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**ACE-EIA Paper 7/2013**  
***For advice on 13 September 2013***

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

**Environmental Impact Assessment Report**

**West Kowloon Cultural District**

**PURPOSE**

This paper presents the key findings and recommendations of the Environmental Impact Assessment (EIA) report for the proposed West Kowloon Cultural District (WKCD) (hereafter known as “the Project”) submitted under Section 6(2) of the Environmental Impact Assessment Ordinance (EIAO) (Application No. EIA-215/2013). The West Kowloon Cultural District Authority (WKCDA) (the applicant) and their consultants will present the EIA report at the meeting of EIA Subcommittee, if necessary.

**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 WKCDA proposes to develop an integrated arts, cultural and entertainment district with mixed uses of commercial and residential developments at the southern tip of the West Kowloon reclamation area. The WKCD will be developed in phases with Phase 1 to be developed from 2013 to 2020 and Phase 2 to be developed beyond 2020.

4. The WKCD has conducted public engagement exercises between October 2009 and October 2011 to collect views from the public and the stakeholders on the planning and design process of the WKCD and to identify optimal development scheme for the WKCD. As an outcome, the WKCD will provide core arts and cultural facilities (CACF) including performing arts venues, museum and exhibition centre; other arts and cultural facilities including arts and craft studios; and infrastructure and supporting facilities. **Figure 1** shows the proposed general layout of the Project.

5. The applicant has submitted the EIA report for the Project. The DEP, in conjunction with the relevant authorities, considers that the EIA report meets the requirements of the EIA Study Brief and the Technical Memorandum on EIA Process (TM).

## NEED FOR THE PROJECT

6. The applicant has advised that the Project is required to meet the long-term infrastructural and development needs of Hong Kong's arts and culture. The Project also serves to meet the acute shortage in performing arts venues. The establishment of the CACF and related facilities will form the heart of the arts and cultural community in Hong Kong and will provide and strengthen the platform for showcasing different forms of arts and culture as well as promote the creation, communication and exchange of arts and cultural ideas.

## ENVIRONMENTAL BENEFITS

7. The EIA report states that the key environmental benefits with the Project in place include:

- (i) Provision of public open space of about 23 hectares (ha) in area within the WKCD with extensive tree planting and various landscape and amenity planting that will enhance the environmental setting, increase the amount of green space, and improve the landscape and visual environment of the West Kowloon area in the long run.
- (ii) Provision of new aesthetic structures that complement the surroundings with the CACF of WKCD forming future signature buildings and provision of landscaping elements such as green roof that will enhance the landscape and visual aspect of the WKCD development.

- (iii) Adoption of a transportation system that focuses on pedestrianization at the ground level and a vehicular network at the basement level that will avoid road traffic noise impact. This will also increase availability of usable space at ground level for provision of landscaping and planting within the WKCD.

## **DESCRIPTION OF THE PROJECT**

8. The Project comprises the development of the WKCD, as described in paragraphs 3 and 4 of this paper, on a reclaimed land of about 40 ha at the south of Austin Road West and the Western Harbour Crossing toll plaza of which, about 23 ha will be used as public open space. The Project also includes the construction and operation of a flyover of about 200 m in length across the Western Harbour Crossing toll plaza, and an underpass road of about 1.4 km in length at the basement level serving the planned WKCD.

9. The Project constitutes a designated project (DP) under Item 1 of Schedule 3 of the EIAO (i.e. “*Engineering feasibility study of an urban development project with a study area covering more than 20 ha.*”). The Project also includes the following two DPs under Part I, Schedule 2 of the EIAO which require an environmental permit for their construction and operation. **Figure 2** shows the individual DPs of the WKCD.

- (i) Item A.8 – “*A road bridge more than 100 m in length between abutments.*”
- (ii) Item A.9 – “*A road fully enclosed by decking above and by structure on the sides for more than 100 m in length.*”

## **CONSIDERATION OF ALTERNATIVE OPTIONS**

10. The EIA report has considered various options for the development of the WKCD, including alternative development options, construction methods and sequence of works, to avoid and minimize the environmental impacts. The environmental benefits and dis-benefits of the options have been evaluated. The recommended options have taken into account environmental considerations, site constraints and comments received by the WKCDA during the public engagement exercises of the Project.

11. The applicant has advised that avoidance and minimization of environmental impacts have been the key considerations, among others, throughout the development and design of the Project. Some of the key approaches that have been adopted in the Project by the applicant to avoid and minimize the environmental impacts are summarized below:

### **Avoidance of Impacts**

- (i) To avoid road traffic noise impact during operation of the WKCD on the noise sensitive receivers (NSRs), the proposed main vehicular network of the WKCD is located to the basement level as underpass road.
- (ii) To avoid helicopter noise to the existing and planned NSRs within and near the WKCD, helicopter landing facilities will not be provided at the WKCD.
- (iii) To avoid rail noise and visual impacts, elevated automatic people mover will not be provided at the WKCD.

### **Minimization of Impacts**

- (i) To minimize extent and magnitude of construction impacts, phased construction and proper scheduling of works for the facilities of the WKCD will be adopted. For example, the WKCD basement and underpass road will be constructed as subdivided zones at different times with reduced number of construction plants instead of construction as one whole entity at the same time to minimize construction dust and noise impacts. Early construction of the park is scheduled to allow early implementation of landscape amenity and reduction of visual impact due to construction of other parts of the WKCD.
- (ii) To minimize water quality impact during construction of the Project, dredging operation will not be adopted for the marine works.
- (iii) To minimize noise from open air entertainment activities, the proposed outdoor theatre is located away from the planned residential developments within the WKCD.

## **SPECIFIC ENVIRONMENTAL ASPECTS TO HIGHLIGHT**

### **Air Quality Impact**

12. For the operational phase, the EIA report shows that the Project would only have minor contribution to the predicted air quality impacts at the air sensitive receivers (ASRs) due to vehicular emissions from the proposed underpass road and flyover serving the WKCD. The predicted cumulative hourly and daily nitrogen dioxide ( $\text{NO}_2$ ) contributions are mainly due to the background concentration and the nearby existing marine traffic emissions. The EIA predicts that the cumulative respirable suspended particulates (RSP), sulphur dioxide ( $\text{SO}_2$ ) and  $\text{NO}_2$  concentrations for all the identified ASRs comply with the prevailing Air Quality Objectives (AQOs).

13. The Project itself does not generate any odour impact. The EIA report has assessed the potential odour impact from the New Yau Ma Tei Typhoon Shelter (NYMTTS) on the Project. Major odour sources are identified to be the polluted discharges from the Cherry Street Box Culvert (CSBC) and the Jordan Road Box Culvert (JRBC) which are located over 1.5 km and 600 m away from the nearest planned ASR of the Project respectively. With the implementation of the planned construction of a new dry weather flow interceptor (DWFI) at CSBC and improvement works for the existing DWFIs upstream of CSBC and JRBC by the Drainage Services Department (DSD), the predicted worst-case odour concentrations within the WKCD would range from 2.4 to 8.9 odour units (ou) for planned residential ASRs and from 1.9 to 13.7 ou for non-residential ASRs. The TM odour criterion is 5 ou based on an averaging time of 5 seconds.

14. The findings of residual odour impact are based on a conservative assessment approach with the assumption that odour from the NYMTTS is continuously released throughout the day at the same odour emission rates that were obtained during the odour sampling on hot summer days. Moreover, the breakdown of odour modelling results indicates that exceedances of odour criterion are predicted to occur up to 33 hours per year (0.4% of the time in a year) for residential ASRs and up to 213 hours per year (2.4% of the time in a year) for non-residential ASRs. The residual odour impacts are evaluated in the EIA report in accordance with the TM and are considered acceptable. The EIA has recommended odour monitoring to monitor the potential odour situation.

15. For construction phase, with the implementation of dust control measures including watering for active construction areas once every working hour, the mitigated worst-case dust levels at all the identified ASRs comply with the criteria of hourly, daily and annual total suspended particulates (TSP).

16. While the Legislative Council passed the Air Pollution Control (Amendment) Bill 2013 on 10 July 2013 to adopt the new AQOs with effect from 1 January 2014, for the purpose of assessing the air quality impacts under the EIAO, consideration of the assessment criteria would be based on the AQOs prevailing at the time of the decision.

## Noise Impact

17. During the operational phase, the cumulative traffic noise impact is predicted with road traffic noise exceedance of up to 2 dB(A) at the planned residential developments within the WKCD if no mitigation measures are put in place. With the proposed at-receiver noise mitigation measures including shielding by balcony, adverse road traffic noise impact is not anticipated.

18. Ground-borne rail noise impact from the existing Kowloon Southern Link, Airport Express and Tung Chung Line as well as the planned Express Rail Link on the proposed performing arts venues are predicted (exceedances of ground-borne noise criteria of  $L_{max}$  25 dB(A) by 7 dB(A) to 31 dB(A)). With practicable noise mitigation measures in place including building isolation and box-in-box installation for the venues (noise reduction of up to 35 dB(A)), adverse ground-borne noise impact is not anticipated.

19. For marine traffic noise, the EIA indicates that there will be potential noise nuisance caused by marine traffic from the nearby China Ferry Terminal to the eight planned residential NSRs facing southern waterfront. These buildings will be designed to avoid use of sensitive façades with openable window facing the noise sources, and adverse marine traffic noise impact to the planned residential developments of the WKCD is not anticipated.

20. For construction noise, with the implementation of a series of noise mitigation measures including use of quieter powered mechanical equipments (PMEs), movable noise barriers and enclosures for various construction plants, the resulting noise levels at most of the NSRs would comply with the TM criteria except for one residential premises and two existing schools located in close proximity to the Project site. The exceedance at the residential premises will be 1 dB(A) for duration of about 1 month. As for the two schools, exceedance ranging from 1 to 11 dB(A) would be expected during examination period. The longest duration of exceedance would be up to 27 months, in which exceedance of more than 5 dB(A) would last for 6 months. Nevertheless, these schools have already been installed with noise insulation windows and equipped with air-conditioners, adverse construction noise impact is not anticipated. All practicable noise mitigation measures have been exhausted and the TM

requirements are considered met.

## **Water Quality Impact**

21. Dredging of marine sediment and associated water quality impact are avoided through alternative construction methods for the Project. With the implementation of the mitigation measures including silt curtain to enclose the marine works such as seawall modification and installation of marine piles, no unacceptable water quality impact is anticipated during construction of the Project.

22. During the operational phase, the cumulative water quality impact from the water discharges of the proposed district cooling water system for the WKCD facilities together with the existing cooling water systems will comply with the relevant water quality standards.

## **Landscape and Visual Impacts**

23. There are no Champion Trees and Registered Old and Valuable Trees identified within the Project site. During construction, about 1,000 trees of common species will be affected by the Project. Of these, about 190 trees will be retained in situ, about 120 trees will be transplanted, and the remaining 690 trees will be felled. The felled trees will be compensated in terms of both quality and quantity with a replanting ratio of not less than 1:1.

24. During operation of the Project, landscape and visual mitigation measures including extensive tree and amenity planting at the open space and along waterfront, provision of green roof and terrace garden at the buildings, aesthetic design of building structures, and integration of ventilation shafts of the WKCD basement with the buildings, etc. will be implemented. With the above mitigation measures in place, the landscape and visual impacts of the Project are considered acceptable and beneficial in the long term.

## **Other Environmental Impacts**

25. Other environmental impacts including sewerage and sewage treatment, waste management, land contamination (due to future demolition of underground fuel oil storage tanks at the Tsim Sha Tsui Fire Station) and ecology have been addressed in the EIA report. With the implementation of the recommended mitigation measures, the Project will comply with the relevant requirements under the TM.

## **ENVIRONMENTAL MONITORING AND AUDIT**

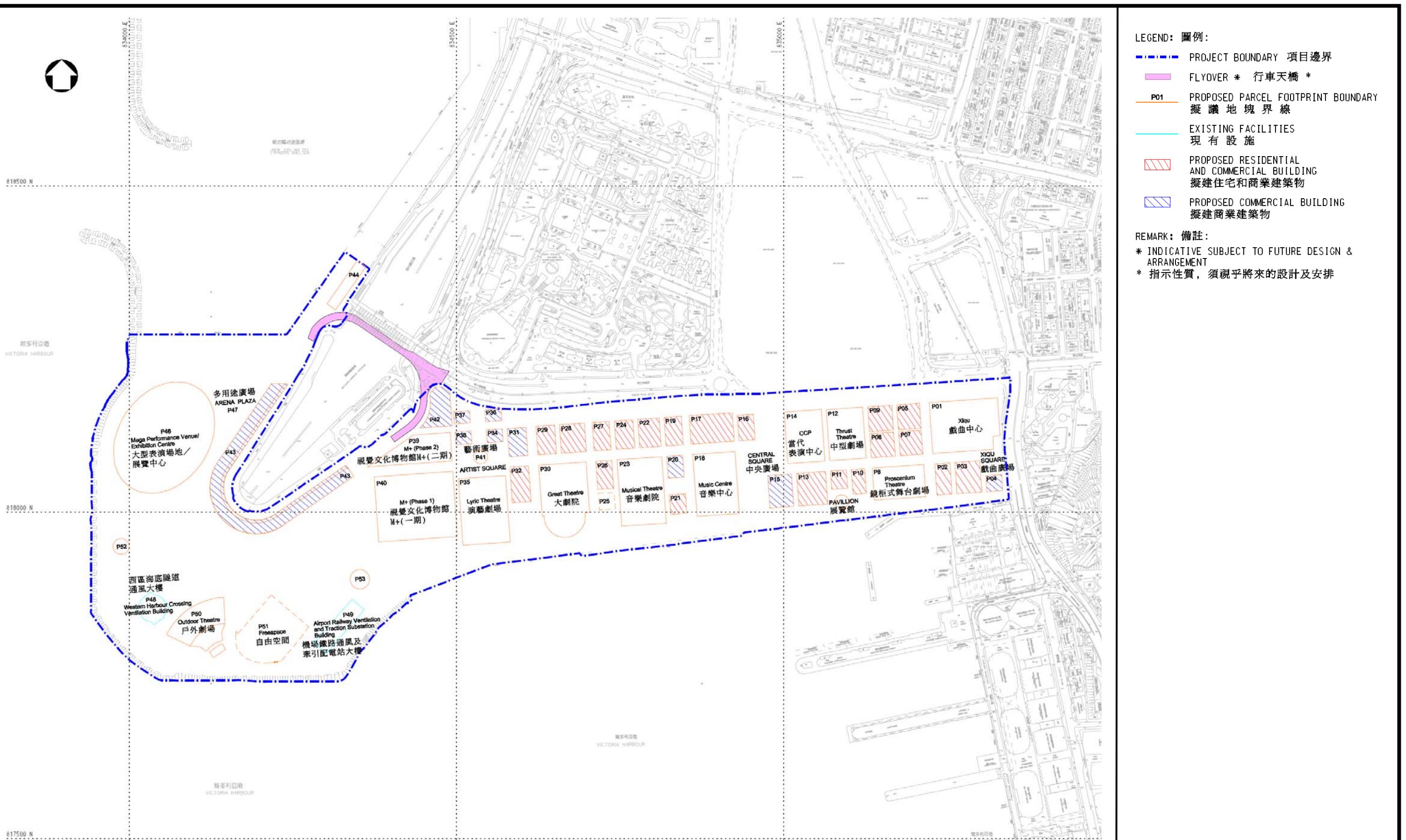
26. The EIA report includes an Environmental Monitoring and Audit (EM&A) Manual which recommends an EM&A programme during the construction and operational phases of the Project. Key recommended EM&A requirements cover dust, noise and water quality during the construction phase, and odour during the operational phase of the Project.

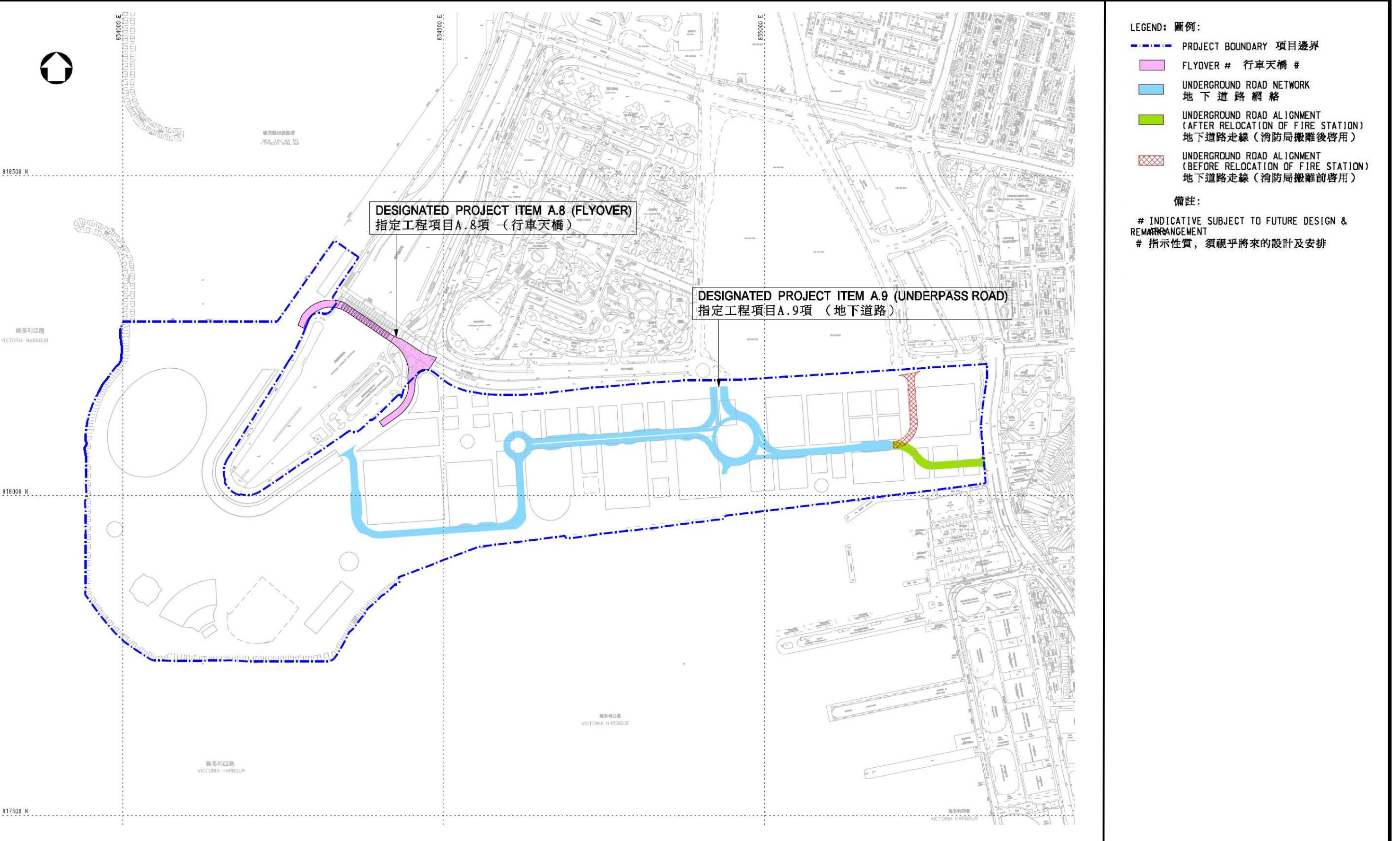
## **PUBLIC CONSULTATION**

27. The applicant has made the EIA report, EM&A Manual and Executive Summary available for public inspection under the EIAO from 23 July 2013 to 21 August 2013. During this inspection period, a total of two public comments were received by the Environmental Protection Department. The main concerns raised by the public are related to the dust and noise issues during construction phase of the Project.

**August 2013**

**Environmental Assessment Division  
Environmental Protection Department**





**Project Title: West Kowloon Cultural District**

**Figure 2: Location of Designated Projects  
(based on Figure 2.1 of the Executive Summary of the EIA Report)**

**Application No.: EIA-215/2013**

