

For discussion
on 20 January 2010

PWSC(2009-10)84

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 703 – BUILDINGS

Public safety – Fire Services

171BF – Development of Aberdeen fire station-cum-ambulance depot

Members are invited to recommend to Finance Committee the upgrading of **171BF** to Category A at an estimated cost of \$177.2 million in money-of-the-day prices for demolishing the existing Aberdeen Fire Station and constructing a new fire station-cum-ambulance depot in Aberdeen.

PROBLEM

The overcrowding situation of the existing Aberdeen Fire Station (the Station) on Wong Chuk Hang Road is affecting the turnout efficiency of fire appliances and ambulances.

/PROPOSAL

PROPOSAL

2. The Director of Architectural Services, with the support of the Secretary for Security, proposes to upgrade **171BF** to Category A at an estimated cost of \$177.2 million in money-of-the-day (MOD) prices for demolishing the existing Station and constructing a new fire station-cum-ambulance depot at a site at the junction of Wong Chuk Hang Road and Nam Fung Road, Aberdeen.

PROJECT SCOPE AND NATURE

3. The proposed project scope includes –
- (a) construction of a five-storey fire station-cum-ambulance depot with a total construction floor area (CFA) of about 4 214 square metres (m²) comprising a five-bay appliance room, watch rooms, offices, an exercise room, stores, barracks, officer bedrooms, locker rooms, a drying room, dangerous goods stores, a canteen, a recreation room, an officers' dining room, a kitchen with store, underground fuel tanks with fuel dispensers, an emergency generator room, a lecture room, toilets and ablutions, a disinfection room, a battery room, a drill yard and a drill tower; and
 - (b) demolition of the existing Station on Wong Chuk Hang Road.

———— A site plan and a perspective drawing for the project are at Enclosure 1 and
———— Enclosure 2 respectively. We plan to start construction works of the new fire-station-cum-ambulance depot in June 2010 for completion in June 2012. The decanting and demolition works of the existing Station will follow in June 2012 for completion in June 2013.

JUSTIFICATION

4. Commissioned more than 40 years ago in 1961, the existing Station, a four-storey building with a CFA of around 1 800 m² including a three-bay appliance room, was designed to accommodate only three fire appliances, namely a Hydraulic Platform, a Major Pump and a Light Rescue Unit. However, notwithstanding the physical constraint, with the development of multi-storey residential and commercial buildings in the area, the Fire Services Department (FSD) has to deploy an additional 37-metre Turntable Ladder, and a command car

/to

to the Station. Besides, as there is no dedicated ambulance depot in Aberdeen and Apleichau, four ambulances are also parked at the Station to meet the demand for ambulance services in the area. Temporary sheds were built inside the drill yard of the Station to accommodate the additional two fire appliances and four ambulances mentioned above.

5. The overcrowding situation together with the traffic condition in the vicinity of the existing Station have affected the turnout efficiency of the FSD vehicles when responding to emergency calls. In 2008, FSD was only able to meet 92.3% of building fire calls from the Aberdeen area within the graded response time, against the service pledge of 92.5%. To ensure effective fire services coverage for the area, we need to reprovision the existing Station to a larger site with better traffic condition to improve operational efficiency.

6. According to FSD's records, the number of fire and special service calls in Aberdeen increased by 19.8% from 605 calls in 2006 to 725 in 2008, while the number of emergency ambulance calls in Aberdeen and Apleichau increased by 11.6% from 12 224 calls to 13 641 calls in the same period. The future major development projects in Aberdeen and Wong Chuk Hang are expected to attract more people to the areas and further increase the demand for both fire and ambulance services. These projects include the current expansion project of the Ocean Park, the two new railway stations planned to be constructed in Wong Chuk Hang and Ocean Park under the MTR Corporation Limited's South Island Line (East) project, and the large maintenance depot to be constructed next to the new railway station at Wong Chuk Hang. In addition, according to the population projection by the Planning Department, the population of the Southern District with age exceeding 60 will drastically increase by 28.3% from 50 600 in 2009 to 64 900 in 2016. As this age group currently accounts for around two-thirds of patients conveyed by ambulances in Aberdeen and Apleichau, we expect that the demand for emergency ambulance service in the area would also increase due to aging population in future years.

7. To meet the expected increase in demand, FSD needs to step up the schedule of attendance (e.g. by increasing the number of manpower and fire appliances deployed in the Station to cope with large-scale incidents) in accordance with the increase in fire risk, and deploy more ambulances for the handling of additional emergency ambulance calls in the area. A new fire station-cum-ambulance depot is therefore necessary to enhance the existing services and to provide room for possible service expansion to meet future demand.

/FINANCIAL

FINANCIAL IMPLICATIONS

8. We estimate the capital cost of the project to be \$177.2 million in MOD prices (please see paragraph 10 below), broken down as follows –

	\$ million
(a) Site works and geotechnical works	4.5
(b) Demolition of existing Aberdeen Fire Station	15.9
(c) Piling	20.1
(d) Building	53.0
(e) Building services	27.7
(f) Drainage	2.7
(g) External works	14.6
(h) Additional cost of energy conservation measures	3.0
(i) Furniture and equipment ¹	3.0
(j) Consultants' fees –	4.9
(i) contract administration	3.4
(ii) management of resident site staff	1.5
(k) Remuneration of resident site staff	5.4
(l) Contingencies	14.2
	<hr style="width: 100px; margin-left: auto; margin-right: 0;"/> /Sub-total

¹ The estimated cost of furniture and equipment is based on an indicative list of items required.

	\$ million	
Sub-total	169.0	(in September 2009 prices)
(m) Provision for price adjustment	8.2	
	<hr/>	
Total	177.2	(in MOD prices)
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9. We propose to engage consultants to undertake contract administration and site supervision. A detailed breakdown of the estimate for consultants' fees and resident site staff costs by man-months is at Enclosure 3. The CFA of the proposed fire station-cum-ambulance depot is 4 214 m². The estimated construction unit cost, represented by building and building services costs, is \$19,150 per m² of CFA in September 2009 prices. We consider this reasonable as compared with similar projects built by the Government.

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

	\$ million (Sept 2009)	Price adjustment Factor	\$ million (MOD)
2010 – 11	30.0	1.02000	30.6
2011 – 12	76.0	1.04040	79.1
2012 – 13	40.0	1.06121	42.4
2013 – 14	17.0	1.08243	18.4
2014 – 15	6.0	1.11220	6.7
	<hr/>		<hr/>
	169.0		177.2
	<hr/>		<hr/>

11. We have derived the MOD estimates 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 2010 to 2015. As the scope of the project can be clearly defined in advance, we intend to award the contract on a lump-sum basis with provision for price adjustments.

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12. We estimate the additional annual recurrent expenditure arising from the project to be \$6.068 million.

PUBLIC CONSULTATION

13. We consulted the District Development and Environment Committee of the Southern District Council (SDC) on the proposed project on 28 April 2008. Members supported the project, and suggested that measures should be introduced to minimise the noise impact to the residents in the vicinity. FSD reported the progress of the project to SDC on 25 June 2009, and provided SDC with further information on the 13 trees to be removed from the new site for the development of the project on 17 July 2009. The Leisure and Cultural Services Department confirmed that the 13 trees had little conservation value. Members noted the information and raised no objection to the project.

14. We also consulted the Legislative Council Panel on Security on 3 November 2009. Members had no objection to the project, but requested the Administration to illustrate with specific figures the likely magnitude of the potential problems with respect to the provision of fire and ambulance services in the Southern District, provide information on the projected population by 2016 in the Southern District for age groups other than those with age exceeding 60 and their corresponding impact on demand for both fire and ambulance services, and provide additional information to justify the need for a new fire station-cum-ambulance depot in Aberdeen. The supplementary information was provided on 1 December 2009 and Members did not raise any further comments on it.

ENVIRONMENTAL IMPLICATIONS

15. The project is not a designated project under the Environmental Impact Assessment Ordinance (Cap. 499). We employed a consultant to conduct a Preliminary Environmental Review (PER) which was completed in December 2008. The PER concluded that the project would have no long-term adverse environmental impact.

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

17. We have considered measures in the planning and design stages to reduce the generation of construction waste where possible (e.g. using metal site hoardings and signboards so that these materials can be recycled or reused in other projects). In addition, we will require the contractor to reuse inert construction waste on site (e.g. use of excavated materials for filling within the 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 facilities². We will encourage the contractor to maximise the use of recycled or recyclable inert construction waste, as well as the use of non-timber formwork to further minimise the generation of construction waste.

18. We will also require the contractor 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 contractor 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.

19. We estimate that the project will generate in total about 18 400 tonnes of construction waste. Of these, we will reuse about 8 000 tonnes (43.5%) of inert construction waste on site and deliver 7 700 tonnes (41.8%) of inert construction waste to public fill reception facilities for subsequent reuse. We will dispose of the remaining 2 700 tonnes (14.7%) 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 \$545,400 for this project (based on a unit cost of \$27 per tonne for disposal at public fill reception facilities and \$125 per tonne³ at landfills).

/ENERGY

² 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.

³ 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 new landfills (which is likely to be more expensive) when the existing ones are filled.

ENERGY CONSERVATION MEASURES

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

- (a) T5 energy efficient fluorescent tubes with electronic ballast and lighting control by occupancy sensors and daylight sensors;
- (b) lighting-emitting diode (LED) type exit signs; and
- (c) variable refrigerant volume (VRV) air-conditioning system.

21. For renewable energy technologies, we will install a solar hot water system and a photovoltaic system for general lighting.

22. For green features, we will provide green roof, recycled timber screen for vertical greening and recycled timber fence wall for environmental and amenity benefits.

23. For recycled features, we will provide rainwater recycling system for irrigating the greenery.

24. The total estimated additional cost for adoption of the energy conservation measures is around \$3 million (including \$212,000 for energy efficient features), which has been included in the cost estimate of this project. The energy efficient features will achieve 8% energy savings in the annual energy consumption with a payback period of about 7.6 years.

HERITAGE IMPLICATIONS

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

LAND ACQUISITION

26. The project does not require land acquisition.

BACKGROUND INFORMATION

27. We upgraded **171BF** to Category B in March 2008. We employed contractors to carry out site mappings in July 2008 and site investigations in August 2008. We engaged consultants to carry out a PER and an Ecological Impact Assessment (EIA) in April 2008, layout design in January 2009 and detailed design in May 2009. We also employed a quantity surveying consultant to prepare the tender documents in January 2009. We charged the total cost of \$5.9 million to block allocation **Subhead 3100GX** "Project feasibility studies, minor investigations and consultants' fees for items in Category D of Public Works Programme". The contractors and consultants have completed the site investigations, site mappings, PER, EIA, layout and detailed design work. The quantity surveying consultant is finalising the tender documents.

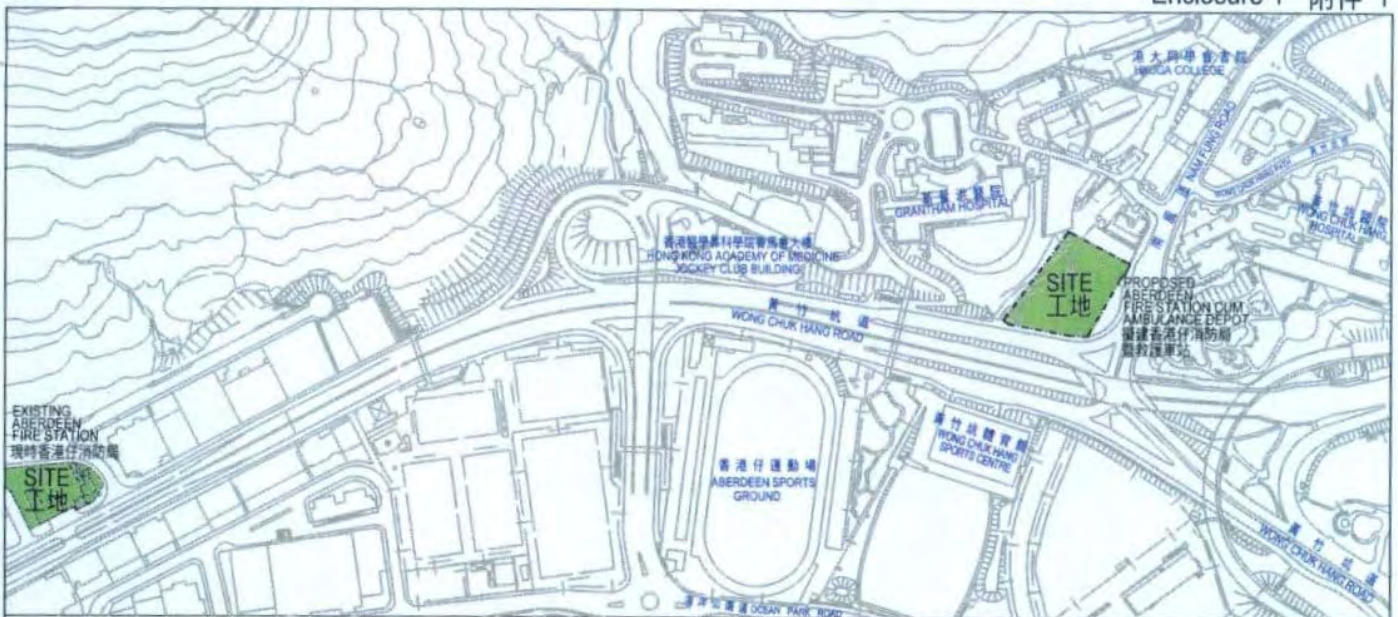
28. The proposed project will involve removal of 24 trees, including 13 trees to be felled and 11 trees to be replanted within the project site. All trees to be removed are not important trees⁴. We will incorporate planting proposals as part of the project, including estimated quantities of 22 trees and 5 000 shrubs.

29. We estimate that the proposed works will create about 88 jobs (79 for labourers and another nine for professional/technical staff) providing a total employment of 2 600 man-months.

Security Bureau
January 2010

⁴ "Important trees" refer 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 tree, tree as landmark of monastery or heritage monument, and trees in memory of an important person 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 (measured at 1.3 metre above ground level), or with height/canopy spread equal or exceeding 25 metres.



位置圖 LOCATION PLAN

比例 1:5000
SCALE




title 171BF 香港仔消防局暨救護站 發展計劃 DEVELOPMENT OF ABERDEEN FIRE STATION CUM AMBULANCE DEPOT	drawn by S.K. Wong	date 09/09	drawing no. AB/7019/XA101	scale 1:1000
	approved Nelson Chow	date 09/09	 ARCHITECTURAL SERVICES DEPARTMENT	
	office ARCHITECTURAL BRANCH			



從南面望向消防局暨救護站的構思圖

VIEW OF THE FIRE STATION CUM AMBULANCE DEPOT FROM SOUTH DIRECTION (ARTIST'S IMPRESSION)

title 171BF 香港仔消防局暨救護站 發展計劃 DEVELOPMENT OF ABERDEEN FIRE STATION CUM AMBULANCE DEPOT	drawn by PC	date 09/09	drawing no. AB/7019/XA102	scale NTS
	approved Nelson Chow	date 09/09		
	office ARCHITECTURAL BRANCH			 ARCHITECTURAL SERVICES DEPARTMENT

Enclosure 3 to PWSC(2009-10)84

171BF – Development of Aberdeen fire station-cum-ambulance depot

**Breakdown of the estimates for consultants' fees and resident site staff costs
(in September 2009 prices)**

		Estimated man-months	Average MPS* salary point	Multiplier (Note 1)	Estimated fees (\$ million)
(a)	Consultants' fees for contract administration (Note 2)				
	Professional	--	--	--	1.9
	Technical	--	--	--	1.5
				Sub-total	3.4
(b)	Resident site staff costs (Note 3)				
	Professional	15	38	1.6	1.4
	Technical	174	14	1.6	5.5
				Sub-total	6.9
Comprising –					
(i)	Consultants' fees for management of resident site staff				1.5
(ii)	Remuneration of resident site staff				5.4
				Total	10.3

*MPS = Master Pay Scale

Notes

1. 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 point 14 = \$19,835 per month and MPS point 38 = \$57,280 per month.)
2. The consultants' staff cost for contract administration is calculated in accordance with the existing consultancy agreement for the design and construction of **171BF**. The assignment will only be executed subject to the Finance Committee's approval to upgrade **171BF** to Category A.
3. The actual man-months and actual costs will only be known after completion of the construction works.