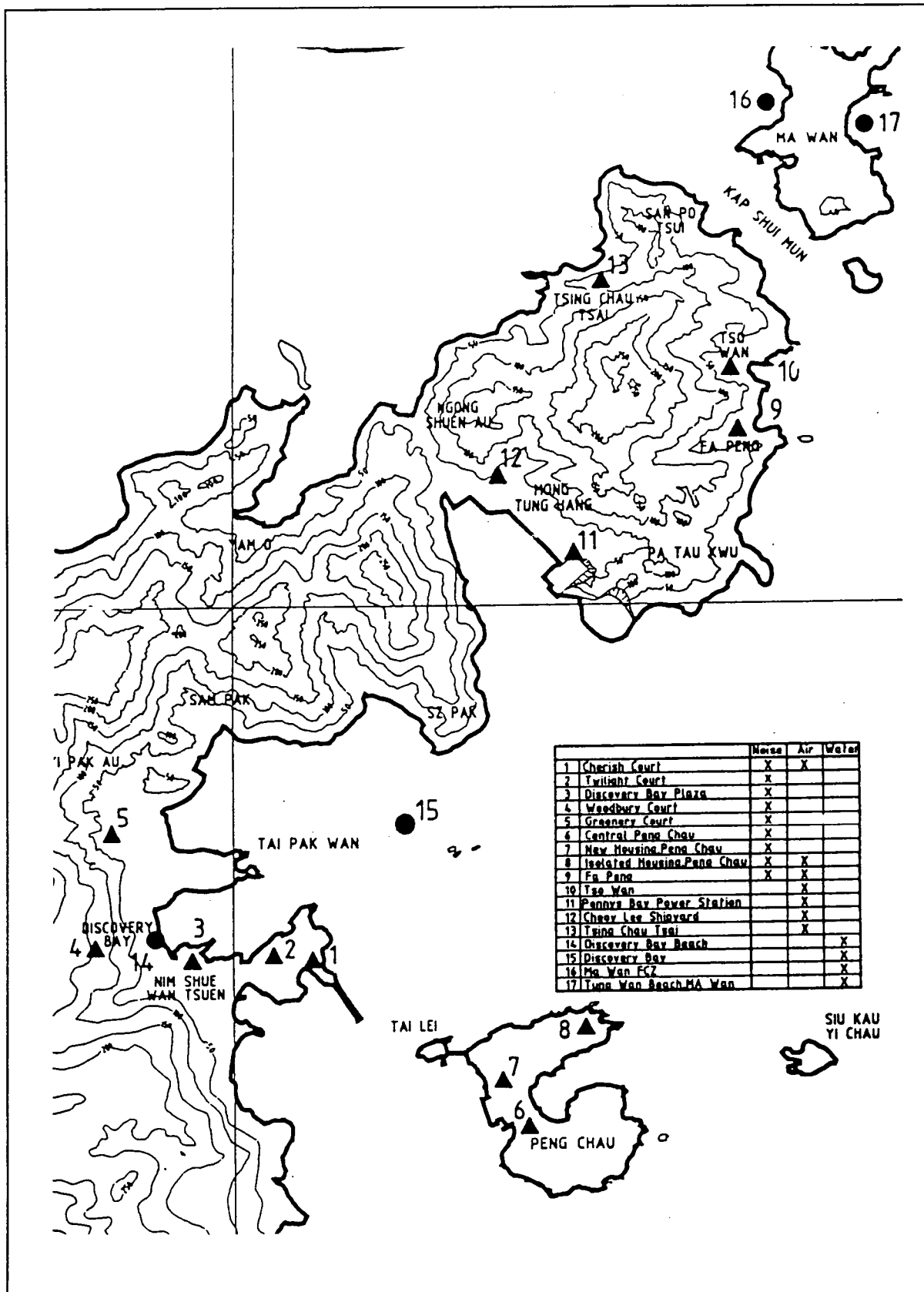


Figure 2.1 Sensitive Receivers

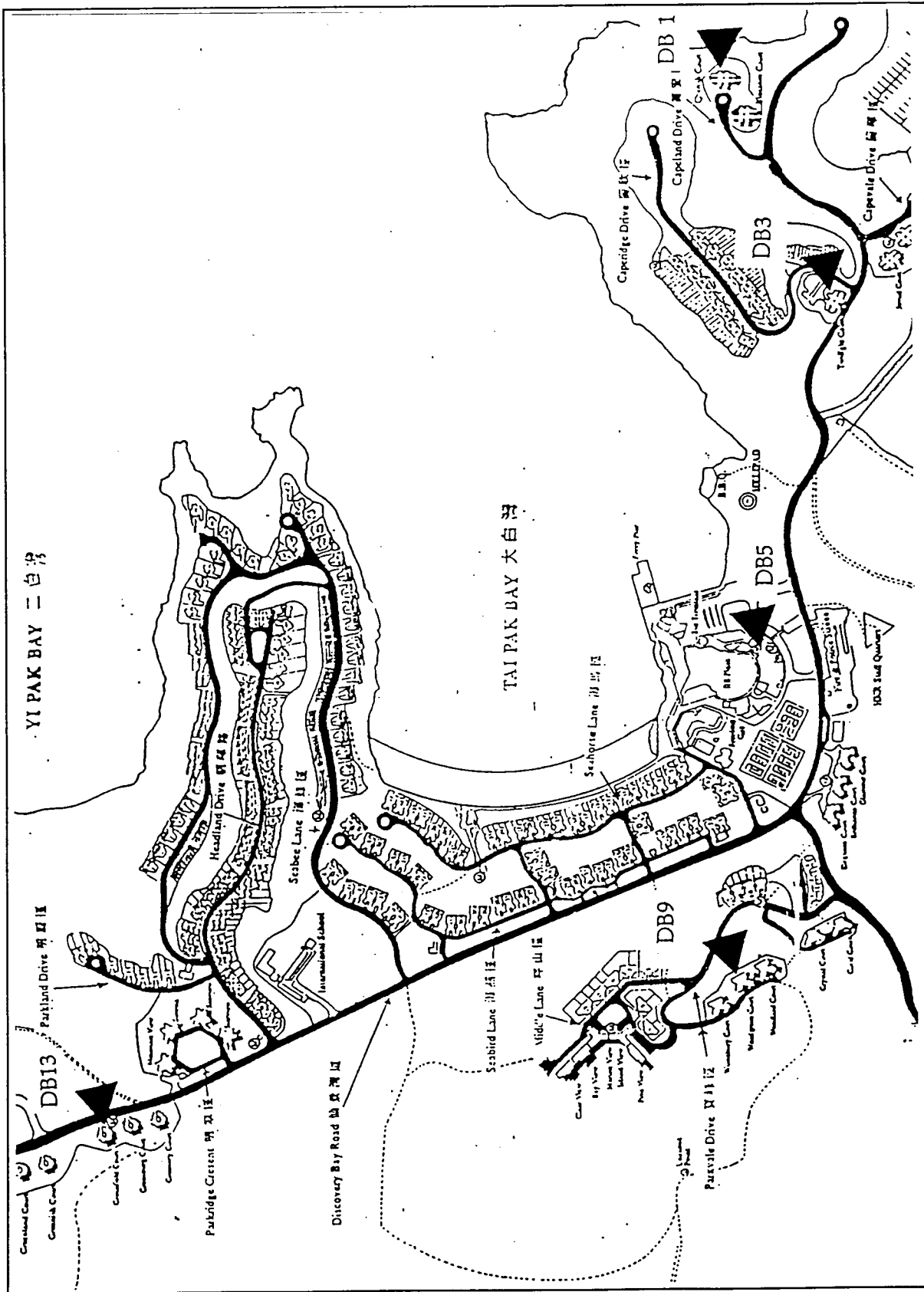


Figure 2.2 Noise Sensitive Receivers at Discovery Bay