

For discussion
on 12 April 2002

Legislative Council Panel on Planning, Lands and Works

**Infrastructure for Penny's Bay Development, Package 3 and
Penny's Bay Reclamation Stage 2**

Purpose

This paper seeks Members' support for the proposed construction of infrastructure and associated works for Penny's Bay Development, Package 3 and Penny's Bay Reclamation Stage 2 under part of the Public Works Programme (PWP) Item No. **660CL**.

Problem

2. We need to provide the necessary infrastructure and government, institution and community (GIC) facilities to support the development of Hong Kong Disneyland (HKD) Phase 1 at Penny's Bay on Lantau Island. We also need to provide land for the future development of HKD Phase 2.

Proposal

3. The Director of Civil Engineering (DCE), with the support of the Secretary for Economic Services, proposes to upgrade part of **660CL** to Category A at an estimated cost of \$2,375.9 million in money-of-the-day (MOD) prices for the construction of infrastructure and GIC facilities to serve HKD Phase 1 and the reclamation works for HKD Phase 2.

Background

4. Since signing of the project agreement with The Walt Disney Company in December 1999 on HKD, Government has been taking active

steps to implement the agreement on HKD Phase 1. We have achieved satisfactory progress in the reclamation works under “Penny’s Bay Reclamation Stage 1” which commenced in May 2000. We have also commenced the construction works under “Infrastructure for Penny’s Bay Development, Package 1 – Yam O Tuk fresh water service reservoir and associated works” and “Infrastructure for Penny’s Bay Development, Package 2” in August 2001 and October 2001 respectively.

5. We have now completed the detailed design of the next package (i.e. Package 3) of infrastructure works (including the decommissioning of the former Cheoy Lee Shipyard) and GIC facilities for HKD Phase 1. We plan to commence construction of the Package 3 works under three contracts in July 2002 for completion in phases by 2005. We also propose to commence Stage 2 of the reclamation works at Penny’s Bay in February 2003 to provide land for the future development of HKD Phase 2. The reclamation contract will be completed in December 2008.

6. We have scheduled to seek Public Works Sub-committee’s support and Finance Committee’s approval for the proposed works in May 2002.

Document Attached

7. To facilitate Members’ consideration of the proposed works in detail, an advanced copy of our draft submission to Public Works Sub-Committee is attached at Annex.

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Tourism Commission
Economic Services Bureau
April 2002

(Draft)

**For discussion
on 8 May 2002**

PWSC(2002-03)xx

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 705 - CIVIL ENGINEERING

Civil Engineering - Land Development

660CL - Site formation, construction of associated infrastructure and provision of government, institution and community facilities for an international theme park on Lantau Island

Members are invited to recommend to Finance Committee –

- (a) the upgrading of part of **660CL**, entitled “Infrastructure for Penny’s Bay Development, Package 3 and Penny’s Bay Reclamation Stage 2”, to Category A at an estimated cost of \$2,375.9 million in money-of-the-day prices; and
- (b) the retention of the remainder of **660CL** in Category B.

PROBLEM

We need to provide the necessary infrastructure and government, institution and community (GIC) facilities to support the development of Hong Kong Disneyland (HKD) Phase 1 at Penny’s Bay on Lantau Island. We also need to provide land for the future development of HKD Phase 2.

/PROPOSAL

PROPOSAL

2. The Director of Civil Engineering (DCE), with the support of the Secretary for Economic Services, proposes to upgrade part of **660CL** to Category A at an estimated cost of \$2,375.9 million in money-of-the-day (MOD) prices for the construction of infrastructure and GIC facilities to serve HKD Phase 1 and the reclamation works for the future development of HKD Phase 2.

PROJECT SCOPE AND NATURE

3. The scope of the part of **660CL** which we now propose to upgrade to Category A comprises -

- (a) construction of a section of Road P2 about 1.8 kilometres (km) in length;
- (b) decommissioning of the former Cheoy Lee Shipyard (the Shipyard);
- (c) formation of about 20 hectares (ha) of land over the Shipyard area and the associated drainage and slope stabilisation works;
- (d) construction of the remaining part of public water recreation centre including the provision of irrigation network, an arboretum, a tree farm, about 3 ha of woodland planting and other landscaping works;
- (e) construction of sewerage works from Yam O to Siu Ho Wan Sewerage Treatment Works including the laying of a sewage rising main about 5 km in length and associated works;
- (f) construction of a salt water main from Siu Ho Wan to Yam O Tuk about 2.6 km in length and associated works;
- (g) construction of the raw water main from Ta Pang Po to Yam O about 1.8 km in length and associated works;
- (h) construction of a fire station with ambulance depot at Penny's Bay;

- (i) construction of a police post at Penny's Bay;
- (j) reclamation works for the formation of about 60 ha of land at Penny's Bay including 1.6 km of permanent sloping seawall and associated works;
- (k) environmental monitoring and mitigation measures for the proposed works; and
- (l) employment of consultants for construction supervision and completion certification of the works.

————— A site plan covering the proposed works is at Enclosure 1. We plan to start the proposed infrastructure works and GIC facilities in July 2002 for completion in phases by July 2005 and to start the Penny's Bay Reclamation Stage 2 (PBR2) in February 2003 for completion in December 2008.

4. The remaining works of **660CL** to be retained in Category B include –

- (a) investigation, design and construction of the remaining works for the development of HKD Phase 2;
- (b) construction of the remaining part of the salt water supply system;
- (c) environmental monitoring and mitigation measures for the remaining works; and
- (d) construction supervision and completion certification of the works.

JUSTIFICATION

5. Government entered into an agreement with The Walt Disney Company and Hongkong International Theme Parks Limited in December 1999 for the development of HKD Phase 1. To implement the development of HKD Phase 1, Government has to provide a fully formed and serviced site on reclaimed land at Penny's Bay including associated and supporting infrastructure and GIC facilities. According to the implementation programme for the project, we need to commence the proposed infrastructure works in July 2002 in order to enable HKD Phase 1 to open in 2005. Failure to commence the works on time will put the project timetable at risk and delay the economic

benefits to be derived from the operation of HKD.

6. We need to decommission the Shipyard as part of the road access to the theme park and part of the public water recreation centre fall within the Shipyard site. The decommissioning of a shipyard is a designated project under the Environmental Impact Assessment (EIA) Ordinance (Chapter 499) and an environmental permit for the decommissioning works is required. In December 2001, we completed the EIA study on the decommissioning of the Shipyard. The study revealed the existence of hazardous substances in the soil at the site and recommended a comprehensive and effective remediation and clean up plan in line with international practice. Subject to the approval of the EIA report and issuance of an environmental permit by the Director of Environmental Protection (DEP), we will carry out the decontamination work in accordance with the recommendations of the EIA report.

7. HKD Phase 1 will attract a large number of local visitors as well as tourists. It is essential to construct a police post near HKD Phase 1 to serve as a reporting centre. In case of emergencies, the police post will serve as a command post in providing and coordinating responses to major incidents within HKD Phase 1. The nearest fire station-cum-ambulance depot is currently located at Tung Chung, which is about 14 km away. Fire appliances and ambulances from Tung Chung will take more than 16 minutes to reach Penny's Bay. This does not meet the fire services performance standard¹ nor the approved response time for emergency ambulance services². To ensure provision of adequate emergency services to HKD Phase 1, a fire station with ambulance depot will be constructed adjacent to the police post.

8. The land formed under the PBR2 is designated for the future development of HKD Phase 2. To maximize the use of inert construction and demolition (C&D) material (also referred to as public fill) in reclamation and land formation and minimize disposal at landfills, we have earmarked PBR2 as an outlet for public fill. PBR2 can accommodate 13 million cubic metres (cu.m.) of public fill. At present, we have only two existing public filling areas³, one at Pak Shek Kok and the other at Tuen Mun Area 38. These two public filling areas will be completely filled up by end-2002. The start of the reclamation works under PBR2 will provide a much-needed outlet for the large quantity of public fill generated by the local construction industry. This large quantity of public fill, if not delivered to public filling areas, would have to be disposed of at landfills taking up valuable capacities.

¹ According to the prevailing performance standard, any calls in HK should be met within a response time of 6 minutes.

² The emergency ambulance service adopts a 12-minute response as its performance target.

³ A public filling area is a designated part of a development project that accepts public fill as filling material for reclamation purpose.

FINANCIAL IMPLICATIONS

9. We estimate the capital cost of the project to be \$2,375.9 million in MOD prices (see paragraph 10 below), made up as follows -

	\$ million
(a) Construction of a section of Road P2	91.6
(b) Decommissioning of former Cheoy Lee Shipyard	450.0
(c) Land formation over the Shipyard area	146.0
(d) Construction of the remaining part of public water recreation centre	144.0
(e) Construction of sewerage works from Yam O to Siu Ho Wan sewage treatment works	34.0
(f) Construction of a salt water main from Siu Ho Wan to Yam O Tuk	12.7
(g) Construction of a raw water main from Ta Pang Po to Yam O	12.0
(h) Construction of a fire station with ambulance depot	176.9
(i) Construction of a police post	23.0
(j) Reclamation works for PBR2	881.2
(k) Environmental monitoring and mitigation measures for the proposed works	49.7

	\$ million	
(l) Employment of consultants for construction supervision and certifying completion	164.6	
(m) Contingencies	228.4	
Sub-total	2,414.1	(in September 2001 prices)
(n) Provision for price adjustment	(-38.2)	
Total	2,375.90	(in MOD prices)

Owing to insufficient in-house resources, DCE proposes to engage consultants for construction supervision and completion certification. A breakdown by man-months of the estimates for consultancy fee is at Enclosure 2.

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

Year	\$ million (Sept 2001)	Price Adjustment Factor	\$ million (MOD)
2002 – 2003	379.2	0.98625	374.0
2003 – 2004	696.4	0.98378	685.1
2004 – 2005	614.6	0.98378	604.6
2005 – 2006	291.6	0.98378	286.9
2006 – 2007	286.1	0.98378	281.5
2007 – 2008	127.1	0.98378	125.0
2008 – 2009	19.1	0.98378	18.8
	2414.1		2375.9

11. We have derived the MOD estimates on the basis of Government's latest forecast of trend labour and construction prices for the period 2002 to 2009. We plan to carry out the works under four contracts comprising three civil engineering contracts and one building contract. We will tender the three civil engineering contracts, namely "Water mains and sewerage works from Siu Ho Wan to Yam O", "Infrastructure for Penny's Bay development, Contract 2" and "Penny's Bay Reclamation Stage 2", as remeasurement contracts because the quantities of major items such as foundation works, drainage works and dredging works cannot be accurately determined at the design stage. The building contract for police post and fire station with ambulance depot will be tendered as a lump-sum fixed-price contract as the quantity of majority of the works can be clearly defined at design stage. The contracts "Infrastructure for Penny's Bay development, Contract 2" and "Penny's Bay Reclamation Stage 2" will provide for inflation adjustment as the duration of these two contracts will exceed 21 months. We will not apply inflation adjustment to the other two contracts because their contract period will not exceed 21 months.

12. We estimate the annually recurrent expenditure upon full completion of this project to be in the region of \$60 million.

PUBLIC CONSULTATION

13. The project is based on the Recommended Outline Development Plan for the Theme Park and Northshore Lantau Development which was generally supported by the Tsuen Wan District Council (TWDC) and Islands District Council (IsDC) during consultation in March 2000. We presented the proposed roadworks to IsDC on 22 May 2000 and circulated an information paper on the proposed roadworks to TWDC in June 2000. Members of the two District Councils made no comments on the proposal. We consulted IsDC and TWDC on 25 and 26 September 2000 respectively on the proposed sewerage scheme and land resumption for Penny's Bay Development. Members supported the proposed sewerage scheme and land resumption.

14. We gazetted the proposed roadworks under the Roads (Works, Use and Compensation) Ordinance on 21 July 2000. We received three objections, only one of which was related to the roads now being proposed.

This objection was related to the resumption of land affected by the roadworks. We met the objector to try to resolve the objection. However, it remained unresolved. We obtained the Chief Executive in Council's authorization of the proposed road schemes in January 2001 and gazetted the authorization on 23 January 2001.

15. We gazetted the reclamation at Penny's Bay including the Penny's Bay Reclamation Stage 2, under the Foreshore and Sea-bed (Reclamations) Ordinance, on 15 October 1999. Eight objections were received. Although we met with the objectors to try to resolve the objections, none of them withdrew their objections. We obtained the Chief Executive in Council's authorization of the proposed reclamation in March 2000 and gazetted the authorization on 14 April 2000.

16. We gazetted the remaining section of reclamation works within the Shipyard area under the Foreshore and Sea-bed (Reclamations) Ordinance on 23 November 2001. No objection was received. Authorization of the proposed works was gazetted on 8 February 2002.

17. We gazetted the proposed sewerage works from Siu Ho Wan sewage treatment plant to Yam O under the Roads (Works, Use and Compensation) Ordinance as applied by section 26 of the Water Pollution Control (Sewerage) Regulation on 15 June 2001. No objection was received. The proposed sewerage scheme was authorized on 6 September 2001.

18. We consulted the Tsuen Wan District Council and Islands District Council on 26 March 2002 and 8 April 2002 respectively on the proposed works. The Councils did not express objection. We consulted the Aquaculture Sub-committee of the Advisory Committee on Agriculture and Fisheries, the Ma Wan Rural Committee and the Capture Fisheries Sub-committees of the Advisory Committee on Agriculture and Fisheries respectively on 20 March, 22 March and 26 March regarding the design, programme and construction method of PBR2. The committee members exchanged views with us on the mitigation measures but did not raise objection to the proposed reclamation works. We also consulted the Ma Wan Fisheries Rights Association Limited and Cheung Sha Wan Fisheries' representatives on 3 April 2002 on the proposed reclamation. The mariculturists' representatives were particularly concerned about the monitoring of water quality. We will liaise with them regarding the

locations of additional monitoring stations, and will make arrangement for their witness of the monitoring process. We have also agreed to disseminate hard copies of monitoring data to their representatives on a monthly basis.

19. We have also conducted extensive briefings on the proposed works for the decommissioning of the Shipyard. Details of our briefings are set out in paragraphs 22 and 23 below.

20. [On 12 April 2002 we briefed the Legislative Council Panel on Planning, Lands and Works on the proposed works.] [*Outcome of meeting to be inserted.*]

ENVIRONMENTAL IMPLICATIONS

21. In March 2000 we completed an EIA study on “Construction of an International Theme Park in Penny’s Bay of North Lantau and its Essential Associated Infrastructures” which covered the proposed works except the decommissioning of the Shipyard and another EIA study under “Northshore Lantau Development Feasibility Study” which addressed the overall cumulative impacts on North-East Lantau region. These studies concluded that the proposed works would meet established environmental standards and legislation after implementation of the recommended mitigation measures in the construction and operation stages. The two EIA reports were endorsed with conditions by the Advisory Council on the Environment (ACE) on 17 April 2000 and approved by DEP on 28 April 2000.

22. The decommissioning of a shipyard is a designated project under the EIA Ordinance and an environmental permit is required for the construction, operation and decommissioning of the relevant designated project. We completed the EIA study for the decommissioning of the Shipyard in December 2001 and the EIA report was published for public consultation on 21 February 2002. During the one-month public consultation period, we briefed the IsDC, the Environmental and Health Affairs Committee of TWDC and Kwai Tsing DC (KTDC) on the proposed decommissioning works on 25 February, 14 March and 21 March respectively. While IsDC and TWDC expressed no objection to the decommissioning works, KTDC objected to the use of the Chemical Waste Treatment Centre in Tsing Yi for the final stage of the proposed decontamination works i.e. incineration of 600 cu.m. of oily

residue arising from the thermal desorption process. We also briefed the Legislative Council Panel on Environmental Affairs on 12 March, 19 March and [10 April] regarding the proposed decommissioning works and the Panel on Economic Services on 20 March regarding the financial implications of the decommissioning works. [Members were by and large concerned about the effectiveness and risk of the recommended treatment method, including the proposal for off-site treatment.] *[to be updated after meeting on 10 April]* At the Economic Services Panel meeting held on 20 March, Members requested the Administration to revert to the Panel in due course on whether we would take any legal action against the polluter of the Shipyard site.

23. The EIA report was discussed by the EIA Sub-committee of ACE on 4 and 18 March and endorsed with conditions by ACE on 26 March 2002. [The EIA report was [approved] by DEP on *[date]*].

24. We will remove, treat and dispose of the 87,000 cu.m. of contaminated soil found at the Shipyard site in an environmentally-acceptable manner in accordance with the EIA report. We will implement the environmental mitigation measures recommended in the EIA report by incorporating them into the contracts and establish Environmental Teams to implement the corresponding Environmental Monitoring and Audit programmes as appropriate. We have included the cost of implementing the recommended environmental monitoring and mitigation measures in the capital cost of the decommissioning works (paragraph 9(b) above).

25. The cost of implementing the environmental monitoring and mitigation measures for the rest of the proposed works is estimated to be \$49.7 million. We have included this cost in the overall project estimate. The key measures include control on the rates and methods of reclamation, a silt curtain system for PBR2 and other provisions for the noise, air and water pollution control in accordance with the Ordinance. We have also established an Environmental Project Office under 687CL to monitor the cumulative environmental effects of all concurrent construction projects in the North-East Lantau area.

26. At the planning and design stages of the project, we have given due consideration to minimizing the generation of C&D materials. To further minimize the generation of C&D materials, we will encourage the contractors

to use steel instead of timber in formwork and temporary works.

27. We estimate that about 313,000 cu.m. of C&D materials will be generated by this project. Of these, about 160,000 cu.m. (51%) will be reused within the project site, about 150,000 cu.m. (48%) will be re-used as public fill in the PBR2 and 3,000 cu.m. (1%) of C&D waste will be disposed of at landfills. The PBR2 works will receive sorted public fill of about 13 million cu.m.. We will require the contractors to submit waste management plans to Environmental Protection Department for approval. The waste management plans will describe the arrangements for avoidance, reuse, recovery and recycling, storage, collection, treatment and disposal of different categories of waste generated from the construction activities, and will include recommended mitigation measures for construction waste management, including designation of areas for segregation and temporary storage of reusable and recyclable materials. We will ensure that the day-to-day operations on site comply with the approved waste management plans. We will implement a trip-ticket system to control the proper disposal of C&D materials and will record the reuse, recycling and disposal of C&D materials for monitoring purposes. We will require the contractor to separate public fill from C&D waste for reuse. The notional cost of accommodating C&D waste at landfill sites is estimated to be \$375,000 for this project (based on a notional unit cost of \$125/cu.m.⁴).

28. We estimate that the PBR2 works will produce 4.0 million cu.m. of uncontaminated marine mud. There will be sufficient capacity in the designated areas at South Cheung Chau, East Ninepin and East Tung Lung Chau for disposal of this mud. We also estimate that no contaminated mud will be generated by the project.

LAND ACQUISITION

29. We have acquired about 18.7 ha of land of the Shipyard by voluntary surrender of the shipyard site. We have paid the land acquisition and clearance cost at \$1,506 million under Head 701 – Land Acquisition.

⁴ This estimate has taken into account the cost of 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/cu.m.) nor the cost to provide new landfills (which is likely to be more expensive) when the existing ones are filled up. The notional cost estimate is for reference only and does not form part of this project estimate.

BACKGROUND INFORMATION

30. We upgraded 660CL to Category B in November 1999. On 26 November 1999, Finance Committee agreed to accept in principle the financial implications, estimated at \$13.569 billion in September 1999 prices, for the site formation, construction of associated infrastructure and the provision of GIC facilities in connection with the development of an international theme park on Lantau Island. The proposed works are part of the \$13.569 billion mega project.

31. We funded the EIA study under “Northshore Lantau Development Feasibility Study” under PWP item 108AP at a cost of \$7.0 million and the EIA study for “Construction of an International Theme Park in Penny’s Bay of North Lantau and its Essential Associated Infrastructures” under block allocation Subhead 5101CX “Civil engineering works, studies and investigations for items in Category D of the Public Works Programme” at a cost of \$7.8 million.

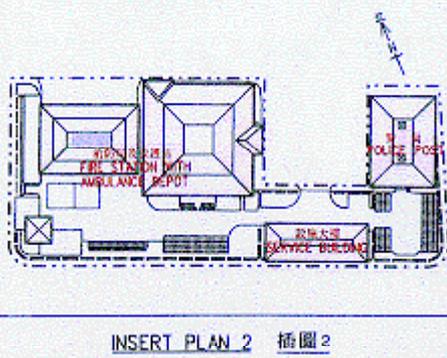
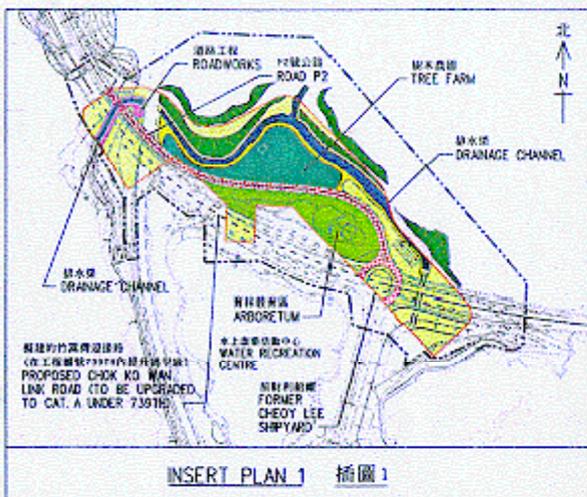
32. On 17 December 1999, Finance Committee approved the upgrading of part of 660CL to Category A as 662CL entitled “Reclamation of Penny’s Bay Stage 1 works, design of site formation at Yam O and design of associated infrastructure and government, institution and community facilities for the development of Hong Kong Disneyland Phase 1 on Lantau Island” at an estimated cost of \$6,923.9 million in MOD prices. We commenced the reclamation works in May 2000 for completion in phases from October 2001 to January 2003. We also commenced the EIA study for the decommissioning of the Shipyard in September 2000. The study was completed in December 2001.

33. On 27 April 2001, Finance Committee approved the upgrading of another part of 660CL to Category A as 322WF entitled “Infrastructure for Penny’s Bay Development, Package 1 – Yam O Tuk fresh water service reservoir and associated works” at an estimated cost of \$165 million in MOD prices. We commenced the construction works on 9 August 2001.

34. On 22 June 2001, Finance Committee approved the upgrading of another part of 660CL to Category A as 687CL entitled “Infrastructure for Penny’s Bay Development, Package 2” at an estimated cost of \$3,917 million in MOD prices. We commenced the construction works of the first infrastructure contract on 24 October 2001.

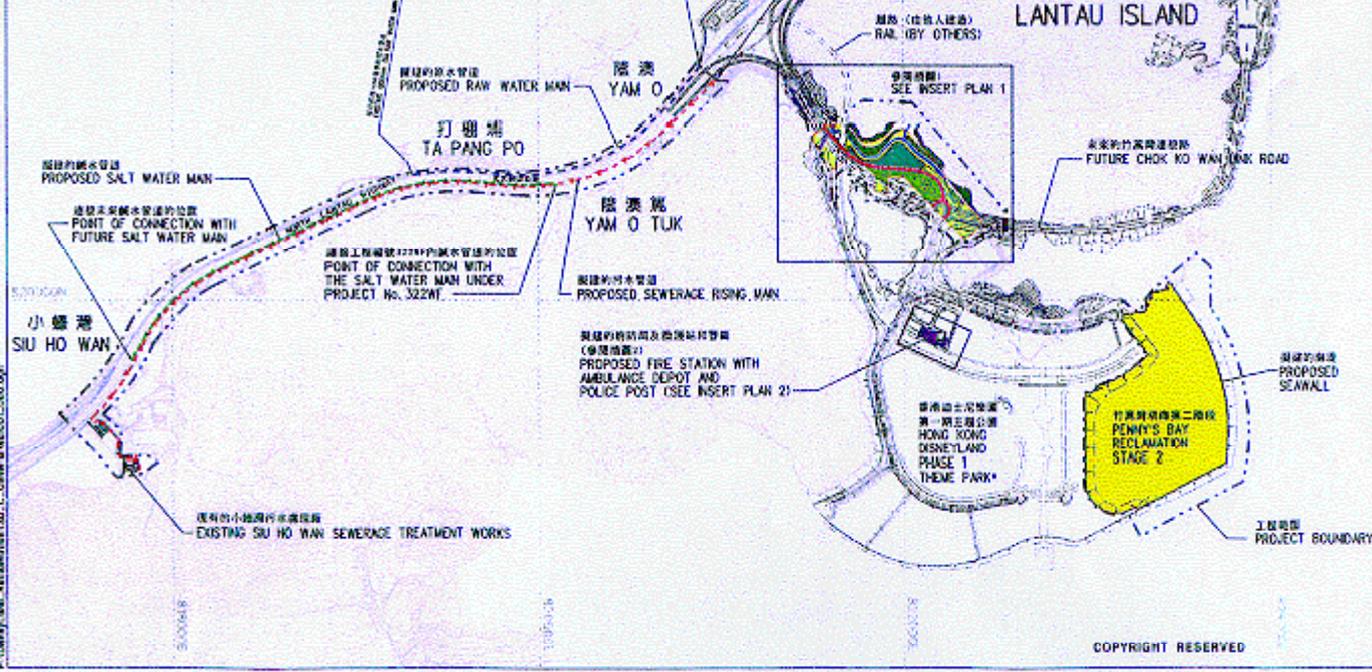
35. We estimate that the project will create some 947 new jobs comprising 164 professional/technical staff and 783 labourers, totalling 29 178 man-months.

Tourism Commission
Economic Services Bureau
May 2002



- LEGENDS 圖例
- 擬議填地範圍 DESIGNATED AREA
 - 擬議竹篙灣山咀填地的現有土庫 STABILISATION WORKS ON EXISTING SLOPE WITH WOODLAND PLANTING
 - 樹木農園 TREE FARM
 - 前利源船塢 ARBORETUM
 - 竹篙灣填海第二期 PENNY'S BAY RECLAMATION STAGE 2

- 排水渠 DRAINAGE CHANNEL
- 道路工程 ROADWORKS
- 擬議的排水渠 PROPOSED RAW WATER MAIN
- 擬議的污水渠 PROPOSED SEWERAGE RISING MAIN
- 擬議的鹹水管 PROPOSED SALT WATER MAIN
- 工程範圍 PROJECT BOUNDARY
- 由香港特設工程發展局有限公司負責的項目 WORKS BY 1001P



NOTES

no.	date	description	checked	approved
REVISION				
designed				
drawn	K. L. LAU	(Signed)		
checked	W. Y. NG	(Signed)		
approved				
(Signed)				
W. L. CHAN				
Senior Engineer				
date: 13_3_2002				

contract no.

file no.

工程編號 project no. S665CL

工程 project

竹篙灣發展計劃的基礎建設第三組及竹篙灣填海工程第二階段 INFRASTRUCTURE FOR PENNY'S BAY DEVELOPMENT PACKAGE 3 AND PENNY'S BAY RECLAMATION STAGE 2

圖則編號 drawing no. SD 1001-080	比例 scale M.T.S.
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辦事處 office

SPECIAL DUTIES OFFICE

香港工程師學會 CIVIL ENGINEERING DEPARTMENT HONG KONG

660CL – Site formation, construction of associated infrastructure and provision of government, institution and community facilities for an international theme park on Lantau Island

Breakdown of estimates for consultants' fees

Consultants' staff costs	Estimated man-months	Average MPS * salary point	Multiplier factor	Estimated fee (\$ million)
(a) Construction Supervision				
(i) administration of contract and completion certification				
Professional	58.5	38	2.4	8.5
Technical	68.0	14	2.4	3.2
(ii) resident site staff employed by the consultants				
Professional	570.0	38	1.7	58.5
Technical	2,846.0	14	1.7	94.4
Total consultants' staff costs				164.6 =====

* MPS = Master Pay Scale

Notes

1. A multiplier factor of 2.4 is applied to the average MPS to arrive at the full staff costs including the consultants' overheads and profit, as the staff will be employed in the consultant's offices. A multiplier factor of 1.7 is applied to the average MPS point in the case of resident site staff supplied by the consultants (At 1.4.2001, MPS pt. 38 = \$60,395 p.m. and MPS pt. 14 = \$19,510 p.m.)
2. The above figures are based on estimates prepared by the Director of Civil Engineering. The consultancy works in relation to contract administration and provision of resident site staff for this project have been included as part of agreements for the design and construction of infrastructure for Penny's Bay development. These assignments will only be exercised subject to Finance Committee's approval to part upgrade 660CL to Category A.