

1. BACKGROUND OF STUDY

- 1.1 The Port and Airport Development Strategy Study (PADS) recommended in 1989 that port facilities should be developed in Tseung Kwan O Area 131. The PADS Development Statement No.5 - Tseung Kwan O Port Development, which was endorsed by LDPC on 3.8.90, identified Area 131 as a suitable site for developing port facilities. The Port Development Strategy Review (1993/94) recommended that Area 131 should be developed as a permanent site to handle cargo arising from nearby mid-stream buoy operations. This recommendation to develop Area 131 as a mid-stream site was endorsed by the Port Progress Committee on 22.6.95.
- 1.2 Area 131 is considered suitable for mid-stream handling facilities as recommended in the PDSR 1993/94 because of the following merits:
 - (i) Mid-stream operations require the use of mooring buoys. As Marine Department is considering re-organization of the buoys in Tseung Kwan O, the provision of mid-stream site in Area 131 will reduce the barge traffic in the busy central harbour area.
 - (ii) Area 131 is distant from densely populated area. The environmental impacts caused by the proposed developments will therefore not have significant effects on the people living in Tseung Kwan O.
 - (iii) It will be well served by external transport links such as the proposed Western Coast Road and the Cross-Bay Bridge.
- 1.3 Maunsell Consultants Asia Ltd was appointed to undertake the Feasibility Study for Tseung Kwan O Port Development at Area 131 on behalf of Project Manager/New Territories East Development Office. The primary objective of the study is to draw up proposals of various aspects in civil, geotechnical, traffic and highway engineering, port planning and engineering, programming, and cost estimation to facilitate the early provision of the mid-stream site facility. The other facilities to be provided in Area 131 are a batching plant and a public dumping barge loading point.

2. PREFERRED CONFIGURATION OF AREA 131

- 2.1. It was agreed at the Steering Group on 2nd June 1997 that the back-up area of the mid-stream site should be planned to contain 15 berths and should occupy a nett area of 18 hectares, in order to keep the annual container throughput within 1.05m million TEUs per annum, which would avoid excessive traffic and environmental impacts.
- 2.2. Within the constraints of the area, all possible and practical layout forms were considered and assessed on the basis of a detailed scoring methodology taken

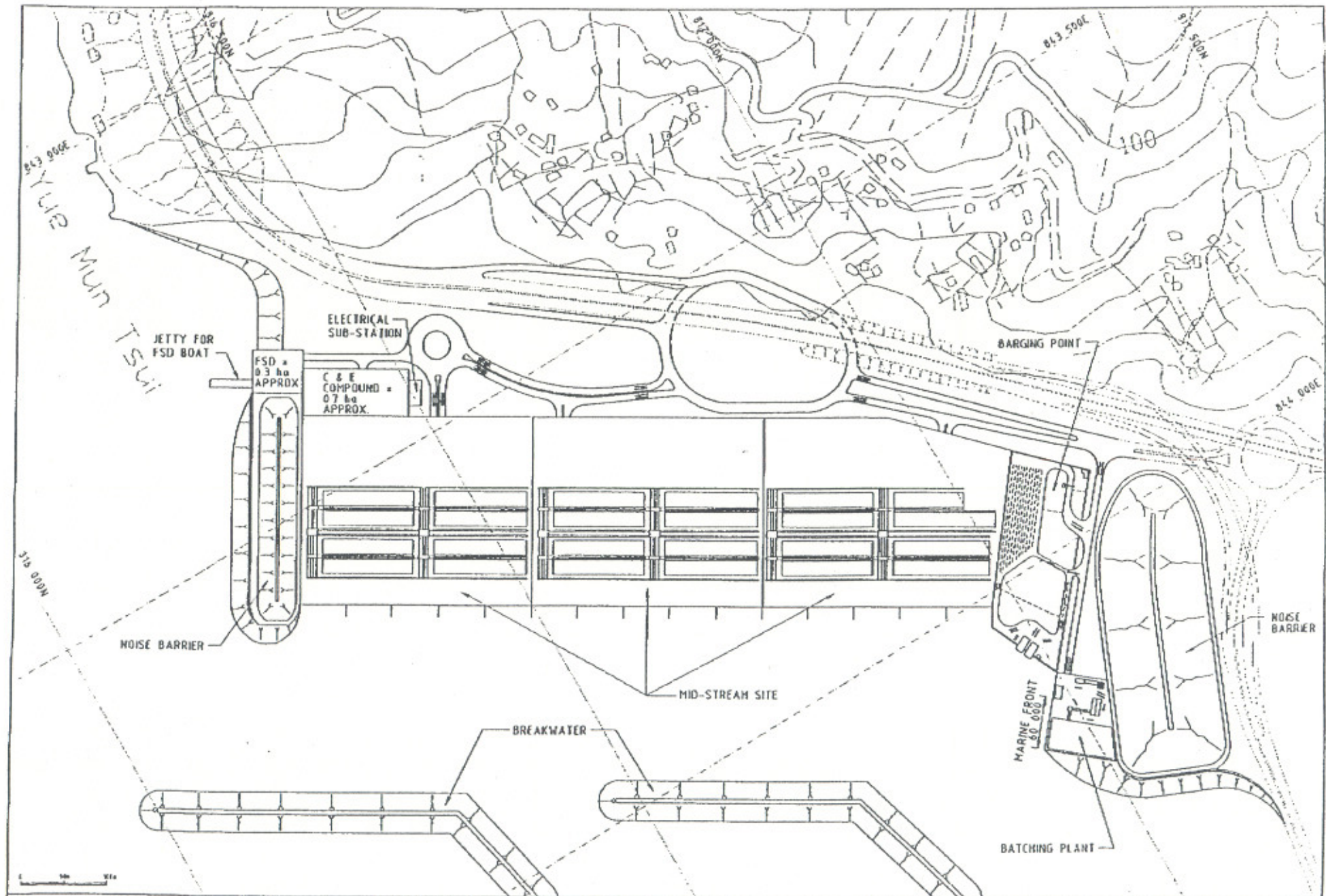
container ashore and vice versa. The type of barges currently in use in Hong Kong are typically lighters which are 30 to 50 metres in length and 16 metres in breadth. These lighters are generally fitted with their own derrick crane. Containers are either loaded or off-loaded by this derrick crane on the barge berth. Unloading of one container from a barge takes an average of 6 to 8 minutes. Barge capacities generally vary from 100 to 110 TEU's for full containers and from 180 to 200 TEU's for empty containers.

- 3.3. Clearly mid-stream site operations would cause an addition of barge traffic in the Lei Yue Mun channel as well as the Victoria Harbour, with origin or destination at the mid-stream site (MSS) and/or at the government mooring buoys (GMBs) of Area 131.
- 3.4. Prior to completion of the MIA study, for purpose of a broad and conservative assessment of effects on Lei Yue Mun caused by developing the TKO MSS, it has been assumed that of the 1.05 million TEUs, 0.22 million would be moved to and from the TKO bay GMBs. This would leave 0.83 million TEUs to be transported between the MSS and the areas to the west of Lei Yue Mun. It is further assumed that of this 0.83 million TEUs, 0.3 million TEUs would be moved to and from the facilities within the Eastern Harbour. This would leave 0.53 million TEUs to be transported through the Victoria Harbour. If a greater proportion of the MSS container throughput were to be serviced by the TKO GMBs, there would be a lower impact on Lei Yue Mun.
- 3.5. While the number of TEUs carried per lighter would vary, it has been assumed that one lighter would carry, on average, 80 TEUs. On this basis 0.83 million TEUs would require 10375 barge movements per annum, or 30 barge movements per day, or 15 movements in each direction per day, through the Lei Yue Mun channel (assuming 350 working days per year). 0.53 million TEUs through the Victoria Harbour would result in an average daily movement of 19 barges, or 10 movements in each direction. The 0.22 million TEU's being carried between the MSS and the GMBs would amount to 8 barges movements a day, 4 each way. This would only add on a very insignificant amount of marine traffic to the existing traffic densities.
- 3.6. At the onset of a typhoon, evacuation of the barges would add a sudden burden to the busy harbour.
- 3.7. Under the assumptions as stated in items 3.4 and 3.5, 38 barge movements per day would be anticipated at Area 131. Evacuation of these numbers of barges should not provide significant operational difficulty. Indeed shelter for the barges could be found within the Area 131 and therefore evacuation is not necessary.

cargo from an ocean going ship, within operating hours. These hours may however be outside the hours sunrise to sunset. Navigation lights at the end of the breakwater should therefore be provided.

4. CONCLUSION & RECOMMENDATION

- 4.1. The proposed developments at TKO Area 131 is considered to have insignificant effect on traffic and on safety within the harbour areas due to the anticipated relatively small increase in barge traffic.
- 4.2. The mix of the buoy size in the TKO bay would need a review by the relevant committees as time of construction of the MSS became closer, and then-current shipping trends are clearer.
- 4.3. The integrated development with anchorage areas and close proximity of shore-based facilities should be promoted in Hong Kong water to reduce the travel distance and therefore internal traffic flows, and thereby improve the busy conditions of the harbour.

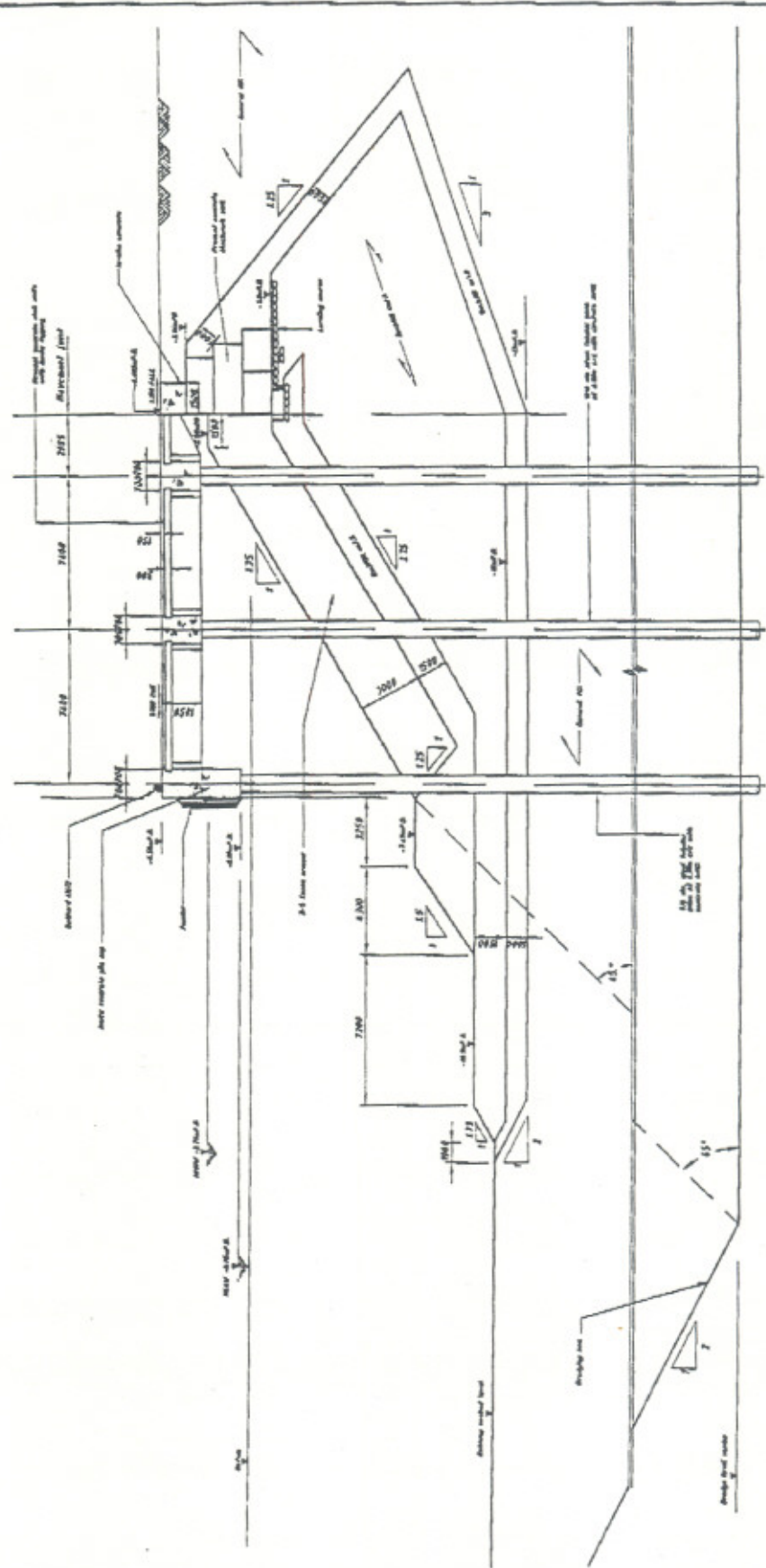


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NO.	REVISION	DATE	BY	CHECKED	APPROVED	SCALE	STATUS

FEASIBILITY STUDY FOR TSEUNG KWAN B PORT
DEVELOPMENT AT AREA E11
MPB REPORT
ENLARGED LAYOUT PLAN

Territory Development Department/Hong Kong
Kowloon Development Office
Scale: 1:4,300
Date: 28/10/92
Sheet: 3a
Figure 2 | C



CROSS SECTION OF TYPICAL BAY
1 : 300

FEASIBILITY STUDY FOR TSEUNG KWAN O PORT DEVELOPMENT
AT AREA 131

CROSS SECTION OF TYPICAL BAY

CHECKED
校核
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批准
DATE
日期 08-10-97



DRG. NO.
圖紙編號 Figure 4