

## ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

### HEAD 703 – BUILDINGS

#### Environmental Hygiene – Burial grounds, columbaria and crematoria 3NB – Additional columbarium at Diamond Hill

Members are invited to recommend to Finance Committee the upgrading of **3NB** to Category A at an estimated cost of \$113.6 million in money-of-the-day prices for the construction of an additional columbarium at Diamond Hill.

### PROBLEM

We need to provide additional columbaria to meet the shortfall of niches in the territory.

### PROPOSAL

2. The Director of Architectural Services, with the support of the Secretary for Health, Welfare and Food, proposes to upgrade **3NB** to Category A at an estimated cost of \$113.6 million in money-of-the-day (MOD) prices for the construction of an additional columbarium at Diamond Hill.

### PROJECT SCOPE AND NATURE

3. The scope of **3NB** comprises the construction of an eight-storey columbarium block to provide the following facilities -

/(a) .....

- (a) about 18 500 niches;
- (b) supporting facilities including joss paper burners and joss paper pans, ash collection chambers, exhaust treatment plants and ash and refuse chutes;
- (c) ancillary facilities such as offices, storerooms, emergency generator and plant rooms, public toilets, benches and refuse storage area;
- (d) two passenger lifts;
- (e) a public address system and a closed-circuit television system; and
- (f) a temporary landscaped sitting out area.

————— A site plan is at Enclosure 1 and the artist's impression of the proposed columbarium  
————— is at Enclosure 2. We plan to start the construction works in July 2006 for completion in December 2008.

## JUSTIFICATION

4. Following population growth, the yearly number of deaths in Hong Kong has increased in the past decade from 30 894 in 1995 to 38 683 in 2005 and is estimated to increase to 47 000 in 2015. Due to limited land supply for coffin burials, the Government has been encouraging the public to adopt cremation in lieu of coffin burials since the 1970s. The adoption of cremation as a means of disposal of the dead has been rising steadily in the last 30 years from 35% (7 300 cremations) in 1975 to 86% (33 000 cremations) in 2005. The cremation rate is anticipated to rise further in the coming years and would probably level off at about 90% in 2010s. With an increasing demand for cremation services, there is also an increasing need for the supply of niches.

5. Niches are provided by both the Government and the private sector. The Government manages a total of about 138 000 niches in eight Government columbaria, including 43 310 niches in Diamond Hill Columbarium. The Government niches are in general more economical than those provided by private institutions as they are heavily subsidised by public funding. Besides, there are membership restrictions on interment in niches provided by religious bodies, etc. As such, there has been a strong demand for Government niches. All new niches provided by the Government were sold out in March 2005. Presently, only around 100 previously used niches in Government columbaria remain available for sale to the public.

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6. To meet the demand in these two years, the Government is now building about 10 000 new niches in small patches of unused land in columbaria at Cape Collinson, Kwai Chung and Wo Hop Shek for commissioning in the first half of 2006 by phases, with an addition of another 1 000 niches in Cheung Chau Columbarium by the end of 2006. Besides, the Board of Management of Chinese Permanent Cemeteries is developing 25 000 additional niches in its Cape Collinson Chinese Permanent Cemetery. The niches are expected to be completed by phases in 2006 and 2007.

7. To meet the increasing public demand for niches in the longer term, the Government is working on a robust plan that aims to provide new columbarium blocks in Diamond Hill and Kwai Chung Columbaria area as well as Wo Hop Shek Cemetery within the next decade.

8. One of our proposals is to construct a multi-storey columbarium block at Po Kong Village Road in Wong Tai Sin, adjacent to the existing columbarium blocks and next to the Diamond Hill Crematorium and the Diamond Hill Urn Cemetery. The new columbarium block, occupying an area of about 2 800 square metres (m<sup>2</sup>) is easily accessible by public transport.

9. In designing this project, we have envisaged the problem of a large number of visitors during the Ching Ming and Chung Yeung Festivals. In order to allow thoroughfare to help facilitate crowd movements during these festivals, we have therefore purposely adopted an open space design at the ground floor whereby only toilet facilities and plant rooms will be provided without niches. A number of exits to Po Kong Village Road will also be provided for easy accessibility and better crowd circulation. The layout of the proposed columbarium has adopted the design of a landscaped garden which would harmonise with the surrounding environment.

## FINANCIAL IMPLICATIONS

10. We estimate the capital cost of **3NB** to be \$113.6 million in MOD prices (see paragraph 11 below), made up as follows –

**\$ million**

|                      |     |
|----------------------|-----|
| (a) Site preparation | 1.8 |
|----------------------|-----|

/(b) .....

|  | <b>\$ million</b> |                               |
|--|-------------------|-------------------------------|
| (b) Piling                             | 14.5              |                               |
| (c) Building                           | 44.5              |                               |
| (d) Building services                  | 30.4              |                               |
| (e) Drainage                           | 1.6               |                               |
| (f) External works                     | 7.5               |                               |
| (g) Furniture & Equipment <sup>1</sup> | 3.1               |                               |
| (h) Contingencies                      | 10.0              |                               |
|  | <hr/>             |                               |
| Sub-total                              | 113.4             | (in September<br>2005 prices) |
| (i) Provision for price adjustment     | 0.2               |                               |
|  | <hr/>             |                               |
| Total                                  | 113.6             | (in MOD prices)               |
|  | <hr/>             |                               |

The construction floor area (CFA) of **3NB** is about 7 750 m<sup>2</sup>. The estimated construction unit cost, represented by the building and the building services costs, is \$9,665 per m<sup>2</sup> of CFA in September 2005 prices. We consider this unit cost reasonable as compared with other similar projects undertaken by the Government.

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

| Year      | \$ million<br>(Sep 2005) | Price<br>adjustment<br>factor | \$ million<br>(MOD) |
|-----------|--------------------------|-------------------------------|---------------------|
| 2006 – 07 | 9.0                      | 1.00125                       | 9.0                 |

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<sup>1</sup> Based on an indicative list of furniture and equipment items required.

| <b>Year</b> | <b>\$ million<br/>(Sep 2005)</b> | <b>Price<br/>adjustment<br/>factor</b> | <b>\$ million<br/>(MOD)</b> |
|-------------|----------------------------------|--|-----------------------------|
| 2007 – 08   | 36.0                             | 1.00125                                | 36.0                        |
| 2008 – 09   | 34.4                             | 1.00125                                | 34.4                        |
| 2009 – 10   | 19.0                             | 1.00125                                | 19.0                        |
| 2010 – 11   | 15.0                             | 1.01627                                | 15.2                        |
|             | 113.4                            |  | 113.6                       |

12. 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 2006 to 2011. We will deliver the piling works and building works through two lump sum contracts because we can clearly define the scope of the works in advance. The contracts will not provide for price adjustments because the contract periods will not exceed 21 months.

13. The annual recurrent expenditure for the proposed columbarium is about \$4.9 million.

## **PUBLIC CONSULTATION**

14. The original scope of the project was to build 20 000 niches at the site to meet increasing public demand. When we consulted the former Wong Tai Sin District Board in November 1995, Members expressed concerns on the crowd control and traffic arrangement during the Ching Ming and Chung Yeung Festivals, adequacy of fire prevention measures and circulation area within the columbarium, potential air pollution caused by the joss paper burners, and the need for adequate barrier at boundary to conceal the building from outside.

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15. To address these concerns, we have made changes to the proposal in a re-submission to the then Wong Tai Sin Provisional District Board in July 1997. For the design of the new block, it mainly included reduction in the number of niches from 20 000 to 18 500, widening the width of the passageway on each floor to improve crowd circulation, and installation of exhaust air treatment plant. In addition, the revised design will provide independent air chutes on each floor to prevent ash from emitting from the burner. Members noted the revised proposal.

16. Subsequently, we consulted the Traffic and Transport Committee of the Wong Tai Sin District Council on the proposed traffic management in March and November 2005. We have addressed Members' concerns on traffic arrangement, and they had no objection to the proposed works. We also consulted the Legislative Council Panel on Food Safety and Environmental Hygiene on this project in January 2006. Members generally supported the project.

#### **ENVIRONMENTAL IMPLICATIONS**

17. The project is not a designated project under the Environmental Impact Assessment Ordinance (Cap. 499). We carried out a Preliminary Environmental Review (PER) for the project in November 1994, which was agreed by EPD. With proper design of joss paper burners equipped with exhaust air treatment plant to mitigate the adverse quality of gaseous emissions, the project will not cause long-term environmental impact. 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 relevant 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.

18. We have considered measures in the planning and design stages to reduce the generation of construction and demolition (C&D) materials where possible. In addition, we will require the contractors to reuse inert C&D materials on site or in other suitable construction sites as far as possible, in order to minimise the disposal of C&D materials to public fill reception facilities. We will encourage the contractors to maximise the use of recycled or recyclable C&D materials, as well as the use of non-timber formwork to further minimise the generation of construction waste.

19. We will require the contractors to submit waste management plans (WMPs) for approval. The WMPs will include appropriate mitigation measures to avoid, reduce, reuse and recycle C&D materials. We will ensure that the day-to-day operations on site comply with the approved WMPs. We will control the disposal of public fill, C&D materials and C&D waste to public fill reception facilities<sup>2</sup> and landfills respectively through a trip-ticket system. We will require the contractors to separate public fill from C&D waste for disposal at appropriate facilities. We will record the disposal, reuse and recycling of C&D materials for monitoring purposes.

20. We estimate that the project will generate about 23 600 tonnes of C&D materials. Of these, we will reuse about 3 200 tonnes (13.6%) on site and deliver 17 700 tonnes (75.0%) to public fill reception facilities for subsequent reuse. In addition, we will dispose 2 700 tonnes (11.4%) at landfills. The total cost for accommodating C&D materials at public fill reception facilities and landfill sites is estimated to be \$815,400 for this project (based on an unit cost of \$27/tonne for disposal at public fill reception facilities and \$125/tonne<sup>3</sup> at landfills).

## LAND ACQUISITION

21. The project does not require land acquisition.

## BACKGROUND INFORMATION

22. We upgraded 3NB to Category B in October 2003. We engaged term contractors to carry out ground investigation, and a topographical survey, and consultants to carry out the layout design, a geotechnical assessment, a traffic impact assessment (TIA) and drafting services for contract documentation for the project at a total cost of \$1.7 million. We have charged this amount to block allocation **Subhead 3100GX** "Project feasibility studies, minor investigations and consultants' fees for items in Category D of the Public Works Programme". The term contractors and the consultants have completed the ground investigation, topographical survey, layout design, geotechnical assessment and TIA. We have completed the detailed design of the project and is finalising the tender documents by in-house staff resources.

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<sup>2</sup> Public fill reception facilities are specified in Schedule 4 of the Waste Disposal (Charges for Disposal of Construction Waste) Regulation. Disposal of public fill in public fill reception facilities requires a licence issued by the Director of Civil Engineering and Development.

<sup>3</sup> 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/m<sup>3</sup>), nor the cost to provide new landfills, (which is likely to be more expensive) when the existing ones are filled.

23. The proposed construction works will involve removal of 89 trees including 23 to be felled, 65 to be transplanted elsewhere, and one to be replanted within the project site. All trees to be removed are not important trees<sup>4</sup>. We will incorporate planting proposals as part of the project, including estimated quantities of 48 trees, 934 palms, 5 538 shrubs, 28 538 ground cover plants and 286 climbers.

24. We estimate that the proposed works will create about 90 jobs (83 for labourers and another seven for professional/technical staff) providing a total employment of 1 400 man-months.

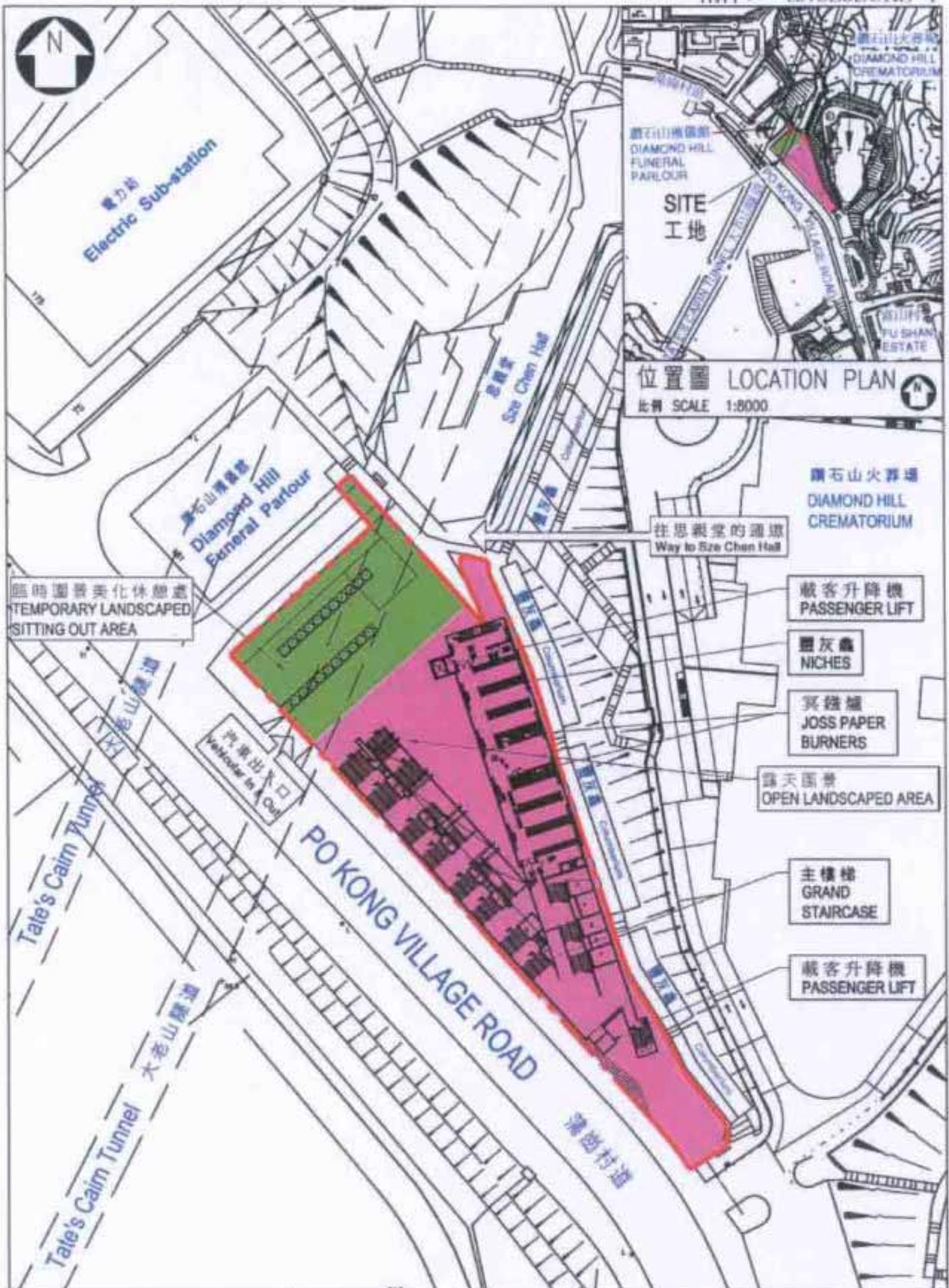
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Health, Welfare and Food Bureau  
February 2006

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<sup>4</sup> Important trees refer to trees on the Register of Old and Valuable Trees, and any other trees which meet one or more of the following criteria -

- (a) trees of over 100 years old;
- (b) trees of cultural, historical or memorable significance;
- (c) trees of precious or rare species;
- (d) trees of outstanding form; or
- (e) trees with trunk diameter exceeding one metre (measured at one metre above ground level).



位置圖 LOCATION PLAN  
比例 SCALE 1:8000

臨時園藝美化休憩處  
TEMPORARY LANDSCAPED  
SITTING OUT AREA

載客升降機  
PASSENGER LIFT

靈灰龕  
NICHES

冥錢爐  
JOSS PAPER  
BURNERS

露天園景  
OPEN LANDSCAPED AREA

主樓梯  
GRAND  
STAIRCASE

載客升降機  
PASSENGER LIFT

003NB  
在鑽石山增設靈灰安置所  
ADDITIONAL COLUMBARIUM  
AT DIAMOND HILL

|          |                      |      |        |
|----------|----------------------|------|--------|
| drawn by | BILLY CHOW           | date | JAN,06 |
| approved | Y. C. WU             | date | JAN,06 |
| office   | ARCHITECTURAL BRANCH |      |        |

|               |        |
|---------------|--------|
| drawing no.   | scale  |
| AB/4441/XB001 | 1:1250 |





從南面望向增設靈灰安置所的構思圖

VIEW OF THE ADDITIONAL COLUMBARIUM FROM SOUTH DIRECTION (ARTIST'S IMPRESSION)



增設靈灰安置所的內部構思圖

INTERIOR OF THE ADDITIONAL COLUMBARIUM (ARTIST'S IMPRESSION)

|   |                                       |                        |   |                        |
|---|---------------------------------------|------------------------|---|------------------------|
| 003NB<br>在鑽石山增設靈灰安置所<br>ADDITIONAL COLUMBARIUM<br>AT DIAMOND HILL | drawn by<br><b>BILLY CHOW</b>         | date<br><b>JAN, 06</b> | drawing no.<br><b>AB/4441/XB002</b>   | scale<br><b>N.T.S.</b> |
|   | approved<br><b>Y. C. WU</b>           | date<br><b>JAN, 06</b> |  ARCHITECTURAL<br>SERVICES<br>DEPARTMENT |                        |
|   | office<br><b>ARCHITECTURAL BRANCH</b> |                        |   |                        |