134th EIASC Meeting
on 17 October 2016 (Monday)
EIA report on "Kai Tak Multi-purpose Sports Complex"

Pursuant to the EIA Subcommittee meeting held on 17 October 2016, the project proponent is requested to provide the following supplementary information:

1. **Landscape and tree planting**

(i) **To provide information on the objectives (e.g. for amenity planting, as an enhancement measure to urban ecology/biodiversity, to maintain ecological connectivity, etc.) and methodology of compensatory tree planting, and grass planting in the public open space, the Main Stadium and the Public Sports Ground, including the proposed species that would be planted and the soil specifications to be adopted with justifications;**

Response:

One of the key landscape design objectives is to enhance the urban ecology and bio-diversity prevailing within the sports park.

For the urban ecology, it is necessary to pay particular attention to urban ecology in the opportunity areas afforded by the primary open space along the edges of the sports park, such as in the Neighbourhood Park, in which a dense and diverse ranged of planting will enhance the habitat development, and thereby, encourage ecological connectivity with the surrounding environment.

For the bio-diversity, the proposed planting palette has integrated a wide range of native species and non-native species, which are widely represented in Hong Kong and have adapted to the local environment. The selected species are suitable to the local environment to achieve healthy growth of planting clusters. In

addition, greening opportunities within the sports park has been maximised by providing both extensive shrub planting and tree planting with shrubs understoreys.

The landscape design strategies have been formulated based on several considerations, includes visual amenity, environmental suitability, ecological value and biological diversity. The recommended planting palette for sports park has been developed with reference to guidelines provide in; the Hong Kong Greening Master Plan (HKGMP) for Kowloon City District and Wong Tai Sin District by the Civil Engineering and Development Department (CEDD) and the Final Report on Planning, Landscape and Urban Design for Kai Tak Development by CEDD. This will ensure that the design compatibility and continuity with planting strategies in the wider district, and optimizing the ecological connectivity beyond the development area.

For the soil specification, all the soil use within the development will be fabricated soil imported to the site. Imported fabricated soil will be prepared to meet higher technical and textural standards than those currently utilised by the Architectural Service Department (ArchSD) General Specification. The benefit of the recommended particular specification for soil is to promote rapid establishment and development, and the longer term growth and health of plant material. The soil requirement in the particular specification will include enhanced textural properties and have a suitable chemical composition, as well as provide an upper limit thresholds for certain chemicals which might inhibit the achievement of the planting objectives. In addition, soil tests and inspections will be carried out to ensure the growing medium meets the requirements of the specification.

(ii) **To confirm whether pesticides would be used and/or whether Integrated Pest Management would be adopted with a view to minimizing the possible escape of residual pesticides and fertilizers in the surface runoff;**

Response:

The use of pesticides is required to ensure that turf playing surfaces are of a quality which meets international competition standards. Pest management will be in accordance with best local and international practice. While use and storage of pesticides and fertilizers will be in accordance with the requirement by the Agriculture, Fisheries and Conservation Department (AFCD); surface water run-off from the turf area will be intercepted and re-used and no residual fertilizers or pesticides will be externally discharged.

(iii) **To clarify the source of soil used and the potential impact on soil moving operations involved in the project;**

Response:

Suitability fabricated soil is readily available from reliable sources close to Hong Kong. This will minimise embedded energy environmental implications of transportation. Transportation-related impacts will be addressed through appropriate management and control measures such as dust sheet covering for transportation vehicles.

2. Air quality and ventilation

(iv) **To provide information on the air pollution implications to the venue users and the surrounding sensitive receivers based on the findings of the air ventilation assessment (AVA) carried out for the interior and exterior of the Main Stadium, Sports Complex and open space of the project site, including under both calm and strong wind conditions;**

Response:

The AVA results for winter and summer times are at Appendix 2.1. According to the AVA result, there is no stagnant wind situation (note: stagnant situation represented by deep blue color in contour) for area immediate to the proposed development under both winter and summer times. The wind speed generally ranges from 1.5m/s to 3m/s.

(v) **To explore other measures to improve air quality and to actively pursue the best practicable means, including using de-NOx paints to minimize air quality impact;**

Response:

The buildings of the Project will achieve "Excellent Class" of the IAQ Objectives. To ensure excellent indoor air quality, the following design measures will be incorporated:

1) Use of low-emitting materials, paints (including de-NOx paints as appropriate), sealants and adhesive;
2) High-performance filtration capable of effective filtering of Respirable Suspended Particulate (PM_{10}) and Fine Suspended Particulate ($PM_{2.5}$);
3) High-performance air treatments (UV Light Air Sterilizer, Activated Oxygen Air Purifier and Electronic Air Cleaner);
4) Sufficient fresh air rate based on ASHRAE 62.1.

3. Sustainability

(vi) **To provide information on those studies conducted that have explored elements of sustainability in the design of the project (e.g. renewable energy);**

Response:

A sustainability strategy study has been conducted and the Project will embrace a wide range of site-specific sustainability features to minimize energy, water use and carbon/ greenhouse

gas (GHG) emissions, whilst providing adequate environmental quality. The measures will be adopted include the following:

Enhancement of microclimate and creation of a comfortable outdoor environment

1) Provide appropriate shading by means of tree canopies or weatherproof canopies
2) Cool materials
3) Water features
4) A large variety of greenery type and adequate area

Water conservation

5) Native and/ or adapted species
6) Efficient irrigation technologies such as drip feed and intelligent irrigation control
7) Low-flow fixtures
8) On-site use of recycled wastewater

Green operation

9) Waste reduction and recycling measures
10) Implementation of internationally recognized environmental management
11) Procurement of recycled or other green materials

4. Minimization of carbon footprint

(vii) **To provide information on the proposed measures to minimize carbon footprint, and specifically, to advise if there will be any strategies/measures for generating renewable energy, recovering and reusing waste heat, reducing peak energy or heat use, decarbonization etc.;**

Response:

The following measures will be adopted to minimize carbon footprint:

1) EV charging facilities
2) High performance building envelope

3) Passive design to utilise natural lighting and ventilation
4) High-efficiency building systems - DCS, energy recovery, displacement ventilation, demand-controlled ventilation, free cooling, LED lighting, automatic lighting control, lift regenerative system, etc.
5) Application of solar renewables – PV, BIPV, solar hot water and solar lighting
6) Low-embodied energy materials – sustainable timber, regional materials and recycled materials

5. Visual impact

(viii) **To provide information on any proposed measures to minimize visual impact and enhance visual quality of the Multi-purpose Sports Complex given its high visual sensitivity as well as to enhance its iconic feature in the district; and**

Response:

In consideration of the visual impact of the venues, we have reviewed the associated planning and design parameters that will drive the design. We have focused on the following key areas to ensure the visual impact is positive, attractive and overall an enhancement to the neighborhood and environment:

<u>Design intent of the Main Stadium</u>

With a capacity of 50,000 spectators the main stadium is the key component in the sports park and hence a large-scale building. We have carried out studies to determine the appropriate scale, layout and height for the main stadium, which involved benchmarking against similar international stadia (refer to Appendix 4.1). We concluded that the design intent of the main stadium is to create a state-of-art landmark venue for international events, to complement the harbour front while conforming to the height limit. The scale,

facilities and features of the building need to be commensurate with the above objectives.

Design intent of the Indoor Sports Centre Building

The statement of intent for the Indoor Sports Centre Building includes the following:

1) An appropriate building mass to minimize the scale while providing the key functionalities;
2) Articulation of the facades to respond to orientation and functionality;
3) Smooth transition into the environs of the site/ neighbourhood;
4) Green sustainable roof; and
5) Selection of materials to minimize light interference from building structures to the neighbourhood.

Planning objectives for the sports park

The planning objectives focus on ensuring that the overall development enhances the waterfront, the neighborhood and the specific setting of the site against Lion Rock and Victoria Harbour:

1) Create a new Hong Kong landmark designed for international sports events and at the same time to be widely used as a community sports park;
2) Enhance the connectivity of the site, its waterfront and its environs with the neighbourhood and communities;
3) Integrate the site and the planned facilities with the harbourfront to facilitate improved access to the water;
4) Promote the creation of a vibrant neighbourhood environment with a real sense of place and a unique character by providing well designed facilities and visual amenities;

5) Facilitate a safe and efficient circulation system through an efficient and logically laid-out pedestrian and traffic network;
6) Promote a balance between built form and open space to satisfy a wide range of uses;
7) Maintain and enhance view corridors to the Lion Rock and Victoria Harbour;
8) Provide a unique and significant sense of arrival; and
9) Encourage the design to re-captivate the site's past memory as the old Kai Tak Airport while without compromising the focus of the development is a sports park.

Summary

The site is a valued piece of Hong Kong's landscape - not specifically because of any landforms or natural features within the site boundary but since it is enhanced by the majesty of the waterfront and Victoria Harbour. The sports park should improve the visual impact and amenity impact because its design intention is to enhance and not to interfere with Hong Kong's urban skyline and of the Lion Rocks natural backdrop through a sensitive approach to managing scale, views and by the application of an appropriate architectural character. The planning and design intent of the sports park will improve the attractiveness of the setting and create a unique sense of place and identity.

6. Geotechnical Investigation Report

(ix) **To provide geotechnical investigation reports to ascertain whether there is marine mud at the subsurface, and provide information on the management and disposal of marine mud if excavation is required;**

Response:

The G.I. works are currently in-progress, there will be in total 80 nos. boreholes. For the 42 nos. borehole logs which have been examined up to now, marine deposit is found in 4 of them. The found marine deposit is at localised borehole locations along the western portion of the site and at around 10m below existing ground level. As there will be no deep excavation for the project, excavation/ disposal of marine deposit is not envisaged. Refer to Appendix 5.1 for G.I. location plan.

(x) **To provide information on any proposed measures to minimize the amount of construction and demolition materials generated; and**

Response:

Adoption of precast / prefabricated elements is the key measure to reduce construction and demolition materials such as wooden formwork, bamboo scaffolding and waste materials induced by rebar fixing and concreting works.

(xi) **To explore the use of Building Information Modeling (BIM) in the design and construction stages.**

Response:

BIM is used since the reference design stage and will continued to be adopted throughout the subsequent design and construction stages in order to:

1) Facilitate coordination and visualization;
2) Encourage pre-cast and pre-fab elements;
3) Reduce construction and demolition waste.

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