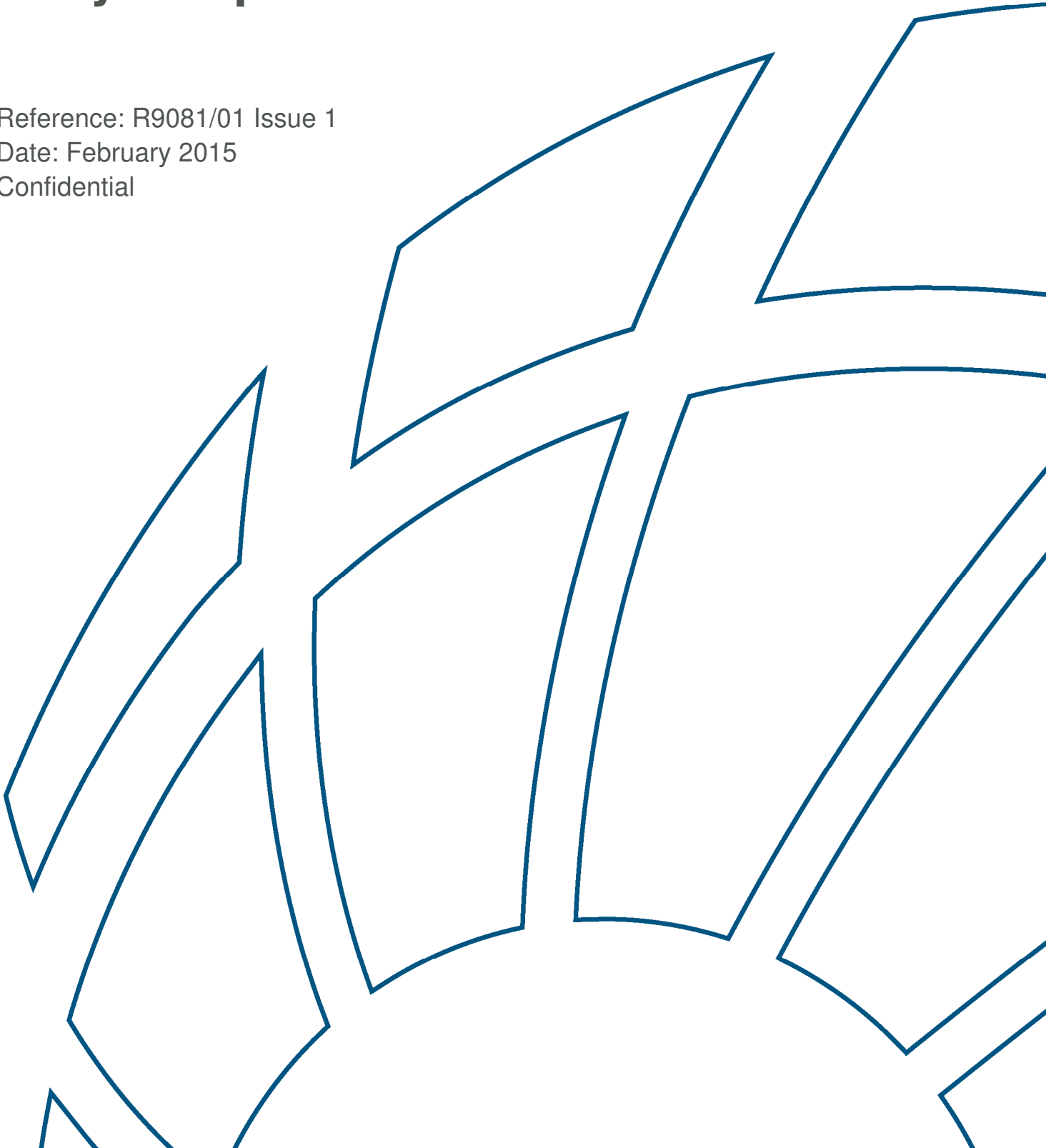


# Project Profile for A Rooftop Helipad at the Proposed New Block of Queen Mary Hospital

Reference: R9081/01 Issue 1

Date: February 2015

Confidential



# **A Rooftop Helipad at the Proposed New Block at Queen Mary Hospital**

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# 1 Basic Introduction

## 1.1 Project Title

“EIA Study for a Rooftop Helipad at the Proposed New Block at Queen Mary Hospital.”

## 1.2 Purpose and Nature of the Project

### 1.2.1 Purpose

Queen Mary Hospital (QMH) with the comprehensive medical facilities available serves the community as a Trauma and Transplant Centre, it is of essence for the public to have a helipad at QMH in order to enable a speedy transfer of patients/survivors suffering from special cases for appropriate treatment. The provision of a rooftop helipad at QMH will enhance the overall efficiency and effectiveness of the emergency response services. In addition, the helipad can serve as an effective alternative to convey quick response medical teams from QMH to scene of distress if a situation requires to effect the rescue efforts.

### 1.2.2 Nature

The helipad is intended strictly for “casevac” (casualty evacuation), SAR (Search and Rescue) operations and urgent transportation of organs for transplantation by GFS. No commercial flight will be allowed.

The helipad will be installed and operated on the roof of the proposed new block (New Block) of QMH. The rooftop helipad design will meet the ‘ICAO Standards for Heliport Design’ and ‘Government Flying Service Helicopter Landing Site Specification Guidelines’.

The helipad (excluding the proposed New Block of QMH) constitutes a designated project under Item B.2, Schedule 2 of the Environmental Impact Assessment Ordinance (“EIAO”) by virtue of its being “A helipad within 300m of existing or planned residential development”.

### **1.3 Name of Project Proponent**

The Project Proponent is the Secretary for Food and Health (SFH), Hong Kong SAR Government.

The Architectural Services Department (“ArchSD”) is the works agent for the SFH. The operation of the future New Block of QMH, including the proposed helipad will be under the management of the Hospital Authority (HA).

## 1.4 Location and Scale of Project, History of Site

### Location of the Project

The proposed helipad is to be located on the rooftop of the proposed New Block at the northern portion of the QMH as shown in Figure 1.1.

### Scale of Project

The helipad will be constructed according to Government Flying Service (“GFS”) Helicopter Landing Site Specification Guidelines. The helipad will be at 288mPD with about 40m in diameter subject to changes to suit the actual site constraints.

### History of the Site

The site where the helipad located is at the QMH in Pok Fu Lam. The project site is zoned as “Government, Institution or Community” (“G/IC”) on the approved Pok Fu Lam Outline Zoning Plan (“OZP”) no. S/H10/15.

## 1.5 The Need of a Helipad at QMH

The QMH is a major acute hospital with over 1,600 beds in the Hong Kong West Cluster (HKWC) of the Hospital Authority (HA), serving a population of over 531,000 in the Central and Western and Sothern Districts as well as treating many patients in other geographical districts in Hong Kong. It provides a full range of acute and tertiary services, including 24-hour Accident and Emergency (A&E) services, in-patient service, ambulatory care and rehabilitation services, as well as specialist services covering a wide range of specialties and subspecialties.

Being the teaching hospital of the Li Ka Shing Faculty of Medicine of The University of Hong Kong, QMH is equipped with state-of-the-art equipment and is responsible for providing professional clinical training, pioneering innovative technology, and conducting clinical trials for new treatment modalities. In addition, QMH serves as tertiary and quaternary referral centre for many complex and advanced services such as organ transplant, neonatal intensive care, coronary care, burns and reconstructive surgery and neurosurgery, etc. for the entire territory. Since July 2003, QMH has become the only designated liver transplant centre in Hong Kong to provide world-class standard liver transplant service. The A&E Department of QMH has been designated as one of the five trauma centres in the territory.

Given that QMH is a major acute hospital, a Trauma and Transplant Centre, it is of essence for the public to have a helipad in order to enable a speedy transfer of patients/survivors suffering from special cases for appropriate treatment and receipt of donated organs. The provision of a rooftop helipad at QMH has been the prime consideration in ensuring that the general public can receive the best



emergency service as needed. With the helipad, it will enhance the overall efficiency and effectiveness of the emergency response services. Further, the proposed QMH helipad is to serve for emergency services by incorporating with the following advantages:

#### Location Advantage

Currently, the air transportation of patients from outlying islands is to either the helipad at Pamela Youde Nethersole Eastern Hospital (PYNEH) or to the Wan Chai Heliport for onward transfer to QMH. The provision of the rooftop helipad at QMH is an ideal drop-off point for survivors travelling from places located to the South and South West of Hong Kong, such as Cheung Chau, Lamma Island, Hei Ling Chau, Shek Kwu Chau. The transit time can be reduced for patients travelling from the above destinations to the proposed helipad at QMH instead of PYNEH and hence increase the chance of survival in many critical cases. For example, if an accident occurs at southwest of HK Island, there will be a 4-minute flight time difference for the transfer of survivors between the place of accident and the helipad at QMH than PYNEH. As a result, the transit time would be shortened if a helipad is available at QMH in critical cases.

#### Multiple Casualties Transfer

The proposed rooftop helipad at QMH can be operated in parallel when major disasters occur involving a large number of patients. It would help to cater multiple casualties transfer during major disasters when multiple helicopters are involved by serving as an emergency support landing site.

#### Weather Alternative

The helipad at PYNEH may not be available for operational use from time to time due to poor weather conditions including poor visibility, low cloud base or strong wind condition. Especially during spring seasons, the prevailing foggy weather from the open sea to the east of Hong Kong results in poor visibility for helicopters to travel. It is better for helicopters to travel to the west of Hong Kong with relatively better weather conditions during spring time. The provision of the rooftop helipad at QMH provides a good landing point for air ambulance and rescue missions with critically ill patients/ injured survivors.

## **1.6 Number and Type of Designated Project**

This Project Profile covers one proposed rooftop helipad which is classified as a designated project under Item B.2, Schedule 2 of the Environmental Impact Assessment Ordinance (EIAO) by virtue of its being a helipad within 300m of existing or planned residential development.

## **1.7 Name and Telephone Number of Contact Person**

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Chief Project Manager – Mr. David Chak

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## 2 Outline of Planning and Implementation Programme

### 2.1 Project Implementation and Schedule

The project is being planned and will be implemented by ArchSD.

BMT Asia Pacific Ltd. has been appointed to conduct the Environmental Impact Assessment (EIA) study for the proposed rooftop helipad under the EIA Ordinance.

Construction of the helipad would involve line painting and supporting frame and equipment installations in its final construction stage. All structural works will be installed on the roof of the hospital.

The operation, management and maintenance of the helipad will be undertaken by Hospital Authority. GFS will be the user of this helipad.

The tentative planning and implementation programme for the Project is as follows:

- Planning / Approvals and Scheme Design Early 2014 to end-2017
- Construction of the New Block of QMH end-2017 to 2024
- Construction of the Helipad 2021 to mid-2024
- Helipad Operation 2024

### 2.2 Interactions with Other Projects

No significant interfacing with other projects has been identified.

## 3 Possible Impacts on the Environment

### 3.1 Construction Stage

#### 3.1.1 Air Quality

##### *Gaseous Emission / Dust / Odour*

For the construction of the helipad, there will be no significant gaseous emissions and odour impacts during the construction phase. Fugitive dust generated will be minimised by implementing suitable dust suppression measures recommended in the Air Pollution Control (Construction Dust) Regulation. Therefore, there should be no significant fugitive dust impact during the construction phase.

#### 3.1.2 Noise

##### *Noisy Operations / night-time Operations*

During the construction phase of the helipad, the use of Powered Mechanical Equipment (PME) for the helipad construction will generate potential noise impacts upon the nearby NSRs. There will not be any construction activities during restricted hours.

Noise arising from construction for designated projects during the non-restricted periods, i.e., between 07:00-19:00 hours of any days not being a Sunday or general holiday, is assessed with reference to the noise criteria listed in Table 1B of Annex 5 of the EIA-TM, which are summarized in *Table 3.1*. These criteria shall be met as far as practicable according to Annex 5 of the EIA-TM.

Table 3.1 Recommended Construction Noise Level (Non-restricted Hours)

Noise Sensitive Receiver Uses	Noise Levels $L_{eq(30\ min)}$ dB(A)
All domestic premises including temporary housing accommodation, hotels and hostels	75
Schools	70 (normal school hours) 65 (during examination periods)

Although construction noise impact arising from construction of the rooftop helipad will be generated, it will likely be minor as the construction works will involve installation of supporting frame, landing platform, lighting system and fire services facilities during which noisy construction works are not expected. With the implementation of mitigation measures, significant impact is not anticipated.

### 3.1.3 Water Quality

#### *Liquid Effluents, Discharges or Contaminated Runoff*

Wastewater generation from the construction of helipad will be limited. It will mainly be surface runoff and wastewater from some minor concrete works for installation of supporting frames. Any wastewater generated from the construction site will be intercepted and treated to comply with the criteria of the Water Pollution Control Ordinance prior to discharge. There will be no significant water quality impact envisaged during the construction phase.

### 3.1.4 Waste

#### *Generation of Wastes or By-products*

Good construction practices and proper waste management procedures will be implemented by the contractor as contractual requirements. There should be no significant construction waste issue.

#### *Manufacture, Storage, Use, Handling, Transport, or Disposal of DGs, Hazardous Materials or Wastes*

There will be no fuelling facilities or storage of fuel or any other kinds of dangerous goods ("DGs") or generation of wastes during the construction phase.

### 3.1.5 Ecology

The helipad will be constructed on the rooftop of the proposed New Block of QMH. No ecological impact is anticipated since only installation works of the helipad structure will be conducted at the roof of the proposed New Block and the works area is located far from the natural habitat of the nearby sensitive receivers. No works will be carried out at the country park area.

### 3.1.6 Cultural Heritage

There will be no cultural heritage issue around the project site.

### 3.1.7 Landscape and Visual

The helipad will be constructed on the roof of the proposed New Block of QMH. As it is at a relatively high level of approximately 288mPD near the hillside and the site is small, significant landscape and visual is not anticipated during the construction phase.

## 3.2 Operational Stage

### 3.2.1 Air Quality

#### *Gaseous Emission / Dust / Odour*

No significant gaseous emission, dust and odour impacts will be anticipated. Emissions from helicopter exhausts will be dissipated by the rotor blades efficiently and thus the impact should be minimal. Air intakes on the roof of the New Block will be strategically located to avoid direct impacts from helicopter exhausts.

There will be no fuelling facility at the proposed helipad.

### 3.2.2

#### Noise

##### Noisy Operations / night-time Operations

The proposed helipad is intended strictly for life-saving flights such as 'casevac' (casualty evacuation) operations, SAR mission and urgent transportation of organs for transplantation by the Government Flying Service (GFS). No commercial flight will be allowed.

The two types of helicopter that GFS will be in used are the Eurocopter Super Puma AS 332 L2 and the Eurocopter EC 155 B1. Helicopter noise is bound to be intrusive and requires careful planning. Noise impact will be generated when helicopter approaches and departs from the helipad, manoeuvring on and over the helipad. The noise impact in L<sub>max</sub> levels – the maximum instantaneous sound pressure level at the representative noise sensitive receivers (NSRs) will be assessed in the detail EIA study with measures recommended, if necessary, to mitigate the impact.

According to Table 1A, Annex 5 of the EIAO TM, helicopter noise impacts shall be assessed in terms of the L<sub>max</sub> level – the maximum instantaneous sound pressure level at the noise sensitive receiver. The stipulated noise standard of helicopter noise (between 07:00 and 19:00 hours) for different uses are summarised in *Table 3.2*.

Table 3.2 Helicopter Noise Standards for Planning Purposes

Uses	Helicopter Noise L <sub>max</sub> dB(A)
	07:00 to 19:00 hours
<ul style="list-style-type: none"> <li>- All domestic premises including temporary housing accommodation;</li> <li>- Hotels and hostels</li> <li>- Educational institutions including kindergartens, nurseries and all others where unaided voice communication is required</li> <li>- Place of public worship and courts of law</li> <li>- Hospitals, clinics, convalescences and home for the aged, diagnostic rooms, wards</li> </ul>	85
<ul style="list-style-type: none"> <li>- Offices</li> </ul>	90

Notes: (1) The above standards apply to uses that rely on opened windows for ventilation.  
(2) The above standards shall be viewed as the maximum permissible noise levels assessed at 1m from the external façade.

### *Traffic Generation*

As the proposed rooftop helipad will be provided solely for emergency use and the patients/ survivors will be transferred internally in QMH, there will be no additional traffic generation.

## **3.2.3 Water Quality**

### *Liquid Effluents, Discharges or Contaminated Runoff*

The Firefighting Foam discharge system may require by Fire Services Department to serve the rooftop helipad of emergency fire accident. However, as the firefighting system is served solely on emergency purpose, the amount of discharge of mixture of foam and water is anticipated to be minimal. Hence, the water quality issue is considered to be insignificant.

There will be no fuelling facilities provided. No significant water quality issues including liquid effluents, discharges or contaminated runoff are anticipated.

## **3.2.4 Waste**

### *Generation of Wastes or By-products*

The proposed rooftop helipad will be used solely for transporting people for medical treatment in emergency situations. No waste or by-products generation is anticipated.

### *Manufacture, Storage, Use, Handling, Transport, or Disposal of DGs, Hazardous Materials or Wastes*

There will be no fuelling facilities or storage of fuel or any other kinds of dangerous goods (“DGs”) or generation of wastes.

## **3.2.5 Ecology**

The helipad will be located at the rooftop of the proposed New Block of QMH. The operation of the helipad may not impact the nearby sensitive receivers including birds and terrestrial animals from Lung Fu Shan and Pok Fu Lam Country Parks. According to the information provided by GFS, there was an annual average of 162 day time cases and 85 night time cases sending to PYNEH in the past five years. The helipad will serve solely on supporting emergency response missions and allow an appropriate selection between PYNEH helipad (HK24) and the proposed QMH helipad subject to the various considerations (e.g. evacuation site location and weather condition). The frequency of the operation of the proposed helipad at the rooftop of QMH is low.

During operation stage of the helipad, noise and glare are potential concerns to the ecological environment. The duration of helicopter operation at the helipad is very short, approximately 5 to 7 minutes. This will not cause any permanent impact on the nearby environment. During its operation, lighting will be provided especially at night. The direction of lighting will only be pointed towards the helipad. Glare impact on the animals within the country park is not anticipated.

The flight paths towards or departing the helipad will not encroach the country park area. Bird collision with helicopter is seldom from the experience of GFS. Moreover, it is also GFS's general practice that they will avoid collision with birds.

Terrestrial animals are difficult to reach the rooftop of the helipad since it has an approximate height of about 288 mPD. Therefore, no significant environmental issues are anticipated towards birds and terrestrial animals from the nearby surroundings.

### **3.2.6 Landscape and Visual**

The helipad itself is not an intrusive structure. As it is located on the roof of the proposed New Block of QMH at approximately 288 mPD near the hillside, it will not affect the landscape elements or features of the nearby surroundings.

However, high mass lighting will be used during operation. Glare from such lighting provision may cause visual impact to residents living in premises along flight path and at activity nodes. The visual impact will be further studied in the detailed EIA.

### **3.2.7 Cultural Heritage**

There will be no cultural heritage issue.



## **4 Major Elements of the Surrounding Environment**

### **4.1 Existing Sensitive Receiver/ Parts of the Natural Environment**

As the proposed helipad will be located on the rooftop of the New Block, no sensitive part of the natural environment (e.g. water sensitive uses, fishing ground, wildlife habitat etc.) will be affected by the construction and operation of the helipad.

As mentioned in the last section, since helicopter noise and glare are the major environmental issues envisaged for the proposed helipad, noise impact and glare impact will be assessed in depth in the EIA study.

A preliminary review of the locality has found the following existing noise sensitive uses within 300m from the helipad (the project site):

- Wei Lun Hall of the University of Hong Kong
- The University of Hong Kong Madam SH Ho Residence for Medical Students
- Lee Hysan Hall of the University of Hong Kong
- Nurses' Quarter Block A of QMH

There will be some other existing and planned noise sensitive receivers affected under the flight path near the north-eastern to western and the south-western to southern part of the helipad. Details of which will be identified during the course of the EIA study.

For glare impact, besides the above buildings and the hospital itself, there is a hiking trail at Pok Fu Lam Country Park which is also considered as visually sensitive. Animals in the country park may also be sensitive to glare.

### **4.2 Major Elements Affecting the Site**

No major element of the surroundings is considered likely to affect the proposed helipad. The flight path will be designed, in consultation with ArchSD and GFS, to route away from the existing and planned residential areas as far as possible in order to minimize the disturbance to the neighbourhood.

## **5 Environmental Measures to be incorporated in the Design**

### **5.1 Construction Stage**

#### **5.1.1 Air Quality**

Dust suppression measures recommended in the Air Pollution Control (Construction Dust) Regulation will be implemented by the contractor as part of the contractual requirements to minimise the potential fugitive dust impacts.

#### **5.1.2 Noise**

Good site practice and general construction noise mitigation measures such as siting of noisy equipment, use of quiet plant and erection of noise barrier/enclosure will be adopted to minimise the noise impact.

#### **5.1.3 Water Quality**

Wastewater generated from the construction site of the New Block of QMH will be intercepted and treated to comply with criteria of the Water Pollution Control Ordinance prior to discharge.

#### **5.1.4 Waste Management**

Good construction practices and proper waste management procedures shall be implemented by the contractor.

The generation of chemical waste (e.g. oil, fuel and batteries) is not anticipated from construction plant/equipment. No mitigation measures is required.

#### **5.1.5 Ecology**

No significant ecological issue is anticipated. Therefore, no mitigation measure is needed.

#### **5.1.6 Cultural Heritage**

No cultural heritage issue is anticipated and hence no mitigation measure is needed.

#### **5.1.7 Landscape & Visual**

No significant landscape/ visual impact issue is anticipated. Therefore, no mitigation measure is needed.

## **5.2 Operational Stage**

### **5.2.1 Air Quality**

No significant air quality issues are anticipated during operational stage. Therefore, no mitigation measure is needed.

### **5.2.2 Noise**

The helicopter noise will be assessed in the EIA study with mitigation measures recommended as necessary. The flight paths should be sufficiently away from any existing and planned residential areas for noise abatement. Flight trials and assessment will be conducted in consultation with GFS, with consideration of possible interface with top floors of future residential blocks, height restrictions, terrain, and location of existing and planned residential areas in the vicinity of the proposed helipad for the flight paths design development.

### **5.2.3 Water Quality**

Routine/annual testing and maintenance is needed for the firefighting system to ensure the system is well equipped when dealing with emergency fire accidents at the helipad.

No wastewater will be generated during the operation of the helipad. No significant water quality issue is anticipated.

### **5.2.4 Waste Management**

There will be no waste generation from the helicopter and the helipad during operation stage.

### **5.2.5 Ecology**

No significant ecological issue is anticipated. Therefore, no mitigation measure is needed.

### **5.2.6 Cultural Heritage**

No cultural heritage issue is anticipated and hence no mitigation measure is needed.

### **5.2.7 Landscape & Visual**

No significant landscape impact issue is anticipated. In order to avoid glare impact, the direction of lighting system will be carefully designed.

## 6 Use of Previously Approved EIA Report

### 6.1.1 EIA report for Helipad at Yung Shue Wan, Lamma Island

*EIAO Register Number: EIA-114/2005*

Approval Date: 19 January 2006

*Addressed Environmental Aspects:*

Air quality, noise impact, waste management, water quality, ecological impact and cultural heritage impact during both the construction and operational phases in EIA-114/2005.

*Relevant Findings and Recommended Mitigated on Environmental Impacts:*

The noise criterion, sound level and mitigation measures of helicopter noise impact are considered relevant. Several mitigation measures were recommended in EIA-114/2005 including reduction of flight path angles of the helicopters, site selection for the best helipad location, realignment of the best flight routes over the least densely populated areas and avoidance of the use of noisier helicopter type (Super Puma AS332 L2) whenever practicable. There is no standard on emergency helicopter noise at night. As such, the residual helicopter noise impacts during daytime and night-time were evaluated. The findings of helicopter noise of EIA-114/2005 are relevant to this EIA study and hence will be referred to in this EIA.

### 6.1.2 EIA report for Peng Chau Helipad

*EIAO Register Number: EIA-107/2005*

Approval Date: 25 August 2005

*Addressed Environmental Aspects:*

Air quality, noise impact, waste management, water quality, ecological impact, fisheries impact, and cultural heritage during both construction and operational stages were addressed in EIA-107/2005.

*Relevant Findings and Recommended Mitigated on Environmental Impacts:*

The noise criterion, sound level and mitigation measures of helicopter noise impact are considered relevant. Several mitigation measures were recommended in EIA-107/2005 including reduction of flight path angles of the helicopters, site selection for the best helipad location, realignment of the best flight routes over the least densely populated areas and avoidance of the use of noisier helicopter type (Super Puma AS332 L2) whenever practicable. There is no standard on emergency helicopter noise at night. As such, the residual helicopter noise impacts during

daytime and night-time were evaluated. The findings of helicopter noise of EIA-107/2005 are relevant to this EIA study and hence will be referred to in this EIA.

## Figure

