賽馬會文物保育有限公司
The Jockey Club CPS Limited

Central Police Station Conservation and Revitalisation Project

Environmental Monitoring & Audit Manual

January 2011

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The Jockey Club CPS Limited

Central Police Station Conservation and Revitalisation Project: *EM&A Manual*

January 2011

For and on behalf of
Environmental Resources Management

Approved by: Frank Wan

Signed:

Position: Partner

Date: 13 January 2011

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1 INTRODUCTION

1.1 PURPOSE OF THE MANUAL

ERM-Hong Kong Ltd was commissioned by the Jockey Club CPS Limited ("the CPS Ltd") to undertake an Environmental Impact Assessment (EIA) Study for the conservation and revitalisation of the Central Police Station (CPS) (hereafter referred to "the Project"). This Environmental Monitoring and Audit (EM&A) Manual (hereafter referred to as the Manual) is a supplementary document to the EIA Report.

The Manual has been prepared in accordance with the *EIA Study Brief* (No. ESB-205/2009) and the *Technical Memorandum of the Environmental Impact Assessment Process* (*EIAO-TM*). The purpose of the Manual is to provide information, guidance and instruction to personnel charged with environmental duties and those responsible for undertaking EM&A work during construction and operation of the Project. It provides systematic procedures for monitoring and auditing the environmental performance of the Project.

This Manual contains the following information:

- Responsibilities of the Contractor(s), Environmental Team (ET), and the Independent Environmental Checker (IEC) with respect to the EM&A requirements during the implementation of the Project;
- Project organisation;
- Requirements with respect to the construction and operational programme schedule and the necessary EM&A programme to track the varying environmental impact;
- Details of the methodologies to be adopted including field, laboratory and analytical procedures, and details on quality assurance and quality control (QA/QC) programme;
- Preliminary definition of Action and Limit (A/L) levels;
- Establishment of Event and Action Plans (EAPs);
- Requirements for reviewing pollution sources and working procedures required in the event of exceedances of applicable environmental criteria and/or receipt of complaints;
- Requirements for presentation of EM&A data and appropriate reporting procedures; and
- Requirements for review of EIA predictions and the effectiveness of the mitigation measures and the EM&A programme.

An ET shall be appointed to conduct the monitoring works and to provide specialist advice on the undertaking and implementation of environmental responsibilities. The ET will be led and managed by the ET Leader. The ET Leader will have relevant education, training, knowledge, experience and professional qualifications and the appointment will be subject to the approval of the Director of Environmental Protection. Suitably qualified staff will be included in the ET, and ET should not be in any way an associated body of the Contractor(s). For the purpose of this manual, the ET Leader, who will be responsible for, and in charge of, the ET, is referred to as the person delegated the role of executing the EM&A requirements for the Project.

To maintain strict control of the EM&A process, an IEC will be engaged to verify and validate/ audit the environmental performance of the Contractor(s). Sufficient and suitably qualified professional and technical staff will be employed by the IEC, as required under the EM&A programme for the duration of the Project.

1.2 PROJECT DESCRIPTION

1.2.1 Project Scope

The vision of the Project embraces three major principles:

1. *Heritage:*

    - to set the Hong Kong benchmark for excellence in the restoration, revitalisation and adaptive reuse of historic structures; and
    - to be the focal attraction in the Government's Conserving Central project.

2. *Visual Arts:*

    - to establish an international reputation for organising art exhibitions;
    - to attract a high quality cluster of arts organisations;
    - to create a programme and arts facility that will appeal to a wide cross section of the people of Hong Kong;
    - to complement the visual arts with a lively and varied performing arts schedule;
    - to provide an international platform for Hong Kong and Pearl River Delta creative talent;
    - to attract international talent to Hong Kong through exhibitions and artists' residency programmes; and
    - to provide a practical training base for Hong Kong and China based arts professionals.

3. History:

- to provide a unique and informative interpretative experience;
- to relay the history and stories of the Site to students, local visitors and tourists; and
- to explain the role of law and order in the context of Hong Kong's development.

The Project aims to transform a cluster of Declared Monuments into a thriving cultural and historic centre which is financially supported by suitably compatible commercial activities.

The location of the Project Site and Site Plan are shown in *Figures 1.1* and *1.2*.

The Project will repair and conserve the historic buildings with alterations that are necessary to bring them back into beneficial use and to extend their useful lives. The Project will, through beneficial adaptive re-use and the insertion of new buildings, revitalise the CPS by providing much needed venues for cultural use and open spaces for the general public to enjoy.

1.2.2 Construction Works

The construction and modification/refurbishment works are designed to match the requirements of the proposed uses and enhance the spaces and connections between the buildings and improve circulation throughout the Site. The key modification/refurbishment works will include repairs to internal finishes and necessary alterations, repair of facades, electrical and mechanical upgrading, improve the paving and site circulation between buildings and opening up part of the existing boundary wall to facilitate access to the Site.

The construction of the new buildings (the Old Bailey Wing and the Arbuthnot Wing) will involve typical activities including excavation, foundation and construction of basement and superstructure.

1.2.3 Construction Programme

The construction works are tentatively scheduled to commence in early 2012 and complete during 2014. The modification works at the existing buildings are divided into four phases. The major demolition and excavation works will be conducted in Phase 1 while Phases 2 to 4 will involve renovation work carried out mainly by the use of handheld/light equipment. The construction work for the new building will be undertaken in parallel to the modification works at the existing buildings. The tentative construction programme is presented in *Figure 1.3*.

1.3 OBJECTIVE OF THE EM&A

The broad objective of this EM&A Manual is to define the procedures of the EM&A programme for monitoring the environmental performance of the Project

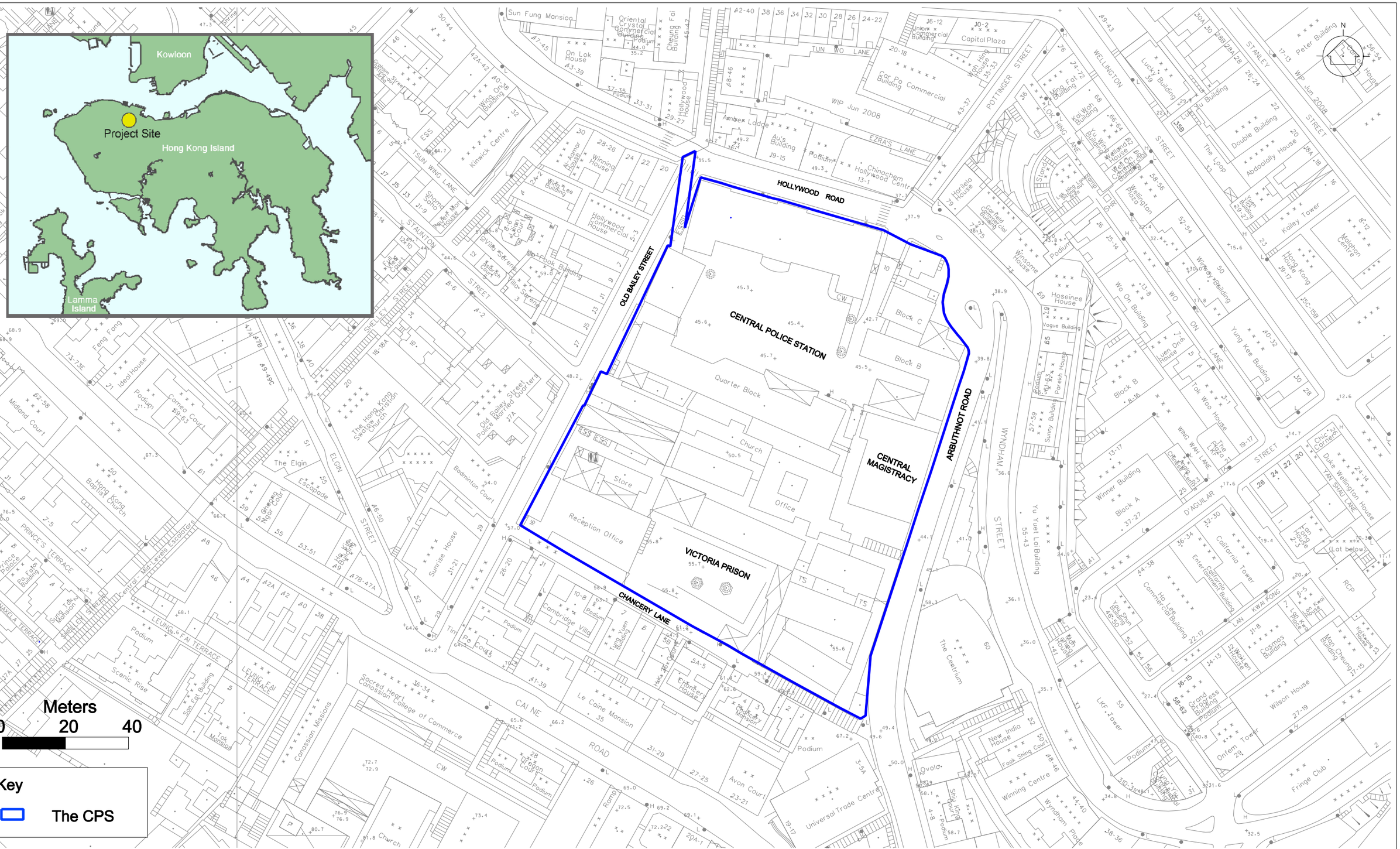

Figure 1.1

Project Location

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DATE: 27/08/2010

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Figure 1.2

Site Plan

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Date: 18/11/2010

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BLOCK PLAN

Key

- Phase 1
- Phase 2
- Phase 3
- Phase 4

BUILDING INDEX

01 POLICE HEADQUARTERS
02 ARMOURY
03 BARRACK BLOCK
04 MARRIED INSPECTORS' QUARTERS AND DEPUTY SUPERINTENDENTS HOUSE
06 MARRIED SERGEANTS' QUARTERS
07 SINGLE INSPECTORS' QUARTERS
08 ABLUTIONS BLOCK
09 CENTRAL MAGISTRACY
10 SUPERINTENDENT'S HOUSE
11 A HALL
12 B HALL
13 C HALL
14 D HALL
15 E HALL
17 F HALL
19 BAUHINIA HOUSE
OBW OLD BAILEY WING
AW ARBUTHNOT WING

Activities	2012												2013												2014											
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Demolition Works (Site Wide Structure)																																				
Repair and A&A Works for Existing Buildings																																				
Phase 1 Construction (Lower Courtyard, Buildings 8, 11, 12)																																				
Phase 2 Construction (Buildings 1, 2, 3, 4, 6, 7)																																				
Phase 3 Construction (Buildings 9, 10, 13)																																				
Phase 4 Construction (Buildings 14, 15, 17, 19)																																				
New Building Works																																				
Foundation																																				
Excavation and Lateral Support																																				
Basement construction																																				
Superstructure Construction																																				
Curtain Wall Installation																																				
Application and Inspection for OP/FS																																				
Post OP Fitting Out Works / Installation of Equipment																																				

Figure 1.3

Tentative Construction Programme

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DATE: 29/12/2010

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during design, construction and operation. The construction and operational impacts arising from the implementation of the Project are described in the EIA Report. The EIA Report also specifies mitigation measures and good construction site practices that will be needed to comply with the environmental criteria or further minimise the potential impacts. These mitigation measures and their implementation requirements are presented in the Implementation Schedule of Mitigation Measures (see *Annex A*).

The main objectives of the EM&A programme are to:

- provide a database of environmental parameters against which to determine any short term or long term environmental impacts;
- provide an early indication should any of the environmental control measures or practices fail to achieve the acceptable standards;
- confirm that the mitigation measures recommended in the EIA Report are properly incorporated into the design of the Project;
- confirm that the design complies with the recommendations of EIA Report and the conditions of Environmental Permit (EP);
- clarify and identify potential sources of pollution, impact and nuisance arising from the works for the responsible parties;
- confirm compliance with regulatory requirements, contract specifications and EIA study recommendations;
- monitor performance of the mitigation measures and to assess their effectiveness;
- take remedial actions if unexpected issues or unacceptable impacts arise;
- verify the environmental impacts predicted in the EIA; and
- audit environmental performance.

The EIA Study indicates that an EM&A programme will be required for the construction and operation phases of this Project. A summary of the requirements for each of the environmental parameters is detailed in *Table 1.2*.

Table 1.2 Summary of EM&A Requirements

Parameters	Construction Phase [a]	Operation Phase [a]
Cultural Heritage	M + SA	SA
Landscape and Visual	M + SA	M
Noise	M + SA	M[b]
Air Quality	SA	-
Water Quality	SA	-
Waste	SA	-

Note:
(a) M = monitoring, SA = site audit
(b) Monitoring will be required for outdoor events only and will be implemented through contract requirement for the event organisers.

1.4 SCOPE OF THE EM&A PROGRAMME

The scope of this EM&A programme is to:

- establish baseline noise levels at specified locations and implement monitoring requirements for noise monitoring programme during construction;
- implement inspection and audit requirements for cultural heritage, landscape and visual, air quality, noise, water quality and waste management and;
- liaise with, and provide environmental advice (as requested or when otherwise necessary) to construction site staff on the significance and implications of the environmental monitoring data;
- identify and resolve environmental issues and other functions as they may arise from the works;
- check and quantify the Contractor(s)'s overall environmental performance, implementation of EAPs, and remedial actions taken to mitigate adverse environmental effects as they may arise from the works;
- conduct monthly reviews of monitored impact data as the basis for assessing compliance with the defined criteria and to verify that necessary mitigation measures are identified and implemented, and to undertake additional *ad hoc* monitoring and auditing as required by special circumstances;
- evaluate and interpret environmental monitoring data to provide an early indication should any of the environmental control measures or practices fail to achieve the acceptable standards, and to verify the environmental impacts predicted in the EIA;
- manage and liaise with other individuals or parties concerning other environmental issues deemed to be relevant to the construction process;

- conduct regular site inspections and audits of a formal or informal nature to assess:
  - the level of the Contractor(s)'s general environmental awareness;
  - the Contractor(s)'s implementation of the recommendations in the EIA and their contractual obligations;
  - the Contractor(s)'s performance as measured by the EM&A;
  - the need for specific mitigation measures to be implemented or the continued usage of those previously agreed; and
  - to advise the site staff of any identified potential environmental issues;
- produce monthly EM&A reports which summarise EM&A data, with full interpretation illustrating the acceptability or otherwise of any environmental impacts and identification or assessment of the implementation status of agreed mitigation measures.

1.5 ORGANISATION & STRUCTURE OF THE EM&A

The EM&A will require the involvement of the CPS Ltd, an Authorised Person (AP), an ET, an IEC and the Contractor(s) (see *Figure 1.4*). The roles and responsibilities of the various parties involved in the EM&A process are further expanded in the following section.

1.5.1 Project Organisation

The CPS Ltd will employ an AP, to oversee the construction works of the Project and monitor the works undertaken by various Contractors, and for ensuring that the works are undertaken in accordance with the specification and contractual requirements.

The CPS Ltd will appoint an ET to conduct the site inspection and monitoring and, to provide specialist advice on implementation of environmental responsibilities.

The ET will have previous relevant experience with managing similarly sized EM&A programmes and shall include an experience building conservation expert and the ET Leader will be a recognised environmental professional, with a minimum of seven years relevant experience in impact assessments and EM&A programmes. The ET Leader will be responsible for, and in charge of, the ET; and will be the person responsible for executing the EM&A requirements, and to provide advice (if required) on environmental clauses for Contract Specifications of the Project.

To maintain strict control of the EM&A process, the CPS Ltd will appoint an independent environmental consultant to act as the IEC to verify and validate/ audit the environmental performance of the Contractor(s) and works of the ET. The IEC will have previous relevant experience with checking and auditing

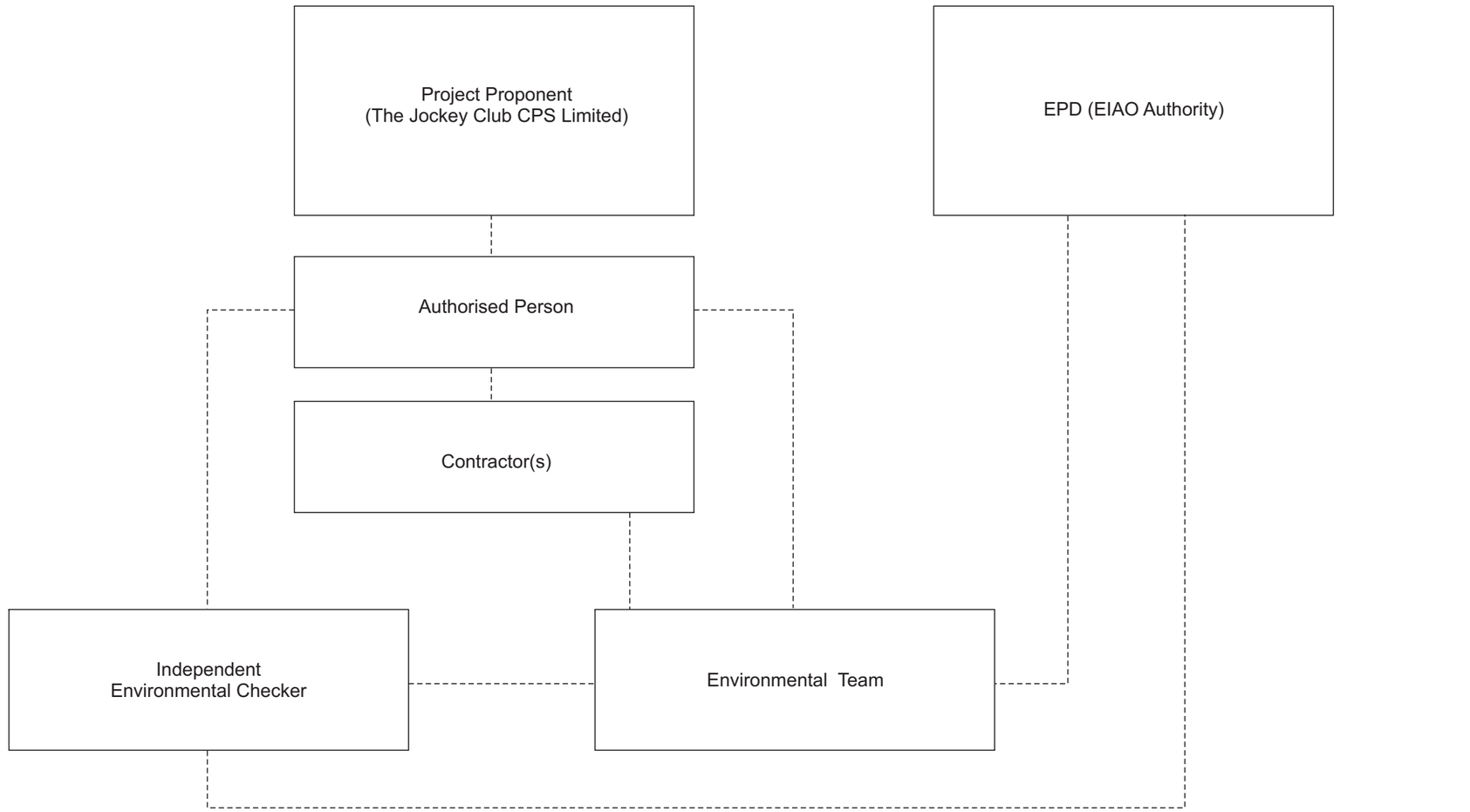

Figure 1.4

EM&A Organisation Chart

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similarly sized EM&A programmes and the IEC will be a recognised environmental professional, with a minimum of seven years relevant experience in impact assessments and EM&A programmes. The IEC should be supported by an experience building conservation expert to cover the building conservation aspect of the EM&A programme.

Roles & Responsibilities

The CPS Ltd will:

- employ an ET to undertake monitoring and reporting of environmental monitoring data, and site inspection of construction works;
- employ an IEC to audit and verify the overall environmental performance of the works and to assess the effectiveness of the ET in their duties;
- supervise the Contractor(s)' activities and confirm that the requirements in the Manual and the Contract Documents are fully complied with;
- develop appropriate contract clauses to confirm that the Contractor(s) will have qualified professionals to interface with the CPS Ltd/AP / ET /IEC to fulfil the EIA/EP requirements;
- inform the Contractor(s) when action is required to reduce impacts in accordance with the EAPs;
- adhere to the procedures for carrying out complaint investigation; and
- participate in joint site inspections undertaken by the ET and IEC.

The AP will:

- ensure that the EM&A programme is fully implemented in accordance with the EP issued upon approval of the EIA Report and the Manual;
- ensure that the Contractor is implementing environmental controls and mitigation as set out in the contract specifications, EP issued upon approval of the EIA Report and the Manual as well as any additional measures necessary for compliance with the environmental control standards;
- ensure that the Contractor is implementing and enforcing EAPs when exceedances of A/L Levels or complaints occur;
- provide assistance to the ET as necessary in the implementation of the EM&A programme; and
- implementing a `stop work' action if necessary when repeated exceedance of target levels justifies this action.

The Contractor(s) will:

- work within the scope of the construction contract and other regulatory requirements;
- provide assistance to the ET in carrying out environmental monitoring and site inspections;
- submit proposals on mitigation measures in case of exceedances of the A/L levels in accordance with the EAPs;
- implement measures to reduce impact where A/L levels are exceeded;
- implement the corrective actions instructed by the CPS Ltd /AP/ETL/IEC;
- participate in the site inspections undertaken by the ET and the IEC, as required, and undertake any corrective actions instructed by the CPS Ltd AP/ETL/IEC; and
- adhere to the procedures for carrying out complaint investigation.

The ET will:

- monitor various environmental parameters as required in the Manual;
- assess the EM&A data and review the success of the EM&A programme determining the adequacy of the mitigation measures implemented and the validity of the EIA predictions as well as identify any adverse environmental impacts before they arise;
- carry out regular site inspection to investigate the Contractor(s)'s site practice, equipment and work methodologies with respect to pollution control and environmental mitigation, and effect proactive action to pre-empt issues;
- review the Contractor(s)'s working programme and methodology, and comment as necessary;
- assisted by an experience building conservation expert to review the compliance and effectiveness of the mitigation measures recommended in Section 3.7 of the EIA report
- review and prepare reports on the environmental monitoring data and site environmental conditions;
- report on the environmental monitoring results and conditions to the IEC, Contractor(s), AP, the CPS Ltd and EPD;
- recommend suitable mitigation measures to the Contractor(s) in the case of exceedance of A/L levels in accordance with the EAPs; and
- adhere to the procedures for carrying out complaint investigation.

The IEC will:

- review and audit the implementation of the EM&A programme and the overall level of environmental performance being achieved;
- assisted by an experience building conservation expert to check the compliance and effectiveness of the mitigation measures recommended in Section 3.7 of the EIA report;
- arrange and conduct monthly independent site audits of the works;
- validate and confirm the accuracy of monitoring results, monitoring equipment, monitoring stations, monitoring procedures and locations of sensitive receivers;
- audit the EIA recommendations and requirements against the status of implementation of environmental protection measures on site;
- on an as needed basis, audit the Contractor(s)'s construction methodology and agree the appropriate, reduced impact alternative in consultation with the CPS Ltd, AP, ET and the Contractor(s);
- adhere to the procedures for carrying out complaint investigation;
- review the effectiveness of environmental mitigation measures and project environmental performance including the proposed corrective measures;
- review EM&A report submitted by the ET leader and feedback audit results to ET by signing off relevant EM&A proformas; and
- report the findings of site audits and other environmental performance reviews to the CPS Ltd, AP, ET, EPD and the Contractor(s).

1.5.2 Key Contact Information

Key contact information will be provided in a similar format as in *Table 1.3*.

Table 1.3 Contact Information (to be completed prior to commencement of construction)

Name	Position	Telephone	Facsimile	E-mail
The CPS Ltd – EP Holder				
To be confirmed				
AP				
To be confirmed				
Contractor(s)				
To be confirmed				
ET				
To be confirmed				
IEC				
To be confirmed				

The updated EM&A Organisation Chart with name and contact information of each member; and a checklist indicating the role and duties of each member responosible for heritage conservation in different stages shall be submitted to the Antiquities and Monuments Office (AMO) prior to construction stage commencement.

1.6 STRUCTURE OF THE EM&A MANUAL

The remainder of the Manual is set out as follows:

- *Section 2* sets out the EM&A general requirements;
- *Section 3* sets out the EM&A requirements for cultural heritage;
- *Section 4* sets out the EM&A requirements for landscape and visual;
- *Section 5* sets out the audit requirements for noise;
- *Section 6* sets out the audit requirements for air quality;
- *Section 7* sets out the audit requirements for water quality;
- *Section 8* sets out the audit requirements for waste management;
- *Section 9* describes the scope and frequency of site environmental inspection; and
- *Section 10* details the reporting requirements for the EM&A programme.

2 EM&A GENERAL REQUIREMENTS

2.1 INTRODUCTION

In this section, the general requirements of the EM&A programme for the Project are presented. The scope of the programme is developed with reference to the findings and recommendations of the EIA Report.

2.2 Construction Phase EM&A

Potential environmental impacts, which were identified during the EIA process and are associated with the construction phase of the Project, will be addressed through the monitoring and controls specified in the Manual and in the construction contracts.

During the construction phases of the Project, cultural heritage, landscape and visual, air quality, noise, water quality, and waste will be subject to EM&A, with environmental monitoring being undertaken for cultural heritage, landscape and visual and noise as determined in the EIA. Monitoring of the effectiveness of the mitigation measures will be achieved through the environmental monitoring programme as well as through site inspections. The inspections will include within their scope, mechanisms to review and assess the Contractor(s)'s environmental performance, ensuring that the recommended mitigation measures have been properly implemented, and that the timely resolution of received complaints are managed and controlled in a manner consistent with the recommendations of the EIA Report.

2.2.1 Operation Phase EM&A

During the operation phase of the Project, environmental monitoring will be undertaken for landscape aspect,while audit of implementation of recommended mitigation measures for cultural heritage will be undertaken as determined in the EIA. However, should other operational licenses that require specific monitoring or audit conditions or practices be required, plans under the respective ordinances/ guidelines will need to be put in place.

2.2.2 Environmental Monitoring

The environmental monitoring work throughout the Project period will be carried out in accordance with this EM&A and reported by the ET. Monitoring works will cover cultural heritage, landscape and visual and noise and will form an important part of the whole EM&A programme.

2.2.3 Action and Limit (A/L) Levels

A/L Levels are defined levels of impact recorded by the environmental monitoring activities which represent levels at which a prescribed response is

required. These levels are quantitatively defined later in the relevant sections of the Manual and described in principle below:

- *Action Levels:* levels beyond which there is a clear indication of a deteriorating environmental conditions for which appropriate remedial actions are likely to be necessary to prevent environmental quality from falling outside the Limit Levels, which would be unacceptable; and

- *Limit Levels:* statutory and/or agreed contract limits stipulated in the relevant pollution control ordinances, Hong Kong Planning Standards and Guidelines (HKPSG) or Environmental Quality Objectives established by the EPD. If these are exceeded, works will not proceed without appropriate remedial action, including a critical review of plant and working methods.

2.2.4 Event and Action Plans (EAPs)

The purpose of the EAPs is to provide, in association with the monitoring and audit activities, procedures for ensuring that if any significant environmental incident occurs, the cause will be quickly identified and remediated. This also applies to the exceedances of A/L limits identified in the EM&A programme.

2.2.5 Site Inspections & Audits

In addition to cultural heritage, landscape and visual and noise monitoring as a means of assessing the ongoing performance of the Contractor(s), the ET will undertake site inspections of on-site practices and procedures each month. The primary objective of the inspection programme will be to assess the effectiveness of the environmental controls established by the Contractor(s) and the implementation of the environmental mitigation measures recommended in the EIA Report. The IEC will undertake monthly site audits to assess the performance of the Contractor(s) and the effectiveness of the ET.

Whilst the inspection and audit programme will complement the monitoring activity, the criteria against which the inspection/ audits will be undertaken will be derived from the Clauses within the Contract Documents which seek to enforce the recommendations of the EIA Report and the Manual.

The findings of site inspections and audits will be made known to the Contractor(s) at the time of the inspection to enable the rapid resolution of identified non-conformities. Non-conformities, and the corrective actions undertaken, will also be reported in the monthly EM&A Reports.

Section 10 of the Manual presents details of the scope and frequency of on-site inspections and defines the range of issues that the audit protocols will be designed to address.

2.2.6 Enquiries, Complaint and Requests for Information

Enquiries, complaints and requests for information may occur from a wide range of individuals and organisations including members of the public, Government departments, the press and television media and community groups.

Enquiries, complaints and requests for information concerning the environmental effects of the construction works, irrespective of how they are received, will be reported to the CPS Ltd and AP and directed to the ET which will set up procedures for the handling, investigation and storage of such information. The following steps will then be followed:

1) The ET Leader will notify the CPS Ltd of the nature of the enquiry.

2) An investigation will be initiated to determine the validity of the complaint and to identify the source(s) of the issue.

3) The Contractor(s) will undertake the following steps, as necessary:

   - investigate and identify source(s) of the issue;
   - if considered necessary by the CPS Ltd following consultation with the IEC, undertake additional monitoring to verify the existence and severity of the alleged complaint;
   - liaise with EPD to identify remedial measures;
   - liaise with the IEC to identify remedial measures;
   - implement the agreed mitigation measures;
   - repeat the monitoring to verify effectiveness of mitigation measures; and
   - repeat review procedures to identify further practical areas of improvement if the repeat monitoring results continue to substantiate the complaint.

4) The outcome of the investigation and the action taken will be documented on a complaint log (see *Annex C*). A formal response to each complaint received will be prepared by the Contractor(s) within five working days and submitted to the CPS Ltd, in order to notify the concerned person(s) that action(s) has been taken.

5) Enquires which trigger this process will be reported in the monthly EM&A Reports which will include results of inspections undertaken by the Contractor(s), and details of the measures taken, and additional monitoring results (if deemed necessary). It should be noted that the receipt of complaint or enquiry will not be, in itself, a sufficient reason to introduce additional mitigation measures.

The complainant will be notified of the findings, and audit procedures will be put in place to verify that the issue does not recur.

2.2.7 Reporting

Baseline and impact monitoring, monthly, quarterly and final reports will be prepared by the ET on behalf of the CPS Ltd and certified by the ET Leader and verified by the IEC. The reports will be submitted to the Contractor(s), the CPS Ltd and EPD. The monthly EM&A Reports will be prepared and submitted within two weeks of the end of each calendar month**.**

2.2.8 Cessation of EM&A

The cessation of EM&A programme is subject to the satisfactory completion of the Final EM&A Report, agreement with the IEC and approval from EPD.

3 CULTURAL HERITAGE

3.1 INTRODUCTION

In accordance with the recommendations of the EIA, mitigation measures have been proposed and are summarised in *Annex A - Implementation Schedule*.

3.2 DETAILED DESIGN STAGE

3.2.1 COMPREHENSIVE SURVEY, IMPACT ASSESSMENT OF HISTORIC FEATURES OF THE MONUMENTS AND IDENTIFICATION OF CHARACTER DEFINING ELEMENTS (CDE)

As not all parts of the buildings are accessible during EIA stage of the Project, comprehensive survey and impact assessment and appropriate mitigation measures for all the character defining elements and items of heritage significance of each building will be conducted in detailed design stage. In order to provide appropriate mitigation measures for historical features of the monuments, the relevant comprehensive survey and impact assessment will therefore be conducted during the detailed design stage when closer access to all parts of the buildings will be made possible and when further ground investigations will have been carried out. Closer access at all levels inside and outside the buildings will clarify the condition of the fabric and features and finishes, and the further ground investigations will clarify any strengthening work required. The design and coordination of the services requirements and their integration into each building will be carried during the detailed design stage. The detailed design development of the historic buildings, with the required interventions, strengthening and integrated services for new adaptive uses, will be carried out by the conservation design team and agreed with AMO. The comprehensive survey and the impact assessments on the historical features will make reference to AMO's archival records and the possible mitigation measures will be tabled in four categories in the protection schedule of the historical features for AMO's approval:

- Historical features to be preserved and repaired in-situ;
- Historical features to be altered/ replaced with new replicas;
- Historical features to be temporarily removed for conservation treatment and reinstatement; and
- Historical features to be affected and relocated for reuse, display and/ or preservation by record.

For those historical features of significant cultural heritage value will be defined as the character defining elements of the monuments. All the character defining elements will be well preserved in-situ and repaired in accordance with the work methodologies approved by the AMO

3.2.2 ARCHIVAL RECORDING

In order to provide an archival record of the site and a detailed reference for future restoration works, a detailed cartographic drawings and photographic records showing the existing condition of all the buildings and identified CDE should be conducted and submitted to the AMO before the construction stage for approval. The archival recording shall compile of a full inventory list together with the protection schedule of the historical features of the monuments, and identify the character defining elements (CDEs) of the monuments from the surveyed significant historical features. All the CDEs must be preserved, repair and maintained properly, and the inventory list shall be updated after the construction and include in the Conservation Management Plan (CMP).

3.2.3 REPAIR AND RESTORATION OF HISTORIC BUILDINGS AND STRUCTURES

A restoration proposal with detailed work methodologies of the repair and conservation treatments to different kinds of historic building fabrics and historical features should be worked out by the Conservation Architect and submitted to the AMO for approval.

3.2.4 ADDITION AND ALTERATION (A&A) WORKS PROPOSAL

As the A&A works and repair works in the historic buildings and the Site including the proposed underground utilities within the Site and major proposed changes as mentioned in the EIA report is still in conceptual stage, in order to ensure the full compliance of the conservation guidelines and approaches as mentioned in the EIA report is followed, the project proponent shall submit detailed proposal of the A&A works and repairs by means of plans, drawings, photos, specifications, method statements and/or other formats of presentation to the AMO for approval.

3.2.5 DETAILED STRUCTURAL ASSESSMENT

The existing building structures have been assessed by the structural engineer as being capable of supporting the proposed new uses and alterations without extensive strengthening work. In order to ensure that the impact to the historic fabric of the buildings is minimal due to the floor strengthening proposal, a detailed structural report will be prepared by the structural engineer during the detailed stage to evaluate if the strengthening proposal needs to be revised and determine any strengthening work is required for the floors and foundations resulting from the loadings of the new uses, or the alterations, or from the condition of the existing structures. Any structural strengthening proposals will be assessed for their impacts on the CDEs, and mitigation measures will be considered.

3.2.6 ARCHAEOLOGICAL INVESTIGATION

An archaeological investigation will be conducted to obtain field data for subsequent detailed impact assessment. The archaeological investigation will focus on areas with archaeological potential that may potentially be

impacted by the Project (i.e. proposed new development that involves excavation work in archaeological potential areas) and the investigation is considered feasible to be carried out in the detailed design phase. These areas are identified on *Figure 3.1*. Subject to the findings of the archaeological investigation, appropriate mitigation measures will be recommended and agreed with the AMO.

If new underground services are proposed at the detailed design stage, subject to the outcome of the archaeological investigation to be conducted in detailed design stage for the Project, the need for additional archaeological investigation and subsequent impact assessment due to the new underground services should be reviewed.

3.2.7 HERITAGE OPERATIONAL STRATEGY AND MANUALS

Detailed Heritage Operational Strategies and Manuals will be developed by the design team and CPS Ltd's advisors for each building and for the management and circulation of the Site (such as distribution of goods and services into and across the Site, control of visitors, etc.) for AMO's approval. To facilitate the future maintenance and repair of the built heritage in the Site at the operation stage, one set of the approved method statement of the repair works to the historic features together with the contact details of the respective work contractors engaged in the project shall be included in the Heritage Operational Manual as part of the heritage maintenance guidelines for the reference of site management and maintenance agents.

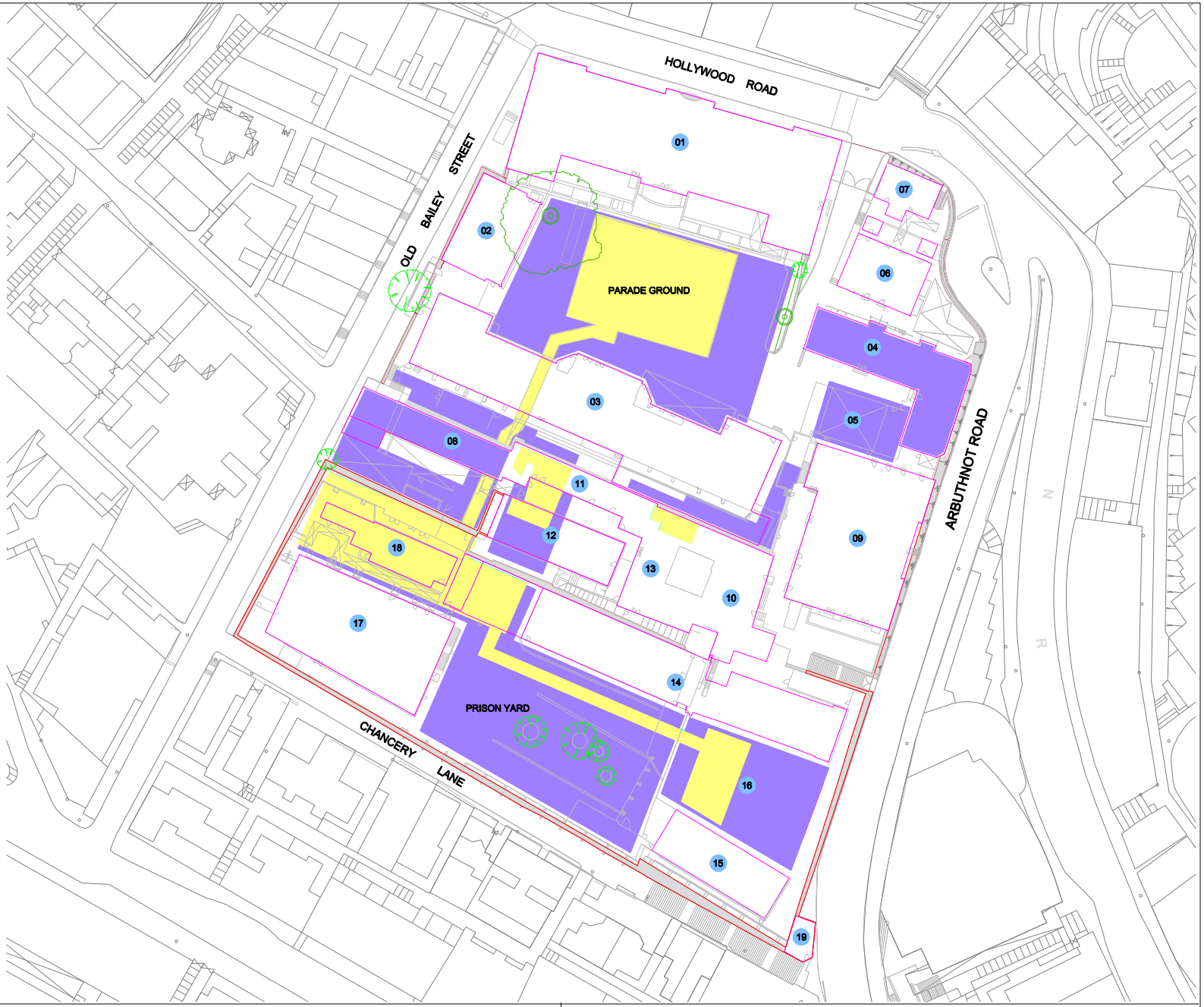
3.3 CONSTRUCTION PHASE

3.3.1 VIBRATION MONITORING

Potential ground-borne vibration onto the historic buildings and structures in CPS, the granite walls at Old Bailey Street and the Proposed Grade 3 Historic building (No. 20 Hollywood Road) outside CPS is anticipated during site formation and excavation and lateral support works. It is recommended that prior to commencement of the construction works, a baseline condition survey and baseline vibration impact be conducted by a specialist to define the vibration control limits and recommend a vibration monitoring proposal for the concerned historic buildings and structures in and outside CPS for AMO's prior approval before commencement of the construction works.

If the evaluated and/or measured vibrations have been found to exceed the allowable values or if damage to either structural or non-structural elements of the historic buildings have been identified, the construction work should be stopped and the construction method and appropriate mitigation measures should be the reviewed and submitted to the AMO for approval.

Building No.	Building Name
1	Headquarters Block
2	Armoury
3	Barracks Block
4	Married Inspectors' Quarters and Deputy Superintendent's House
5	Garage
6	Married Sergeants' Quarters
7	Single Inspections' Quarters
8	Ablutions Block
9	Central Magistracy
10	Superintendents House
11	A Hall
12	B Hall
13	C Hall
14	D Hall
15	E Hall
16	Workshops & Laundry
17	F Hall
18	General Office
19	Bauhinia House



01 Building Number

Indicates areas of excavations for proposed new buildings, principal service trenches and underground circulation

Indicates areas of potential archaeological remains including foundations of former buildings and features

Figure 3.1 Areas (in Yellow) involve Soil Excavation Works

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3.3.2 ARCHAEOLOGICAL RESOURCES

No EM&A is required at the archaeological potential area of the Garage (building 05) and the Married Inspectors' Quarters and Deputy Superintendent's House (building 04).

3.3.3 COMPLIANCE OF THE APPROVED MEASURES AND AUDITING

Staff training by an experience building conservation expert or relevant competent person(s) in the environmental team of the project should be provided to the on-site staffs, contractors, sub-contractors and workers of the project before commencement of works to ensure their full understanding of the approved protection schedule, restoration proposal and work methodologies related to cultural heritage, and their respective responsibilities in the implementation of the environmental protection measures.

Regular site audit for cultural heritage should be carried out in the construction phase by an experience building conservation expert in the environmental team ("the Heritage Checker") to investigate the site practice of the contractors and workers and their compliance of the approved work methodologies with respect of conservation works, mitigations for cultural heritage and any related works. A detailed proposal of the regular audit such as methodology (e.g. performance and monitoring indicators, contrl tools, frequency of the audit, etc.) and the conservation professionals to be engaged should be agreed with AMO prior to work commencement.

The Heritage Checker shall also attend the regular site meetings with AMO and report the compliance and effectiveness of the mitigation measures for cultural heritage.

3.3.4 ARCHIVAL RECORDING

An archival recording should be conducted to provide a detailed reference for the update of the Conservation Management Plan and inventory of historical features of the monuments, the preparation of as-built drawings showing the condition of the historic buildings and structures after the completion of the construction works. These archival records will be a reference source for future maintenance of the character defining elements, conservation of the monuments, interpretation and conservation education of the Site . The archival recording shall include but not limit to the video and photographic recording on the detailed process of the repair trials for different kinds of historical features, conservation works of character defining elements and historic fabrics of the monuments, and a written records of any new changes to the detailed design made in the construction phase illustrate with photos and drawings. A full set of the archives records of construction work (including both hard and soft copies) should be submitted to the AMO after the work completion for record purpose.

3.4 OPERATION PHASE

3.4.1 REGULAR AUDIT

Regular audit is recommended for checking the compliance and effectiveness of the strategies and mitigation measures mentioned in Sections 3.7.4 and 3.7.5 should be conducted. The detailed proposal of the regular audit such as methodology (e.g. performance and monitoring indicators, control tools, frequency of the audit, etc) and the conservation professionals to be engaged should be agreed with AMO prior to operation commencement.

The management team shall ensure the audit to be carried out by an experience building conservation expert in order to investigate the site practice and work methodologies of th work contractors, the tenants and any other stakeholders of the Site with respect of conservation works, site interpretation of cultural heritage, and any related works in the operation phase.

To facilitate the future maintenance and management of the monuments, one set of the approved method statement/work methodology of the repair and conservation works to the historic features of the monuments (particular the CDEs) and contract details of the respective work contractors engaged in the repair and conservation works of the Project should be included in the Heritage Operation Manual for the reference of site management and maintenance agents.

An updated copy of the Heritage Operation Manual and the associated guidelines should be submitted to AMO at least one week before the opening of the Site.

At present no operational phase EM&A for archaeological resources and built heritage outside the CPS Site is considered necessary.

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4 LANDSCAPE & VISUAL

4.1 INTRODUCTION

The EIA has recommended that checking of implementation of the mitigation measures for landscape and visual resources shall be undertaken as part of the site inspections. The implementation and maintenance of mitigation measures (see *Annex A*) shall be checked to confirm that they are fully realised and that potential conflicts between the proposed landscape measures and any other project works and operational requirements are resolved at the earliest practical date and without compromise to the intention of the mitigation measures.

4.2 CONSTRUCTION PHASE

Monthly inspections of affected trees by an experienced and appropriately trained arborist or horticulturist using Form 1 – Tree Group Inspection Form and Form 2 – Tree Risk Assessment Form developed by Development Bureau (*http://www.trees.gov.hk/en/doc/TRAGuideline_July2010version_combine.pdf*) or a form designed by a tree expert and approved by Tree Management Office. All irregularities that deviate from the recommended tree protection measures, or could impose deleterious impacts on the protected trees, must be reported to the AP or the tree expert within two days.

Implementation of the mitigation measures for landscape and visual resources recommended in the EIA Report will be monitored through the site inspection and audit programme.

4.3 OPERATION PHASE

A detailed specifications and methods statement could be drafted and included in the soft landscape maintenance contract to circumscribe the scope and to ascertain the quality of the work. Following this, quarterly inspections of affected and newly planted trees should be undertaken by an experienced and appropriately trained arborist or horticulturist for a period of 12 months. Hard landscape maintenance will be covered by the Conservation Management Plan and Operational Phase Manual, as detailed in Sections 3.7.1 and 3.7.4 of the EIA Report.

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5 NOISE

5.1 INTRODUCTION

The requirements, methodology, equipment, monitoring locations, criteria and protocols for the monitoring and audit of noise impacts during construction of the Project are presented in this section. Weekly noise monitoring is recommended during the construction phase to ensure compliance with the noise criterion at the NSRs. Monthly site audits will be conducted to ensure that the recommended mitigation measures are properly implemented during the construction stage.

The mitigation measures recommended to control noise impacts are summarised in *Annex A*.

5.2 METHODOLOGY AND CRITERIA

Noise measurements should be carried out in accordance with the guidelines given in *Annex – General Calibration and Measurement Procedures* of *Technical Memorandum on Noise from Construction Work other than Percussive Piling* (*GW-TM*).

Whilst the *Noise Control Ordinance* (*NCO*) does not provide for the statutory control of construction activities occurring on weekdays during normal working hours (ie Monday to Saturday inclusive 0700-1900 hours), a day-time standard of $L_{eq(30min)}$ 75dB(A) as stipulated in Annex 5 of the *Technical Memorandum on Environmental Impact Assessment Process* (*EIAO-TM*) will be adopted as the noise criterion for all residential dwellings.

The construction noise levels will be measured in terms of A-weighted equivalent continuous sound pressure level (L_{eq}) measured in decibels dB(A). $L_{eq(30min)}$ should be used as the monitoring parameter for the time period between 0700-1900 hours on normal weekdays.

Supplementary information for data auditing, two statistical sound levels L_{10} and L_{90}; the levels exceeded for 10 and 90 percent of the time respectively, should also be recorded during the monitoring for reference. A sample data record sheet is shown in *Annex B* for reference.

Noise measurements should generally not be made in the presence of fog, rain, wind with a steady speed exceeding 5m s^{-1} or wind with gusts exceeding 10m s^{-1}. The wind speed should be checked with a portable wind speed meter capable of measuring the wind speed in m s^{-1}.

5.3 MONITORING EQUIPMENT

As referred to the *GW-TM*, sound level meters in compliance with the *International Electrotechnical Commission Publications 651:1979 (Type 1) and 804:1985 (Type 1) Specifications* should be used for carrying out the noise monitoring. Immediately prior to and following each noise measurement the accuracy of the sound level meter should be checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements may be accepted as valid only if the calibration levels from before and after the noise measurement agree to within 1.0 dB.

The ET should ensure that the equipment is maintained in a good working order in accordance with the manufacturer's recommendations with sufficient spare equipment available in the event of breakdown to maintain the planned monitoring programme.

The ET is responsible for the provision of the monitoring equipment and will ensure that sufficient noise measuring equipment and associated instrumentation are available for carrying out the baseline monitoring and impact monitoring. All the equipment and associated instrumentation will be clearly labelled.

5.4 MONITORING LOCATIONS

Representative locations were selected to monitor the noise levels from the construction of the Project. The noise monitoring stations are listed in *Table 5.1* and presented in *Figure 5.1*.

Table 5.1 Noise Monitoring Stations for Construction Noise

Monitoring Station	Description
N2	Ho Fook Building
N5	Chancery House

The status and locations of noise sensitive receivers (NSRs) may change after issuing the Manual and the location of the noise monitoring station may need to be adjusted accordingly. If such changes occur during the construction phase, the ET should propose an updated monitoring location for the agreement from the CPS Ltd, AP, IEC and EPD.

When alternative monitoring location is proposed, the following criteria, as far as practicable, should be followed:

- At locations close to the major site activities which are likely to have noise impacts;
- Close to the NSRs; and
- For monitoring locations located in the vicinity of the NSRs, care should be taken to minimise disturbance to the occupants during monitoring.

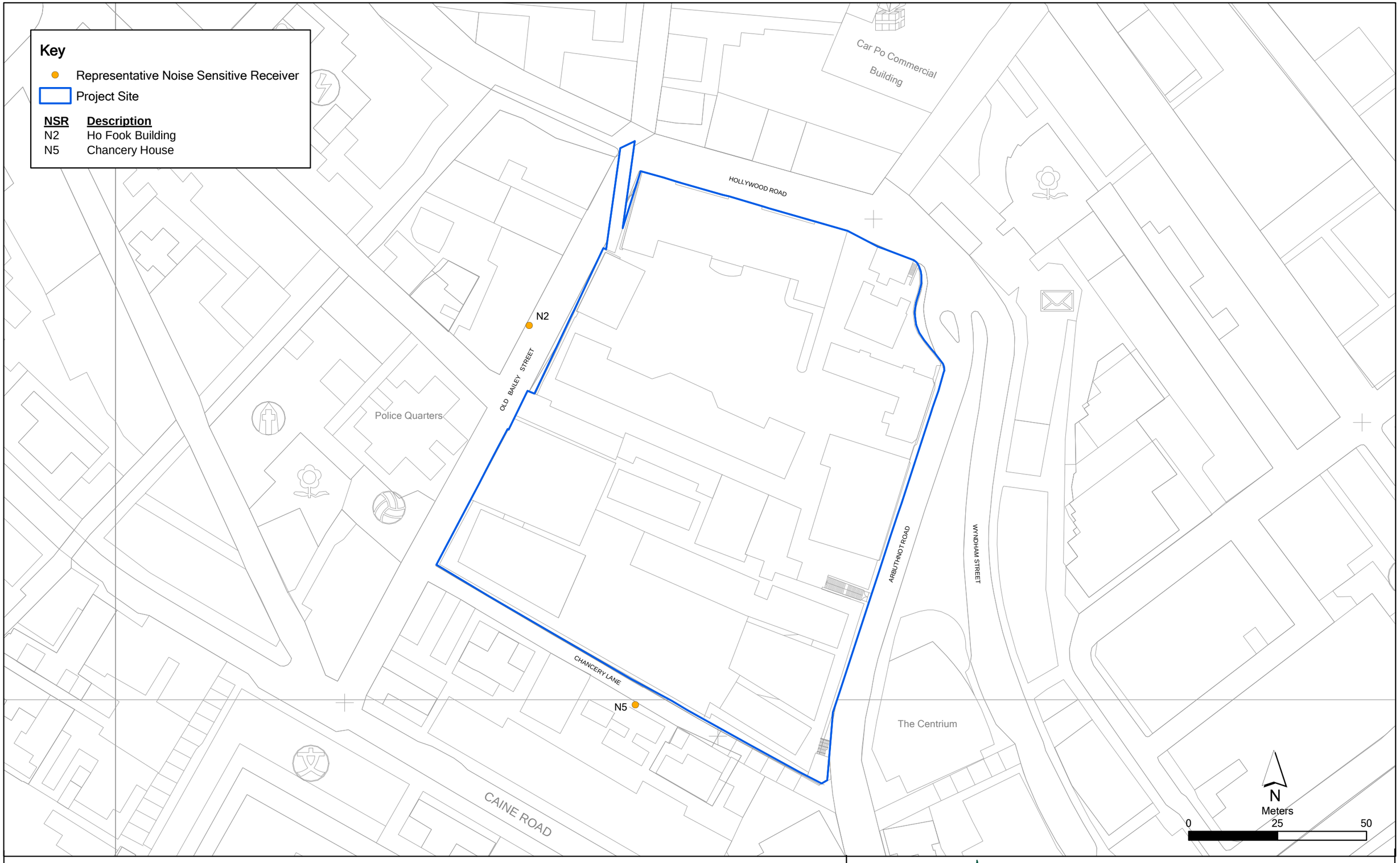

Figure 5.1

Location of Noise Monitoring Stations

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The monitoring station will normally be at a point 1m from the exterior of the NSR building façade and at a height of approximately 1.2m above ground or at the height that has the least obstructed view of the construction activities in relation to the NSR. If access to the normal monitoring position cannot be obtained, an alternative position will be chosen, and a correction to the measurements should be made, if appropriate. For instance, a correction of +3 dB(A) should be made to free-field measurements. The ET should agree with the AP, IEC, EPD and the owners/occupants of the premises on the monitoring position. Once the positions for the monitoring stations are chosen, the baseline monitoring and the impact monitoring should be carried out at the same positions.

5.5 BASELINE MONITORING

The ET should carry out baseline noise monitoring prior to the commencement of any construction works. The baseline monitoring shall be measured for a continuous period of at least 14 consecutive days at a minimum logging interval of 30 minutes for day-time and 15 minutes (as three consecutive $L_{eq(5min)}$ readings) for evening, holidays and night-time.

Before commencing the baseline monitoring, ET shall inform the Contractor(s), IEC, AP and the EPD of the baseline monitoring schedule programme such that relevant parties could conduct on-site audit to ensure accuracy of the baseline monitoring results.

During the baseline monitoring, there should not be any construction activities in the vicinity of the monitoring stations. Any non-Project related construction activities in the vicinity of the stations during the baseline monitoring should be noted and the source(s) and location(s) be recorded.

In case the baseline monitoring could not be carried out at any of the designated monitoring locations during the baseline monitoring period, the ET shall carry out the monitoring at alternative location which could effectively represent the baseline conditions at the impact monitoring locations. The alternative baseline monitoring locations shall be agreed with the AP, Contractor(s) and IEC and approved by EPD.

In exceptional cases, when insufficient baseline monitoring data or questionable results are obtained, the ET shall liaise with the AP, IEC and EPD to agree on an appropriate set of data to be used as a baseline reference.

5.6 CONSTRUCTION IMPACT MONITORING

Noise monitoring shall be carried out at all the designated monitoring stations. An initial guide on the monitoring is to obtain one set of 30-minute measurement at each station between 0700 and 1900 hours on normal weekdays at a frequency of once a week when construction activities are underway.

If construction works are extended to include works during the hours between 1900 and 0700 hours of the following day, or on general holidays and Sundays, applicable Construction Noise Permits (CNPs) will be obtained by the Contractor(s) under the *NCO* requirements, and the frequency and scope of monitoring will be determined by EPD in the capacity of the *Noise Control Authority* (NCA).

5.7 ENVIRONMENTAL QUALITY PERFORMANCE LIMITS

A/L Levels provide an appropriate framework for the interpretation of monitoring results. Interpretation of monitoring results is undertaken through checking them against the A/L Levels defined in *Table 5.2*.

Table 5.2 Action and Limit Level for Construction Noise Monitoring

Time Period	Action Level	Limit Level
0700 – 1900 hours on normal weekdays	When one documented complaint is received from any one of the sensitive receivers	75 dB(A) (Note)

Notes:

(a) Acceptable Noise Levels for Area Sensitivity Rating of A/B/C. Limit Level is reduced to 70dB(A) for schools and 65dB(A) during school examination periods.

(b) If works are to be carried out during restricted hours, the conditions stipulated in the CNP issued by the NCA have to be followed.

To account for cases where ambient noise levels, as identified by baseline monitoring, approach or exceed the stipulated Limit Level prior to commencement of construction, a Maximum Acceptable Impact Level, which incorporates the baseline noise level and the identified construction noise Limit Level, might be defined upon agreement with the EPD. This amended level will, therefore, be greater than 75 dB(A) and will represent the maximum acceptable noise level at a specific monitoring station.

For compliance checking, after taking into account any adjustments agreed with EPD, comparison with either the Limit or the Maximum Acceptable Impact Level will represent the governing criteria for noise impact assessment during impact monitoring.

5.8 EVENT AND ACTION PLAN

The ET should compare the impact monitoring results with the noise criteria as defined in *Table 5.2*. In cases where exceedance of these criteria occurs, actions should be carried out in accordance with the EAP shown in *Table 5.3*.

Table 5.3 Event and Action Plan for Construction Noise

Event	Action			
	ET	**IEC**	**AP**	**Contractor**
Action Level	1. Notify IEC and Contractor; 2. Carry out investigation; 3. Report the results of investigation to the IEC, AP and Contractor; 4. Discuss with the Contractor and formulate remedial measures; 5. Increase monitoring frequency to check mitigation effectiveness.	1. Review the analysed results submitted by the ET; 2. Review the proposed remedial measures by the Contractor and advise the AP accordingly; 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Require Contractor to propose remedial measures for the analysed noise problem; 4. Ensure remedial measures are properly implemented.	1. Submit noise mitigation proposals to IEC; 2. Implement noise mitigation proposals.
Limit Level	1. Identify source; 2. Inform IEC and AP: 3. Repeat measurements to confirm findings; 4. Increase monitoring frequency; 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 6. Inform IEC, AP and EPD the causes and actions taken for the exceedances; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and AP informed of the results; 8. If exceedance stops, cease additional monitoring.	1. Discuss amongst AP, ET, and Contractor on the potential remedial actions; 2. Review Contractors remedial actions whenever necessary to assure their effectiveness and advise the AP accordingly; 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Require Contractor to propose remedial measures for the analysed noise problem; 4. Ensure remedial measures properly implemented; 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Resubmit proposals if problem still not under control; 5. Stop the relevant portion of works as determined by the AP until the exceedance is abated.

5.9 AUDIT REQUIREMENTS

It is necessary to undertake regular environmental audits and site inspections to ensure those recommended mitigation measures were properly implemented. The requirements of the environmental audit programme were set out in *Section 10* of the Manual.

The audit programme will verify the implementation status and evaluate the effectiveness and stability of the mitigation measures.

6 AIR QUALITY

6.1 INTRODUCTION

In accordance with the recommendations of the EIA, mitigation measures have been proposed for controlling air quality impacts during the construction phase of the Project. Details of the mitigation measures are presented in *Annex A - Implementation Schedule*.

6.2 CONSTRUCTION PHASE

As adverse fugitive dust impacts are not anticipated during the construction period, dust monitoring is considered not necessary. However, monthly site audits throughout the construction period are recommended to ensure that appropriate dust control measures are properly implemented and good construction site practices are adopted.

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7 WATER QUALITY

7.1 INTRODUCTION

In accordance with the recommendations of the EIA, mitigation measures have been proposed during the construction and operation phases of the Project. Details of the mitigation measures are presented in *Annex A - Implementation Schedule*.

7.2 CONSTRUCTION PHASES

Monthly site audits will be carried out during the construction phase to monitor the environmental performance of the Project and to enable prompt actions to rectify any malpractice which may give rise to water pollution problem. The site audit will also ensure that the recommended mitigation measures are properly implemented during the construction stage.

7.2.1 Methodology and Criteria

The Contractor(s) must confirm that the necessary disposal permits or licences are obtained from appropriate authorities in accordance with the various ordinances. Relevant legislation and guidelines for reference include:

- *Water Pollution Control Ordinance (WPCO) (Cap. 358);*
- *Technical Memorandum Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Inshore Waters (TM);*
- *Practice Note for Professional Persons on Construction Site Drainage (Prop PECC PN 1/94);* and
- *Hong Kong Planning Standards and Guidelines (HKPSG).*

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8 WASTE MANAGEMENT

8.1 INTRODUCTION

The Project is expected to generate the following types of waste during the construction phase:

- Construction and demolition (C&D) materials;
- Chemical waste; and
- General refuse.

Mitigation measures, where appropriate, have been recommended in the EIA Report to avoid or reduce potential adverse environmental impacts associated with handling, collection and disposal of waste arising from the construction and operation of the Project.

Waste management will be the Contractor(s)'s responsibility and wastes produced during the construction phase will be managed in accordance with appropriate waste management practices and EPD's regulations and requirements.

It is recommended that monthly site audits of the waste management practices be carried out during the construction phase to determine if wastes are being managed in accordance with the recommended good construction site practices. The audits will examine all aspects of waste management including waste generation, storage, recycling, transport and disposal. In addition, the audit will also carry out visual inspection to check if signs of contaminated soil are revealed during the construction phase. If contaminated soil is found, the procedure for assessing and remediating the contamination in accordance with Sections 3.1 of EIAO TM Annex 19 will be undertaken. The guidelines related to land contamination stated in *Section 8.3.1* will be followed.

The Contractor(s) will be responsible for the implementation of any mitigation measures to reduce waste or redress issues arising from the waste materials.

8.2 WASTE MANAGEMENT PRACTICES

The Contractor(s) shall incorporate the recommended mitigation measures into a Waste Management Plan (WMP) for managing the different types of wastes on site. The Contractor(s) shall submit the WMP to the CPS Ltd for endorsement and to EPD for approval prior to the commencement of the construction works. The WMP shall be certified by the ET Leader and

verified by the IEC as conforming to the information and recommendations contained in the *Waste Management Impact Assessment* and the Manual.

The WMP shall describe the arrangements for avoidance, re-use, recover and recycling, storage, collection, treatment and disposal of different categories of waste to be generated from construction activities and shall include the recommended mitigation measures on waste management detailed in *Annex A* of the Manual.

A Trip Ticket system shall be included in the WMP. Wastes shall not be disposed of at any other designated disposal locations unless otherwise approved in writing by EPD, Secretary of Public Fill Committee and/or other authorities, as appropriate.

The Implementation Schedule (see *Annex A)* provides details on the appropriate mitigation measures for avoiding and preventing adverse environmental impacts associated with management of C&D materials, chemical waste and general refuse from the workforce. The WMP shall be regularly reviewed, and updated as appropriate, throughout the course of the construction works to confirm that it remains current with the latest detailed information and works practices.

The WMP shall also outline the requirements for a waste audit programme to verify that the measures outlined in the plan are effectively implemented and adhered to.

8.3 WASTE MANAGEMENT EM&A

To facilitate monitoring and control over the Contractors' performance on waste management, a waste inspection and audit programme will be implemented throughout the construction phase. The programme shall look at the aspects of waste management including waste generation, storage, recycling, transport and disposal. An appropriate audit programme shall be undertaken with the first audit conducted at the commencement of the construction works.

The aims of the waste inspection and audit programme are:

- To review the Contractor's WMP including the quantities and types of C&D materials generated, reused on-site and disposed of off-site and the quantity of timber used in temporary works construction for each process/activity;
- To confirm that the wastes arising from the works are handled, stored, collected, transferred and disposed of in an environmentally acceptable manner and comply with the relevant requirements under the *Waste Disposal Ordinance (WDO)* and its regulations;

- To confirm that the Contractor(s) properly implements the appropriate environmental protection and waste pollution control mitigation measures, as outlined in the Implementation Schedule (see *Annex A*), to reduce and control the potential for waste impacts;

- To monitor the implementation and achievement of the WMP on-site to assess its effectiveness; and

- To monitor the follow-up action(s) on deficiencies identified.

Joint site inspections and audits by the ET, IEC and Contractor(s) shall be undertaken each month. Particular attention will be given to the Contractor(s)'s provision of sufficient spaces, adequacy of resources and facilities for on-site sorting and temporary storage of C&D materials. The C&D materials to be disposed of from the site shall be visually inspected. The public fill for delivery to the government public fill reception facilities shall contain no observable non-inert materials (e.g. general refuse, timber, etc). As a good practice, the waste to be disposed of at landfills should minimise any inert or reusable/recyclable C&D materials (e.g. soil, broken rock, metal, and paper/cardboard packaging, etc). Any irregularities observed during the site audits will be raised promptly to the Contractor(s) for rectification.

The findings of the waste audits will be reported in the Monthly EM&A Reports.

8.3.1 Methodology and Criteria

The Contractor(s) must confirm that the necessary disposal permits or licences are obtained from appropriate authorities in accordance with the various ordinances. In addition to the monthly joint inspections/ audits, each Contractor(s) shall designate a member of staff as being responsible for routine inspections and audits of on-site waste management practices, with reference to the relevant legislation and guidelines as well as the recommendations given in the Implementation Schedule contained in *Annex A* of this Manual, and defined below:

General Legislation

- *Waste Disposal Ordinance (Cap 354);*

- *Waste Disposal (Chemical Waste) (General) Regulation (Cap 354);*

- *Waste Disposal (Charges for Disposal of Construction Waste) Regulation;*

- *Land (Miscellaneous Provisions) Ordinance (Cap 28);*

- *Public Health and Municipal Services Ordinance (Cap 132) – Public Cleansing and Prevention of Nuisances Regulations;* and

- The storage, handling and disposal of chemical waste should be audited with reference to the requirements of the *Code of Practice on the Package, Labelling and Storage of Chemical Wastes* published by the EPD.

Other Relevant Guidelines

- *Waste Disposal Plan for Hong Kong* (December 1989), Planning, Environment and Lands Branch Government Secretariat, Hong Kong Government;

- *Chapter 9 – Environment (1999)*, Hong Kong Planning and Standards Guidelines, Hong Kong Government;

- *New Disposal Arrangements for Construction Waste* (1992), Environmental Protection Department & Civil Engineering Department, Hong Kong Government;

- *Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes* (1992), Environmental Protection Department, Hong Kong Government;

- *Works Branch Technical Circular (WBTC) No. 32/92, The Use of Tropical Hard Wood on Construction Site;* Works Branch, Hong Kong Government;

- *WBTC No. 2/93, Public Dumps*, Works Branch, Hong Kong Government;

- *WBTC No. 2/93B, Public Filling Facilities*, Works Branch, Hong Kong Government

- *WBTC No. 16/96, Wet Soil in Public Dumps*; Works Branch, Hong Kong Government;

- *WBTC Nos. 4/98 and 4/98A, Use of Public Fill in Reclamation and Earth Filling Projects*; Works Bureau, Hong Kong SAR Government;

- *Waste Reduction Framework Plan*, 1998 to 2007, Planning, Environment and Lands Bureau, Government Secretariat, 5 November 1998;

- *WBTC Nos. 25/99, 25/99A and 25/99C, Incorporation of Information on Construction and Demolition Material Management in Public Works Subcommittee Papers*; Works Bureau, Hong Kong SAR Government;

- *WBTC No. 12/2000, Fill Management*; Works Bureau, Hong Kong Government;

- *WBTC No. 19/2001, Metallic Site Hoardings and Signboards*, Works Bureau, Hong Kong SAR Government;

- *WBTC Nos. 6/2002 and 6/2002A, Enhanced Specification for Site Cleanliness and Tidiness*, Works Bureau, Hong Kong SAR Government;

- *WBTC No. 11/2002, Control of Site Crusher*, Works Bureau, Hong Kong SAR Government;
- *WBTC No. 12/2002, Specification Facilitating the Use of Recycled Aggregates*. Works Bureau, Hong Kong SAR Government;
- *ETWB TC(W) No. 33/2002, Management of Construction and Demolition Material Including Rock*; Environment, Transport and Works Bureau, Hong Kong SAR Government;
- *DevB TC(W) No. 6/2010, Trip Ticket System for Disposal of Construction & Demolition Materials*, Development Bureau, Hong Kong SAR Government;
- *ETWB TC(W) No. 19/2005, Environmental Management of Construction Site*, Environment, Transport and Works Bureau, Hong Kong SAR Government;
- *WBTC No. 25/99A and 25/99C, Incorporation of Information on Construction and Demolition Material Management in Public Works Sub-committee Papers*; Works Bureau, Hong Kong SAR Government;
- EPD's *Guidance Manual for Use of Risk-based Remediation Goals (RBRGs) for Contaminated Land Management*;
- EPD's *Guidance Note for Contaminated Land Assessment and Remediation*; and
- EPD's *Guidance Notes for Investigation and Remediation of Contaminated Sites of Petrol Filling Stations, Boatyards, and Car Repair/Dismantling Workshop*.

The Contractor(s)'s waste management practices shall be audited with reference to the checklist detailed in *Table 8.1*.

8.4 MITIGATION MEASURES

Details of the required mitigation measures are included within the Implementation Schedule of *Annex A* of the Manual.

Table 8.1 Waste Management Checklist

Activities	Timing	Checking Frequency	If non-compliance noted, Action Required
Necessary waste disposal permits or licences have been obtained	Before the commencement of works	Once	The ET will inform the Contractor(s), AP and the CPS Ltd. The Contractor(s) shall apply for the necessary permits/ licences prior to disposal of the waste. The ET shall verify that corrective action has been taken.
Only licensed waste haulier are used for waste collection.	Throughout the works	Each Month	The ET shall inform the Contractor(s), AP and the CPS Ltd. The AP will instruct the Contractor(s) to use a licensed waste haulier. The Contractor(s) shall temporarily suspend waste collection of that particular waste until a licensed waste haulier is used. Corrective action shall be undertaken within 48 hours.
Records of quantities of wastes generated, recycled and disposed are properly kept. For demolition material/waste, the number of loads for each day shall be recorded (quantity of waste can then be estimated based on average truck load. For landfill charges, the receipts of the charge could be used for estimating the quantity).	Throughout the works	Each Month	The ET will inform the Contractor(s), AP and the CPS Ltd. The Contractor(s) shall estimate the missing data based on previous records and the activities carried out. The ET shall review the results and forward to the CPS Ltd for approval.
Wastes shall be removed from site in a timely manner. General refuse is collected on a daily basis.	Throughout the works	Each Month	The ET shall inform the Contractor(s), AP and the CPS Ltd. The AP will instruct the Contractor(s) to remove waste accordingly.
Waste storage areas shall be properly cleaned and do not cause windblown litter and dust nuisance.	Throughout the works	Each Month	The ET shall inform the Contractor(s), AP and the CPS Ltd. The AP will instruct the Contractor(s) to clean the storage area and/or cover the waste.
Different types of waste shall be segregated in different containers or skips to enhance recycling of materials and proper disposal of waste.	Throughout the works	Each Month	The ET shall inform the Contractor(s), AP and the CPS Ltd. The AP will instruct the Contractor(s) to provide separate skips/ containers. The Contractor(s) shall verify that the workers place the waste in the appropriate containers.

Activities	Timing	Checking Frequency	If non-compliance noted, Action Required
Chemical wastes shall be stored, handled and disposed of in accordance with the Code of Practice on the Packaging, Handling and Storage of Chemical Wastes, published by the EPD.	Throughout the works	Each Month	The ET shall inform the Contractor(s), AP and the CPS Ltd. The AP will instruct the Contractor(s) to rectify the issues immediately. Warning will be given to the Contractor(s) if corrective actions are not taken within 24 hrs.
C&D materials shall be properly covered before leaving the site.	Throughout the works	Each Month	The ET shall inform the Contractor(s), AP and the CPS Ltd. The CPS Ltd will instruct the Contractor(s) to comply. The Contractor(s) shall confirm that the C&D materials are properly covered when transport out of the site.
Wastes shall be disposed at licensed sites.	Throughout the works	Each Month	The ET shall inform the Contractor(s), AP and the CPS Ltd. The AP will warn the Contractor(s) and instruct the Contractor(s) to confirm that the wastes are disposed of at the licensed sites. Should it involve chemical waste, the Waste Control Group of EPD will be notified.

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9 ENVIRONMENTAL SITE INSPECTION

9.1 SITE INSPECTIONS

Site inspections provide a direct means to assess and confirm that the Contractor(s)'s environmental protection and pollution control measures are in compliance with the contract specifications. The site inspection shall be undertaken routinely by the ET to verify that appropriate environmental protection and pollution control mitigation measures are properly implemented in accordance with the EIA. In addition, the ET shall be responsible for defining the scope of the inspections, detailing any deficiencies that are identified, and reporting any necessary action or additional mitigation measures that were implemented as a result of the inspection.

Regular site inspections shall be carried out by the ET each month. Subject to the progress of the construction works, the Heritage Checker in the ET will have to conduct more frequent site inspection and progress meetings with the AMO, the Contractors and the AP in order to check the implementation of the mitigations for cultural heritage and keep a contemporaneous conservation log-book of each and every site inspections and performance record. The IEC shall also undertake monthly site audit to assess the performance of the Contractor(s). The areas of inspection shall not be limited to the site area and shall also include the environmental conditions outside the site which are likely to be affected, directly or indirectly, by the site activities. The ET shall make reference to the following information while conducting the inspections:

- the EIA and EM&A recommendations on environmental protection and pollution control mitigation measures;
- protection schedule of historic features of the monuments;
- Restoration proposal of the historic buildings and structures in the Site;
- ongoing results of the EM&A programme;
- work progress and programme;
- individual works methodology proposals;
- the contract specifications on environmental protection;
- the relevant environmental protection and pollution control laws;
- previous site inspection results; and
- Records in the conservation log-book of the Heritage Checker since the last monthly site inspection of the ET.

The Contractor(s) shall update the ET with relevant information on the construction works prior to carrying out the site inspections. The site inspection results shall be submitted to the IEC, the CPS Ltd, the AP and the Contractor(s) within 24 hours. Should actions be necessary, the ET shall follow up with recommendations on improvements to the environmental protection and pollution control works and shall submit these recommendations in a timely manner to the IEC, the CPS Ltd, the AP and the Contractor(s). They shall also be presented, along with the remedial actions taken, in the monthly EM&A Reports. The Contractor(s) shall follow the procedures and time frame stipulated in the environmental site inspection for the implementation of mitigation proposal and the resolution of deficiencies in the Contractor(s)' EMP. An action reporting system shall be formulated and implemented to report on any remedial measures implemented subsequent to the site inspections.

Ad hoc site inspections shall also be carried out by the ET and site audits by the IEC if significant environmental issues are identified. Inspections and audits may also be required subsequent to receipt of an environmental complaint or as part of the investigation work as specified in the EAPs for EM&A programme.

9.2 COMPLIANCE WITH LEGAL & CONTRACTUAL REQUIREMENTS

There are contractual environmental protection and pollution control requirements as well as environmental protection and pollution control laws in Hong Kong with which the construction activities will comply.

In order that the works are in compliance with the contractual requirements, the works method statements submitted by the Contractor(s) to the CPS Ltd for approval will be sent to the ET for review.

The ET shall also review the progress and programme of the works to check the regulatory compliance.

The Contractor(s) shall regularly copy relevant documents to the ET so that the checking and auditing work can be carried out. The relevant documents are expected to include at a minimum the updated Work Progress Reports, the updated Works Programme, the application letters for different licence/ permits under the environmental protection laws and all valid licences/ permits. The site diary shall also be available for the ET inspection upon request.

After reviewing the document, the ET shall advise the IEC, the CPS Ltd, the AP and the Contractor(s) of any non-compliance from the contractual and legislative requirements on environmental protection and pollution control for follow-up actions. The ET shall also advise the IEC, the Contractor(s), the CPS Ltd and the AP on the current status on licence/permit applications and any environmental protection and pollution control preparation works that may not be suitable for the works programme or may result in potential

nonconformity of environmental protection and pollution control requirements.

Upon receipt of the advice, the Contractor(s) shall undertake immediate action to remedy the situation. The ET, IEC, AP and the CPS Ltd shall follow up to confirm that appropriate action(s) shall be taken by the Contractor(s) in order that the environmental protection and pollution control requirements are fulfilled.

9.3 ENVIRONMENTAL COMPLAINTS

The ET shall undertake the following procedures upon receipt of a complaint:

(i) log complaint and date of receipt into the complaint database and inform the IEC immediately;

(ii) investigate the complaint and discuss with the Contractor(s) and the CPS Ltd/AP to determine its validity and to assess whether the source of the issue is due to works activities;

(iii) if a complaint is considered valid due to the works , the ET will identify mitigation measures in consultation with the Contractor(s), the CPS Ltd/ AP and IEC;

(iv) if mitigation measures are required, the ET shall advise the Contractor(s) accordingly;

(v) review the Contractor(s)'s response on the identified mitigation measures and the updated situation;

(vi) if the complaint is transferred from EPD, an interim report shall be submitted to EPD on the status of the complaint investigation and follow-up action within the time frame assigned by EPD;

(vii) undertake additional monitoring and audit to verify the situation if necessary and confirm that any valid reason for complaint does not recur;

(viii) report the investigation results and the subsequent actions on the source of the complaint for responding to complainant. If the source of complaint is EPD, the results shall be reported within the time frame assigned by EPD; and

(ix) record the complaint, investigation, the subsequent actions and the results in the monthly EM&A Reports.

During the complaint investigation work, the ET, Contractor(s) and the CPS Ltd /AP shall cooperate with the IEC in providing the necessary information and assistance for completion of the investigation. If mitigation measures are identified in the investigation, the Contractor(s) shall promptly carry out the mitigation measures. The CPS Ltd and the AP will approve the proposed

mitigation measures and the ET and IEC shall check that the measures have been carried out by the Contractor(s).

9.4 LOG-BOOK

The ET Leader shall keep a contemporaneous log-book of each and every instance or circumstance or change of circumstances which may affect the environmental impact assessment and every non-compliance from the recommendations of the EIA Report or the conditions of the EP. The ET Leader shall notify the IEC within one working day of the occurrence of any such instance or circumstance or change of circumstance. The ET Leader's log-book shall be kept readily available for inspection by persons assisting in supervision of the implementation of the EIA Report recommendations (such as the CPS Ltd, AP, IEC and Contractor(s)) and the EPs or by EPD or his authorised officers.

10 REPORTING

10.1 GENERAL

Reports can be provided in an electronic medium upon agreeing the format with the CPS Ltd and EPD. The monitoring data (baseline and impact) shall also be made available through a dedicated internet website that shall be agreed with relevant authority. Considering the nature of the Project and the monitoring requirement set in previous sections, real-time reporting monitoring data was not proposed. However, the monitoring data shall be uploaded to the dedicated internet website as soon as they are ready.

Types of reports that the ET Leader shall prepare and submit include Baseline Monitoring Report, Monthly EM&A Reports, Quarterly EM&A Summary Reports and Annual EM&A Report and Final EM&A Review Report. In accordance with *Annex 21* of the *EIAO-TM*, a copy of the monthly, quarterly summary and final review EM&A reports shall be made available to the Director of Environmental Protection.

10.2 BASELINE MONITORING REPORT

In respect of the construction phase EM&A works, the ET shall prepare and submit a Baseline Monitoring Report no less than 2 weeks before commencement of the works for the Project for agreement on the A/L Levels. Copies of the Baseline Monitoring Report shall be submitted to the following: the Contractor(s), the IEC, the AP, the CPS Ltd and the EPD as appropriate. The ET shall liaise with the relevant parties on the exact number of copies required.

The Baseline Monitoring Report for the construction phase shall cover the baseline noise levels. It will include at least the following:

(i) Up to half a page executive summary.

(ii) Brief project background information.

(iii) Drawings showing locations of the baseline monitoring stations.

(iv) Monitoring results (in both hard and diskette copies) together with the following information:

   a. monitoring methodology;

   b. name of laboratory and types of equipment used and calibration details;

   c. parameters monitored;

   d. monitoring locations (and depth if applicable);

e. monitoring date, time, frequency and duration; and

f. QA/QC results and detection limits.

(v) Details on influencing factors, including:

a. major activities, if any, being carried out on the site during the period;

b. weather conditions during the period; and

c. other factors which might affect the results.

(vi) Determination of the A/L Levels for each monitoring parameter and statistical analysis of the baseline data, the analysis shall conclude if there is any significant difference between control and impact stations for the parameters monitored;

(vii) Revisions for inclusion in the Manual; and

(viii) Comments, recommendations and conclusions.

10.3 MONTHLY EM&A REPORTS

The results and findings of the construction phase EM&A work required in this Manual will be recorded in the Monthly EM&A Reports prepared by the ET Leader. The EM&A report shall be prepared and submitted within 2 weeks of the end of each reporting month, with the first report due the month after construction commences. Each Monthly EM&A Report shall be submitted to the following parties: the Contractor(s), the IEC, the AP, the CPS Ltd and the EPD, as well as to other relevant departments as required. Before submission of the first Monthly EM&A Report, the ET shall liaise with the parties on the exact number of copies and format of the reports in both hard copy and electronic medium.

The ET Leader shall review the number and location of monitoring stations and parameters every six months, or on as needed basis, in order to cater for any changes in the surrounding environment and the nature of works in progress.

10.3.1 Contents of First Monthly EM&A Report

(i) 1-2 pages executive summary, comprising:

- breaches of A/L levels;
- complaint Log;
- notifications of any summons and successful prosecutions;
- reporting changes; and

- forecast of impact predictions.

(ii) Basic project information including a synopsis of the Project organisation, programme and management structure, and a drawing of the Project area showing the environmentally sensitive receivers and the locations of monitoring and control stations, programme, management structure and the work undertaken during the month.

(iii) Environmental Status, comprising:

- works undertaken during the month with illustrations (such as location of works, daily excavation/filling rates, percentage fines in the fill material used); and

- drawing showing the project area, any environmental sensitive receivers and the locations of the monitoring and control stations.

(iv) A brief summary of EM&A requirements including:

- monitoring parameters;

- environmental quality performance limits (A/L levels);

- EAPs;

- environmental mitigation measures, as recommended in the EIA Report; and

- environmental requirements in contract documents.

(v) Advice on the implementation of environmental protection, mitigation and pollution control measures as recommended in the EIA Report and summarised in the updated implementation schedule.

(vi) Monitoring results (in both hard and diskette copies) together with the following information:

- monitoring methodology;

- name of laboratory and equipment used and calibration details;

- parameters monitored;

- monitoring locations (and depth); and

- monitoring date, time, frequency, and duration;

(vii) Graphical plots of trends of monitored parameters for representative monitoring stations annotated against the following:

- major activities being carried out on site during the period;

- weather conditions during the period; and
- any other factors which might affect the monitoring results;

(viii) Advice on the solid and liquid wastes management.

(ix) A summary of the current condition of character defining elements, historic buildings and structures illustrated with photo records, and location plan of each items, and any significant issues related to the cultural heritage protection and conservation during the period.

(ix) A summary of non-compliance (exceedances) of the environmental quality performance limits (A/L levels).

(x) A review of the reasons for and the implications of non-compliance including a review of pollution sources and working procedures.

(xi) A description of the actions taken in the event of non-compliance and deficiency reporting and any follow-up procedures related to earlier non-compliance.

(xii) A summary record of complaints received (written or verbal) for each media, including locations and nature of complaints, liaison and consultation undertaken, actions and follow-up procedures taken and summary of complaints.

(xiii) A summary record of notifications of summons, successful prosecutions for breaches of environmental protection/pollution control legislation and actions to rectify such breaches.

(xiv) A forecast of the works programme, impact predictions and monitoring schedule for the next one month; and

(xv) Comments, recommendations and conclusions for the monitoring period.

10.3.2 Contents of the Subsequent Monthly EM&A Reports

(i) Title page.

(ii) Executive summary (1-2 pages), including:

- breaches of A/L levels;
- complaint log;
- notifications of any summons and successful prosecutions;
- reporting changes; and
- forecast of impact predictions.

(iii) Contents page.

(iv) Environmental status, comprising:

- drawing showing the Project area, any environmental sensitive receivers and the locations of the monitoring and control stations;
- summary of non-compliance with the environmental quality performance limits; and
- summary of complaints.

(v) Environmental issues and actions, comprising:

- review issues carried forward and any follow-up procedures related to earlier non-compliance (complaints and deficiencies);
- description of the actions taken in the event of non-compliance and deficiency reporting;
- recommendations (should be specific and target the appropriate party for action); and
- implementation status of the mitigation measures and the corresponding effectiveness of the measures.

(vii) Appendices, including:

- A/L levels;
- graphical plots of trends of monitored parameters at key stations over the past reporting month for representative monitoring stations annotated against the following: major activities being carried out on site during the period; weather conditions during the period; and any other factors which might affect the monitoring results;
- monitoring schedule for the present and next reporting period;
- cumulative complaints statistics; and
- details of complaints, outstanding issues and deficiencies.

10.4 QUARTERLY EM&A SUMMARY REPORTS

The ET Leader shall submit Quarterly EM&A Summary Reports for the construction phase EM&A works only. These reports shall contain at least the following information:

(i) Up to half a page executive summary.

(ii) Basic project information including a synopsis of the Project organisation, programme, contacts of key management, compliance with EP condition (status of submission) and a synopsis of work undertaken during the quarter.

(iii) A brief summary of EM&A requirements including:

- monitoring parameters;
- environmental quality performance limits (A/L levels); and
- environmental mitigation measures, as recommended in the EIA Report.

(iv) Advice on the implementation of environmental protection and pollution control/mitigation measures as recommended in the EIA Report and summarised in the updated Implementation Schedule.

(v) Drawings showing the Project area, any environmental sensitive receivers and the locations of the monitoring and control stations.

(vi) Graphical plots of the trends of monitored parameters over the past four months (the last month of the previous quarter and the present quarter) for representative monitoring stations annotated against:

- the major activities being carried out on site during the period;
- weather conditions during the period; and
- any other factors which might affect the monitoring results.

(vii) Advice on the solid and liquid wastes management.

(viii) A summary of the current condition of character defining elements, historic buildings and structures illustrated with photo records, and location plan of each items, and any significant issues related to the cultural heritage protection and conservation during the period.

(viii) A summary of non-compliance (exceedances) of the environmental quality performance limits (A/L levels).

(ix) An Impact Prediction Review will be prepared to compare project predictions with actual impacts for the purpose of assessing the accuracy of predictions on the EIA study. The review will focus on the comparison between the EIA study prediction with the EM&A monitoring results. If any excessive variation was found, a summary of investigation and follow up procedure taken shall be addressed accordingly.

(x) A brief review of the reasons for and the implications of non-compliance including review of pollution sources and working procedures.

(xi) A summary description of the actions taken in the event of non-compliance and any follow-up procedures related to earlier non-compliance.

(xii) A summarised record of complaints received (written or verbal) for each media, liaison and consultation undertaken, actions and follow-up procedures taken.

(xiii) Comments (eg effectiveness and efficiency of the mitigation measures), recommendations (eg any improvement in the EM&A programme) and conclusions for the quarter.

(xiv) Proponents' contacts for the public to make enquiries.

10.5 ANNUAL/FINAL EM&A REVIEW REPORTS

An Annual EM&A Report shall be prepared by the ET at the end of each construction year during the course of the Project. A Final EM&A Review Report shall be prepared by the ET at the end of the construction phase. The Annual/Final EM&A Review Reports shall contain at least the following information:

(i) Executive Summary (1-2 pages).

(ii) Drawings showing the project area any environmental sensitive receivers and the locations of the monitoring and control stations.

(iii) Basic project information including a synopsis of the Project organization, contacts for key management staff and a synopsis of work undertaken during the course of the Project.

(iv) A brief summary of EM&A requirements including:

- environmental mitigation measures as recommended in the EIA Report;
- environmental impact hypotheses tested;
- environmental quality performance limits (A/L Levels);
- monitoring parameters; and
- EAPs.

(v) A summary of the implementation status of environmental protection and pollution control/mitigation measures as recommended in the EIA Report and summarised in the updated Implementation Schedule.

(vi) Graphical plots and the statistical analysis of the trends of monitored parameters over the course of the project including the post-project monitoring for monitoring stations annotated against the following:

- the major activities being carried out on site during the period;
- weather conditions during the period; and
- any other factors which might affect the monitoring results;

(vii) A summary of the implementation status of the protection and conservation works to the character defining elements, historic buildings and structures of the Site illustrate with photo records, and location plan of each items.

(viiI) A summary of non-compliance (exceedances) of the environmental quality performance limits (A/L levels).

(ix) A review of the reasons for and the implications of non-compliance including review of pollution sources and working procedures as appropriate.

(x) A description of the actions taken in the event of non-compliance.

(xi) A summary record of complaints received (written or verbal) for each media, liaison and consultation undertaken, actions and follow-up procedures taken.

(xii) A summary record of notifications of summonses and successful prosecutions for breaches of the current environmental protection/pollution control legislations, locations and nature of the breaches investigation, follow-up actions taken and results.

(xiii) A comparison of the EM&A data with the EIA predictions with annotations and explanations for any discrepancies, including a review of the validity of EIA predictions and identification of shortcomings in the EIA recommendations.

(xiv) A review of the monitoring methodology adopted and with the benefit of hindsight, comment on its effectiveness, including cost effectiveness.

(xv) A review of the success of the EM&A programme, including a review of the effectiveness and efficiency of the mitigation measures, and recommendations for any improvements in the EM&A programme.

(xvi) A clear cut statement on the environmental acceptability of the Project with reference to specific impact hypotheses and a conclusion to state the return to ambient and/or the predicted scenario as the EIA findings.

10.6 DATA KEEPING

The site documents such as the monitoring field records, laboratory analysis records, site inspection forms, etc. are not required to be included in the EM&A Reports for submission. However, the documents shall be kept by the ET Leader and be ready for inspection upon request. Relevant information shall be clearly and systematically recorded in the documents. The monitoring data shall also be recorded in magnetic media, and the software copy shall be available upon request. The documents and data shall be kept for at least one year after the completion of the construction phase EM&A works. For those documents and data related to heritage conservation, the ET Leader shall submit one full set of these records (both hard and soft copies) to AMO for record and update the Conservation Management Plan if necessary.

10.7 ELECTRONIC REPORTING OF EM&A INFORMATION

To enable the public inspection of the Baseline Monitoring Report and Monthly EM&A Reports via the *EIAO* Internet Website and at the *EIAO* Register Office, electronic copies of Monthly EM&A Reports shall be prepared in Hyper Text Markup Language (HTML) (version 4.0 or later) and in Portable Document Format (PDF, version 4.0 or later), unless otherwise agreed by EPD and shall be submitted at the same time as the hard copies. For the HTML version, a content page capable of providing hyperlink to each section and sub-section of the EM&A Reports shall be included in the beginning of the document. Hyperlinks to figures, drawings and tables in the EM&A Reports shall be provided in the main text where the respective references are made. Graphics in the reports shall be in interlaced GIF format unless otherwise agreed by EPD. The content of the electronic copies of the Monthly EM&A Reports must be the same as the hard copies.

The internet address and the environmental monitoring data shall be made available to the public via the *EIAO* Internet Website and the *EIAO* Register Office.

The internet website as described above will enable user friendly public access to the monitoring data and with features capable of:

- providing access to environmental monitoring data collected since the commencement of works;
- searching by data;
- searching by types of monitoring data;
- hyperlinks to relevant monitoring data after searching; and
- or otherwise as agreed by EPD.

10.8 INTERIM NOTIFICATIONS OF ENVIRONMENTAL QUALITY LIMIT EXCEEDANCES

With reference to EAPs, when the environmental quality limits are exceeded, the ET shall notify the IEC, Contractor(s), the AP, the CPS Ltd and EPD as appropriate within 24 hours of the identification of the exceedance. The notification shall be followed up with each party on the results of the investigation, proposed action and success of the action taken, with any necessary follow-up proposals.

Annex A

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
Construction Phase							
1. Cultural Heritage							
S3.9.1 & S3.6.2	S3.2.1	***Comprehensive Survey, Impact Assessment of Historic Features of the Monuments and Identification of Character Defining Elements*** In order to provide appropriate mitigation measures for historic features of the monuments, the relevant comprehensive survey, impact assessment and protection schedule will be conducted during the detailed design stage when closer access to all parts of the buildings will be made possible and when further ground investigations will have been carried out. Closer access at all levels inside and outside the buildings will clarify the condition of the fabric and features and finishes, and the further ground investigations will clarify any strengthening work required. The design and coordination of the services requirements and their integration into each building will be carried during the detailed design stage. The detailed design development of the historic buildings, with the required interventions, strengthening and integrated services for new adaptive uses, will be carried out by the conservation design team and agreed with AMO. For those historical features of significant cultural heritage value will be defined as the character defining elements of the monuments. All the character defining elements (CDE) will be well preserved in-situ and repaired in accordance with the work methodologies approved by the AMO.	To compile comprehensive data for subsequent impact assessment and design on appropriate conservation measures to be adopted	Conservation Architect	Whole Site	During detailed design	International Building Conservation Practices
S3.9.1	S3.2.2	***Archival Record*** A detailed cartographic drawings and photographic records showing the existing condition of all the buildings and identified CDE should be conducted and submitted to the AMO before the construction stage for approval. The archival recording shall compile of a full inventory list together with the protection schedule of the historical features of the monuments, and identify the character defining elements (CDEs) of the monuments from the surveyed significant historical features. All the CDEs must be preserved, repair and maintained properly, and the inventory list shall be updated after the construction and include in the Conservation Management Plan (CMP).	To provide an archival record of the site and a detailed reference for future restoration works	Conservation Architect	Whole Site	During detailed design	
S3.9.1	S3.2.3	***Repair and Restoration of Historic Buildings and Structures*** A restoration proposal with detailed work methodologies of the repair and conservation treatments to different kinds of historic building fabrics and historical features should be worked out by the Conservation Architect and submitted to the AMO for approval.	For statutory approval	Project Proponent and Design Team	Whole site	During detailed design	
S3.9.1	S3.2.4	***Addition and alteration (A&A) Works Proposal*** A detailed proposal of the A&A works by means of plans, drawings, photos, specifications, method statements and/or other formats of presentation shall be submitted to the AMO during the detailed design stage for approval.	To ensure the full compliance of the conservation guidelines and approaches as mentioned in the EIA report is followed.	Project Proponent, Design Team and Contractor(s)	Whole site	During detailed design	-
S3.6.1	S3.2.5	***Detailed Structural Assessment*** A detailed structural report will be prepared by the structural engineer during the detailed stage to evaluate if the strengthening proposal needs to be revised and determine any strengthening work is required for the floors and foundations resulting from the loadings of the new uses, or the alterations, or from the condition of the existing structures. Any structural strengthening proposals will be assessed for their impacts on historic features, particular the CDE, and mitigation measures will be considered.	To ensure that the impact to the historic fabric of the buildings is minimal due to the floor strengthening proposal	Structural Engineer of the Design Team	Whole site	During detailed design	-
S3.9.1	S3.2.6	*Archaeological Investigation* An archaeological investigation will be conducted to obtain field data for subsequent detailed impact assessment. The archaeological investigation will focus on areas with archaeological potential that may potentially be impacted by the Project (i.e. proposed new development that involves excavation work in archaeological potential areas) and the investigation is considered feasible to be carried out in the detailed design phase. These areas are identified on Figure 3.1.	To obtain field data for subsequent detailed impact assessment	Qualified Archaeologist employed by the Project Proponent	Area with archaeological potential	During detailed design stage	Antiquities and Monuments (AM) Ordinance (Cap. 53)

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
S3.9.1	S3.2.6	Subject to the outcome of the archaeological investigation, if archaeological deposits are identified to be impacted by the proposed development, appropriate mitigation measures will be recommended and agreed with AMO.	To mitigate any identified impacts on the archaeological resources	Project Proponent and Design Team	To be advised	During detailed design and construction	Antiquities and Monuments (AM) Ordinance (Cap. 53)
S3.9.1	S3.2.7	***Heritage Operational Strategy and Manuals*** Detailed Heritage Operational Strategies and Manuals will be developed by the design team and CPS Ltd's advisors for each building and for the management and circulation of the Site (such as distribution of goods and services into and across the Site, control of visitors, etc.) for AMO's approval. To facilitate the future maintenance and repair of the built heritage in the Site at the operation stage, one set of the approved method statement of the repair works to the historic features and historic buildings together with the contact details of the respective work contractors engaged in the project shall be included in the Heritage Operational Manual as part of the heritage maintenance guidelines for the reference of site management and maintenance agents.	To manage the operation o f the Site	Project Proponent	Whole site	During detailed design stage	-
S3.9.2	S3.3.1	*Vibration Monitoring* A baseline condition survey and baseline vibration impact will be conducted by a specialist for the approval of AMO and Buildings Department prior to commencement of the construction works to define the vibration control limits and recommend a vibration monitoring proposal for the concerned historic buildings and structures in and outside CPS for AMO's prior approval before commencement of the construction works.	To minimize the vibration impacts from the on-site construction activities during construction stage	AP and Design Team	Historic buildings and structures in CPS, the granite walls at Old Bailey Street and the proposed Grade 3 historic building (No. 20 Hollywood Road)	During detailed design and construction	Antiquities and Monuments (AM) Ordinance (Cap. 53)
S3.9.2	S3.3.3	*Compliance of the Approved Measures and Auditing* Staff training by an experience building conservation expert or relevant competent person(s) in the environmental team of the project should be provided to the on-site staffs, contractors, sub-contractors and workers of the project before commencement of works to ensure their full understanding of the approved protection schedule, restoration proposal and work methodologies related to cultural heritage, and their respective responsibilities in the implementation of the environmental protection measures. Regular site audit for cultural heritage should be carried out in the construction phase by an experience building conservation expert in the environmental team ("the Heritage Checker") to investigate the site practice of the contractors and workers and their compliance of the approved work methodologies with respect of conservation works, mitigations for cultural heritage and any related works. A detailed proposal of the regular audit such as methodology (e.g. performance and monitoring indicators, control tools, frequency of the audit, etc.) and the conservation professionals to be engaged should be agreed with AMO prior to work commencement. The Heritage Checker shall also attend the regular site meetings with AMO and report the compliance and effectiveness of the mitigation measures for cultural heritage.	To check the compliance and effectiveness of the strategies and mitigation measures mentioned in the EIA report	ET & Project Proponent	Whole site	Prior to and during construction	Strategies and Mitigation Measures stated in the EIA Report
S3.9.3	S3.3.4	*Archival Recording* An archival recording should be conducted to provide a detailed reference for the update of the Conservation Management Plan and inventory of historical features of the monuments, the preparation of as-built drawings showing the condition of the historic buildings and structures after the completion of the construction works. These archival records will be a reference source for future maintenance of the character defining elements, conservation of the monuments, interpretation and conservation education of the Site. The archival recording shall include but not limit to the video and photographic recording on the detailed process of the repair trials for different kinds of historical features, conservation works of character defining elements and historic fabrics of the monuments, and a written records of any new changes to the detailed design made in the construction phase illustrate with photos and drawings. A full set	To provide a detailed reference for the update of the Conservation Management Plan and inventory of historical features of the monuments and to be a reference source for future maintenance of the character defining elements, conservation of the monuments, interpretation and conservation education of the Site	Project Proponent	Whole Site	During detailed design, construction and prior to operation	

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
		of the archives records (including both hard and soft copies) should be submitted to the AMO for approval after the work completion for record purpose. Any new findings related to the conservation of built heritage in the Site identified during the detailed design stage and construction phases shall be properly recorded in details for notification to the AMO and update of the Conservation Management Plan.					
S3.9.3	S3.4.1	Regular audit is recommended for checking the compliance and effectiveness of the strategies and mitigation measures mentioned in Sections 3.7.4 and 3.7.5 should be conducted. The detailed proposal of the regular audit such as methodology (e.g. performance and monitoring indicators, control tools, frequency of the audit, etc) and the conservation professionals to be engaged should be agreed with AMO prior to operation commencement. The management team shall ensure the audit to be carried out by an experience building conservation expert in order to investigate the site practice and work methodologies of th work contractors, the tenants and any other stakeholders of the Site with respect of conservation works, site interpretation of cultural heritage, and any related works in the operation phase. To facilitate the future maintenance and management of the monuments, one set of the approved method statement/work methodology of the repair and conservation works to the historic features of the monuments (particular the CDEs) and contract details of the respective work contractors engaged in the repair and conservation works of the Project should be included in the Heritage Operation Manual for the reference of site management and maintenance agents. An updated copy of the Heritage Operation Manual and the associated guidelines should be submitted to AMO at least one week before the opening of the Site.	To check the compliance and effectiveness of the strategies and mitigation measures mentioned in the EIA report	ET & Project Proponent	Whole site	During operation	Strategies and Mitigation Measures stated in the EIA Report
S3.7.3	-	The general mitigation measures to be used during the detailed design phase will include: • Prior identification and recording of all the significant features, finishes, fittings, structures, and contents in the existing buildings, and the site ("historic features", and assessment of their heritage significance level for shortlist of the CDE of the monuments • After assessing their existing condition and vulnerability during construction, a full inventory list of historic features together with a schedule of protection works for all these identified items ("protection schedule") shall be submitted to the AMO for approval prior to the construction stage. • Preparation of a detailed precautionary and monitoring measures to preserve or secure items and finishes remaining in situ during construction. • Preparation of a detailed proposal of protection measures to the exteriors and interiors of the buildings to be put in place before the enabling and investigation works during design stage or before the construction operations. Ensuring the responsible contractor understands the significance and vulnerabilities of the building structures, constructions, features and finishes prior to starting the work to avoid overloading or inappropriate storage or construction activities.	To minimize impacts on the built structures	Design Team	Whole site	During detailed design	-
S3.7.3	-	*General Construction Methods* Prior to the commencement of the modification/refurbishment works at an existing building or structure (e.g. masonry walls near the Old Bailey Wing) , a site survey will be carried out by the design team, and all building dimensions and levels of the building/structure shown will be checked and confirmed by the contractor. Non-percussive piling methods will be adopted for the construction of the foundation for the new buildings. Protective and precaution measures to the existing buildings and structure adjacent to the work area (including the proposed Grade 3 historic building (No. 20 Hollywood road) and the granite boundary walls between the Ablutions Block of the police station (building no. 08) and the General Office of the prison area (building no. 18) which is adjacent to the new construction of the Old Bailey Wing and for an old granite walls at Old Bailey Street within 15m from the new construction) shall be provided to avoid damage to the existing features and to safeguard the structural integrity during the course of construction. Small scale handheld pneumatic tools with minimal vibration impact to the existing buildings/ structures are selected so as to have a better logistic and handling at the existing buildings and structures, which usually have only narrow working areas. In cases of the	To minimize impacts from modification/refurbishment works on the existing historic buildings and structures	Project Team and Contractor(s)	Whole site	During construction	-

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		local demolition of structural elements, demountable platforms will be erected to temporarily support the affected area and divert the loading from above to avoid instability and create excessive cracking and settlement of the building/structure.					
S3.7.1 & 3.7.2	-	Implementation and update of the Conservation Management Plan (CMP). Any new findings related to the conservation of the built heritage in the site identified during the detailed design and construction stage shall be properly recorded in details for the notification to the AMO and update in the CMP. After the construction, a cartographic and photographic recording on the restored historic buildings, historic features and the site shall be conducted and the following records shall be included into the CMP as appendices for updating and record purpose: • one set of measured drawings and photographic records showing the as-built condition of historic buildings and structures; and • an updated inventory list of the historic features together with the cross referenced location plans and photo records. One set of updated CMP shall be submitted to the AMO for approval before the operation stage of the project.	To implement and update the CMP for long term caring of the heritage site(s) and sustainability of the adaptive reuses	Project Proponent and AP	Whole site	During detailed design, construction, post-construction and operation	-
S3.7.3	-	*Passageway under A Hall and B Hall* A comprehensive study will be carried out for the Ground Improvement and Excavation and Lateral Support (ELS) systems to be adopted using results from ground investigation work and trial pits to prevent damage and adverse effect to structural integrity to existing historic buildings during the course of the passageway construction under A Hall and B Hall on site. ELS design, construction sequence, method statement and monitoring proposal of the proposed passageway will be submitted to the authorities (Buildings Department, Geotechnical Engineering Office and Antiquities and Monuments Office) for approval before commencement of work on site.	To protect the existing historic buildings and structures from damage due to the passageway construction under A Hall and B Hall	Design Team	Proposed Passageway under A Hall and B Hall	During detailed design stage	Antiquities and Monuments (AM) Ordinance (Cap. 53); Building Ordinance
2. Landscape & Visual							
S4.7.2	-	*Detailed Design Considerations* Aesthetic treatment of the proposed visible structures, including their form, textures, finishes and colours, are to be compatible with/complement structures in the vicinity of the Project Site while fitting with the revitalized CPS philosophy. Sensitive landscape treatments are to be considered within the confines of the conservation of the CPS character. The building footprint is to be reduced to the minimal practical size.	To reduce building footprint and visibility of structures	Design Team	Whole site	During detailed design	-
S4.7.27	-	*In-situ Tree Protection - Cordon Zone (CZ)* Cordon off each tree along its drip line (below the crown) with a chain-link fencing of 2.5 m height with padlocked gate, allowing limited access to area only to authorized persons. The base of the perimeter fence will be sealed up to 30 cm height to ensure that no construction drainage water will enter. If grouting is to be conducted less than 5 m from the edge of the CZ, a waterproof membrane will be installed below the ground to a depth of 1.5 m on the outer edge of the CZ to prevent the subsurface lateral movement of contaminated construction wastewater from intruding the soil inside the CZ.	Protect the soil and roots from disturbance and shied the tree from undesirable construction incursions	Contractor(s)	Whole site	During construction	-
S4.7.2	-	*In-situ Tree Protection - Advanced & Phased Root Pruning* All edges of the CZ that will be affected by excavation will undergo root pruning by a trained arborist or horticulturist, in advance of the earth work. The entire affected length of the CZ, plus 3 m additional length at both ends, shall be designated as the root pruning segment (RPS). The require trench will be opened manually in the RPS, be 1.5 m deep and 1 m wide, and closed on the same day after pruning with a good soil mix. All roots with a diameter >20 mm encountered in the course of trench opening shall be cut flushed with the inner wall of the trench. If the RPS exceeds one-quarter of the CZ circumference, the root pruning should be conducted in two stages. Each phase will tackle half of the RPS length. After the first phase, the tree will be allowed to recuperate for not less than four months before the second phase root pruning is conducted. The RPS shall be protected by sheet piles along the outer edge. The rig	To reduce construction activity impact and shock on the tree	Trained Arborist or Horticulturist Contractor	Whole site	During construction	-

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		that installs the piles and the associated operations shall not intrude into the CZ or injure the protected tree.					
S4.7.2	-	*In-situ Tree Protection - Foliage cleansing system* A sprinkler cleansing system will be installed either in the crown of the tree or at a suitable location on an adjacent building to provide the means to wash the foliage of the accumulated dust when necessary, particularly in the dry season.	To reduce damage to trees from dust accumulating on the foliage that might impair respiration and photosynthesis	Landscape Contractor	Whole site	During construction	-
S4.7.2	S4	*In-situ Tree Protection - Monthly inspection* Monthly inspection of affected trees by an experienced and appropriately trained arborist or horticulturist using Form 1 – Tree Group Inspection Form and Form 2 – Tree Risk Assessment Form developed by Development Bureau (*http://www.trees.gov.hk/en/doc/TRAGuideline_July2010version_combine.pdf*) or a form designed by a tree expert and approved by Tree Management Office. All irregularities that deviate from the recommended tree protection measures, or could impose deleterious impacts on the protected trees, must be reported to the authorized person or the tree expert within two days.	To ensure the trees onsite are being sufficiently protected	Trained Arborist or Horticulturist Contractor	Whole site	During construction	-
S4.7.2	-	*Light Control* Control of night-time lighting shall be implemented to minimise impact to adjacent VSRs.	To minimize glare impact to adjacent VSRs.	Contractor(s)	Whole site	During construction and operation	-
S4.7.2	S4	*Compensatory Tree Planting* A new planting site has been identified for compensatory tree planting in the Parade Ground. The planting is to compensate for felling of T10. The existing tree site will be enlarged to become a wide tree strip to accommodate at least six trees. The entire strip of land that accommodates T1 to T4 should be revamped to improve the soil condition for future tree growth. The new tree strip should be 4 m wide and covered by porous unit pavers to permit the entry of rain and irrigation water and air exchange between the soil and the atmosphere. The unit pavers should be supported by small columns to create a vault-like structure so as to avoid compaction of the underlying soil due to pedestrian trampling. The unit pavers will be movable to provide access to the soil underneath so that fertilizers and conditioners could be added on a regular basis. The air conditioner unit currently located near the proposed planting site should also be removed. This new tree planting site should also be provided with proper irrigation. Pursuant to the "Environment, Transport and Works Bureau Technical Circular (Works) No. 3/2006 Tree Preservation", the compensation ratio should preferably be 1:1 according to trunk girth. T10 has a DBH of 20 cm (*Table 4.3*), and it is proposed that six trees of heavy standard size be planted, each with a DBH of around 10 cm and root balls of not less than 0.75 m diameter and 0.75 m depth,. Since the aggregate DBH of the new trees would be 60 cm, the rate of compensation is equivalent to three times the DBH of T10, far beyond the requirements The six replacement trees should be planted in the new tree strip in two staggered rows, maximising distance between each tree to avoid mutual interference in the future. It is recommended that the species selected should have a small final dimension of less than 10 m height given the proximity to built structures such as the retaining wall and buildings. Two each of the outstanding and related flowering tree species connected to local natural history are suggested:: - *Bauhinia* 'Blakeana' a native evergreen species with deep mauve flowers and an exceptionally long flowering period from late autumn to early spring. - *Bauhinia purpure*, a native evergreen with lighter purple flowers from late autumn to early winter. - *Bauhinia variegata*, an exotic deciduous species, with pale pinkish flowers in spring to early	To compensate for loss of trees due to the Project	Landscape Contractor	At identified compensatory tree planting location at the Parade Ground	During detailed design and construction	-

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		summer often when the tree has little or no leaves.					
S4.7.2	S4	<u>*Vertical Greening*</u> Within the limitations of the conservation of the CPS character, greening of vertical structures should be provided where possible. As such it is recommended that the inner southern wall of the Site be planted as a green wall. The plantings should be inserted in between each of the large protruding piers and an offset be made from both the top and bottom edge so that old and new are equally visible. An independent frame should be strategically positioned in order to ensure minimal disturbance to the original wall, and provide the main structural support and planting surface for the green wall. The frame on to which the new green will be planted should contain its own irrigation system so that moisture for the plants will remain mainly on the planting surface and not the exiting wall behind. The planting chosen should be appropriate to the Hong Kong climate, requiring relatively little maintenance to sustain the quality of both plants and wall.	To reduce landscape and visual impact of proposed new structures and facilities	Landscape Contractor	Inner Southern Wall	During detailed design and construction	-
S4.7.2	-	***New Custom Paving*** New, Porous, Patterned, High Quality, Concrete Custom Pavers should replace most of the existing paving in the open spaces.	To enhance the landscape and visual appearance	CPS Ltd/ Site Management Company	Whole site	During detailed design and construction	-
S4.7.2	S4	<u>*In-situ Tree Protection - Quarterly inspection*</u> Quarterly Inspection of affected and newly planted trees by an experienced and appropriately trained arborist or horticulturist using Form 1 – Tree Group Inspection Form and Form 2 – Tree Risk Assessment Form developed by Development Bureau (*http://www.trees.gov.hk/en/doc/TRAGuideline_July2010version_combine.pdf*) or a form designed by a tree expert and approved by Tree Management Office for a period of 12 months after construction.	To reduce the loss of and protect existing trees	Trained Arborist or Horticulturist contractor	Whole site	During post construction and operation	-
3. Noise							
S5.9	-	The following site practices should be followed during the construction of the Project: • Only well-maintained plant will be operated on-site and plant will be serviced regularly during the construction phase; • Silencers or mufflers on construction equipment will be utilised and will be properly maintained during the construction phase; • Mobile plant, if any, will be sited as far away from NSRs as possible; • Machines and plant (such as trucks) that may be in intermittent use will be shut down between work periods or will be throttled down to a minimum; • Plant known to emit noise strongly in one direction will, wherever possible, be orientated so that the noise is directed away from the nearby NSRs; and • Material stockpiles and other structures will be effectively utilised, wherever practicable, in screening noise from on-site construction activities.	To minimize the construction noise impact	Contractor(s)	Whole Site	During construction	-
S5.9	-	Noise insulating sheet would be adopted for certain PME (eg drill rig, excavator for demolition of existing structures, etc). The noise insulating sheet should be deployed such that there would be no opening or gaps on the joints.	To minimize the construction noise impact	Contractor(s)	Whole Site	During construction	-
S5.9	-	Use temporary noise barriers to mitigate the noise impact arising from the construction works, particularly for low-rise NSRs. Movable noise barriers of 3 m in height with skid footing should be used and located within a few metres of stationary plant and mobile plant such that the line of sight to the NSR is blocked by the barriers. The length of the barrier should be at least five times greater than its height. The noise barrier material should have a superficial surface density of at least 7 kg m^{-2} and have no openings or gaps.	To minimize the construction noise impact	Contractor(s)	Whole Site	During construction	A Practical Guide for the Reduction of Noise from Construction Works
S5.9	-	Use quiet PME as far as practicable to mitigate the construction noise impact.	To minimize the construction noise impact	Contractor(s)	Whole Site	During construction	-

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S5.9	-	Scheduling of construction activities with identified grouping of PMEs.	To minimize the construction noise impact	Contractor(s)	Whole Site	During construction	-
S5.11	S5	Weekly noise monitoring will be undertaken at the representative NSRs N2 Ho Fook Building and N5 Chancery House. Monthly site audits will be conducted to ensure that the recommended mitigation measures are properly implemented during the construction stage.	To ensure compliance with the noise criterions at the NSRs; ensure the recommended mitigation measures are properly implemented during the construction stage	ET (monitoring; ET, IEC and Contractor for site audits	Whole Site	During construction	Environmental Impact Assessment Ordinance
4. Air Quality							
S6.8.1	-	Dust control measures stipulated in the *Air Pollution Control (Construction Dust) Regulation* will be implemented during the construction phase to control the potential fugitive dust emissions.	To minimize adverse dust emission generated from various construction activities of the works sites	Contractor(s)	Whole Site	During construction	Air Pollution Control (Construction Dust) Regulation
S6.8.1	-	In particular: Temporary stockpiles of dusty materials will be either covered entirely by impervious sheets; placed in an area sheltered on the top and three sides; or sprayed with water to maintain the entire surface wet at all the time.	To minimize adverse dust emission generated from various construction activities of the works sites	Contractor(s)	Whole Site	During construction	Air Pollution Control (Construction Dust) Regulation
S6.8.1	-	Impervious sheet will be provided for skip hoist for material transport.	To minimize adverse dust emission generated from various construction activities of the works sites	Contractor(s)	Whole Site	During construction	Air Pollution Control (Construction Dust) Regulation
S6.8.1	-	Vehicle washing facilities will be provided at the designated vehicle exit points.	To minimize adverse dust emission generated from various construction activities of the works sites	Contractor(s)	Whole Site	During construction	Air Pollution Control (Construction Dust) Regulation
S6.8.1	-	Every vehicle will be washed to remove any dusty materials from its chassis and wheels immediately before leaving the worksite.	To minimize adverse dust emission generated from various construction activities of the works sites	Contractor(s)	Whole Site	During construction	-
S6.8.1	-	Road sections between vehicle-wash areas and vehicular entrances will be paved.	To minimize adverse dust emission generated from various construction activities of the works sites	Contractor(s)	Whole Site	During construction	-
S6.8.1	-	The load carried by the trucks will be covered entirely to ensure no dust emission from the vehicles.	To minimize adverse dust emission generated from various construction activities of the works sites	Contractor(s)	Whole Site	During construction	-
S6.8.1	-	Hoarding of not less than 2.4m high from ground level will be provided along the Project Site boundary adjoining a road where the new buildings (Old Bailey Wing and Arbuthnot Wing) will be constructed.	To minimize adverse dust emission generated from various construction activities of the works sites	Contractor(s)	Whole Site	During construction	-
S6.8.1	-	Stockpiles of more than 20 bags of cement, dry pulverised fuel ash and dusty construction materials will be covered entirely by impervious sheeting sheltered on top and 3-sides.	To minimize adverse dust emission generated from various construction activities of the works sites	Contractor(s)	Whole Site	During construction	-
S6.8.1	-	An effective dust screen will be provided to enclose scaffolding, if required, from the ground floor level of building for construction of superstructure of the new buildings.	To minimize adverse dust emission generated from various construction activities of the works sites	Contractor(s)	Whole Site	During construction	-
S6.8.1	-	Impervious dust screen or sheeting will be implemented for demolition of structures and renovation of outer surfaces of structures that abuts or fronts open area accessible to the public to no less than 1m higher than the highest level of the structure being demolished.	To minimize adverse dust emission generated from various construction activities of the works sites	Contractor(s)	Whole Site	During construction	-
S6.8.1	-	The area at which demolition work takes place will be sprayed with water or dust suppression chemical immediately prior to, during and immediately after the demolition activity.	To minimize adverse dust emission generated from various construction activities of the works sites	Contractor(s)	Area for Demolition Work	During construction	-
S6.8.1	-	ULSD will be used for all construction plant on-site.	To minimize adverse dust emission generated from various construction activities of the works sites	Contractor(s)	Whole Site	During construction	-
S6.8.1	-	The engine of the construction equipment or trucks during idling will be switched off.	To minimize adverse dust emission generated from various construction activities of the works sites	Contractor(s)	Whole Site	During construction	-
S6.8.1	-	Site practices such as regular maintenance and checking of construction equipment deployed on-site will be conducted to avoid any black smoke emissions and to minimise gaseous emissions.	To minimize adverse dust emission generated from various construction	Contractor(s)	Whole Site	During	-

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			activities of the works sites			construction	
S6.10	S3.2	Monthly environmental site audits to ensure that appropriate dust control measures are properly implemented and good construction site practices are adopted throughout the construction period.	To minimize adverse dust emission generated from various construction activities of the works sites; to ensure appropriate dust control measures are properly implemented and good construction site practices are adopted throughout the construction period	Environmental Team (ET) & Independent Environmental Checker (IEC), Contractor	Whole Site	During construction	Environmental Impact Assessment Ordinance
5. Water Quality							
S7.6	-	Channels, earth bunds or sand bag barriers will be provided on site to direct stormwater to silt removal facilities. The design of silt removal facilities will make reference to the guidelines in *Appendix A1* of *ProPECC PN 1/94*. All drainage facilities and erosion and sediment control structures will be inspected on a regular basis and maintained to confirm proper and efficient operation at all times and particularly during rainstorms. Deposited silt and grit will be removed regularly.	To control site runoff and drainage; prevent high sediment loading	Contractor(s)	Whole Site	During construction	ProPECC PN 1/94 TM standard under the WPCO
S7.6	-	All drainage facilities and erosion and sediment control structures will be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rainstorms. Deposited silt and grit will be removed regularly and disposed of.	To control site runoff and drainage; prevent high sediment loading	Contractor(s)	Whole Site	During construction	-
S7.6	-	Measures will be taken to reduce the ingress of stormwater into excavation areas. If the excavation of the concrete foundation is to be carried out in wet season, they will be dug and backfilled in short sections wherever practicable. Water pumped out from trenches or foundation excavations will be discharged into stormwater drains via silt removal facilities.	To minimize water quality impacts	Contractor(s)	Whole Site	During construction	-
S7.6	-	Open stockpiles of excavated and demolition materials will be covered with tarpaulin or similar fabric during rainstorms. Measures will be taken to prevent the washing away of residues, chemicals or debris into any drainage system.	To minimize water quality impacts	Contractor(s)	Whole Site	During construction	-
S7.6	-	Manholes (including newly constructed ones) will always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system.	To minimize water quality impacts	Contractor(s)	Whole Site	During construction	-
S7.6	-	Precautions will be taken when a rainstorm is imminent or forecasted, and actions to be taken during or after rainstorms are summarised in Appendix A2 of *ProPECC PN 1/94*. Particular attention will be paid to the control of silty surface runoff during storm events.	To minimize water quality impacts	Contractor(s)	Whole Site	During construction	ProPECC PN 1/94
S7.6	-	All temporary and permanent drainage pipes and culverts provided to facilitate runoff discharge will be adequately designed for the controlled release of stormwater flows. All sediment traps will be regularly cleaned and maintained. The temporary diverted drainage will be reinstated to the original condition when the construction work has finished or the temporary diversion is no longer required.	To minimize water quality impacts	Contractor(s)	Whole Site	During construction	-
S7.6	-	Vehicle and plant servicing areas, vehicle washing bays and lubrication bays will, as far as possible, be located within roofed areas. The drainage in these covered areas will be connected to foul sewers via a petrol interceptor.	To minimize water quality impacts	Contractor(s)	Whole Site	During construction	-
S7.6	-	Oil leakage or spillage will be contained and cleaned up immediately. Waste oil will be collected and stored for recycling or disposal.	To minimize water quality impacts	Contractor(s)	Whole Site	During construction	Waste Disposal Ordinance
S7.6	-	Waste streams classifiable as chemical wastes will be properly stored, collected and treated.	To minimize water quality impacts	Contractor(s)	Whole Site	During construction	Waste Disposal Ordinance or Waste Disposal (Chemical Waste) (General) Regulation requirements
S7.6	-	All fuel tanks and chemical storage areas will be provided with locks and be sited on paved areas.	To minimize water quality impacts	Contractor(s)	Whole Site	During construction	-
S7.6	-	The storage areas will be surrounded by bunds with a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled oil, fuel and chemicals from reaching the receiving waters.	To minimize water quality impacts	Contractor(s)	Whole Site	During construction	-
S7.6	-	The Contractors will prepare guidelines and procedures for immediate clean-up actions following any spillages of oil, fuel or chemicals.	To minimize water quality impacts	Contractor(s)	Whole Site	During construction	-

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S7.6	-	Surface runoff from bunded areas will pass through oil/grease traps prior to discharge to the stormwater system	To minimize water quality impacts	Contractor(s)	Whole Site	During construction	-
S7.6	-	The stomwater discharge from the site will be monitored as part of the routine monitoring under the WPCO licence, if applicable.	To minimize water quality impacts	Contractor(s)	Whole Site	During construction	-
S7.6	-	The existing toilet facilities of the CPS will be available to the construction workforce. The sewage will be discharged to the public sewer.	To minimize water quality impacts	Contractor(s)	Whole Site	During construction	-
S7.8	S5.2	Monthly site audits of the works areas will be carried out during the construction phase to monitor the environmental performance of the Project and to enable prompt actions to rectify any malpractice which may give rise to water pollution problem.	To minimize water quality impacts	ET, IEC and Contractor	Whole Site	During construction	-
6. Waste Management							
S8.5	S6.3.1 & Table 6.1	*General* The Contractor shall apply for and obtain all the necessary waste disposal permits or licences are obtained prior to the commencement of the construction works.	To ensure the contractor(s) is qualified in waste management in accordance with the various ordinances	Contractor(s)	Whole Site	During construction	Waste Disposal (Chemical Waste) (General) Regulation Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes WBTC No 5/99, Trip-ticket System for Disposal of Construction and Demolition Material
S8.5	-	*Management of Waste Disposal* The construction contractor will open a billing account with the EPD. Every construction waste or public fill load to be transferred to the Government waste disposal facilities such as public fill reception facilities, sorting facilities, landfills will require a valid "chit" which contains the information of the account holder to facilitate waste transaction recording and billing to the waste producer.	To ensure proper management of waste disposal	Contractor(s)	Whole Site	During construction	Waste Disposal (Charges for Disposal of Construction Waste) Regulation
S8.5	S6.2	A trip-ticket system will also be established to monitor the disposal of construction waste at landfill and to control fly-tipping. The trip-ticket system will be included as one of the contractual requirements and implemented by the contractor.	To ensure proper management of waste disposal	Contractor(s)	Whole Site	During construction	Dev B-TC (W) No. 6/2010
S8.5	S6 & Table 6.1	A recording system for the amount of wastes generated/recycled and disposed of will be established during the construction phase.	To ensure proper management of waste disposal	Contractor(s)	Whole Site	During construction	-
S8.5	S6.3	*Reduction of Construction Waste Generation* C&D material will be segregated on-site into public fill and construction waste and stored in different containers or skips to facilitate reuse of the public fill and proper disposal of the construction waste. Specific areas of the work site will be designated for such segregation and storage if immediate use is not practicable.	To reduce the quantity of construction wastes; to minimize impacts resulting from C&D material	Contractor(s)	Whole Site	During construction	-
S8.5	S6	*Chemical Waste* The contractor will register as a chemical waste producer with the EPD.	To minimize impacts resulting from collection and transportation of chemical waste for off-site disposal	Contractor(s)	Whole Site	During construction and operation	Waste Disposal (Chemical Waste) (General) Regulation
S8.5	S6	Containers used for storage of chemical waste shall: • Be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed; • Have a capacity of less than 450 L unless the specifications have been approved by the EPD; and • Display a label in English and Chinese in accordance with instructions prescribed in *Schedule 2* of the *Regulations*.	To minimize impacts resulting from collection and transportation of chemical waste for off-site disposal	Contractor(s)	Whole Site	During construction and operation	Waste Disposal (Chemical Waste) (General) Regulation Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes
S8.5	S6	Storage areas for chemical waste shall: • Be clearly labelled and used solely for the storage of chemical waste; • Be enclosed on at least 3 sides; • Have an impermeable floor and bunding, of capacity to accommodate 110% of the volume of	To minimize impacts resulting from collection and transportation of chemical waste for off-site disposal; to ensure proper chemical waste	Contractor(s)	Whole Site	During construction and operation	Waste Disposal (Chemical Waste) (General) Regulation Code of Practice on the Packaging, Labelling

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		the largest container or 20% by volume of the chemical waste stored in that area, whichever is the greatest; • Have adequate ventilation; • Be covered to prevent rainfall entering (water collected within the bund must be tested and disposed of as chemical waste, if necessary); and • Be arranged so that incompatible materials are appropriately separated.	management				and Storage of Chemical Wastes
S8.5	S6	A licensed contractor shall be employed to collect chemical waste for delivery to a licensed treatment facility.	To ensure chemical waste are collected by a qualified contractor properly	Contractor(s)	Chemical Waste Treatment Centre at Tsing Yi	During construction and operation	Waste Disposal (Chemical Waste) (General) Regulation Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes
S8.5	S6 & Table 6.1	*General Refuse* General refuse will be stored in enclosed bins separately from construction and chemical wastes. The general refuse will be delivered to the transfer station, separately from construction and chemical wastes, on a daily basis to reduce odour, pest and litter impacts.	To minimize impacts resulting from collection and transportation of general refuse for off-site disposal	Contractor(s)	Whole site	During construction	-
S8.5	S6	Recycling bins will be provided at strategic locations to facilitate recovery of aluminium can and waste paper from the Site. Materials recovered will be sold for recycling.	To facilitate recycling on site	Contractor(s)	Whole site	During construction and operation	-
S8.5	S6	*Staff Training* At the commencement of the construction works, training will be provided to workers on the concepts of site cleanliness and on appropriate waste management procedures, including waste reduction, reuse and recycling.	To ensure waste management practices are carried out by the site staff properly	Contractor(s)	Whole site	Commence-ment of construction	-
S8.7	S6.1 & 6.3	Monthly audits of the waste management practices will be carried out during the construction phases to determine if wastes are being managed in accordance with the recommended good site practices. The audits will examine all aspects of waste management including waste generation, storage, recycling, transport and disposal.	To ensure wastes are being managed in accordance with the recommended good construction site practices	ET, IEC and Contactor	Whole site	During construction	-
Operation Phase							
1. Cultural Heritage							
S3.7.4	-	Establishment of the Heritage Operational Strategy and Manual with plans and guidelines on maintenance, visitors control, future operators/users, further development or alternation and risk management. The CPS Ltd. Shall be assisted by the competent person(s) in the conservation management and the related field. The Heritage Operational Manual shall also include a chart showing the organisation and structure of the CPS Ltd as well as the role and responsibilities of each member in respect of conservation management. The Heritage Operation Strategy and Manual shall be submitted to AMO for Approval before the operation stage of the Project	To develop appropriate operational policies, an appropriate operational management team, appropriate guidelines and manuals for user, and provide adequate resources during the operational stage for the Site	Design Team and the CPS Ltd	Whole site	Prior operation	-
S3.7.5	-	Establishment of the Interpretation Strategies and Plan. A detailed interpretation plan shall be submitted to the AMO for approval prior to the construction of the facilities related to the site interpretation. (e.g. directional signs, display areas and visitor centre).	To outline initial interpretive strategies to communicate a sense of value to users and inspire them to become actively involved in the process	Design Team and the CPS Ltd	Whole site	Prior operation	-
3.9.2	S7.4	Regular audit during Project operation is recommended for checking the compliance and effectiveness of the mitigation measures recommended in Sections 3.7.4 and 3.7.5 of the EIA Report. The detailed proposal of the regular audit such as methodology (e.g. performance and monitoring indicators, control tools, frequency of the audit, etc.) and the conservation professionals to be engaged shall be agreed with AMO prior to operation commencement.	To check the compliance and effectiveness of the mitigation measures recommended before and during operation stage	The CPS Ltd	Whole site	Prior to and during operation	Sections 3.7.4 and 3.7.5 of the EIA Report
2. Landscape & Visual							
S4.7.2	S8.2	*In-situ Tree Protection - Quarterly inspection* Quarterly Inspection of affected and newly planted trees by an experienced and appropriately	To reduce the loss of and protect existing trees	Trained Arborist or Horticulturist contractor	Whole site	During post construction and operation	-

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
		trained arborist or horticulturist using Form 1 – Tree Group Inspection Form and Form 2 – Tree Risk Assessment Form developed by Development Bureau (*http://www.trees.gov.hk/en/doc/TRAGuideline_July2010version_combine.pdf*) or a form designed by a tree expert and approved by Tree Management Office for a period of 12 months after construction.					
S4.7.2	S8.3	*Soft Landscape Maintenance* After completion of the Project, the preserved, newly planted trees and other vegetation onsite will be maintained on a long term basis by a professional horticultural contractor.	To minimize landscape and visual impact during operation stage	Landscaper Contractor	Whole site	During operation	-
S4.7.2	S8.3	*Architectural Maintenance* The retained buildings as well as the newly built structures and new paving should be maintained such as to preserve their visual amenity at a standard similar to that on Day 1 of Operation. Such hard landscape maintenance will be covered by the Conservation Management Plan and Operational Phase Manual of the Project.	To minimize landscape and visual impact during operation stage	The CPS Ltd	Whole site	During operation	-
S4.7.2	S8.3	*Light Control* Control of night-time lighting shall be implemented to minimise impact to adjacent VSRs. Lighting at the two new buildings and the food and beverage/ retail users within the retained buildings will be turned to night-mode (ie dimmer) after 11pm. Only limited lighting will be on for safety/emergency purposes elsewhere in the Site.	To minimize light impact on adjacent VSRs	The CPS Ltd	Whole site	During operation	-
3. Noise							
S5.9	-	The following site practices should be followed during the operation of the Project: • Choose quieter equipment; • Include noise levels specification when ordering new plant items; • Locate fixed plant items or noise emission points away from the NSRs as far as practicable; • Locate noisy machines in completely enclosed plant rooms or buildings with suitable and practicable noise remedies; • Develop and implement a regularly scheduled plant maintenance programme so that plant items are properly operated and serviced. The programme shall be implemented by properly trained personnel. • Good management practices shall be in place, including noise monitoring, setting up a complaint hotline, and distributing advance notice to nearby NSRs. Good management practices shall be implemented during both rehearsals and shows; • In any event that an outdoor event is expected, the event organizer is required to undertake noise monitoring at least at one of the affected NSR. One set of Leq(30min) noise measurement before and during the event shall be taken; • As a fallback option, should non-compliance of the relevant noise criteria at the NSRs be identified for the event, immediate mitigation measures (such as turning down/off of music volume) shall be implemented; and • The requirements of not exceeding the total sound power level and noise monitoring for each independent event shall be specified in the event organisers' contract document.	To minimize the fixed plant noise impact	Contractor(s) and Event Organizer(s)	Whole Site	During operation	-
4. Air Quality							
S6.8.2	-	The following measures will be implemented for kitchens to minimize the potential kitchen fumes or stack emissions: • Electric stoves will be used; • Electrostatic precipitators (ESP) will be installed to control the oily fume and cooking odour; • Siting the kitchen exhausts away from the nearby air sensitive uses as far as practicable;; • Direct the kitchen exhausts vertically upwards; and • Provide sufficient separation distance from the nearby air sensitive uses.	To minimize the potential kitchen fumes or stack emissions during operation stage	The CPS Ltd	Kitchens on-site	During operation	-

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
6. Waste Management							
S8.5	S6	*Chemical Waste* The contractor will register as a chemical waste producer with the EPD.	To minimize impacts resulting from collection and transportation of chemical waste for off-site disposal	Contractor(s)	Whole Site	During construction and operation	Waste Disposal (Chemical Waste) (General) Regulation
S8.5	S6	Containers used for storage of chemical waste shall: • Be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed; • Have a capacity of less than 450 L unless the specifications have been approved by the EPD; and Display a label in English and Chinese in accordance with instructions prescribed in *Schedule 2* of the *Regulations*.	To minimize impacts resulting from collection and transportation of chemical waste for off-site disposal	Contractor(s)	Whole Site	During construction and operation	Waste Disposal (Chemical Waste) (General) Regulation Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes
S8.5	S6	Storage areas for chemical waste shall: • Be clearly labelled and used solely for the storage of chemical waste; • Be enclosed on at least 3 sides; • Have an impermeable floor and bunding, of capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in that area, whichever is the greatest; • Have adequate ventilation; • Be covered to prevent rainfall entering (water collected within the bund must be tested and disposed of as chemical waste, if necessary); and Be arranged so that incompatible materials are appropriately separated.	To minimize impacts resulting from collection and transportation of chemical waste for off-site disposal; to ensure proper chemical waste management	Contractor(s)	Whole Site	During construction and operation	Waste Disposal (Chemical Waste) (General) Regulation Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes
S8.5	S6	A licensed contractor shall be employed to collect chemical waste for delivery to a licensed treatment facility.	To ensure chemical waste are collected by a qualified contractor properly	Contractor(s)	Chemical Waste Treatment Centre at Tsing Yi	During construction and operation	Waste Disposal (Chemical Waste) (General) Regulation Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes
S8.5	S6	Recycling bins will be provided at strategic locations to facilitate recovery of aluminium can and waste paper from the Site. Materials recovered will be sold for recycling.	To facilitate recycling on site	Contractor(s)	Whole site	During construction and operation	-
S8.5	S6	*Food and Beverage Waste* Food and beverage waste will be stored in enclosed bins and disposed of at the tipping area on a daily basis to reduce odour, pest and litter impacts. Once the proposed Organic Waste Treatment Facility (OWTF) at Siu Ho Wan is available, the management office of the CPS should consider segregate the food waste from the café and restaurants and delivered to the OWTF for treatment.	To minimize impacts resulting from collection and transportation of food and beverage wastes for off-site disposal	Contractor(s)	Whole site	During operation	-

Annex B

Construction Phase Noise Monitoring Data Record Sheet

Noise Monitoring Field Record Sheet

Monitoring Location		
Description of Location		
Date of Monitoring		
Measurement Start Time (hh:mm)		
Measurement Time Length (min.)		
Noise Meter Model/Identification		
Calibrator Model/Identification		
Measurement Results	L_{90} (dB(A))	
	L_{10} (dB(A))	
	L_{EQ} (dB(A))	
Major Construction Noise Source(s) During Monitoring		
Other Noise Source(s) During Monitoring		
Remarks		

	Name & Designation	Signature	Date
Recorded By :			
Checked By :			

Annex C

Complaint Log

Complaint Log

Ref:

Log Ref	Date	Location	Complainant/ Date of Contact	Details of Complaint	Investigation / Mitigation Action	File Closed

Filed by Environmental Team Leader:

Date: