

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 705 – CIVIL ENGINEERING

Law and Order – Correctional Services

72LC – Prison Development Plan at Hei Ling Chau - feasibility study and preliminary site investigation for land formation and infrastructure works

Members are invited to recommend to Finance Committee the upgrading of 72LC to Category A at an estimated cost of \$46.7 million in money-of-the-day prices for carrying out a feasibility study and associated site investigation for land formation and infrastructure works for the proposed prison development at Hei Ling Chau.

PROBLEM

We need to carry out a feasibility study and associated site investigation (SI) for land formation and infrastructure works to determine the feasibility of developing the proposed prison of 7 220 penal places at Hei Ling Chau.

PROPOSAL

2. The Director of Civil Engineering, with the support of the Secretary for Security, proposes to upgrade 72LC to Category A at an estimated cost of \$46.7 million in money-of-the-day (MOD) prices for carrying out a feasibility study and associated SI for land formation and infrastructure works for the proposed prison development at Hei Ling Chau.

/PROJECT

PROJECT SCOPE AND NATURE

3. The scope of the proposed works comprises –
- (a) a feasibility study which covers the following –
 - (i) land uses and planning studies;
 - (ii) engineering, traffic and transport, marine, water supplies, sewerage, drainage and geotechnical studies;
 - (iii) environmental impact assessment (EIA);
 - (iv) preparation of implementation plans, programmes and cost estimates;
 - (v) preliminary design of land formation and infrastructure works; and
 - (vi) planning and documentation for preliminary site investigation; and
 - (b) preliminary SI works including a geophysical survey and laboratory testing.
4. A layout plan showing the project area of the proposed prison development at Hei Ling Chau is at Enclosure 1. We plan to start the proposed feasibility study and site investigation in May 2003 for completion by mid 2005.

JUSTIFICATION

5. The policy objectives of our correctional services are to take offenders into custody in a manner which is secure to the public, safe for the inmates and compatible with human dignity, and to provide the best possible opportunity for all inmates to rehabilitate for reintegration into society. To achieve these objectives, we require the provision of adequate penal places with suitable supporting facilities.

/6.

6. The Correctional Services Department (CSD) currently operates a total of 24 penal institutions with a designated capacity of some 11 000. They are located at various parts of the territory – seven on Hong Kong Island, one in Kowloon and 16 in the New Territories (including six on Lantau and three on Hei Ling Chau). Many of the penal institutions were converted from buildings previously used for other purposes, and are presently old and lacking in modern-day facilities (e.g. toilets in cells and hot water supply etc.). The outdated or non-purpose built design of some of the existing institutions, particularly the poor environment and sub-standard facilities, is highly unsatisfactory and have caused operational and security problems to CSD.

7. As a more pressing issue, CSD has been suffering from the problem of prison overcrowding over the past decade. The penal population reached a record high of some 14 200 in November 1996 with an overall occupancy rate of 140%. The overcrowding situation not only creates difficulties to prison management in maintaining good order and discipline within the prison, but also creates tension among inmates, making it difficult for prison staff to administer rehabilitation programmes effectively to prepare inmates for reintegration into society.

8. As at 10 January 2003, the penal population stood at 12 709 representing an occupancy rate of about 112%. Overcrowding is most serious in maximum security prisons, remand facilities and female prisons, which were operating at average occupancy rates of 125%, 137% and 212% respectively.

9. The penal population is expected to continue to grow and may reach 14 000 by 2015 (and 15 000 by 2024). The forecast has taken into account the number of arrests and prosecutions projected by the Police and the Immigration Department as well as other relevant factors such as crime rate, crime detection rate, admission rate, sentencing pattern and the general population growth.

10. In order to solve the current prison overcrowding problem and meet the anticipated growth in penal population, we propose that all existing penal facilities on Hong Kong Island and in Kowloon plus reception facilities scattered in the territories (4 620 penal places), together with an additional 2 600 places, be co-located on Hei Ling Chau in a new prison development. These 7 220 penal places will bring the total penal capacity under the CSD to 13 860. This will not only solve the current overcrowding problem, which will persist until such time when the new facilities are in operation, but also meet the forecast growth up to 2015.

11. The co-located prison complex will be able to achieve a significant economy of scale. Long-term substantial savings in operation and manpower costs will be achieved. For example, only 709 additional staff would be required to cover the net increase of 2 600 places, instead of the 1 100 which would otherwise be required under the conventional approach of building separate, stand-alone prisons (representing an annual recurrent saving of \$125 million).

12. The purpose-built prison complex together with modern facilities will also greatly enhance the prison management and enable the efficient and effective running of rehabilitation programmes.

13. The new facility will enable the existing penal sites on Hong Kong Island and Kowloon (see Enclosure 2) to be released for alternative development after co-location.

14. To form land and provide infrastructure for the prison development, we need to carry out the proposed feasibility study and preliminary SI works.

FINANCIAL IMPLICATIONS

15. We estimate the cost of the feasibility study and preliminary SI to be \$46.7 million in MOD prices (see paragraph 16 below), made up as follows –

	\$ million
(a) Consultants' fee for –	20.0
(i) Land uses and planning studies	2.7
(ii) Engineering, traffic and transport, marine, water supplies, sewerage, drainage, and geotechnical studies	6.4
(iii) EIA	6.2
	/(iv)

(iv) Preparation of implementation plans, programmes and cost estimates	0.9	
(v) Preliminary design of land formation and infrastructure works	3.0	
(vi) Planning and documentation for preliminary site investigation	0.8	
(b) Preliminary SI works including a geophysical survey and laboratory testing	23.0	
(c) Contingencies	4.0	
	Sub-total	47.0 (in September 2002 prices)
(d) Provision for price adjustment	(0.3)	
	Total	46.7 (in MOD prices)

Due to insufficient in-house resources, DCE proposes to engage consultants to undertake the proposed feasibility study. A breakdown by man-months of the estimate for the consultants' fees is at Enclosure 3.

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

Year	\$ million (Sept 2002)	Price adjustment factor	\$ million (MOD)
2003 – 04	6.0	0.99250	6.0
2004 – 05	28.0	0.99250	27.8
			/2005 – 06

2005 – 06	13.0	0.99250	12.9
	<hr/>		<hr/>
Total	47.0		46.7
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17. We have derived the MOD estimates on the basis of the Government's latest forecast of trend labour and construction prices for the period 2003 to 2006. We will award the proposed consultancy assignment on a lump sum fee basis with provision for price adjustment as the consultancy period will exceed 12 months. We will tender the site investigation works under a standard remeasurement contract because the amount of works involved may vary depending on actual ground conditions. The contract will not provide for price adjustments as the contract period will be less than 21 months.

18. The proposed feasibility study and preliminary SI have no recurrent financial implications.

PUBLIC CONSULTATION

19. Legislative Council Panel on Security was consulted on the proposed co-location project and related issues on 7 December 2000, 7 June 2001 and 7 February 2002. Members noted the need for a long-term prison development plan in order to address the problems of overcrowding, projected growth in penal population and archaic facilities. The security and related issues of the proposed project have been thoroughly discussed. To address members' concerns on possible security risks of having a large number of inmates at one site, we have agreed to reduce the scale of co-location from full-scale provision of 15 000 penal places to a mid-sized complex which provides 7 220 places.

20. We also consulted the Legislative Council Panel on Planning, Lands and Works on 9 July 2002. Some issues were raised at the meeting and the Administration provided responses to these issues on 25 September 2002 (Enclosure 4).

21. On 12 August 2002, we consulted the Islands District Council. The Council expressed general support for the proposed feasibility study and SI of the project.

22. We will undertake further public consultation (including consultation with the fishermen communities and interested green groups) at an early stage of the proposed feasibility study and also during implementation of the project. In particular, we will present the findings of the EIA study through public inspection in accordance with the EIA Ordinance and will consult the Advisory Council on the Environment and the Islands District Council upon completion of the EIA study.

ENVIRONMENTAL IMPLICATIONS

23. The proposed prison development is a Designated Project under the EIA Ordinance. It has to follow the statutory EIA process and requires an environmental permit for its construction and operation. The feasibility study itself will not have adverse long-term environmental impacts. However, the proposed development which consists of a fixed crossing from Hei Ling Chau to Lantau Island and reclamation, may have potential adverse ecological and water quality impacts. Key environmental issues include the potential impacts on the marine ecosystem, sensitive marine communities, bathing beaches, fishing grounds, the nearby fish cultural zone, natural coastline and ecologically important habitats for the rare Boggadek's Burrowing Lizard at Hei Ling Chau. The feasibility study will include an EIA study to identify the potential environmental impacts arising from the development and to determine the environmental acceptability of the project. An EIA report will have to be submitted under the EIA Ordinance. In accordance with the Ordinance, the public and the Advisory Council on the Environment will be consulted on the EIA report and their views will be taken into consideration by the Director of Environmental Protection when deciding whether the EIA report should be approved.

24. The proposed preliminary SI works will cause insignificant disturbance to the ground or the seabed and generate only minimal amount of construction and demolition materials (C&DM). We will require the consultants to fully consider measures to minimise the generation of C&DM and to reuse/recycle C&DM as far as practicable in the future implementation of the construction project.

LAND ACQUISITION

25. The proposed feasibility study and SI do not require land acquisition.

/BACKGROUND

BACKGROUND INFORMATION

26. The estimated capital cost for the proposed prison development is about \$16 billion.

27. The scope of the land formation and infrastructure works for the proposed prison development at Hei Ling Chau comprises –

- (a) formation of land for the prison development of 7 220 penal places and associated facilities;
- (b) construction of seawalls and reclamation works using public fill;
- (c) provision of transport facilities, including piers, roads and a fixed crossing connecting Hei Ling Chau and Lantau Island; and
- (d) provision of drainage, sewerage, water supply and related utility services.

28. We tentatively plan to commence the construction works in mid 2006 for completion by end 2012.

29. We estimate that the proposed feasibility study and site investigation works will create some 32 jobs comprising 19 professional/technical staff and 13 labourers, totaling 690 man-months.



Existing penal sites to be released for alternative development

Institution

Hong Kong

Stanley Prison

Pak Sha Wan Correctional Institution

Tung Tau Correctional Institution

Victoria Prison

Tai Tam Gap Correctional Institution

Cape Collinson Correctional Institution

Ma Hang Prison

Kowloon

Lai Chi Kok Reception Centre

72LC - Prison Development Plan at Hei Ling Chau – feasibility study and preliminary site investigation for land formation and infrastructure works

Breakdown of the estimate for consultants' fees

Consultants' staff costs		Estimated man-months	Average MPS* salary point	Multiplier	Estimated fee (\$ million)
(a) Land uses and planning studies	Professional	22	38	2.0	2.5
	Technical	6	14	2.0	0.2
(b) Engineering, traffic and transport, marine, water supplies, sewerage, drainage and geotechnical studies	Professional	46	38	2.0	5.3
	Technical	30	14	2.0	1.1
(c) EIA	Professional	36	38	2.0	4.1
	Technical	55	14	2.0	2.1
(d) Preparation of implementation plans, programmes and cost estimates	Professional	7	38	2.0	0.8
	Technical	4	14	2.0	0.1
(e) Preliminary design of land formation and infrastructure works	Professional	24	38	2.0	2.7
	Technical	8	14	2.0	0.3
(f) Planning and documentation for preliminary site investigation	Professional	6	38	2.0	0.7
	Technical	4	14	2.0	0.1
Total consultants' staff cost					20.0

* MPS = Master Pay Scale

Notes

1. A multiplier factor of 2.0 is applied to the average MPS point to estimate the full staff costs including the consultants' overheads and profit, as the staff will be employed in the consultants' offices. (At 1.10.2002, MPS pt. 38 = \$57,730 per month and MPS pt. 14 = \$19,195 per month).
2. The above figures are based on the estimates prepared by the Director of Civil Engineering. We will only know the actual man-months and fees when we have selected the consultants through the usual competitive lump sum fee bid system.

**Prison Development at Hei Ling Chau –
Feasibility Study and Preliminary Site Investigation for
Land Formation and Infrastructure Works**

**Administration's Response to
Issues raised at the meeting on 9 July 2002**

Site Selection

A summary of our preliminary assessment of the site options of Kong Nga Po and Hei Ling Chau is provided at **Annex A**. As is apparent from it, both site options can meet Correctional Services Department's (CSD) operational requirements and they attract different advantages and disadvantages in various aspects. Taking into account all relevant factors, including the relative potentials of the two sites for alternative development in the long run from an overall planning point of view, we have selected Hei Ling Chau for further pursuit of the feasibility study (FS) and site investigation (SI).

Alternative Site Options

2. A territorial location search for pursuing the proposed prison development has been undertaken based on a set of objective criteria (see Enclosure II of LC Paper No. CB(1)2178/01-02(01) discussed at the meeting on 9 July 2002). Two possible site options at Hei Ling Chau and Kong Nga Po have been identified for further consideration.

3. The area of site needed for the project should be sufficient for the prison development of 7,220 penal places and all associated facilities. There is no suitable site available in any part of the urban area for such purposes. Any hypothetical site of such a size in the urban area would have high opportunity cost for alternative developments. Indeed, one of the benefits of the project is to release valuable penal sites on Hong Kong Island and in Kowloon for redevelopment to serve the community needs. It is also doubtful if the public would support a prison project of such a scale at an urban location.

Implications for Prison Visitors

4. At present, there are already a total of six institutions on Lantau Island and three institutions on Hei Ling Chau. The current travelling time and cost for a trip from Central to Hei Ling Chau and Lantau is provided at **Annex B**. Such information can provide a useful reference in assessing the implications for visitors to the proposed new prison complex, assuming that the existing travelling mode is adopted.

5. One of the areas to be covered in the proposed FS is a detailed traffic impact assessment, which will include a study of possible new travel means for visitors such as direct marine transport from the urban areas to Hei Ling Chau. Subject to this study, we are of the preliminary view that the proposed transport infrastructure under this project (such as fixed crossing and piers) can support the development of new travel means at a competitive price and reduce travel time for visitors to Hei Ling Chau.

6. As a separate initiative, CSD launched a pilot Video Visit Scheme in April 2001 to link up remote institutions with a town centre by means of a video-conferencing system. The system provides a convenient way for friends and relatives to get in touch with prisoners in remote institutions. With the rapid advancement of information technology, we believe that similar schemes will be a useful alternative for visitors to consider after the commissioning of the co-located prison complex in 2013.

Traffic Impact

7. In order to assess the potential traffic generation from staff, visitors and other operational requirements, we have undertaken a preliminary Traffic Impact Assessment (TIA). While this preliminary TIA should not pre-empt the findings of a detailed, comprehensive TIA to be included in the FS, it aims at identifying traffic issues that need to be fully addressed later.

8. The preliminary TIA indicated that the additional traffic arising from the prison development would not cause unacceptable impact on the road network of Lantau Island. During the construction phase, there will be no land access to Hei Ling Chau until the proposed fixed crossing is completed towards the end of the construction phase. Constructional plants, labour and materials for the reclamation and building works will be delivered to the site via marine transport. As such, the construction phase of the proposed prison complex would unlikely generate adverse traffic impact in the South Lantau area.

9. According to the preliminary TIA, ferry services could be a cost-effective and convenient travelling mode to the proposed prison complex upon its commissioning in 2013. The number of daily trips generated to Hei Ling Chau for work and prison visit should support the provision of direct ferry services from Central and Tsuen Wan. It would significantly reduce the land-based travel demand via the road network on Lantau Island.

10. The provision of public bus services from Tung Chung to Hei Ling Chau would further reduce the number of private cars travelling via Tung Chung Road and South Lantau Road. With the completion of the current road-widening project of Tung Chung Road by 2006, we believe that the additional traffic generated upon the completion of the proposed project would not cause unacceptable impact to the road network in Lantau.

11. We must emphasize that this TIA is preliminary and should be reviewed in the detailed TIA to be included in the FS. Subject to the results and recommendations of the FS, we remain open in considering alternative ways of addressing the traffic demand generated by the proposed development.

Justification of Fixed Crossing

12. The fixed crossing connecting Hei Ling Chau and Lantau Island is an absolutely necessary provision to meet the emergency and operational needs of the proposed prison development -

- On a daily basis, it provides a mode of access alternative to sea transport and meets specific transport needs. The land and sea access can together ensure an adequate transport capacity to meet the overall operational requirements of the proposed prison development.
- During inclement weather (such as foggy or stormy days) when marine transport is affected, it provides a secured access to the proposed prison development to ensure normal or reduced-scale operation.

- During emergency situations, it provides a most important land access to the prison complex to ensure expeditious, massive dispatch of disciplined services forces to the prison complex to reinforce prison staff and deal with the matter.

Centralisation of Remand Facilities

13. One of the major advantages of co-location is cost saving through significant economy of scale. Currently, there are four reception centres¹ (remand facilities) situated on Hong Kong Island, in Kowloon and in the New Territories. Everyday there are remands to be escorted from these centres to various courts or other penal institutions throughout the SAR. By centralising the remand facilities at the proposed new prison complex, we will be able to achieve recurrent savings notably in terms of vehicles' operation and maintenance costs and escorting staff.

Impacts on Marine Life and Public Consultation

14. While in-depth assessment is not possible at this stage without undertaking an Environmental Impact Assessment (EIA), we have attempted a preliminary assessment of the potential impacts on marine ecology and fisheries resources. A table summarising the assessment is attached at **Annex C**.

15. We must emphasise that the proposed development is a designated project under the EIA Ordinance and hence conducting an EIA is a statutory requirement and will be included in the proposed FS of the project. Apart from assessing the potential impacts of the proposed development on marine life, and possible effect on nearby fishing grounds and fish culture zones, we are required to identify mitigation measures to minimize the impacts and reduce them to acceptable levels under the EIA study.

16. Mariculturists and fishermen who are affected by the proposed project may obtain ex-gratia allowance if they meet the eligibility of the allowance under the established criteria.

¹ The four receptions centres are Lai Chi Kok Reception Centre, Pik Uk Correctional Institution, Tai Lam Centre for Women and Tai Tam Gap Correctional Institution.

17. Public consultation is a key element of the statutory EIA process. Members of the public and the Advisory Council on the Environment can raise their comments with the Director of Environmental Protection with regard to the Project Profile and the EIA report of the proposed development during the respective public inspection periods. Before such statutory consultations, we have already started to meet with interested parties to brief them on the proposed development and gauge their views and possible concerns in advance. On 12 August we attended a meeting of the Islands District Council which expressed general support for the proposed project. We will soon meet with the fishermen associations and green groups.

Annex A

**Co-location of Penal Institutions
Main Considerations of Site Options**

	Kong Nga Po	Hei Ling Chau
Site Description and General Engineering Considerations	<ul style="list-style-type: none"> • Land-based site in North district, part of which falling within the Frontier Closed Area. • Site formation through excavation and levelling of hills. • Infrastructure provision required, including water supply, drainage and sewage treatment systems. 	<ul style="list-style-type: none"> • Isolated island opposite to Lantau. • Site formation principally through reclamation as cutting mountain would not be cost effective and would generate huge amount of surplus fill. • Infrastructure provision required, including water supply, drainage and sewage treatment systems.
Operational Effectiveness (including court/clinic attendance, family/legal visits, NGO support, supply of rations and daily necessities, transport of raw materials for Correctional Services Industries and products, and access during adverse inclement weather)	<ul style="list-style-type: none"> • Readily accessible by land-based transport links. • Travelling time by land for court attendance in city centre is about 40 minutes. • Travelling time by sea is not applicable. 	<ul style="list-style-type: none"> • A fixed crossing to Lantau (with special engineering design to avoid closure during inclement weather) and ancillary access roads are necessary and possible. • Road accessibility would also rely on the Tsing Ma Bridge. • Travelling time by land for court attendance in city centre is about 95 minutes. • Travelling time by sea is about 60 minutes on the assumption that a secure landing and transit area can be made available in Central or Wanchai, otherwise longer travelling time will be required. However, sea transfer may become inoperable under inclement weather.

	Kong Nga Po	Hei Ling Chau
Emergency Response (including emergency support (On Call/Standby duties))	<p><u>By Land</u></p> <ul style="list-style-type: none"> • A full Emergency Unit (EU) platoon could reach site within 30 minutes. • Regional Police Tactical Unit (PTU) Company and Quick Response Force (3 platoons) could respond within 60 minutes. 	<p><u>By Land</u></p> <ul style="list-style-type: none"> • A EU Platoon (deployed from Kwai Tsing, Tsuen Wan and Sha Tin regions) could reach Hei Ling Chau (HLC) in 90 minutes.
Emergency Response (including emergency support (On Call/Standby duties)) (Cont'd)	<p><u>By Land (Cont'd)</u></p> <ul style="list-style-type: none"> • For further reinforcement, additional PTU Platoons/ Companies from other Regions should be able to reinforce duties at the scene within 60 – 90 minutes, once mobilized <p><u>By Sea</u></p> <ul style="list-style-type: none"> • Not applicable 	<p><u>By Land (Cont'd)</u></p> <ul style="list-style-type: none"> • Regional PTU NTS deployed from Siu Lek Yuen would take about 100 minutes to respond. • For further reinforcement, additional PTU Platoons/ Companies from other Regions/PTU HQs should be able to respond at the scene within 90 – 100 minutes. • The longer Police response time could be remedied by the strengthening of CSD's Emergency Unit (i.e. to reserve more standby men on site to contain the emergency pending reinforcement.) <p><u>By Sea</u></p> <ul style="list-style-type: none"> • Marine Region would require between 1 and 2 hours to transfer PTU officers from a Police controlled pier (Marine Port District HQ at Aberdeen) to the island

	Kong Nga Po	Hei Ling Chau
	<p><i>By Air</i></p> <ul style="list-style-type: none"> • Not applicable 	<p><i>By Air</i></p> <ul style="list-style-type: none"> • GFS would require 1.5 hours to transfer one platoon of Police Tactical Unit officers from designated locations to the sites. GFS would require longer time to respond after 2200 hours as pilots would need to be called out.
	<ul style="list-style-type: none"> • Fire Services take 7 minutes to reach the site. 	<ul style="list-style-type: none"> • Fire Services from Mui Wo would take 16 minutes.
<p>Planning, Environmental and Other Considerations</p>	<ul style="list-style-type: none"> • Kong Nga Po, partly falling within the Frontier Closed Area, may have great potential for long term development into other uses which can best take advantage of the strategic location of the area. 	<ul style="list-style-type: none"> • Hei Ling Chau and Sunshine Island are proposed for conservation in the Study on South West New Territories Development Strategy Review due to the presence of ecologically important habitats (notably for the rare Bogadek’s Burrowing lizard) and the natural landscape values of the islands. Reclamation may compromise the conservation objective.

	Kong Nga Po	Hei Ling Chau
Planning, Environmental and Other Considerations (Cont'd)	<ul style="list-style-type: none"> • The long term development potential of the boundary area is being examined in the Study on Hong Kong 2030: Planning Vision and Strategy. • Natural and 'Fung Shui' woodland, as well as wet and dry agricultural land will be affected. • Environmental Impact Assessment and Cultural Heritage Impact Assessment required. 	<ul style="list-style-type: none"> • Environmental Impact Assessment, Cultural Heritage Impact Assessment and Marine Archaeological Investigation required.
Resumption and clearance	<ul style="list-style-type: none"> • Substantial land resumption and clearance involving large numbers of village houses, removal of over 100 graves and substantial clearance of natural "Fung Shui" woodland would be inevitable. 	<ul style="list-style-type: none"> • Limited land resumption may be required depending on the fixed crossing option chosen. For option A, clearance on both private building/ agricultural land is required. For option B, only government land is affected and small scale clearance will be required. For option C, only small scale land clearance will be required.
Capital investment	<ul style="list-style-type: none"> • Total capital investment cost is about \$16 billion. 	<ul style="list-style-type: none"> • Total capital investment is about \$16 billion.

Annex B**Estimated travelling time and cost for visiting existing penal institutions on Lantau and Hei Ling Chau**

Destination	Travelling Mode	Estimated Cost	Estimated Travelling Time
Lantau	Central to Tung Chung (By MTR) Tung Chung to penal institution, e.g. Shek Pik Prison (By Bus)	HK\$35	1.5 Hours
Hei Ling Chau	Central to Peng Chau (By Ferry) Peng Chau to Hei Ling Chau (By Kaito)	HK\$30	1.5 Hours

Note:

- 1) Existing penal institutions on Lantau include:
 - Chi Ma Wan Drug Addiction Treatment Centre
 - Chi Ma Wan Correctional Institution
 - Ma Po Ping Prison
 - Tong Fuk Centre
 - Shek Pik Prison
 - Sha Tsui Detention Centre

- 2) Existing penal institutions on Hei Ling Chau include:
 - Hei Ling Chau Correctional Institution
 - Hei Ling Chau Addiction Treatment Centre
 - Lai Sun Correctional Institution

Annex C

Prison Development Plan at Hei Ling Chau

Potential impacts on marine ecology and fisheries are as follows:

Stage	Nature		Receivers	Existing Information / Preliminary Assessment
Construction phase	Temporary habitat loss and Disturbance	Marine	Seabed organisms, corals, Chinese White Dolphin, fisheries resources	Some corals were found in previous surveys but of limited ecological value. The area is not a core habitat for dolphins or porpoises.
		Intertidal	Rocky and sandy shore organisms	Natural coastline present but no known high ecological value habitats in intertidal zone
	Marine water quality changes (due to dredging, filling etc)		Marine organisms and Fish Culture Zones	Magnitude of impacts depends on reclamation configuration and build form of the fixed crossing, to be confirmed in the EIA. Mitigation measures to reduce impacts to ecological and fisheries sensitive receivers likely necessary
Operation phase	Permanent habitat loss	Marine	Seabed habitat, corals, fisheries resources	Some loss of habitats inevitable, measures to mitigate impacts necessary. Severity and acceptability to be confirmed in the EIA
		Intertidal	Rocky and sandy shore habitats	Some loss of habitats inevitable, measures to mitigate impact necessary. Severity and acceptability to be confirmed in the EIA
	Marine hydrodynamic and water quality changes (due to reclamation and bridge piers)		Marine organisms and Fish Culture Zones	To be addressed in the EIA through mathematical water quality modelling