

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 705 - CIVIL ENGINEERING

Transport – Ferry Piers

47TF – Reconstruction of Sha Tau Kok, Wong Shek, Ko Lau Wan, Sham Chung and Lai Chi Chong public piers

Members are invited to recommend to Finance Committee –

- (a) the upgrading of part of **47TF**, entitled “Reconstruction of Sha Tau Kok, Wong Shek and Ko Lau Wan public piers”, to Category A at an estimated cost of \$109.0 million in money-of-the-day prices; and
- (b) the retention of the remainder of **47TF**, retitled “Reconstruction of Sham Chung and Lai Chi Chong public piers”, in Category B.

PROBLEM

The existing public piers at Sha Tau Kok, Wong Shek and Ko Lau Wan are in poor condition and need reconstruction.

PROPOSAL

2. The Director of Civil Engineering (DCE), with the support of the Secretary for Economic Development and Labour, proposes to upgrade part of **47TF** to Category A at an estimated cost of \$109.0 million in money-of-the-day (MOD) prices for the reconstruction of the public piers at Sha Tau Kok, Wong Shek and Ko Lau Wan.

/ PROJECT

PROJECT SCOPE AND NATURE

3. The part of **47TF** which we now propose to upgrade to Category A comprises –

- (a) demolition of three existing piers at Sha Tau Kok, Wong Shek and Ko Lau Wan;
- (b) construction of three replacement piers at Sha Tau Kok, Wong Shek and Ko Lau Wan;
- (c) construction of three roof covers with associated lighting for the three new piers; and
- (d) environmental monitoring and mitigation measures for the proposed works.

We plan to start the construction works in October 2004 for completion in October 2006. The layout plans of the three piers are at Enclosures 1 to 3. The photomontages showing the perspective views of the proposed new piers are at Enclosures 4 to 6. During the reconstruction stage, we will provide temporary berthing facilities to the existing piers at Sha Tau Kok, Wong Shek and Ko Lau Wan. The operation of the piers will not be affected.

JUSTIFICATION

4. Over the years, a number of public piers were built and maintained to serve local and public users in the rural areas and the outlying islands. As some piers are approaching the end of their serviceable life, plans were drawn up to build new piers to replace and improve these facilities. In April 2002, Members supported the reconstruction of the public piers at Kat O, Peng Chau, Cheung Chau and Wu Kai Sha. The reconstruction works for these four piers have either been completed or near completion. The current proposal is part of the on-going exercise.

5. The existing public piers at Sha Tau Kok, Wong Shek and Ko Lau Wan were built in the 1960s and are currently maintained by Civil Engineering Department (CED). All three piers were constructed in form of prestressed concrete structure. In conducting inspection for the piers in the past few years, CED found that the three piers are in poor condition. They are deteriorating with broken prestressed tendons and spalling concrete. The concrete cover to the steel reinforcements of the prestressed structural elements is significantly below the

/present

present standard for corrosion protection. The prestressed tendons in the concrete, which were designed for very high tensile stresses, are suffering from significant corrosion and cannot be repaired or restored to the original state. The partial loss of function of such essential structural element has significant impact on the integrity of prestressed concrete structure. Even with costly repair implemented, the long term durability of the structure will still be limited. Although there is no immediate risk to public safety, the integrity of the piers cannot be assured without rebuilding the main structure. In the interest of public safety, we propose to reconstruct the piers. We will also take this opportunity to upgrade the existing facilities by providing roof covers to the replacement piers for shelter and shading purposes, and construct additional berths at the proposed new piers at Sha Tau Kok and Wong Shek to meet existing and future demand.

6. The Sha Tau Kok and Ko Lau Wan public piers are serving residents of local villages and other islands in their proximity. They are also the only landing facility for fishermen and mariculturists operating nearby the piers. Besides, Ko Lau Wan cannot be accessed by roads. Marine transport is the only means to reach Ko Lau Wan. The Wong Shek Public Pier is the major land access point for visitors to Tap Mun, Ko Lau Wan, and North Sai Kung area. The demand is high especially during weekends and public holidays. As these piers are integral parts of transportation facility for local and public users in the respective areas, it is essential to maintain the continuity of services. Details of the berthing facilities provided by the three piers are listed at Enclosure 7. The utilization rates of the existing piers in terms of population served by the piers and the patronage by kaito services are summarized in Enclosures 8 and 9. CED has also conducted field surveys on the pier usage including number of vessels and users for each pier on selected weekdays, weekends and public holidays in January to April 2004. The results of the field surveys are set out in Enclosure 10 and summarized as follows –

Location of the public pier	Weekdays		Weekends and Public Holidays	
	Average No. of Pier Users	Average No. of Vessels	Average No. of Pier Users	Average No. of Vessels
Sha Tau Kok	106	24	236	23
Wong Shek	205	59	1 185	71
Ko Lau Wan	35	13	373	21

FINANCIAL IMPLICATIONS

7. We estimate the capital cost of the project to be \$109.0 million in MOD prices (see paragraph 8 below), made up as follows –

/(a)

	\$ million	
(a) Demolition of three existing piers	4.3	
(b) Construction of three replacement piers (including provision of temporary berthing and mooring facilities to the existing piers)	86.9	
(i) Sha Tau Kok	48.5	
(ii) Wong Shek	21.8	
(iii) Ko Lau Wan	16.6	
(c) Construction of three roof covers with associated lighting	11.1	
(d) Environmental monitoring and mitigation measures for the proposed works	1.8	
(e) Contingencies	9.6	
	<hr/>	
Sub-total	113.7	(in September 2003 prices)
(f) Provision for price adjustment	(4.7)	
	<hr/>	
Total	109.0	(in MOD prices)
	<hr/>	

The cost breakdown of the three piers is set out at Enclosure 11. DCE has confirmed that the estimated cost for this project is comparable to that of other similar projects implemented by the Government.

8. Subject to approval, we will phase the expenditure as follows –

Year	\$ million (Sept 2003)	Price Adjustment Factor	\$ million (MOD)
2004 – 05	22.2	0.97150	21.6

/2005 – 06

Year	\$ million (Sept 2003)	Price Adjustment Factor	\$ million (MOD)
2005 – 06	62.4	0.95450	59.6
2006 – 07	21.1	0.95450	20.1
2007 – 08	8.0	0.96643	7.7
	<hr/> 113.7 <hr/>		<hr/> 109.0 <hr/>

9. We have derived the MOD estimate on the basis of the Government's latest forecast of trend rate of change in the prices of public sector building and construction output for the period from 2004 to 2008. We intend to award two contracts on a lump-sum basis because we can clearly define the scope of works in advance, leaving little room for uncertainty. One contract is for the works at Wong Shek and Ko Lau Wan and another is for the works at Sha Tau Kok. Apart from better management of the project as Wong Shek and Ko Lau Wan public piers are near to each other, it could allow different groups of qualified contractors to take part in the tendering exercise. The contracts will not provide for price adjustments as the contract period will not exceed 21 months.

10. At present, the annual recurrent expenditure for the three piers is \$566,000. We estimate the annual recurrent expenditure upon completion of the project to be \$776,000.

PUBLIC CONSULTATION

11. We have consulted the North District Council on 21 July 2003 and the Sha Tau Kok Rural Committee on 24 June 2003 and 24 October 2003 on the proposed reconstruction of public pier at Sha Tau Kok. We have also consulted Sai Kung North Rural Committee and Tai Po District Council on 13 May 2003 and 18 July 2003 respectively on the proposed reconstruction of public piers at Wong Shek and Ko Lau Wan. The Committees/Councils supported the proposed reconstruction works.

12. In response to the request of the Sha Tau Kok Rural Committee and the North District Council and taking into account the potential for tourism development at Sha Tau Kok, we included two additional berths for the proposed new pier in the final design. Upon request from the Sai Kung North Rural Committee, we proposed to provide one additional berth for the replacement Wong Shek Public Pier to enhance the facilities to cope with the heavy demand. The proposal has the support of the Tai Po District Council.

13. Under the Foreshore and Sea-bed (Reclamations) Ordinance, Cap. 127, we gazetted the proposed reconstruction works at Wong Shek and Ko Lau Wan on 8 August 2003, and those at Sha Tau Kok on 9 January 2004. No objection was received to the proposed reconstruction works. We gazetted the authorization of the proposed reconstruction works at Wong Shek and Ko Lau Wan on 31 October 2003, and those at Sha Tau Kok on 2 April 2004.

14. We briefed the Legislative Council Panel on Economic Services on 26 April 2004 and Members supported the proposed reconstruction works. On the query raised by one Member whether the pier design would be user-friendly to divers, we have consulted five major diving associations. The diving associations indicated that they had no difficulties in using Wong Shek Public Pier for diving activities and supported the additional berth proposal.

ENVIRONMENTAL IMPLICATIONS

15. Reconstruction of Sha Tau Kok and Ko Lau Wan public piers are not designated projects under the Environmental Impact Assessment (EIA) Ordinance (Cap. 499). For each of these two piers, we completed a Preliminary Environmental Review (PER) in 2003 which were agreed by the Director of Environmental Protection (DEP). The PERs concluded that the environmental impacts during both the construction and operation of the piers are minimal in general and that with implementation of mitigation measures the works would not cause adverse environmental impact.

16. The reconstruction of Wong Shek Public Pier is a designated project under Schedule 2 of the EIA Ordinance as the site falls partly within the Sai Kung East Country Park. DEP granted the environmental permit to the proposed works on 16 March 2004. We have also consulted Country Parks Committee (CPC) on 1 April 2004. The CPC has no objection to the proposed works inside the Sai Kung East Country Park.

17. We will carry out environmental mitigation measures set out in the PERs and the environmental permit, which include the installation of silt curtain around sea area where piling will be carried out. In addition, we will implement other standard pollution control measures such as silencers and siltation chambers to control short-term environmental impact during construction to within the established standards and guidelines. We will also implement Environmental Monitoring and Audit (EM&A) during construction. We estimate the cost of implementing the above mitigation measures and the EM&A to be \$582,000 and \$1.2 million respectively. We have included this cost in the overall project estimate.

18. We will require the contractors to submit waste management plan (WMP) for approval. The WMP will include appropriate mitigation measures to avoid, reuse and recycle construction and demolition (C&D) materials. We will ensure that the day-to-day operations on site comply with the approved WMP. We will control the disposal of C&D materials to designated artificial reefs deployment site(s), public filling areas and/or landfills through a trip ticket system. We will record the disposal, reuse and recycling of C&D materials for monitoring purposes.

19. We have considered in the planning and design stages the need to minimize the generation of C&D materials. We estimate that the proposed works will generate about 2 255 cubic metres (m³) of C&D materials. Of these, we will reuse about 1 668 m³ (74.0%) as artificial reefs in appropriate deployment site(s) as directed by the Director of Agriculture, Fisheries and Conservation Department, 512 m³ (22.7%) as fill in public filling areas¹ and 75 m³ (3.3%) will be disposed of at landfills. The notional cost of accommodating C&D materials at landfill is estimated to be \$9,375 for the proposed works (based on a notional unit cost² of \$125/ m³).

LAND ACQUISITION

20. This project does not require land acquisition.

/BACKGROUND

¹ A public filling area is a designated part of a development project that accepts public fill for reclamation purposes. Disposal of public fill in a public filling area requires a licence issued by the Director of Civil Engineering.

² This estimate has taken into account the cost for developing, operating and restoring the landfills after they are filled and the aftercare required. It does not include the land opportunity cost for existing landfill sites (which is estimated at \$90/m³), nor the cost to provide new landfills (which are likely to be more expensive) when the existing ones are filled. The notional cost estimate is for reference only and does not form part of this project estimate.

BACKGROUND INFORMATION

21. We included the project in Category B of the Public Works Programme in November 2002 which originally contained the reconstruction of public piers at Sha Tau Kok, Wong Shek, Ko Lau Wan, Sham Chung and Lai Chi Chong. However, the reconstruction of public piers at Sham Chung and Lai Chi Chong will be deferred as objections were received during the gazettal under the Foreshore and Sea-bed (Reclamations) Ordinance on 9 January 2004 and 13 February 2004 for these two piers which would take time to resolve. At the same time, we are reviewing the need for reconstructing these two piers in light of recent usage patterns.

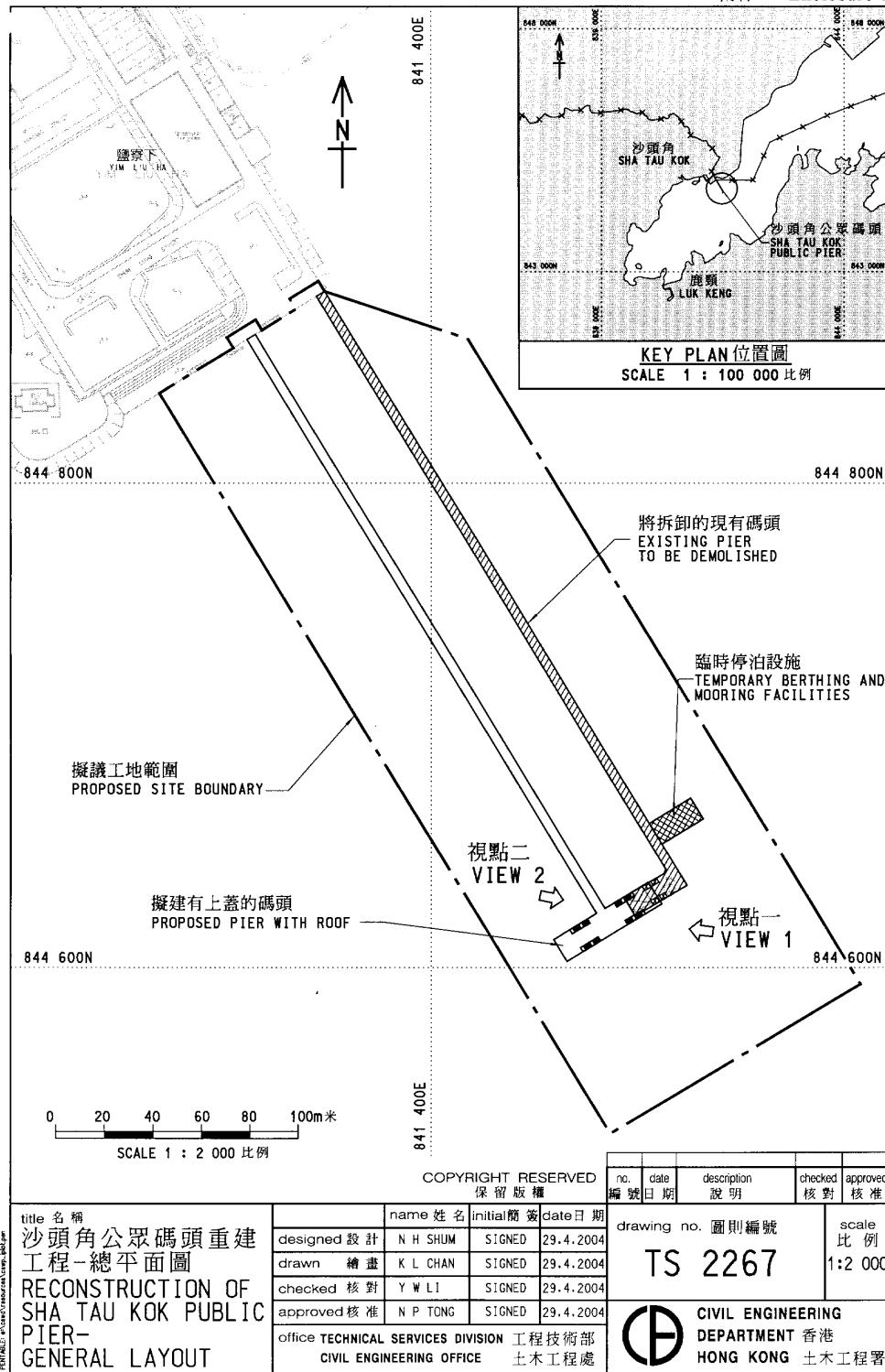
22. CED has completed the site investigation and design of the piers at Sha Tau Kok, Wong Shek and Ko Lau Wan at a total cost of \$1.4 million. We charged the amount to block allocation **Subhead 5101CX** "Civil engineering works, studies and investigations for items in Category D of the Public Works Programme". The piers will have a design life of 50 years. We have incorporated an integrated design of roof covers, which are in harmony with the surrounding environment.

23. The proposed reconstruction of the existing public piers at Sha Tau Kok, Wong Shek and Ko Lau Wan will not involve any tree removal or planting proposals.

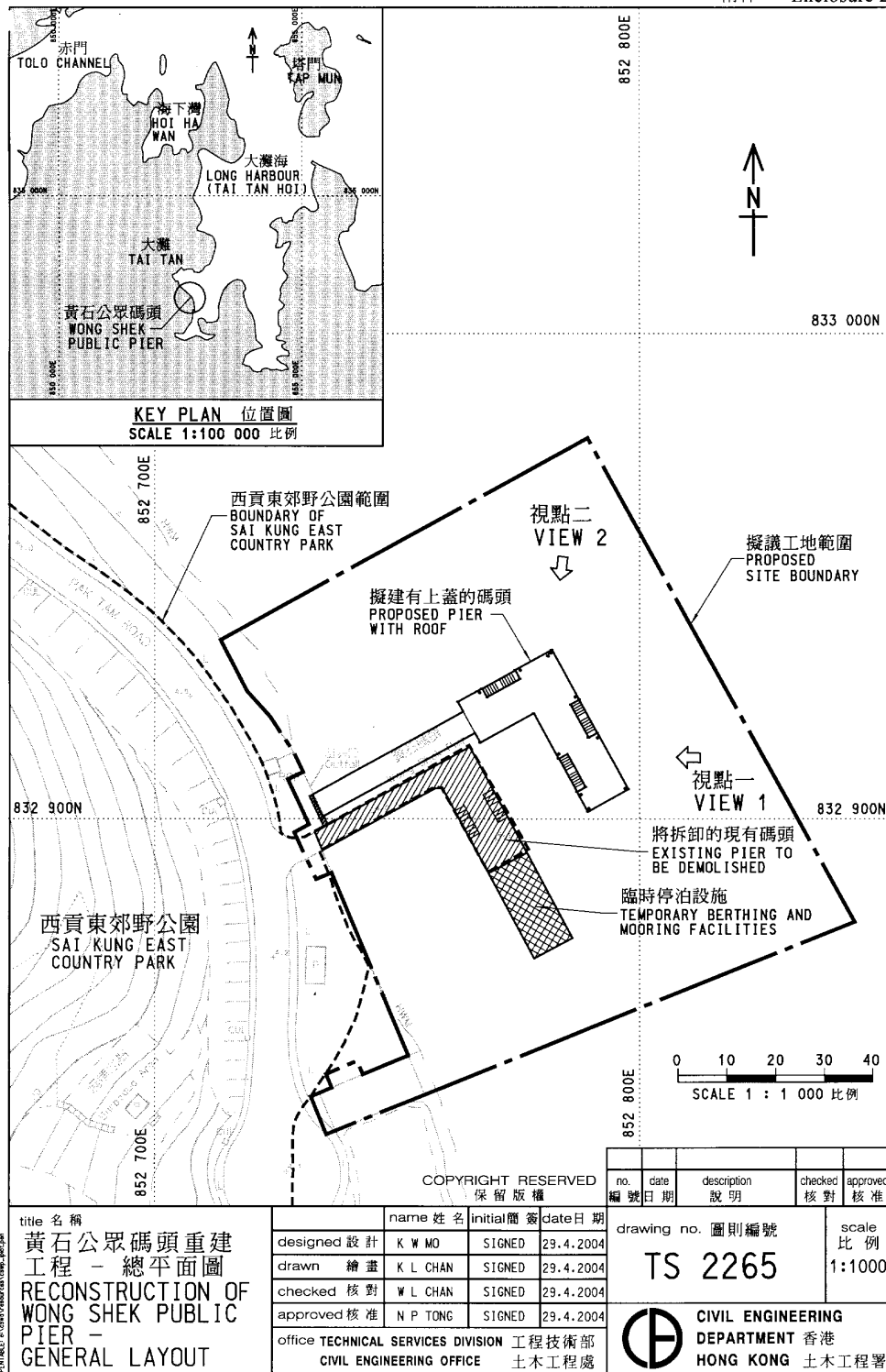
24. We estimate that the proposed works will create about 90 jobs (78 for labourers and another 12 for professional/technical staff) providing a total employment of 2 160 man-months.

Economic Development and Labour Bureau
June 2004

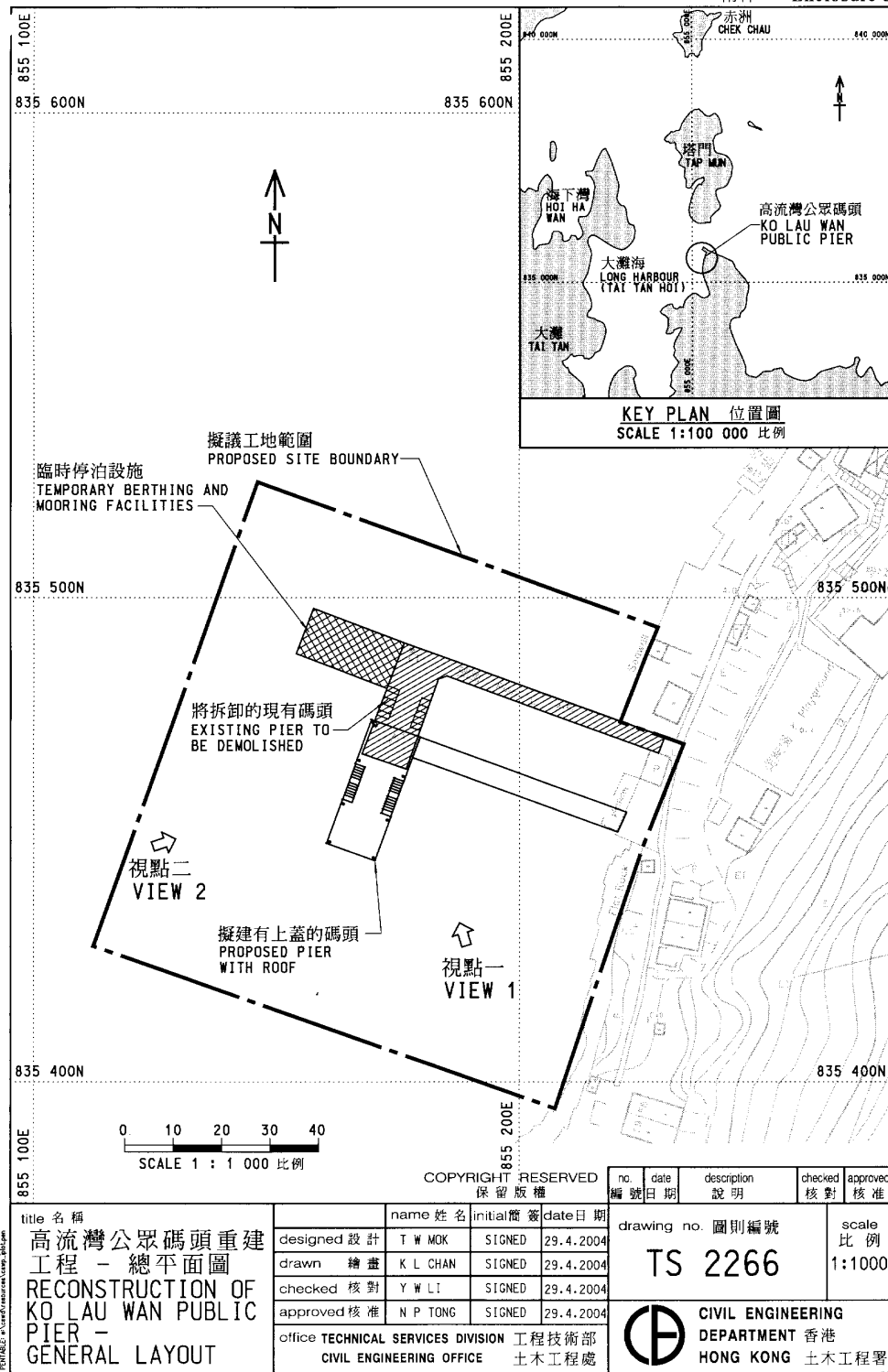
附件 1 Enclosure 1



附件 2 Enclosure 2



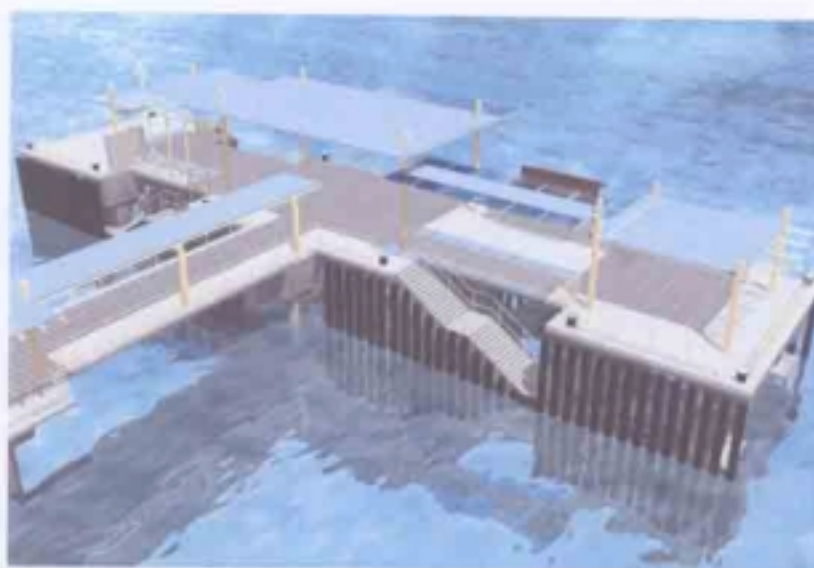
附件 3 Enclosure 3



附件 4 Enclosure 4



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VIEW 1




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VIEW 2

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title 名稱
沙頭角公眾碼頭重建
工程 - 透視圖
RECONSTRUCTION OF
SHA TAU KOK PUBLIC
PIER -
PERSPECTIVE VIEWS

	name 姓名	initial 簽署	date 日期
designed 設計	M H SHUM	SIGNED	10.5.2004
drawn 繪圖	K L CHAN	SIGNED	10.5.2004
checked 核對	Y K AI	SIGNED	10.5.2004
approved 核准	N P TONG	SIGNED	10.5.2004
office TECHNICAL SERVICES DIVISION 工程技術部 CIVIL ENGINEERING OFFICE 土木工程處			

no.	date	description	checked	approved
圖號	日期	說明	核對	核准
drawing no. 圖則編號			scale 比例	
TS 2274			NIL	
 CIVIL ENGINEERING DEPARTMENT 香港 HONG KONG 土木工程處				

A4 210 x 297

附件 5 Enclosure 5



視點一
VIEW 1




視點二
VIEW 2

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title 名稱
黃石公眾碼頭重建
工程 - 透視圖
RECONSTRUCTION OF
WONG SHEK PUBLIC
PIER -
PERSPECTIVE VIEWS

	name 姓名	initial 簡寫	date 日期
designed 設計	K. W. MO	SIGNED	25.4.2004
drawn 繪圖	K. L. CHAN	SIGNED	25.4.2004
checked 核對	W. L. CHAN	SIGNED	25.4.2004
approved 核准	N. P. TONG	SIGNED	25.4.2004
office 工程技術部 CIVIL ENGINEERING OFFICE	土木工程處		

no. 編號	date 日期	description 說明	checked 核對	approved 核准
drawing no. 圖則編號 TS 2269			scale 比例 NIL	
 CIVIL ENGINEERING DEPARTMENT 香港 HONG KONG 土木工程署				

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視點一
VIEW 1



視點二
VIEW 2

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Title 名稱 高流灣公眾碼頭重建 工程 - 透視圖 RECONSTRUCTION OF KO LAU WAN PUBLIC PIER - PERSPECTIVE VIEWS		NAME 姓名	initial 簽名	date 日期	drawing no. 圖則編號 TS 2271	scale 比例 NIL
	designed 設計	T W MOK	SIGNED	29.4.2004		
	drawn 繪圖	K L CHAN	SIGNED	29.4.2004	 CIVIL ENGINEERING DEPARTMENT 香港 HONG KONG 土木工程署	
	checked 核對	T W LI	SIGNED	29.4.2004		
	approved 核准	N P TONG	SIGNED	29.4.2004		
office TECHNICAL SERVICES DIVISION 工程技術部 CIVIL ENGINEERING OFFICE 土木工程處						

A4 290 x 297

Enclosure 7 to PWSC(2004-05)19

**47TF – Reconstruction of Sha Tau Kok, Wong Shek, Ko Lau Wan,
Sham Chung and Lai Chi Chong public piers**

Berthing Facilities

Location of the public pier	Berthing facilities
Sha Tau Kok	For use by regular “kaito” services between Sha Tau Kok (沙頭角) and Kat O Chau (吉澳洲); local fishing vessels and government vessels.
Wong Shek	For use by regular “kaito” services between Ma Liu Shui (馬料水) and Wong Shek (黃石) via Ko Lau Wan (高流灣), and between Tap Mun (塔門) and Wong Shek via Ko Lau Wan; pleasure vessels operating in Sai Kung North area and government vessels.
Ko Lau Wan	For use by regular “kaito” services between Ma Liu Shui and Wong Shek via Ko Lau Wan, and between Tap Mun and Wong Shek via Ko Lau Wan; pleasure vessels operating in Sai Kung North area; local fishing vessels; Chee Wan Floating Clinic (醫療船慈雲號) and other government vessels.

**47TF – Reconstruction of Sha Tau Kok, Wong Shek, Ko Lau Wan,
Sham Chung and Lai Chi Chong public piers**

Population Served by the Piers

Pier	Name of Local Village(s) served by the Pier	Villages Covered in the Census	Population served by the Pier		Remarks
			Figures provided by District Office Consulting Village Representatives*	Figures provided by District Planning Office based on 2001 Census	
Sha Tau Kok Public Pier	Kat O; Ap Chau; Sai Lau Kong; Yung Shue Au; Kuk Po; Fung Hang; seven villages in Hing Chun Yeuk	Kat O; Ap Chau; Sai Lau Kong; Yung Shue Au; Kuk Po; Fung Hang	274	117	There are ten restaurants near Sha Tau Kok Public Pier with around 600 daily customers
Wong Shek Public Pier	Ko Lau Wan Village; Tap Mun Village; Tap Mun Fishermen Village	—	8 700	—	There is no local village in the vicinity of Wong Shek Public Pier, but Wong Shek Public Pier serves as the major land access point for Tap Mun and Ko Lau Wan.
Ko Lau Wan Public Pier	Ko Lau Wan Village	Ko Lau Wan Village	600	227	—

* Figures include local villagers, fishermen and other mariculturists served by the piers.

**47TF – Reconstruction of Sha Tau Kok, Wong Shek, Ko Lau Wan,
Sham Chung and Lai Chi Chong public piers**

Patronage by Kaito Services
(Figures provided by Transport Department)

Pier	Kaito Services	Average Daily Arrivals and Departures	Average Daily Patronage of the Pier by kaito services ^{Note 1}	
Sha Tau Kok Public Pier	Kaito (Sha Tau Kok to Kat O Chau)	5	8	
Wong Shek Public Pier	Kaito (Ma Liu Shui to Tap Mun via Wong Shek and Ko Lau Wan)	2	110	467
	Kaito (Wong Shek to Chek Keng)	8 on weekends and holidays	138	
	Kaito (Wong Shek to Tap Mun via Ko Lau Wan)	7 on weekdays 12 on weekends and holidays	219	
Ko Lau Wan Public Pier ^{Note 2}	Kaito (Ma Liu Shui to Tap Mun via Wong Shek and Ko Lau Wan)	2	110	329
	Kaito (Wong Shek to Tap Mun via Ko Lau Wan)	7 on weekdays 12 on weekends and holidays	219	

Notes

1. The figures refer to the average daily patronage for the whole route of kaito services, which include passengers enroute the interim landing points during the trip.
2. There are also 2-day per week services provided by Chee Wan Floating Clinic at Ko Lau Wan Public Pier.

Enclosure 10 to PWSC(2004-05)19

47TF – Reconstruction of Sha Tau Kok, Wong Shek, Ko Lau Wan, Sham Chung and Lai Chi Chong public piers

Field Survey Results

Date of Survey	Number of Pier Users		
	Sha Tau Kok Public Pier	Wong Shek Public Pier	Ko Lau Wan Public Pier
Weekends and Public Holidays			
25/1/2004	(no survey taken)	738	314
1/2/2004	(no survey taken)	881	150
21/3/2004	286	881	297
28/3/2004	232	690	(no survey taken)
5/4/2004	267	1 324	253
10/4/2004	172	2 309	664
11/4/2004	224	1 474	558
Average	236	1 185	373
Weekdays			
23/3/2004	113	170	42
24/3/2004	103	253	51
25/3/2004	116	148	25
26/3/2004	77	204	21
27/3/2004	122	232	27
29/3/2004	107	222	42
Average	106	205	35

Date of Survey	Number of Vessels		
	Sha Tau Kok Public Pier	Wong Shek Public Pier	Ko Lau Wan Public Pier
Weekends and Public Holidays			
25/1/2004	(no survey taken)	64	14
1/2/2004	(no survey taken)	59	11
21/3/2004	34	41	23
28/3/2004	21	33	(no survey taken)
5/4/2004	26	129	21
10/4/2004	18	85	25
11/4/2004	14	88	30
Average	23	71	21
Weekdays			
23/3/2004	24	36	11
24/3/2004	28	69	15
25/3/2004	28	52	11
26/3/2004	14	74	9
27/3/2004	25	64	17
29/3/2004	25	57	14
Average	24	59	13

**47TF – Reconstruction of Sha Tau Kok, Wong Shek, Ko Lau Wan,
Sham Chung and Lai Chi Chong public piers**

Project Cost Breakdown

Works Items	Project Cost \$ million (in September 2003 prices)			
	Sha Tau Kok	Wong Shek	Ko Lau Wan	Total
(a) Demolition of three existing piers	2.9	0.6	0.8	4.3
(b) Construction of three replacement piers (including provision of temporary berthing and mooring facilities to the existing piers)	48.5	21.8	16.6	86.9
(c) Construction of three roof covers with associated lighting	6.5	2.6	2.0	11.1
(d) Environmental monitoring and mitigation measure for the proposed works	0.8	0.5	0.5	1.8
(e) Contingencies	5.4	2.1	2.1	9.6
Total	64.1*	27.6	22.0	113.7

* The cost of Sha Tau Kok Public Pier is higher because it is required to construct a 280 metres long cat walk with roof cover and two additional berths. The size of the pier head will be extended from 24.4m x 9.1m (220m²) to 45.8m x 10.6m (485m²).