

**THE GOVERNMENT OF THE HONG KONG  
SPECIAL ADMINISTRATIVE REGION**

**AGREEMENT NO. CE 60/2014 (EP)**

**STRATEGIC ENVIRONMENTAL ASSESSMENT  
FOR HONG KONG 2030 +  
– FEASIBILITY STUDY**

**CONSULTANCY BRIEF**



**Planning Department**

**Agreement No. CE 60/2014 (EP)**

**STRATEGIC ENVIRONMENTAL ASSESSMENT FOR  
HONG KONG 2030 +  
– FEASIBILITY STUDY**

**STUDY CONSULTANCY BRIEF**

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**Strategic Environmental Assessment for Hong Kong 2030 +  
– Feasibility Study**

**STUDY BRIEF**

**1. INTRODUCTION**

1.1 This Brief is to be read in conjunction with the Memorandum of Agreement, the General Conditions of Employment of Engineering and Associated Consultants for a Feasibility Assignment (1997 Edition) (referred to hereafter as the General Conditions of Employment), Special Conditions of Employment, Schedule of Fees and any other detailed instructions issued by Directors' Representative (DR). For the avoidance of doubt but without prejudice to Clause 7 of the General Conditions of Employment, the performance of Services specified herein shall be subject to Clause 22 of the General Conditions of Employment.

1.2 The following words and expressions shall have the meaning hereby assigned to them except when the context of this Brief otherwise required: -

- (a) "Assignment" for the purpose of this Brief means the Strategic Environmental Assessment for Hong Kong 2030 + ;
- (b) "Government" means the Government of the Hong Kong Special Administrative Region.

1.3 The following abbreviations shall have the meaning hereby assigned to them except when the context of this Brief otherwise requires:-

"ACE"	means Advisory Council on the Environment
"AFCD"	means Agriculture, Fisheries and Conservation Department
"AMO"	means Antiquities and Monuments Office of Leisure and Cultural Services Department
"AVA"	means Air Ventilation Assessment
"BSAP"	means Biodiversity Strategy and Action Plan
"CBD"	means the Convention on Biological Diversity

“CEDD”	means Civil Engineering and Development Department
“DC”	means District Council
“DEVB”	means Development Bureau
“DR”	means Director’s Representative
“ESMG”	means Environmental Study Management Group
“EACSB”	means Engineering and Associated Consultants Selection Board
“EE”	means Expert Evaluation
“EIA”	means Environmental Impact Assessment
“EIAO”	means Environmental Impact Assessment Ordinance
“EPD”	means Environmental Protection Department
“HK2030 Study”	means Hong Kong 2030 Planning Vision and Strategy
“LandsD”	means Lands Department
“PlanD”	means Planning Department
“PHI”	means Potentially Hazardous Installations

## **2. DESCRIPTION OF THE ASSIGNMENT**

- 2.1 Strategic land use planning in Hong Kong has a long history since 1920. The Government has been reviewing the territorial development strategy for Hong Kong around once every decade so as to cater for our changing development needs.
- 2.2 The last comprehensive review, named the HK2030 Study, was completed and promulgated in 2007 with a timeframe up to 2030. Under an assumed population of 8.4 million by 2030, the HK2030 Study provides a spatial planning framework for the future development of Hong Kong and sets out the broad direction to be adopted by the Government for land supply and town planning. A Strategic Environment Assessment (SEA) was conducted as an integral part of the HK2030 Study.
- 2.3 According to the latest estimate by the Census and Statistics Department (C&SD), the growth of Hong Kong's population will slow down and reach 8.47 million by 2041. Nevertheless, the number of households will increase at a faster rate and rise from the current 2.37 million to about 3.05 million in 2041.
- 2.4 Land demand for various uses (such as housing, economic uses and community facilities) has been intense. Besides, the community has ever-growing aspirations for a more spacious living environment and a better quality of life. At the same time, the changing global trends over the past decade, such as enhanced global connectivity and more intense competitions among cities around the world all point to the need for Hong Kong to sustain its competitive position.
- 2.5 According to the 2014 Policy Address, "*we must plan not only for the next few years but also for the next 30 years. The strategy is to keep developing new land.*" An updated plan should be provided on land supply to meet the housing, employment, and various social and economic needs of the projected population, vide an updating of the HK2030 Study.
- 2.6 Meanwhile, given the pressing demand for land for housing and other uses, and new policy developments, there is a need to assess how the on-going and

planned land development and supply initiatives based on HK2030 are meeting such needs for the short-to-medium term, and what measures are required to fill any shortfall and the choices the community would have to make realistically in this regard.

- 2.7 Against the above background, Planning Department is undertaking an in-house update of the territorial development strategy recommended under HK2030 Study. It would be necessary to carry out a corresponding SEA to identify any environmental concerns early in the planning process, to systematically evaluate in broad terms the cumulative environmental impacts of all the known and potential developments, to evaluate environmental performance of alternative development scenarios and to propose the necessary strategic environmental action plan to maximise environmental gain and ensure an acceptable environment in future.
- 2.8 In January 2014, the Lantau Development Advisory Committee (LanDAC) was formed to capitalize on the social and economic development opportunities on Lantau as it will become the confluence of Hong Kong, Macau and the western Pearl River Delta (PRD) after the completion of the Hong Kong-Zhuhai-Macao Bridge. Taking into account the advice from LanDAC, the overall spatial development and conservation strategy for Lantau will be formulated so as to meet the long-term development needs of Hong Kong. Being the largest island in Hong Kong, development of Lantau would be one of the essential building blocks of the updated territorial development strategy. Therefore, it is considered effective to conduct a SEA for the development strategy for Lantau in this Assignment.

### **3. OBJECTIVES OF THE ASSIGNMENT**

3.1 Under the overarching goal of adhering to the principle of sustainability, the planning objective of updating the HK2030 Study is, inter alia, to provide a quality living environment. To achieve this, we need to strike a balance in the demand for and supply of environmental resources. As an integral part of the Update of the HK2030 Study (referred as “the Main Study”), a SEA will be carried out with the following objectives:

- (a) with regard to the findings of the baseline review, to review environmental targets in order to achieve a good quality environment which is crucial to reinforcing Hong Kong as a greener, less waste generation and low carbon city;
- (b) to integrate the consideration of environmental factors together with other considerations; development, evaluation and refinement of options; and formulation of response plans to enhance environmental sustainability and to avoid potential environmental problems;
- (c) to identify the environmentally-preferred development options, and provide environmental input into the options selection process;
- (d) to evaluate at the strategic level the potential environmental impacts and cumulative effects of the preferred option(s) in different time frames proposed by the Main Study and the overall spatial development and conservation strategy for Lantau, and to identify any environmental mitigation and environmentally friendly measures and follow-up investigations required; and
- (e) to propose an implementation plan to maximize environmental gain and ensure an acceptable environment in future in achieving environmentally sustainable development.

#### **4. DESCRIPTION OF THE ASSIGNMENT**

- 4.1 Providing a good quality environment is crucial to reinforcing Hong Kong as a global city. Hong Kong also needs to respond to its regional and global environmental responsibilities. We need to recap and review the required environmental targets for this Assignment in order to achieve a good quality environment meeting people's rising aspiration, and to meet the regional and global environmental responsibilities.
- 4.2 Given the growing aspiration for a livable environment, the Government has been promoting a basket of measures, including the implementation of Air Quality Health Index (AQHI), Air Quality Objectives (AQO), A Food Waste & Yard Waste Plan for Hong Kong 2014-2022, Hong Kong Blueprint for Sustainable Use of Resources 2013-2022 and a Clean Air Plan for Hong Kong. It is necessary to take into account those new environmental initiatives while assessing our environmental capital or budget for use as a basis, among other factors, for deriving development options.
- 4.3 The Convention on Biological Diversity (CBD), a multi-national treaty on the conservation of biodiversity, has been extended to Hong Kong since May 2011. The CBD recognizes impact assessment as a significant tool for helping to ensure that development is planned and implemented with appropriate consideration of biodiversity. Hong Kong is formulating a city-level BSAP in light of local needs and priorities based on the principles of CBD. This SEA shall take into account Hong Kong's biodiversity strategies in BSAP and examine the interface issues, if any, with BSAP.
- 4.4 Strategic evaluation methodologies/tools shall be used to examine the overall spatial development and conservation strategy for Lantau and the preferred option(s) of the Main Study in respect of their environmental sustainability implications and strategic environmental impacts. Potential issues to be examined include air quality implications of the transportation, energy and industrial sectors; water quality implications due to sewage load increase and sewerage infrastructure constraints, reclamation and increase in toxic chemicals discharge; waste management implications due to increase in resources consumption and waste generation; potential changes in noise levels due to transportation, port operation and future port development plans, and increase in development density; increase in greenhouse gas emission; any increase in hazards risks; and implications on the integrity of

important terrestrial and marine habitats as well as on resources of landscape and heritage value. Reference should be made to the AQHI, A Food Waste & Yard Waste Plan for Hong Kong 2014-2022, Hong Kong Blueprint for Sustainable Use of Resources 2013-2022, and a Clean Air Plan for Hong Kong in considering and evaluating the environmental implications.

- 4.5 Apart from the developments in Hong Kong, development in the PRD region also influences Hong Kong's environmental conditions. The recent and potential future developments in the PRD would provide some hints on the environmental issues to which we should pay attention. The Assignment would therefore examine the implications of the regional development and its consequential regional environmental impacts on Hong Kong's environment. Latest findings on regional planning studies, including Study on the Action Plan for Livable Bay Area of Pearl River Estuary, should be taken into account. Such environmental implications would be considered in formulating the development strategies with a view to providing a good quality environment in Hong Kong.
- 4.6 There are a number of environmental assessment reports or studies that are either completed, on-going or to be commissioned in the near future. These reports/studies, as listed in **Appendix A**, may have bearing on this Assignment. In carrying out this Assignment, the Consultants must have due regard to the findings and recommendations of the relevant reports/studies and liaise closely with the EPD and other relevant Government departments.
- 4.7 In view of the long planning horizon, the Consultants should try to examine innovative ideas and new technologies that could help solve the existing and potential future environmental problems. The Consultants shall participate actively in formulating the development scenarios, options and strategies to ensure environmental considerations are duly incorporated.
- 4.8 The SEA under the Main Study is not a statutory requirement. The Consultants are required to undertake the SEA (covering issues of ecological, air quality, water quality, noise, hazard, etc.) to provide strategic environmental input to the Main Study. After the preferred option(s) have been selected, the SEA study shall evaluate the individual and cumulative environmental implications (both beneficial and adverse as applicable), and to address potential environmental problems of the preferred option(s) and

the overall spatial development and conservation strategy for Lantau. The Consultants shall prepare a SEA Report detailing the findings and recommendations. The Consultants are required to prepare an Executive Summary and an Outcome Profile on SEA based on the findings detailed in the SEA Report.

#### 4.8.1 Air Quality Impact Assessment

- (a) The Consultants shall follow technical requirements of the air quality impact assessment as in Para. 6.2.5.1.
- (b) The Consultants shall propose and adopt suitable assessment methodology and criteria for carrying out the assessment with computational modelling as agreed with the DR and relevant government departments.

#### 4.8.2 Water Quality Impact Assessment

- (a) The Consultants shall follow the technical requirements of water quality impact assessment in Para. 6.2.5.2. The Consultants shall also observe the hydrodynamic and water quality modelling requirements as set out in Appendix E.
- (b) The Consultants shall propose and adopt suitable assessment methodology and criteria for carrying out the assessment with computational modelling as agreed with the DR and relevant government departments.

#### 4.8.3 Waste Management Implications

- (a) The Consultants shall follow the technical requirements of assessing waste management implications in Para. 6.2.5.3.

#### 4.8.4 Noise Impact Assessment

- (a) The Consultants shall follow the technical requirements of noise impact assessment in Para. 6.2.5.4.
- (b) The Consultants shall propose and adopt suitable assessment methodology and criteria for carrying out the assessment with computational modelling as agreed with the DR and relevant government departments.

#### 4.8.5 Ecological Impact Assessment

- (a) The Consultants shall follow the technical requirements of ecological impact assessment in Para. 6.2.5.5.
- (b) The Consultants shall propose and adopt suitable assessment methodology and criteria for carrying out the assessment as agreed with the DR and relevant government departments.

#### 4.8.6 Cultural Heritage Impact Assessment

- (a) The Consultants shall follow the technical requirements of cultural heritage impact assessment in Para. 6.2.5.6.

#### 4.8.7 Broad Landscape Impact Assessment

- (a) The Consultants shall follow the technical requirements of broad landscape impact assessment in Para. 6.2.5.7.

#### 4.8.8 Harzard Assessment

- (a) The Consultants shall follow the technical requirements of hazard assessment in Para. 6.2.5.8.

## **5. DELIVERABLES**

### **5.1 General**

- 5.1.1 An Environmental Study Management Group (ESMG) (**Appendix B**) may be formed to deal with the specific tasks. The Consultants shall assist the DR to set up an ESGM, and arrange regular meetings as agreed by the DR to discuss and endorse the Deliverables.
- 5.1.2 The Consultants shall produce and submit the required Deliverables as part of the Assignment. The Consultants shall be responsible for the circulation and timely delivery of sufficient hard copies (and/or soft copies where appropriate) of the Deliverables and the papers and/or reports directly to the ESGM and/or any other relevant parties before the submission deadlines in accordance with the approved Study programme in the Inception Report, unless otherwise agreed by the DR. The circulation lists for each deliverable shall be agreed with the DR. The deadline for submission and the maximum number of hard copies for major deliverable (draft or final papers and/or reports) to the ESGM and relevant parties shall be as specified below, unless otherwise approved by the DR.
- 5.1.3 The Consultants shall ensure that the reports/submissions are delivered to the relevant Government departments and/or agencies in a timely manner. The Consultants shall allow for adequate time for the relevant parties to comment on the draft reports/submissions. The Consultant shall prepare a summary of the comments received and responses, advice/recommendations for further action and report on action taken in respect of the comments. Upon clearance of comments from all relevant parties, the Consultants shall circulate the summary together with the revised report to the relevant parties for record.
- 5.1.4 The Consultants shall copy all correspondence with Government bureaux/departments, public utilities companies, other authorities, bodies or persons affected by the Study to the DR for information.

## 5.2 Required deliverables for this Assignment

5.2.1 The Deliverables required for this Assignment are listed in the table below:

Deliverables (Task No.)		Max. No. of copies	Deadline for Submission from the date of commencement of the Agreement
(1) Inception Report (IR)	Draft	60	2 weeks
	Final	70	4 weeks
(2) Baseline and Initial Assessment Report	Draft	60	4 weeks
	Final	70	7 weeks
(3) Key Issues Report	Draft	60	10 weeks
	Final	70	13 weeks
(4) Strategic Environmental Evaluation (SEE) Report for Options of Overall Spatial Development and Conservation Strategy for Lantau	Draft	60	10 weeks
	Final	70	13 weeks
(5) Executive Summary for SEE for Overall Spatial Development and Conservation Strategy for Lantau	Draft	60	14 weeks
	Final	70	16 weeks
(6) Strategic Environmental Evaluation Report for Development Options for the Whole Territory	Draft	60	24 weeks
	Final	70	30 weeks
(7) Evaluation Report for Preferred Option(s) for the Whole Territory	Draft	60	38 weeks
	Final	70	46 weeks

(8) Strategic Environmental Performance Report for the Preferred Option(s) for the Whole Territory	Draft	60	52 weeks
	Final	70	56 weeks
(9) Strategic Environmental Action Plan and Programme	Draft	60	56 weeks
	Final	70	60 weeks
(10) Final Report, Executive Summary and Environmental Outcome Profile	Draft	60	64 weeks *
	Final	See Cl. 5.2.15	72 weeks *

*\*The draft version for departments' comments should be submitted at least 4 weeks before the deadline.*

5.2.2 All deliverables shall be submitted in draft and be finalised after endorsement by the ESMG, incorporating any appropriate comments from ESMG and any other relevant parties as directed by the DR before the deadlines specified in Clause 5.2.1 of this Brief. The Consultants shall ensure that these reports are delivered to the relevant Government departments and/or agencies in a timely manner. The Consultants shall allow sufficient time for circulation of the draft report to concerned Government departments for comments. The deliverables include the following:

### **Inception Report (IR)**

5.2.3 The IR should include:

- (a) the Consultants' understanding and appreciation of the needs, nature and objectives of the SEA;
- (b) the approach and methodology for the various parts of the SEA;
- (c) a work programme with major work tasks and key decision points identified and briefly described;

- (d) a schedule detailing the submission dates of reports and proposed dates of the ESGM meetings; and
- (e) the organization structure of the Consultants' team for the Assignment and curricula vitae of the professional and technical staff employed under the Agreement.

#### **Baseline and Initial Assessment Report**

5.2.4 The Baseline and Initial Assessment Report should:

- (a) review the environmental baseline conditions including but not limited to air quality, noise, water quality, ecology, hazards and waste;
- (b) identify the environmental opportunities, constraints and key environmental issues of the whole territory and Lantau Island; and
- (c) review the environmental targets to be met by Hong Kong;

#### **Key Issues Report**

5.2.5 The Key Issues Report covering those issues of key environmental concerns identified in the Initial Assessment Report. Initially, the following subjects are identified:

- (a) the conservation strategies currently under formulation and proposals on strengthening and enhancement of our ecological and landscape resources;
- (b) trans-boundary pollutions;
- (c) environmental-friendly strategic options that could potentially enhance the environmental conditions and facilitate achievement of the environmental targets; and
- (d) water quality in waters of Hong Kong.

**Strategic Environmental Evaluation Report for Options of Overall Spatial Development and Conservation Strategy for Lantau**

5.2.6 The report should:

- (a) propose environmental performance indicators, criteria and methodologies, and carry out strategic evaluation and comparison of the options for the proposed overall spatial development and conservation strategy for Lantau;
- (b) provide an initial evaluation of the potential key environmental impacts and cumulative effects arising from the overall spatial development and conservation strategy for Lantau, with the key environmentally favourable and unfavourable features and problematic areas stated as input for the refinement of the overall spatial development and conservation strategy for Lantau; and
- (c) identify particular problematic areas related to the overall spatial development and conservation strategy for Lantau to facilitate further refinement.

**Executive Summary for Strategic Environmental Evaluation for the Overall Spatial Development and Conservation Strategy for Lantau**

5.2.7 The Executive Summary for strategic environmental evaluation for overall spatial development and conservation strategy for Lantau shall be in both English and Chinese and highlighted all the important findings including evaluation of options, potential environmental impacts and cumulative effects arising from the overall spatial development and conservation strategy for Lantau and its problematic areas, etc. The environmental feasibility, the issues and consequences of the “do-nothing” scenario and the strategic implications of the overall spatial development and conservation strategy for Lantau should also be addressed. The ESs should also be written in simple terms so that the ESs could be understood by layman to facilitate the Government in communication with the public. 300 copies of Final ES for Strategic Environmental Evaluation for the overall spatial development and conservation strategy for Lantau shall be produced and delivered to the ESMG and/or relevant parties with remaining copies to the DR.

**Strategic Environmental Evaluation Report for the Development Options for the Whole Territory**

5.2.8 The report should:

- (a) propose environmental performance indicators, criteria and methodologies and carry out strategic evaluation and comparison of the development option(s) considered in the Main Study;
- (b) provide an initial evaluation of the potential key environmental impacts and cumulative effects arising from development option(s) considered by the Main Study, with the key environmentally favourable and unfavourable features and problematic areas stated as input for the refinement of options;
- (c) identify the particular problematic areas related to the development option(s) to facilitate further refinement; and
- (d) the findings and conclusions of the report will serve as input to the Main Study for formulating the updated territorial development strategy taking account of other non-environmental considerations.

**Evaluation Report for the Preferred Option(s) for the Whole Territory**

5.2.9 The report should:

- (a) assess the air quality impact, water quality impact, noise impact, ecological impact, cultural heritage impact, broad landscape impact, waste management and hazard for the preferred option(s) of the updated territory development strategy;
- (b) assess the environmental benefits and disbenefits of with and without the preferred option(s); and
- (c) identify specific environmental concerns with possible mitigation measures.

**Strategic Environmental Performance Report for the Preferred Option(s) for the Whole Territory**

5.2.10 The report should:

- (a) confirm the broad environmental feasibility of the preferred option(s) ;
- (b) identify the issues and consequences of the “do-nothing” scenario of the preferred option(s); and
- (c) summarise the strategic implications of the preferred option(s) .

**Strategic Environmental Action Plan and Programme**

5.2.11 The report should comprise specific environmental action plans and programmes, including a Strategic Environmental Monitoring and Audit Plan.

**Final Report (FR), Executive Summary (ES) and Environmental Outcome Profile**

5.2.12 The Draft Final SEA Report and Final SEA Report for the whole Assignment shall be a consolidated compilation of the overall findings, proposals and recommendations of each stage of the Assignment, including the departmental comments and the Consultants’ responses. The coloured FRs shall be supported with photographs and illustrations. The FRs should also:

- (a) fully satisfy the requirements of this Study Brief. The reports shall be a self-contained document. To meet this requirement, appropriate matters covered by other reports such as the Baseline and Initial Assessment Report, Key Issues Reports, Strategic Environmental Evaluation Report and Evaluation Report as well as services required under Tasks 6 and 7 viz. those described in Section 6.2.6 and 6.2.7 below shall be summarised in the report; and
- (b) provides clear summaries of the environmentally friendly strategic options identified, environmental evaluation and comparison of the options considered; mitigation measures, residual environmental impacts, strategic

environmental impacts and environmental sustainability implications of the preferred option(s) and overall spatial development and conservation strategy for Lantau and justifications for their selection; and strategic environmental action plan and programme including a Strategic Environmental Monitoring and Audit Plan.

5.2.13 The Draft Final SEA Executive Summary and Final SEA Executive Summary for the Assignment shall be produced concurrently with the Draft Final SEA Report and Final SEA Report respectively and shall be bound separately. The ESs shall be in both English and Chinese highlighted all the important findings including plans, key issues, evaluation of development scenarios and recommendations of the Assignment, etc. The ESs should also:

- (a) be written in simple terms so that the ESs could be understood by layman to facilitate the Government in communication with the public; and
- (b) highlight the issues of concern to the community, such as the revised environmental targets and budget, the acceptability of residual environmental impacts and cumulative effects, any further improvements in environmental efficiency needed to reduce the environmental pressure, requirements for implementation of the option(s), and the basis for and implications of those requirements.

5.2.14 The Environmental Outcome Profile (EOP) aims at telling people, both professionals and laymen, the key recommendations of the SEA as well as the benefits of the preferred option(s). The EOP shall be in both English and Chinese. It is desirable to keep the EOP short and simple, and some two to four A4/A3 pages will be adequate.

5.2.15 100 copies of the Final SEA Report, and 300 copies of Final SEA Executive Summary and the EOP shall be produced and delivered to the ESMG and/or relevant parties with remaining copies to the DR. 100 digital copies of the Final SEA Report and 300 digital copies of the Final SEA Executive Summary and the EOP (saved in compact discs, DVDs, or Blue-ray discs which are kept in protective pockets with proper labeling) shall be produced and delivered to the DR. The EOP and the Final SEA Executive Summary could be saved in the same digital device. The format of the digital copies shall be agreed with the DR beforehand. All the hard and soft copies of the

Final SEA Executive Summaries and the EOPs shall be produced in both English and Chinese.

**Responses to Comments (R-to-C) (number of hard copies same as respective Deliverables)**

- 5.2.16 The Consultants shall prepare tabulated summary of R-to-C for all draft and final Deliverables. The draft R-to-C shall be delivered to the DR within 2 weeks of receipt of comments. The digital copy of the draft R-to-C in both Microsoft Word format and Acrobat (.pdf) format shall be submitted to the ESMG, government committees, and advisory committees through electronic transmission at least 7 working days before the meeting. Taking into account comments received, the draft R-to-C should be amended, where appropriate, to the satisfaction of commenting parties and circulated through electronic transmission after amendment.
- 5.2.17 The ES and the EOP will be made available to the public. The electronic copies of these documents will be uploaded to the DR's web site for public inspection. The electronic format of these documents should be carefully considered such that the documents can be downloaded to some commonly used devices and browsers, including iPads, Android Tablets and Personal Computers equipped with Microsoft Windows and Internet Explorers, Google Chrome and Mozilla Firefox.
- 5.2.18 The Consultant may prepare an English Technical Note (TN) to deposit all those tedious technical assessments and supporting documents for record purpose. This TN may not be made available to the public.
- 5.2.19 If there is any disagreement on the findings of the SEA or on the necessary environmental protection and pollution control measures, the issue will be referred to the ESMG, which is chaired by the Director of Environmental Protection or her representative(s) to resolve the differences as detailed in Section 13.1 below.

**Covering Notes**

- 5.2.20 The Consultants shall prepare and provide sufficient copies of covering discussion, information and/or consultative notes, in either English or

Chinese, or both, complying with standard formats and procedures where applicable, for each submission, including those required by Government committees and statutory, advisory bodies and/or committees. If so required by DR, and other public bodies/local communities, the notes shall contain the main findings, points of issues and guidance and/or decision sought, which should be agreed by the DR prior to submission. Sufficient number of hard copies shall be submitted to the DR and relevant parties for each occasion.

### **5.3 Deliverables in Digital Format**

- 5.3.1 In addition to the hard copies, the Consultants shall also submit one digital copy for each deliverable (both draft and final version) above as well as Programme, Drawings and other documents prepared during the course of the Study in accordance with Appendix A of CEDD Technical Circular (TC) No. 3/2010 or its updated version, which shall be delivered to the DR on the same day together with the hard copy.
- 5.3.2 The digital and editable copies shall be saved in a convenient medium, such as compact disc, DVD, Blue-Ray Disc(s), or other storing media agreed by the DR and kept in a protective pocket (with proper labeling) attached to the hard copy delivered.
- 5.3.3 Unless otherwise agreed by the DR, the digital copies of the Deliverables shall be in .doc format (Microsoft Word 2003 file format which is used by Microsoft Word 2003 and later versions) or shall be printable using Microsoft Word 2003 and later versions) and in Adobe Portable Document (.PDF) format without loss of data and change in appearance compared with the corresponding hard copies, except that:
- (a) All drawings attached to the Deliverables shall be in MicroStation V8 DGN format conforming to the Computer-Aided-Standard Standard for Works Projects promulgated by the Development Bureau and in Hong Kong 1980 Grid and Hong Kong Principal Datum if applicable;

- (b) UDFs and illustrative design drawings shall be prepared in digital CAD format compatible with the Cartographic Specification for Departmental Plans to be provided by Planning Department;
- (c) Calculation spread sheets shall be in .xls format (Excel 97 file format which is used by Excel 97 and later version) or shall be printable using Microsoft Excel 2000, 2002 or 2003 without loss of data and change in appearance compared with the corresponding hard copies;
- (d) Assignment programmes shall be printable using Microsoft Project 2000, 2002 or 2003 without loss of data and change in appearance compared with the corresponding hard copies or format subject to approval of the DR; and
- (e) Photographs, photomontages, illustrations, portraits, documents provided by others and documents involving signatures shall be scanned and saved in Encapsulated PostScript Files (EPSF), Truevision Graphics Adapter (TGA), Tagged Image File Format (TIFF), Graphic Interchange Format (GIF), Joint Photographic Experts Group (JPEG), bitmap or Adobe Portable Document Format (PDF) and other formats subject to approval of the DR;
- (f) FR, ESs and EOP (the latter two in both English, traditional Chinese character versions) shall be in Microsoft Word 97, 2000 or 2003 format or shall be printable by Microsoft Word 97, 2000 or 2003, in PDF format (non-raster version to allow text extraction) and in HTML format which can be readily uploaded onto the Study Webpage. Both the hard and digital copies of the FR, ESs and EOP shall be delivered on the same day.

5.3.4 All digital copies of the Deliverables shall have a resolution of at least 200 dpi, where applicable.

5.3.5 Upon completion of the Assignment, the Consultant shall submit to the DR three sets of compact disc(s), DVD(s) or Blu-Ray disc(s) kept in rigid plastic cases containing the digital and editable copies of all the Deliverables completed in the Assignment. In addition, the first set of compact disc(s), DVD(s) or Blu-Ray disc(s) shall include a digital copy of the Brief to be provided by the DR. The compact discs shall also include an index file in HTML (hypertext mark-up language) or equivalent format containing the

salient points of the Study and the following information about each of the digital copies involved:

- (a) Agreement No. and title of the deliverable;
- (b) Version number and date of issue of the deliverable;
- (c) File name of the deliverable;
- (d) Software used to create the deliverable;
- (e) Version of the software; and
- (f) Highlights of any pre-existing intellectual property rights.

A sample of the index page is included in **Appendix C**.

5.3.6 The compact disc(s), DVD(s) or Blu-Ray disc(s) submitted shall be clearly labelled on the surfaces and the protective cases with the date of production of the discs, the Agreement number and title of the Assignment, the name and logo of PlanD, and the name company chop of the Consultants. In addition, the spines of the cases shall be marked with the Agreement number.

5.3.7 The Consultants shall seek the agreement of the owners of the intellectual property rights to allow the Government to copy, distribute or amend those Deliverables in respect of which there is a pre-existing intellectual property right.

## **5.4 Others**

5.4.1 All Deliverables shall be submitted in A4 size and accompanying drawings of convenient sizes, but not exceeding A3 size format unless otherwise specified in this Brief or approved in writing by the DR. For technical assessments, the drawings shall be submitted in A2 size, if required. The Consultant shall submit together with the WPs and reports a digital copy of all drawings presented therein.

5.4.2 The Consultants shall make revisions or supplements to all Deliverables as may be required by the DR and arrange the revised Deliverables for issue to the ESMG members at least 7 working days in advance of the arranged meetings and at the cost of the Consultants without reimbursement.

- 5.4.3 The Consultants shall update and submit the latest Programme in both soft and hard copies. With respect to the Programmes referred to Clause 8 of this Brief, the output shall be showing in detail the duration of all activities, resources required, the critical path, all key dates and any other dates or important events. Activities duration shall be measured on a weekly scale. Any activities exceeding 8 weeks in duration shall preferably be divided into sub-activities, the duration of which shall preferably not exceed 8 weeks. The number of activities on the network diagram shall contain sufficient detail to permit effective control of the proposed activities.
- 5.4.4 The Consultants shall submit to the DR up to three sets of full documentation of any study models, including the air quality, water quality and noise models completed/used in the Assignment if applicable. Documents to be submitted shall include full details of the models, supporting data and notes, plans and drawings, assumptions adopted, computer programmes (except for licensed programme), input data in the form of source listings together with a digital copy in a format to be agreed with the DR, methods/procedures of calibration, and user's manual/instructions to enable the models to be calibrated, tested, run, modified and updated in future. All work files and other outstanding Deliverables shall also be submitted in this connection.
- 5.4.5 All data gathered and computer software or programmes, which are developed by the Consultants for the purpose of the Assignment, shall be compatible with the requirements of the DR and shall be submitted to the DR before the completion of the Assignment. All plans and drawings to be prepared shall be CAD based with digitised layers to facilitate subsequent amendment and to be compatible with MicroStation (.dgn) design file. Upon completion of the Assignment, all these together with supporting notes and data, calculations, sketches, plans, display materials, photographs, charts, etc. shall be properly documented and shall become the property of the Government with full copyright. Such documents and information shall be handed over to the DR within 1 month of the submission of the FR.
- 5.4.6 The Consultants shall adopt the following green measures in preparing the Deliverables:
- (a) All reports shall be of single line spacing and printed on both sides of the paper;

- (b) All final reports, ESs and EOP shall be printed on recycled paper. The use of recycled paper with not less than 50% recycled materials and not exceeding 80 gsm shall be used as a general rule. The logo of recycled paper shall be printed in a prominent area of the report;
- (c) Unnecessary or excessive use of plastic laminates, glossy covers or double covers shall be avoided. Use of recyclable non-glossy art board papers as document covers should be encouraged;
- (d) Excessive page margins and line spacing should be avoided. A top/bottom margin of 2 cm and left/right margin of 2.5 cm are sufficient;
- (e) Use of blank paper should be avoided as far as possible; and
- (f) Suitable font type of font size 12 shall be used generally in balancing legibility and waste reduction objective.

5.4.7 The submitted Deliverables shall become the property of the Government with full copyright. The Consultants shall draw to the Employer's attention the Deliverables which are under licence and any-existing copyright or patent on any Deliverables and any other restriction whatsoever affecting the Employer's use of the same and, if required by the DR, to establish the existence of any licence, copyright, patent or restriction. Licences for computer programmes shall be assigned to be the Employer unless prohibited by licensors.

5.4.8 All record, if any, shall be stored in a safe place by the Consultants before submitting the same to the DR upon completion of the Study or any other earlier dates as instructed by the DR.

## **6. SERVICES TO BE PROVIDED BY THE CONSULTANTS**

### **6.1 General**

- 6.1.1 The Consultants shall comply with all reasonable instructions from the DR and with all relevant circulars, standing instructions, technical memoranda and policy documents as directed by the DR.
- 6.1.2 The Consultants shall take cognizance of the relevant documents, reports, drawings and other background materials of the various studies relevant to the Assignment and/or any other studies that have a bearing on the Assignment. The Consultants shall also identify and resolve any potential or actual conflicts that may arise when they carry out the Assignment.
- 6.1.3 The Consultants shall review all findings, recommendations, reports, documents, public consultation materials and plans produced under those listed at **Appendix A** and any other studies as appropriate. The Consultants shall update, seek additional information, review, refine and modify where appropriate all available information and the data, assumptions, findings, conclusions, rationale and recommendations contained in the papers and reports of the previous studies related to the Assignment, and propose any necessary revisions and recommendations.
- 6.1.4 During the course of Assignment, the Consultant shall keep themselves informed as to the progress of the studies/development listed in **Appendix A** and any other relevant to the Assignment and take into account any information from these studies / projects / developments which has a bearing on the Assignment.
- 6.1.5 Throughout the course of the Assignment, the Consultants shall consult, liaise and coordinate with relevant Government departments, authorities, bodies, organizations, agencies, Consultants or persons on matters related to the status of the above and any other studies / developments and to this Study. The relevant bodies, departments, organizations and public utilities shall include, but not be limited to those listed in **Appendix D**. Relevant records of meetings and correspondence shall be produced and copied to the DR and other relevant parties and any other agencies or organizations, as necessary. The Consultants shall address the concerns raised by all parties concerned and refer to the DR if needed.

- 6.1.6 The Consultants shall attend meetings to present their work and to answer questions in connection with the consultations with other government departments, authorities, bodies, consultants, or persons on matters related to the Assignment and seeking endorsement of any findings, conclusions and recommendations. The Consultants shall provide staff available to give presentations and answer questions in either Chinese or English, or both, and shall when required by the DR produce documents, submissions or presentation materials in both Chinese and English.
- 6.1.7 Interface and liaison with other consultants / parties responsible for the projects as listed in Appendix A, and other studies as appropriate, that have impacts on this Study:
- (a) The Consultants shall consult and liaise with other consultants and parties on matters relating to the Assignment. The Consultants shall communicate and correspond directly with them, and if necessary arrange meetings with them, to obtain information or seek their comments on matters relating to the Assignment. Correspondence so exchanged shall be copied to the DR for reference. The Consultants shall assess and address the implications of interface projects on the proposals of the Study, or vice versa.
  - (b) The Consultants shall gather all necessary information and data from the other consultants and parties for the purpose of undertaking the Assignment and shall satisfy themselves that the information and data so collected are adequate and appropriate for use in the Assignment.
  - (c) The Consultants shall bring to the attention of the DR promptly of any interfaces or conflicts that they are unable to resolve, together with the Consultants' recommendation on how to resolve the problem.
  - (d) The Consultants shall in a timely manner offer and/or assist the DR to offer comments on the relevant deliverables of the interface projects.
- 6.1.8 In amplification of Clause 19 of the GCE, the Consultants shall communicate and correspond direct with other Government departments, public utility companies, and other authorities, bodies, consultants, or persons to obtain information in connection with the Assignment. Relevant records of meetings and correspondence shall be produced and copied to the DR and

other relevant parties and any other agencies or organisations, as necessary. Any problem in communication or liaison shall be referred to the DR for assistance.

- 6.1.9 Upon request from the DR, the Consultants shall provide all assistance to the DR to resolve and reply to all sorts of complaints, expression of dissatisfaction, accusations, and queries raised by the general public or Government departments.
- 6.1.10 The Consultants shall draw the attention of the DR the need to consider any legal implications and consequences arising out of or in relation to the Assignment. For the purpose of completing the Assignment, the Consultants shall take cognizance of the need to comply with and observe relevant ordinances, by-laws, regulations and rules for the time being in force in Hong Kong.
- 6.1.11 The Consultants shall inform the DR as early as possible of the need to take action under any ordinances and the DR will, upon receipt of the necessary documents and drawings, etc. from the Consultants, arrange for the necessary action to be taken.
- 6.1.12 Upon completion of the Final Report / Executive Summary, the Consultants shall seek the approval for the relevant findings / recommendations from the Advisory Council on the Environment (ACE) and make amendments to relevant papers and reports, if necessary.
- 6.1.13 The Consultants shall present the staged / final findings with papers and briefing notes in English and Chinese of the Assignment to the relevant committees, authorities, councils, community groups and other parties as required by the DR.
- 6.1.14 The Consultants shall attend, serve and report to meetings as outlined in **Clause 13** of this Brief.
- 6.1.15 The key task of the Study is specified in Clause 6.2.

## 6.2 Major Tasks

The major tasks to be carried out by the Consultants of the Assignment are as follows:

### 6.2.1 Task 1: Baseline Review

- (a) The environmental (such as air quality, noise, water quality, ecology, landscape, hazards, sewage, waste, etc) and cultural heritage baseline conditions of the whole territory and Lantau Island will be established from existing available information and current studies to serve as inputs to the preparation of development scenarios and options in the Main Study and overall spatial development and conservation strategy for Lantau. The Consultants are required to review and update, where necessary, the baseline conditions and examine whether they may be influenced by various local and regional factors. The Consultants shall provide an emission inventory on the quantities and characteristics of those major existing and future pollution sources in the assessment area. Field investigation and laboratory test may need to be conducted as appropriate, or other methods / reasonable assumptions be proposed to fill relevant information gaps if found necessary.
- (b) The Consultants shall also define how much environmental asset we have and the pressure that has been and might be generated from future developments. Furthermore, the Consultants shall estimate the extent of improvement in environmental efficiency needed to improve the situation, and the potential for meeting such amount of improvement; and
- (c) The Consultants shall review environmental targets to be met by Hong Kong in order to achieve Hong Kong's long-term vision based on the findings of Tasks 1 to 2, and international standards and criteria. Consideration should be given to the likelihood that green initiatives and other measures could tackle the current environmental problems. Reference should also be made to the studies in **Appendix A**.

## **6.2.2 Task 2: Identification of Constraints, Opportunities and Key Issues**

### ***Lantau Island***

- (a) The Consultants shall identify the major environmental constraints and key issues of Lantau Island that would have influence on the land use planning. Lantau Island and its surroundings are rich in terrestrial and marine biodiversity and are ecologically and environmentally sensitive, whilst the development at Lantau is also subject to various constraints, including the noise impact along/near flight paths (particularly with the Noise Exposure Forecast (NEF) 25 contours), and the air and noise pollution caused by the North Lantau Highway and the at-grade Airport Express and Tung Chung Lines. Taking into account those environmental constraints, “no-go” areas in Lantau Island should be identified.

### ***The Whole Territory***

- (a) The Consultants shall identify the major environmental constraints and key issues of the entire territory that would have influence on land use planning, the environmental opportunities that land use planning could make use of, and any land use planning principles / options and other measures, including potential use of technologies and measures currently under development that could bring about environmental improvements. Since nature conservation will be a key concern, those ecological “no-go areas” shall be identified and habitats / sites of conservation importance shall be duly reflected. Other constraints may include trans-boundary pollutions and identification of cultural heritage and Potentially Hazardous Installations (PHIs), etc.

## **6.2.3 Task 3: Examination of Key Issues**

- 6.2.3.1 The Consultants shall examine the key issues, including but not limited to the following:

### ***Conservation Strategies***

- (a) The Consultants shall identify the conservation strategies currently under formulation and proposals on strengthening and enhancement of our ecological and landscape resources.

***Trans-boundary Pollutions***

- (a) The Consultants shall investigate the potential trans-boundary air quality and water quality influenced from the Mainland. The Consultants shall take into account any trans-boundary issues which may affect Hong Kong's future environmental indicators to be used in the Study.

***Environmental Friendly Strategic Options***

- (a) The Consultants shall suggest a list of environmentally friendly strategic options (including strategic physical development, policy, institutional and technology options, features, measures and principles) that could potentially enhance the environmental conditions and facilitate achievement of the environmental targets, in particular for those areas where improvements in environmental efficiency are needed (such as new and renewable energy and rehabilitation of urban stream). Assumptions and information on the identified potential strategic options and/or features should be provided to allow incorporation into the development scenarios, options and strategies under the Main Study and the overall spatial development and conservation strategy for Lantau.
- (b) As the planning horizon is extended beyond year 2030, environmentally friendly options that may be viable in the future, or reflect a potential direction for further investigations or development should also be included in the list. The characteristics and potential advantages and disadvantages of the options should be stated. On the other hand, practices which may further increase the pressure on the environment causing further deterioration in the environmental quality shall also be identified.

***Water quality in waters of Hong Kong***

- (a) In view of the various proposed major developments, the Consultants shall consider and identify any key existing or potential future water quality issues in waters of Hong Kong, especially the Western Waters and Deep Bay.

**6.2.4 Task 4: Strategic Environmental Evaluation and Comparison of Options**

- (a) The Consultants shall base on the available data to propose appropriate environmental performance indicators, criteria and evaluation methodologies/tools, in quantitative terms wherever possible, to evaluate the strategic environmental impacts and environmental sustainability implications of the options for the overall spatial development and conservation strategy for Lantau and the development options considered in the Main Study. Prior to the commencement of options evaluation process, the Consultants shall seek views and agreements from the DR on the proposed environmental performance indicators, criteria and evaluation methodologies/ tools.
- (b) Using the environmental performance indicators, criteria and methodologies / tools established in paragraph (a) above, the Consultants shall carry out broad-brush assessments for the development option(s) considered in the Main Study and the options for the overall spatial development and conservation strategy for Lantau. The potential key environmental impacts and cumulative effects, and the key environmentally favourable and unfavourable features and problematic areas should be identified.
- (c) The development options shall be discussed with respect to their relative environmental performance. The key environmentally favourable and unfavourable features, and any particular problematic areas related to the options considered in the Main Study and the options for the overall spatial development and conservation strategy for Lantau should be identified to facilitate further refinement. The environmental feasibility, the issues and consequences of the “do-nothing” scenario and the strategic implications of the overall spatial development and conservation strategy for Lantau should also be addressed.
- (d) The broad assessments for the options for the overall spatial development and conservation strategy for Lantau and the option(s) considered in the Main Study should cover the environmental assets which may face severe pressure. The mitigation measures to tackle the potential key environmental impacts should be identified.

- (e) To determine the effectiveness of the overall spatial development and conservation strategy for Lantau and the preferred option(s) considered in the Main Study, the Consultants shall evaluate the relevant environmental sustainability implications. Reference should be made to the environmental aspect of SUSDEV21 to ensure that appropriate strategic level environmental information would be available for input into the “Computer Aided Sustainability Evaluation Tool” (CASET) produced under SUSDEV21 to evaluate sustainability impact assessment.

**6.2.5 Task 5: Evaluation of the Individual and Cumulative Environmental Implications of the Preferred Option(s) for the Whole Territory**

- (a) After the preferred option(s) have been selected, the Consultants shall identify major environmental constraints and opportunities, and shall evaluate its environmental feasibility and follow-up investigations required. The information and findings of the environmental performance evaluation carried out under Task 4 above should be used where appropriate to avoid duplication of effort. The environmental benefits and disbenefits of with or without the preferred option(s) should be considered and compared. In the assessment, specific environmental concerns should be identified with possible mitigation measures stated. Aspects to be assessed include the followings:

**6.2.5.1 *Air Quality Impact***

- I. The Assessment shall make reference to the prevailing Air Quality Objectives (AQOs), relevant technical memorandum and other relevant guidelines in proposing the methodology and criteria.
- II. The Consultants should review and incorporate the findings of relevant previous studies/surveys and collate all available information on the air quality of the territory.
- III. Based on the findings of the baseline review, the Consultants should provide background information relating to air quality issues of the territory.

- IV. Present the background air quality levels in the territory for the purpose of evaluating cumulative air quality impacts of the preferred option(s). The Consultants should estimate the background air pollutants concentrations based on the “Pollutants in the Atmosphere and their Transport over Hong Kong” (PATH) model.
- V. Identify and describe the representative existing, committed and planned air sensitive receivers (ASRs) of the preferred option(s).
- VI. Identify the emission characteristics and provide a list of major air pollution emission sources of the preferred option(s). Examples of operational phase emission sources include vehicular emissions from road traffic, chimneys, emissions from power plants, marine emissions, emissions from the operation of the existing HKIA and its planned expansion into a Three-Runway System etc.
- VII. Characterize, assess and evaluate the net and cumulative air quality impacts generated from the major emission sources of the preferred option(s).
- VIII. Present the assessment results in the form of summary table and pollution contours for comparison with relevant air quality standards and the examination of the land use implications of these impacts.
- IX. Propose mitigation measures to reduce the cumulative air pollution impacts to meet the established standards.
- X. Propose and adopt suitable assessment methodology and criteria for comparing the greenhouse gas emissions arising from the preferred option(s) against some relevant baseline scenario(s).

#### **6.2.5.2 Water Quality Impact**

- I. The Consultants shall make reference to the criteria and guidelines for evaluating and assessing water quality impact as stated in Annexes 6 and 14 of the TM.

- II. The assessment area for the water quality impact assessment shall include all the Water Control Zones as designated under the Water Pollution Control Ordinance (Cap. 358).
- III. The Consultants shall identify and analyse physical, chemical and biological disruptions of the water system(s) arising from the preferred option(s) through desktop research.
- IV. The Consultants shall predict, quantify and assess any water quality impacts arising from the preferred option(s) by appropriate mathematical modelling and/or other techniques proposed by the Consultants and approved by the DR. The mathematical modeling requirements are set out in **Appendix E** to this Study Brief.
- V. The Main Study shall address water quality impacts of the preferred option(s). Essentially, the assessment shall address the following:
  - i) Collect and review background information on affected existing and planned water systems, their respective catchments through desktop research;
  - ii) Characterize water quality of the water systems based on existing best available information;
  - iii) Identify and analyse relevant existing and planned future activities and beneficial uses related to the water systems and identify all water sensitive receivers;
  - iv) Identify pertinent water quality objectives and establish other appropriate water quality criteria or standards for the water system(s) and the sensitive receivers identified in (i), (ii) and (iii) above;
  - v) Identify any alternation of any water courses, natural streams, ponds, wetlands, change of water holding/flow regimes of water bodies, change of catchment types or areas and water quality changes;

- vi) Identify and quantify existing and likely future water pollution sources, including point discharges and non-point sources to water system(s), sensitive receivers and stormwater drainage system(s);
- vii) Provide an emission inventory on the quantities and characteristics of those major existing and future pollution sources;
- viii) Derive future sewage flows and loads for different scenario years, assess the adequacy of the existing and planned sewerage and sewage treatment facilities for the collection, treatment and disposal of the future and ultimate sewage flows arising from the preferred option(s) and determine the short term, intermediate term and long term requirements of sewerage improvement works for the development options, including upgrading and expanding of the existing and planned sewerage and sewage treatment facilities and provision of new sewerage and sewage treatment facilities;
- ix) Identify and quantify the water quality impacts based on the findings and recommendations of (viii) above;
- x) Predict and quantify the impacts on the water system(s) and its/their sensitive receivers due to those alternations and changes identified in (v) above, and the pollution sources identified in (vi) above ;
- xi) Assess the cumulative impacts due to other major related concurrent and planned projects, activities or pollution sources in the territory that may have a bearing on the overall environmental acceptability;
- xii) Analyze the provision and adequacy of existing and planned future facilities to reduce pollution arising from the point and non-point sources identified in (vi) above. Recommend improvement works to prevent or reduce the pollution;
- xiii) Recommend mitigation measures to reduce the water quality impacts to acceptable levels; and

- xiv) Evaluate and quantify residual impacts on water systems and the sensitive receivers with regard to the appropriate water quality objectives, criteria, standards or guidelines or government policies.

#### **6.2.5.3 Waste Management**

- I. The assessment shall examine the implications of the preferred option(s) on the material consumption and waste generation, and existing and planned waste reduction, collection, treatment and disposal measures or facilities for various solid waste reduction and disposal options. The implications of construction and demolition materials arising from the preferred option(s), their collection, recycle/reuse and disposal shall also be examined.
- II. After considering the opportunities for reducing waste generation and maximizing re-use, the types and quantities of the wastes required to be treated/disposed of as a consequence of the preferred option(s) shall be estimated. The Consultants shall identify and propose any new/additional appropriate modern waste management facilities to be needed for handling solid waste arising from the development options and such facilities should tally with the principles and directions as set out in “Hong Kong Blueprint for Sustainable Use of Resource 2013-2022” and “A Food Waste & Yard Waste Plan for Hong Kong 2014-2022”. The potential waste facilities to be considered and explored should include thermal treatment facilities, biological treatment facilities, mechanical sorting and resource recovery/recycling facilities etc. The cost of new/additional facilities should also be estimated.

#### **6.2.5.4 Noise Impact**

- I. The Consultants should review and incorporate the findings of relevant previous studies/surveys and collate all available information on the noise impact of the territory.
- II. The Consultants shall carry out a quantitative noise impact assessment for the preferred option(s). The assessment shall include road traffic noise, fixed noise sources, railway noise, aircraft noise, helicopter noise and marine

traffic noise impact assessment and the examination of compliance with relevant noise criteria at representative existing and planned noise sensitive receivers (NSRs). The Consultant shall conduct the road traffic noise assessment by using 3D traffic noise mapping model to examine the acceptability and performance of the proposals of the preferred option(s). The Consultants shall recommend feasible broad noise planning and mitigation measures with supporting quantitative noise impact assessment at representative locations to substantiate the effectiveness of the proposed noise mitigation measures and that the recommended options of the Study could comply with the relevant noise criteria.

- III. The Consultants shall also review the baseline conditions and examine how they would be affected by the preferred option(s). In particular, the Consultants shall, with use of 3D traffic noise mapping model, define and present the compliance margins under the baseline conditions and the changes/improvement to the margins caused by the preferred option(s) with the proposed noise mitigation measures.

#### **6.2.5.5 *Ecological Impact***

- I. The Consultants should review and incorporate the findings of the baseline review and collate all available information on the ecological characters of the territory.
- II. An up-to-date general ecological profile of areas likely to be affected by the preferred option(s) should be provided. The major information to be provided in the ecological profile shall include :
  - i) Habitat type and the presence of any areas/species of conservation importance and features of ecological importance.
  - ii) General description of the existing wildlife uses of various habitats with special attention to various wildlife groups.
  - iii) Habitat map of suitable scale showing the various habitats. Colour photos of important habitats or features of ecological importance identified shall be provided.

- III. Any impacts arising from the preferred option(s) that may lead to the destruction of or adverse effect on important habitats, i.e. woodland, undisturbed natural coast, intertidal mudflats, mangrove, freshwater or brackish marshes, established seagrass bed, natural stream courses and rivers, wetlands, coral communities and other habitats considered as having special conservation importance by documented scientific studies should be identified.
- IV. Consider and recommend the type and nature of mitigation measures in broad sense to avoid, minimise and/or compensate for the adverse ecological impacts identified in a preferential order.
- V. Identify unresolved key issues and recommend further investigations to be taken up in individual studies.
- VI. For the avoidance of doubt, all ecological assessment work will be qualitative in nature.

#### **6.2.5.6 Cultural Heritage Impact**

- I. The Consultants should carry out a broad term desktop Cultural Heritage Impact Assessment on the preferred option(s). In conducting the broad term Cultural Heritage Impact Assessment, the Consultants should make reference to the available information from relevant studies, baseline reviews and research findings; and the assessment should be supported with illustrate materials such as location plans. The Consultants shall identify the potential impacts on cultural heritage which should include :
  - i) All archaeological sites (including marine and terrestrial archaeological sites);
  - ii) Built heritages (including all declared monuments; all proposed monuments; all buildings/structures/sites graded or proposed to be graded by the Antiquities Advisory Board (AAB); Government historic sites identified by AMO; and buildings/structures/sites of high architectural/historical significance and interest); and

- iii) Cultural landscapes (including places associated with historic event, activity, or person or exhibiting other cultural or aesthetic values, such as sacred religious sites, a setting for buildings or structures of architectural or archaeological importance, historic field patterns, clan graves, old tracks, fung shui woodlands and ponds etc.) and recommend feasible mitigation measures and/or areas of archaeological and heritage potential for further study/survey.

#### **6.2.5.7 *Broad Landscape Impact***

- I. The Consultants should carry out a broad landscape impact assessment with a view to producing a broad landscape framework to prevent and minimise adverse impacts of the preferred option(s) on the landscape resources of the sensitive areas and potential conservation areas, and to look for positive opportunities for environmental enhancement.

#### **6.2.5.8 *Hazard***

- I. The Consultants should identify the Potentially Hazardous Installations (PHIs) and should avoid to propose any developments within or adjacent to these facilities in the preferred option(s). In case such developments are unavoidable, the Consultants shall examine if these facilities may affect or be affected by the proposed developments, conduct hazard assessments, quantify the risks, and recommend feasible risk mitigation measures.
- II. The Consultants should assess the requirements of the PHIs of the preferred option(s) and recommend further investigations of these requirements to be taken up in the subsequent planning and engineering stage of individual studies.

#### **6.2.6 Task 6: Strategic Environmental Performance of the Preferred Option(s) for the Whole Territory**

- (a) After the preferred option(s) have been selected, the Consultants shall confirm its broad environmental feasibility by identifying and evaluating the

potential environmental impacts and any mitigation measures and follow-up investigations required. The information and findings of the environmental performance evaluation and comparison carried out under Tasks 4 and 5 above should be used where appropriate to avoid duplication of effort. The Consultants shall also identify the issues and consequences of the “do-nothing” scenario of the preferred option(s). In the assessment, specific environmental concerns should be identified with possible mitigation measures stated.

- (b) The Consultants shall summarise the strategic implications of the preferred option(s). Potential measures to improve the strategic environmental performance of the preferred option(s) should be identified if appropriate.

#### **6.2.7 Task 7: Strategic Environmental Action Plan and Programme**

The Consultants shall recommend specific environmental action plans and programmes, including a Strategic Environmental Monitoring and Audit Plan. For avoidance of doubt, the actual monitoring and auditing work will not form part of the SEA.

### **7. RESPONSE TO QUERIES**

- 7.1 The Consultants shall respond to queries under Clause 20 of the General Conditions of Employment raised within a period of 3 months after the final submission and acceptance of the Deliverables required under the Agreement. Such date shall be confirmed in writing to the Consultants by the DR.

## 8. PROGRAMME OF IMPLEMENTATION

8.1 The due date for commencement of the Agreement is 23 March 2015.

8.2 Pursuant to Clause 26(B) of the General Conditions of Employment, the Consultants shall submit the draft programme and revised draft programmes and the DR shall agree, or instruct, within the following periods:

Submission of draft programme:	Within 2 weeks after the due date for commencement of the Agreement
Agreement of the draft or revised draft programme or instruction for submission of the revised draft programme:	Within 2 weeks from receipt of the draft or revised draft programme or instruction for submission of the revised draft programme
Submission of revised draft programme:	Within 1 week from the instruction of the DR

8.3 The draft programme and revised draft programme shall detail the activities to be carried out and their inter-relationships, key dates for particular tasks and any decision dates that may be required for the uninterrupted progress of the Assignment. Critical activities and paths shall be identified in the Programme. The Consultants shall discuss with the DR during the above periods to agree the timing of submission of reports, other documents and plans for each of the main elements of the Assignment, for inclusion in the draft programme and revised draft programme.

8.4 The key dates referred to in Clause 8.3 of this Brief shall include but not be limited to the following deliverables:

<b>Deliverables</b>		<b>Key Dates (from the date for commencement of this Assignment)</b>
(i)	Final Baseline and Initial Assessment Report	Week 7
(ii)	Final Executive Summary for Strategic Environmental Evaluation for Overall Spatial Development and Conservation Strategy for Lantau	Week 16
(iii)	Final Evaluation Report for Preferred Option(s) for the Whole Territory	Week 46
(iv)	Final Report, Final Executive Summary and Final Environmental Outcome Profile	Week 72

8.5 Meetings arising from statutory requirements may be arranged beyond the study period. In addition, meetings may be extended beyond the study period to fit in with the meeting schedule of concerned parties.

8.6 The Consultants shall endeavour to ensure that the Assignment is carried out in accordance with the agreed programme and shall submit regular programme reviews as part of the progress reports referred to in Section 9.

8.7 An indicative Outline Study Programme is attached at **Appendix F** for reference only. The Consultants shall prepare and submit the Study programme pursuant to the General Conditions of Employment and the Brief.

## **9. PROGRESS REPORTS**

9.1 The Consultants shall submit to the DR progress reports at monthly intervals on all aspects of the Services relating progress to the Study' Programme referred to in Clause 26(D) of the General Conditions of Employment and Clause 8 of this Brief. The reports shall include progress against the agreed Programme and include a list of those parts of the Services the execution of which are falling behind the Programme, together with proposals to rectify the delay or expedite progress. The reports shall also highlight any change to study team/management structure and give justifications for the change,

and include updated expenditure forecasts in accordance with Clause 10 of this Brief. The Consultants shall propose the content and format of the progress report at study commencement for agreement by the DR. The progress report shall be submitted within the first week of each month.

- 9.2 The Consultants shall attend progress meetings with the DR at monthly or shorter intervals to review the Consultants' Services and progress and to receive guidance and instructions from the DR.

## **10. FINANCIAL MANAGEMENT**

- 10.1 At monthly intervals or at such other intervals as the DR may require, the Consultants shall submit a report on the current and forecast expenditure on the various elements of the Assignment, including the fees due to the Consultants, in a form to be agreed by the DR. The monthly reports shall be submitted within the first week of each month.

## **11. STANDARDS AND SPECIFICATIONS**

- 11.1 The Consultants shall adopt the Hong Kong Planning Standards and Guidelines, Transport Planning and Design Manual, the Buildings Ordinance and Regulations, the Technical Memorandum issued under Section 16 of the EIAO, and such other technical and design standards and specifications as are in current use by the Government or, if non-existent, British/European Standard Codes of Practice and Specifications relevant to the Study. Should instances arise for which suitable standards or specifications do not exist or for which the current standards or specifications appear to require medication or if by the adoption of current standards the Consultant would incur additional expenses not within reasonable contemplation, the Consultants shall submit recommendations on appropriate alternatives to the DR for agreement.

## **12. DIRECTOR'S REPRESENTATIVE**

- 12.1 The Director's Representative (DR) as defined in the General Conditions of Employment shall be the Assistant Director of Planning/Territorial (AD/T) or such other person as may be authorised by the Director of Planning in writing and notified to the Consultants. The DR may delegate any of the powers and functions vested in her to other officers. If the Consultants are dissatisfied with a decision or instruction of any such officer the matter shall be referred to the Director of Planning for a ruling.
- 12.2 During the course of the Agreement, the Consultants shall report direct to the DR via the Chief Town Planner/Strategic Planning (CTP/SP).

## **13. CONTROL OF THE ASSIGNMENT**

- 13.1 An ESMG, to be chaired by an Environmental Protection Department's representative, may be set up to provide guidance to the Consultants on related policy and technical matters, to monitor progress of the Study, and to consider all major recommendations and reports from the Consultants. Proposed membership and the terms of reference are at **Appendix B**. Representatives from relevant parties will be invited to participate in the ESMG.
- 13.2 The representative(s) of the Consultants shall attend and present findings of their work at meetings of the ESMG when concerned working papers/reports are considered.
- 13.3 All submissions to the ESMG shall be in the form of a written paper together with supporting plans and diagrams as required. All papers for the consideration of the ESMG shall reach the Committee/Group members not less than 7 working days prior to the agreed meeting date.
- 13.4 The Project Director and relevant members from the Consultants' team shall attend and make presentations to meetings of the ESMG as may be required.
- 13.5 Consultants Liaison Meeting (CLM) shall be held between the DR and the Consultants at regular intervals to discuss the progress and issues relevant to the Agreement except otherwise agreed by the DR.

- 13.6 The Consultants shall attend, make presentation and provide responses to questions at other meetings as required by the DR to discuss progress of the Study or related issues and according to Clause 13.10 on the attendance of external meetings. The Project Director of the Consultants, together with one or more his professional staff and relevant specialist Consultants at appropriate rank as necessary, will be required to attend meetings of the ESMG and other meetings as required by the DR.
- 13.7 The Consultants shall propose meeting schedules of the ESMG for the agreement of the DR.
- 13.8 The venue of the ESMG meetings shall be normally in the Conference Room of the DR's office unless advised otherwise by the DR. The Consultants shall be responsible for informing members of the exact time and venue of the meetings, and shall circulate all papers related to items to be discussed at the meeting.
- 13.9 The Consultants shall maintain necessary liaison and consultation with the relevant Government departments and other relevant parties throughout the course of the Assignment. The DR shall be involved in such discussion where possible. Correspondence with Government departments and other parties shall be copied to the DR and to other departments who are likely to be affected.
- 13.10 In addition to those ESMG, Consultants Liaison meetings and other meetings as required by DR for the purpose of discussing the study progress and other technical issues, the Consultants shall be required to attend a maximum of 20 external meetings, as part of the Study. Attendance at further external meetings may be required and shall be paid for as additional services or negotiated lump sum basis. The Consultants' representatives attending the meetings should be of appropriate rank and experience. For avoidance of doubt, liaison meetings or discussions with relevant bureaux/departments, utility companies, other consultants and other parties to address/resolve issues arising from the Study shall not be counted towards the 20 external meetings. If so required by the DR, the Consultants shall prepare the presentation materials, documents and briefing notes in either English or Chinese or both, for the external meetings.

**14. INFORMATION AND FACILITIES PROVIDED BY THE EMPLOYER**

14.1 All available information relevant to the Assignment will be provided to the Consultants. Relevant documents including reports, drawings and other background materials to be noted by the Consultants are listed at **Appendix A**. The Consultants shall indicate for guidance those documents which they currently hold and those of which a copy may be needed. A copy of each of the document indicated as needed will be supplied free of charge by the DR on request from the Consultants, except those currently available from the Sales Section of the Information Services Department. The Consultants shall return the documents supplied in good order upon the completion of the Study, as may be required by the DR. In the case of plans and drawings, one transparency and two prints of each plan or drawing shall be provided free of charge if requested by the Consultants. A charge may be made for additional copies required by the Consultants. Requirements on the provision of map data in digital and hard copy forms are further stipulated in Clause 17. For any information under confidential cover, the Consultants shall not release it to any party without the prior consent of the DR.

**15. CONSULTANT'S OFFICE AND STAFFING**

15.1 The Consultants shall maintain for the duration of this Agreement an office in Hong Kong under the control of the Project Director of the Consultants who shall be responsible for the Assignment. He shall have adequate authority and sufficient professional, technical and administrative support staff in all relevant disciplines to ensure progress of the Study to the satisfaction of the DR.

15.2 The Consultants shall provide the staff and manpower input in accordance with the Technical Proposal which was submitted with the Consultants' tender for this Assignment. The DR shall have the right to check the time-log record of the Consultants' staff deployed for the Assignment.

15.3 If the DR considers that the performance of the Consultants is not satisfactory due to inadequate staffing and manpower input allocated to the Assignment, the Consultants shall, upon the DR's request, forthwith submit

to the DR the time-log record of the staff deployed for the Assignment for the DR to check against the Technical Proposal.

- 15.4 The Consultants' failure to adhere to their staffing proposals, in particular the employment of core personnel of the Consultants and their sub-consultants, thus causing an adverse impact on the performance of the Services, shall be duly reflected in the Employer's performance report on the Consultants.
- 15.5 If the Consultants are unable to maintain any of the core personnel specified in the Technical Proposal, the Consultants shall as soon as possible report this to the DR and propose, for the DR's approval, a revised personnel arrangement which is equivalent to or better than the existing personnel arrangement, in terms of qualifications, experience and competence.
- 15.6 Pursuant to the Personal Data (Privacy) Ordinance (Cap 486), all information which can be directly or indirectly related to an individual shall be kept confidential. The Consultants shall make all submissions which contain personal data under separate and confidential cover.

## **16. SPECIALIST AND SUB-CONSULTANT SERVICES**

- 16.1 The Consultants shall provide all specialist and sub-consultant services required for the satisfactory completion of the Assignment. No additional fees or expenses for provision of such services rendered locally or overseas shall be payable by the Employer except as otherwise provided for in the Schedule of Fees.
- 16.2 The Consultants are also required to produce Chinese translation of the Deliverables as set out under Clauses 5.2.7, 5.2.13 and 5.2.14. If they contract out the translation work to a contractor, the contractor shall be agreed by the DR so as to assure the quality of the translation.
- 16.3 Without derogating from the generality of Clause 38(i) of the General Conditions of Employment, the Consultants shall, upon the award of this Agreement and save as otherwise agreed by the DR, appoint the sub-consultants as proposed in their Technical Proposal for the Assignment. The DR shall have the right to check the sub-consultancy agreements. If

the DR considers that the performance of the Consultants is not satisfactory due to inadequate staffing and manpower input allocated to the Assignment, the Consultants shall, upon the request of the DR, forthwith submit to the DR a certified copy of any or all of the sub-consultancy agreements.

**17. SURVEYS**

- 17.1 Two prints each of topographic map at 1:1,000, 1:5,000 and 1:20,000 scales prepared by the Survey and Mapping Office of the Lands Department, where available for the area covered by the Assignment for which the Assignment forms a part, can be obtained free of charge on application to the Director's Representative.
- 17.2 Digital map at appropriate scales in available formats from Lands Department would be supplied on application to the Director's Representative. The Consultants may apply for the digital map by duly completing, signing and submitting the undertaking forms together with a list summarizing the data required. The Consultants shall provide the storage media for the supply of digital map.
- 17.3 All the mapping information provided shall be for the exclusive use of this Assignment. The Consultants shall abide by the terms and conditions stipulated in the Undertakings and the copyright shall extend to any data derived from the Government digital map provided.
- 17.4 All the lot boundary information provided is for identification only and is subject to amendments by the Lands Department without prior notice. The Consultants shall refer to the District Survey Offices of the Lands Department for the most up-to-date lot boundary information.
- 17.5 The Consultants shall be responsible for updating and verification of accuracy of the information supplied. All field survey work required for the proper execution of the Assignment shall unless otherwise provided for in the Agreement, be the duty of the Consultants. A copy of field notes, field data and resultant plans in hardcopy and in digital form (MicroStation DGN format) as well if available arising from these surveys shall be handed over to the DR upon completion of the Assignment. The accuracy as well as

presentation of these surveys should be of a standard agreed by the DR. After the DR has accepted the survey results, the Consultants shall forward a set of the As-built Survey Plans in hardcopy and softcopy to the Land Information Centre of the Survey and Mapping Office of the Lands Department.

- 17.6 Immediately after the completion of the Assignment, the Consultants shall erase and destroy the supplied Government digital map and any data derived from the digital map in their computer systems and storage media. The Consultant shall confirm the destruction of digital map by duly completing, signing and returning the “Confirmation by Government’s Consultant/Contractor on the Cessation of the use of Digital Map from Land Information Centre, Survey and Mapping Office, Lands Department” to the Director's Representative within 10 days of the completion of the Assignment.
- 17.7 **Appendix G** specifies the division of responsibility for other surveying between the Consultants, the Lands Administration Office and Survey and Mapping Office as well as the relevant sub-offices at district level of the Lands Department.

## **18. INSURANCE**

The amount of insurance cover to be maintained in accordance with Clause SCE 9 of the Special Conditions of Employment shall be HONG KONG Dollars [the Lump Sum Fee, subject to a maximum of HK\$25 million and a minimum of HK\$1 million].

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**Relevant Information to be Noted by the Consultants**

The Consultants shall take cognizance of, but not limited to, the documents, reports, projects, drawings and other materials produced by the following studies, projects and researches in the Study.

**Previous Studies related to SEA**

1. Hong Kong 2030: Planning Vision and Strategy - Strategic Environmental Assessment (2007) (Planning Department)
2. Broad Brush Environmental Appraisal of the Revised Concept Plan for Lantau (2007) (Planning Department)
3. Land Use Planning for the Closed Area – Feasibility Study (2010) (Planning Department)
4. North East New Territories New Development Areas Planning and Engineering Study under Agreement No. CE 61/2007(CE)

**Current Studies related to SEA/EIA**

5. “Preliminary Feasibility Study for Container Terminal 10 at Southwest Tsing Yi – Feasibility Study” under Agreement No. CE 34/2008 (CE)
6. Broad Technical Assessment and Environmental Assessment reports of “Increasing Land Supply by Reclamation and Rock Cavern Development cum Public Engagement – Feasibility Study” under Agreement No. CE 9/2011 (CE)
7. Planning and Engineering Study on the Remaining Development in Tung Chung – Feasibility Study under Agreement No. CE 32/2011(CE)
8. Cumulative Environmental Impact Assessment Study for the Three Potential Nearshore Reclamation Sites in the Western Waters of Hong Kong under Agreement No. CE 14/2013 (CE)
9. EIA report on “Expansion of Hong Kong International Airport into a Three-Runway System”
10. EIA report on “Hong Kong - Zhuhai - Macao Bridge Hong Kong Boundary Crossing Facilities”
11. Study on the Strategic Development Plan for Hong Kong Port 2030

12. Hung Shui Kiu NDA Planning and Engineering Study under Agreement No. CE 2/2011 (CE)
13. Planning and Engineering Study for Housing Sites in Yuen Long South – Investigation
14. Planning and Engineering Study on Future Land Use at Ex-Lamma Quarry Area at Sok Kwu Wan, Lamma Island - Feasibility Study
15. Planning and Engineering Study for Kwu Tung South - Feasibility Study
16. Preliminary Feasibility Study on Developing the New Territories North
17. Feasibility Study on Identification of New Quarry Site in Hong Kong
18. Long Term Strategy for Cavern Development - Feasibility Study
19. Territory-wide Study on Underground Space Development in the Urban Areas of Hong Kong – Feasibility Study
20. Planning and Engineering Study on Development of Lok Ma Chau Loop under Agreement No. CE 53/2008 (CE)
21. Site Formation and Infrastructural Works for the Initial Sites at Kam Tin South, Yuen Long – Investigation, Design and Construction under Agreement No. CE 34/2014 (CE)
22. Planning and Engineering Study for Tuen Mun Areas 40 and 46 and the Adjoining Areas - Feasibility Study under Agreement No. CE 20/2012(TP)

#### **Forthcoming Studies related to SEA/EIA**

23. Planning, Engineering and Architectural Study for Topside Development at Hong Kong Boundary Crossing Facilities Island of Hong Kong–Zhuhai-Macao Bridge
24. Planning and Engineering Study on Sunny Bay Reclamation – Feasibility Study
25. Strategic Studies for Artificial Islands in the Central Waters- Feasibility Study
26. Engineering Feasibility Study for Remaining Housing Sites at Kam Tin South, Yuen Long
27. Main Engineering Infrastructural Works for Housing Development in Area 54, Tung Chung – Design and Construction
28. Land Use Review of Lam Tei Quarry Site and adjoining Cavern Reserves

#### **Materials Relevant to the Study**

29. Hong Kong Planning Standards and Guidelines.
30. Relevant Outline Zoning Plans, Outline Development Plans and Layout Plans of the Study Area
31. Study on Sustainable Development for the 21st Century [SUSDEV 21] (2000)

- (Planning Department)
32. Greenhouse Gas Emission Control Study (2000) (Environmental Protection Department)
  33. Sewerage Master Plans (Environmental Protection Department)
  34. Harbour Area Treatment Scheme (Environmental Protection Department)
  35. Pilot Plant Study on Development of Desalination Facilities in Hong Kong – Investigation under Agreement No. CE 97/2002(WS)
  36. Contaminated Mud Disposal Facility within the Airport East/East of Sha Chau Area under Agreement No. CE 12/2002(EP)
  37. Study on Landscape Value Mapping of Hong Kong (2005) (Planning Department)
  38. Wetland Compensation Study (2005) (Agriculture, Fisheries and Conservation Department)
  39. Specific Study for Relocating GFS Helicopter Base to Sunny Bay under Agreement No. CE 32/2011(CE)
  40. Urban Climate Map and Standards for Wind Environment – Feasibility Study (2012) (Planning Department)
  41. Final reports on “Monitoring of Marine Mammals in Hong Kong Waters – Data Collection” (2012) (Agriculture, Fisheries and Conservation Department)
  42. Hong Kong Blueprint for Sustainable Use of Resources 2013-2022 (2013) (Environment Bureau)
  43. A Clean Air Plan for Hong Kong (2013) (Environment Bureau)
  44. A Food Waste & Yard Waste Plan for Hong Kong 2014-2022 (2014) (Environment Bureau)
  45. Future Fuel Mix for Electricity Generation Consultation (Environment Bureau)
  46. Study on the Action Plan for Livable Bay Area of Pearl River Estuary (2014) (Planning Department)
  47. Hong Kong Biodiversity Strategy and Action Plan 2015-2020 (To be published in 2015)
  48. EIA report on “Extension of Existing Landfills and Identification of Potential New Waste Disposal Sites” (2003)
  49. EIA report on "Development of a 100MW Offshore Wind Farm in Hong Kong” (2010)
  50. EIA report on “Development of Integrated Waste Management Facilities Phase 1” (2012)
  51. Land Use Review for Kam Tin South and Pat Heung
  52. Railway Development Strategy 2014

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**Environmental Study Management Group**

**Terms of Reference**

- (a) To provide guidance and monitor the progress of the Strategic Environmental Assessment (SEA) with a view to assessing the environmental performance of the HK2030 Update.
- (b) To review and recommend reports/papers prepared as part of the SEA process for the final endorsement by the Study Steering Committee.
- (c) To provide guidance to resolve any difference in professional views among ESMG members on the SEA findings and outcomes, and if necessary, seek steer from the Study Steering Committee.
- (d) To provide guidance on environmental planning considerations for the formulation of the territorial spatial development strategy.

**Composition**

**Chairman**

Assistant Director (Environmental Assessment), EPD

**Vice-chairman**

Assistant Director of Planning/ Territorial, PlanD

**Members**

Representative of:

- DEVB
- ENB
- THB
- PlanD (T Branch)

- AFCD
- CEDD
- EPD
- PlanD (D Branch) )
- HyD )
- TD )
- HKO )
- MD ) - on need basis
- WSD )
- DSD )
- AMO, LCSD )
- Department of Health )
- EMSD )

Others as required

**Secretary**

EPD

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**Sample Index Page for Deliverables**

**Details of Agreement**

Agreement No.	
Title of Agreement	
Brief	<a href="#">Brief.html</a> <sup>1</sup>

**Details of Consultants<sup>2</sup>**

Name of Consultants	
Address	
Telephone No.	
Fax No.	
E-mail Address	

**Details of Sub-Consultants<sup>2</sup>**

Name of Consultants	
Address	
Telephone No.	
Fax No.	
E-mail Address	

**Deliverables**

Title of Deliverables	Version no.	Date of issue	Hyperlink <sup>3</sup> to constituent files	Software used to create the constituent files (with version)	Highlights of any pre-existing intellectual property right
<i>[e.g. Report No.1 – Inception Report]</i>	<i>e.g. 3.1]</i>	<i>[e.g. 3 Nov 2014]</i>	Main Text.doc	Microsoft Word 97	Nil
			Table 1.xls	Microsoft Excel 97	Nil
			Appendix 1.doc	Microsoft Word 2000	Nil
			Appendix	Microsoft Word	Nil

<sup>1</sup> A hyperlink to the finalized version of the Brief of the Assignment should be included. In case the Brief comprises several documents, hyperlinks to all such documents should be included.

<sup>2</sup> In case there are more than one consultant firm or sub-consultant, additional tables should be inserted and their information should be provided in these tables

<sup>3</sup> The hyperlink should be set relative to the file location of this index file.

			2.doc	2000	
			Photo 1.gif	Microsoft Photo Editor 3.01	Company X owns the copyright of this file. Their agreement to copy, distribute and amend this file has been obtained.

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**List of Government Departments, Bodies, Organizations and Public Utility  
Companies to be Consulted**

**A. Consultation with Government Departments**

- |  |   |
|--|---|
| Advisory Committee on the Appearance of Bridges and Associated Structures  | - On aesthetical aspects of any proposed highway bridges and associated structures.   |
| Agriculture, Fisheries and Conservation Department                         | - On matters related to ecological conservation, preservation of trees, protection of wildlife and wetland, and on matters related to ecology, nature conservation, agriculture, fisheries, other important habitats, farm access and irrigation facilities, and on matters affecting existing and proposed Country Parks, Marine Parks/Reserves, Special Areas and Sites of Special Scientific Interest. |
| Antiquities and Monuments Office, Leisure and Cultural Services Department | - On matters related to Cultural Heritage (including sites of Archaeological Interest and Built Heritage)   |
| Civil Aviation Department  | - On matters affecting the airport facilities, and provision of heliport.<br><br>- On matters relating to GFS airport height restriction for the current and future operation of the Hong Kong International Airport  |
| Civil Engineering Office of Civil Engineering and Development Department   | - On matters relating to public filling, fill requirements and if marine facilities are affected and if reclamation/marine works and port developments are involved.  |

Commerce and Economic Development Bureau	- On policy matters relating to commerce and industry, tourism, telecommunications, information technology, broadcasting, film and creative industry.
Development Bureau	- On policy matters relating to planning, land use, buildings, urban renewal, construction and works and development-related heritage conservation
Development Offices of Civil Engineering and Development Department	- On matters relating to new town developments and major development areas.
District Lands Office and District Survey Office of Lands Department	- On all district land and land related matters including survey and mapping.
District Offices, Home Affairs Department	- On matters which affect the local community's interest at large, and on local consultation arrangements.
Drainage Services Department	- On matters relating to the drainage and sewerage projects being undertaken by DSD and matters which involve or affect existing or proposed drainage facilities, or which will alter the flow regime of a drainage basin, particularly in flood prone areas, and on matters relating to the sewage treatment facilities, pumping stations, sludge handling and transportation and control centres.
Electrical and Mechanical Services Department	- On matters relating to district cooling system, solar energy, traffic signals, illuminated bollards, gas standard/safety, or any other electrical and mechanical involved.
Environmental Protection Department	- On matters relating to environmental and pollution aspects, and waste treatment and disposal, and planning of sewage infrastructure.

Fire Services Department	- On fire safety, fire service installations and dangerous goods licence, emergency vehicular accesses, etc.
Food and Environmental Hygiene Department	- If environmental and hygienic facilities of ex-Urban Council / Regional Council etc, excluding those areas in country parks, leased areas and the appropriate regions are affected, and if their provision of services are required.
Geotechnical Engineering Office of Civil and Engineering Development Department	On matters relating to quarries, caverns, underground space and slopes
Government Economist	- On matters relating to macroeconomic situation and long-term socio-economic development.
Government Flying Service (GFS)	- On matters relating to the GFS flight operations, flight path and possible constraints on the development
Home Affairs Bureau	- On matters relating to the provision of territory-wide recreation and sport facilities, multi-purpose stadium complex, and cultural facilities.
Hong Kong-Zhuhai-Macao Bridge Hong Kong Project Management Office of HyD	- On matters related to Tuen Mun Western Bypass and Hong Kong-Zhuhai-Macao Bridge.
Housing Department	- On matters relating to public housing.
Leisure and Cultural Services Department	- If amenity, civic, community and recreational facilities and land of ex-Urban Council / Regional Council etc, and trees within 5 metres in urban areas, or 30 metres in New Territories, of a public carriageway maintained by HyD, excluding those areas in country parks, leased areas and the appropriate regions are affected, and if their

provision of services are required.

- |   |   |
|---|---|
| Major Works Project Management Office of HyD                    | - On matters related to major highway projects.   |
| Marine Department   | - If marine traffic, marine and port facilities are affected, fairways, anchorages, typhoon shelter, public cargo working areas, Vessel Traffic Service radar station and associated electronic and communication equipment, and reclamation/marine works, and port development and port efficiency are involved. |
| Planning Department   | - On planning matters including land use, urban design, landscape and visual impacts relating to the development of the area, and outline zoning plans amendments.  |
| Railway Development Office of Highways Department               | - On matters affecting planned railway lines and stations.  |
| Regional Offices and Structures Division of Highways Department | - On matters affecting proposed or existing public roads and associated structures, roadside landscape works, and accommodation of underground utilities by wider pavements or by different forms, etc.   |
| Security Bureau   | - On matters affecting the existing military sites, correctional institutions and flight operations of GFS  |
| Traffic Engineering Divisions, Transport Department (TD)        | - On traffic matters, traffic aids, road alignment and layout generally.  |
| Transport Operations Divisions, TD                              | - If public transport is likely to be affected.   |
| Transport Planning Division, TD                                 | - On traffic and transport matters including traffic forecast and transport planning  |
| Transport and Housing Bureau                                    | - On policy matters relating to Hong Kong's internal and external transportation, including air   |

services, land transport, maritime transport, port, maritime and logistics developments and housing.

- |  |  |
|--|--|
| Water Supplies Department                | - On matters related to water supply, or if water gathering grounds, waterworks reserves and waterworks installations are affected.                  |
| Other departments, offices and divisions | - If their areas of responsibility are affected by the Project, or if they will be responsible for its management and/or maintenance when completed. |

## **B. Consultation with Others**

- |   |  |
|---|--|
| Advisory Council on the Environment             | - On matters relating to EIA Studies, environment and pollution.   |
| Advisory Committee on Agriculture and Fisheries | - On matters concerning the development of agriculture and fisheries production in Hong Kong and formulation of related policy   |
| Airport Authority Hong Kong                     | - On matters relating to the operations of Hong Kong International Airport, aircraft flight path and noise forecast<br><br>- On matters relating to the planning of expansion of Hong Kong International Airport into a Three-Runway System and the related airspace protection plan |
| Country and Marine Parks Board                  | - On matters relating to country parks, special areas, marine parks and marine reserves.   |
| Harbour-front Enhancement Committee             | - On matters relating to waterfront development and initiatives.   |
| Hong Kong Maritime Industry Council             | - On matters relating to maritime services and facilities  |

Hong Kong Port Development Council	- On matters relating to port planning / development and facilities
Hong Kong Port Operations Committee	- On matters relating to the safe and efficient operations of the Hong Kong Port
Local Vessels Advisory Committee	- On matters relating to local craft traffic activities and use of services and facilities
Hong Kong Tourism Board	- On matters relating to tourism/recreation facilities.
Lantau Development Advisory Committee	- On matters relating to the social and economic development opportunities on Lantau to capitalise on its advantages as the confluence of major transport infrastructure linking Hong Kong, Macau and the western PRD, so as to meet the long-term development needs of Hong Kong.  - On matters relating to the policies, measures and specific proposals conducive to the sustainable development and conservation of Lantau.
Marine Fuels Distributors' Association	- On all matters affecting local marine dangerous goods carriers and marine fuels operations
MTR Corporation Limited	- On all matters affecting their existing and/or planned railway lines and stations.
Town Planning Board	- On matters relating to statutory planning.

Utility undertakers (including China Light and Powers Hong Kong Limited, Hong Kong Electric Company Limited, Electricity Advisory Services Ltd., Hong Kong & China Gas Co., C & W HK Telecommunications Ltd., Hong Kong Telecom International, Rediffusion (H.K.) Ltd., Hutchison Telecom (HK) Ltd., New T & T (HK) Ltd., New World Telephone Co. Ltd., and Wharf Cable Ltd.

- If existing and /or planned utilities facilities and installation are affected.

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**Hydrodynamic and Water Quality Modelling Requirements**

Modelling software general

1. The modelling software shall be fully 3-dimensional capable of accurately simulating the stratified condition, salinity transport, and effects of wind and tide on the water body within the model area.
2. The modelling software shall consist of hydrodynamic, water quality, sediment transport, thermal and particle dispersion modules. All modules shall have been proven with successful applications locally and overseas.
3. The hydrodynamic, water quality, sediment transport and thermal modules shall be strictly mass conserved at all levels.
4. An initial dilution model shall be used to characterize the initial mixing of the effluent discharge, and to feed the terminal level and size of the plume into the far field water quality modules where necessary. The initial dilution model shall have been proven with successful applications locally and overseas.

Model details – Calibration & Validation

1. The models shall be properly calibrated and validated against applicable existing and/or newly collected field data before their use in this study in the Hong Kong waters, the Pearl Estuary and the Dangan (Lema) Channel. The field data set for calibration and validation shall be agreed with DR in consultation with EPD.
2. Tidal data shall be calibrated and validated in both frequency and time domain manner.
3. For the purpose of calibration and validation, the model shall run for not less than 15 days of real sequence of tide (excluding model spin up) in both dry and wet seasons with due consideration of the time required to establish initial conditions.

4. In general the hydrodynamic models shall be calibrated to the following criteria:

<u>Criteria</u>	<u>Level of fitness with field data</u>
• tidal elevation (@)	< 8%
• maximum phase error at high water and low water	< 20 minutes
• maximum current speed deviation	< 30%
• maximum phase error at peak speed	< 20 minutes
• maximum direction error at peak speed	< 15 degrees
• maximum salinity deviation	< 2.5 ppt

@ Root mean square of the error including the mean and fluctuating components shall meet the criteria at no less than 80% of the monitoring stations in the model domain

5. The Consultants shall be responsible for acquiring/developing and calibration of the models for use in this study themselves. They might make reference to the models developed under the Update on Cumulative Water Quality and Hydrological Effect of Coastal Developments and Upgrading of Assessment Tool (Agreement No. CE 42/97). They might also propose to use other models subject to agreement with DR in consultation with EPD.

#### Model details – Simulation

1. The water quality modelling results shall be qualitatively explainable, and any identifiable trend and variations in water quality shall be reproduced by the model. The water quality model shall be able to simulate and take account of the interaction of dissolved oxygen, phytoplankton, organic and inorganic nitrogen, phosphorus, silicate, BOD, temperature, suspended solids, contaminants release of dredged and disposed material, air-water exchange, E. coli and benthic processes. It shall also simulate salinity. Salinity results simulated by hydrodynamic models and water quality models shall be demonstrated to be consistent.
2. The sediment transport module for assessing impacts of sediment loss due to marine works shall include the processes of settling, deposition and re-erosion. The values of the modelling parameters shall be agreed with DR in consultation with EPD. Contaminants release and DO depletion during dredging and dumping shall be simulated by the model.

3. The thermal model shall be based on the flow field produced by the hydrodynamic model. It shall incorporate the physical processes of thermal / cooled water discharge and abstraction flow, buoyancy effect of the thermal plume, and surface heat exchange. Dispersion of biocides in the discharge shall also be simulated with appropriate decay rates.
4. The models shall at least cover the Hong Kong waters, the Pearl Estuary and the Dangan Channel to incorporate all major influences on hydrodynamic and water quality. A fine grid model may be used for detailed assessment of this study. It shall either be linked to a far field model or form part of a larger model by gradual grid refinement. The coverage of the fine grid model shall be properly designed such that it is remote enough so that the boundary conditions would not be affected by the project. The model coverage area shall be agreed with DR in consultation with EPD.
5. In general, grid size at the area affected by the project shall be less than 400 m in open waters and less than 75 m around sensitive receivers. The grid shall also be able to reasonably represent coastal features existing and proposed in the project. The grid schematization shall be agreed with DR in consultation with EPD.

#### Modelling assessment

1. The assessment shall include the construction and operation phases of the Project. Where appropriate, the assessment shall also include maintenance dredging. Scenarios to be assessed shall cover the baseline condition and scenarios with various different options proposed by the Consultants in order to quantify the environmental impacts and improvements that will be brought about by these options. Corresponding pollution load, bathymetry and coastline shall be adopted in the model set up.
2. The assessment shall cover accidental fuel spillage associated with the operation of the Project. Potential locations, quantities and rates of spill shall be identified and quantified. The spill modelling shall cover combinations of different tides, wind and season conditions. The methodology for modelling spill and scenarios to be covered should be agreed with DR in consultation with EPD.
3. Hydrodynamic, sediment transport, oil spill and thermal modules, where appropriate, shall be run for (with proper model spin up) at least a real sequence of

15 days spring-neap tidal cycle in both the dry season and the wet season.

4. Water quality module shall run for a complete year incorporating monthly variations in Pearl River discharges, solar radiation, water temperature and wind velocity in the operational stage. Construction stage impacts, cooling water discharge and floating refuse and debris entrapment may be assessed by simulating typical spring-neap cycles in the dry and wet seasons.
5. The results shall be assessed for compliance of Water Quality Objectives. Any changes in hydrodynamic regime shall be assessed. Daily erosion/sedimentation rate shall be computed and its water quality impact on water sensitive receivers shall be assessed
6. The impact on all sensitive receivers shall be assessed.
7. Cumulative impacts due to other projects, activities or pollution sources within a boundary to the agreement of DR in consultation with EPD shall also be predicted and quantified.

**Outline Study Programme**

TASKS	W1 W2 W3 W4 W5 W6 W7 W8 W9 W10 W11 W12 W13 W14 W15 W16 W17 W18 W19 W20 W21 W22 W23 W24 W25 W26 W27 W28 W29 W30 W31 W32 W33 W34 W35 W36 W37 W38 W39 W40 W41 W42 W43 W44 W45 W46 W47 W48 W49 W50 W51 W52 W53 W54 W55 W56 W57 W58 W59 W60 W61 W62 W63 W64 W65 W66 W67 W68 W69 W70 W71 W72																							
	03/15	04/15	05/15	06/15	07/15	08/15	09/15	10/15	11/15	12/15	01/16	02/16	03/16	04/16	05/16	06/16	07/16	08/16	09/16					
1. Inception Report	█	█	█	█																				
2. Baseline and Initial Assessment Report (Task 1)	█	█	█	█	█																			
3. Key Issues Reports (Task 2 & 3)			█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█					
4. Strategic Environmental Evaluation (SEE) Report for Options of Overall Spatial Development and Conservation Strategy for Lantau (Task 4)			█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█					
5. Executive Summary for SEE for Overall Spatial Development and Conservation Strategy for Lantau (Task 4)					█	█	█																	
6. Strategic Environmental Evaluation Report for Development Options for the Whole Territory (Task 4)						█	█	█	█	█	█	█	█	█	█	█	█	█	█					
7. Evaluation Report for Preferred Option(s) for the Whole Territory (Task 5)									█	█	█	█	█	█	█	█	█	█	█	█	█	█		
8. Strategic Environmental Performance Report for the Preferred Option(s) for the Whole Territory (Task 6)																	█	█	█	█	█	█		
9. Strategic Environmental Action Plan and Programme (Task 7)																					█	█		
10. Final Report, Executive Summary and Environmental Outcome Profile																						█		

█ █ █ Preparing the draft version  
 █ █ █ Preparing the final version

**Agreement No. CE 60/2014 (EP)  
Strategic Environmental Assessment for Hong Kong 2030 +  
– Feasibility Study**

**Responsibility for Survey Work**

The Consultants shall be responsible for all engineering surveys required in connection with the Assignment. The division of responsibility among the Consultants and Survey and Mapping Office of the Lands Department for other surveying required in connection with the Assignment shall be as follows:

	<b><u>Task</u></b>	<b><u>Responsibility of</u></b>
1.	(a) Provision of basic horizontal and vertical survey control	Survey and Mapping Office (Consultants to download from <a href="http://www.geodetic.gov.hk">www.geodetic.gov.hk</a> )
	(b) Checking of given control point values and establishment of survey control network(s) based on survey control given vide 1(a)	Consultants
2.	(a) Provision of topographic map (at 1:1,000 or other standard map scale) relevant to the Assignment)	Survey and Mapping Office (excluding those specified as to be provided by the Consultants in the Assignment)
	(b) Provision of available format of digital topographic map at standard scales relevant to the Assignment	Land Information Centre, Survey and Mapping Office
	(c) Updating and verification of accuracy of information shown on plans supplied vide (a) as necessary in relation to the Assignment	Consultants
	(d) Carrying out detailed surveys for site investigation and for preparation of design and contract documents as necessary in relation to the Assignment	Consultants
3.	(a) Supply of existing land boundary plans and records and co-ordinate data of lots affected	District Survey Office

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|-----|---|---|
| (b) | Provision of available format of digital land boundary map at standard scales relevant to the Assignment  | Land Information Centre, Survey and Mapping Office  |
| (c) | Completion of “Undertakings by Government Department for Provision of Digital Map from Land Information Centre, Survey and Mapping Office, Lands Department to Consultants/ Contractors”. | Director’s Representative   |
| 4.  | Computation of detailed dimensioned layouts of roads, drainage and waterworks reserves, platforms, etc.   | Consultants (in liaison with Director’s Representative and District Survey Office)  |
| 5.  | Determination of site/lot boundaries, calculation of areas, etc. in connection with the agreed dimensioned layouts  | District Survey Office (in liaison with District Lands Office)  |
| 6.  | (a) Processing of resumption and surrender for privately owned land in Development Area   | Acquisition Section of Lands Department (in liaison with District Lands Office, District Survey Office and Consultants)               |
|     | (b) Preparation of resumption and surrender plans and demarcation of lands to be resumed  | District Survey Office (in liaison with District Lands Office and Consultants)  |
| 7.  | (a) Setting-out of roads, drainage works, formation areas, etc.   | Contractors (checked and accepted by Consultants, usually by resident site staff under their supervision)                             |
|     | (b) Initial site survey, and interim and final payment surveys  | Consultants, usually by resident site staff under their supervision (joint survey with contractors or agreed survey with contractors) |
| 8.  | Preparation of proposal plans for Government land allocations and other land grants relevant to the Assignment  | District Survey Office (in liaison with District Lands Office)  |
| 9.  | Preparation of dimensioned plans and setting out of boundaries of sites and lots for Government land allocations and other land grants relevant to the Assignment                         | District Survey Office  |

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| 10. | As-constructed surveys (including records of position and levels on all underground pipelines, etc.)  | Consultants, usually by resident site staff under their supervision |
| 11. | Supply a set of As-built Survey Plans in both hardcopy and softcopy to the Land Information Centre of the Survey and Mapping Office of the Lands Department | Consultants   |