

## **Environmental Impact Assessment Ordinance (Cap. 499), Section 5 (7)**

### **Environmental Impact Assessment Study Brief No. ESB-205/2009**

**Project Title :** **Central Police Station Compound Conservation and Revitalisation**  
**(hereinafter known as the "Project")**

**Name of Applicant :** **The Hong Kong Jockey Club Charities Trust**  
**(hereinafter known as the "Applicant")**

#### **1. BACKGROUND**

- 1.1 An application (No. ESB-205/2009) for an Environmental Impact Assessment (EIA) study brief under section 5(1) of the Environmental Impact Assessment Ordinance (EIAO) was submitted by the Applicant on 29 April 2009 with a project profile (No. PP-382/2009) (the Project Profile).
- 1.2 The scope of the Project is to implement suitable adaptive re-uses to revitalize the Central Police Station Compound (CPSC), as shown in Figure 1 in Appendix A, as a space for cultural and leisure activities for the public to enjoy, while conserving their unique heritage features, with the elements described below :
  - (i) repair and alteration of certain existing buildings and structures in the CPSC;
  - (ii) construction of new structure(s) including possible new or improved pedestrian links; and
  - (iii) installation of ancillary utilities and electrical and mechanical works within the CPSC.
- 1.3 The Project is a designated project (DP) under Item Q.1 in Schedule 2 of the EIAO – all projects including earthworks and other building works partly or wholly in an existing or gazetted site of cultural heritage.
- 1.4 The site of cultural heritage for this Project includes the 3 numbers of Declared Monuments in the CPSC, i.e. the Central Police Station Compound, the Former Central Magistracy and the Victoria Prison Compound.
- 1.5 Pursuant to section 5(7)(a) of the EIAO, the Director of Environmental Protection (the Director) issues this EIA study brief to the Applicant to carry out an EIA study.
- 1.6 The purpose of this EIA study is to provide information on the nature and extent of environmental impacts arising from the construction and operation of the Project and related activities that take place concurrently. This information will contribute to decisions by the Director on :
  - (i) the overall acceptability of any adverse environmental consequences that are likely to arise as a result of the Project;
  - (ii) the conditions and requirements for the detailed design, construction and operation of the Project to mitigate against adverse environmental consequences wherever practicable; and

- (iii) the acceptability of residual impacts after the proposed mitigation measures are implemented.

## **2. OBJECTIVES OF THE EIA STUDY**

2.1 The objectives of the EIA study are as follows :

- (i) to describe the Project and associated works together with the requirements for carrying out the Project;
- (ii) to identify and describe elements of community and environment likely to be affected by the Project and/or likely to cause adverse impacts to the Project, including natural and man-made environment and the associated environmental constraints;
- (iii) to provide information on the consideration of alternatives to avoid and minimize potential environmental impacts to the site of cultural heritage and its environs; to compare the environmental benefits and dis-benefits of each of the different options; to provide reasons for selecting the preferred option(s) and to describe the part environmental factors played in the selection of preferred option(s);
- (iv) to identify and evaluate any potential cultural heritage impacts and to propose measures to mitigate these impacts;
- (v) to identify and evaluate any potential landscape and visual impacts from the Project, particularly from any new structure to be erected, including glare interference, and to propose measures to mitigate these impacts;
- (vi) to identify and evaluate noise, air and water pollution and waste generation and determine the significance of impacts on sensitive receivers and potential affected uses;
- (vii) to propose the provision of mitigation measures so as to minimize pollution, environmental disturbance and nuisance during construction and operation of the Project;
- (viii) to investigate the feasibility, practicability, effectiveness and implications of the proposed mitigation measures;
- (ix) to identify, predict and evaluate the cumulative effects and the residual environmental impacts (i.e. after practicable mitigation) expected to arise during the construction and operation phases of the Project in relation to the site of cultural heritage, the sensitive receivers and potential affected uses, taking into account nearby concurrent project(s);
- (x) to identify, assess and specify methods, measures and standards, to be included in the detailed design, construction and operation of the Project which are necessary to mitigate these environmental impacts and cumulative effects and reduce them to acceptable levels;
- (xi) to investigate the extent of the secondary environmental impacts that may arise from the proposed mitigation measures and to identify constraints associated with the mitigation measures recommended in the EIA study, as well as the provision of any necessary modification; and
- (xii) to investigate, and where found necessary and justified, design and specify environmental monitoring and audit requirements to ensure the effective implementation of the recommended environmental protection and pollution control measures.

## **3. DETAILED REQUIREMENTS OF THE EIA STUDY**

### **3.1 The Purpose**

The purpose of this study brief is to scope the key issues of the EIA study. The Applicant has to demonstrate in the EIA report that the criteria in the relevant sections of the Technical Memorandum on the Environmental Impact Assessment Process of the Environmental Impact Assessment Ordinance (hereinafter referred to as “the TM”) are complied with.

### **3.2 The Scope**

3.2.1 The scope of this EIA study shall cover the Project mentioned in sub-section 1.2 above. The EIA study shall address the likely key issues described below, together with any other key issues identified during the course of the EIA study:

- (i) potential environmental impacts to the site of cultural heritage of the Project during its construction and operation stages;
- (ii) potential landscape and visual impacts, particularly from any new structure to be erected, including glare interference, to nearby sensitive receivers from the Project during its construction and operation stages;
- (iii) potential construction dust, water quality and noise impacts to nearby sensitive receivers as well as waste management implications from the Project; and
- (iv) potential operation water quality and other impacts to nearby sensitive receivers from the Project.

### **3.3 Consideration of Alternatives**

#### **3.3.1 The Need of the Project**

The Applicant shall report on or provide information related to the need for the Project and the various objectives of the Project. The Applicant shall explain clearly the purpose and objectives of the Project and describe the scenarios with and without the Project.

#### **3.3.2 Consideration of Different Technology and Design Options**

The Applicant shall provide information on the considerations of feasible options for the Project, and the justification regarding how the proposed scheme is arrived at, including descriptions of the environmental factors considered in the option selection, covering “any new elements to be inserted” and “construction of new structures” as mentioned in the Project Profile, any possible waivers of existing regulations, standards and guidelines on building and fire safety, as well as which buildings/parts of building on the site will be conserved, modified, altered or demolished. Options should include alternative conservation and revitalisation schemes and use of any alternative technology. A comparison of the environmental benefits and dis-benefits of feasible conservation and revitalisation options and alternative technologies and design shall be presented with a view to show the selection of the preferred option has taken into consideration the maximization of environmental benefits and avoidance/minimization of adverse environmental effects, taking into account of the potential cultural heritage impact; the potential landscape and visual impacts; and the potential glare interference; to the maximum practicable extent. Design options shall be considered and their environmental performance shall be evaluated and compared. Apart from environmental considerations, design philosophy and constraints/conditions of each option should also be provided to support an informed decision.

### 3.3.3 Consideration of Alternative Construction Methods and Sequences of Works

Taking into consideration the combined effect with respect to the severity and duration of the construction impacts to the site of cultural heritage and affected sensitive receivers, the EIA study shall report on the exploration of alternative construction methods and sequences of works for the Project, with a view to avoid prolonged adverse environmental impacts. A comparison of the environmental benefits and dis-benefits of applying different construction methods and sequence of works shall be provided.

### 3.3.4 Description and Selection of Preferred Scenario

Taking into consideration of the findings in sub-sections 3.3.2 and 3.3.3 above, the Applicant shall recommend / justify the adoption of the preferred scenario that has taken into account the potential to maximise environmental benefits and avoid or minimize adverse environmental effects arising from the Project, and describe the part that environmental factors played in arriving at the final selection. The Applicant shall also provide the preferred scenario, in particular, those features, design and technology that have major influence on the potential environmental impacts and performance of the Project.

## 3.4 **Technical Requirements**

The Applicant shall conduct the EIA study to address environmental aspects as described in sub-sections 3.1, 3.2 and 3.3 above. The EIA study shall include the following technical requirements on specific impacts.

### 3.4.1 **Cultural Heritage Impact**

3.4.1.1 The Applicant shall follow the criteria and guidelines for evaluating and assessing the cultural heritage impacts as stated in section 2 of Annex 10 and sections 1 and 2 of Annex 19 of the TM and the Guidance Notes “Assessment of Impact on Sites of Cultural Heritage in Environmental Impact Assessment Studies” under the EIAO. The study area shall be within 50m from the Project boundary.

3.4.1.2 The Cultural Heritage Impact Assessment (CHIA) for an adaptive reuse project at Sites of Cultural Heritage should address both the short-term impacts during construction as well as the long-term impact during operation to illustrate the environmental acceptability of the Project. A Conservation Management Plan (CMP) is therefore required as a product in report format documenting the processes, findings and recommendations of the CHIA to ensure the long term caring of the heritage site(s) and the sustainability of the adaptive reuse. The CMP shall include, in addition to the Baseline Study, Impact Assessment and Mitigation Measures according to Annex 19 of the Technical Memorandum under EIAO, a set of Conservation Policy outlining the principle of heritage conservation, Interpretation Strategies and Heritage Operation Strategies framing the ways to control long-term impact to the heritage site(s) during operation. The preparation of the CMP shall make reference to any previously published CMP for the study area.

3.4.1.3 The CHIA shall comprise an Archaeological Impact Assessment (AIA) and a Built Heritage Impact Assessment (BHIA). The Applicant shall refer to Appendix B “Guidelines for Cultural Heritage Impact Assessment for Adaptive Reuse Projects” for the detailed requirements. Some of the key requirements are highlighted below:

- (i) Archaeological Impact Assessment (AIA)

- a. The applicant shall engage a qualified archaeologist to conduct an archaeological impact assessment (AIA) to assess and establish the archaeological potential and significance at open spaces, individual buildings and areas to be affected by any building works or excavation works of the project. Appropriate conservation works and mitigation measures shall be designed and implemented to enhance the preservation of the site.
  - b. The applicant shall draw necessary reference to relevant sections of the Guidelines for CHIA for Adaptive Reuse in Appendix B of this study brief for detailed requirement of the AIA.
  - c. The archaeologist shall obtain a licence from the Antiquities Authority before undertaking the field evaluation.
- (ii) Built Heritage Impact Assessment (BHIA)
- a. The applicant shall draw necessary reference to relevant sections of the Guidelines for CHIA for Adaptive Reuse in Appendix B to conduct the BHIA.
  - b. When adverse impact is caused by the proposed development due to works including any alteration of, addition to, demolition of and disturbance to these sites, the necessity of such works shall be fully justified with alternative proposals or design layouts to confirm that the adverse impact to the sites of cultural significance has been avoided to the maximum practicable extent. Where disturbance is unavoidable, the Applicant shall recommend practicable mitigation measures and monitoring to keep the impacts to these sites to the minimum.
  - c. Assessment of impacts on cultural heritage shall also take full account of, and follow where appropriate, the Guidelines for Landscape and Visual Impact Assessment of Annex 18 of the TM.

### **3.4.2 Landscape and Visual Impact**

3.4.2.1 The Applicant shall follow the criteria and guidelines as stated in Annexes 10 and 18 of the TM and the EIAO Guidance Note No. 8/2002 for evaluating and assessing visual impacts including glare interference to the sensitive receivers with key views of any above ground structures associated with the Project. Assessment of localised landscape impacts shall include a tree survey to identify species composition and conditions of trees to be felled, transplanted or preserved, if any, within the Project site. Visual and landscape impacts during construction and operation phases shall be also assessed.

#### Visual Impact

3.4.2.2 The study area for visual impact assessment shall be defined by the visual envelope of the Project. The visual impact shall be evaluated in terms of visual compatibility of the Project with the site context, blockage of views, viewing distance, sensitivity of visual sensitive receivers, irreversibility of change, and duration of impact under construction and operation phases. The visual impacts of the Project with and without mitigation measures shall be included so as to demonstrate the effectiveness of the proposed mitigation measures.

#### Landscape Impact

3.4.2.3 The assessment area for landscape impact assessment shall include all areas within a 500m distance from the Project with the following details: -

- (i) the Applicant shall describe, appraise, analyse and evaluate the existing landscape

resources and character of the assessment area. A system shall be derived for judging landscape and visual impact significance as required under the TM. The sensitivity of the landscape framework and its ability to accommodate change shall be particularly focused on. The Applicant shall identify the degree of compatibility of the Project with the existing landscape and planned landscape setting. The assessment shall quantify the potential landscape impacts as far as possible, so as to illustrate the significance of such impact arising from the Project. Clear mapping of the landscape is required; and

- (ii) parties shall be identified for the ongoing management and maintenance of the proposed mitigation works to ensure their effectiveness throughout the Project. A practical programme and funding proposal for the implementation of the recommended measures shall be provided.

### Mitigation Measures

3.4.2.4 The Applicant shall recommend mitigation measures to minimize the adverse effects identified above, including retention of existing vegetation, transplanting of mature trees, provision of screen planting, re-vegetation of disturbed land, compensatory planting, provisioning and reprovisioning of amenity areas and open spaces, design of structures, provision of finishes to structures, colour scheme and texture of material used, and any measures to mitigate the disturbance of the existing land use. A Landscape Master Plan indicating the proposed landscape mitigation measures shall be submitted. Presentation of perspective drawings, plans and section/elevation diagrams, and photomontage from key vantage points taken for all proposed new permanent above ground structures in the existing and planned urban setting, illustrating the effectiveness of visual impact mitigation measures shall be included. Also, photomontages showing the existing condition, the proposed development without mitigation measures, and the proposed development with mitigation measures on Day 1 and Year 10 shall be provided for comparison.

### **3.4.3 Construction Noise Impact**

3.4.3.1 The Applicant shall follow the criteria and guidelines for evaluating and assessing construction noise impact as stated in Annexes 5 and 13 of the TM, respectively. The study area for the noise impact assessment shall generally include areas within 300m from the Project boundary. Subject to the agreement of the Director, the study area could be reduced accordingly if the first layer of noise sensitive receivers (NSRs), closer than 300m from the outer Project limit, provides acoustic shielding to those receivers at distances further away from the Project. Subject to the agreement of the Director, the study area shall be expanded to include NSRs at distances over 300m from the Project which would be affected by the construction of the Project.

3.4.3.2 The Applicant shall apply the general principles for the assessment with reference to the guidelines in Appendix C.

### **3.4.4 Construction Air Quality Impact**

3.4.4.1 The Applicant shall follow the criteria and guidelines as stated in section 1 of Annex 4 and Annex 12 of the TM for evaluating and assessing air quality impact due to the construction of the Project, as stipulated in Section 1.2 and 1.3 above. The Study Area for construction air quality assessment shall generally be defined by a distance of 500 metres from the boundary of the project site, and it shall be extended to include other areas that may have a

bearing on the environmental acceptability of the Project. For this project, the assessment shall include the existing and planned/committed air sensitive receivers within the study area. Such assessment shall be based on the best available information at the time of the assessment.

3.4.4.2 The Applicant shall apply the general principles for the assessment with reference to the guidelines in Appendix D.

### **3.4.5 Construction and Operation Water Quality Impact**

3.4.5.1 The Applicant shall follow the criteria and guidelines for evaluating and assessing water pollution as stated in Annexes 6 and 14 of the TM, respectively.

3.4.5.2 The Applicant shall identify, assess and quantify existing and future wastewater generation activities and analyse on the adequacy of existing and future sewerage infrastructure.

3.4.5.3 Where necessary, the Applicant shall make proposal for upgrading or providing any effective infrastructure, water pollution prevention and mitigation measures to be implemented during the construction and operation stages so as to reduce the water quality impacts to within standards. Requirements to be incorporated in the project contract document shall also be proposed.

3.4.5.4 The Applicant shall investigate and propose best management practices to reduce storm water and non-point source pollution as appropriate.

### **3.4.6 Waste Management Implications**

3.4.6.1 The Applicant shall follow the criteria and guidelines for evaluating and assessing waste management implications as stated in Annexes 7 and 15 of the TM respectively.

3.4.6.2 The assessment of waste management implications shall cover the following:

(i) Analysis of Activities and Waste Generation

The Applicant shall identify the quantity, quality and timing of waste arising as a result of construction activities of the Project, based on sequence and duration of these activities.

(ii) Proposal for Waste Management

- (a) Prior to considering the disposal options for various types of wastes, opportunities for reducing waste generation, on-site or off-site re-use and recycling shall be evaluated. Measures which can be taken in the planning and design stages e.g. by modifying the design approach and in the construction stage for maximizing waste reduction shall be separately considered.
- (b) After considering the opportunities for reducing waste generation and maximizing re-use, the types and quantities of the wastes required to be disposed of as a consequence shall be estimated and the disposal options for each type of waste shall be described in detail. The disposal method recommended for each type of waste shall take into account of the result of the assessment in (c) below.
- (c) Impact caused by handling (including labelling, packaging & storage), collection, and disposal of wastes shall be addressed in detail and appropriate mitigation

measures shall be proposed, including the adoption of a trip ticket system and the identification of parties responsible for the implementation of the trip ticket system. This assessment shall cover the following areas :

- potential hazard;
- air and odour emissions;
- noise;
- wastewater discharge; and
- public transport.

### **3.4.7 Operational Stage Environmental Impacts**

**3.4.7.1** The Applicant shall report on or provide information related to the intended future uses of the Project during its operational stage, using a scenario(s) approach if necessary. The Applicant shall provide information on the operation hours of the Project and assess, quantitatively if necessary, the various environmental impacts associated with the intended future uses of the Project during its operational stage under the different scenario(s), in particular with respect to potential glare impact and operational noise nuisance, provide any necessary mitigation measures, evaluate the residual impacts and the environmental acceptability of the Project in accordance with criteria and guidelines for assessment as set out in the TM.

### **3.4.8 Documentation of Key Assessment Assumptions, Limitation of Assessment Methodologies and related Prior Agreement(s) with the Director**

To facilitate efficient information retrieval, the EIA report shall contain a summary to include the assessment methodologies and key assessment assumptions adopted in this EIA study, the limitations of these assessment(s) methodologies/assumptions, if any, plus all relevant prior agreement(s) with the Director and/or other Authorities on individual environmental media assessment components. The proposed use of any alternative assessment tool(s) or assumption(s) have to be justified by the Applicant, with supporting documents based on cogent, scientific and objectively derived reason(s) before seeking the Director's agreement. All related supporting documents to the summary shall also be provided in the form of an Appendix to the EIA study report.

### **3.4.9 Impacts Summary**

To facilitate efficient retrieval of pertinent key environmental impacts information, the EIA report shall contain a summary in the form of a table (or in any other form approved by the Director) showing the assessment points (such as ASRs, NSRs), results of impact predictions, relevant standards or criteria, extents of exceedances predicted, impact avoidance measures considered, mitigation measures proposed and residual impacts (after mitigation) covering each individual environmental media assessment components in this EIA study. This impact summary shall also form an essential part of Executive Summary.

### **3.4.10 Summary of Environmental Outcomes**

The EIA report shall contain a summary of key environmental outcomes arising from the EIA study, including the population and environmentally sensitive areas protected, environmentally friendly designs recommended, key environmental problems avoided, compensation areas included and the environmental benefits of environmental protection measures recommended.



### **3.4.11 Environmental Monitoring and Audit (EM&A) Requirements**

- 3.4.11.1 The Applicant shall identify and justify in the EIA study whether there is any need for EM&A activities during the construction and operation phases of the Project and, if affirmative, to define the scope of EM&A requirements for the Project in the EIA study.
- 3.4.11.2 Subject to confirmation of EIA study findings, the Applicant shall comply with requirements as stipulated in Annex 21 of the TM. The Applicant shall also propose real-time reporting of monitoring data for the Project through dedicated internet website.
- 3.4.11.3 The Applicant shall prepare a Project Implementation Schedule (in the form of a checklist as shown in Appendix E to this EIA study brief) containing the EIA study recommendations and mitigation measures with reference to the implementation programme. The Project Implementation Schedule shall include the explicit agreement reached between the Applicant and relevant parties on the responsibility for funding, implementation, management and maintenance of mitigation measures. Alternatively, the Project Implementation Schedule shall include an undertaking from the Applicant to assume the responsibility of those mitigation measures until an agreement is reached between the Applicant and relevant parties on the funding, implementation, management and maintenance of mitigation measures.

## **4. DURATION OF VALIDITY**

- 4.1 The Applicant shall notify the Director of the commencement of the EIA study. If the EIA study does not commence within 36 months after the date of issue of the EIA study brief, the Applicant shall apply to the Director for a fresh EIA study brief before commencement of the EIA study.

## **5. REPORT REQUIREMENTS**

- 5.1 In preparing the EIA report, the Applicant shall refer to Annex 11 of the TM for the contents of an EIA report. The Applicant shall also refer to Annex 20 of the TM, which stipulates the guidelines for the review of an EIA report.
- 5.2 The Applicant shall supply the Director with the following number of copies of the EIA report and the executive summary:
- (i) 50 copies of the EIA report in English and 80 copies of the executive summary (each bilingual in both English and Chinese) as required under section 6(2) of the EIAO to be supplied at the time of application for approval of the EIA report.
  - (ii) When necessary, addendum to the EIA report and the executive summary submitted in sub-section 5.2 (i) above as required under section 7(1) of the EIAO, to be supplied upon advice by the Director for public inspection.
  - (iii) 20 copies of the EIA report in English and 50 copies of the executive summary (each bilingual in both English and Chinese) with or without Addendum as required under section 7(5) of the EIAO, to be supplied upon advice by the Director for consultation with the Advisory Council on the Environment.
- 5.3 The Applicant shall, upon request, make additional copies of above documents available to the public, subject to payment by the interested parties of full costs of printing.
- 5.4 In addition, to facilitate public inspection of EIA report via EIAO Internet Website, the

Applicant shall provide electronic copies of both the EIA report and executive summary prepared in HyperText Markup Language (HTML) (version 4.0 or later) and in Portable Document Format (PDF version 4.0 or later), unless otherwise agreed by the Director. For the HTML version, a content page capable of providing hyperlink to each section and sub-section of the EIA report and executive summary shall be included in the beginning of the document. Hyperlinks to figures, drawings and tables in the EIA report and executive summary shall be provided in the main text from where respective references are made. All graphics in the report shall be in interlaced GIF format unless otherwise agreed by the Director.

- 5.5 The electronic copies of the EIA report and the executive summary shall be submitted to the Director at the time of application for approval of the EIA report.
- 5.6 When the EIA report and the executive summary are made available for public inspection under section 7(1) of the EIAO, the content of the electronic copies of the EIA report and the executive summary must be the same as the hard copies and the Director shall be provided with the most updated electronic copies.
- 5.7 To promote environmentally friendly and efficient dissemination of information, both hardcopies and electronic copies of future EM&A reports recommended by the EIA study shall be required and their format shall be agreed by the Director.
- 5.8 To facilitate public involvement in the EIA process, the Applicant shall produce 3-dimensional electronic visualizations of the major findings (in particular the glare impact (if any), and landscape and visual impacts) and elements of the EIA report, including baseline environmental information, the environmental situations with or without the project, key mitigated and unmitigated environmental impacts, and key recommended environmental mitigation measures so that the public can understand the Project and the associated environmental issues. The visualizations shall be based on the EIA report and released to the public. The 3-dimensional visualizations shall be developed and constructed such that they can be accessed and viewed by the public through an internet browser at a reasonable speed and without the need for software license requirement at the client's end. The visualizations shall be deposited in 10 copies of CD-ROM or DVD±R or other suitable means agreed with the Director.

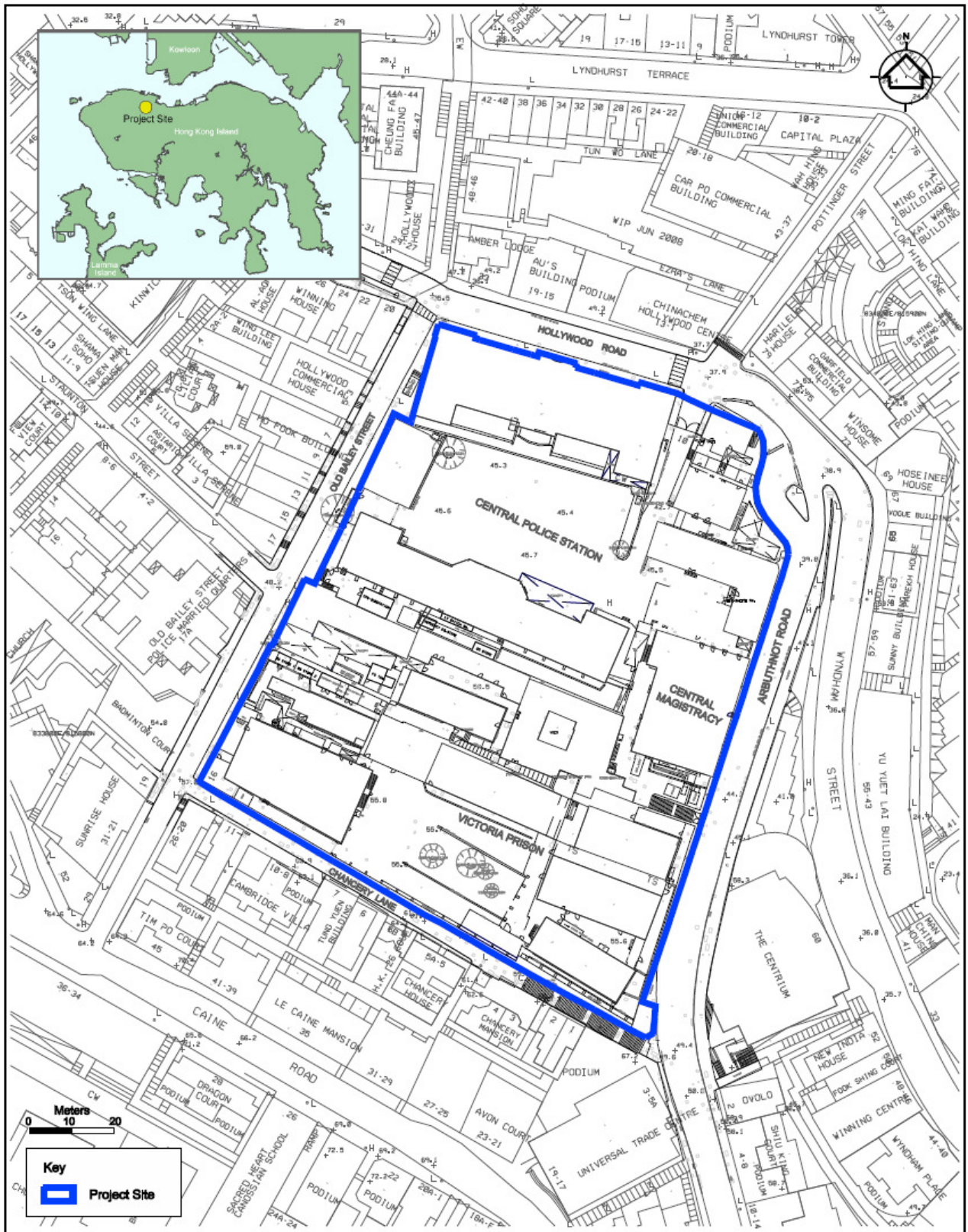
## **6. OTHER PROCEDURAL REQUIREMENTS**

- 6.1 If there is any change in the name of Applicant for this EIA study brief during the course of the EIA study, the Applicant must notify the Director immediately.
- 6.2 If there is any key change in the scope of the Project mentioned in sub-section 1.2 of this EIA study brief and in Project Profile (No. PP-382/2009), the Applicant must seek confirmation from the Director in writing on whether or not the scope of issues covered by this EIA study brief can still cover the key changes, and the additional issues, if any, that the EIA study must also address. If the changes to the Project fundamentally alter the key scope of the EIA study brief, the Applicant shall apply to the Director for a fresh EIA study brief.

--- END OF EIA STUDY BRIEF ---

June 2009  
Environmental Assessment and Noise Division,  
Environmental Protection Department

**Appendix A**



**Figure 1: Location Plan of the Project**  
**圖 1: 工程項目位置**  
 Project Title: Central Police Station Compound Conservation and Revitalisation  
 工程名稱: 中區警署建築群保育及活化計劃

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Note: Reproduced from Figure 1.4a of the Project Profile PP-382/2009

**Appendix B****Guidelines for Cultural Heritage Impact Assessment  
For Adaptive Reuse Projects (As at May 2009)****Introduction**

The purpose of the guidelines is to assist the understanding of the requirements in assessing archaeological and built heritage impacts for adaptive reuse of sites of cultural heritage. The guidelines will be revised by the Antiquities and Monuments Office (AMO) of the Leisure and Cultural Services Department from time to time, where appropriate, and when required.

The Cultural Heritage Impact Assessment (CHIA) for an adaptive reuse project at Sites of Cultural Heritage should address comprehensively both the short-term impacts during construction as well as the long-term impact during operation. A **Conservation Management Plan (CMP)** is therefore required for the CHIA to ensure the long term caring of the heritage site(s) and the sustainability of the adaptive reuse. The CMP shall include, in addition to the Baseline Study, Impact Assessment and Mitigation Measures according to Annex 19 of the Technical Memorandum under EIAO, a set of Conservation Policy outlining the principle of heritage conservation, Interpretation Strategies and Heritage Operation Strategies framing the ways to control long-term impact to the heritages site(s) during operation.

The aforesaid **CMP**, which aims to ensure both short-term and long-term caring of the heritage site(s) and the sustainability of the adaptive reuse, should be a detailed document which sets out the significance of a heritage asset and identifies all the actions needed to conserve that significance in the future uses, management and maintenance of the heritage site(s).

Reference should be made to international charters and guidelines for heritage conservation while compiling the CMP for good practice of heritage conservation. The following are some examples of international charters and guidelines for reference:

- a. Venice Charter: International Charter for the Conservation and Restoration of Monuments and Sites (1964);
- b. Convention for the Protection of the Architectural Heritage of Europe – the Granada Convention (1985);
- c. The Nara Document on Authenticity (1994);
- d. Principles for the Recording of monuments, Groups of Buildings and Sites (1996);
- e. Burra Charter (1979, revision of 1999);
- f. Principles for the Conservation of Heritage sites in China (2003);
- g. Hoi An Protocol for Best Conservation Practice in Asia (2005);
- h. The Beijing Document (2007);
- i. Conservation Principles, Policies and Guidance for the Sustainable Management of the Historic Environment (2008); and
- j. ICOMOS Charter on the Interpretation and Presentation of Cultural Heritage Sites (2008)

**(1) Baseline Study**

1.1 A baseline study shall be conducted:

- a. to compile a comprehensive inventory of heritage sites and items within the proposed project area, which include:

- (i) all archaeological sites;
- (ii) all pre-1950 buildings and structures (including underground disused tunnels and air-raid shelters);
- (iii) selected post-1950 buildings and structures of high architectural and historical significance and interest; and
- (iv) cultural landscapes include places associated with historic event, activity, or person or exhibiting other cultural or aesthetic values, such as sacred religious sites, battlefields, a setting for buildings or structures of architectural or archaeological importance, open spaces, historic field patterns, clan graves, old tracks, *fung shui* woodlands and ponds, and etc; and
- (v) all features, fabric and elements of each individual site, building, structure and place of the archaeological heritages, built heritages and cultural landscape as listed above with the project area that define the architectural and historical significance to the sites, buildings, structures and places (the “character-defining elements” hereafter).

1.2 The baseline study shall also include a desk-top research and a field evaluation.

### 1.3. Desk-top Research

1.3.1 Desk-top research should be conducted to analyse, collect and collate extant information. It shall include but not limited to:

- a. Declared monuments and proposed monuments protected under the Antiquities and Monuments Ordinance (Chapter 53);
- b. Graded historic buildings and sites;
- c. Government historic sites identified by the Antiquities and Monuments Office (AMO);
- d. Lists and archives kept in the Reference Library of the Antiquities and Monuments Office of the Leisure and Cultural Services Department including archaeological sites, declared monuments, proposed monuments, deemed monuments and recorded historical building & structures identified by the AMO;
- e. Publications on local historical, architectural, anthropological, archaeological and other cultural studies, such as, Journals of the Royal Asiatic Society (Hong Kong Branch), Journals of the Hong Kong Archaeological society, Antiquities and Monuments Office Monograph Series and so forth.
- f. Any published Conservation Management Plan for the study area.
- g. Other unpublished papers, records, archival and historical documents through public libraries, archives, and the tertiary institutions, such as the Hong Kong Collection and libraries of the Department of Architecture of the University of Hong Kong and the Chinese University of Hong Kong, Public Records Office, photographic library of the Information Services Department and so forth.
- h. Any other unpublished archaeological investigation and excavation reports kept by the AMO.
- i. Historical documents in the Public Records Office, the Land Registry, District Lands Office, District Office and the Hong Kong Museum of History, building records from the Building Department and Architectural Services Department, and so forth.
- j. Cartographic and pictorial documents. Old and recent maps and aerial photos searched in the Maps and Aerial Photo Library of the Lands Department.
- k. Existing geological information (for archaeological desk-top research).
- l. Discussion with the former users and the local informants.

## 1.4 Field Evaluation

### 1.4.1 General

The potential value of the project area with regard the cultural heritage could be established easily where the area is well-documented. However, it does not mean that the area is devoid of interest if it lacks information. In these instances, a site visit and consultations with appropriate individuals or organisations should be conducted by those with expertise in local heritage to clarify the situation.

### 1.4.2 Field survey on historic buildings and structures

- a. Field scan of all the historic buildings and structures within the project area.
- b. Photographic recording of each historic building or structure including the exterior (the elevations of all faces of the building premises, the roof, close up for the special architectural details) and the interior (special architectural details), if possible, as well as the surroundings, the associated cultural landscape features and the associated intangible cultural heritage (if any) of each historic building or structure.
- c. Interview with the former users, the locals and other informants on local historical, architectural, anthropological and other cultural information related to the historic buildings and structures.
- d. Historical and architectural appraisal of the historic buildings and structures, their associated cultural landscape and intangible cultural elements.

### 1.4.3 Archaeological Survey

- a. Appropriate methods for pricing and valuation of the archaeological survey, including by means of a Bill of Quantities or a Schedule of Rates should be considered in preparing specifications and relevant documents for calling tenders to carry out the archaeological survey. The specifications and relevant documents should be sent to the Antiquities and Monuments Office for agreement prior to calling tenders to conduct the archaeological survey.
- b. A licence shall be obtained from the Antiquities Authority for conducting an archaeological survey. It takes at least two months to process the application.
- c. A detailed archaeological survey programme should be designed to assess the archaeological potential of the project area. The programme should clearly elaborate the strategy and methodology adopted, including what particular question(s) can be resolved, how the archaeological data will be collected and recorded, how the evidence will be analyzed and interpreted and how the archaeological finds and results will be organized and made available. Effective field techniques should also be demonstrated in the programme. The programme should be submitted to the Antiquities and Monuments Office for agreement prior to applying for a licence.
- d. The following methods of archaeological survey (but not limited to) should be applied to assess the archaeological potential of the project area:
  - (i) Definition of areas of natural land undisturbed in the recent past.
  - (ii) Field scan of the natural land undisturbed in the recent past in detail with special attention paid to areas of exposed soil which were searched for artifacts.
  - (iii) Conduct systematic auger survey and test pitting. The data collected from auger survey and test pitting should be able to establish the horizontal spread of cultural materials deposits.

- (iv) Excavation of test pits to establish the vertical sequence of cultural materials. The hand digging of 1 x 1 m or 1.5 x 1.5 m test pits to determine the presence or absence of deeper archaeological deposits and their cultural history.
- (v) The quantity and location of auger holes and test pits should be agreed with the Antiquities and Monuments Office prior to applying for a licence.
- (vi) A qualified land surveyor should be engaged to record reduced levels and coordinates as well as setting base points and reference lines in the course of the field survey.

1.4.4 If the field evaluation identifies any additional heritage sites within the project area which are of potential historic or archaeological importance and not recorded by AMO, the findings should be reported to the AMO as soon as possible.

## 1.5 The Report of Baseline Study

1.5.1 The study report should have concrete evidence to show that the process of the above desk-top and field survey has been satisfactorily completed. This should take the form of a detailed inventory of the heritage sites supported by full description of their significance. The description should contain detailed geographical, historical, archaeological, architectural, anthropological, ethnographic and other relevant data supplemented with illustrations below and photographic and cartographic records, if required.

1.5.2 Based on the findings from the desk-top research and field survey, the study report should summarize heritage values of the heritage site(s) in statement(s) of cultural significance.

1.5.3 A master layout plan showing all identified archaeological and built heritage sites within the study area should be provided in the report. All the identified heritage sites should be properly numbered with their locations indicated on the master layout plan.

### 1.5.4 Built Heritage Sites

- a. A inventory list of all historic buildings, structures and places in each of the sites, with their locations shown in a map (or maps) in at least 1:1000 scale.
- b. Detailed recording form of each historic buildings, structures and places including its construction year, previous and present uses, architectural characteristics, as well as legends, historic persons and events, cultural landscape features and cultural activities associated with the buildings, structures and places.
- c. Photographic and cartographic survey records of each historic buildings, structures and places.
- d. Lists of character defining elements of each historic buildings, structures and places, with their locations shown in plans (including floor plans, elevation and section as necessary) in at least 1:200.
- e. Photographic and cartographic records of each of these character defining elements.
- f. All the identified historic buildings, structures and places and their character defining elements (“heritage items” hereafter) should be probably numbered and all the above inventory list, maps, plans, cartographic survey and photographic records should be probably cross-referenced with a clear numbering system for easy cross-checking of individual records.

### 1.5.5 Archaeological Sites

- a. A map showing the boundary of each archaeological site as supported and delineated by field walking, augering and test-pitting;
- b. Drawing of stratigraphic section of test-pits excavated which shows the cultural sequence of a site.
- c. Reduced levels, coordinates, base points and reference lines should be clearly defined and certified by a qualified land surveyor.
- d. *Guidelines for Archaeological Reports (Annex 1)* should be followed.

1.5.6 A full bibliography and the source of information consulted should be provided to assist the evaluation of the quality of the evidence. To facilitate verification of the accuracy, the AMO will reserve the right to examine the full details of the research materials collected under the baseline study.

### 1.6 Finds and Archives

1.6.1 Archaeological finds and archives should be handled following *Guidelines for Handling of Archaeological Finds and Archives (Annex 2)*.

### 1.7 Safety Issue

1.7.1 During the course of the CHIA Study, all participants shall comply with all Ordinances, Regulations and By-laws which may be relevant or applicable in safety aspect in connection with the carrying out of the CHIA Study, such as site safety, insurance for personal injuries, death and property damage as well as personal safety apparatuses, etc.

1.7.2 A Risk Assessment for the fieldwork shall be carried out with full consideration to all relevant Ordinances, Regulations and By-laws.

## **(2) Conservation Policy**

### 2.1 Heritage Conservation Policy

2.1.1 Based on the findings of the baseline study, a conservation policy shall be compiled to set out the principles to conserve, to control changes, to manage and to interpret the heritage site(s), both short-term and long-term. These principles will be the yardsticks for evaluating heritage impacts and mitigation measures as identified in the study.

2.1.2 It should address:

- a. the potential uses of the heritage site(s) that are compatible with its/ their cultural significance;
- b. the physical heritage items and the cultural landscapes within the project area to be conserved and the control of intervention to the heritage items and the cultural landscape;
- c. the way to give interpretation of the heritage site(s) that helps appreciate and understand the cultural significance of the heritage site(s);
- d. the way to maintain the heritage items and the cultural landscapes;
- e. the way to guide future use and developments;
- f. the adoption and review of the conservation policy.



### **(3) Impact Assessment Study**

#### **3.1 The Project Proposal**

- 3.1.1 The proposed development in the project area should be clearly defined and stated, with a brief account on its background and the overall intended use, following with descriptions on the proposed uses, zoning, layout and settings of each building, structure and place within the project area, with illustrative drawings, plans, perspectives, schedules of accommodations, etc.
- 3.1.2 The compatibility of the intended use of the project area in regard to cultural significance of the heritage site and its technical feasibility should be analyzed and addressed.

#### **3.2 Identification of impact on heritage**

- 3.2.1 It is important to identify the direct and indirect impacts on the heritage sites at the planning stage in order to avoid causing any negative effects. The impacts include the direct loss, destruction or disturbance of an element of cultural heritage, impact on its settings or impinging on its character through inappropriate sitting or design, potential damage to the physical fabric of archaeological remains, historic buildings and their character-defining elements or historic landscapes through visual disturbance, air pollution, change of ground water level, vibration, ecological damage, new recreation or other daily needs to be caused by the new development. The impacts listed are merely to illustrate the range of potential impacts and not intended to be exhaustive.
- 3.2.2 The impact assessment study must be undertaken to identify the impacts on the heritage sites which will be affected by the proposed development subject to the result of desktop research and field evaluation. The prediction of impacts and an evaluation of their significance must be undertaken by expert(s) in local heritage with reference to the principles set under the Conservation Policy for the heritage sites.
- 3.2.3 During the assessment, both the direct impacts such as loss or damage of important features as well as indirect impacts should be clearly stated, such as adverse visual impact on built heritage, landscape change to the associated cultural landscape features of the built heritage, temporary change of access to the heritage sites during the work period, change of ground level or water level which may affect the preservation of the archaeological and built heritage *in situ* during the implementation stage of the project.
- 3.2.4 The evaluation of heritage impact assessment may be classified into five levels of significance based on type and extent of the effects concluded in the CHIA study:
- a. **Beneficial impact**: the impact is beneficial if the project will enhance the preservation of the heritage site(s) and heritage items such as improving the flooding problem of the historic building after the sewerage project of the area, putting an unused historic building back in use and allowing public appreciation;
  - b. **Acceptable impact**: if the assessment indicates that there will be no significant effects on the heritage site(s) and heritage items;
  - c. **Acceptable impact with mitigation measures**: if there will be some adverse effects, but these can be eliminated, reduced or offset to a large extent by specific measures for the affected heritage site(s) and heritage items before commencement of work in order to avoid any inappropriate and unnecessary interventions to them;

- d. Unacceptable impact: if the adverse effects are considered to be too excessive and are unable to mitigate practically;
  - e. Undetermined impact: if the significant adverse effects are likely, but the extent to which they may occur or may be mitigated cannot be determined from the study. Further detailed study will be required for the specific effects in question.
- 3.2.5 Preservation in totality must be taken as the first priority as it will be a beneficial impact and will enhance the cultural and socio-economical environment if suitable measures to integrate the heritage site(s) into the proposed project are carried out.
- 3.2.6 If, due to site constraints and other factors, only preservation in part is possible, this must be fully justified with alternative proposals or layout designs which confirm the impracticability of total preservation.
- 3.2.7 In particular, when adverse impact is caused by the proposed development during the course of conversion for adaptive reuse due to works including any alteration of, addition to, demolition of and disturbance to the heritage sites and heritage items, the necessity of such works shall be fully justified with alternative proposals or design layouts to confirm that the adverse impact has been avoided to the maximum practicable extent, e.g. the necessity for compliance with modern days requirements regarding building safety, fire safety, health, hygiene and planning requirements should be justified by relevant regulations, while the necessity for structural upgrade should be justified by condition and structural survey findings. Design options should be considered before deciding a proposal with minimum adverse impact to the heritage sites and heritage items.
- 3.2.8 Total destruction must be taken as the very last resort in all cases and shall only be recommended with a meticulous and careful analysis balancing the interest of preserving local heritage as against that of the community as a whole. Assessment of impacts on heritage sites shall also take full account of, and follow where appropriate, paragraph 4.3.1(c), item 2 of Annex 10, items 2.6 to 2.9 of Annex 19 and other relevant parts of the Technical Memorandum on Environmental Impact Assessment Process.

### 3.3 Mitigation Measures

- 3.3.1 It is always a good practice to recognize the heritage site and heritage items early in the planning stage and site selection process, and to avoid it, i.e. preserve it in-situ, or leaving a buffer zone around the site.
- 3.3.2 Mitigation is not only concerned with minimizing adverse impact on the heritage site and heritage items but also should give consideration of potential enhancement if possible (such as to improve the access to the built heritage or enhance the landscape and visual quality of built heritage).
- 3.3.3 Mitigation measures shall not be recommended or taken as *de facto* means to avoid preservation of heritage sites and heritage items. They must be proved beyond all possibilities to be the only practical course of action. Heritage sites and heritage items are to be in favour of preservation unless it can be demonstrated that there is a need for a particular development which is of paramount importance and outweighs the significance of a heritage sites and heritage items.

- 3.3.4 If avoidance of the heritage sites is not possible, amelioration can be achieved by minimizing the potential impacts and the preservation of the heritage sites and items. Measures like amendments of the sitting, screening and revision of the detailed design of the development are required to lessen its degree of exposure if it causes visual intrusion to the heritage site and affects the character and integrity of the heritage site.
- 3.3.5 A rescue programme, when required, may involve preservation of the historic building or structure together with the relics inside, and its historic environment through relocation, detailed cartographic and photographic survey or preservation of an archaeological site “by record”, i.e. through excavation to extract the maximum data as the very last resort.

#### 3.4 The Impact Assessment Report

- 3.4.1 A detailed description and plans should be provided to elaborate on the heritage site(s) and items to be affected. Besides, please also refer to paragraph 4.3.1(d), items 2.10 to 2.14 of Annex 19 and other relevant parts of the Technical Memorandum, other appropriate presentation methods for mitigation proposals like elevations, landscape plan and photomontage shall be used in the report extensively for illustrating the effectiveness of the measures.
- 3.4.2 To illustrate the visual impacts on built heritage, as well as effects of the mitigation measures, choice of appropriate presentation methods is important. These methods include perspective drawings, plans and section/ elevation diagrams, photographs on scaled physical models, photo-retouching and photomontage. These methods shall be used extensively to facilitate communication among the concerned parties.
- 3.4.3 When adverse impact is caused by the proposed development during the course of conversion for adaptive reuse due to works including any alteration of, addition to, demolition of and disturbance to the heritage sites and heritage items, full justification with alternative proposals or design layouts should be provided to show the necessity of such works and to confirm that the adverse impact has been minimized to the maximum practicable extent.
- 3.4.4 The implementation programme for the agreed mitigation measures should be able to be executed and should be clearly set out in the report together with the funding proposal. These shall form an integral part of the overall redevelopment project programme and financing of the proposed redevelopment project. Competent professionals must be engaged to design and carry out the mitigation measures.
- 3.4.5 For contents of the implementation programme, reference can be made to Annex 20 of the Technical Memorandum on Environmental Impact Assessment Process. In particular, item 6.7 of Annex 20 requires to define and list out clearly the proposed mitigation measures to be implemented, by whom, when, where, to what requirements and the various implementation responsibilities. A comprehensive plan and programme for the protection and conservation of the partially preserved heritage site, if any, during the planning and design stage of the proposed project must be addressed in details.
- 3.4.6 Supplementary information to facilitate the verification of the findings shall be provided in the report including but not limited to:
- a. layout plan(s) in a proper scale illustrating the location of all heritage sites and items within the study area, the extent of the work area together with brief description of the proposed works;

- b. any proposed alteration, addition and demolition works in the heritage sites disturbing the heritage items should be clearly stated and shown;
- c. all the heritage sites and items within the study area should be properly numbered, cross-reference to the relevant drawings and plans.
- d. an impact assessment cross-referenced checklist of all the heritage sites and items within the study area including heritage site reference, distance between the heritage site and work area, justification for the intervention, summary of the possible impact(s), impact level, summary of the proposed mitigation measure(s), as well as references of the relevant plans, drawings and photos; and
- e. a full implementation programme of the mitigation measures for all affected heritage sites to be implemented with details, such as by whom, when, where, to what requirements and the various implementation responsibilities of individual parties.

#### **(4) Long-Term Impact Control**

##### **4.1 Interpretation Strategies and Plans**

- 4.1.1 Interpretation refers to the full range of potential activities intended to heighten public awareness and enhance understanding of cultural heritage site. These can include print and electronic publication, public lectures, on-site and directly related off-site installations, educational programmes, community activities, and ongoing research, training and evaluation of the interpretation process itself. <sup>1</sup>
- 4.1.2 The interpretation is an inseparable part of the overall process of the conservation of sites of cultural heritage and causes impact to public understanding to the heritage significance of the sites as well as the heritage meaning of the sites during the operation stage. Adverse heritage impacts induced by heavy tourism are usually found in a site of cultural heritage without proper interpretation policy and visitor management. Good interpretation strategies are therefore important for the heritage conservation during the operation phase for an adaptive reuse project and these should be addressed during early planning stage of the project.
- 4.1.3 Good practices in interpretation should ensure a proper public access with minimum disturbance to the heritage sites, provide means of documenting, archiving and sharing with the public the research information, relate the sites of cultural heritages with wider context including both tangible and intangible significance, respect authenticity of the heritage sites and involve stakeholders participation.
- 4.1.4 Documentation of any research information, cartographic and photographic record of the heritage sites and their character defining elements before, during and after the new interventions for the adaptive reuse projects will set the base for the materials used for interpretation and future reference. The detailed forms, processes and methods of the documentation to the heritage items and the related wider context before, during and after the proposed development should be clearly stated in the interpretation plan.
- 4.1.5 The interpretation strategies on the heritage site(s) within the project area to set the framework on ways to enhance public's appreciation and understanding of the cultural significance of the heritage site(s) and to manage the possible impacts to be induced by the visitors should be

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<sup>1</sup> Extracted from [\*ICOMOS Charter on the Interpretation and Presentation of Cultural Heritage Sites\*](#), 2008

included in the EIA Study. Subject to the future uses, an interpretation plan shall be worked out in accordance with the approved interpretation strategies before the operation of the proposed adaptive reuse. The interpretation plan shall include, but not limited to, physical location and setting of places for interpretation, form of interpretation (such as exhibition, tour, activities, etc), any uses of the heritage items facilitating the interpretation, and the public accessibility to heritage site(s).

- 4.1.6 Subject to the future uses, an audience development plan will be useful to identify the different groups of people who might be involved in the heritage site(s) and the associated activities, and to find ways of attracting and keeping their interest and involvement, helping them to understand and enjoy the heritage.

#### 4.2 Heritage Operation Strategies and Manuals

- 4.2.1 Proper heritage operation strategies, which aim to set the framework on ways to safeguard the heritage site(s) against the impact due to deterioration and improper use/ damage to the sites by future operator and user during the operation stage, shall be included in the EIA Study. The strategies should address:

- a. Maintenance strategy for heritage site(s) and heritage items, especially any heritage items requiring special attention in maintenance;
- b. Strategy to manage visitors;
- c. Strategy to guide proper use by future operators/ users;
- d. Strategy to control further new development or alteration within the heritage site(s) during the operation stage; and
- e. Subject to the condition of the heritage site(s), a risk management strategy.

- 4.2.2 The staffing structure of the maintenance and management team, as well as the corresponding roles and responsibilities of the team members, should be clearly stated in the strategies.

- 4.2.3 A heritage operation manual shall be worked out in accordance with the approved heritage operation strategies before the opening of the proposed adaptive reuse.

- 4.3 An implementation programme for the interpretation and heritage operation strategies, together with the proposed plans and manuals required in the operation phase of the project should be included in the EIA report .

**Annex 1****Guidelines for Archaeological Reports**  
**(As at December 2008)****I. General**

1. All reports should be written in a clear, concise and logical style.
2. The reports should be submitted in A4 size and accompanying drawings of convenient sizes.
3. Draft reports should be submitted to the Antiquities and Monuments Office (AMO) for comments within two months after completion of archaeological work unless otherwise approved by AMO.
4. The draft reports should be revised as required by AMO and relevant parties. The revised reports should be submitted to AMO within three weeks after receiving comments from AMO and relevant parties.
5. At least 5 hard copies of the final reports should be submitted to AMO for record purpose.
6. At least 2 digital copies of the final reports in both Microsoft Word format and Acrobat (.PDF) format without loss of data and change of appearance compared with the corresponding hard copy should be submitted to AMO. The digital copies should be saved in a convenient medium, such as compact discs with clear label on the surface and kept in protective pockets.

**II Suggested Format of Reports**

1. Front page: - Project/Site name  
- Nature of the report  
e.g. (Draft/Final)  
Archaeological Investigation/Survey Report  
Archaeological Impact Assessment Report  
Watching Brief Report  
Rescue Excavation Report  
Post-excavation Report  
- Organization  
- Date of report
2. Contents list  
Page number of each section should be given.
3. Non-technical summary (both in English and Chinese with approximate 150 - 300 words each)  
This should outline in plain, non-technical language, the principal reasons for the archaeological work, its aims and main results, and should include reference to authorship and commissioning body.
4. Introduction  
This should set out background leading to the commission of the reports. The location, area, scope and date of conducting the archaeological work must be given. The location of archaeological work should be shown on maps in appropriate scales and with proper legends.
5. Aims of archaeological work  
These should reflect the aims set in the project design.

6. Archaeological, historical, geological and topographical background of the site  
Supporting aerial photos and maps (both old and present) in appropriate scales, with proper legends and with the site locations clearly marked on should be provided.
7. Methodology  
The methods used including any variation to the agreed project design should be set out clearly and explained as appropriate.
8. Result  
This should outline the findings, known and potential archaeological interests by period and/or type. Their significance and value with reference/inclusion of supporting evidence should be indicated. For impact assessment, the likely effect of the proposed development on the known or potential archaeological resource should be outlined.
9. Conclusion  
This should include summarization and interpretation of the result.
10. Recommendation  
Recommendations on further work and the responsible party as well as a brief planning framework should be outlined.
11. Reference and bibliography  
A list of all primary and secondary sources including electronic sources used should be given in full detail.
12. Archaeological Team  
The director and members of the archaeological team and the author of the report should be clearly specified.
13. Supporting illustrations  
They should be clearly numbered and easily referenced to the text. They should be scanned and saved in TIFF or JPEG formats.

A. Maps

Archaeological work locations, such as auger hole and test pit locations (with relevant coordinates certified by a qualified land surveyor), should be clearly shown on maps in appropriate scales, with proper legends, grid references (in 8 digits) and captions.

B. Drawings of test pits, archaeological features and finds

The below scales should be followed:

Cross section and profile drawings of test pits	1:20
Archaeological feature drawings	1:10
Finds drawings	1:1

If drawings of the above stated scales are not appropriate to be incorporated into the report under certain occasions, reduced copy of the drawings with the same scales are acceptable. Proper captions, legends and indication of reduced size should be given.

C. Photos of site and finds

All photos should be at least in 3R size with proper captions and scales. They should be clearly numbered and easily referenced to the text. They should be scanned and saved in TIFF or JPEG formats.

14. Supporting data in appendices

These should consist of essential technical details to support the result. These may include stratigraphy record of test pits and auger holes, record of general and special finds discovered with description, quantity and context number/stratigraphical sequence, index of field archives.

15. Comment and Response

All comments and responses from AMO and relevant parties should be attached.

**III. Green Measures**

1. All reports should be of single line spacing and printed on both sides of the paper.

2. Excessive page margins should be avoided. A top/bottom margin of 2 cm and left/right margin of 2.5 cm are sufficient.

3. Use of blank paper should be avoided as far as possible.

4. Suitable font type of font size 12 should be used generally in balancing legibility and waste reduction objective.



**Annex 2****Guidelines for Handling of Archaeological Finds and Archives**  
**(As at Oct 2006)****General**

## 1. Site Code

The Licensee should contact the Central Archaeological Repository (CAR) of the Antiquities and Monuments Office (AMO) [Contact Person: Mr. Michael TANG, Tel: 2384 5446; Email: mkstang@lcsd.gov.hk] about the allocation of site code before the commencement of the project to avoid duplicate of site code assignment.

**I. Archaeological Finds**

## 2. Cleaning

Every excavated finds should be properly cleaned before handing over to the CAR of the AMO.

## 3. Marking

- All the excavated finds should be cleaned before marking object number.
- “Sandwich” technique <sup>2</sup> should be adopted for marking permanent identification number on an object.
- Every special finds should be marked with site code, context number and object number, etc.
- All representative samples collected from general finds should be marked.
- For the finds which is too small, has unstable surface, or leather, textiles or wood, it should not be marked/labeled directly and should be bagged separately or attached with tags by tying. The tag should contain information about the object number, context number and site code, etc.

## 4. Labeling and bagging

- A label should be attached on each bag.
- Information about the object number, context number, test-pit number, site code and bag number should be stated clearly on the label.

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<sup>2</sup> *Steps for “Sandwich” technique*

1. First of all, the object should be marked in appropriate area and size that does not impact important diagnostic or aesthetic parts of the object.
2. Clean the area to be marked.
3. Apply a thin coat of clear reversible lacquer on the area. Use white lacquer if the object is dark in colour. Let the base coat dry completely.
4. Use a permanent water-based ink to write the object number on top of the base coat. Let ink dry completely.
5. Apply a top coat of clear varnish.
6. Let the marking dry completely before packing.

- Finds excavated within the same context should be bagged together. However, if they have been categorized according to their types, materials or characteristics, separate bagging is required.
5. Conservation
- To refit and reconstruct pottery vessels by appropriate adhesive. A heat and waterproof adhesive, e.g. product of H. Marcel Guest Ltd., is recommended.
  - Any adhesives which are not reversible or will damage artefacts, e.g. the pottery vessel should not be applied on the finds.
6. Finds register
- A clear finds register with information about the finds description, quantity, form, weight, dimensions and field data should be prepared for handover to the CAR.

## **II. Field Archives and Laboratory Records**

7. Field archives include field dairy, context recording sheet, special finds recording sheet, soil sample/sample recording sheet, map, survey sheet and video/visual records etc. Laboratory records also form part of the archaeological archives, which include finds processing record, conservation record, finds drawings and photos, records of typological analysis and objects card etc.
8. All the aforesaid archives should be handed over to the CAR after the compilation of the excavation report. Attention should be drawn to the followings:
- All the field archives should be submitted together with their indexes.
  - The video footage should be submitted together with a detailed script introducing the content of the video record.
  - All the slides, colour/black & white negatives and digital photographs should be submitted together with their contact prints and indexes.

### ***Handover of Finds***

9. Packing
- Every special finds should be protected with tissue paper, bubble sheet or P.E. foam with shock-proofed packing. No packing material other than the aforesaid items should be used.
  - All the general finds should be stored in heavy duty plastic container with shock-proofed packing.
  - The heavy duty plastic container, e.g. product of the Star Industrial Co., Ltd. (No. 1849 or 1852), is recommended.
  - For oversized finds, prior advice on packing method should be sought from the AMO.
10. Handover procedure
- The Licensee should arrange to transport the finds and archives to the CAR upon the completion of the finalized excavation report.
  - Separate handover forms for finds and archives should be signed by the representatives of the Licensee and the AMO.

**Appendix C****Guidelines for Construction Noise Impact Assessment**

The construction noise impact assessment shall include the following :

- (i) Provision of Background Information and Existing Noise Levels  
The Applicant shall provide background information relevant to the Project, e.g. relevant previous or current studies. Unless required for determining the planning standards, e.g. those for planning of fixed noise sources (such as ventilation systems), no existing noise levels are particularly required.
- (ii) Identification of Noise Sensitive Receivers
  - (a) The Applicant shall refer to Annex 13 of the TM when identifying the NSRs. The NSRs shall include existing NSRs and planned/committed noise sensitive developments and uses that would be affected by the Project, including those earmarked on the relevant Outline Zoning Plans, Development Permission Area Plans, Outline Development Plans, Layout Plans and other relevant published land use plans. Photographs of existing NSRs shall be appended to the EIA report.
  - (b) The Applicant shall select assessment points to represent identified NSRs for carrying out quantitative noise assessment described below. The assessment points shall be agreed with the Director prior to the quantitative noise assessment and may be varied subject to the best and latest information available during the course of the EIA Study. A map showing the location and description such as name of building, use, and floor of each and every selected assessment point shall be given. For planned noise sensitive land uses without committed site layouts, the Applicant should use the relevant planning parameters to work out representative site layouts for operational noise assessment purpose.
- (iii) Provision of an Emission Inventory of the Noise Sources  
The Applicant shall provide an inventory of noise sources including representative construction equipment for construction noise assessment. Confirmation of the validity of the inventory shall be obtained from the relevant government departments/authorities and documented in the EIA report.
- (iv) Construction Noise Assessment
  - (a) The assessment shall cover the cumulative noise impacts due to the construction works of the Project and other concurrent projects identified during the course of the EIA study.
  - (b) The Applicant shall carry out assessment of noise impact from construction (excluding percussive piling) of the Project during daytime, i.e. 7 a.m. to 7 p.m., on weekdays other than general holidays in accordance with the methodology in paragraphs 5.3. and 5.4 of Annex 13 of the TM. The criteria in Table 1B of Annex 5 of the TM shall be adopted in the assessment.
  - (c) To minimize the construction noise impact, alternative construction methods to replace percussive piling shall be proposed as far as practicable.
  - (d) If the unmitigated construction noise levels are found exceeding the relevant criteria, the Applicant shall propose practicable direct mitigation measures (including movable barriers, enclosures, quieter alternative methods, re-scheduling and restricting hours of operation of noisy tasks) to minimize the impact. If the mitigated noise levels still exceed the relevant criteria, the duration of the noise exceedance shall be given.

- (e) The Applicant shall, as far as practicable, formulate a reasonable construction programme so that no work will be required in restricted hours as defined under the Noise Control Ordinance (NCO). In case the Applicant needs to evaluate whether construction works in restricted hours as defined under NCO are feasible or not in the context of programming construction works, reference should be made to relevant technical memoranda issued under NCO. Regardless of the results of construction noise impact assessment for restricted hours, the Noise Control Authority will process Construction Noise Permit (CNP) application, if necessary, based on NCO, the relevant technical memoranda issued under the NCO, and the contemporary conditions/situations. This aspect should be explicitly stated in the noise chapter and conclusions and recommendations chapter in EIA report.

**Appendix D****Guidelines for Construction Air Quality Impact Assessment**

The construction air quality impact assessment shall include the following :

The Applicant shall review the constructional dust impact arising from the project with respect to the following:

- (i) Background and analysis of activities
  - (a) Provide background information relating to air quality issues relevant to the project, e.g. description of the types of activities of the project that may affect air quality during construction stage.
  - (b) Present the background air quality levels in the assessment area for the purpose of evaluating the cumulative construction air quality impacts.
  - (c) Consider alternative modes of operation to minimize construction air quality impact.
- (ii) Identification of Air Sensitive Receivers (ASRs) and Examination of Emission Characteristics
  - (a) Identify and describe representative existing and planned/committed ASRs that would be affected by the Project, including those earmarked on the relevant Outline Zoning Plans, Development Permission Area Plans, Outline Development Plans and Layout Plans. A map showing the location and description including name of buildings, their uses and height of the selected ASRs shall be given. The separation distance of these ASRs from the nearest emission sources shall also be given.
  - (b) Identify and present a list of air pollutant emission sources, including any nearby emission sources, which are likely to have impact on the project. Examples of construction stage emission sources include vehicle movements on unpaved roads on site, earthworks and tunnel formation and material handling, etc.
- (iii) Construction Air Quality Impact

The Applicant shall follow the requirements of the Air Pollutant Control (Construction Dust) Regulation and propose any other remedies or mitigation measures in dust control to ensure construction dust impacts are controlled within the relevant standards as stipulated in section 1 of Annex 4 of the TM. A monitoring and audit programme for the construction phase shall be devised to verify the effectiveness of the control measures proposed so as to ensure proper construction dust control.

**Appendix E**

**Implementation Schedule**

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Measure & Main Concerns to be Addressed	Who will Implement the Measure	Location of the Measure	When to Implement the Measure	What Standard or Requirement the Measure will Achieve