

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 708 – CAPITAL SUBVENTIONS AND MAJOR SYSTEMS AND EQUIPMENT

Medical Subventions

5MF – Redevelopment of Yan Chai Hospital

Members are invited to recommend to Finance Committee the upgrading of **5MF** to Category A at an estimated cost of \$590.5 million in money-of-the-day prices for the main works of the redevelopment of Yan Chai Hospital.

PROBLEM

A number of blocks in Yan Chai Hospital (YCH) (Blocks C, D, E and F) are dilapidated and facing various building-related problems. It is necessary to redevelop these facilities in order to overcome the physical and space constraints to meet the increasing demand for comprehensive and integrated healthcare services in the community.

PROPOSAL

2. The Secretary for Food and Health proposes to upgrade the remaining part of **5MF** to Category A at an estimated cost of \$590.5 million in money-of-the-day (MOD) prices for carrying out the main works of the redevelopment of YCH.

/PROJECT

PROJECT SCOPE AND NATURE

3. The redevelopment of YCH comprises two stages of work. The preparatory works¹ (i.e. Stage I) have been completed. The scope of the proposed remaining works (i.e. Stage II) include the following main works –

- (a) decanting works;
- (b) demolition of Blocks C, D, E and F;
- (c) excavation and lateral support, services diversion and foundation works;
- (d) construction of a new building at the sites of Blocks C and D to accommodate a community health and wellness centre, and ancillary facilities including a central pharmacy, a registration and business unit, a medical record unit, a maintenance unit and a basement car park; and
- (e) provision of landscaped areas with car parking facilities at the sites of Blocks E and F.

4. Subject to funding approval by the Finance Committee, we propose to start the Stage II main works as described in paragraph 3(a) to (e) above in July 2011 for completion in February 2016. The site plans showing the existing layout of YCH and the proposed layout after redevelopment are at Enclosures 1 and 2 respectively. The sectional plan and the artist impression of the new building are at Enclosures 3 and 4 respectively.

JUSTIFICATION

5. YCH, established in 1973, is a community hospital with about 800 beds to provide a comprehensive range of acute, extended care, ambulatory and community health services. It mainly serves the population in the Kwai Tsing and Tsuen Wan districts. It operates a 24-hour accident and emergency department and the clinical specialties of its services include medicine; surgery;

/orthopaedics

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Stage I preparatory works of the redevelopment project include (i) site investigation; (ii) building survey; and (iii) consultancy services for outline sketch design, detailed design, as well as tender documentation and assessment for the main works.

orthopaedics and traumatology; paediatrics; ear, nose and throat; intensive / coronary care; and infirmary. In 2009-10, the total number of attendances for the primary care and specialist out-patient services at YCH were 60 517 and 189 898 respectively; and the total number of in-patient and day discharges and deaths was 48 967.

Building conditions in YCH

6. YCH currently comprises seven buildings, namely Blocks A, B, C, D, E and F and the Multi-Services Complex. Among them, Blocks C and D have been in use for 37 years and are now accommodating the patient resources centre, dietetic department, dental clinic, and the hospital engineering services department. Blocks E and F have been in use for 27 years and are now accommodating the general and specialist out-patient clinics, pharmacy, staff changing room, overnight rooms, call rooms and temporary store rooms. These four hospital blocks have become old and dilapidated over the years and are facing various building-related problems, which could not be fixed by regular repair and maintenance and minor improvement works. There are also physical and space constraints of the buildings, which make it very difficult for YCH to meet the increasing demands of the community and to deliver comprehensive and integrated healthcare services.

Need for more clinical space to meet rising service demand

7. The population in the Kwai Tsing and Tsuen Wan districts has grown from 712 300 in 1991 to 813 100 in 2009, an increase by 14%. According to the latest population projection of the Planning Department, the elderly population in the two districts will rise from 107 900 in 2009 to about 130 700 in 2016, an increase by 21%. The increasing demand for healthcare services from the ageing community will further exert pressure on YCH. It is not possible for YCH to upgrade its services and facilities within the existing building structure due to inadequate space and outdated design of Blocks C, D, E and F.

The redevelopment project

8. We propose to redevelop the four hospital blocks in order to upgrade the facilities to achieve the standards of a modern community hospital and to meet the increasing service demand. The redevelopment project involves the construction of a community health and wellness centre, which is in line with

/the

the modern healthcare concepts of recognising the needs of individual patients and acknowledging the importance of psycho-social elements in patients' health. The service delivery model of the community health and wellness centre seeks to provide community-based and patient-centred services, and to promote continuity of healthcare at different stages of life through "one-stop" integrated services. The services of the centre will promote healthy ageing and address the changing service needs, in keeping with the change in focus from acute episodic illnesses to diseases of chronic disabling and relapsing nature due to an ageing population.

9. The proposed community health and wellness centre will have the following three components –

(a) Health Resource Centre

The Health Resource Centre primarily provides health education resources and information for integrated rehabilitation services to patients, aiming to build a district-based "safe and healthy city". Apart from providing health education to patients with chronic illnesses, the centre also facilitates group activities for patient empowerment and peer support, thereby promoting maintenance rehabilitation.

(b) Primary Care Centre

The Primary Care Centre aims to provide primary healthcare services to individuals at different stages of life. These will include pre-natal assessment and post-natal care services to promote maternity health for mother and children; infant and child services to provide assessment and early intervention of diseases; adolescent services including early intervention for young psychotropic drug users; well-women services; as well as geriatric counselling services. The existing general out-patient clinic and community nursing services in YCH will also be reprovisioned in the Primary Care Centre.

(c) Specialist Care Centre

The Specialist Care Centre provides assessment and stabilisation services in an ambulatory setting for patients suffering from chronic diseases, such as

/diabetes

diabetes, hypertension and chronic obstructive airway disease. The centre will also provide day surgery and endoscopic services to reduce reliance on in-patient services. The existing specialist out-patient clinic in YCH will also be reprovisioned in the Specialist Care Centre.

10. In sum, the services to be provided in the proposed community health and wellness centre include health education, illness prevention, curative intervention and patient rehabilitation. The capacity of the general out-patient clinic and specialist out-patient clinic will be increased from the current 36 to 54 consultation rooms after the redevelopment. The 50% enhancement in service capacity would also help to cater for the demand from elderly patients which is on average around 38% of the total number of out-patient attendances at YCH in the past three years. The services of the centre will complement the existing in-patient and day hospital services at YCH (mainly provided in Block B and the Multi-Services Complex) by reducing avoidable hospitalization and fostering re-integration of patients with chronic disability into the community.

11. To ensure that there will be no disruption to the continuity of services for patients during implementation of the project, YCH will make appropriate decanting arrangements for its services. The existing services in Blocks C and D will first be decanted to Blocks A, B and E before Blocks C and D are demolished for construction of the community health and wellness centre. Upon completion of the centre, the services decanted from Blocks C and D as well as the existing services in Blocks E and F (i.e. the out-patient clinics and pharmacy) will be reprovisioned in the centre, whereas the remaining facilities in Blocks E and F (i.e. staff changing room, overnight rooms and call rooms) will be decanted and reprovisioned in Block A prior to the demolition of Blocks E and F. Patients will continue to receive the existing services throughout the redevelopment period albeit at different locations of the hospital compound before the completion of the project.

FINANCIAL IMPLICATIONS

12. The Hospital Authority (HA), in consultation with the Director of Architectural Services, estimates the cost of the main works to be \$680.5 million in MOD prices (please see paragraph 15 below), broken down as follows –

/(a)

	\$ million
(a) Demolition	14.1
(b) Decanting works and services diversion	21.3
(c) Building ²	255.2
(d) Building services ³	131.8
(e) Drainage works	2.4
(f) External works ⁴	14.0
(g) Energy conservation measures	8.5
(h) Furniture and equipment (F&E) ⁵	49.2
(i) Consultants' fees for	21.5
(i) contract administration	19.9
(ii) management of resident site staff	1.6
(j) Remuneration of resident site staff	9.7

/(k)

² Works relating to building include construction of footings for foundation, basement construction, superstructure construction, plumbing and above ground drainage installations, hot water supply system, provision of finishes/ fitting/ fixtures and all associated works (including all necessary temporary works).

³ Works relating to building services include electrical installations, air-conditioning installation, fire services installation, burglar alarm and security installation, medical gases and non-medical gases installation, towngas installation, lifts, escalators and dumbwaiter installation, gondola installation, and other associated works.

⁴ External works include the provision of landscaped areas with car parking facilities.

⁵ Based on an indicative list of furniture and equipment items and their estimated prices.

	\$ million
(k) Contingencies	44.7
Sub-total	<u>572.4</u> (in September 2010 prices)
(l) Provision for price adjustment	108.1
Total	<u>680.5</u> (in MOD prices)

13. We have engaged consultants to undertake the design, contract administration and site supervision of the project. A detailed breakdown of the estimate for consultants' fees for the main works by man-months is at Enclosure 5. The construction floor area (CFA) of this project is 25 114 square metres (m²). The estimated construction unit cost for the new block, represented by building and building services costs, is \$15,410 per m² of CFA in September 2010 prices. We consider this unit cost reasonable as compared with similar hospital projects.

14. YCH Board has undertaken to contribute \$90 million in MOD prices over eight years towards the capital cost of the project. Government will fund the remaining commitment of \$590.5 million in MOD prices for this project, calculated as follows –

	\$ million
(a) Total capital cost	680.5
(b) Contribution from YCH Board	(90.0)
Total commitment sought	<u>590.5</u> (in MOD prices)

15. Subject to funding approval, HA will phase the expenditure as follows –

Year	\$ million (Sept 2010)		Price adjustment factor	\$ million (MOD)	
	Funded under 5MF	Total construction cost		Funded under 5MF	Total construction cost
2011 – 12	21.3	24.6	1.04525	22.3	25.7
2012 – 13	98.6	113.7	1.10143	108.6	125.2
2013 – 14	154.7	178.3	1.16201	179.8	207.2
2014 – 15	145.2	167.3	1.22592	178.0	205.1
2015 – 16	54.4	62.7	1.29335	70.4	81.1
2016 – 17	15.5	17.8	1.36448	21.1	24.3
2017 – 18	3.5	4.0	1.43953	5.0	5.8
2018 – 19	3.5	4.0	1.51870	5.3	6.1
	496.7	572.4		590.5	680.5

16. We have derived the MOD estimates on the basis of the Government's latest set of assumptions on the trend rate of change in the prices of public sector building and construction output for the period 2011 to 2019. HA intends to award the main works through two lump-sum contracts. One contract will cover items listed in paragraph 3(a), (b) (except the demolition of Blocks E and F), (c) and (d); and the other contract will cover items in paragraph 3(b) (for demolition of Blocks E and F) and (e). The contracts will provide for price adjustments.

17. When the redevelopment project was first submitted to the Legislative Council Panel on Health Services on 11 December 2006, the total estimated cost of the project was about \$420 million. The construction costs have increased since then due to the considerable escalations in the prices of major construction materials. The Building Works Tender Price Index compiled by Architectural Services Department indicates that the average tender prices rose by about 60% from the fourth quarter in 2006 to the third quarter in 2010.

18. HA has assessed the requirements for F&E for this project, and estimated the F&E costs to be \$49.2 million. The proposed F&E provision represents 12.2% of the total construction cost⁶ of the project. An indicative list of major F&E items (costing \$1 million or above per item) to be procured for the project is at Enclosure 6.

19. We estimate the additional annual recurrent expenditure arising from the project to be \$94.8 million.

PUBLIC CONSULTATION

20. HA consulted the Tsuen Wan District Council (TWDC) on 28 July 2009 and 27 July 2010, and the Kwai Tsing District Council Community Affairs Committee (K&TDCCAC) on 11 August 2009. Members of both TWDC and K&TDCCAC supported the proposed project.

21. We consulted the Legislative Council Panel on Health Services on 8 November 2010. Members of the Panel supported the project.

ENVIRONMENTAL IMPLICATIONS

22. The project is not a designated project under the Environmental Impact Assessment Ordinance (Cap. 499). A Preliminary Environmental Review has been carried out and concludes that the project would not have long-term adverse environmental impact.

23. During construction, we will control noise, dust and site run-off nuisances to within established standards and guidelines through the implementation of mitigation measures in the contracts. These include the use of silencers, mufflers, acoustic lining or shields for noisy construction activities, frequent cleaning and watering of the site and the provision of wheel-washing facilities to prevent dust nuisance.

24. At the planning and design stages, we have considered measures to reduce the generation of construction waste where possible. These include using dry-wall partitioning and curtain wall system to reduce temporary formwork and construction waste. In addition, we will require the contractors to reuse inert

/construction

⁶ Represented by the building, building services, drainage and external works costs.

construction waste (e.g. brickwork / blockwork / crushed concrete from demolition of existing facilities, as well as excavated soil) on site or in other suitable construction sites as far as possible, in order to minimise the disposal of inert construction waste at public fill reception facilities⁷. We will encourage the contractors to maximise the use of recycled / recyclable inert construction waste, and the use of non-timber formwork to further reduce the generation of construction waste.

25. At the construction stage, we will require the contractors to submit for approval a plan setting out the waste management measures, which will include appropriate mitigation means to avoid, reduce, reuse and recycle inert construction waste. We will ensure that the day-to-day operations on site comply with the approved plan. We will require the contractors to separate the inert portion from non-inert construction waste on site for disposal at appropriate facilities. We will control the disposal of inert construction waste and non-inert construction waste at public fill reception facilities and landfills respectively through a trip-ticket system.

26. We estimate that the project will generate in total about 46 500 tonnes of construction waste. Of these, we will reuse about 9 600 tonnes (21%) of inert construction waste on site and deliver 31 300 tonnes (67%) of inert construction waste to public fill reception facilities for subsequent reuse. We will dispose of the remaining 5 600 tonnes (12%) of non-inert construction waste at landfills. The total cost for accommodating construction waste at public fill reception facilities and landfill sites is estimated to be \$1.5 million for this project (based on a unit cost of \$27 per tonne for disposal at public fill reception facilities and \$125 per tonne⁸ at landfills).

ENERGY CONSERVATION MEASURES

27. This project has adopted various forms of energy efficient features, including –

- (a) water cooled chillers (fresh-water cooling tower);

/(b)

⁷ Public fill reception facilities are specified in Schedule 4 of the Waste Disposal (Charges for Disposal of Construction Waste) Regulation. Disposal of inert construction waste in public fill reception facilities requires a licence issued by the Director of Civil Engineering and Development.

⁸ 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 per m³), nor the cost to provide the new landfills (which is likely to be more expensive), when the existing ones are filled.

- (b) automatic demand control of chilled water circulation system;
- (c) automatic condenser tube cleaning equipment;
- (d) automatic demand control of supply air;
- (e) demand control of fresh air supply with carbon dioxide sensors;
- (f) automatic demand control for ventilation fans in car park;
- (g) heat wheels for heat energy reclaim of exhaust air;
- (h) T5 energy efficient fluorescent tubes and compact fluorescent lamps with electronic ballast and lighting control by occupancy sensors and daylight sensors;
- (i) light-emitting diode (LED) type exit signs;
- (j) heat pump for domestic hot water, space heating and dehumidification;
- (k) services-on-demand control for escalator (on/off control); and
- (l) automatic on/off switching of lighting and ventilation fan inside the lift.

28. In addition to the above energy efficient features, we will also adopt renewable energy technologies and incorporate greening and recycled features in the project wherever possible. For renewable energy technologies, this project will adopt solar park lights for the proposed landscape area. For greening features, appropriate areas on 8/F and main roof of the proposed community health and wellness centre will be landscaped which also has environmental and amenity benefits. For recycled features, a rainwater and condensate water recycling system will be installed for landscape irrigation with a view to conserving water.

29. The total estimated cost for adoption of the above features is around \$8.5 million (including \$6.1 million for energy efficient features), which has been included in the cost estimate of the project. The energy efficient features will achieve 11% energy savings in the annual energy consumption with a payback period at about 6.0 years.

HERITAGE IMPLICATIONS

30. This project will not affect any heritage site, i.e. all declared monuments, proposed monuments, graded historic sites/buildings, sites of archaeological interest and Government historic sites identified by the Antiquities and Monuments Office.

LAND ACQUISITION

31. This project does not require any land acquisition.

BACKGROUND INFORMATION

32. At present, HA provides medical services for districts of Wong Tai Sin, Mongkok, Sham Shui Po, Kwai Tsing, Tsuen Wan and North Lantau through its Kowloon West Cluster (KWC). KWC comprises seven hospitals, namely Princess Margaret Hospital (PMH), Kwong Wah Hospital (KWH) and Caritas Medical Centre (CMC) which are acute general hospitals; YCH and Our Lady of Maryknoll Hospital (OLMH) which are community hospitals; Wong Tai Sin Hospital (WTSB) which is an extended care hospital; and Kwai Chung Hospital (KCH) which is a psychiatric hospital.

33. Each of the seven hospitals in KWC has its designated role in the delivery of medical services to the community it serves. PMH is the major regional hospital providing a comprehensive range of acute services. It also serves as the tertiary referral centre in KWC for a number of clinical specialties, and manages all degrees of urological cases in Kwai Tsing and Tsuen Wan districts. KWH provides a full range of services to the population of West Kowloon and Wong Tai Sin district and is also a neurosurgical and ante-natal diagnosis referral centre for the cluster. Obstetrics and gynaecology services are currently provided at both PMH and KWH. CMC is providing a full range of acute, extended and community care services mainly to the residents of Shum Shui Po district. It is also a referral centre for ophthalmology in KWC. YCH is providing a wide spectrum of services for Kwai Tsing and Tsuen Wan districts.

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It is also a referral centre for ear, nose and throat services of the cluster. OLMH is community hospital providing general medical and hospice care services. WTSH is an extended care hospital which focuses on providing intensive trans-disciplinary rehabilitative training programmes for patients to facilitate their re-integration into the community. KCH is a psychiatric hospital which provides care for acute and chronic psychiatric patients, including community-based outreach services to ensure continuity of care for them.

34. In May 2007, Finance Committee approved the upgrading of part of **5MF** as **6MF**, entitled “Redevelopment of Yan Chai Hospital – preparatory works” to Category A at an estimated cost of \$20.7 million in MOD prices; and the retention of the remainder of **5MF** in Category B.

35. Of the 13 trees within the project boundary, four trees will be preserved. The proposed works will involve the removal of nine trees, including six trees to be felled and three trees to be transplanted within the project site. All the trees to be felled are not important trees⁹. We will incorporate planting proposals as part of the project, including estimated quantities of 24 trees and 3 000 shrubs.

36. We estimate that the proposed works will create about 182 jobs (162 for labourers and another 20 for professional/ technical staff) providing a total employment of 9 000 man months.

Food and Health Bureau
April 2011

⁹ “Important trees” refers to trees in the Register of Old and Valuable Trees, or any other trees that meet one or more of the following criteria –

- (a) trees of 100 years old or above;
- (b) trees of cultural, historical or memorable significance; e.g. Fung Shui trees, trees as landmark of monastery or heritage monument, and trees in memory of important persons or event;
- (c) trees of precious or rare species;
- (d) trees of outstanding form (taking account of overall tree sizes, shape and any special features) e.g. trees with curtain like aerial roots, trees growing in unusual habitat; or
- (e) trees with trunk diameter equal or exceeding 1.0 metre (m) (measured at 1.3 m above ground level), or with height/canopy spread equal or exceeding 25 m.

5MF – Redevelopment of Yan Chai Hospital

**Breakdown of the estimates for consultants' fees and resident site staff costs
(in September 2010 prices)**

			Estimated man- months	Average MPS* salary point	Multiplier (Note 1)	Estimated fee (\$ million)
(a)	Consultants' fees for contract administration (Note 2)	Professional	–	–	–	13.6
		Technical	–	–	–	6.3
					Sub-total	19.9
(b)	Resident site staff costs (Note 3)	Professional	13.7	38	2.0	1.6
		Technical	304.0	14	1.6	9.7
					Sub-total	11.3
Comprising –						
(i)	Consultants' fees for management of resident site staff					1.6
(ii)	Remuneration of resident site staff					9.7
					Total	31.2

* MPS = Master Pay Scale

Notes

1. A multiplier of 2.0 is applied to the average MPS salary point to estimate the full staff cost including the consultants' overheads and profit for staff employed in the consultants' offices. A multiplier of 1.6 is applied to the average MPS salary point to estimate the cost of resident site staff supplied by the consultants. (As at now, MPS salary point 38 = \$58,195 per month and MPS salary point 14 = \$19,945 per month.)
2. The consultants' staff cost given above is calculated in accordance with the existing consultancy agreement for the design and construction of redevelopment of Yan Chai Hospital.
3. The actual man-months and actual costs will only be known after completion of the construction works.

Enclosure 6 to PWSC(2011-12)1

5MF – Redevelopment of Yan Chai Hospital

Indicative list of furniture and equipment items with unit cost of \$1 million or more

Item description	Quantity	Unit cost (\$ million)	Total cost (\$ million)
Multi-purpose C-Arm Digital Radiography Machine with lead glass protected control panel	1	5.500	5.500
Endoscopic System	1	3.000	3.000
Electrically-driven Mobile Shelving System	1	9.164	9.164
Modular Pharmacy Dispensing System	1	2.800	2.800
Pharmacy Bulk Storage System	1	1.100	1.100
Telecommunication System	1	3.130	3.130
3G mobile system	1	1.500	1.500
IT System	1	2.000	2.000
AV Equipment	1	1.500	1.500
Cold Room	1	1.500	1.500
		Total :	31.194