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ACE-EIA Paper 5/2016
For advice on 17 October 2016

Environmental Impact Assessment Ordinance (Cap. 499)
Environmental Impact Assessment Report

Kai Tak Multi-purpose Sports Complex

PURPOSE

This paper presents the key findings and recommendations of the Environmental Impact Assessment (EIA) report on "Kai Tak Multi-purpose Sports Complex" (hereafter known as "the Project") submitted under section 6(2) of the Environmental Impact Assessment Ordinance (EIAO) (Application No. EIA-247/2016). The Architectural Services Department (ArchSD) (the applicant) and their consultants will present the report at the meeting of the EIA Subcommittee.

ADVICE SOUGHT

2. Members' views are sought on the findings and recommendations of the EIA report. The Director of Environmental Protection (DEP) will take into account comments from the public and the Advisory Council on the Environment (ACE) in deciding whether or not to approve the EIA report under Section 8(3) of the EIAO.

BACKGROUND

3. The Project has been planned as a key component of the Kai Tak Development (KTD). The environmental impacts of the Project have been broadly addressed in the Schedule 3 EIA report for the KTD, which was approved under the EIAO on 4 March 2009. The approved Schedule 3 EIA report concluded that insurmountable environmental impacts associated with the MPSC are not

anticipated, whilst detailed environmental implications of the Project should be further investigated in a separate EIA under the EIAO.

4. The applicant submitted the EIA report for the Project for approval. The DEP, in conjunction with the relevant authorities, considered that the EIA report met the requirements in the EIA Study Brief and the Technical Memorandum on EIA Process TM, for the purpose of exhibiting the report for public inspection, under Section 7(4) of the EIAO.

NEED FOR THE PROJECT

5. Hong Kong people are becoming more passionate about sports and our athletes have been making encouraging achievements in recent years in the international arena. However, there is a general shortage of public sports facilities and major stadium venues in Hong Kong. To meet the community demands for more sports facilities and help nurture local athletic talents, the Project was initiated in line with the Government's policy objective for sports development, i.e. to promote sports in the community, support elite sports and make Hong Kong a centre for major international sports events. The Multi-purpose Sports Complex (MPSC) at Kai Tak will provide multi-purpose sports venues for hosting major local and international sports events, and facilities for school sports competition and training.

ENVIRONMENTAL BENEFITS

6. Opportunities have been taken at the Project's design, construction and operation stages in incorporating positive environmental elements into the Project, including:

(i) Closely connected to the community at the Metro Area, the Project area will be developed as the Kai Tak Sports Park with large open space of landscape features and extensive greenery for the public to enjoy.

(ii) With a state-of-the-art retractable roof for the Main Stadium and a spacious Sports Park, the MPSC will become a landmark feature with strong visual focus-of-attention along the Harbour view of Hong Kong.

(iii) To promote eco-friendly transport and design, the MPSC will provide electric vehicle (EV) charging facilities for at least one-third of the car

parking spaces for private cars. An intercepting drainage system will be provided to minimize the escape of residual fertilizers and pesticides from the natural turf as surface run-off at the Main Stadium and the Public Sports Ground (if natural turf will be adopted as the default playing surface). Also, a rainwater harvesting system will be adopted for water recycling as far as practicable.

DESCRIPTION OF THE PROJECT

7. The project site covers a land area of about 28.2 hectares situated in the North Apron Area of the former Kai Tak Airport. The scope of the Project includes a multi-purpose complex comprising a 50,000-seat Main Stadium, a 7,000-seat Public Sports Ground, an Indoor Sports Centre, and other ancillary/supporting facilities such as car parks, a hotel, office area for sports-related organizations and a commercial area. While priority will be given to major sports events, non-sporting events such as concerts, exhibitions, and carnivals, etc. may also be held in the Main Stadium. The layout plan of the Project is shown in **Figure 1**.

8. The Project is classified as a designated project by virtue of items O.6 and O.7 of Part I, Schedule 2 of the EIAO, extracted below for easy reference:

(i) Item O.6 – "An open air concert venue with a capacity to accommodate more than 10 000 persons."; and

(ii) Item O.7 – "An outdoor sporting facility with a capacity to accommodate more than 10 000 persons".

CONSIDERATION OF ALTERNATIVE OPTIONS

9. The EIA report has considered alternative options for the development of the Project, including site locations and orientation, construction methodologies and programme, in order to avoid and minimize environmental impacts. The environmental benefits and dis-benefits of the options have been evaluated. The recommended options of various project items have taken into account environmental considerations, site constraints, other factors such as operational requirements, and engineering considerations. Some of the key approaches that have been adopted by the applicant to avoid or minimize environmental impacts are summarized as below:

Avoidance and Minimization of Impacts

(i) The Main Stadium is located at the waterfront and the spectator stand of the Public Sports Ground is orientated towards the MPSC to minimize noise impact on the future residents in the neighbourhood.

(ii) To reduce noise impacts arising from the sports and musical events at the Main Stadium, acoustic designs for the Main Stadium, including a sound-proofing retractable roof, double acoustic doors, etc. have been adopted.

(iii) Precast construction units (e.g. concrete elements) will be used as far as possible to avoid noise and dust impacts arising from on-site construction activities.

(iv) The Project site will be divided into smaller work zones and construction works will be carried out in phases to minimize concurrent polluting activities.

(v) Fitting-out will largely be carried out inside completed building envelops and hence shielded so as to minimize noise and lighting impacts during construction phase.

SPECIFIC ENVIRONMENTAL ASPECTS TO HIGHLIGHT

Noise Impact

Operation Phase

10. For sports and musical events at the Main Stadium, the EIA predicted that the operational noise levels at the representative noise sensitive receivers (NSRs) during daytime/evening time period will comply with the relevant noise criteria even with a fully-opened retractable roof which is designed primarily to cater for inclement weather conditions. If needed, the retractable roof could be closed or partially closed to further reduce noise emissions.

11. Should the future operator plan to host musical events at the Main Stadium that might extend beyond 11 p.m., the operator will have to ensure that the noise impacts arising from the said events will comply with the requirements of the Noise Control Ordinance.

12. Events held in the Main Stadium may require crowd dispersal after 11 p.m. Specific routes are designated for dispersing spectators underneath the podium deck of the Stadium complex and along covered walkways as far as possible at street-level to nearby MTRC stations to minimize exposure to nearby residential buildings. The EIA has demonstrated that noise nuisance from human activities along these designated dispersion routes would not cause annoyance to nearby residents.

13. With the implementation of the recommended mitigation measures such as enclosures and silencers, the noise levels from the fixed plant sources such as the building services system of the Project will comply with the noise criteria for day time, evening and night-time at all representative NSRs.

14. For traffic noise impact, the EIA estimated that the traffic induced by the Project would contributes less than 1.0dB(A) on the existing noise sensitive receivers (NSRs) which is considered insignificant as compared to the prevailing noise level exceeding the 70dB(A) criterion due to existing heavy traffic on Prince Edward Road East and Sung Wong Toi Road etc. For a planned housing site and a Comprehensive Development Area (CDA) along Sung Wong Toi Road, the EIA demonstrated that the noise impacts from traffic induced by the Project would not create difficult constraints to the development and could be mitigated by the future developers to comply with the relevant established noise criteria for protecting the future NSRs.

Construction Phase

15. For construction noise, the TM stipulates that the daytime construction noise criterion of 75 dB(A) (for all domestic premises including temporary housing accommodation, as well as hotels and hostels) on any days not being a general holiday shall be met as far as practicable. The EIA indicated that during construction of the Project, there would be other projects undertaking construction works concurrently in the vicinity. Under the worst case scenario, the EIA predicted that the cumulative construction noise impact on three nearby planned residential/CDA sites may not be able to be contained within the day time construction noise criterion for some time periods, mainly due to the construction noise caused by other concurrent projects. In accordance with the TM requirement, the project proponent is required to exhaust all practicable mitigation measures to minimize the construction noise impact. According to the EIA report, the applicant has explored and where practicable incorporated all possible mitigation measures,

which included the use of quieter plant, movable noise barriers, good site practices and proper scheduling of noisy construction activities. The applicant has undertaken to review the construction programme at the implementation stage and carry out noise monitoring during construction to ascertain the impact during the overlapping period between the population intake of the concerned planned NSRs and the construction works of the Project, and to ensure that follow-up actions such as advancement of noisy construction activities as necessary will be undertaken to minimize nuisance to the NSRs. With all these measures in place, adverse residual construction noise impact arising from the Project would be contained as far as practicable.

Landscape and Visual Impacts

16. The site is currently used partly as construction works areas and partly as temporary car parks, with limited landscape and visual characters. The Project provides a clear opportunity for enhancement by undertaking significant tree planting and public space creation. Approximately 160 trees will be lost during the construction of the Project, but none of them are of any importance or with high amenity value. The felled trees will be fully compensated for within the Project boundary by future extensive landscaping and greening at the Sports Park.

17. The visual intrusion arising from the Stadium and building structures will be mitigated by suitable architectural designs with extensive tree-planting and greening on walls and roofs that respond to the existing and planned urban context. The landscaped deck will also provide an attractive open space and integrate all the buildings within the MPSC development into the Sports Park.

18. For the glare impact, the EIA predicted that no significant discomfort glare condition is anticipated at all representative visual sensitive receivers (VSRs). To minimize potential glare impact on the VSRs, mitigation measures have been recommended such as use of adjustable shields for lighting in the construction site, adoption of lighting design which will not directly point towards sensitive receivers, and switching off of all external wall lighting (except emergency lighting) after 11 p.m. automatically, etc.

Air Quality Impact

<u>Operation Phase</u>

19. The air quality modelling results indicated that the existing background

annual nitrogen dioxide (NO_2) level already exceeded the Air Quality Objective (AQO). The Project itself is not an air pollution source and thus will not contribute any direct air quality impacts. The only indirect air pollution due to the Project is the vehicular emissions from traffic induced along the routes leading to and from the MPSC during major events. Practical mitigation measures have been recommended for implementation under the Project to reduce the NO_2 emission from the induced traffic, which include:

(i) provision of minimal car parking spaces at the MSPC to encourage the use of mass transport system which is within walking distances;

(ii) provision of EV charging facilities in at least one-third of the car parking spaces for private cars, and EV charging enabling facilities for the remaining car parking spaces for private cars to facilitate future provision of the EV charging facilities;

(iii) giving priority to EV using the car parking spaces as far as practicable;

(iv) use of electric saloon cars and coaches in the transport services for staff and/or hotel guests under normal operation (if such services are provided by the future operator); and

(v) restricted entry of heavy vehicles during peak hours (7 a.m. to 10 a.m. and 4 p.m. to 7 p.m.) in weekdays, except for major events (i.e. with more than 20,000 persons).

20. With these mitigation measures, the EIA estimated that the corresponding vehicular nitrogen oxides (NOx) emissions arising from the Project is about 1.36% of the total vehicular emissions in the study area for the worst assessment year (2023). As such, the EIA concluded that the residual impact of annual NO_2 is predominantly caused by existing background concentrations unrelated to this Project, and the impacts caused by this Project itself are minimal. With the implementation of the air quality improvement programmes currently being undertaken by the Government, continuous air quality improvement in the territory is expected.

21. Moreover, the contour plots from the air quality modelling indicated that the Project will not cause any noticeable increase in the exceedance zones of annual NO_2, and therefore similar size of population would be affected with or without the Project. The EIA thus concluded that the residual air quality impact caused by the

Project will not cause long term serious environmental implications and justified as required by the TM. Also, the long-term attainment of AQOs is not expected to be compromised with implementation of the Project.

Construction Phase

22. During construction, fugitive dust is the major concern. The EIA predicted that with the implementation of recommended mitigation measures including regular watering of the construction site and good site practices in the Air Pollution Control (Construction Dust) Regulation, the impacts on all representative air sensitive receivers (ASRs) will comply with the TM criteria.

Other Environmental Impacts

23. Other impacts including hazard to life, water quality, sewerage and sewage treatment implications, waste management, land contamination, ecology and cultural heritage are relatively minor and have also been addressed in the EIA report. With the implementation of recommended mitigation measures, the Project will comply with the relevant requirements under the TM.

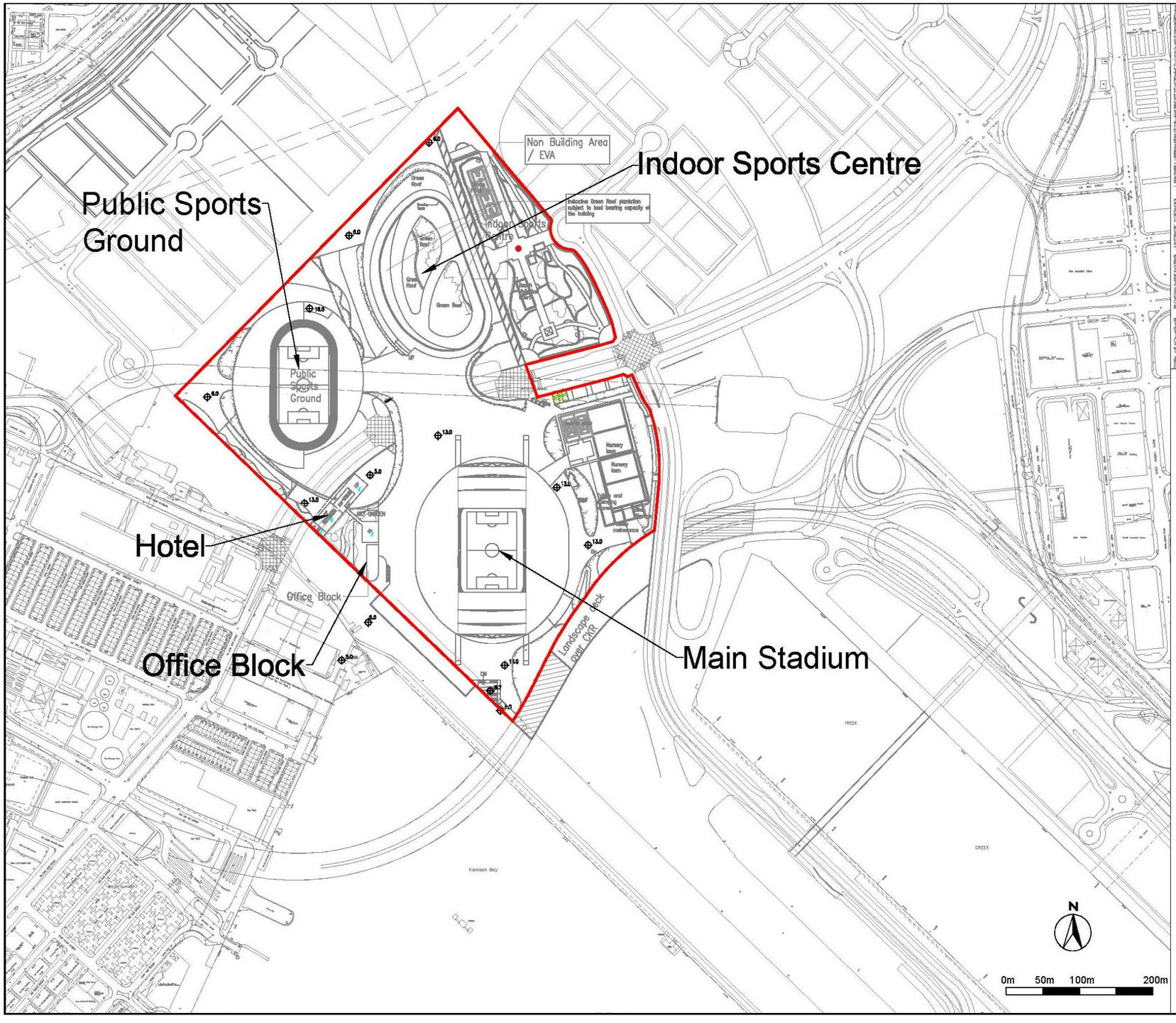
ENVIRONMENTAL MONITORING AND AUDIT

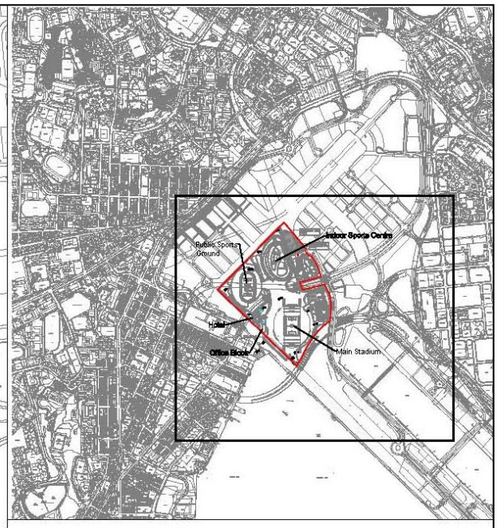
24. The EIA report includes an Environmental Monitoring and Audit (EM&A) Manual which recommends an EM&A programme during the construction and operation phases of the Project. Key recommended EM&A requirements cover air quality, noise, water quality, landscape and visual issues.

PUBLIC CONSULTATION

25. The applicant has made the EIA report, EM&A Manual and Executive Summary available for the public inspection under the EIAO from 1 September 2016 to 30 September 2016. The public comments received will be summarized in a gist to be provided to Members separately.

October 2016
Environmental Assessment Division
Environmental Protection Department





Legend:

The Project Site

Project Title : **Kai Tak Multi-purpose Sports Complex**

Figure 1 – Layout Plan of Kai Tak Multi-purpose Sports Complex

Application No.: EIA - 247/2016
(Note: This figure is extracted from the EIA Report)