**For discussion** **PWSC(1999-2000)18**
**on 26 May 1999**

# ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

**HEAD 702 - PORT AND AIRPORT DEVELOPMENT**
**Territory Development**
**Civil Engineering - Land development**
**359CL - Tseung Kwan O port development at area 137 (Fat Tong O) - remaining works**

Members are invited to recommend to Finance Committee -

(a) the upgrading of part of **359CL**, entitled "Tseung Kwan O port development at area 137 (Fat Tong O), Stage 2 reclamation", to Category A at an estimated cost of $507 million in money-of-the-day prices; and

(b) the retention of the remainder of **359CL** in Category B.

## PROBLEM

We have to provide land for Deep Water Industries[1] (DWI) in area 137 Tseung Kwan O (TKO) to meet future development needs. We also have to maintain a public filling outlet for the disposal of inert construction and

/demolition .....

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[1] DWI are industries which require access to deep water berths. Examples are bulk heavy oil storage and packing, break bulk chemical and concrete batching and prefabrication, steel building materials production and strategic storage facilities for polystyrene production.

demolition (C&D) material[2] (also referred to as public fill) in the Southeast New Territories (SENT) when Stage 1 of the public filling area in area 137 of TKO becomes full. This will happen around October 1999.

## PROPOSAL

2. The Director of Territory Development, with the support of the Secretary for Planning, Environment and Lands, proposes to upgrade part of **359CL** to Category A at an estimated cost of $507 million in money-of-the-day (MOD) prices to carry out the Stage 2 reclamation at area 137 of TKO.

## PROJECT SCOPE AND NATURE

3. The reclamation at area 137 of TKO consists of two stages. The part of works we now propose to upgrade to Category A is the second stage of the reclamation which comprises -

(a) reclamation of about 47 hectares of seabed;

(b) construction of a vertical seawall about 500-metre long and a sloping seawall about 315-metre long; and

(c) environmental monitoring and implementation of the necessary mitigation measures.

4. The remainder of **359CL** consists of the provision of infrastructure to serve the development of DWI and Potentially Hazardous Installations[3] (PHI) in the area 137 reclamation.

/**JUSTIFICATIONS** .....

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[2] The inert portion of C&D material comprises earth, broken rock, concrete and building debris (e.g. bricks and plaster) which does not decompose or cause any bad odour. Using public fill for reclamation not only helps conserve natural resources, but also conserves valuable landfill space designed for disposing of municipal solid waste.

[3] PHI are installations which store hazardous materials in quantities exceeding a specified threshold quantity, which varies for different substances in accordance with the UK Notification of Installations Handling Hazardous Substances Regulations 1982. These substances include liquefied petroleum gas, chlorine, ammonia, petrol, naphtha, liquid oxygen and a number of chemicals. Examples of PHI are Gas Plant at Ma Tau Kok, Pak Kong Water Treatment Works, stores for the above hazardous substances, explosive factories and Government explosive depots.

## JUSTIFICATIONS

5. The proposed Stage 2 reclamation at area 137 of TKO will provide 32 hectares of land for future development of DWI and is currently the only site reserved for DWI in the territory. The Hong Kong Industrial Estates Corporation has expressed interest in acquiring about 20 hectares of the DWI land in area 137 as an extension to TKO Industrial Estate subject to further study.

6. It is the Government's policy to maximise the reuse of public fill in land formation and reclamation projects to minimise the disposal of construction and demolition waste at the landfills. At present, there are two public filling areas[4] in the territory located at TKO area 137 and Pak Shek Kok (Phase II) in Shatin. As at May 1999, the TKO area 137 Stage 1 site is 85% full and we estimate that it will be totally filled up by October 1999.

7. Because of the uncertainty associated with certain planned reclamation projects, there will be an acute shortage of public filling capacity in Hong Kong in the near future. We propose to make use of the TKO area 137 Stage 2 site as a public filling area to provide some 3 million cubic metres of public filling capacity. This would provide a suitable outlet for the large quantity of public fill generated from planned infrastructure projects, such as the Mass Transit Railway TKO Extension Project commencing in 1999.

8. If the TKO area 137 Stage 2 reclamation does not proceed as proposed, there will be no public filling area in southeast Hong Kong after the completion of the Stage 1 reclamation. Public fill will have to be hauled to the remaining and more remote public filling areas. This will place an additional burden on our road network and constitute to air pollution. By November 1999, even the combined public filling capacity of the existing site (i.e. Pak Shek Kok (Phase II) ) and new sites coming on stream (i.e. Tung Chung Development Phase 3A, Jordon Road Reclamation and Pak Shek Kok (Phase III) ) will not be able to handle the territory's total demand[5].

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[4] A public filling area is a designated part of a development project that accepts public fill as filling material for reclamation purpose. Disposal of public fill in a public filling area requires a licence issued free of charge by the Director of Civil Engineering.

[5] Based on Civil Engineering Department's Public Filling Programme, the available public filling capacity from committed reclamation projects for 1999 and 2000 is about 4 million cubic metres ($Mm^3$) and 2 $Mm^3$ respectively. The forecast public fill generated by the construction industry is 5 $Mm^3$ and 5.2 $Mm^3$ for 1999 and 2000 respectively.

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9. The success of the Waste Reduction Framework Plan (WRFP) published in 1998 relies to a large extent on the extensive use of public fill in reclamation. If there is insufficient public filling capacity, more public fill will be delivered to the landfills. This will cause rapid depletion of the valuable landfill space designed for municipal waste. As explained in the WRFP, if we were not able to extend the life of the landfills, we would have to find 860 hectares of land for disposing of municipal waste in the next decade. Therefore, if we cannot find adequate public filling outlets now, the landfills will be full even earlier than suggested in the WRFP. We will need to find even more land for replacement landfills.

10. In the Audit Report No. 28 of 1997, the Director of Audit (D of A) estimated[6] that the cost of handling public fill at reclamation sites was about $27 per cubic metre as compared to $158 per cubic metre for handling construction waste at landfills. It is therefore important from the environmental, land requirement and financial perspectives to avoid the disposal of inert C&D material at landfills. In the same audit report, D of A also identified that the lack of sorting facilities for construction and demolition material had unnecessarily shortened the life of the landfills. The Report was discussed by the Public Accounts Committee and the Committee expressed concern on this issue. In response, we propose to establish a construction and demolition material sorting plant on the area of Stage 1 of TKO area 137 reclamation to further minimise the disposal of public fill at landfills.

## FINANCIAL IMPLICATIONS

11. We estimate the capital cost of the project to be $507 million in MOD prices (see paragraph 12 below), made up as follows -

| | | **$ million** |
|---|---|---|
| (a) | Reclamation | 108.0 |
| (b) | Seawalls | 228.0 |
| (c) | Drainage works | 22.0 |
| (d) | C&D material sorting plant | 25.0 |

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[6] The Audit Commission's cost estimates were based on 1995 price levels.

/(e) .....

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|---|---|---|---|
| (e) | Environmental monitoring and audit | 7.0 | |
| (f) | Environmental mitigation measures | 5.0 | |
| (g) | Site staff costs | 30.0 | |
| (h) | Contingencies | 43.0 | |
| | Sub-total | 468.0 | (at December 1998 prices) |
| (i) | Provision for price adjustment | 39.0 | |
| | Total | 507.0 | (in MOD prices) |

During the construction stage, the Director of Civil Engineering (DCE) will provide professional input for site supervision. Owing to insufficient in-house resources, DCE proposes to employ consultants to provide technical site staff support during this period. A breakdown by man-months of the estimate for consultants' fees is at Enclosure 1.

12. Subject to approval, we will phase the expenditure as follows -

| Year | $ million (Dec 1998) | Price adjustment factor | $ million (MOD) |
|---|---|---|---|
| 1999 - 2000 | 78.0 | 1.02625 | 80.0 |
| 2000 - 2001 | 175.0 | 1.06217 | 185.9 |
| 2001 - 2002 | 122.0 | 1.09934 | 134.1 |
| 2002 - 2003 | 65.0 | 1.13782 | 74.0 |

/2003 - 2004 .....

| | | | |
|---|---|---|---|
| 2003 - 2004 | 28.0 | 1.17765 | 33.0 |
| | 468.0 | | 507.0 |

13. We have derived the MOD estimate on the basis of the Government's forecasts of trend labour and construction prices for the period from 1999 to 2004. We will tender the proposed works under a standard remeasurement contract because the quantities of dredging and filling may vary according to the actual ground conditions. The contract will provide for price adjustments because the contract period will exceed 21 months.

14. We estimate the annually recurrent expenditure to be $17.79 million.

**PUBLIC CONSULTATION**

15. When the proposed reclamation project was gazetted under the Foreshore and Seabed (Reclamations) Ordinance and the Town Planning Ordinance on 29 July 1994 and 29 May 1998 respectively, no objections to the proposed reclamation were received. The reclamation was subsequently approved under the Foreshore and Seabed (Reclamations) Ordinance on 11 October 1994 and the relevant Outline Zoning Plan was approved by the Chief Executive-in-Council under the Town Planning Ordinance on 9 February 1999.

16. We consulted the Sai Kung Provisional District Board on the Layout Plan of TKO Area 137 on 14 April 1998. Members had no objections to the development of DWI on the Stage 2 reclamation.

17. We consulted the Legislative Council's Panel on Planning, Land and Works on 23 March 1999. Members' main concern was the overall reclamation and development plan for TKO. The Administration has issued an information note to all Panel Members to address these concerns.

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18. We also consulted the Legislative Council's Panel on Transport on 23 April 1999. Members' main concern was that the road widening works along Wan Po Road, the MTR TKO Extension line construction works and the proposed public filling works together might result in severe traffic pressure on the local transport network. Locations of Wan Po Road and the MTR TKO Extension line are shown at Enclosure 2. We had explained to Members that the traffic situation had been fully addressed in the Traffic Impact Assessment Study which concluded that the project would not result in any unacceptable traffic problem. Furthermore, the Territory Development Department would be responsible for co-ordinating the various projects, as well as liaising with the Mass Transit Railway Corporation, to ensure that there would not be any interfacing problems during construction.

## ENVIRONMENTAL IMPLICATIONS

19. We completed an Environmental Impact Assessment (EIA) as part of the Engineering Feasibility Study of Development of TKO area 137. The EIA concluded that the proposed engineering works would have no adverse long term impact and the environmental impacts arising during construction stage could be controlled by recommended mitigation measures to within established standards and guidelines. The then Environmental Pollution Advisory Committee endorsed the EIA on 7 June 1993.

20. In view of the proposed change from the originally assumed reclamation method to public filling, the Director of Environmental Protection completed an Environmental Review (ER) in December 1995. The ER concluded that the environmental impacts of using public fill at the proposed reclamation could still be controlled by the mitigation measures in the endorsed EIA and appropriate dust suppression measures. No further EIA would be necessary.

21. We will implement all environmental mitigation measures, environmental monitoring and audit requirements recommended in the EIA and ER. We have included the cost of these requirements in the project estimate.

## LAND ACQUISITION

22. The proposed works do not require any land acquisition.

**/BACKGROUND .....**

**BACKGROUND INFORMATION**

23. Under the Port and Airport Development Strategy Study completed in October 1989, we identified area 137 of TKO to the south-east of Fat Tong O as a potential site suitable for the development of PHI and DWI because of its deep water bay and the considerable distance of the site from residential areas. In March 1993, an "Engineering Feasibility Study of Development of TKO area 137" (the Study) was completed in March 1993. The Study confirmed that the proposal to develop PHI and DWI in area 137 was both feasible and viable in terms of land use planning, engineering and marine operation. The Study also indicated that the proposed reclamation would have insignificant effect on the water flow and water quality in the area. The Study also recommended a reclamation design that required no removal of mud at the seabed to reduce the impacts arising from the dredging works.

24. We upgraded **359CL** to Category B in December 1993. In July 1995, we upgraded part of **359CL** to Category A, as **501CL** "Tseung Kwan O port development at area 137 (Fat Tong O), Stage I reclamation" at an estimated cost of $1,308.2 million. We commenced the Stage 1 reclamation in January 1996 for completion in October 1999.

25. DCE has completed the detailed design and drawings for the proposed works using in-house resources. We plan to start the works in September 1999 for completion in August 2002. Details of the proposed works are at Enclosure 3.

26. We will commence the remaining works under **359CL** in August 2001 for completion in December 2003.

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Planning, Environment and Lands Bureau
May 1999

## 359CL - Tseung Kwan O port development at area 137 (Fat Tong O) - remaining works

### Breakdown of estimates for consultants' fees

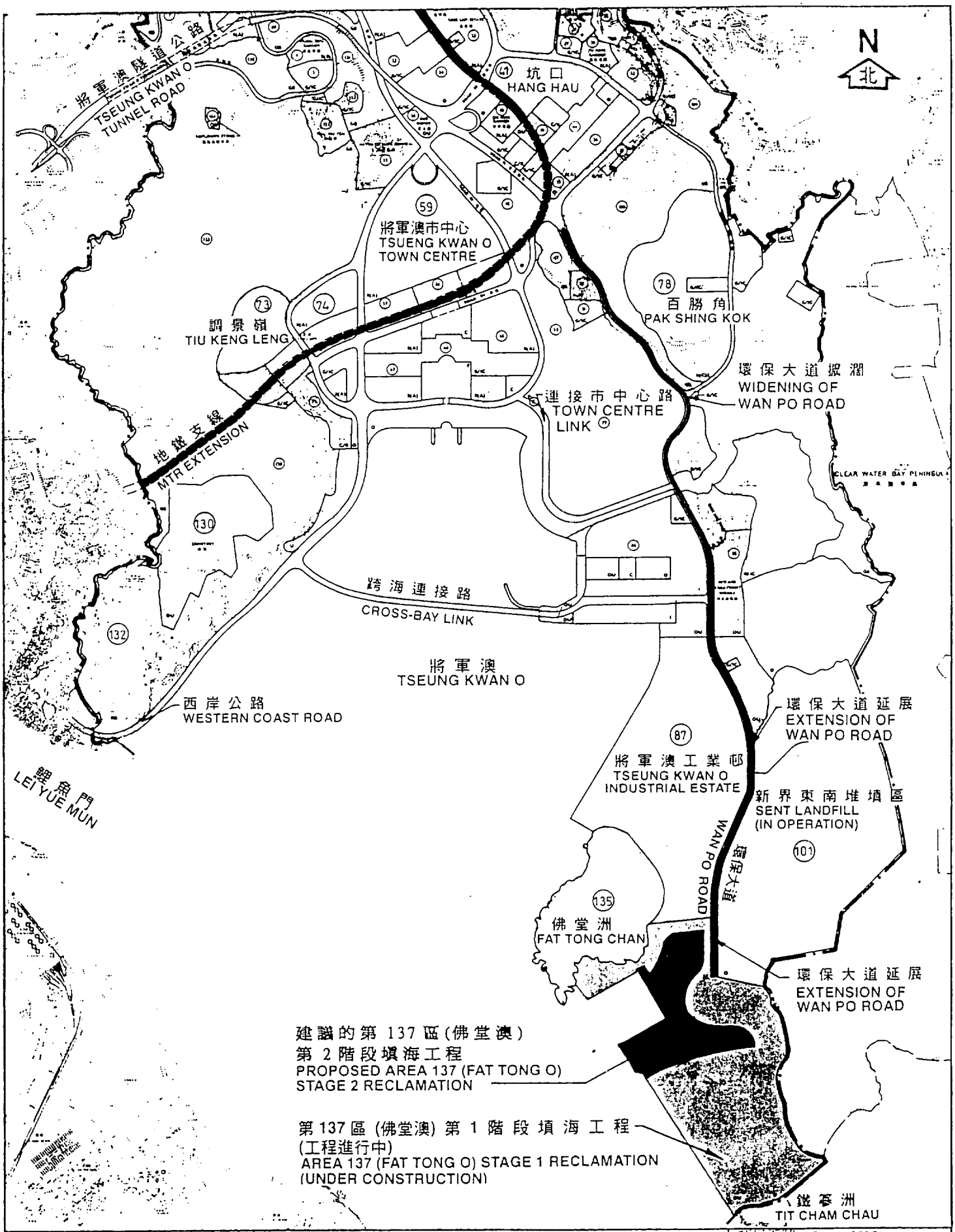
| Consultants' staff costs | | Estimated man months | Average MPS* salary point | Multiplier factor | Estimated fee ($ million) |
|---|---|---|---|---|---|
| Site supervision by resident site staff employed by the consultants | Technical | 840 | 16 | 1.7 | 30.0 |
| | | | | **Total consultants' staff costs** | 30.0 |

* MPS = Master Pay Scale

### Notes

1. A multiplier factor of 1.7 is applied to the average MPS point to arrive at the full staff costs including the consultants' overheads and profit, as the staff will be supplied by the consultants. (At 1.4.98, MPS pt. 16 = $21,010 p.m.)

2. The figures given above are based on estimates prepared by the Director of Civil Engineering. We will only know the actual man months and actual fees when we have appointed the resident site staff.




一九九九年至二零零零年度工務小組委員會文件 P.W.S.C. SUBMISSION 1999-2000

項目編號 ITEM No.359CL

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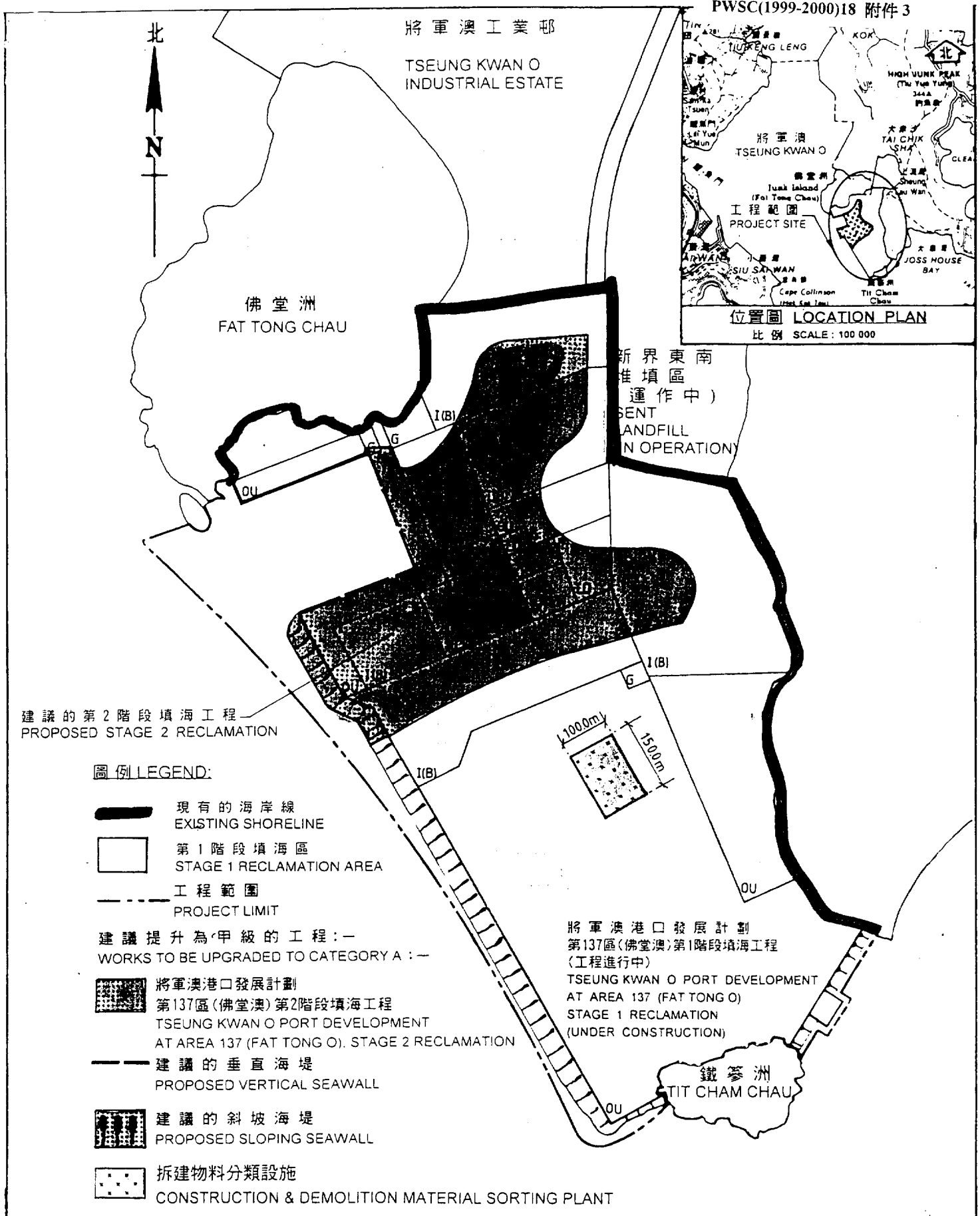
|---|---|---|---|---|---|
| 圖則名稱 drawing title<br>將軍澳港口發展計劃第137區(佛堂洲)餘下工程(將軍澳道路規劃圖)<br>TSEUNG KWAN O PORT DEVELOPMENT AT AREA 137 (FAT TONG O) REMAINING WORKS (TKO ROAD LAYOUT) | 繪圖 drawn C.S. LAU | 簽署 initial | 日期 date 17.5.99 | 比例 scale NTS | 辦事處 office 新界東拓展處 NT EAST DEVELOPMENT OFFICE |
| | 核對 checked T.S. LI | 簽署 initial | 日期 date 17.5.99 | 圖則編號 drawing no. TK2260 | 拓展署 TERRITORY DEVELOPMENT DEPARTMENT |
| | 核准 approved K.C. NG | 簽署 initial | 日期 date 17.5.99 | | |




圖例 LEGEND:

- 現有的海岸線 EXISTING SHORELINE
- 第1階段填海區 STAGE 1 RECLAMATION AREA
- 工程範圍 PROJECT LIMIT

建議提升為甲級的工程：—
WORKS TO BE UPGRADED TO CATEGORY A：—

- 將軍澳港口發展計劃 第137區(佛堂澳)第2階段填海工程 TSEUNG KWAN O PORT DEVELOPMENT AT AREA 137 (FAT TONG O), STAGE 2 RECLAMATION
- 建議的垂直海堤 PROPOSED VERTICAL SEAWALL
- 建議的斜坡海堤 PROPOSED SLOPING SEAWALL
- 拆建物料分類設施 CONSTRUCTION & DEMOLITION MATERIAL SORTING PLANT

| 編號 no. | 日期 date | 內容摘要 description | 核對 checked | 核准 approved |
|---|---|---|---|---|
| A | 3. 3. 99 | 修改圖例 LEGEND REVISION | | |

一九九九至二零零零年度工務小組文件 PWSC Submission 1999-2000 項目編號 ITEM No. 359CL

| 圖則名稱 drawing title | 繪圖 drawn | 簽署 initial | 日期 date | 比例 scale | 辦事處 office |
|---|---|---|---|---|---|
| 將軍澳港口發展計劃<br>第137區(佛堂澳)餘下工程<br>TSEUNG KWAN O PORT DEVELOPMENT<br>AT AREA 137 (FAT TONG O)<br>REMAINING WORKS | M.K. LEE | | 11.11.98 | 1 : 10 000 | 新界東拓展處<br>NT EAST DEVELOPMENT OFFICE |
| | 核對 checked<br>T.S. LI | | 11.11.98 | 圖則編號 drawing no. | 拓展署<br>TERRITORY DEVELOPMENT DEPARTMENT |
| | 核准 approved<br>K.C. NG | | 11.11.98 | TK2254A | |