



Water Supplies Department
The Government of the Hong Kong Special Administrative Region

Agreement No. CE 52/2009 (WS)
Improvement of fresh water supply to Cheung Chau -
Design and Construction

BRIEF

(dated 16 July 2010)

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1. Introduction

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 Design and Construction Assignment (1997 Edition) [hereinafter referred to as the General Conditions of Employment], Special Conditions of Employment and Schedule of Fees.

2. Description of the Project

2.1 The Project is to provide a new submarine water main across the Adamasta Channel from Lantau to Cheung Chau to improve the reliability of fresh water supply between Lantau and Cheung Chau.

2.2 The Project comprises the following :

- (a) laying of about 1.4 km of 500mm diameter submarine water main from Lantau to Cheung Chau by horizontal directional drilling method;
- (b) Construction of landfalls and associated works at Ha So Pai, Lantau and at Tai Kwai Wan, Cheung Chau;
- (c) laying of about 500m of 500 mm diameter land mains; and
- (d) all associated civil, structural, geotechnical, marine, electrical and mechanical works, including landscaping, permanent and temporary accesses as may be necessary for the completion of the works elements as listed in sub-clauses (a) to (c) above.

- 2.3 The general layout of the proposed works is shown on Drawing No. 62010/025 at Appendix I.
- 2.4 The general background is as described in Planning Report No. 3/2007 issued by the Project Planning Unit of Water Supplies Department (WSD) dated October 2007.
- 2.5 In June 2008, WSD commissioned a consultant under Agreement No. CE1/2008(W.S) to carry out an investigation study (hereinafter referred to as the Investigation) for the works as described in items (a) to (c) of Clause 2.2 of this Brief. The Investigation was to explore the feasibility of laying of the proposed submarine water main and associated land mains, identify alternative sites and alignments, carry out an Environmental Impact Assessment (EIA) study for the Project, obtain an Environmental Permit (EP) for the Project and prepare preliminary designs, contract strategy, programmes and cost estimates to enable the detailed design to proceed. Details of the findings and recommendations are described in the Final Report of the Investigation.
- 2.6 The Project is a designated project under Schedule 2 of the Environmental Impact Assessment Ordinance (EIAO) (Cap.499). Under the EIAO, an EP from the Environmental Protection Department (EPD) has been obtained during the Investigation Study for the implementation of the Project. Details of the approved Environmental Impact Assessment Report, Environmental Monitoring and Audit Manual and the Environment Permit are available in EPD website.
- 2.7 The New Engineering Contract (NEC3 Engineering and Construction Contract (June 2005)(with amendments June 2006). For simplicity, herein and hereinafter referred to as NEC) shall be used in this project. The Employer intends to adopt the NEC target contract options, i.e. Option C – Target contract with activity schedule, or Option D – Target contract with bills of quantities, for the project, with the roles of the Project Manager as defined in the NEC to be performed in-house by the Employer’s own staff. Subject to the recommendations of the option evaluation described in Clause 6.2.2 by the Consultants, the Employer also intends to adopt the following secondary Options in the works contract of the Project:
- (a) Option X1 – Price adjustment for inflation;
 - (b) Option X7 – Delay damages
 - (c) Option X15 – Limitation of Contractor’s liability for his design to

reasonable skill and care

- (d) Option X16 – Retention
- (e) Option Z – Additional Conditions of Contract

- 2.8 The Consultants shall advise the Employer on the core clauses, main clauses, secondary option clauses that may be required for the incorporation. The Consultants shall identify any incompatibility of the NEC with the Employer's policy conditions, General Specification and Standard Method of Measurement when being incorporated into the NEC, and prepare such amendments/additional clauses as may be required for incorporation into the works contract of the Project.
- 2.9 The Consultants shall be required to work closely with the Employer's team for the drafting, vetting and approval of NEC clauses for incorporation into the works contract of the Project.

3. Objectives of the Assignment

The objectives of the Assignment are as follows:

- (a) Adoption of NEC in the delivery of the project as described in Clauses 2.7 to 2.9;
- (b) Production of detailed designs, tender documents and other documents necessary for construction of the proposed works to standards acceptable to the Employer; and
- (c) Construction of the proposed works for providing a new submarine fresh water main across the Adamasta Channel from Lantau to Cheung Chau and associated land main with the aim of commissioning them on or before the end of May 2014.

4. Description of the Assignment

4.1 This Assignment covers the following:

- (a) The proposed works as described in Clauses 2.2 and 2.7 to 2.9 of this Brief;

- (b) Assisting the Employer in familiarizing with the basic concepts and principles of NEC system as detailed in sub-clauses (c) to (k) below;
- (c) Advising the Employer on procedures, steps and methods in implementing NEC during design stage and tendering stage;
- (d) Addressing any key issues identified during adoption of the NEC for the Project;
- (e) Resolving any difficulties encountered during design stage and tendering stage in implementing NEC for the Project;
- (f) Evaluating different contract options under NEC and recommend to the Employer the most appropriate options (i.e. main option and secondary options) for the Project;
- (g) Developing a sample NEC contract document for WSD;
- (h) Developing the tendering strategy for implementing NEC for the Project;
- (i) Preparing tender documents in a form compatible with NEC;
- (j) Advising the Employer the procedures in implementation of partnering in construction stage for the NEC; and
- (k) Providing workshops on the use of NEC in public works projects in various Phases of this Assignment (in accordance with Clause 6.1.25 to 6.1.27).

4.2 The Assignment is to be carried out in four phases, viz the Review Phase, Design Phase, Tender Phase and Construction Phase of the proposed works. The written approval of the Director's Representative (DR) shall be obtained before commencing work in any of these phases except the Review Phase and Design Phase.

4.3 Review Phase

- (a) Review the work carried out by the consultants for the Investigation and the findings, conclusions and recommendations of the Final Report of the

Investigation. Prepare any alternative proposals which are considered to be more favourable than those recommended in the Final Report of the Investigation.

- (b) Recommend to the Employer to carry out in the Design Stage further surveys, studies, analyses, assessments, inspections and investigations including site investigation in addition to those carried out under the Investigation for the preparation of the detailed design and contractual arrangements for the laying of the proposed submarine water mains and associated land main.
- (c) Review interfacing with other projects and identify those parts of the proposed works that are required to be carried out in conjunction with the other projects in order to minimize the interfacing problem.
- (d) Assess and evaluate different contract types for NEC, main and secondary options and contract strategies and recommend to the Employer the best NEC contract arrangement for the Project.

4.4 Design Phase

- (a) Implement additional geophysical surveys, studies, analyses, assessments, inspections and investigations including site investigation and laboratory testing as recommended and agreed by the Employer during the Review Phase. Supervision of the geophysical survey, site investigation and laboratory testing conducted by contractor/specialist contractors during Design Phase shall be considered as work carried out under Clause 5 of the Schedule of Fees;
- (b) Update the land requirement plans and complete all the statutory procedures and comply with the Government requirements (which includes but not limited to tree removal application and landscaping design) for the implementation of the Projects,
- (c) Prepare detailed designs, calculations, specifications, drawings, bills of quantities, cost estimates and programmes for the proposed works;
- (d) Prepare tender documents and drawings compatible with the NEC to enable the Employer to invite tenders for the proposed works and if

necessary, supply of materials and equipment;

- (e) Identify the critical construction activities and structural elements in the design that warrant the formulation of special site supervision requirements for such activities and structural elements; and
- (f) Assist the Employers in all matter in connection with public consultations.

4.5 Tender Phase (Phase Subject to Incorporation)

- (a) Analyse the tenders and prepare recommendations to the Employer as to which tenders to accept.
- (b) Prepare contract documents to enable the Employer to execute Articles of Agreement with the selected tenderers.

4.6 Construction Phase (Phase Subject to Incorporation)

- (a) Discharge the duties of the Supervisor as defined in the NEC for the Contract and all other duties delegated by the Employer's Project Manager (herein and hereinafter referred to as the Project Manager) as appropriate under the Contract..
- (b) Prepare such further drawings and specifications as may be necessary.
- (c) Appoint the Resident Site Staff and assist the Project Manager in administering the Resident Site Staff.
- (d) Carry out further site investigation necessary for ascertaining the field conditions/design and completion of the proposed works and supervise site works by contractors/specialist contractors. Supervision of the site investigation conducted by contractors/specialist contractors during the Construction Phase shall be carried out by the Resident Site Staff.
- (e) Report on the financial situation, variation orders, claims for additional payment and requests for extensions of time and all other matters affecting the progress and financial situation of the Assignment.

- (f) Check, comment on and approve all submissions by the contractors for the supply and installation of all electrical and mechanical plant and telemetry equipment.
- (g) Prepare manuals and as-built records for all the completed works, including maintenance manuals for any slopes and earth retaining structures formed or modified.
- (h) Test and commission the completed works.

5. Deliverables

5.1 Throughout the duration of this Agreement, the following deliverables (hardcopies and softcopies with editable and scanned files in CD-ROMs or other equivalent media) are to be supplied by the Consultants:

- (a) Programme for the Assignment (4 copies) in accordance with Clause 7 of this Brief. (To be submitted within 2 weeks from the commencement of the Agreement.)
- (b) Progress Reports (4 copies) in accordance with Clause 8 of this Brief. (To be submitted 3 working days before progress meeting or within the first 5 working days of the month for which no progress meeting will be held.)
- (c) Financial Reports (4 copies) in accordance with Clause 9 of this Brief. (To be submitted together with the progress reports.)
- (d) Records of meetings and correspondence with others (1 copy). (To be submitted within 5 working days from the date of meeting.)
- (e) Information Papers, in English and Chinese (up to 100 copies for each consultation) as requested by the DR and in accordance with Clause 6.1.10 of this Brief for consultation with District Councils, or other public bodies and community groups. (To be submitted 4 weeks prior to the consultation.)
- (f) Presentation materials (2 copy in hard copy format and 1 copy in computerised format for each presentation) including colour drawings

mounted on boards, photographs and slides in connection with the Assignment, programme and progress for consultation with District Councils, or other public bodies and community groups. (To be submitted 2 weeks prior to the presentation.)

- (g) Insurance Policy (1 copy) in accordance with Clause S14 of the Special Conditions of Employment. (To be submitted prior to the commencement of the Agreement and thereafter annually or upon any change in Insurer or terms of the Insurance Policy.)
- (h) Land acquisition and allocation plans including those for temporary and permanent land allocations (8 copies) in accordance with Clause 6.1.12 of this Brief. (To be submitted within 2 weeks when instructed by the DR.)
- (i) Provide a total of 6 NEC workshops in accordance with Clauses 6.1.25 to Clause 6.1.27. (The first workshop to be conducted not later than 2 months from the commencement of the Agreement.)
- (j) Provide the NEC reference documents in accordance with Clause 6.1.28. (To be submitted within 6 weeks from the commencement of the Agreement.)

5.2 During the **Review Phase**, the following deliverables (hardcopies and softcopies with editable and scanned files in CD-ROMs or other equivalent media) are to be supplied by the Consultants:

- (a) Recommendation to the Employer to carry out the following additional works in the Design Phase in accordance with relevant Clauses of this Brief. (4 copies) (To be submitted within six weeks from the commencement of the Agreement):
 - (i) Geophysical survey, site investigation and laboratory testing (Clause 6.2.3);
 - (ii) Traffic Impact Assessment (Clause 6.2.4);
 - (iii) Marine Traffic Impact Assessment (Clause 6.2.5);
 - (iv) Drainage & sewerage impact assessment (Clause 6.2.6); and

- (v) Tree survey (Clause 6.2.7).

- (b) Report on the review to the Environmental Permit and Environmental Monitoring & Audit Manual in accordance with Clause 6.2.8 of this Brief (4 copies) (To be submitted within 6 weeks from the commencement of the Agreement.)

- (c) NEC Contract Option Evaluation Report and recommendations on selecting the best contract strategy and option for the project in accordance with Clause 6.2.2 of this Brief (20 copies) (To be submitted by the key date specified in Clause 7.4 of this Brief.)

- (d) Draft Review Report (20 copies) for the DR to circulate to Government departments and divisions of WSD involved in or affected by the works for comments. The Draft Review Report shall be fully comprehensive and detailed to show the findings and recommendations and shall include a description of the objectives and requirements of the Project, assumptions and input data, alternatives considered, the recommended options, methodology used in arriving at the results and factors considered in developing the recommendations. (To be submitted by the key date specified in Clause 7.4 of this Brief.)

- (e) Final Review Report (20 copies). (To be submitted by the key date specified in Clause 7.4 of this Brief.)

- (f) Executive Summary (20 copies). The Executive Summary shall outline the major issues considered and the findings of the review. A translation in Chinese of the Executive Summary (20 copies) shall be submitted. (To be submitted in conjunction with the Final Review Report.)

5.3 During the **Design Phase**, the following deliverables (hardcopies and softcopies with editable and scanned files in CD-ROMs or other equivalent media) are to be supplied by the Consultants:

- (a) Report(s) on additional works (6 copies each) agreed by the Employer in the Review Phase and in accordance with the appropriate sub-clauses under Clause 6.3. (To be submitted within 3 month from the commencement of the Design Phase of the Agreement.)

- (b) Tree Risk Assessment and tree removal application documents for where tree removal is necessary in accordance with Clause 6.3.5 of this Brief (6 copies). (To be submitted within 3 months from the commencement of the Design Phase of the Agreement.)
- (c) Detailed Landscape proposal in accordance with Clause 6.3.6 of this Brief (6 copies). (To be submitted within 3 months from the commencement of the Design Phase of the Agreement.)
- (d) Design Memorandum (6 copies) and any revised Design Memorandum as and when necessary in accordance with Clause 6.3.8 of this Brief. (To be submitted within 3 month from the commencement of the Design Phase of the Agreement.)
- (e) Design calculations, statement of standards and Design Certificates (2 copies) at the end of the Design Phase in accordance with Clause 11 of this Brief. (To be submitted within 7 months from the commencement of the Agreement.)
- (f) Draft tender drawings and other tender documents (10 copies) for the DR to circulate to Government departments and divisions of WSD involved in or affected by the works including any works to be entrusted to others for comments. Upon receipt of the comments from the Government departments, divisions of WSD and the DR, the Consultants shall take these comments into consideration, make revisions to the draft tender drawings and other tender documents and submit these to the DR for agreement. (To be submitted by the key date specified in Clause 7.4 of this Brief.)
- (g) Estimates of the cost of the works and deployment of Resident Site Staff in accordance with Clause 6.3.30 of this Brief (4 copies). (To be submitted by the key date specified in Clause 7.4 of this Brief.)
- (h) WSD Project Estimate Control Committee (PECC) Submission in accordance with Clause 6.3.31 of this Brief (10 copies). (To be agreed with DR.)
- (i) Drawings, specifications, bills of quantities and other documents for

advance works, works entrusted to other Government departments/parties and procurement of materials or services required prior to and separately from the main works contracts (4 copies). (To be submitted 3 months prior to tendering of the works.)

- (j) Quality Site Supervision Plan (QSSP) for each works contract (4 copies) in accordance with Clauses 6.1.6 and 6.3.35 of this Brief. (To be submitted within 6 months from the commencement of the Agreement.)

5.4 During the **Tender Phase**, the following deliverables (hardcopies and softcopies with editable and scanned files in CD-ROMs or other equivalent media) are to be supplied by the Consultants:

- (a) Tender Documents including the Electronic Dissemination Package in accordance with Environment, Transport and Works Bureau Technical Circular (Works) (ETWB TCW) No. 11/2005 “Electronic Dissemination of Tender Documents and Electronic Submission of Tender Returns on Removable Media” and subsequent revision, press releases and tender notification (25 copies for each works contract) for issue to prospective tenderers. (To be submitted by the key date specified in Clause 7.4 of this Brief.)
- (b) Tender Report (5 copies for each works contract) in an approved format to the DR. (To be submitted within 6 weeks from the close of tender.)
- (c) Drawings and other contract documents for the works contracts (3 sealed copies of all documents and drawings, 13 certified true copies of documents and 6 certified true copies of drawings for each works contract) for the execution of the Articles of Agreement by the Employer and the contractors, for retention by the DR and for issue to the contractors, Resident Site Staff and other parties. At the request of the DR some sets of drawings are to be reduced to A2 or A3 size as appropriate. (Sealed copies of documents and drawings for execution of Articles of Agreement to be submitted 3 working days prior to the execution. Certified true copies of documents to be submitted within 1 week after the execution.)

5.5 During the **Construction Phase**, the following deliverables (hardcopies and softcopies with editable and scanned files in CD-ROMs or other equivalent

media) are to be supplied by the Consultants:

- (a) Documents, letters, certificates, charts and all other information (1 copy) produced in the discharge of the duties of the Supervisor as defined in the Contract and all other duties delegated by the Project Manager as appropriate under the Contract.
- (b) Reports on the Resident Site Staff Organization (4 copies) in accordance with Clause 13.3 of this Brief. (To be submitted together with the progress reports.)
- (c) As-constructed drawings (4 copies). One set of these drawings is to be supplied as velograph and to be submitted within 3 months from the completion of each works contract. As-constructed drawings shall be prepared by CAD in accordance with Clause 5.8 of this Brief. The Consultants shall also submit 1 soft copy of the as-constructed drawings in CD-ROM. The Consultants shall also submit 2 advance copies of the as-constructed drawings showing necessary details for alterations and/or additions of WSD Mains Record Plans in CAD format according to Clause 5.8 and in Geographic Information System format compatible with WSD Digital Mapping System, for any sections of works at the time of handing over the works concerned to WSD.
- (d) Operation and Maintenance Manuals (4 copies) for the submarine water main. (To be submitted within 3 months from the completion of the works contract.)
- (e) Maintenance and Instruction Manuals (4 copies) including lists of recommended spares and performance test reports for any electrical and mechanical plant and equipment installed. (To be submitted within 3 months from the completion of each works contract.)
- (f) Maintenance Manuals (4 copies) for any slopes or earth retaining structures formed or modified in accordance with Geoguide 5. (To be submitted within 3 months from the completion of each works contract.)
- (g) Brief and all necessary documents for engaging an Independent Environmental Checker as required in the Environmental Monitoring & Audit Manual in accordance with Clause 6.5.8 of this Brief. (To be

submitted when appropriate)

- (h) Monthly Independent Environmental Checker's Report (4 copies for each works contract) in accordance with Clause 6.5.8 of this Brief. (To be submitted within the first seven working days of each month after commencement of each works contract.)
- (i) Revised QSSP (4 copies) in accordance with Clause 6.5.9 of this Brief (To be submitted upon major modification of the QSSP during construction stage.)

5.6 The Consultants shall produce the required copies of the deliverables listed above and circulate sufficient copies to all relevant parties for comments before the specified deadline. The Consultants shall prepare a summary of the comments received on the deliverables, the Consultants' response to, and advice and recommendations for further action on, and/or report on action taken arising out of the comments. Upon clearance of the comments from all relevant parties, the Consultants shall circulate the summary and response to comments, together with the revised reports in the events that material revisions to the contents of the reports are required, to the relevant parties for record.

5.7 The Consultants shall draw the Employer's attention to any deliverables that are under license and any pre-existing copyright or patent on any deliverables and other restriction whatsoever affecting the Employer's use of the same and, if required by the DR, to establish the existence of any license, copyright, patent or restriction.

5.8 Drawings shall be prepared by Computer-Aided-Drafting (CAD) in AutoCAD DXF or DWG format conforming to the CAD Standard for Works Projects version 1.03.00 (or later versions as agreed between the Employer and the Consultants from time to time) as posted on the web site of the Works Branch of Development Bureau <http://www.devb-wb.gov.hk>. The Consultants shall also submit one soft copy of drawings in AutoCAD format. One additional soft copy of drawings in Arcview format (version as agreed with the Employer) shall also be prepared and submitted.

5.9 The Consultants shall adopt the following green measures in preparing the deliverables:

- (a) All reports, working papers, tender documents, tender submission and technical notes shall be printed on both sides;
- (b) Documents other than the final reports and executive summaries should preferably be printed on recycled paper. Otherwise, the paper used should not be excessively bleached;
- (c) Unnecessary or excessive use of plastic laminates, glossy covers or double covers shall be avoided. Use of re-cyclable non-glossy art board paper as document covers should be encouraged;
- (d) The final reports and executive summaries shall be of single line spacing and printed on both sides of the paper;
- (e) Excessive white space around borders and in between paragraphs should be avoided. A top/bottom margin of 2 cm and left/right margin of 2.5cm shall be sufficient;
- (f) Excessive use of blank paper should be avoided as far as possible; and
- (g) The number of pages can be reduced by reducing the font size. As an indication, Times New Roman or CG Times of font size 13 shall be used in balancing legibility and the waste reduction objective.

6. Services to be provided by the Consultants

6.1 General

- 6.1.1 Comply with all instructions from the DR and with all relevant Government circulars, Departmental Instructions and technical memoranda as directed by the DR.
- 6.1.2 Draw to the attention of the DR the need to consider any implications and consequences arising out of or in relation to the Assignment and any alternative proposals.
- 6.1.3 Attend progress meetings at monthly intervals or at such other intervals as required by the DR.
- 6.1.4 Prepare and submit a programme covering the work of the Assignment and such revised programmes as may be necessary in accordance with Clause 7 of this Brief.

- 6.1.5 Liaise with and seek agreement of the Geotechnical Engineering Office and any concerned parties on any matters of geotechnical concern arising from the proposed works.
- 6.1.6 Prepare a QSSP in accordance with Clause 6.3.35 of this Brief and the quality management system of the Consultants upon completion of the detailed design. The Consultants shall also review the QSSP with the Resident Site Staff during the construction phase.
- 6.1.7 Prepare the various reports and documents as stated in Clause 5 of this Brief.
- 6.1.8 Consult the following authorities and parties as required in addition to any other authorities necessary all in accordance with Clause 19 of the General Conditions of Employment and obtain their approval, where necessary, to the construction of the proposed works, the working methods and the programme for the works:
- (a) Agriculture, Fisheries and Conservation Department (AFCD)
 - (b) Antiquities and Monuments Office of Leisure and Cultural Services Department (AMO)
 - (c) Architectural Services Department (Arch SD)
 - (d) Bus Companies
 - (e) Civil Engineering and Development Department (CEDD)
 - (f) CLP Power Hong Kong Ltd (CLP)
 - (g) District Lands Office of Lands Department (DLO)
 - (h) District Office of Home Affairs Department (DO)
 - (i) District Survey Office of Lands Department (DSO)
 - (j) Drainage Services Department (DSD)
 - (k) Electrical and Mechanical Services Department (EMSD)
 - (l) Environmental Protection Department (EPD)
 - (m) Fire Services Department (FSD)
 - (n) Food and Environmental Hygiene Department (FEHD)
 - (o) Geotechnical Engineering Office of Civil Engineering and Development Department (GEO)
 - (p) Government Property Agency (GPA)
 - (q) Government Secretariat: Home Affairs Bureau (HAB)
 - (r) Government Secretariat: Environment Bureau (ENB)

- (s) Government Secretariat: Development Bureau (DEVB)
- (t) Highways Department (HyD)
- (u) Hong Kong Police Force (HKPF)
- (v) Hong Kong and China Gas Co., Ltd (HKCGC)
- (w) Hong Kong Electric Co., Ltd (HKE)
- (x) Housing Department (HD)
- (y) Lands Department (LandsD)
- (z) Legal Advisory Division(Works), DEVB (LAD(W))
- (aa) Leisure and Cultural Services Department (LCSD)
- (bb) Marine Department (MD)
- (cc) Planning Department (PlanD)
- (dd) Public Fill Committee (PFC)
- (ee) Transport Department (TD)
- (ff) Water Supplies Department (WSD)
- (gg) District Councils and their Sub-committees
- (hh) Rural Committees and Area committees
- (ii) All other relevant utility companies and Government departments
- (jj) Other consultants and contractors in connection with the proposed works

6.1.9 Propose the public relation measures that need to be carried out during the course of the Assignment.

6.1.10 Provide technical support for the DR and attend meetings with District Councils, or other public bodies and community groups in public consultation. This is to include the preparation of information papers (including the required information on greening works in accordance with ETWB TCW No. 34/2003) in both English and Chinese and presentation materials such as colour drawings, photographs and slides in both hard copies and computerised format.

6.1.11 Provide Chinese translation of the Information Papers and Executive Summary referred to in Clauses 5.1(e) and 5.2(f) of this Brief respectively. This translation shall be carried out by competent translators or translation firms. The translation should be of reasonable quality in rhetoric and phraseology to convey precisely the original meaning of the English version.

6.1.12 Assist the DR in taking possession of any land required for the purpose of

or in connection with the proposed works and handing over the land to contractors or others. The services required include preparation of land requirement, clearance, acquisition and allocation plans, survey fieldwork to establish the site boundary and liaison with DLOs, the contractors and the public.

6.1.13 The Consultants shall nominate a professional acceptable to the Employer to be named as the contact person of the Employer in applications for excavation permits and, where applicable, emergency excavation permits pursuant to the requirements of the Land (Miscellaneous Provisions) Ordinance, Cap 28.

6.1.14 The Consultants shall carry out all duties imposed upon the Employer under the Land (Miscellaneous Provisions) Ordinance, Cap 28 or under the conditions of the excavation permits and, where applicable, emergency excavation permits in so far as such duties have not been imposed only on the Contractors under the Ordinance or under the Contracts.

6.1.15 Notwithstanding Clause 6.1.14, the Consultants shall not be liable to the Employer in respect of obligations stipulated under the following conditions of the excavation permits and, where applicable, emergency excavation permits:

- (a) The condition stipulated in the excavation permits and, where applicable, the emergency excavation permits relating to the obligation and liability of the Permittee to indemnify the Government against all losses and claims for injury or damage to any person or property, nuisance, disruption or interference whatsoever which may arise out of or in consequence of the work of the Permittee, and against all claims, demands, proceedings, damages, costs, charges or expenses whatsoever in respect thereof or in relation thereto, and
- (b) The condition stipulated in the excavation permits and, where applicable, emergency excavation permits relating to the obligation and liability of the Permittee to make good or pay for any works as a result of or in consequence of the work of the Permittee.

6.1.16 Clause 6.1.15 is without prejudice to Clause 22 of the General Conditions of Employment.

6.1.17 The Consultants shall ensure that the Contractors comply with the permit conditions imposed by the Authority under the Land (Miscellaneous Provisions) Ordinance, Cap 28, including those conditions stipulated in the excavation permits and, where applicable, emergency excavation permits to be observed by the Nominated Permittee or by both the Permittee and the Nominated Permittee and those stipulated in the excavation permits and, where applicable, emergency excavation permits to be observed by the Permittee but which the Contractors are required to comply with under the Contracts.

6.1.18 In respect of permit conditions which are stipulated in the excavation permits and, where applicable, emergency excavation permits to be complied with by the Permittee but which are required to be complied with by the Contractors under the Contracts, if notwithstanding Clause 6.1.17 the Contractors have failed to comply with these conditions, the Consultants shall take such actions so as to ensure that these conditions are complied with by the Employer in his capacity as the Permittee irrespective of whether these actions are required to be carried out by the Contractors under the Contracts.

6.1.19 Clauses 6.1.13 to 6.1.18 shall apply only with respect to excavation in street maintained by the Highways Department that requires excavation permits and, where applicable, emergency excavation permits under the Ordinance for execution of the Works.

6.1.20 The Consultants shall engage a competent person to supervise the excavation works on behalf of the Employer, maintain a documented system for supervising the excavation works and maintain a documented system to ensure that the Contractors comply with their duties in relation to excavation works. The attention of the Consultants is drawn to section 10T(5) and (6) of the Land (Miscellaneous Provisions) Ordinance, Cap 28.

6.1.21 Assist the Employer in seeking planning permission from the Town Planning Board for the proposed works as required.

6.1.22 Comply with the requirements of the approved Environmental Impact Assessment Report on the project and the conditions of the Environmental Permit. The Consultants shall implement all environmental impact monitoring, control and mitigation measures as recommended and approved under the EIA study. The requirements for the Environmental Monitoring and Audit (EM&A) recommended in the EIA study shall also be included and implemented in the works contracts where appropriate to ensure that the proposed works will be carried out with full compliance of the standards set by the EIA Technical Memorandum.

6.1.23 Assist the DR to apply for further Environmental Permits (EPs) including variations of the EPs, if required, for the construction and operation of the Project in accordance with the EIAO in the course of the Assignment.

6.1.24 Consultants shall take cognizance of other studies, projects or other interface issues which may be relevant to the Project and identify the likely conflicts when they carry out the Assignment. In particular, the Consultants shall take into account, but not limited to, the following projects, studies, records and reports and, where appropriate, comments on proposals relating to those studies which are in progress:

- (a) PWP Item No. 4354DS – “Outlying Islands Sewerage Stage 2 – Upgrading of Cheung Chau and Tai O Sewage Collection, Treatment and Disposal Facilities – Design and Construction”, undertaken by Consultant Management Division, DSD;
- (b) “Cheung Chau Village Sewerage Phase 1”, undertaken by the Sewerage Project Division of DSD;
- (c) “Improvement to Existing Roads and Drains in Cheung Chau Old Town, Stage 1, Stage 2 and Stage 3”, undertaken by CEDD;
- (d) “Replacement and Rehabilitation of Water Stage 2 - Mains on Lantau Island West and Cheung Chau”, undertaken by WSD;
- (e) “Replacement and Rehabilitation of Water Stage 3 - Mains on Hong Kong and Islands”, undertaken by WSD;
- (f) “Replacement and Rehabilitation of Water Stage 4 - Mains on Hong Kong and Islands”, undertaken by WSD;

- (g) “City Revitalization Project at Cheung Chau and Peng Chau” undertaken by HAD; and
- (h) Other miscellaneous local improvement projects by HAD

6.1.25 The Consultant shall provide a total of 6 workshops to achieve the following objectives:

- (A) Workshops during Review Phase (2 nos.)
 - (i) to introduce and explain the basic concepts of NEC;
 - (ii) to explain the difference in approach between NEC and the conventional types of government contracts (e.g. General Conditions of Contract, Conditions of Tender, dispute resolution mechanism and roles of different contract parties);
 - (iii) to explain in general the steps and procedures for implementation of NEC in the design, tender and construction phases of the Project, including the benefits gained and problems encountered; and
 - (iv) to share experience of other similar contracts successful in adopting NEC.
- (B) Workshops during Design Phase (2 nos.)
 - (i) to explain the concept in selecting NEC contract type for the proposed construction works under this agreement;
 - (ii) to elaborate on the essential difference between the adopted NEC contract and the conventional types of government contracts (e.g. General Conditions of Contract, Conditions of Tender, dispute resolution mechanism and roles of different contract parties) and how these differences are incorporated into the contract document;
 - (iii) to explain the roles of the Employer, the project manager and the supervisor of the contract and the differences in running a NEC contract and the conventional government contract;
 - (iv) to elaborate essential Clauses under the NEC contract using appropriate flowcharts with emphasis but not limited to the

effective delivery of the project and to avoid disputes between the Employer and the contractor and;

- (v) to share experience of other similar contracts successful in adopting NEC.
- (C) Workshops on completion of all the Construction contract(s) (2 nos.)
- (i) to review on the NEC contract document with emphasis on areas for improvement for future NEC contract;
 - (ii) to review the problems encountered during the supervision of the NEC contract and area of improvement; and
 - (iii) to share latest experience of other similar contracts successful in adopting NEC.

The workshop should be conducted in English/Chinese. The venue of the workshops shall be provided by the Employer.

6.1.26 The duration of the workshop shall be from 9:00 a.m. to 5:00 p.m. (inclusive 1 hour lunch break) and the maximum number of participants shall be 50. Details of the workshop shall be agreed by the DR in writing.

6.1.27 The Consultant shall arrange speaker(s) and supply worksheets, workbooks, relevant references and literature and other material necessary for the effective delivery of the workshops. The Consultant shall bear all the expenses of the speaker(s) who come from overseas (if any).

6.1.28 The Consultant shall supply the updated versions of the following NEC reference documents to the Employer:

- (a) 2 nos. of paperbound and digital copies of “NEC3 Engineering and Construction Contract Option C: Target contract with activity schedule”; and
- (b) 2 nos. of paperbound and digital copies of “NEC3 Engineering and Construction Contract Option D: Target contract with bills of quantities”; and
- (c) 2 complete box set of paperbound NEC documents (refer to Clause 2.7) which includes the following documents titled:

- (i) “NEC3 Engineering and Construction Contract” ;
- (ii) “NEC3 Engineering and Construction Contract A: Priced contract with activity schedule”;
- (iii) “NEC3 Engineering and Construction Contract B: Priced contract with bills of quantities”;
- (iv) “NEC3 Engineering and Construction Contract C: Target contract with activity schedule”;
- (v) “NEC3 Engineering and Construction Contract D: Target contract with bills of quantities”;
- (vi) “NEC3 Engineering and Construction Contract E: Cost reimbursable contract”;
- (vii) “NEC3 Engineering and Construction Contract F: Management contract”;
- (viii) “NEC3 Engineering and Construction Contract Guidance Notes”;
- (ix) “NEC3 Engineering and Construction Contract Flow Charts”;
and
- (x) “NEC3 Engineering and Construction Subcontract”.

6.2 Review Phase

6.2.1 Reviews the work carried out by the consultants for the Investigation and the findings, conclusions and recommendations of the Final Report of the Investigation and prepare any alternative proposals which are considered to be more favourable than those recommended. The review shall include the following:

- (a) The alignment of the proposed water mains. This is required to be the optimum combination of lowest cost, least disruption to marine, vehicular and pedestrian traffic, least inconvenience for the public, least disruption to or greatest ability to phase in with the works of others including other Government departments and any other factors that come to light.

- (b) The preliminary design for the proposed water mains including the corrosion protection measure for the submarine main and the proposed land main.
- (c) The monitoring and control (electrical and mechanical) schemes for the proposed works.
- (d) Geotechnical issues.
- (e) Land requirements.
- (f) Interfacing with other projects.
- (g) Programme for works and for material procurement, and programme constraints.
- (h) Contract strategy and strategy for site supervision.
- (i) Materials for pipes, fittings and valves including a review of the maintenance problems associated with those portions of water main to be laid at depths that give a cover of greater than 1.0 m measured from the surface.
- (j) Cost estimate.

6.2.2 Pursuant to Clause 2.7 to 2.9, the Consultants shall conduct an option evaluation of the most suitable NEC types for the Project and prepare a report, which shall include:

- (a) assessment and evaluation of different contract types for NEC and identification of the merits and demerits of each contract option;
- (b) findings and recommendation on the best contract strategy including the choices of the main and secondary options which best suit the Project;
- (c) the approach and methodology in selecting the best contract strategy and secondary options;
- (d) any special issues identified in the adoption of the NEC for the

Project; and

- (e) sample NEC contract document which uses the main and secondary options recommended.

During the process of option evaluation for the most suitable contract types, the Consultants shall arrange meetings with the Employer to discuss their progress and findings and provide guidance to the Employer to select the best contract type and secondary options. The Consultants shall prepare Working Papers, worksheets, workbooks, relevant references and literature and attend working group meetings set up for vetting and endorsement of the recommended NEC types.

- 6.2.3 Review the recommendations in the Investigation and if necessary, recommend to the Employer any additional geophysical survey, site investigation and laboratory testing for the proposed works under the Assignment. The additional geophysical survey, site investigation and laboratory testing shall be carried out in accordance with Clause 6.3.1.
- 6.2.4 Review the Traffic Impact Assessment in the Investigation and if necessary, recommend to the Employer additional Traffic Impact Assessment necessary for the proposed works including the additional site investigation work under the Assignment using, where appropriate, the Guidelines on Traffic Impact Assessment and Day-Time Ban Requirements for Road Works on Traffic Sensitive Routes issued by the Research and Development Division of HyD. The additional Traffic Impact Assessment shall be carried out in accordance with Clause 6.3.2.
- 6.2.5 Review the Marine Traffic Impact Assessment in the Investigation and if necessary, recommend to the Employer additional Marine Traffic Impact Assessment necessary for the proposed works including the additional site investigation work under the Assignment. The additional Marine Traffic Impact Assessment shall be carried out in accordance with Clause 6.3.3.
- 6.2.6 Review the Drainage and Sewerage Impact Assessment in the Investigation and if necessary, recommend to the Employer additional Drainage and Sewerage Impact Assessment necessary for the proposed works. The additional Marine Traffic Impact Assessment shall be carried out in accordance with Clause 6.3.4.

- 6.2.7 Review the Tree Survey in the Investigation and if necessary, recommend to the Employer additional Tree survey for the proposed works. The additional Tree Survey shall be carried out in accordance with Clause 6.3.5.
- 6.2.8 Review the EIA in the Investigation including the Environmental Monitoring & Audit Manual and the approved Environmental Permit in accordance with the latest available information and requirements of the EIAO and if necessary, recommend to the Employer additional Environmental Review necessary for the proposed works. The additional Environmental Review shall be carried out in accordance with Clause 6.3.7.
- 6.2.9 Liaise with the consultants of the Investigation to resolve any queries on the Final Report of the Investigation.
- 6.2.10 Attend the review meeting(s) to review the preliminary design produced during the Investigation and to present the Consultants' findings on all the changes since the completion of the preliminary design in the form of a discussion paper that identifies and addresses these changes in accordance with ETWB TCW No. 19/2003.

6.3 Design Phase

The services to be rendered under the Design Phase of the Assignment shall include the following:

- 6.3.1 Carry out the additional geophysical survey for seabed, site investigation and laboratory testing. The Consultants shall provide an adequate number of qualified and experienced professionals to plan and direct the geophysical survey, site investigation and laboratory testing. The recommendations of Geoguide 2 regarding requirements of the personnel for geophysical survey, site investigation and laboratory testing should be followed. The Consultants shall obtain the approval from the DR before carrying out the additional geophysical survey, site investigation and laboratory testing. The additional geophysical survey, site investigation and laboratory testing shall include the following:-

- (a) Prepare a Desk Study Report for the additional geophysical survey for seabed, site investigation and laboratory testing. The report shall document the information examined (including available reference documents, aerial photographs and site investigation and testing reports, with Geotechnical Information Unit reference where appropriate), describe the geological setting of the site, and indicate the location of utilities within and surrounding the site and the land status. It shall state the need, scope and objectives of the proposed additional geophysical survey for seabed, site investigation and laboratory testing, and give the estimated depths of proposed drill holes and the likely amount of rock drilling. It shall also include a proposed supervision plan for the additional geophysical survey, site investigation and laboratory testing work, giving the names and Curriculum Vitae of the proposed supervisory personnel. The Consultants shall arrange for the report to be vetted and signed by a qualified and experienced professional if the report has not been prepared by such a person. A copy of the Desk Study Report shall be passed to the nominated supervisory personnel to convey to them the available information and the aims of the proposed site investigation and laboratory testing.
- (b) Liaise and consult with EPD, CEDD, MD and any other concerned authorities on any special requirements and incorporate them into the design of the additional geophysical survey for seabed and site investigation works.
- (c) Additional geophysical survey for seabed, site investigation and associated laboratory testing may be carried out by GEO Term Contractor. The Consultants shall pass a copy of the Desk Study Report to the Chief Geotechnical Engineer/Geotechnical Projects (CGE/GP) of GEO with the request for arranging the additional geophysical survey, site investigation and laboratory testing. The Consultants shall allow lead time of 2 months between submission of the request for additional geophysical survey, site investigation works and laboratory testing and the actual commencement of the works and allow time required for the production of the site investigation report. The responsibilities of the Consultants for the additional geophysical survey, site investigation and laboratory testing to be carried out by GEO Term Contractor are detailed in the

Ground Investigation Note No. 1/2008 “Handling of Ground Investigation, Geophysical Survey, and Laboratory Testing Requests” or the updated version from GEO. CGE/GP should be advised of any proposed special testing, as well as any rock testing required, at an early stage of the Assignment. A list of tests available under GEO term contracts and associated test methods specified can be obtained from CGE/GP.

- (d) Liaise with WSD Term Contractor regarding those site investigations to be carried out by them.
- (e) Assist the Employer to engage competent specialist contractors to carry out special site investigation and laboratory testing as necessary. Prepare tender documents and drawings for inviting tenders for carrying out the special site investigation and laboratory testing. Invite and analyse tenders from specialist contractors. Submit tender reports to make recommendation on acceptance of tenders. The successful contractors will be employed by the Employer by means of service orders issued in accordance with the Store and Procurement Regulation.
- (f) Liaise with the WSD Term Contractor, the GEO Term Contractor, the specialist contractors engaged in sub-clause (e) above and all Government departments and authorities concerned to obtain permissions for the site investigation including the application for Excavation Permits and access permission. Provide and enter relevant information for obtaining Excavation Permits and any extensions thereof through the Excavation Permit Management System (XPMS) administered by the HyD. Prepare temporary traffic arrangement schemes as required.
- (g) Identify all utilities, facilities, installations and existing rights that may be affected by the additional geophysical survey and site investigation. Liaise with and obtain consent from the concerned parties for carrying out the additional geophysical survey and the site investigation, including the consent for diversion or relocation of the utilities, facilities and installations if necessary.
- (h) Carry out all necessary surveys, setting out, levels and sounding,

make such investigation and inquiries and search site records as are necessary for the satisfactory completion of the additional site investigation.

- (i) Supervise the additional geophysical survey and the site investigation including reinstatement, and ensure that marine, pedestrian and vehicular traffic arrangements and the provisions for supporting, watching, guarding and lighting of any excavations are to a standard that will enhance the public image of WSD. Report on the contractors' performance. Take measurements of findings and photographs. Take measurements of work done and prepare quantities for payment for the works. Administer the works orders and service orders. Supervise laboratory testing.
- (j) Prepare and submit reports on the results, findings and conclusions of the additional geophysical survey, site investigation and laboratory testing including drawings to show the location of all existing services, underground structures and obstructions.

6.3.2 Carry out additional Traffic Impact Assessment (ATIA) necessary for the proposed works including the additional site investigation work under the Assignment using, where appropriate, the Guidelines on Traffic Impact Assessment and Day-Time Ban Requirements for Road Works on Traffic Sensitive Routes issued by the Research and Development Division of HyD. The Consultants shall obtain the approval from the DR before carrying out the ATIA. The ATIA shall include the following:-

- (a) Carry out traffic counts and perform junction and road link analysis for the Traffic Impact Assessments.
- (b) Propose any traffic management scheme such as traffic diversions and road closures that would minimise the traffic impact on the existing road network and facilitate the proposed works, to the satisfaction of all concerned parties including HyD, HKPF and TD.
- (c) Review the standard requirements of an Excavation Permit issued by HyD and identify those parts of the proposed works that will require special provisions in the contract documents to effect these measures and recommend how these provisions are to be made.

- (d) Identify any special measures required by HyD, TD and HKPF for carrying out the proposed works and recommend how the provisions for these special measures are to be made in the contract documents for the proposed works.
- (e) Identify those parts of the works that will require special measures for pedestrian traffic and recommend how the provisions for these special measures are to be made in the contract documents for the proposed works.
- (f) Prepare and submit report on the results, findings and conclusions of the study.
- (g) Present the results of the study to all concerned parties or persons including District Councils and Rural Committee as required.

6.3.3 Carry out additional Marine Traffic Impact Assessment (AMTIA) necessary for the proposed works including the additional site investigation work under the Assignment. The Consultants shall obtain the approval from the DR before carrying out the AMTIA. The AMTIA shall include the following:-

- (a) Identify all potential impacts to the existing and future marine traffic and facilities during construction and operation phases of the proposed submarine water main.
- (a) Propose appropriate mitigation measures to minimise the marine traffic impact and facilitate the proposed works, to the satisfaction of all concerned parties such as HKPF and MD, etc..
- (b) Identify any special measures required by relevant parties such as MD, CEDD, DSD and HKPF, etc., for carrying out the proposed works and recommend how the provisions for these special measures are to be made in the contract documents for the proposed works.
- (c) Identify those parts of the works that will require special measures for marine traffic and recommend how the provisions for these

special measures are to be made in the contract documents for the proposed works.

- (d) Prepare and submit report on the results, findings and conclusions of the study.
- (e) Present the results of the study to all concerned parties as required.

6.3.4 Carry out additional Drainage and Sewerage Impact Assessment (ADSIA) necessary for the proposed works. The Consultants shall obtain the approval from the DR before carrying out the additional ADSIA. The ADSIA shall include the following:-

- (a) Carry out additional studies, field measurements, investigations on temporary and permanent drainage and sewerage impacts arising from the proposed works.
- (b) Liaise with and seek agreement of DSD, WSD and any other concerned parties or persons on all matters relating to the drainage impacts of the proposed works.
- (c) Prepare and submit report on the results, findings and conclusions of the study.
- (d) Present the results of the study to all concerned parties as required.

6.3.5 Carry out additional tree survey, tree risk assessment and undertake tree removal application for the proposed work. The Consultants shall obtain the approval from the DR before carrying out the additional Tree survey. The additional tree survey and tree removal application shall include the following:-

- (a) Carry out an additional survey of the trees on the sites and identify any additional trees that will be affected by the proposed works.
- (b) Prepare and submit a Tree Survey Report. The report shall include drawings showing the location and size of the trees together with a tree schedule showing the species, height, circumference of trunk, tree spread, general condition and photographs. The report shall include Tree Risk Assessment and indicate the trees to be retained,

transplanted or felled and the existing and the proposed general levels adjacent to the trees. Tree Risk Assessment shall be carry out in accordance with the DEVB's Cyber Manual for Greening. The report shall include drawings showing compensatory landscaping and replanting.

- (c) Make submission and obtain approval from DLO, AFCD, HyD, LCSD on the Tree Survey Report as required in accordance with ETWB TCW No. 3/2006 – ‘Tree Preservation’, ETWB TCW No. 2/2004 – “Maintenance of Vegetation and Hard Landscape Features” and ETWB TCW No. 29/2004 – “Registration of Old and Valuable Trees, and Guidelines for their Preservation”.
- (d) Where tree removal, either by felling or by transplanting, is necessary, submit tree removal application to the relevant authorities for approval in accordance with ETWB TCW No. 3/2006, and take necessary follow-up action until obtaining approval to the application from the relevant authorities. The tree removal application shall include a tree survey plan and a tree assessment schedule, including tree preservation and protection measures for the trees to be retained and a compensatory planting proposal as required in ETWB TCW No. 3/2006.
- (e) Present the results of the tree survey to and obtain consent from all concerned parties or persons including District Councils as required.

6.3.6 Prepare a detailed Landscape proposal covering the hard and soft landscape treatments for the whole Project area, The Proposal shall be developed taking into account the “General Requirements of Roadside Landscaped Area to be Handed Over to LCSD for Maintenance” in Appendix L for future roadside landscape plantings to be handed over to LCSD for horticultural maintenance in accordance with ETWB TCW No. 2/2004.

The Consultants shall prepare a schedule of management and maintenance responsibilities for all the proposed landscape elements, and in their circulation of the Proposal attach this schedule and specifically ask the management and maintenance authorities listed on the schedule to agree on the design details and to confirm undertaking the management

and maintenance responsibilities of the landscape elements under their jurisdiction. Such agreement and confirmation from the management and maintenance authorities shall be obtained before the calling of tenders for the works contracts.

6.3.7 Carry out additional Environmental Review for the proposed work. The Consultants shall obtain the approval from the DR before carrying out the additional Environmental Review. The additional Environmental Review shall include the following:-

- (a) Identify the additional environmental issues that will arise from the proposed works and liaise with EPD to ensure compliance with latest pollution control ordinances, regulations and guidelines.
- (b) Identify and recommend additional mitigation measures required so as to achieve compliance with the relevant ordinances, regulations and guidelines for the environmental issues.
- (c) Liaise with and seek agreement of AFCD, EPD, DO, PlanD and other concerned parties or persons on all matters associated with additional environmental impacts arising from the Assignment.
- (d) Identify any additional sites of cultural heritage that may be in conflict with or affected by the proposed works. Liaise with AMO regarding the measures that need to be implemented for protection of the sites of cultural heritage during the construction of the proposed works.
- (e) Prepare and submit report on the results, findings and conclusions of the study.
- (f) Present the results of the study to all concerned parties or persons including District Councils as required.
- (g) Assist the DR to apply for variation of the Environmental Permit, if required.

6.3.8 Prepare a Design Memorandum which shall set out the standards governing the design of the works and obtain the consent of the DR to

this memorandum before proceeding further with the detailed design of the proposed works

- 6.3.9 Prepare detailed designs with hydraulic analysis, including landscaping designs, necessary for the works together with specifications, drawings, bills of quantities and all tender documentation using the standard documents listed below (or their latest versions) as a basis. This work shall be carried out for all works contracts and for procurement of any materials or services required prior to or separately from the main works contracts including works entrusted to other Government departments/parties and advance work to be carried out under WSD Term Contracts.

	Title	<u>Issuing Authority</u>
(a)	Civil Engineering Design Manual	WSD
(b)	Geotechnical Manual for Slope	GEO
(c)	Geoguide 1: Guide to Retaining Wall Design	GEO
(d)	Geoguide 5: Guide to Slope Maintenance	GEO
(e)	Manual of Mainlaying Practice 1997 Edition	WSD
(f)	Code of Practice on Inspection and Maintenance of Water Carrying Services Affecting Slopes (1996 Edition)	The then Works Bureau (WB)
(g)	Project Administration Handbook for Civil Engineering Works	CEDD
(h)	Project Administration Manual for Engineering Works	WSD
(i)	Standard Drawings	WSD
(j)	Standard Drawings	CEDD
(k)	General Specification for Civil Engineering	Hong Kong

Title Works, 2006 Edition	<u>Issuing Authority</u> SAR Government
(l) Standard Method of Measurement for Civil Engineering Works	Hong Kong SAR Government
(m) Stormwater Drainage Manual	DSD
(n) Hong Kong Planning Standards and Guidelines	PlanD
(o) Public Works Departmental, Lands and Works Branch, Works Branch, Works Bureau and Environment, Transport and Works Bureau Technical Circulars	The then ETWB
(p) Cyber manual for Greening	DEVB
(q) Development Bureau Technical Circulars	DEVB
(r) Planning, Environment & Lands Bureau (Branch) Technical Circulars	The then PELB
(s) Departmental Instructions	WSD
(t) Professional Persons Environmental Consultative Committee (Pro PECC) Practice Notes	PlanD
(u) Technical Circulars/Memoranda	DSD
(v) Technical Circulars/Memoranda	HyD
(w) Technical Circulars/Memoranda	CEDD
(x) Guidelines on Traffic Impact Assessment and Day-Time Ban Requirements for Road	HyD

Title	<u>Issuing Authority</u>
Works on Traffic Sensitive Routes	
(y) General Specifications for Electrical Installation in Government Building, Hong Kong SAR (2002 Edition)	EMSD
(z) Code of Practice for the Electricity (Wiring) Regulations (2003 Edition)	EMSD
(aa) Regulations for Electrical Installations 16 th Edition including latest amendments	IEE
(bb) Standard Specifications for Mechanical and Electrical Works	WSD
(cc) Feasibility Study on Cleaning and Disinfection of Service Reservoirs and Disposal of the Effluent (Agreement No. CE19/94)	WSD
(dd) Mechanical Project Design Manual	WSD
(ee) Electrical Project Design Manual	WSD
(ff) Operations Branch Instructions	WSD
(gg) Supply and Distribution Branch Instructions	WSD

6.3.10 Draw to the attention of the DR any deviations necessary from the standard documents, manuals, instructions and guidelines listed under Clause 6.3.9 of this Brief and explain the reasons for any Special Conditions of Tender, Special Conditions of Contract, Particular Specification Clauses and Particular Preambles to the Bills of Quantities required to embody these deviations into the contract documents.

6.3.11 Study the requirements of the Ordinances listed below and bring to the attention of the DR any special measures necessary to comply with the requirements of these Ordinances:

- (a) Air Pollution Control Ordinance
- (b) Antiquities and Monuments Ordinance
- (c) Country Parks Ordinance
- (d) Dumping at Sea Ordinance
- (e) Environmental Impact Assessment Ordinance
- (f) Electricity Ordinance
- (g) Factories and Industrial Undertakings Ordinance
- (h) Foreshore and Seabed (Reclamation) Ordinance
- (i) Hong Kong Shipping Ordinance
- (j) Land (Miscellaneous Provisions) Ordinance
- (k) Noise Control Ordinance
- (l) Town Planning Ordinance
- (m) Road Traffic Ordinance
- (n) Waste Disposal Ordinance
- (o) Waterworks Ordinance
- (p) Water Pollution Control Ordinance
- (q) Any other Ordinance having a bearing on the works of the Assignment.

6.3.12 Assist to carry out public consultations for the proposed works. The services to be rendered shall include, but not limited, to the following :-

- (a) Identify the District Councils, relevant committees and public consultation bodies with whom public consultation is to be made and prepare a strategy and programme for doing so.
- (b) Prepare information papers and presentation materials with Chinese translation and attend meetings of the public bodies to be consulted and assist with the presentation as necessary. The number of such meetings is estimated to be thirty over which the Employer shall pay the extra cost on a time charge basis.
- (c) Identify concerns and requirements arising from public consultations, in particular the Fisherman and Mariculturist groups and establish a strategy to fully address the concerns of the public and incorporate the requirements into the design.,

6.3.13 Liaise with telecommunication companies for provision of telephone

services for telemetry and communication purposes.

- 6.3.14 Liaise with manufacturers or suppliers of electrical and mechanical plant and equipment to obtain drawings, specifications and other documents required for the preparation of the detailed design and tender documents.
- 6.3.15 Prepare specification clauses required to effect the environmental measures to mitigate the impact of the construction activities and permanent installations on the public. In particular, the environmental mitigation measures, EM&A programme and other requirements laid down in the approved EIA report and in the Environmental Permit shall be included in the contracts.
- 6.3.16 Determine the extent of the excavations that will be carried out in rock or artificial hard materials and assess the volume of rock and artificial hard materials to be excavated.
- 6.3.17 Determine the volume of the C & D material generated and disposed in respect of the installation of the submarine pipeline.
- 6.3.18 Determine the extent of the existing materials to be excavated that can be used for backfilling purposes and assess the volume of materials if any, to be imported to complete the backfilling. Draw up a Construction and Demolition Material Management Plan (C&DMMP) for vetting by the Vetting Committee of WSD as required by ETWB TCW No. 33/2002. Attend the Vetting Committee Meeting to present the plan if necessary.
- 6.3.19 Carry out design check on structures affected by the proposed works.
- 6.3.20 Liaise with Hong Kong & Islands Region, Mechanical and Electrical/Maintenance Division and Development Divisions of WSD regarding the operation and maintenance requirements of the water supply system during the construction and the requirements for leakage detection facilities.
- 6.3.21 Liaise with Hong Kong & Islands Region, Mechanical and Electrical/Project Division and Mechanical and Electrical/Maintenance Division of WSD regarding the requirements on mechanical and electrical plant and equipment including monitoring and control

equipment.

- 6.3.22 Consult and liaise with LCSD on the potential recreational use of the sites and incorporate their requirements into the design.
- 6.3.23 Implement the public relation measures that need to be carried out during the course of the Assignment.
- 6.3.24 Identify all utilities, facilities, installations and existing rights that may be affected by the proposed works. Liaise with and obtain consent from the concerned parties for construction of the proposed works including the consent for diversion or relocation of the utilities, facilities and installations if necessary.
- 6.3.25 Identify any materials or services that are required prior to or separately from the main works contracts.
- 6.3.26 Advise and assist the Employer in preparation of the Environmental Implications Paragraph for submission of the Public Works Subcommittee (PWSC) Paper. For this purpose, the Consultants shall provide an estimate with breakdown and total costs of implementing the mitigation measures required in the EIA report approved by the DEP for the Project.
- 6.3.27 Based on the Consultant strategy and choices of the main and secondary options recommended in Clauses 2.8 & 6.2.2 and agreed by the Employer, the consultant shall:
 - (a) Prepare the tender documents for the Project in a form compatible to NEC to enable the Employer to invite tenders and place orders for the works. The document should include the following for the NEC type chosen:
 - (1) Works Information;
 - (2) Site Information;
 - (3) Bills of Quantities and/or activity schedule;
 - (4) Schedule of Rates;

- (5) Schedule of Cost Components;
 - (6) Contract Data Formats;
 - (7) Drawings;
 - (8) Specifications;
 - (9) Estimate of the Contingencies by risk analysis technique;
 - (10) estimated total of the Price (if the target cost main option is selected);
 - (11) study on the risk profiles adopted in similar construction projects outside Hong Kong which use NEC framework, and recommending the risk profiles to be adopted above or below the target for the Project (if either NEC Option C or D is selected); and
 - (12) Procedural Manual to outline the implementation of the partnering strategy for the construction stage including the strategy to select the partnering contractor.
- (b) Formulate tendering strategy of the project to the satisfaction of the DR and prepare a report which shall:
- (1) identify the possible tendering arrangement for the project, including a marking scheme for tender evaluation in accordance with ETWB TCW No. 8/2004 if appropriate;
 - (2) review and analyse the merits and demerits of different tendering arrangement for NEC; and
 - (3) recommend the best tendering strategy which best suit the Project with due consideration given to statutory requirements.
- (c) Combine the tender documents that have been prepared or converted to NEC compatible documents in accordance with Clause 6.3.27(a) with clauses, main clauses, secondary option clauses or any other policy clauses the Employer considers necessary, Notes to Tenderers, Conditions of Tender, Special Conditions of Tender, and any other document, such that the combined tender documents are in a form which is suitable and ready for tendering purpose.

6.3.28 Prepare and enter proposed road opening details to the XPMS for

obtaining Excavation Permits from HyD for the proposed works.

- 6.3.29 Liaise with Government departments/other relevant parties and their consultants for works entrusted, or to be entrusted, to them. The Consultants will be required to answer queries on the entrustment works and to assist in evaluation of offers made by tenderers and to make recommendations when so required during the course of tender assessment. The Consultants shall undertake the liaison duties as required under WSD Departmental Instruction No. 1254 until the completion of the entrustment works.
- 6.3.30 Prepare estimates of the cost of the proposed works and deployment of Resident Site Staff. The estimation of contingency items shall be in accordance with WBTC No. 22/93 “Estimating Using Risk Analysis” or any subsequent version. Attend the Project Estimate Control Committee Meeting to present the cost estimate.
- 6.3.31 Prepare pre-tender estimates for the works contracts within 2 months before the date programmed for the invitation of tenders. Attend vetting committee to present the pre-tender estimates if necessary.
- 6.3.32 Calculate the level of Liquidated Damages to be stated in the tender documents using the pre-tender estimates prepared in Clause 6.3.31 of this Brief.
- 6.3.33 Accept the appointment as Engineer’s Representative under the terms of WSD Term Contracts and carry out the duties of Engineer’s Representative and other necessary duties similar to those in Clause 6.5 of this Brief for advance works carried out under WSD Term Contracts. The work of supervising the advance works shall be considered as being work carried out under Clause 5 of the Schedule of Fees.
- 6.3.34 Liaise with relevant parties including Government departments and finalize land requirements for the proposed works for incorporation into the tender documents.
- 6.3.35 Prepare a QSSP in line with the strategy of site supervision recommended in the Review Phase, and to include, but not limited to, the following details:

- (a) A detailed site supervision arrangement, including arrangements for supervision of construction activities that are required to be carried out outside the normal working hours of the Resident Site Staff;
- (b) A list of critical construction activities and structural elements that require special attention together with the associated supervision requirements for such items, where appropriate the level of supervision and the rank of staff who should perform the supervision of such items and/or sign the Request for Inspection Form (or a purposely made inspection form for a particular activity or test);
- (c) If necessary, the Consultants shall also specify any critical construction activities, structural elements and particular aspects or details that should be noted by the inspection officer on the Request for Inspection Form for future reference;
- (d) A guideline on the details of inspection to be recorded for specialist works or critical elements; and
- (e) In case it is envisaged that construction or fabrication works will be carried out outside Hong Kong, the Consultants shall formulate supervision requirements and inspection arrangement for such works. The Consultants shall also prepare comprehensive guidelines to be followed by the Resident Site Staff who need to conduct inspection outside Hong Kong. The guideline shall include the three minimum requirements as given in Appendix III.

6.3.36 Make provision in the works contracts for implementation of measures for protection of any sites of cultural heritage that may be affected by the proposed works. The measures may include, but not limited to condition survey of the sites before commencement of the works and monitoring during the course of works.

6.3.37 Submit to the DR on completion of the Design Phase two full sets of design calculations and certificates pursuant to Clause 11 of this Brief.

6.4 Tender Phase

The Consultants shall not proceed with Tender Phase unless and until they have received the written instruction of the DR. The services to be rendered under the Tender Phase of the Assignment shall include the following:

- 6.4.1 Assist the Employer in the invitation of tenders for the proposed works. Draft tender notifications, prepare and distribute tender documents, prepare and issue tender addenda, answer queries and carry out pre-tender briefings if required.
- 6.4.2 Prepare tender assessments and recommendations, including evaluation of alternative tenders, and submit tender reports to the DR in a standard format as required by the DR.
- 6.4.3 Prepare Articles of Agreement and other contract documents for signature, for retention by the DR and for issue to contractors, Resident Site Staff and other parties. Prepare publicity materials, attend signing ceremonies and any press briefings.
- 6.4.4 Carry out debriefing to unsuccessful bidders if required.

6.5 Construction Phase

The Consultants shall not proceed with Construction Phase unless and until they have received the written instruction of the DR. The services to be rendered under the Construction Phase of the Assignment shall include the following:

- 6.5.1 Accept the appointment as and carry out the duties of the Supervisor as defined in the NEC Contract and all other duties delegated by the Project Manager as appropriate under the Contract (herein and hereinafter called works contract).
- 6.5.2 Accept the appointment as and carry out the duties of the Engineer's Representatives under the terms of WSD Term Contracts for works, if any, carried out under the WSD Term Contracts.
- 6.5.3 Comment on any insurance policies submitted by the contractors.

- 6.5.4 Co-ordinate the works which are carried out in conjunction with the works of other Government departments, parties and public utility companies.
- 6.5.5 Review the designs as necessary during the construction of the works including works entrusted to other Government departments/parties. Prepare such other designs, specifications and documents as may be necessary for completion of the works and mitigation of the effects of the works on the public.
- 6.5.6 Arrange and supervise the testing and commissioning of the works including any re-testing necessary as a result of failure of initial tests and commissioning. Prepare reports on the testing and commissioning of the works.
- 6.5.7 Appoint, manage and supervise the Resident Site Staff to discharge their duties as defined in the Works contract. Provide training and refresher courses to the Resident Site Staff. The Consultants shall also identify special training requirement regarding the supervision of critical construction activities and critical structural elements and provide the necessary training to the Resident Site Staff. In particular, the Consultants shall provide sufficient technical support to the Resident Site Staff, carry out necessary services, and be responsible for overseeing and ensuring that the environmental mitigation works are in compliance with the EIA report and EM&A Manual and the Environmental Permit(s).
- 6.5.8 Prepare the brief and all necessary documents to enable the Employer to appoint an Independent Environmental Checker (IEC) under a separate contract. The IEC shall have at least 7 years' experience in environmental monitoring and audit or environmental management, to carry out all the duties of the monitoring and auditing work, including the provision and maintenance of the necessary monitoring equipment, subject to the requirements in the EM&A Manual (such duties shall not be assigned to the Resident Site Staff nor the contractors). The IEC shall be independent from the Consultants and the contractors and shall be empowered to audit the environmental performance of the construction activities and operational mitigation. The IEC shall submit a monthly report to the DR through the Consultants, summarising his work as described in the EM&A Manual during the reporting period. The Consultants shall liaise

and co-ordinate with the IEC and provide all necessary assistance to the IEC for the IEC to exercise his duties. A sign-off certification for all mitigation measures implemented shall be submitted to the DR upon completion of the Contract.

- 6.5.9 At the commencement of works, review the QSSP (against the activities described by the contractors in their Quality Plans prior to the execution of works if the contractors are required to submit the Quality Plans under the works contracts), and conduct regular reviews of the QSSP with the Resident Site Staff subsequently, and as the need arises, and make necessary updating and modification in order to suit the actual circumstances, and the Consultants shall report in the progress reports the status of implementing the QSSP and any major modifications to it as a result of a review. The Consultants shall submit a revised QSSP to the DR if there is a major revision and as requested by the DR.
- 6.5.10 Report on the performance of the contractors in the format advised by the DR.
- 6.5.11 Report on the financial situation, variation orders, claims for additional payment and request for extensions of time and all other matters affecting the progress and financial situation of the works.
- 6.5.12 Plan, arrange and, where necessary, direct the inspection and testing of materials and workmanship.
- 6.5.13 Liaise with HyD, TD, HKPF and other concerned parties regarding traffic diversions and traffic management proposals made by the contractors.
- 6.5.14 Liaise with MD, HKPF and other concerned parties regarding the required temporary arrangement for the marine traffic including the necessary measures to mitigate the marine traffic impact.
- 6.5.15 Invite the landscape maintenance authorities to inspect the works commencement of softworks, placing of imported soil and top soil mix, completion of planting and at the end of the Establishment Period.
- 6.5.16 Liaise with Hong Kong and Islands Region, Mechanical & Electrical/Maintenance Division and Development Divisions of WSD

regarding the operation of the water supply system during construction.

- 6.5.17 Check and comment on or approve the submissions by the contractors for the supply and installation of mechanical and electrical plant and associated instrumentation and SCADA equipment. Vet the inspection reports of mechanical and electrical pumping plant and other materials submitted by the Independent Inspection Agent as necessary.
- 6.5.18 Supervise and coordinate the installation, testing and commissioning of the mechanical and electrical plant and associated instrumentation and SCADA equipment and arrange for the preparation and delivery of the Instruction Manuals for the mechanical and electrical works.
- 6.5.19 Check and give professional advice to the DR on any alternative designs proposed by the Contractors.
- 6.5.20 Give three months' notice to the DR/Project Manager of the intention to recommend issuing to contractor a completion or taking-over certificate for the whole or part of the contract works under any of the works contracts. Arrange a joint inspection, before the issue of the completion certificate, for the purpose of handing over the completed works to Government with representatives of the DR and the relevant operation and maintenance departments. Deliver to the DR, at least two weeks prior to this inspection, all information, instructions, manuals, calculations and drawings as are necessary for the operation of the completed works.
- 6.5.21 After completion of the contract works under any of the works contracts and within a period to be agreed by the DR, prepare and deliver to the DR As-constructed drawings showing in full details the contract works as actually carried out together with manuals, calculations and information necessary for the operation and maintenance of the contract works and submit all records and accounts relating to the contract works. The Consultants shall also submit all survey data being used, in a format to be agreed by the DR, to facilitate subsequent input by the Government into the Land Information System in the LandsD.
- 6.5.22 Arrange a final joint inspection of the contract works with the representatives of the DR and the operation and maintenance departments two months before expiry of the maintenance period of the works

contracts.

6.5.23 Prepare finalized site plans for the completed works so as to enable the return of surplus land to LandsD, the registration of WSD reserves and the finalization of land allocations.

6.5.24 Respond to audit reports.

6.5.25 Submit additional calculations and certificates for any design work carried out during the Construction Phase.

6.5.26 Plan and arrange for the community planting near or after the completion of the works in accordance with ETWB Technical Circular (Works) No. 34/2003 if required.

7. Programme of Implementation

7.1 The due date for commencement of the Agreement is **December 2010**.

7.2 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:

(a) Submission of the draft programme : Within 2 weeks of the due date for commencement of the Agreement

(b) Agreement of the draft programme or instruction for submission of the revised draft programme : Within 2 weeks from receipt of the draft programme

(c) Submission of revised draft programme : Within 2 weeks from the instruction of the DR

7.3 The draft programme and revised draft programmes shall detail the activities to be carried out, target dates for particular tasks and any decision dates that may be required for the uninterrupted progress of the Assignment. 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 programmes.

7.4. The key dates referred to in Clause 7.3 of this Brief include the following:

Deliverable / Milestone	Due Date (from commencement of the Agreement)
Submission of Draft Review Report	3 months
Submission of Final Review Report	4 months
Submission of NEC Contract option evaluation and recommendation report	3 months
Submission of estimate of the cost of the works and deployment of Resident Site Staff	7 months
Submission of draft tender documents	10 months
Submission of finalised tender documents	13 months
Gazetting of tender invitation	15 months
Commencement of works	19 months
Substantial completion of works contracts	43 months
Finalisation of works contract accounts	55 months

7.5 The Consultants shall endeavour to ensure that the Assignment and the works contracts and other contracts are carried out in accordance with the programme and shall submit regular reviews as part of the progress reports referred to in Clause 8 of this Brief.

8. Progress Reports

The Consultants shall submit to the DR progress reports at monthly intervals on all aspects of the Services relating it to the programme referred to in Clause 7 of this Brief. The reports shall include a list of those parts of the Services the execution of which is behind the programme together with proposals to expedite progress, so as to complete the work by the due date. The reports shall also include updated expenditure forecasts in accordance with Clause 9 of this Brief.

9. Financial Management

9.1 At monthly intervals or at such other intervals as the DR may require, the Consultants shall submit a report on the current and the forecast expenditure on

the various elements of the Project during the construction phase and the fees due to the Consultants during all phases, in a form to be agreed by the DR.

9.2 The Consultants shall closely monitor progress and expenditure on any works contract and be alert to the possibility of the approved contract sum being exceeded. They shall advise the DR immediately if there is any likelihood of the approved contract sum being exceeded. To ensure sufficient time to obtain the necessary authorities and make funds available, the Consultants shall give the DR at least four months notice in writing of the need to increase the approved contract sum to meet contractual payments and shall provide the supporting information, except that if the need cannot be foreseen so far ahead, then the Consultants shall give as much notice as is possible in the circumstances. The following information shall be provided:

- (a) full details of the proposed net increase broken down into the following categories:
 - (i) price fluctuation payment under the contract. An arithmetical derivation based on the projected percentage and the estimated final effective value of work done is required;
 - (ii) additional works and savings arising from the Bills of Quantities items and variation orders. Reasons shall be given for increases and decreases in the earlier estimates; and
 - (iii) claims from the contractors. These shall be the Consultants' estimates of the amounts which will be certified for payment.
- (b) an assessment of increase in the consultancy fees and the Resident Site Staff costs if the contract period is likely to be extended or additional Resident Site Staff are required; and
- (c) a revised projected monthly cash flow pattern of contract payments, consultancy fees and all other expenditure.

10. Standards and Specifications

The Consultants shall adopt such technical and design standards and specifications as are in current use by Government works departments and

Transport Department or, if non-existent, British Standard, Codes of Practice and Specifications. Should instances arise for which suitable standards or specifications do not exist or for which the current standards or specifications appear to require modifications or if by the adoption of current standards the Consultants would incur additional expenses not within reasonable contemplation, the Consultants shall submit recommendations on appropriate alternatives to the DR for agreement.

11. Checking and Certification of the Design

The Consultants shall submit to the DR in accordance with Clause 5.3(e) of this Brief, two full sets of design calculations including a statement of the standards, procedures and codes of practice adopted. Each set shall be accompanied by a certificate that the design calculations have been checked by another qualified independent designer in the Consultants' employ and that the drawings are in accordance with the calculated designs. The standard form of "Design Certificate" set out in Appendix 4.7 of the Handbook on Selection, Appointment and Administration of Engineering and Associated Consultants shall be used for this purpose wherever applicable.

12. Variations and Other Commitments

- 12.1 The value of a variation to the contract works or other expenditure commitment for the purposes of Clause 24 of the General Conditions of Employment is \$300,000.00.
- 12.2 All variations to the contract works shall be covered by a variation order in a form to be agreed by the DR, except that no variation order will be required for increase or decrease in quantities arising from remeasurement of the items in the bills of quantities.
- 12.3 The DR shall advise the Consultants of his approval or otherwise under Clause 24 of the General Conditions of Employment within 14 days of submission. The reasons for non-approval, which may include insufficiency of supporting information provided with the submission, will be provided to the Consultants at the same time. If, because of the need for consultation or referral elsewhere, the DR is unable to give his decision within the period stated then he shall inform the Consultants immediately and advise them when he will give his decision. Provide that, in any case, a different period can be applied by mutual agreement.

- 12.4 Under sub-clause (iii) of Clause 25(A) of S12 of the Special Conditions of Employment, the Consultants shall report all claims to the DR within 14 days of their receipt. The DR shall provide the Employer's views to the Consultants within 60 days of receipt of the Consultants' principles of assessment of a claim.
- 12.5 Under sub-clause (iv) of Clause 25(A) of S12 of the Special General Conditions of Employment, the Consultants shall report all delays to the DR within 14 days of the delay being identified. The DR shall provide the Employer's views to the Consultants within 28 days of receipt of the Consultants' assessment of extension of time.

13. Resident Site Staff

- 13.1 The Schedule of Resident Site Staff (RSS) Standards and Duties is at **Appendix II**. The duties of the RSS may be varied as determined by the Employer/Project Manager prior to the employment of the RSS. The inclusion or exclusion of any rank in this schedule is not to be taken as a requirement that the rank must be included or must be excluded from the RSS Establishment.
- 13.2 The qualifications, the experience required and the duties of the RSS are shown in **Appendix II** but it shall remain the responsibility of the Consultants to ensure that the RSS are suitable in all respects and that all the RSS remain courteous in all dealings relating to this Agreement including the construction works and conduct themselves in a manner that will not bring Government in general or WSD in particular into disrepute or cause embarrassment, publicly or non-publicly.
- 13.3 The Consultants shall submit to the DR at monthly intervals reports on the RSS, structure, establishment and dates of events affecting the deployment of the RSS.

14. Director's Representative

- 14.1 The Director's Representative (DR) as defined in the General Conditions of Employment shall be the Assistant Director/New Works of WSD or such other person as may be authorized by the Director of Water Supplies in writing and notified to the Consultants. The DR may delegate any of the powers and functions vested in him to other officers. If the Consultants are dissatisfied

with a decision or instruction of any such officer the matter shall be referred to the DR for a ruling.

- 14.2 During the course of the Agreement, the Consultants shall report direct to the DR.

15. Control of the Project and Assignment

- 15.1 Pursuant to Clause 13 of the General Conditions of Employment, the Consultants shall attend meetings of relevant committees, public consultation bodies and District Councils as necessary. The total amount of this kind of meeting time is estimated to be not more than 100 hours, beyond which the extra cost shall be reimbursed by the Employer on a time charge basis.

- 15.2 The Consultants when necessary, shall communicate and correspond directly with other Government departments/parties, utility undertakers and various divisions of WSD to obtain information in connection with the Project, copying such correspondence to the DR.

16. Information and Facilities Provided by the Employer

- 16.1 All available information relevant to the Assignment will be provided to the Consultants. The relevant reports giving the background information are as follows:

- (a) Planning Report No. 3/2007.
- (b) Final Report of Agreement No. CE 1/2008 (WS) "Improvement of fresh water supply to Cheung Chau - Investigation".

The approved Environmental Impact Assessment Report, Environmental Monitoring and Audit Manual and the Environment Permit are available on the EPD website.

- 16.2 The Consultants shall indicate for guidance those documents which they currently hold and those of which a copy may be needed, should the Assignment be awarded to them. A copy of each of the documents indicated as needed will be supplied free of charge by the DR on request from the Consultants, except those currently available from the Publications Sales Unit of the Information

Services Department. 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.

17. Consultants' Office and Staffing

- 17.1 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 Project. He shall have adequate authority and sufficient professional, technical and administrative support staff in all relevant disciplines to ensure progress to the satisfaction of the DR.
- 17.2 The Consultants' staff shall provide the staff and manpower input in accordance with the Technical Proposal which was submitted with the Consultant's tender for this assignment. The DR shall have the right to check the time-log record of the Consultants' staff deployed for the Assignment.
- 17.3 If 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 the time-log record of the staff deployed for the Assignment for the DR to check against the Technical Proposal.
- 17.4 The Consultants' failure to adhere to their staffing proposal, 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.
- 17.5 If the Consultants are unable to maintain any of the core personnel specified in the Technical Proposal, the Consultants shall be 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 qualification, experience and competence.

18. Specialist and Sub-consultant Services

- 18.1 The Consultants shall provide all specialist and sub-consultant services required for the satisfactory completion of the Assignment. No additional fees or expenses for the provision of such services rendered locally or overseas shall be

payable by the Employer except as otherwise provided for in the Schedule of Fees.

- 18.2 Without derogating from the generality of Clause 38(i) of the general Conditions of Employment, the Consultants shall, upon the award of the 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.

19. Surveys

- 19.1 One velograph and two prints of topographical mapping at 1:20,000, 1:5,000 and 1:1,000 scales prepared by the Survey and Mapping Office of the Lands Department, where available for the area covered by the Project for which the Assignment forms a part, can be obtained free of charge on application to the DR. For the supply of Government digital map data, the Consultants will be charged a fee for handling. This fee shall be included in the Lump Sum.
- 19.2 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 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.
- 19.3 The Consultants shall be responsible for all engineering surveys required in connection with the Assignment. The division of responsibility among the Consultants, the Lands Administration Office, and the Survey and Mapping Office of the Lands Department for other surveying required in connection with the Assignment shall be as follows:

	Task	Responsibility of
(a)	(i) Provision of basic horizontal and vertical survey control.	Survey and Mapping Office

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| (ii) | Checking of given control point values and establishment of survey control network(s) based on survey control given vide (i). | Consultants |
| (b) (i) | Provision of basic mapping (at 1:1000 scale or other standard mapping relevant to the Assignment). | Survey and Mapping Office (excluding those specified as to be provided by the Consultants in the Agreement) |
| (ii) | Updating and verification of accuracy of information shown on plans supplied vide (i) as necessary in relation to the Assignment. | Consultants |
| (iii) | Carrying out detailed surveys for site investigation and for preparation of design and contract documents as necessary in relation to the Assignment. | Consultants |
| (c) (i) | Supply of digital data. | Land Information Centre, Lands Department |
| (ii) | Provision of a plan of the study area to the Land Information Centre for data preparation. | DR |
| (iii) | Completion of “Undertakings by Government Department for provision of Digital Data from Land Information Centre, Lands Department to Consultants” Form. | DR |
| (iv) | Completion of Digital Data Order Form. | Consultants |

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| (v) | Completion of “Undertaking by Consultants on the use of Government Digital Data from the Land Information Centre, Lands Department” Form. | Consultants |
| (vi) | Before data collection, payment of the charges for the storage media and labour to prepare the data when informed by the Land Information Centre prior to data collection and collection of the Demand Note. | Consultants |
| (d) | Supply of existing cadastral plans and records and co-ordinate data. | District Survey Office |
| (e) | Computation of detailed dimensioned layouts of roads, drainage and WSD reserves, platforms, etc. | Consultants
(checked and accepted by District Survey Office) |
| (f) | 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) |
| (g) | (i) Processing of resumption and surrender for privately owned land in Development Area. | District Lands Office (in liaison with District Survey Office and Consultants) |
| | (ii) Resumption and surrender plans and demarcation of lands to be resumed. | District Survey Office (in liaison with District Lands Office and Consultants) |
| (h) | (i) Setting out of roads, drainage works, formation areas, etc. | Contractors (checked and accepted by Consultants, usually by Resident Site Staff under their supervision) |

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| (ii) | 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) |
| (i) | Preparation of proposal plans for Government land allocations and grants. | District Survey Office (in liaison with District Lands Office) |
| (j) | Preparation of dimensioned plans and setting out of boundaries of sites and lots for Government land allocation and for grants to architects (Government and Housing Authority). | District Survey Office |
| (k) | As-constructed surveys (including records of levels on all underground pipelines, etc.). | Consultants, usually by Resident Site Staff under their supervision |

20. Insurance

The amount of insurance cover to be maintained in accordance with sub-clause 47(1) of S14 of the Special Conditions of Employment shall be twice the Lump Sum value of the fee, subject to a maximum of HONG KONG \$150 million and a minimum of HONG KONG \$10 million.