

**PROJECT PROFILE OF REPROVISIONING OF
DIAMOND HILL CREMATORIUM**

(Project No. : 01011533)

Quality Index

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1 BASIC INFORMATION

1.2 Project Title

Re-provisioning of Diamond Hill Crematorium

1.2 Purpose and Nature of the Project

The purpose of this project is to design and construct a new crematorium for replacement of the existing Diamond Hill Crematorium and to subsequently decommission the entire complex of the existing crematorium. This project includes the provision of 12 cremators, including replacement of the 6 existing cremators and addition of 6 new cremators. This project also includes the provision of a full range of ancillary facilities required for the operation of a crematorium, including:

- air pollution control systems to control the emission of the cremators
- four service halls
- four joss paper burners
- underground fuel tanks
- mortuary
- office accommodation
- store rooms and dangerous goods store
- public toilets
- parking spaces for coaches and private cars
- refuse storage chambers
- garden of remembrance

1.3 Name of Project Proponent

Architectural Services Department (ASD) of the Hong Kong SAR Government

1.4 Location and Scale of Project

The proposed crematorium is located in the southern part of the existing Diamond Hill Crematorium site, at an elevation of 75mPD to the east of Po Kong Village Road in Diamond Hill. Twelve cremators with associated air pollution control systems will be installed in the new crematorium and the maximum cremation loading for the new crematorium is 2,460 kg per hour. The land uses surrounding the site are mainly cemetery, urn cemetery, residential areas, and educational institutes. The location plan of the project is given in Figure 1.

1.5 History of the Site

The proposed site is located at the southern part of the existing Diamond Hill Crematorium site. There have been a pavilion, roads, walkways, a latrine, slopes, and some open space uses in the proposed site.

1.6 Number and Types of Designated Projects to be Covered by the Project Profile

The reprovisioning of Diamond Hill Crematorium is classified as a Designated Project under Category N.4 (a crematorium) in Part 1 of Schedule 2 of the Environmental Impact Assessment Ordinance (EIAO).

1.7 Names and Telephone Numbers of Contact Persons

The names and telephone numbers of the contact persons of this project are given below:

Project Team	Organization
Project Proponent	Architectural Services Department
Environmental Consultant	Hong Kong Productivity Council

2. OUTLINE OF PLANNING AND IMPLEMENTATION PROGRAMME

ASD is responsible for the management, design and implementation of the project. External consultants and contractors will be employed to respectively design and build the proposed crematorium. In particular, Hong Kong Productivity Council (HKPC) has been employed as the Environmental Consultant of this project. Urban Services Department (USD) is the government department responsible for the operation of the proposed crematorium.

The tentative broad schedule of the project is summarized below:

Item	Activity	Start Month	End Month
1	Appointment of consultants	Sep. 1999	Nov. 1999
2	Sketch and detail design	Dec. 1999	Dec. 2000
3	Tendering	Jan. 2001	Sep. 2001
4	Construction	Oct. 2001	Sep. 2003
5	Decommissioning of the entire complex of the existing crematorium	Oct. 2003	Mar. 2004

3. POSSIBLE IMPACT ON THE ENVIRONMENT

3.1 Construction Phase

3.1.1 Air Quality

The construction site will be an ordinary building construction site with dust generated from the general construction activities such as excavation or earth moving, stockpiling of dusty materials, and use of vehicles.

3.1.2 Construction Noise

Construction noise will be mainly contributed by piling works and the use of powered mechanical equipment in various construction activities. The severity of the construction noise impacts will be influenced by the chosen construction methods, and the duration of any noisy activities such as excavation and piling activities.

3.1.3 Water Quality

The major water pollution problems in relation to the construction site will be siltation in storm drains caused by excessive sand and silt in the storm run-off and pollution caused by improper handling and disposal of other types of construction site wastewater, such as sewage from site toilet (if any).

3.1.4 Waste

Excavated materials, general construction waste, chemical waste, and general refuse will be generated from the construction work of the proposed crematorium. The amount of such waste arisings from the construction work of this project are anticipated to be small.

3.2 Operation Phase

3.2.1 Air Emissions from Cremation

In the process of cremation, particulate matter, organic compounds, and inorganic gases will be generated and discharged to the atmosphere. Without proper treatment, these emissions will cause air pollution impact to the surrounding sensitive receivers. Appropriate air pollution control system will be provided to treat these emissions before being discharged through chimney.

3.2.2 Landscape and Visual Impact

In building the new crematorium, the landscape of the proposed site will be changed. In the new crematorium design, it is intended that adverse visual impact on the surrounding sensitive receivers would be minimized.

3.2.3 Operational Noise

When the proposed crematorium is in operation, the operation of certain equipment is likely to generate noise and may affect the surrounding sensitive receivers. However, since the operation of the proposed crematorium is mainly confined in daytime and the noisy equipment will be properly enclosed, adverse noise impact on the surrounding sensitive receivers is unlikely.

3.2.4 Traffic Noise

The proposed crematorium may be affected by the traffic of Po Kong Village Road and the access road within the site. However, significant traffic noise impact is not expected because Po Kong Village Road is at least 50m apart from the proposed crematorium and the access road is of low traffic volume. On the other hand, since the additional traffic caused by the crematorium during operation would be minimal, the traffic noise impact on neighbouring noise sensitive receivers would remain as mainly contributed by the existing traffic of the main roads like Po Kong Village Road.

3.2.5 Water Quality

Sewage will be generated from sanitary facilities during the daily operation of the proposed crematorium. The generated sewage will be discharged to nearby foul sewer and no adverse impact of water quality is expected.

3.2.6 Waste

A small amount of waste will be generated from visitors and people using the joss burners during the operation of the proposed crematorium. The waste will be properly handled and stored in metal bins and disposed of at landfills. Significant impact on the environment therefore is not expected.

3.2.7 Dangerous goods

Diesel oil (classified as Dangerous Goods Category 5) will be used and stored during operation of the proposed crematorium. Pursuant to the Dangerous Goods Ordinance, a licence will be obtained from the Fire Services Department. In accordance with the relevant legal requirements, the diesel oil will be properly handled and an appropriate underground fuel storage tank will be provided so as to avoid escape of fuel into nearby drains as well as to prevent fire hazard. It is therefore anticipated that the use and storage of diesel will not cause adverse environmental impacts and hazard concern.

4. MAJOR ELEMENTS OF THE SURROUNDING ENVIRONMENT

4.1 Surrounding Sensitive Receivers

Sensitive receivers of this project are those existing and planned land uses in the surrounding environment. For the construction phase and the operation phase of the project, the representative existing sensitive receivers (horizontal distance from the proposed crematorium in brackets) are identified below:

- Fu Shan Estate (215m)
- King Shan Court (350m)
- Crematorium Staff Quarters (75m)
- PLK No. 1 Secondary School (225m)
- William Booth Secondary School (260m)
- Kei Sum Primary School (300m)

Besides, schools are also planned opposite to PLK No. 1 Secondary School.

4.2 Existing Surrounding Pollution Sources

There are 6 cremators currently in operation in the existing Diamond Hill Crematorium. The existing crematorium will be decommissioned when the proposed crematorium is in operation.

5. ENVIRONMENTAL PROTECTION MEASURES TO BE INCORPORATED IN THE DESIGN AND ANY FURTHER ENVIRONMENTAL IMPLICATIONS

5.1 Construction Phase

5.1.1 Air Quality

The contractors will be required to follow the requirements stipulated in Air Pollution Control (Construction Dust) Regulation. For instance, the following good site practices will be adopted by the contractors in order to ensure no excessive dust emission from the constructive activities:

- Watering of the access roads frequently with water browsers
- Watering of stockpiles during material handling
- Enclosure on three sides for large stockpiles
- Set up of wheel washing facilities at all site exits

5.1.2 Construction Noise

The contractors will be required to obtain all necessary noise permits from the Environmental Protection Department, according to the Noise Control Ordinance, before conducting piling works and using powered mechanical equipment at designated time. The contractors will be required to implement the noise abatement measures as recommended in the ProPECC Practice Note PN2/93 Noise from Construction - Non-Activities Statutory Control. In addition, the following good site practice and noise management will be implemented as far as practicable to reduce noise impact:

- All machines and plant on site will be well maintained and serviced regularly during the construction programme
- Plant that is expected to emit noise in one direction will, where possible, be orientated so that the noise is directed away from nearby sensitive receivers
- Site supervision to ensure the proper operation of all plant and construction works will be implemented

5.1.3 Water Quality

To comply with Water Pollution Control Ordinance, the contractors will be required to apply for the requisite wastewater discharge licenses to cover all the following effluent generating activities:

- Surface run-off from the site
- Ground water discharge during excavation works
- Discharge from on-site sanitary facilities (if any)

To fulfil the discharge standards as stipulated in the licences, the contractors will undertake all the necessary measures as recommended in the ProPECC Practice Note PN1/94 - Construction Site Drainage in order to control/treat the effluent. Such measures will include but are not limited to:

- Provision of adequate drainage channels at the site to avoid surface run-off containing silts and solids from contaminating the nearby storm drains as well as to collect all such surface run-off to sedimentation tanks for treatment prior to discharge to the storm drains
- Collection of ground water as may be produced by excavation works to sedimentation tanks for treatment prior to discharge to nearby storm drains or to soak-away pits
- Provision of septic tanks to treat sewage from on-site sanitary facilities (if any)
- If portable toilets are used on site, a licensed contractor should be employed to regularly collect and dispose of the sewage

In order to ensure effectiveness of the above mitigation measures, regular monitoring of wastewater discharge from the site will be performed in accordance with the licensing requirements.

5.1.4 Waste Management

While the amount of waste arising from the construction phase is expected to be small, the contractors will be required to follow all the relevant requirements of the Waste Disposal Ordinance. In summary, the construction waste will be properly handled and stored on-site in a manner to minimize the potential environmental impacts, and the contractors will be required to employ licensed waste collectors to collect the waste for disposal at licensed facilities. In case of handling, transportation and disposal of any chemical waste, the Code of Practices on the Packaging, Labelling and Storage of Chemical Waste as published by Environmental Protection Department will be followed.

5.2 Operation Phase

5.2.1 Air Emissions from Cremation

According Schedule 1 of Air Pollution Control Ordinance, the cremation process of the project is classified as a specified process (incinerators). To operate it, the operator will apply for a specified process licence from the Environmental Protection Department and follow strictly the licensing conditions and the guidance note on the best practicable means (BPM) for incinerators (crematoria) so as to minimize the air pollution impact to the surrounding environment.

According to the BPM, each cremator will be designed to ensure complete combustion and with the provision of a secondary combustion zone. The flue gases will be held at 850°C for sufficiently long residence time in the secondary combustion zone to achieve complete combustion. Alternative design

is also permitted if it is demonstrated to achieve equivalent or better emission standard required by BPM and it will require flue gases to pass through an air pollution control system to remove the air pollutants. Regular inspection and maintenance of the cremators and the air pollution control system will be carried out to ensure their proper performance.

5.2.2 Landscape and Visual Impact

The design of the proposed crematorium will consider as far as practicable preserving and enhancing the greenery effect of the site by protecting the existing trees and, if necessary, planting new trees. Visual effects in view of the adjacent environment, especially Diamond Hill Urn Cemetery, will also be considered in the design.

5.2.3 Other Mitigation Measures

The proposed measures for mitigating the potential impacts caused by waste pollution, waste disposal and use/storage of dangerous goods are mentioned i.e. Sections 3.2.5, 3.2.6 and 3.2.7 respectively.

6. USE OF PREVIOUSLY APPROVED EIA REPORTS

No relevant previously approved EIA reports are identified.

Environmental Management Division
Hong Kong Productivity Council

August 1999



HONG KONG PRODUCTIVITY COUNCIL
香港生產力促進局

**Job Title : Reprovisioning of
Diamond Hill Crematorium**

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Figure Title : Location Plan

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