Appendix 1.1

Project Information and Operation Requirement from Relevant Government Departments
From

Architectural Services Department (ArchSD)
Dear Chi Pang,

Please be advised that we have no comment on the information stated in the attachment of your preceding mail. Thanks.

Regards

Suzanna C K Chan
SPM229
Architectural Services Department
Tel 2867 3908

REF: 9081

Dear Suzanna,

I would like to summarize all the relevant information that we discussed before. Grateful if you could confirm the attached information.

Should you have any queries, please feel free to contact the undersigned.

Thank you for your kind attention and happy new year.

Best regards,

CP LEE

Chi Pang Lee
Senior Consultant
BMT Asia Pacific Ltd

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Environmental Impact Assessment for A Rooftop Helipad at the Proposed New Block of Queen Mary Hospital

Information for Construction Phase

- Tentative planning and implementation programme of the Proposed New Block and Helipad of Queen Mary Hospital:

<table>
<thead>
<tr>
<th>Stage</th>
<th>Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planning / Approvals and Detail Design</td>
<td>Early 2014 to end-2019</td>
</tr>
<tr>
<td>Foundation Work of the New Block of QMH</td>
<td>Mid-2019 to end-2020</td>
</tr>
<tr>
<td>Superstructure Work of the New Block of QMH</td>
<td>End-2020 to 2022</td>
</tr>
<tr>
<td>Finishing and BS Installation Work of the New Block of QMH</td>
<td>End-2022 to 2024</td>
</tr>
<tr>
<td>Construction of the Helipad</td>
<td>1 year between 2022 &amp; 2024</td>
</tr>
<tr>
<td>Helipad Operation</td>
<td>2024</td>
</tr>
</tbody>
</table>

- PMEs inventory for the construction activities of the Proposed Helipad:

<table>
<thead>
<tr>
<th>Powered Mechanical Equipment (PME)</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air compressor</td>
<td>1</td>
</tr>
<tr>
<td>Concrete lorry mixer</td>
<td>1</td>
</tr>
<tr>
<td>Concrete pump</td>
<td>1</td>
</tr>
<tr>
<td>Crane, tower (electric)</td>
<td>1</td>
</tr>
<tr>
<td>Poker, vibratory, hand-held</td>
<td>2</td>
</tr>
<tr>
<td>Breaker, hand-held</td>
<td>1</td>
</tr>
<tr>
<td>Welding set</td>
<td>2</td>
</tr>
</tbody>
</table>

Note: The construction works are including all steel framework, helipad structure, safety walkway, access ramp and the proposed noise mitigation measures (i.e. noise barriers and noise reducers)

Consideration for Installation of Noise Barrier

- The height of noise barrier shall be kept not more than 4m, i.e. top level at 286.4mPD, in order to maintain the overall building height of Proposed New Block of QMH (hereafter as “New Block”) and top level of the Proposed Helipad as well as effective operation of the essential A/C plant locating at roof floor of New Block with an overall consideration with possible intake location, building structure, floor finishes, concrete plinth footing, equipment dimension, acoustic enclosure, etc.

In current arrangement, the noise reduction measures are optimized with the arrangement of Proposed Helipad with GFS, building design and necessary operational requirement of the A/C plant for the New Block. Such that the GFS’s operational requirement on safety clearance under each helicopter’s hovering position could be met.

Therefore, it is inappropriate to increase further the height of noise barrier as it will subsequently raise the A/C plant level and hence cannot satisfy GFS’s requirement on safety clearance.

Window Condition of Nurse Quarters (QMH)

- All windows in Nurse Quarter A &B are already gasketted as confirmed with QMH.
From

Hospital Authority (HA)
Dear Chi-pang,

Below is HA/QMH’s response in blue text to EPD’s query item (ii) in the preceding mail. Please reply to EPD accordingly.

The Nurse Quarters A & B in Queen Mary Hospital were built in 1933 and 1957 respectively. They had been serving as quarters for nurses since until they were converted into places for temporary rest and changing rooms for doctors, nurses and supporting staff on call or on shift duties in 2002. Unlike other Government Quarters, the Nurse Quarters A & B in Queen Mary Hospital are being used solely as structural components of the hospital for its daily operation and their function is substantially different from that of a residential purpose. However, the name of the buildings, i.e., Nurse Quarters A & B has not been changed after the conversion in 2002.

The air conditioning for the Nurse Quarters A & B is provided by window-type AC and the windows are all well gasketed windows with good acoustic insulation. The hospital management will ensure the AC be constantly in operation with all the gasketed windows kept closed except for maintenance and cleaning purposes. In light of the future helicopter operations at the roof top of the New Block in Queen Mary Hospital, users of the Nurse Quarters will be reminded in the House Rule that they may be affected by the noise generated by the helicopter operations if they choose to have the windows open.

Regards

Suzanna C K Chan
SPM229
Architectural Services Department
Tel 2867 3908
From

Government Flying Service (GFS)
Dear Pang,

Thanks for your call.

EPD also called me today about the presentation format of the relevant information related to helicopter operations. Thanks for the summary as requested by EPD. Please be confirmed that this is the factual information on the technical aspects of GFS helicopter operations.

Happy New Year to you too.

Best Regards,
Cody

Lee Chi Pang
<chipang.lee@bmtglobal.com>
To
"codywong@gfs.gov.hk"
30/12/2016 19:12
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Subject
QMH - EIA (information from GFS)

REF: 9081

Dear Cody,

Further to our numerous coordination, I would like to summarize all the relevant information regarding to the GFS's helicopter operation. Grateful if you could confirm the attached information.

Should you have any queries, please feel free to contact the undersigned.

Thank you for your kind attention and happy new year.

Best regards,

CP LEE

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Environmental Impact Assessment for A Rooftop Helipad at the Proposed New Block of Queen Mary Hospital

Background Information for GFS’s New Helicopter
- The model of the New Helicopters for the replacement of the current GFS helicopter fleet is Airbus H175
- Starting in first quarter of 2018 and the full fleet replacement of new helicopters will be completed before 2024

Noise data for GFS’s New Helicopter
- Type certified noise level during approach, take-off and flyover of the Airbus H175:
  - Approach Mode: 95.1 EPNdB
  - Overflight Mode: 91.0 EPNdB
  - Take-off Mode: 89.8 EPNdB

- Reference Measurement Distances:
  With reference to the ICAO Annex 16, the reference distance with the round up figures are:
  - Approach Mode: Reference distance 120 metres;
  - Overflight Mode: Reference distance 150 metres;
  - Take-off Mode: Reference distance 150 metres.

Selection of Flight Sectors
- GFS will be the operator of the proposed QMH helipad in conveying patients/survivors from lifesaving missions to the hospital in a safe, efficient and effective manner. At the same time, it is always the GFS’s aim to minimize any disturbance to the surrounding areas during the course of actions, for day and night operations alike.

- The choice of helicopter approach and departure paths depends on the terrain/obstacles clearance as well as any ambient conditions such as wind and turbulence. The aim is to avoid any downwind operations and to minimizing crosswind operations which could undermine safety of the flight. As the actual wind conditions will vary from time to time, the proposed flight sectors are essential to offer sufficient flexibility to the flight crew in deciding the most suitable and safe flight path for approach and departure. Also, from flight operations point of view, the chosen flight path may need to be altered slightly subject to the conditions in order to cope with some in-flight situations e.g. movement of birds or unexpected localized turbulence. For departure, on the other hand, GFS internal procedures will require the aircraft to climb to 1500 feet above mean sea level and turn away from any build-up areas as soon as practicable. The flight trials at the later stage will further refine the operational procedure to ensure flight safety and minimize the noise impact to the NSRs further regardless of day or night operations.

- Taking the noise impact to the surroundings into considerations, GFS would however like to emphasize that the proposed flight sectors are the best compromise with all factors and have been kept to a minimum in size. For instance, based on the geographical locations of the high ground and build up areas in the vicinity of the helipad, the eastern sector as well as most of the southern sector will not be considered in order to balance the flight safety concerns and any possible disturbance to the neighbourhood.
Typical Flight Profile

- **Cruise / Flyover:** Typical flight height 1500ft above mean sea level with flight speed 140kts, descends 500ft/min with flight speed 100kts until 300ft above the helipad;
- **Approach:** From 300ft above the helipad, flight speed reduces from 60kts to 0kts with approach angle of 4.6 degrees within 60 sec for both North-west flight sector and South flight sector;
- **Hovering (Approach):** Achieve desirable orientation for touchdown within 5 sec., around 2.5m above helipad;
- **Touchdown:** Descends on to the helipad within 3 sec.;
- **Idling:** 5 minutes for casualty handover under normal circumstances;
- **Lift-off:** Ascends from helipad to achieve a hover before departure within 3 sec.;
- **Hovering (Departure):** Achieve desirable orientation for take-off within 5 sec., around 2.5m above helipad;
- **Take-off:** Flight speed increases from 0kts to 60kts with departure angle of 4.6 degrees within 60 sec up to 300ft above the helipad; and
- **Cruise/Flyover:** Ascends 500ft/min with flight speed 100kts until achieved typical flight height 1500ft above mean sea level, at typical flight height, the flight speed increases to 140kts (approximate 2 - 3 seconds for travelling over each NSR).

Note: It is approximate 2 – 3 seconds for helicopter travelling over each NSR during flyover/cruise mode. The minimum distance to the nearest NSR (i.e. 90m) could be achieved during cruise/flyover mode.

Quiet Approaching / Departure Procedures

- The approach and departure angles can be increased to 10 degrees for the north-west and south flight sector.

Safety Consideration During Take-off

- To ensure the flight safety of helicopter operations, accordingly to ICAO Annex 14 Volume II, in the immediate vicinity of an elevated helipad, obstacle protection for helicopters shall be provided below the helipad level. As confirmed previously, a provision of a minimum vertical clearance from the hovering position of helicopter is 10 m for flight safety reasons.

Helicopter Landing Light

- Landing lights will be switched on to illuminate the helipad only during approaching and departure. The overall operation of landing lights takes 2 minutes approximately.

Other Information

- There is no registered helicopter landing site located in the vicinity.
- There is no regular GFS helicopter flight route within the study area.
- GFS does not have any record of emergency helicopter operations within the study area.
- GFS’s Helicopter is seldom operated in full load condition.
From

Civil Aviation Department (CAD)
Dear Suzanna,

EPD’s comment (item (I)5):
As requested by EPD, appreciate if CAD could provide an endorsement letter on the proposed helicopter flight sectors.

The following table is the number of noise complaints received for TMH and PYNEH helipad in the recent 5 years (i.e. 2011 – 2015).

<table>
<thead>
<tr>
<th>Year</th>
<th>TMH</th>
<th>PYNEH</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>2012</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2013</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>2014</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>2015</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

EPD’s comment (item (I)5):
As requested by EPD, appreciate if CAD could provide an endorsement letter on the proposed helicopter flight sectors.

CAD can confirm that we do not have any comments in respect of safety on Flight Sector Zone 1 and 3 on condition that the helicopter is operated in accordance with Performance Class 1 at all times and the buildings located south of the helipad in Flight Sector Zone 3 is lower than the elevation of the helipad. However as the helipad was built in accordance with GFS specifications for Emergency Service it may be more appropriate for GFS to provide the endorsement letter.

Regards,
Alison