Public Works and Government Services Canada | Travaux publics et Services gouvernementaux Canada

RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:

Bid Receiving - PWGSC / Réception des soumissions - TPSGC
11 Laurier St. / 11 rue Laurier
Place du Portage, Phase III
Core 0B2 / Noyau 0B2
Gatineau, Québec K1A 0S5
Bid Fax: (819) 997-9776

REQUEST FOR PROPOSAL
DEMANDE DE PROPOSITION

Proposal To: Public Works and Government Services Canada

We hereby offer to sell to Her Majesty the Queen in right of Canada, in accordance with the terms and conditions set out herein, referred to herein or attached hereto, the goods, services, and construction listed herein and on any attached sheets at the price(s) set out therefor.

Proposition aux: Travaux Publics et Services Gouvernementaux Canada

Nous offrons par la présente de vendre à Sa Majesté la Reine du chef du Canada, aux conditions énoncées ou incluses par référence dans la présente et aux annexes ci-jointes, les biens, services et construction énumérés ici sur toute feuille ci-annexée, au(x) prix indiqué(s).

Comments - Commentaires

Vendor/Firm Name and Address
Raison sociale et adresse du fournisseur/de l'entrepreneur

Issuing Office - Bureau de distribution

Consultant Services Division/Division des services d'experts-conseils
11 Laurier St./11 Rue Laurier
3C2, Place du Portage
Phase III
Gatineau, Québec K1A 0S5

Title - Sujet West Memorial Building	
Solicitation No. - N° de l'invitation EH900-173222/A	**Date** 2017-08-04
Client Reference No. - N° de référence du client 20173222	
GETS Reference No. - N° de référence de SEAG PW-$$FE-172-73224	
File No. - N° de dossier fe172.EH900-173222	**CCC No./N° CCC - FMS No./N° VME**
Solicitation Closes - L'invitation prend fin **at - à 02:00 PM** **on - le 2017-09-20**	**Time Zone** **Fuseau horaire** Eastern Daylight Saving Time EDT
F.O.B. - F.A.B. **Plant-Usine:** ☐ **Destination:** ☐ **Other-Autre:** ☐	
Address Enquiries to: - Adresser toutes questions à: Boujenoui(fe172), Nabil	**Buyer Id - Id de l'acheteur** fe172
Telephone No. - N° de téléphone (873) 469-4905 ( )	**FAX No. - N° de FAX** ( ) -
Destination - of Goods, Services, and Construction: **Destination - des biens, services et construction:** West Memorial Building, Ottawa, Ontario	

Instructions: See Herein

Instructions: Voir aux présentes

Delivery Required - Livraison exigée See Herein	**Delivery Offered - Livraison proposée**
Vendor/Firm Name and Address **Raison sociale et adresse du fournisseur/de l'entrepreneur** **Telephone No. - N° de téléphone** **Facsimile No. - N° de télécopieur**	
Name and title of person authorized to sign on behalf of Vendor/Firm (type or print) **Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie)** **Signature**	**Date**

Canada

THIS PROCUREMENT CONTAINS A SECURITY REQUIREMENT
REQUEST FOR PROPOSAL (RFP)

TABLE OF CONTENTS

The following is intended to clarify the general structure of the whole document.

SUPPLEMENTARY INSTRUCTIONS TO PROPONENTS (SI)

SI1 INTRODUCTION

1. Public Works and Government Services Canada (PWGSC) intends to retain an individual consulting firm or joint venture to provide the professional services for the project as set out in this Request for Proposal (RFP).

2. Because of the considerable time and expense involved in the preparation, submission and evaluation of full proposals, proponents responding to this RFP are requested to submit a proposal in two phases. Phase One proposals cover only the qualifications, experience and organization of the proposed Consultant Team. Following evaluation and rating of these proposals, proponents are advised of their competitive standing and have the opportunity to decide whether or not to continue their participation by submitting a Phase Two proposal. Phase Two proposals cover the detailed approach to the work, and the pricing and terms offered. A combination of the Phase One and Phase Two submissions constitutes the final proposal.

3. Initially, firms are invited to submit a proposal in the first phase of the selection procedure outlined below. Only the Phase One information asked for in the RFP is to be included in the Phase One proposal, and evaluation and rating of Phase One proposals will be carried out only on the Phase One information requested. In Phase One, no material is to be submitted on the subject project itself.

SI2 PROPOSAL DOCUMENTS

1. All instructions, general terms, conditions and clauses identified in the RFP by number, date and title, are hereby incorporated by reference into and form part of this solicitation and any resultant contract.

   All instructions, general terms, conditions and clauses identified in the RFP by number, date and title, are set out in the Standard Acquisition Clauses and Conditions Manual (https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual) issued by Public Works and Government Services Canada.

2. The following are the proposal documents:

   (a) Supplementary Instructions to Proponents (SI);
   R1110T (2016-04-04), General Instructions (GI) – Architectural and/or Engineering Services – Two Phase Request for Proposal;
   Submission Requirements and Evaluation (SRE);

Subsection 2.b. of section GI16, Submission of proposal of R1110T, incorporated by reference above, is deleted in its entirety and replaced with the following:

b. send its proposal only to Public Works and Government Services Canada (PWGSC) Bid Receiving Unit specified on page 1 of the RFP;

(b) the general terms, conditions and clauses, as amended, identified in the Agreement clause;

(c) Project Brief / Terms of Reference;

(d) the document entitled "Doing Business with National Capital Area";

(e) the Security Requirements Check List (SRCL);

(f) any amendment to the solicitation document issued prior to the date set for receipt of Phase Two proposals;

(g) the proposal submitted at Phase One and Declaration/Certifications Form; and

(h) the proposal submitted at Phase Two and Price Proposal Form.

3. Submission of a proposal constitutes acknowledgment that the Proponent has read and agrees to be bound by these documents.

SI3 QUESTIONS OR REQUEST FOR CLARIFICATION

Questions or requests for clarification during the Phase One solicitation period must be submitted in writing to the Contracting Authority named on the RFP - Page 1. Enquiries should be received no later than **10** working days prior to the closing date identified on the front page of the Request for Proposal. Enquiries received after that date may not be answered prior to the closing date of the solicitation.

SI4 CANADA'S TRADE AGREEMENTS

This procurement is subject to the provisions of the Canada Free Trade Agreement (CFTA), the North American Free Trade Agreement (NAFTA) and the World Trade Organization - Agreement on Government Procurement (WTO-AGP).

SI5 CERTIFICATIONS

1. **Integrity Provisions – Declaration of Convicted Offences**
   In accordance with the Ineligibility and Suspension Policy (http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html), the Proponent must provide with its bid, as applicable, to be given further consideration in the procurement process, the required documentation as per R1110T (2016-04-04), General instructions 1 (GI1), Integrity Provisions – Proposal, section 3b.

2. **Federal Contractors Program for Employment Equity - Proposal Certification**

   By submitting a proposal, the Proponent certifies that the Proponent, and any of the Proponent's members if the Proponent is a Joint Venture, is not named on the Federal Contractors Program (FCP) for employment equity "FCP Limited Eligibility to Bid" list (http://www.labour.gc.ca/eng/standards_equity/eq/emp/fcp/list/inelig.shtml) available from Employment and Social Development Canada (ESDC) - Labour's website.

   Canada will have the right to declare a proposal non-responsive if the Proponent, or any member of the Proponent if the Proponent is a Joint Venture, appears on the "FCP Limited Eligibility to Bid" list at the time of contract award.

   Canada will also have the right to terminate the Agreement for default if a Consultant, or any member of the Consultant if the Consultant is a Joint Venture, appears on the "FCP Limited Eligibility to Bid" list during the period of the Agreement.

   The Proponent must provide the Contracting Authority with a completed Federal Contractors Program for Employment Equity - Certification (see Appendix B - Declaration/Certifications Form), before contract award. If the Proponent is a Joint Venture, the Proponent must provide the Contracting Authority with a completed Federal Contractors Program for Employment Equity - Certification, for each member of the Joint Venture.

SI6 SECURITY REQUIREMENT

1. At the closing date identified on the front page of the Request for Proposal (the ‘’Bid close’’, the following conditions must be met:

   (a) the Proponent must hold a valid organization security clearance as indicated in Supplementary Conditions SC1 and set out in the following table:

Proponent/Sub Consultants/Specialists (Firms)	Facility Security Clearance (FSC Secret) at Bid Close	Document Safeguarding (Secret) at Bid Close
Proponent (Prime Consultant)	X	X
Structural Engineer (with heritage building conservation specialty)	X	
Mechanical Engineer	X	
Electrical Engineer	X	
Security Specialist	X	
IT Specialist	X	

(b) the Proponent's proposed individuals requiring access to classified or protected information, assets or sensitive work site(s) must meet the security requirement as indicated in Supplementary Conditions SC1 and set out in the following table:

Key Personnel Category (Individuals)	Security Clearance (Secret) at Bid Close
Proponent (Prime Consultant)	X
Structural Engineer (with heritage building conservation specialty)	X
Mechanical Engineer	X
Electrical Engineer	X
Security Specialist	X
IT Specialist	X

(c) the Proponent's Site or Premises requiring Safeguard Measures must meet the security requirement as indicated in Supplementary Conditions SC1.

(d) the Proponent must provide the address of the proposed location of the Site or Premises requiring Safeguard Measures as indicated in the Declaration/Certifications Form (Appendix B).

2. For additional information on security requirements, proponents should refer to the Canadian Industrial Security Directorate (CISD), Industrial Security Program of Public Works and Government Services Canada (http://ssi-iss.tpsgc-pwgsc.gc.ca/index-eng.html) website.

SI7 OPTIONAL SITE VISIT

All interested Proponents are invited to attend an optional site visit on Wednesday August 30th, 2017 at 10:00 a.m. at 344 Wellington Street (loading dock entrance located on Bay Street between Sparks Street and Wellington Street), Ottawa, Ontario. Interested Proponents must provide name (s) of those attending to the Contracting Authority NO LATER THAN August 25, 2017 at 2:00 p.m. Hard hat, safety glasses and safety boots are required. Valid photo ID will be required.

SI8 WEBSITES

The connection to some of the Web sites in the RFP is established by the use of hyperlinks. The following is a list of the addresses of the Web sites:

Employment Equity Act
http://laws-lois.justice.gc.ca/eng/acts/E-5.401/index.html

Federal Contractors Program (FCP)
http://www.labour.gc.ca/eng/standards_equity/eq/emp/fcp/index.shtml

Certificate of Commitment to Implement Employment Equity form LAB 1168
http://www.servicecanada.gc.ca/cgi-bin/search/eforms/index.cgi?app=profile&form=lab1168&dept=sc&lang=e

Ineligibility and Suspension Policy
http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html

Code of Conduct for Procurement
http://www.tpsgc-pwgsc.gc.ca/app-acq/cndt-cndct/contexte-context-eng.html

Lobbying Act
http://laws-lois.justice.gc.ca/eng/acts/L-12.4/?noCookie

Buy and Sell
https://buyandsell.gc.ca/

Supplier Registration Information
https://srisupplier.contractscanada.gc.ca

Consultant Performance Evaluation Report Form
http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/documents/2913-1.pdf

Canadian economic sanctions

http://www.international.gc.ca/sanctions/index.aspx?lang=eng

National Joint Council (NJC) Travel Directive
http://www.njc-cnm.gc.ca/directive/travel-voyage/index-eng.php

TERMS, CONDITIONS AND CLAUSES

AGREEMENT

1. The Consultant understands and agrees that upon acceptance of the offer by Canada, a binding Agreement shall be formed between Canada and the Consultant and the documents forming the Agreement shall be the following:

   (a) the Front Page and this Agreement clause;
   (b) the General Terms, Conditions and Clauses, as amended, identified as:
   R1210D (2016-04-04), General Condition (GC) 1 - General Provisions – Architectural and/or Engineering Services
   R1215D (2016-01-28), General Condition (GC) 2 - Administration of the Contract – Architectural and/or Engineering Services
   R1220D (2015-02-25), General Condition (GC) 3 - Consultant Services
   R1225D (2015-04-01), General Condition (GC) 4 - Intellectual Property
   R1230D (2016-01-28), General Condition (GC) 5 - Terms of Payment – Architectural and/or Engineering Services
   R1235D (2011-05-16), General Condition (GC) 6 - Changes
   R1240D (2011-05-16), General Condition (GC) 7 - Taking the Services Out of the Consultant's Hands, Suspension or Termination
   R1245D (2016-01-28), General Condition (GC) 8 - Dispute Resolution – Architectural and/or Engineering Services
   R1250D (2015-07-03), General Condition (GC) 9 - Indemnification and Insurance

   Section GC1.1 of R1210D, Definitions, incorporated by reference above, is amended as follows:

   ADD:

   "Architectural and Engineering Services":
   means services to provide a range of investigation and recommendation reports, planning, design, preparation, or supervision of the construction, repair, renovation or restoration of a work and includes contract administration services, for real property projects.

   "Construction Services":
   means construction, repair, renovation or restoration of any work except a vessel and includes; the supply and erection of a prefabricated structure; dredging; demolition; environmental services related to a real property; or, the hire of equipment to be used in or incidentally to the execution of any construction services referred to above.

   "Facility Maintenance Services":

means services related to activities normally associated with the maintenance of a facility and keeping spaces, structures and infrastructure in proper operating condition in a routine, scheduled, or anticipated fashion to prevent failure and degradation including inspection, testing, servicing, classification as to serviceability, repairs, rebuilding and reclamation, as well as cleaning, waste removal, snow removal, lawn care, replacement of flooring, lighting or plumbing fixtures, painting and other minor works.

Section GC1.12 of R1210D, Not applicable, incorporated by reference above, is deleted in its entirety and replaced with the following:

R1210D GC1.12 (2016-04-04) Performance evaluation - contract

1. Consultants shall take note that the performance of the Consultant during and upon completion of the services shall be evaluated by Canada. The evaluation includes all or some of the following criteria:
   a. Design
   b. Quality of Results
   c. Management
   d. Time
   e. Cost

2. A weighting factor of 20 points will be assigned to each of the five criteria as follows:
   a. Unacceptable: 0 to 5 points
   b. Not satisfactory: 6 to 10 points
   c. Satisfactory: 11 to 16 points
   d. Superior: 17 to 20 points

3. The consequences resulting from the performance evaluation are as follows:
   a. For an overall rating of 85% or higher, a congratulation letter is sent to the Consultant.
   b. For an overall rating of between 51% and 84%, a standard, meets expectations, letter is sent to the Consultant.
   c. For an overall rating of between 30% and 50%, a warning letter is sent to the Consultant indicating that if, within the next two (2) years, they receive 50% or less on another evaluation, the firm may be suspended from any new PWGSC solicitations for

construction services, architectural and engineering services or facility maintenance services, of real property projects, for a period of one year.

d. For an overall rating of less than 30%, a suspension letter is sent to the Consultant indicating that the firm is suspended from any new PWGSC solicitations for construction services, architectural and engineering services or facility maintenance services, of real property projects, for a period of one year.

e. For a rating of 5 points or less on any one criterion, a suspension letter is sent to the Consultant indicating that the firm is suspended from any new PWGSC solicitations for construction services, architectural and engineering services or facility maintenance services, of real property projects, for a period of one year.

The form PWGSC-TPSGC 2913-1, Select - Consultant Performance Evaluation Report (CPERF), is used to record the performance.

Supplementary Conditions
Agreement Particulars

(c) Project Brief / Terms of Reference;
(d) the document entitled “Doing Business with National Capital Area”;
(e) the Security Requirements Check List (SRCL);
(f) any amendment to the solicitation document incorporated in the Agreement before the date of the Agreement;
(g) the Phase One proposal and Declaration/Certifications Form;
(h) the Phase Two proposal and Price Proposal Form.

2. The documents identified above by title, number and date are hereby incorporated by reference into and form part of this Agreement, as though expressly set out herein, subject to any other express terms and conditions herein contained.

The documents identified above by title, number and date are set out in the Standard Acquisition Clauses and Conditions (SACC) Manual, issued by Public Works and Government Services Canada (PWGSC). The SACC Manual is available on the PWGSC Web site: https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual

3. If there is a discrepancy between the wording of any documents that appear on the following list, the wording of the document that first appears on the list has priority over the wording of any document that subsequently appears on the list.

(a) any amendment or variation in the Agreement that is made in accordance with the terms and conditions of the Agreement;

(b) any amendment to the solicitation document incorporated in the Agreement before the date of the Agreement;
(c) this Agreement clause;
(d) Supplementary Conditions;
(e) General Terms, Conditions and Clauses;
(f) Agreement Particulars;
(g) Project Brief / Terms of Reference;
(h) the document entitled “Doing Business with National Capital Area”;
(i) the document entitled “Security Requirement Check List”; and
(j) the proposal.

SUPPLEMENTARY CONDITIONS (SC)

SC1 SECURITY REQUIREMENT

1. The following security requirement (SRCL and related clauses) applies and form part of the Agreement.

The Consultant must, at all times during the performance of the Contract, hold a valid Facility Security Clearance at the level of SECRET with approved Document Safeguarding at the level of SECRET, issued by the Canadian Industrial Security Directorate (CISD), Public Works and Government Services Canada (PWGSC).

The Consultant personnel requiring access to CLASSIFIED information, assets or sensitive work site(s) must EACH hold a valid personnel security screening at the level of SECRET, or RELIABILITY STATUS, as required, granted or approved by the CISD/PWGSC.

The Consultant MUST NOT utilize its Information Technology systems to electronically process, produce or store any sensitive CLASSIFIED information until CISD/PWGSC has issued written approval. After approval has been granted, these tasks may be performed at the level of SECRET.

Subcontracts which contain security requirements are NOT to be awarded without the prior written permission of CISD/PWGSC.

The Consultant must also comply with the provisions of the:

(a) Security Requirements Check List and applicable guide, attached at Appendix E;

(b) Industrial Security Manual (latest edition).

2. Consultant's Site or Premises Requiring Safeguard Measures

The Consultant must diligently maintain up-to-date, the information related to the Consultant's site or premises, where safeguard measures are required in the performance of the Services, for the following addresses:

Address:
Street Number / Street Name, Unit / Suite / Apartment Number
City, Province, Territory
Postal Code

Note: The above security clauses except for Document Safeguarding applies to the Consultant (Prime), Sub-Consultant(s)/Specialist(s) and each entity of the Joint Ventures or the Partnerships.

Document Safeguarding only applies to the Consultant (Prime). In the event of a Joint Venture or a Partnership, Document Safeguarding is required for the entity of the Proposed Site or premises Requiring Safeguard Measures (Appendix B).

3. The Consutlant and/or any and all Subconsultant must be from a country with which Canada has an international bilateral industrial security instrument or will have such an instrument with Canada by the end of the bidding period. The Contract Security Program (CSP) has international bilateral industrial security instruments with the countries listed on the following PSPC website: http://ssi-iss.tpsgc-pwgsc.gc.ca/gvrnmnt/risi-iisr-eng.html

   All CANADA CLASSIFIED information/assets, furnished to the Foreign recipient Consultant / Subconsultant, shall be safeguarded as follows:

   1. The Foreign recipient Consultant / Subconsultant shall, at all times during the performance of the Contract / Subcontract, hold a valid Facility Security Clearance (FSC), issued by the National Security Authority (NSA) or Designated Security Authority (DSA) of the supplier's country, at the equivalent level of SECRET, and hold an approved Document Safeguarding Capability Clearance at the level of SECRET.
   2. All CANADA CLASSIFIED information/assets provided or generated under this Contract / Subcontract will continue to be safeguarded in the event of withdrawal by the recipient party or upon termination of the Contract / Subcontract, in accordance with the national policies of the supplier's country.
   3. The Foreign recipient Consultant / Subconsultant shall provide the CANADA CLASSIFIED information/assets a degree of safeguarding no less stringent than that provided by the Government of Canada in accordance with the national

policies, National Security legislation and regulations and as prescribed by the National Security Authority (NSA) or Designated Security Authority (DSA) of the supplier's country.

4. All CANADA CLASSIFIED information/assets provided to the Foreign recipient Consultant / Subconsultant pursuant to this Contract / Subcontract by the Government of Canada, shall be marked by the Foreign recipient Consultant / Subconsultant with the equivalent security classification utilized by the supplier's country and in accordance with the national policies of the supplier's country.
5. The Foreign recipient Consultant / Subconsultant shall, at all times during the performance of this Contract / Subcontract, ensure the transfer of CANADA CLASSIFIED information/assets be facilitated in accordance with the national policies of the supplier's country, and in compliance with the provisions of the Bilateral Industrial Security Instrument between the supplier's country and Canada.
6. Upon completion of the work, the Foreign recipient Consultant / Subconsultant shall return to the Government of Canada, via government-to-government channels, all CANADA CLASSIFIED information/assets furnished or produced pursuant to this Contract / Subcontract, including all CANADA CLASSIFIED information/assets released to and/or produced by its subcontractors.
7. CANADA CLASSIFIED information/assets shall be released only to Foreign recipient Consultant / Subconsultant personnel, who have a need-to-know for the performance of the Contract / Subcontract and who have a Personnel Security Clearance at the level of SECRET, granted by their respective National Security Authority (NSA) or Designated Security Authority (DSA) of the supplier's country, in accordance with national policies of the supplier's country.
8. CANADA CLASSIFIED information/assets provided or generated pursuant to this Contract / Subcontract shall not be further provided to a third party Foreign recipient Subcontractor unless:

   a. written assurance is obtained from the third-party Foreign recipient's National Security Authority (NSA) or Designated Security Authority (DSA) to the effect that the third-party Foreign recipient Subcontractor has been approved for access to CANADA CLASSIFIED information/assets by the third-party Foreign recipient's NSA/DSA; and

   b. written consent is obtained from the NSA/DSA of the supplier's country, if the third-party Foreign recipient Subcontractor is located in a third country.
9. Subcontracts which contain security requirements are NOT to be awarded without the prior written permission of their respective National Security Authority (NSA) or Designated Security Authority (DSA), in accordance with the national policies of the the supplier's country.
10. The Foreign recipient Consultant / Subconsultant MUST NOT utilize its Information Technology systems to electronically process, produce, or store on a computer system any CANADA CLASSIFIED information/assets until the National Security Authority (NSA) or Designated Security Authority (DSA) of the supplier's country has granted approval to do so. After approval has been

granted in writing to the Foreign recipient Consultant / Subconsultant, these tasks may be performed up to the level of SECRET.

11. The Foreign recipient Consultant / Subconsultant shall not use the CANADA CLASSIFIED information/assets for any purpose other than for the performance of the Contract / Subcontract without the prior written approval of the Government of Canada. This approval must be obtained from the Canadian DSA.
12. The Foreign recipient Consultant / Subconsultant visiting Canadian Government or industrial facilities, under this contract, will submit a Request for Visit form to Canada's Designated Security Authority (DSA) through their respective National Security Authority (NSA) or Designated Security Authority (DSA).
13. The Foreign recipient Consultant / Subconsultant shall immediately report to the Canadian DSA all cases in which it is known or there is reason to suspect that CANADA CLASSIFIED information/assets pursuant to this Contract / Subcontract has been compromised.
14. The Foreign recipient Consultant / Subconsultant shall immediately report to its respective National Security Authority (NSA) or Designated Security Authority (DSA) all cases in which it is known or there is reason to suspect that CANADA CLASSIFIED information/assets accessed by the Foreign recipient Consultant / Subconsultant, pursuant this Contract / Subcontract have been lost or disclosed to unauthorized persons.
15. The Foreign recipient Consultant / Subconsultant shall not disclose CANADA CLASSIFIED information/assets to a third party government, person, firm or representative thereof, without the prior written consent of the Government of Canada. Such consent shall be sought through the recipient's National Security Authority/ Designated Security Authority (NSA/DSA).
16. The Foreign recipient Consultant / Subconsultant shall comply with the provisions of the International bilateral industrial security instrument between the supplier’s country and Canada, in relation to equivalencies.
17. The Foreign recipient Consultant / Subconsultant must comply with the provisions of the Security Requirements Check List attached at Appendix E.
18. In the event that a Foreign recipient Consultant / Subconsultant is chosen as a supplier for this Contract, subsequent Country-Specific Foreign security requirement clauses shall be generated and promulgated by the Canadian DSA, and provided to the Government of Canada Contracting Authority, to ensure compliance with the security provisions, as defined by the Canadian DSA, in relation to equivalencies.

SC2 LANGUAGE REQUIREMENTS

1. Communication between Canada and the Consultant shall be in the language of choice of the Consultant Team, which shall be deemed to be the language of the Consultant’s proposal.

2. The Consultant's services during construction tender call (such as addenda preparation, tenderers' briefing meetings, technical answers to questions by bidders, including translation of bidder's questions) shall be provided expeditiously in both languages, as necessary.

3. The Consultant's services during construction shall be provided in the language of choice of the Contractor. The successful Contractor will be asked to commit to one or other of Canada's official languages upon award of the Construction Contract and, thereafter construction and contract administration services will be conducted in the language chosen by the Contractor.

4. Other required services in both of Canada's official languages (such as construction documentation) are described in detail in the Project Brief.

5. The Consultant Team, including the Prime Consultant, Sub-Consultants and Specialists Consultants shall ensure that the services being provided in either language shall be to a professional standard.

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SC3 FEDERAL CONTRACTORS PROGRAM FOR EMPLOYMENT EQUITY - DEFAULT BY THE CONSULTANT

The Consultant understands and agrees that, when an Agreement to Implement Employment Equity (AIEE) exists between the Consultant and Employment and Social Development Canada (ESDC)-Labour, the AIEE must remain valid during the entire period of the contract. If the AIEE becomes invalid, the name of the Consultant will be added to the "FCP Limited Eligibility to Bid" list. The imposition of such a sanction by ESDC will constitute the Consultant in default as per the terms of the contract.

AGREEMENT PARTICULARS

The Agreement Particulars will be issued at time of award of contract and will identify the fee to be paid to the Consultant for the services determined in the Price Proposal Form.

APPENDIX A - TEAM IDENTIFICATION FORMAT

For details on this format, please see SRE in the Request For Proposal.

The prime consultant and other members of the Consultant Team shall be licensed in the province of Ontario, or eligible to be, licensed, certified or otherwise authorized to provide the necessary professional services to the full extent that may be required by provincial or territorial law.

I. Prime Consultant (Proponent - Architect):

Firm or Joint Venture Name: .....
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Key Individuals and provincial professional licensing status and/or professional accreditation:
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II. Key Sub Consultants / Specialists:

Conservation Architect

Firm Name: .....
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Key Individuals and provincial professional licensing status and/or professional accreditation:
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APPENDIX A - TEAM IDENTIFICATION FORMAT (CONT'D)

Structural Engineer (with Heritage Building Conservation specialty)

Firm Name: .....
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Key Individuals and provincial professional licensing status and/or professional accreditation:
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Mechanical Engineer

Firm Name: .....
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Key Individuals and provincial professional licensing status and/or professional accreditation:
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Electrical Engineer

Firm Name: .....
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Key Individuals and provincial professional licensing status and/or professional accreditation:
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APPENDIX A - TEAM IDENTIFICATION FORMAT (CONT'D)

Security Specialist

Firm Name: .....
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Key Individuals and provincial professional licensing status and/or professional accreditation:
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Information Technology Specialist

Firm Name: .....
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Key Individuals and provincial professional licensing status and/or professional accreditation:
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Interior Designer

Firm Name: .....
.....
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Key Individuals and provincial professional licensing status and/or professional accreditation:
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APPENDIX B - DECLARATION/CERTIFICATIONS FORM

Project Title:

Name of Proponent:

Street Address: **Mailing Address:**

Proponent's Proposed Site or premises Requiring Safeguard Measures (refer to SI6 Security Requirement):

Address:

_____

Street Number / Street Name, Unit / Suite / Apartment Number

_____

City, Province, Territory

_____

Postal Code

Telephone Number: ( )

Fax Number: ( )

E-Mail:

Procurement Business Number:

Type of Organization:	**Size of Organization:**
_____ Sole Proprietorship _____ Partnership _____ Corporation _____ Joint Venture	Number of Employees _____ Graduate Architects / Professional Engineers _____ Other Professionals _____ Technical Support _____ Other _____

APPENDIX B - DECLARATION/CERTIFICATIONS FORM (CONT'D)

Federal Contractors Program for Employment Equity - Certification

I, the Proponent, by submitting the present information to the Contracting Authority, certify that the information provided is true as of the date indicated below. The certifications provided to Canada are subject to verification at all times. I understand that Canada will declare a proposal non-responsive, or will declare a consultant in default, if a certification is found to be untrue, whether during the proposal evaluation period or during the contract period. Canada will have the right to ask for additional information to verify the Proponent's certifications. Failure to comply with any request or requirement imposed by Canada may render the proposal non-responsive or constitute a default under the contract.

For further information on the Federal Contractors Program for Employment Equity visit Employment and Social Development Canada (ESDC)-Labour's website.

Date:_____(YY/MM/DD) (If left blank, the date will be deemed to be the bid closing date.)

Complete both A and B.

A. Check only one of the following:

( ) A1. The Proponent certifies having no work force in Canada.

( ) A2. The Proponent certifies being a public sector employer.

( ) A3. The Proponent certifies being a federally regulated employer being subject to the *Employment Equity Act*.

( ) A4. The Proponent certifies having a combined work force in Canada of less than 100 permanent full-time and/or permanent part-time employees.

A5. The Proponent has a combined work force in Canada of 100 or more employees; and

APPENDIX B - DECLARATION/CERTIFICATIONS FORM (CONT'D)

( ) A5.1. The Proponent certifies already having a valid and current Agreement to Implement Employment Equity (AIEE) in place with ESDC-Labour.

OR

( ) A5.2. The Proponent certifies having submitted the Agreement to Implement Employment Equity (LAB1168) to ESDC-Labour. As this is a condition to contract award, proceed to completing the form Agreement to Implement Employment Equity (LAB1168), duly signing it, and transmit it to ESDC-Labour.

B. Check only one of the following:

( ) B1. The Proponent is not a Joint Venture.

OR

( ) B2. The Proponent is a Joint Venture and each member of the Joint Venture must provide the Contracting Authority with a completed Federal Contractors Program for Employment Equity - Certification. (Refer to the Joint Venture section of the General Instructions)

APPENDIX B - DECLARATION/CERTIFICATIONS FORM (CONT'D)

Former Public Servant (FPS) - Certification

Contracts awarded to former public servants (FPS) in receipt of a pension or of a lump sum payment must bear the closest public scrutiny, and reflect fairness in the spending of public funds. In order to comply with Treasury Board policies and directives on contracts awarded to FPS, proponents must provide the information required below before contract award. If the answer to the questions and, as applicable the information required have not been received by the time the evaluation of proposals is completed, Canada will inform the Proponent of a time frame within which to provide the information. Failure to comply with Canada's request and meet the requirement within the prescribed time frame will render the proposal non-responsive.

Definitions

For the purposes of this clause,

"former public servant" is any former member of a department as defined in the *Financial Administration Act*, R.S., 1985, c. F-11, a former member of the Canadian Armed Forces or a former member of the Royal Canadian Mounted Police. A former public servant may be:

(a) an individual;
(b) an individual who has incorporated;
(c) a partnership made of former public servants; or
(d) a sole proprietorship or entity where the affected individual has a controlling or major interest in the entity.

"lump sum payment period" means the period measured in weeks of salary, for which payment has been made to facilitate the transition to retirement or to other employment as a result of the implementation of various programs to reduce the size of the Public Service. The lump sum payment period does not include the period of severance pay, which is measured in a like manner.

"pension" means a pension or annual allowance paid under the *Public Service Superannuation Act* (PSSA), R.S., 1985, c.P-36, and any increases paid pursuant to the *Supplementary Retirement Benefits Act*, R.S., 1985, c.S-24 as it affects the PSSA. It does not include pensions payable pursuant to the *Canadian Forces Superannuation Act*, R.S., 1985, c.C-17, the *Defence Services Pension Continuation Act*, 1970, c.D-3, the *Royal Canadian Mounted Police Pension Continuation Act*, 1970, c.R-10, and the *Royal Canadian Mounted Police Superannuation Act*, R.S., 1985, c.R-11, the *Members of Parliament Retiring Allowances Act*, R.S., 1985, c.M-5, and that portion of pension payable to the *Canada Pension Plan Act*, R.S., 1985, c.C-8.

APPENDIX B - DECLARATION/CERTIFICATIONS FORM (CONT'D)

Former Public Servant in Receipt of a Pension

As per the above definitions, is the Proponent a FPS in receipt of a pension?
YES ( ) NO ( )

If so, the Proponent must provide the following information, for all FPS in receipt of a pension, as applicable:

(a) name of former public servant;
(b) date of termination of employment or retirement from the Public Service.

By providing this information, proponents agree that the successful Proponent's status, with respect to being a former public servant in receipt of a pension, will be reported on departmental websites as part of the published proactive disclosure reports in accordance with Contracting Policy Notice: 2012-2 and the Guidelines on the Proactive Disclosure of Contracts.

Work Force Adjustment Directive

Is the Proponent a FPS who received a lump sum payment pursuant to the terms of a work force reduction program? YES ( ) NO ( )

If so, the Proponent must provide the following information:

(a) name of former public servant;
(b) conditions of the lump sum payment incentive;
(c) date of termination of employment;
(d) amount of lump sum payment;
(e) rate of pay on which lump sum payment is based;
(f) period of lump sum payment including start date, end date and number of weeks;
(g) number and amount (professional fees) of other contracts subject to the restrictions of a work force adjustment program.

For all contracts awarded during the lump sum payment period, the total amount of fees that may be paid to a FPS who received a lump sum payment is $5,000, including Applicable Taxes.

APPENDIX B - DECLARATION/CERTIFICATIONS FORM (CONT'D)

Name of Proponent:

DECLARATION:
I, the undersigned, being a principal of the proponent, hereby certify that the information given on this form and in the attached proposal is accurate to the best of my knowledge. If any proposal is submitted by a partnership or joint venture, then the following is required from each component entity.

....
name signature
.....
title
I have authority to bind the Corporation / Partnership / Sole Proprietorship / Joint Venture

....
name signature
.....
title
I have authority to bind the Corporation / Partnership / Sole Proprietorship / Joint Venture

....
name signature
.....
title
I have authority to bind the Corporation / Partnership / Sole Proprietorship / Joint Venture

During proposal evaluation period, PWGSC contact will be with the following person:_____.

Telephone Number: ( ) _____ Fax Number: ( ) _____

E-mail: _____

This Appendix "B" should be completed and submitted with the Phase One proposal, but may be submitted afterwards as follows: if Appendix "B" is not completed and submitted with the proposal, the Contracting Authority will inform the Proponent of a time frame within which to provide the information. Failure to comply with the request of the Contracting Authority and to provide the certifications within the time frame provided will render the proposal non-responsive.

APPENDIX C - PRICE PROPOSAL FORM

INSTRUCTIONS: Complete this Price Proposal Form and submit in a **separate sealed envelope** with the Name of Proponent, Name of Project, PWGSC Solicitation Number, and the words "PRICE PROPOSAL FORM" typed on the outside of the envelope. Price Proposals are not to include Applicable Taxes.

PROPONENTS SHALL NOT ALTER THIS FORM

Project Title:

Name of Proponent:

The following will form part of the evaluation process:

REQUIRED SERVICES including all related costs, services and deliverables to complete the services as specified in the Project Brief and in the RFP documents:

FIXED FEE (R1230D (2016-01-28), GC 5 - Terms of Payment – Architectural and/or Engineering Services)

SERVICES	**FIXED FEE**
RS 1 Design Management	$.....
RS 2 Pre Design	$.....
RS 3 Schematic Design	$.....
RS 4 Design Development	$.....
RS 5 Construction Documentation	$.....
RS 8 Commissioning (supporting RS1 to RS5)	$.....
RS 9 Estimating and Cost Planning (supporting RS1 to RS5)	$.....
RS 10 Project Time Planning (supporting RS1 to RS5)	$.....
RS 12 Bilingual Documents (supporting RS1 to RS5)	$.....
TOTAL FEE FOR REQUIRED SERVICES	**$..... (1)**

APPENDIX C - PRICE PROPOSAL FORM (CONT'D)

OPTIONAL REQUIRED SERVICES including all related costs, services and deliverables to complete the services as specified in the Project Brief and in the RFP documents:

FIXED FEE (R1230D (2016-01-28), GC 5 - Terms of Payment – Architectural and/or Engineering Services)

SERVICES		**FIXED FEE**
RS6	Construction Tender	$.....
RS7	Construction and Contract Administration	$.....
RS8	Commissioning (supporting RS6 to RS7)	$.....
RS9	Estimating and Cost Planning (supporting RS6 to RS8)	$.....
RS10	Project Time Planning (supporting RS6 to RS8)	$.....
RS12	Bilingual Documents	$.....
MAXIMUM FIXED FEES		**$.....(2)**

APPENDIX C - PRICE PROPOSAL FORM (CONT'D)

TIME BASED FEES (R1230D (2016-01-28), GC 5 - Terms of Payment– Architectural and/or Engineering Services)

RS 11 - Resident Site Services *	**ESTIMATED HOURS** **Column A**	**HOURLY RATES**** **Column B**	**TIME BASED FEE** **Columns AxB**
Principal Resident Site Representative. (Senior Architect) based on 40 hours per week X 180 weeks	7,200	$.....	$.....
Assistant to Principal Resident Site Representative based on 40 hours per week X 180 weeks	7,200	$.....	$.....
MAXIMUM TIME BASED FEES			$..... **(3)**

*Payment will be based on actual hours spent. Travel time and/or expenses will not be reimbursed separately (Refer to R1230D (2016-01-28), GC 5.12 – Disbursements).
** All inclusive hourly rate is applicable to both normal working hours and any other shift work as required.

TOTAL FEE FOR OPTIONAL REQUIREDSERVICES **$.....(2) + (3)**

APPENDIX C - PRICE PROPOSAL FORM (CONT'D)

ADDITIONAL SERVICES if and when required
Firm Hourly Rates* Hourly Rates to be based on the Proponents hourly rate for the Proponent's Personnel inclusive of payroll costs, overhead and profit for Additional Personnel. Payment for any additional services or personnel will be based on these hourly rates and paid on the basis of actual hours worked. See table below.

	HOURS Column 1	HOURLY RATES Column 2	Total Column 1 X Column 2
Principals			
Principal in Charge	400		$
Lead Project Architect	400		$
Lead Conservation Architect	400		$
Lead Structural Engineer	400		$
Lead Mechanical Engineer	400		$
Lead Electrical Engineer	400		$
Lead Civil Engineer	400		$
Lead Landscape Architect	400		$
Staff			
Arch Staff Senior	500		$
Arch Staff Intermediate	1000		$
Arch Staff Junior	1000		$
Building Envelop Specialist	400		$
Sustainable Design Specialist	400		$
Quality Control Specialist	400		$
Specification Writer	400		$
Site Representative and Contract Admin	1000		$
Cost Specialist	400		$
Time Specialist	400		$
Code and Life Safety Consultant	400		$
Security Consultant	400		$
Building Information Modelling Specialist	400		$
Conservation			
Senior Conservation staff	600		$
Intermediate Conservation staff	600		$
Junior Conservation staff	1000		$

APPENDIX C - PRICE PROPOSAL FORM (CONT'D)

Structural

Senior Structural Engineer	500		$
Intermediate Structural Engineer	800		$
Junior Structural Engineer	800		$
Technologist	1200		$

Mechanical

Senior Mechanical Engineer	500		$
Intermediate Mechanical Engineer	800		$
Junior Mechanical Engineer	800		$
Mechanical Technologist	1200		$
Commissioning Specialist	500		$

Electrical

Senior Electrical Engineer	500		$
Intermediate Electrical Engineer	800		$
Junior Electrical Engineer	800		$
Electrical Technologist	1200		$
Commissioning Specialist	500		$

Site/Civil

Senior Civil Engineer	800		$
Intermediate Civil Engineer	800		$
Junior Civil Engineer	1200		$
Senior Landscape Architect	400		$
Intermediate Landscape Architect	400		$
Junior Landscape Architect	800		$

Interior Design

Senior Interior Designer	300		$
Intermediate Interior Designer	600		$
Junior Interior Designer	1000		$

Information Technology

Senior Specialist	300		$
Intermediate Specialist	600		$
Junior Specialist	1000		$

TOTAL FEE FOR ADDITIONAL SERVICES **$.....(4)**

APPENDIX C - PRICE PROPOSAL FORM (CONT'D)

**The Hours in Column 1 are for bid evaluation purposes only and do not represent any hours or estimate of hours associated with the project. The quantities and categories of personnel identified in (4) above are for evaluation purposes only and shall not be interpreted to be a commitment by Canada to request the additional services of any of the personnel for any quantity of hours whatsoever. Any errors in the addition or multiplication of the amounts in the Price Proposal Form Sections (1), (2), (3), and (4) above will be corrected by Canada to obtain the Total Fee Amount. In the case of error in the extension or addition of unit prices, the unit price will govern.

APPENDIX C - PRICE PROPOSAL FORM (CONT'D)

TOTAL COST OF SERVICES FOR PROPOSAL EVALUATION PURPOSES

Total Fee for Required Services (1)		$.....
Total Fee for Optional Required Services (2) + (3)		$.....
Total Fee for Additional Services (4)	+	$.....
Total Evaluated Fee		**$.....**

APPENDIX C - PRICE PROPOSAL FORM (CONT'D)

The following will NOT form part of the evaluation process

Canada may accept or reject any of the following fees, disbursements and/or hourly rates. Canada reserves the right to negotiate on these fees, disbursements and/or hourly rates.

DISBURSEMENTS
At cost without allowance for mark-up or profit, supported by invoices/receipts - see clause R1230D (2016-01-28), GC 5 - Terms of Payment– Architectural and/or Engineering Services, section GC5.12 Disbursements:

Reproduction and delivery costs of technical documentation Additional to that specified in the Project Brief with the prior Approval and authorization of the Departmental Representative	$ 50,000
Bilingual Documents (beyond services stated in the RFP)	$ 20,000
Investigations, materials testing and inspections (refer to RS 2.3)	$150,000
Other Disbursements	$ 50,000
MAXIMUM AMOUNT FOR DISBURSEMENTS	**$270,000**

END OF PRICE PROPOSAL FORM

Doing Business with National Capital Area (Appendix D)

Public Works and Government Services Canada
Travaux publics et Services gouvernementaux Canada

Canada

Respect ◆ Integrity ◆ Excellence ◆ Leadership

Serving GOVERNMENT, Serving CANADIANS.

Doing Business with the National Capital Area (NCA)

www.pwgsc-tpsgc.gc.ca

Last updated: Apr 8, 2013

TABLE OF CONTENTS

SECTION 1 INTRODUCTION

This document must be used in conjunction with the Terms of Reference (TOR), as the two documents are complimentary. The TOR describes project-specific requirements while this document deals with information common to all projects. In case of a conflict between the two documents, the requirements of the TOR override this document.

SECTION 2 PWGSC NATIONAL CADD STANDARD

Drawings shall be in accordance with PWGSC National CADD Standards and Canadian Standards Association (CSA) B78.3.

Refer to:
http://www.tpsgc-pwgsc.gc.ca/biens-property/cdao-cadd/index-eng.html

The above link is subject to change. The Consultant shall check with the Project Manager to ensure that the link and related information are current and relevant with regards to PWGSC National CADD Standards.

SECTION 3 GUIDE TO PREPARATION OF CONSTRUCTION DOCUMENTS FOR PWGSC

1 Purpose

This document provides direction in the preparation of construction contract documents (namely specifications, drawings and addenda) for Public Works and Government Services Canada (PWGSC).

Drawings, specifications and addenda must be complete and clear, so that a contractor can prepare a bid without guesswork. Standard practice for the preparation of construction contract documents requires that:

- drawings are the graphic means of showing work to be done, as they depict shape, dimension, location, quantity of materials and relationship between building components.
- specifications are written descriptions of materials and construction processes in relation to quality, colour, pattern, performance and characteristics of materials, installation and quality of work requirements.
- Addenda are changes to the construction contract documents or tendering procedures, issued during the tendering process.

2 Principles of PWGSC Contract Documents

PWGSC's contract documents are based on common public procurement principles. PWGSC does not use Canadian Construction Document Committee (CCDC) documents.

The terms and conditions are prepared and issued by PWGSC as well as other related bidding and contractual documents. For information, the clauses are available on the following web site: **http://sacc.pwgsc.gc.ca/sacc/query-e.jsp**. Any questions should be directed to the Project Manager.

3 Quality Assurance

Consultants are required to undertake their own quality control process and must review, correct and coordinate (between disciplines) their documents before sending them to PWGSC.

SPECIFICATIONS

1 National Master Specification

The National Master Specification (NMS) is a master construction specification available in both official languages, which is divided into 48 Divisions and used for a wide range of construction and/or renovation projects. In preparing project specifications, the Consultant must use the current edition of the NMS in accordance with the “NMS User’s Guide”.

The Consultant retains overriding responsibility for content and shall edit, amend and supplement the NMS as deemed necessary to produce an appropriate project specification free from conflict and ambiguity.

2 Specification Organization

Narrowscope sections describing single units of work are preferred for more complex work, however, broadscope sections may be more suitable for less complex work. Use either the NMS 1/3 - 2/3 page format or the Construction Specifications Canada full-page format.

Start each Section on a new page and show Project Number, Section Title, Section Number and Page Number on each page. Specification date, project title, and consultant’s name are not to be indicated.

3 Terminology

Use the term "Departmental Representative" instead of Engineer, PWGSC, Owner, Consultant or Architect. "Departmental Representative" means the person designated in the Contract, or by written notice to the Contractor, to act as the Departmental Representative for the purposes of the Contract, and includes a person, designated and authorized in writing by the Departmental Representative to the Contractor.

Notations such as: "verify on site", "as instructed", “to match existing”, “example”, “equal to” or “equivalent to”, "to be determined on site by “Departmental Representative", should not be indicated in the specifications as this promotes inaccurate and inflated bids. Specifications must permit bidders to calculate all quantities and bid accurately. If quantities are impossible to identify (i.e. cracks to be repaired) give an estimated quantity for bid purposes (unit prices). Ensure that the terminology used throughout the specifications is consistent and does not contradict the applicable standard construction contract documents.

4 Dimensions

Dimensions are to be in metric only (no dual dimensioning).

5 Standards

As references in the NMS may not be up to date, it is the responsibility of the consultant to ensure that the project specification uses the latest applicable edition of all references quoted. The following is a list of some of the Internet websites which provide the most current publications of standards for reference in the construction specification document.

- CSA standards: http://www.csa.ca
- CGSB standards: http://www.pwgsc.gc.ca/cgsb
- ANSI standards: http://www.ansi.org
- ASTM Standards: http://www.astm.org
- ULC standards: http://www.ulc.ca
- General reference of standards: http://www.cssinfo.com

The NMS website (http://www.tpsgc-pwgsc.gc.ca/biens-property/ddn-nms/index-eng.html) also links to other documents references in the NMS under its "Links" feature.

6 Specifying Materials

The practice of specifying actual brand names, model numbers, etc., is against departmental policy except for special circumstances. The method of specifying materials shall be by using recognized standards such as those produced by Canadian Gas Association (CGA), Canadian General Standards Board (CGSB), Canadian Standards Association (CSA), and Underwriters' Laboratories of Canada (ULC), or by trade associations such as Canadian Roofing Contractors' Association (CRCA) and Terrazzo, Tile, Marble Association of Canada (TTMAC). Canadian standards should be used wherever possible.

If the above method cannot be used and where no standards exist, specify by a non-restrictive, non-trade name "prescription" or "performance" specifications.

In exceptional or justifiable circumstances or if no standards exist and when a suitable non-restrictive, non-trade name "prescription" or "performance" specification cannot be developed, specify by trade name. Include all known materials acceptable for the purpose intended, and in the case of equipment, identify by type and model number.

Acceptable Materials: set up the paragraph format as follows:

Acceptable Materials:

1. ABC Co. Model [_____].
2. DEF Co. Model [_____].
3. GHI Co. Model [_____].

Alternative materials to those specified may be considered during the solicitation period, however, the onus will be on the Consultant to review and evaluate all requests for approval of alternative materials.

The term "Acceptable Manufacturers" should not be used, as this restricts competition and does not ensure the actual material or product will be acceptable. A list of words and phrases that should be avoided is included in the NMS User's Guide.

Sole Sourcing: Sole sourcing for materials and work can be used for proprietary systems (ie. fire alarm systems, EMCS systems). Substantiation and/or justification will be required.

Wording for the sole source of work should be in Part 1 as:

"Designated Contractor

.1 Hire the services of [_____] to do the work of this section."

Wording for the sole source of EMCS systems should be in Part 1 as

"Designated Contractor

.1 Hire the services of [_____] or its authorized representative to complete the work of all EMCS sections."

and in Part 2 as "Materials

.1 There is an existing [_____] system presently installed in the building. All materials must be selected to ensure compatibility with the existing [_____] system.

Wording for the sole source of materials (ie. fire alarm systems) should be in Part 2 as:

"Acceptable materials

.1 The only acceptable materials are [_____] ."

Prior to including sole source materials and/or work, the Consultant should contact the Project Manager to obtain the approval for the sole sourcing.

7 Unit Prices

Unit prices are used where the quantity can only be estimated (eg. earth work) and the approval of the Project Manager must be sought in advance of their use.

Use the following wording:

> [The work for this section] or [define the specific work if required, e.g. rock excavation] will be paid based on the actual quantities measured on site and the unit prices stated in the Bid and Acceptance Form.

In each applicable NMS section, replace paragraph title "Measurement for Payment" with "Unit Prices".

Sample of Unit Price Table:

The Unit Price Table designates the Work to which a Unit Price Arrangement applies.

(a) The Price per Unit and the Estimated Total Price must be entered for each Item listed.

(b) Work included in each item is as described in the referenced specification section.

Item	Specification Reference	Class of Labour, Plant or Material	Unit of Measurement	Estimated Quantity	Price per Unit GST/HST extra	Estimated Total Price GST / HST extra
					TOTAL ESTIMATED AMOUNT **Transfer amount to subparagraph 1)(b) of BA03**	

8 Cash Allowances

Construction contract documents should be complete and contain all of the requirements for the contractual work. Cash allowances are to be used only under exceptional circumstances (ie. utility companies, municipalities), where no other method of specifying is appropriate. Obtain approval from the Project Manager in advance to include cash allowances and then use "Section 01 21 00 - Allowances" of the NMS to specify the criteria.

9 Warranties

It is the practice of PWGSC to have a 12 month warranty and to avoid extending warranties for more than 24 months. When necessary to extend beyond the 12 month warranty period provided for in the General Conditions of the contract, use the following wording in Part 1 of the applicable technical sections, under the heading "Extended Warranty":

- "For the work of this Section [_____], the 12 month warranty period is extended to 24 months.

- Where the extended warranty is intended to apply to a particular part of a specification section modify the above as follows: "For [_____] the 12 month ... [_____] months."

Delete all references to manufacturers' guarantees.

10 Scope of Work
No paragraphs noted as "Scope of Work" are to be included.

11 Summary and Section Includes in Part -1 General of Section
Do not use "Summary" and "Section Includes."

12 Related Sections
In every section of the specification at 1.1 "Related Sections": coordinate the list of related sections and appendices. Ensure co-ordination among the sections of the specification and ensure not to reference any section or appendices which do not exist.

13 Index
List all the plans and specification sections with correct number of pages, section names and correct drawing titles in the format shown in Appendix A.

14 Regional Guide
The Consultant should contact the Project Manager to obtain the region's requirements for Division 01 or other short form specifications as might be appropriate. For example, it is required in the National Capital Region that regional Section 01 00 10 - General Instructions be used on all projects.

15 Health and Safety
It is required that all project specifications include "Section 01 35 29.06 - Health and Safety Requirements." Confirm with the Project Manager to determine if there are any instructions to meet regional requirements.

16 Designated Substances Report
Include "Section 01 14 25 - Designated Substances Report"

17 Subsurface Investigation Reports
Subsurface Investigation Report(s) are to be included after Section 31 and the following paragraph should be added to Section 31:

Subsurface investigation report(s)

.1 Subsurface investigation report(s) are included in the specification following this section.

When the Project Manager determines that it is not practical to include the subsurface investigation report(s), alternate instructions will be provided.

Where tender documents are to be issued in both official languages, the subsurface investigation report(s) shall be issued in both languages.

In addition to the provision of the Subsurface Investigation Report, the foundation information required by the National Building Code of Canada 2005 (Division C, Part 2, 2.2.4.6) shall be included on foundation drawings.

18 Experience and Qualifications

Remove experience and qualification requirements from specification sections.

19 Prequalification and Pre-award submissions

Do not include in the specification any mandatory contractor and/or subcontractor prequalification or pre-award submission requirements that could become a contract award condition. If a prequalification process or a pre-award submission is required, contact the Project Manager.

There should be no references to certificates, transcripts or license numbers of a trade or subcontractor being included with the bid.

20 Contracting Issues

Specifications describe the workmanship and quality of the work. Contracting issues should not appear in the specifications. Division 00 of the NMS is not used for PWGSC projects.

Remove all references within the specifications, to the following:

- General Instructions to Bidders
- General Conditions
- CCDC documents
- Priority of documents
- Security clauses
- Terms of payment or holdback
- Tendering process
- Bonding requirements
- Insurance requirements
- Alternative and separate pricing
- Site visit (Mandatory or Optional)
- Release of Lien and deficiency holdbacks

DRAWINGS

1 Title Blocks

Use PWGSC title block for drawings and sketches (including addenda).

2 Dimensions

Dimensions are to be in metric only (no dual dimensioning).

3 Trade Names

Trade names on drawings are not acceptable. Refer to SECTION 3, SPECIFICATIONS, 6.0 Specifying Materials for specifying materials by trade name.

4 Specification Notes

No specification type notes are to appear on any drawing.

5 Terminology

Use the term "Departmental Representative" instead of Engineer, PWGSC, Owner, Consultant or Architect. "Departmental Representative" means the person designated in the Contract, or by written notice to the Contractor, to act as the Departmental Representative for the purposes of the Contract, and includes a person, designated and authorized in writing by the Departmental Representative to the Contractor.

Notations such as: "verify on site", "as instructed", “to match existing”, “example”, “equal to” or “equivalent to”, "to be determined on site by “Departmental Representative", should not be indicated in the specifications as this promotes inaccurate and inflated bids. Specifications must permit bidders to calculate all quantities and bid accurately. If quantities are impossible to identify (i.e. cracks to be repaired) give an estimated quantity for bid purposes (unit prices). Ensure that the terminology used throughout the specifications is consistent and does not contradict the applicable standard construction contract documents.

6 Information to be included

Drawings should show the quantity and configuration of the project, the dimensions and details of how it is constructed. There should be no references to future work and no any information that will be changed by future addenda. The scope of work should be clearly detailed and elements not in contract should be eliminated or kept to an absolute minimum.

7 Drawing Numbers: Number drawings in sets according to the type of drawing and the discipline involved as follows (The requirements of SECTION 2 PWGSC NATIONAL CADD STANDARD will supercede these requirements, where warranted).

During the Design Phase of the project each submission and review must be noted on the Notes block of the drawing title, but at the time of construction document preparation, all revision notes should be removed.

Discipline	Drawing
Demolition	D1, D2, etc.
Architectural	A1, A2, etc.
Civil	C1, C2, etc.
Landscaping	L1, L2, etc.
Mechanical	M1, M2, etc.
Electrical	E1, E2, etc.
Structural	S1, S2, etc.
Interior Design	ID1, ID2, etc.

8 **Presentation Requirements:** Present drawings in sets comprising the applicable demolition, architectural, structural, mechanical and electrical drawings in that order. All drawings should be of uniform standard size.

9 **Prints:** Print with black lines on white paper. Blue prints are acceptable for document submissions at 33%, 66% and 99% stages. Confirm with Project Manager the size of prints to be provided for review purposes.

10 **Binding:** Staple or otherwise bind prints into sets. Where presentations exceed 20 sheets, the drawings for each discipline may be bound separately for convenience and ease of handling.

11 **Legends:** Provide a legend of symbols, abbreviations, references, etc., on the front sheet of each set of drawings or, in large sets of drawings, immediately after the title sheet and index sheets.

12 **Schedules:** Where schedules occupy entire sheets, locate them next to the plan sheets or at the back of each set of drawings for convenient reference. *See CGSB 33-GP-7 Architectural Drawing Practices for schedule arrangements.*

13 **North Points:** On all plans include a north point. Orient all plans in the same direction for easy cross-referencing. Wherever possible, lay out plans so that the north point is at the top of the sheet.

14 **Drawing Symbols:** Follow generally accepted drawing conventions, understandable by the construction trades, and in accordance with PWGSC publications.

ADDENDA

1 Format

Prepare addenda using the format shown in Appendix B. No signature type information is to appear.

Every page of the addendum (including attachments) must be numbered consecutively. All pages must have the PWGSC project number and the appropriate addendum number. Sketches shall appear in the PWGSC format, stamped and signed.

No Consultant information (name, address, phone #, consultant project # etc.) should appear in the addendum or its attachments (except on sketches).

2 Content

Each item should refer to an existing paragraph of the specification or note/detail on the drawings. The clarification style is not acceptable.

DOCUMENTATION

Translation

When required, all documentation included in the construction contract documents shall be in both official languages.

Ensure that English and French documents are equal in all respects. There can be no statement that one version takes precedence over the other.

Consultant shall provide:

- Per construction document submission, a completed and signed Checklist for the Submission of Construction Documents. See Appendix 'A'.
- Specification: originals printed one side on 216 mm x 280 mm white bond paper.
- Index: as per Appendix 'C'
- Addenda (if required): as per Appendix 'B' (to be issued by PWGSC).
- Drawings: reproducible originals, sealed and signed by the design authority.
- Tender information:
  - Including a description of all units and estimated quantities to be included in unit price table.
  - Including a list of significant trades including costs. PWGSC will then determine which trades, if any, will be tendered through the Bid Depository.
  - Government Electronic Tendering System (MERX): Consultants to provide an electronic true copy of the final documents (specifications and drawings) on one or multiple CD-ROM in Portable Document Format (PDF) without password protection and printing restrictions. The electronic copy of drawings and specifications is for bidding purposes only and do not require to be signed and sealed. See Appendix 'D' and Appendix 'E'.

PWGSC shall provide:

- General and Special Instructions to Bidders
- Bid and Acceptance Form
- Standard Construction Contract Documents

SECTION 4 CLASSES OF CONSTRUCTION COST ESTIMATES USED BY PWGSC

DESCRIPTION OF THE CLASSES OF ESTIMATES USED BY PWGSC FOR CONSTRUCTION COSTING OF BUILDINGS PROJECTS

Class 'D' (Indicative) Estimate:

Based upon a comprehensive statement of requirements, and an outline of potential solutions, this estimate is to provide an indication of the final project cost, and allow for ranking all the options being considered.

Submit Class D cost estimates in elemental cost analysis format latest edition issued by the Canadian Institute of Quantity Surveyors with cost per m² for current industry statistical data for the appropriate building type and location. Include a summary in the cost estimate, plus full back up, showing items of work, quantities, unit prices, allowances and assumptions.

The level of accuracy of a class D cost estimate shall be such that no more than a 20% contingency allowance is required.

Class 'C' Estimate:

Based on a comprehensive list of requirements and assumptions, including a full description of the preferred schematic design option, construction/design experience, and market conditions. This estimate must be sufficient for making the correct investment decision.

Submit Class C cost estimates in elemental cost analysis format latest edition issued by the Canadian Institute of Quantity Surveyors with cost per m² for current industry statistical data for the appropriate building type and location. Include a summary in the cost estimate, plus full back up, showing items of work, quantities, unit prices, allowances and assumptions.

The level of accuracy of a class C cost estimate shall be such that no more than a 15% contingency allowance is required.

Class 'B' (Substantive) Estimate:

Based on design development drawings and outline specifications, which include the design of all major systems and subsystems, as well as the results of all site/installation investigations. This estimate must provide for the establishment of realistic cost objectives and be sufficient to obtain effective project approval.

Submit Class B cost estimates in elemental cost analysis format latest edition issued by the Canadian Institute of Quantity Surveyors. Include a summary in the cost estimate, plus full back up, showing items of work, quantities, unit prices, allowances and assumptions.

The level of accuracy of a class B cost estimate shall be such that no more than a 10% design contingency allowance is required.

Class 'A' (Pre-Tender) Estimate:

Based on completed construction drawings and specifications prepared prior to calling competitive tenders. This estimate must be sufficient to allow a detailed reconciliation/negotiation with any contractor's tender.

Submit Class A cost estimates in both elemental cost analysis format and trade divisional format latest edition issued by the Canadian Institute of Quantity Surveyors. Include a summary in the cost estimate, plus full back up, showing items of work, quantities, unit prices, allowances and assumptions.

The level of accuracy of a class A cost estimate shall be such that no more than a 5% design contingency allowance is required.

SECTION 5 TIME MANAGEMENT

1 Time Management, Planning, and Control

The Time Management, Planning, and Control Specialist (scheduler) shall provide a Project Planning and Control System (Control System) for Planning, Scheduling, Progress Monitoring and Reporting and a Time Management, Planning, and Control Report (Progress Report). It is required that a fully qualified and experienced Scheduler play a major role in providing services in the development and monitoring of the project schedule.

The scheduler will follow good industry practices for schedule development and maintenance as recognized by the Project Management Institute (PMI).

PWGSC presently utilizes the Primavera Suite software and MicroSoft Project for it's current Control Systems and any software used by the consultant should be fully integrated with these, using one of the many commercially available software packages.

1.1 Schedule Design

Project Schedules are used as a guide for execution of the project as well as to communicate to the project team when activities are to happen, based on network techniques using Critical Path Method (CPM).

When building a Control System you must consider:

1. The level of detail required for control and reporting;
2. The reporting cycle- monthly and what is identified in the Terms of Reference, but also includes Exception Reports;
3. That the duration must be in days;
4. What is required for reporting in the Project Teams Communications Plan and
5. The nomenclature and coding structure for naming and reporting requirements of activities, schedules and reports.

1.2 Schedule Development

For purposes of monitoring and reporting of project progress and ease of schedule review it is important to maintain a standard for all schedules and reports starting with the Work Breakdown Structure (WBS), identification of Milestones, naming of activities as well as schedule outputs and paper sizing and orientation.

Work Breakdown Structure

When developing the schedule the consultant needs to use PWGSC standards and practices. Two basic requirements are the National Project Management System

(NPMS) and a Work Breakdown Structure (WBS), structured supporting the NPMS (Levels 1-4).

The WBS is as follows:

- Level 1 Project Title (NPMS)
- Level 2 Project Stage (NPMS)
- Level 3 Project Phase (NPMS)
- Level 4 Processes to meet Deliverables/Control Points Milestones (NPMS)
- Level 5 Sub-Processes and Deliverables in support of Level 4
- Level 6 Discrete activities. (Work Package)

Not all the Stages, Phases and Processes in the NPMS will be required on all the projects, however the structure remains the same.

Major and Minor Milestones

The Major Milestones are standard Deliverables and Control Points within NPMS and are required in all schedule development. These Milestones will be used in Management Reporting within PWGSC as well as used for monitoring project progress using Variance Analysis. The Minor milestones are process deliverables (Level 4) or sub-process deliverables (level 5) also used in Variance Analysis.

Each Milestone will also be assigned appropriate coding for Status Reporting and Management Reporting.

Milestones must have zero duration and are used for measuring project progress.

Milestones may also be external constraints such as the completion of an activity, exterior to the project, affecting the project.

Activities

All activities will need to be developed based on Project Objectives, Project Scope , Major and Minor Milestones, meetings with the project team and the scheduler's full understanding of the project and it's processes.

Subdivide the elements down into smaller more manageable pieces that organize and define the total scope of work in Levels 5-6 that can be scheduled, costed, monitored and controlled. This process will develop the Activity List for the project.

Each activity is a discrete element of work and is the responsibility of one person to perform.

Each activity will describe the work to be performed using a verb and noun combination (i.e. Review Design Development Report).

Activities should not have durations longer that 2 update cycles, with exception of activities not yet defined in a "Rolling Wave".

Each activity will be assigned at WBS level 6 and appropriately coded for Status Reporting and Management Reporting.

These elements will become activities, interdependently linked in Project Schedules.

Project Logic

Once the WBS, Milestones and Activity List have been developed the activities and milestones can be linked in a logical manner starting with a Project Start Milestone. Every activity and milestone must be linked in a logical manner using either a Finish to Start (FS), Finish to Finish (FF), Start to Start (SS) or Start to Finish (SF) relationship. There can be no open-ended activities or milestones.

A Finish to Start (FS) is the preferred relationship.

When developing relationships avoid the use of lags and constraints in place of activities and logic.

Activity Duration

The activity duration (in days) is the estimated length of time it will take to accomplish a task.

Consideration needs to be taken in how many resources are needed and are available, to accomplish any activity. (Example: availability of Framers during a “Housing Boom”.) Other factors are the type or skill level of the available resources, available hours of work, weather etc.

There will be several types of lists and schedules produced from this process, which will form part of the Progress Report.

Activity List

An Activity List identifies all activities including milestones required to complete the whole project.

Milestone List

A Milestone List identifies all project Major and Minor milestones.

Master Schedule

A Master Schedule is a schedule used for reporting to management at WBS level 4 and 5 that identifies the major activities and milestones derived from the detailed schedule. Cash Flow projections can be assigned at WBS level 5 for monitoring the Spending Plan.

Detailed Project Schedule

A Detailed Project Schedule is a schedule in reasonable detail (down to WBS Level 6 and 7) for progress monitoring and control, this will ensure that the schedule shall be in sufficient detail to ensure adequate planning and control.

1.3 Schedule Review and Approval

Once the scheduler has identified and properly coded all the activities; put them into a logical order and then determined the appropriate durations. The scheduler can then analyze the schedule to see if the milestone dates meet the contractual requirements and then adjust the schedule accordingly by changing durations, resource leveling or changing logic.

When the schedule has been satisfactorily prepared the scheduler can present the detailed schedule to the Project Team for approval and be Baselined. There may be several iterations before the schedule meets with the Project Teams agreement and the contractual requirements.

The final agreed version must be copied and saved as the Baseline to monitor variances for reporting purposes.

1.4 Schedule Monitoring and Control

Once Baselined the schedule can be better monitored, controlled and reports can be produced.

Monitoring is performed by, comparing the baseline activities % complete and milestone dates to the actual and forecast dates to identify the variance and record any potential delays, outstanding issues and concerns and provide options for dealing with any serious planning and scheduling issues in report form.

Analyze and report from early start sequence on all activities due to start, underway, or finished for the complete project.

Thee will be several reports generated from the analysis of the baseline schedule and will form part of the Time Management Report in the Required Services Sections (RS)

Progress Reports

A Progress Report reflects the progress of each activity to the date of the report, any logic changes, both historic and planned, projections of progress and completion the actual start and finish dates of all activities being monitored.

The Progress Report includes:

A Narrative Report, detailing the work performed to date, comparing work progress to planned, and presenting current forecasts. This report should summarize the progress to date, explaining current and possible deviations and delays and the required actions to resolve delays and problems with respect to the Detail Schedule, and Critical Paths.

Narrative reporting begins with a statement on the general status of the project followed by a summarization of delays, potential problems and project status criticality, any

potential delays, outstanding issues and concerns and options for dealing with any serious planning and scheduling issues.

A Variance Report, with supporting schedule documentation, detailing the work performed to date, comparing work progress to planned. This report should summarize the progress to date, explaining all causes of deviations and delays and the required actions to resolve delays and problems with respect to the Detail Schedule, and Critical Paths.

A Criticality Report identifying all activities and milestones with negative, zero and up to five days Total Float used as a first sort for ready identification of the critical, or near critical paths through the entire project.

Included in the Progress Report as attachments are: WBS chart, Activity Lists, Milestone Lists, Master Schedules, Detailed Project Schedule

Exception Report

The Scheduler is to provide continuous monitoring and control, timely identification and early warning of all unforeseen or critical issues that affect or potentially affect the project.

If unforeseen or critical issues arise, the Scheduler will advise the Project Manager and submit proposed alternative solutions in the form of an Exception Report.

An Exception Report will include sufficient description and detail to clearly identify:

1. Scope Change: Identifying the nature, reason and total impact of all identified and potential project scope changes affecting the project.
2. Delays and accelerations: Identifying the nature, the reason and the total impact of all identified and potential duration variations.
3. Options Enabling a Return to the project baseline: Identifying the nature and potential effects of all identified options proposed to return the project within baselined duration.

1.5 Standard Submissions

At each submission or deliverable stage provide a complete and updated Progress Report, the contents of each report will vary with requirements and at each project phase. Typically a Progress Report has:

1. Executive Summary;
2. Narrative Report;
3. Variances Report;
4. Criticality Report;
5. Exception Report (as required)
6. Work Breakdown Structure Chart;
7. Activity List;
8. Milestone List;
9. Master Schedule with Cash Flow Projections;
10. Detail Project Schedule (Network Diagram or Bar Charts);

1.6 Schedule Outputs and Reporting Formats

The sheet sizing and orientation is more a suggestion that a role, changes to the paper format may vary to accommodate the information and column information required.

Progress Reports

Paper Size: Letter

Paper Format: Portrait

Title Format: Project Title; Report Type; Print Date; Data Date; Revision Block

Body Text: Narratives for each report to match other reports generated in the D.S.S.

Variance Report Columns: Activity ID, Activity Name, Planned Finish, Revised Finish, Variance, Activity % Complete,

Criticality Report Columns: Activity ID, Activity Name, Duration, Start, Finish, Activity % Complete, Total Float.

Exception Reports

Paper Size: Letter
Paper Format: Portrait
Title Format: Project Title; Report Type; Print Date; Data Date; Revision
Body Text: Narrative to match other reports generated in the D.S.S.

Paper Size: Letter
Paper Format: Landscape
Title Format: Project Title; Report Type; Print Date; Data Date; Revision
Columns: Activity ID, Activity Name, Duration, Remaining Duration, Start, Finish, Total Float.
<u>Work Breakdown Structure (indent tree):</u>

Paper Size: Letter
Paper Format: Portrait
Columns: WBS Code, WBS Name, Duration, Cost estimate, start and finish dates.
Footer Format: Project Title; Report Type; Print Date; Data Date; Revision Block

Activity Lists

Paper Size: Letter
Paper Format: Portrait
Columns: Activity ID, Activity Name, Start, Finish, Predecessor, Successor.
Footer Format: Project Title; Report Type; Print Date; Data Date; Revision Block

Sort with Early Start, then Early Finish, then Activity ID and with the WBS.

Milestone Lists

Paper Size: Letter
Paper Format: Portrait

Footer Format: Project Title; Report Type; Print Date; Data Date; Revision Block
Columns: Activity ID, Activity Name, Start, Finish.

Sort with Early Start, then Early Finish, then Activity ID and without the WBS.

Master Schedule (Bar Chart)

Paper Size: 11X17
Paper Format: Landscape
Footer Format: Project Title; Report Type; Print Date; Data Date; Revision Block
Columns: Activity ID, Activity Name, Duration, Activity % Complete, Start, Finish, Total Float.

Sort with Early Start, then Early Finish, then Activity ID and with the WBS.

Detailed Project Schedules (Bar Chart)

Paper Size: 11X17
Paper Format: Landscape
Footer Format: Project Title; Report Type; Print Date; Data Date; Revision Block
Columns: Activity ID, Activity Name, Duration, Activity % Complete, Start, Finish, Total Float.

Sort with Early Start, then Early Finish, then Activity ID and with the WBS.

APPENDIX 'A' - Checklist for the Submission of Construction Documents to PWGSC

Last updated November 21, 2012

Date:	
Project Title:	**Project Location:**
Project Number:	**Contract Number:**
Consultant's Name:	**PWGSC Project Manager:**
Review Stage: 66% 99% 100%	

Item	Verified by:	Comments:	Action by:
Specifications:			
1 National Master Specifications			
1a The current edition of the NMS has been used.			
1b Sections have been included for all work identified on drawings and sections edited.			
2 Specification Organization			
2a Either the NMS 1/3 - 2/3 page format or the Construction Specifications Canada full page format is used.			
2b Each Section starts on a new page and the Project Number, Section Title, Section Number and Page Number show on each page.			
2c Specification date and consultant's name are not indicated.			
3 Terminology			
3a The term Departmental Representative is used instead of Engineer, PWGSC, Owner, Consultant or Architect.			
3b Notations such as: "verify on site", "as instructed", "to match existing", "example", "equal to", "equivalent to" and "to be determined on site by" are not used.			
4 Dimensions			
4a Dimensions are provided in metric only.			
5 Standards			
5a The latest edition of all references quoted is used.			

6 Specifications Materials			
6a The method of specifying materials uses recognized standards. Actual brand names and model numbers are not specified.			
6b Materials are specified using standards and performance criteria (if not, the correct form of acceptable materials has been used).			
6c Identify if non-restrictive, non-trade name “prescription” or “performance” specifications are used.			
6d Indicate if a list of acceptable materials have been used.			
6e The term “Acceptable Manufacturers” is not used.			
6f No sole sourcing has been used.			
6g If sole sourcing has been used, the correct wording has been used and a justification provided to RPCD for the sole sourced products.			
7 Unit Prices			
7a Unit prices are used only for work that is difficult to estimate.			
8 Cash Allowances			
8a Indicate if cash allowances have been used.			
9 Warranties			
9a Indicate if warranties extend more than a 12 or 24 months period.			
9b Manufacturers guarantees are not indicated.			
10 Scope of Work			
10 No paragraphs noted as “Scope of Work” are included.			
11 Summary and Section Includes			
11a In part 1 of section, paragraphs “Summary” and “Section Includes” are not used.			
12 Related Sections			
12a The list of related sections and appendices are coordinated.			
13 Index			
13a The index shows a complete list of plans and specification sections with the correct number of pages and correct drawing titles and section names.			
14 Regional Guide Specifications			
14a General Instructions is included (Section 01 00 10 in the NCA).			

15 Health and Safety			
15a Section 01 35 29.06 - Health and Safety Requirements is included.			
16 Designated Substances Report			
16 a Section 01 14 25 - Designated Substances Report is included.			
***17* Subsurface Investigation Reports**			
17a Subsurface Investigation Reports are included in Division 31.			
18 Experience and qualifications			
18a Experience and qualification requirements do not appear in the specification sections			
19 Pre-qualifications			
19a There are no mandatory contractor and/or subcontractor pre-qualification requirements or references to certificates, transcripts or license numbers of a trade or subcontractor being included in the bid.			
20 Contracting Issues			
20a Contracting issues do not appear in the specifications.			
20b Division 00 of the NMS is not used.			
21 Quality Issues			
21a There are no specification clauses with square brackets "[ ]" or lines "__" indicating that the document is incomplete or missing information.			

Item	**Verified by:**	**Comments:**	**Action By:**
Drawings:			
1 Title Blocks			
1a The PWGSC title block is used.			
2 Dimensions			
2a Dimensions are provided in metric only.			
3 Trade Names			
3a Trade names are not used.			
4 Specification Notes			
4a There is no specification type notes.			
5 Terminology			
5a The term Departmental Representative is used instead of Engineer, PWGSC, Owner,			

Consultant or Architect.			
5b Notations such as: “verify on site”, “as instructed”, “to match existing”, “example”, “equal to”, “equivalent to” and “to be determined on site by” are not used.			
6 Information to be included			
6a Architectural and Engineering Drawings have been stamped and signed by the design authority.			
6b The project quantity and configuration, dimensions and construction details are included.			
6c References to future work and elements not in contract do not appear or are kept to an absolute minimum and clearly marked.			

I confirm that the plans and specifications have been thoroughly reviewed and that the items listed above have been addressed or incorporated. I acknowledge and accept that by signing, I am certifying that all items noted above have been addressed.

Consultant's Representative: _____

Firm name: _____

Signature:_____ Date: _____

APPENDIX 'B' - Sample of Addendum

Last updated April 22, 2008

ADDENDUM No. _____

Project Number: _____

The following changes in the bid documents are effective immediately. This addendum will form part of the contract documents

DRAWINGS

SPEC NOTE: indicate drawing number and title, then list changes or indicate revision number and date, and re-issue drawing with addendum.

1 A1 Architectural

.1

SPECIFICATIONS

SPEC NOTE: indicate section number and title.

1 Section 01 00 10 - General Instructions

SPEC NOTE: list all changes (i.e. delete, add or change) by article or paragraph

.1 Delete article (xx) entirely.
.2 Refer to paragraph (xx.x) and change ...

2 Section 23 05 00 - Common Work Results - Mechanical

.1 Add new article (x) as follows:

APPENDIX 'C' - Sample of Index

Last updated April 22, 2008

Project No: _____

Index
Page 1 of ___

DRAWINGS AND SPECIFICATIONS

DRAWINGS:

SPEC NOTE: List all Drawings by number and title.

C-1	Civil
L-1	Landscaping
A-1	Architectural
S-1	Structural
M-1	Mechanical
E-1	Electrical

SPECIFICATIONS:

SPEC NOTE: List all Divisions, Sections (by number and title) and number of pages.

DIVISION	SECTION	NO. OF PAGES
DIVISION 01	01 00 10 - General Instructions.....	xx
	01 14 25 - Designated Substances Report.....	xx
	01 35 30 - Health and Safety.....	xx
DIVISION 23	23 xx xx	
DIVISION 26	26 xx xx	

APPENDIX 'D'

USER MANUAL ON DIRECTORY STRUCTURE AND NAMING CONVENTION STANDARDS FOR CONSTRUCTION TENDER DOCUMENTS ON CD ROM

Issued by:

Real Property Contracting Directorate

PWGSC

May 2005

Last Updated: June 3, 2008

Version 1.0

PREFACE

The Government of Canada (GoC) has committed to move towards an electronic environment for the majority of the services it offers. This covers the advertisement and distribution of contract opportunities, including construction solicitations. As a result, it is necessary to obtain a copy of construction drawings and specifications (in PDF format ***without*** password protection) on one or multiple CD-ROM to facilitate for the GoC the transfer of the construction drawings and specifications electronically to the Government Electronic Tendering System (GETS).

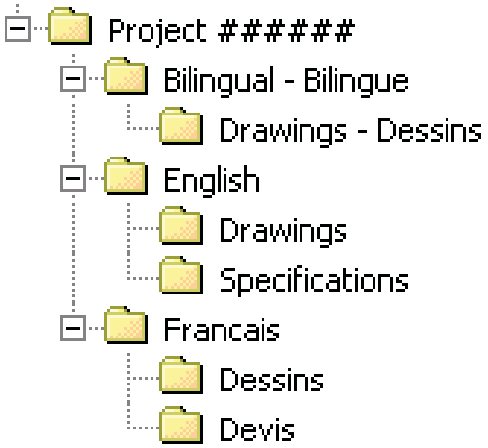
There is therefore a need to adopt a common directory structure and file-naming convention to ensure that the information made available to contractors electronically and in hard (printed) copy is in accordance with the sequence adopted in the real property industries, both for design and construction. This manual defines the standard to be followed by both consultants and print shops at time of formatting and organizing the information, whether drawings and specifications are created by scanning print documents or saved as PDF files from the native software (AutoCAD, NMS Edit, MS-Word, etc…) in which these were created.

It is important to note that the procedure described in this manual is not an indication that consultants are relieved from following the established standards for the production of drawings and specifications. The sole purpose of this manual is to provide a standard for the organization and naming of the electronic files that will be recorded on CD-ROM.

1. DIRECTORY STRUCTURE

1.1 1st, 2nd and 3rd Tier Sub-Folders

Each CD-ROM, whether it is for the original solicitation (tender call) or for an amendment (addendum), must have the applicable elements of the following high-level Directory Structure created:



The following important points are to be noted about the Directory Structure:

- The "*Project ######*" folder is considered the 1st Tier of the Directory Structure where ###### represents each digit of the Project Number. The Project Number must always be used to name the 1st Tier folder and it is always required. Free text can be added following the Project Number, to include such things as a brief description or the project title;

- The "*Bilingual - Bilingue*", "*English*" and "*Français*" folders are considered the 2nd Tier of the Directory Structure. The folders of the 2nd Tier **cannot** be given any other names since GETS uses these names for validation purposes. At least one of the "*Bilingual - Bilingue*", "*English*" and "*Français*" folders is always required, and these must always have one of the applicable sub-folders of the 3rd Tier;

- The "*Drawings - Dessins*", "*Drawings*", "*Specifications*", "*Dessins*" and "*Devis*" folders are considered the 3rd Tier of the Directory Structure. The folders of the 3rd Tier **cannot** be given any other names since GETS also uses these names for validation purposes. There must be always at least one of the applicable 3rd Tier folder in each document.

IMPORTANT:	The applicable elements of the Directory Structure (1st, 2nd and 3rd Tier folders) are always required and cannot be modified.

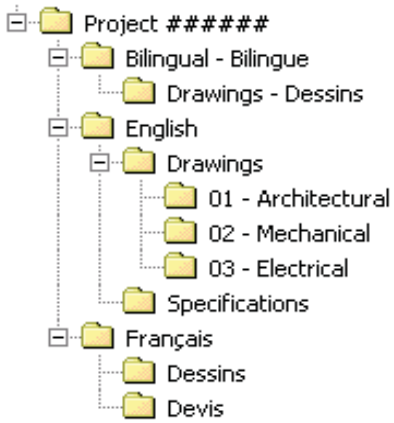
1.2 4th Tier Sub-Folders for Drawings

The "*Drawings – Dessins*", "*Drawings*" and "*Dessins*" folders must have 4th Tier sub-folders created to reflect the various disciplines of the set of drawings.

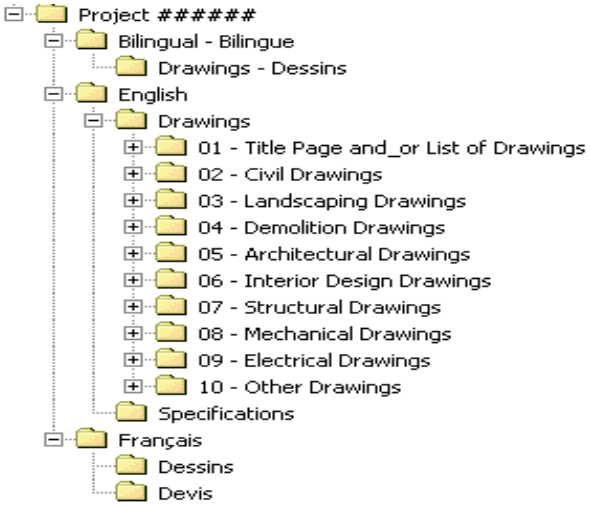
Because the order of appearance of the sub-folders on the screen will also determine the order of printing, it is necessary to start with a number the identification name of the sub-folders in the "*Drawings – Dessins*", "*Drawings*" and "*Dessins*" folders.

Note: The first sub-folder must be always reserved for the Title Page and/or the List of Drawings unless the first drawing of the set is an actual numbered discipline drawing.

Examples of 4th Tier sub-folders for drawings:



or



1.2.1 Naming Convention

The 4th Tier sub-folders for drawings must adhere to the following standard naming convention.

For the "*Drawings*" and "*Dessins*" folders:

- Y

Where:

= A two digit number ranging from 01 to 99 (leading zeros must be included)

Y = The title of the folder

Example: 03 – Mechanical

For the "*Drawings - Dessins*" folder:

- Y - Z

Where:

= A two digit number ranging from 01 to 99 (leading zeros must be included)

Y = The English title of the folder

Z = The French title of the folder

Example: 04 - Electrical - Électricité

It should be noted that the numbering of the 4th Tier sub-folders is for sorting purposes only and is not tied to a specific discipline. For example, "*Architectural*" could be numbered 05 for a project where there is four other disciplines before "*Architectural*" in the set of drawings or 01 in another project where it's the first discipline appearing in the set.

It is essential to ensure that the order of the drawings on the CD-ROM be exactly the same as in the hard copy set. GETS will sort each drawing for both screen display and printing as per the following rules:

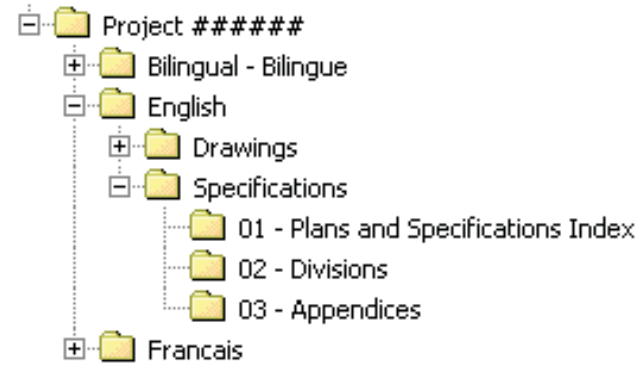
- The alphanumerical sorting is done on an ascending order;
- The alphanumerical order of the sub-folders determines the order of appearance on the screen as well as the order of printing (as an example: all the drawing PDF files in the 01 sub-folder will be printed in alphanumerical order before the drawings in the 02 sub-folder etc…);
- Each drawing PDF file within each sub-folder will also be sorted alphanumerically. This will determine the order of appearance on the screen as well as the order of printing (i.e. Drawing A001 will be printed before Drawing A002, Drawing M02 before Drawing M03, etc…).

1.3 4th Tier Sub-Folders for Specifications

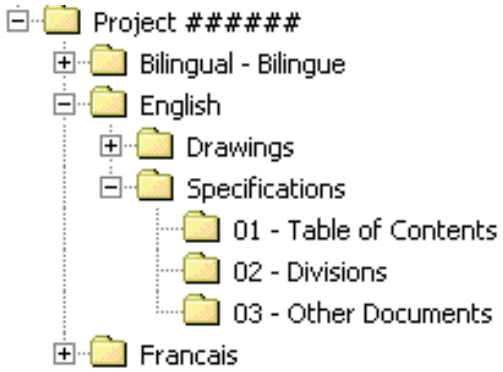
The "*Specifications*" and "*Devis*" folders must have 4th Tier sub-folders created to reflect the various elements of the specifications.

Because the order of appearance of the sub-folders on the screen will also determine the order of printing, it is necessary to start with a number the identification name of the sub-folders in the "*Specifications*" and "*Devis*" folders.

Examples of 4th Tier sub-folders for specifications:



or



1.3.1 Naming Convention

The 4th Tier sub-folders for specifications must adhere to the following standard naming convention.

For the "*Specifications*" and "*Devis*" folders:

- Y

Where:

## =	A two digit number ranging from 01 to 99 (leading zeros must be included)
Y =	The title of the folder

Example: 02 – Divisions

It should be noted that the numbering of the 4th Tier sub-folders is for sorting purposes only and is not tied to an element of the specifications.

It is essential to ensure that the order of the elements of the specifications on the CD-ROM be exactly the same as in the hard copy. GETS will sort each element of the specifications for both

screen display and printing as per the following rules:

- The alphanumerical sorting is done on an ascending order;
- The alphanumerical order of the sub-folders determines the order of appearance on the screen as well as the order of printing (as an example: all the specifications PDF files in the 01 sub-folder will be printed, in alphanumerical order before the PDF files in the 02 sub-folder, etc…);
- Each specifications PDF file within each sub-folder will also be sorted alphanumerically. This will determine the order of appearance on the screen as well as the order of printing (i.e. Division 01 will be printed before Division 02, 01 - Appendix A before 02 - Appendix B, etc…).

2. NAMING CONVENTION FOR PDF FILES

Each drawing, specifications division or other document that are part of the tender documents must be converted in PDF format (without password protection) in accordance with the following standard naming convention and each PDF file must be located in the appropriate sub-folder of the Directory Structure.

2.1 Drawings

Each drawing must be a **separate single page** PDF file. The naming convention of each drawing must be:

X### - Y

Where:

X =	The letter or letters from the drawing title block ("*A*" for Architectural or "*ID*" for Interior Design for example) associated with the discipline
### =	The drawing number from the drawing title block (one to three digits)
Y =	**The drawing name from the drawing title block (for bilingual drawings, the name in both English and French is to appear)**
Example:	A001 - First Floor Details

Each drawing that will be located in the appropriate discipline 4th Tier sub-folders must be named with the same letter ("*A*" for Architectural Drawings for example) and be numbered. The drawing number used to name the PDF file must match as much as possible the drawing number of the actual drawing (the exception being when leading zeros are required).
The following important points about drawings are to be noted:

- The drawing PDF files within each sub-folder are sorted alphanumerically for both displaying and printing. If there are more than 9 drawings in a particular discipline the numbering must use at least two numerical digits (i.e. A01 instead of A1) in order to avoid displaying drawing A10 between A1 and A2. The same rule applies when there are more than 99 drawings per discipline i.e. three digits instead of two must be used for the numbering (for example M003 instead of M03);

- If drawing PDF files are included in the "*Bilingual - Bilingue*" folder, these cannot be included as well in the "*English*" and/or "*Français*" folders;

- If drawings not associated with a particular discipline are not numbered (Title Page or List of Drawings for example), these will be sorted alphabetically. While this does not represent a problem if there is only one drawing in the sub-folder, it could disrupt the order when there are two or more drawings. If the alphabetical order of the drawings name does not represent the order on the hard copy set, the drawings are to be named as per the following standard convention when converted in PDF format to ensure proper display and printing order.

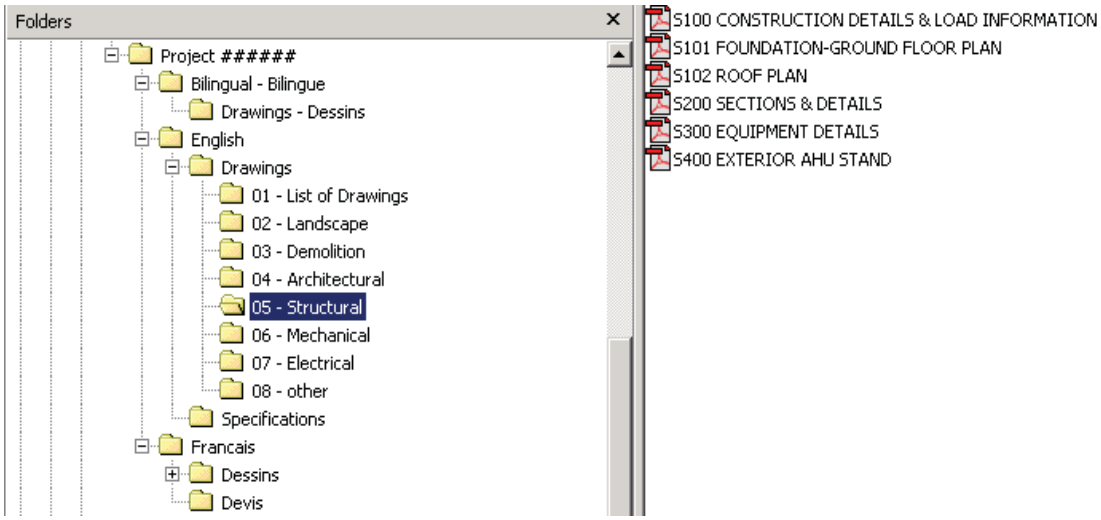
  ## - Y

  Where:

## =	A two digit number ranging from 01 to 99 (leading zeros must be included)
Y =	The name of the drawing
Example:	01 - Title Page 02 - List of Drawings

  If numbers are not used in the PDF files name, "*List of Drawings*" will be displayed before "*Title Page*" because "L" comes before "T" in the alphabet.

Example of a 4th Tier Drawings sub-folder's content:



2.2. Specifications

Each Specifications Division must be a separate PDF file and all pages contained in each PDF file must have the same physical size (height, width). The Plans and Specifications Index must

also be a separate PDF file. If there are other documents that are part of the Specifications (e.g. Appendix or other) these are to be separate PDF files as well.

2.2.1 Documents other than Specifications Divisions

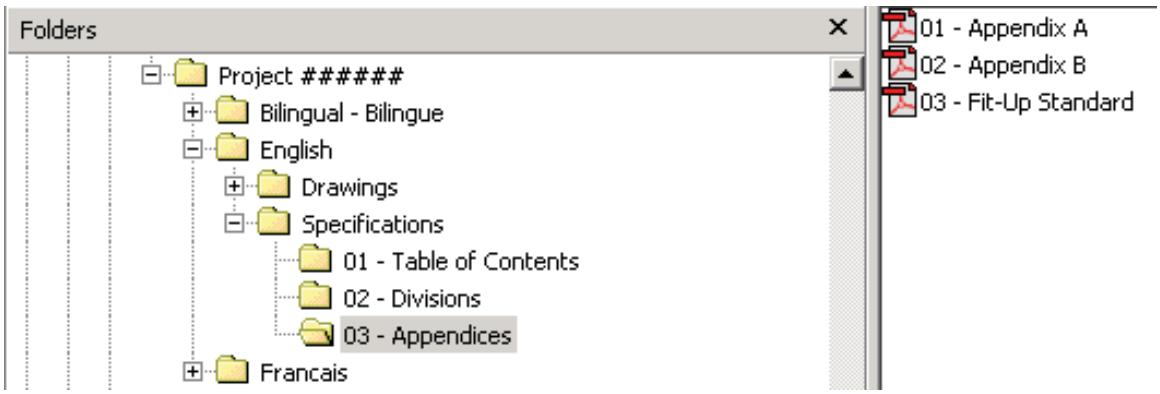
Because PDF files within the Specifications sub-folders are sorted alphanumerically (in ascending order) for both on screen display and printing order, all files that appear in folders other than the "*Divisions*" sub-folder must be named using a number:

- Y

Where:

## =	Two digit number ranging from 01 to 99 with leading zeros required
Y =	Name of the document
Example:	01 - Plans and Specifications Index

Example of a sub-folder content (sub-folder other than "*Divisions*"):



2.2.2 Specifications Divisions

The Specifications Divisions must be named as follows:

Division ## - Y

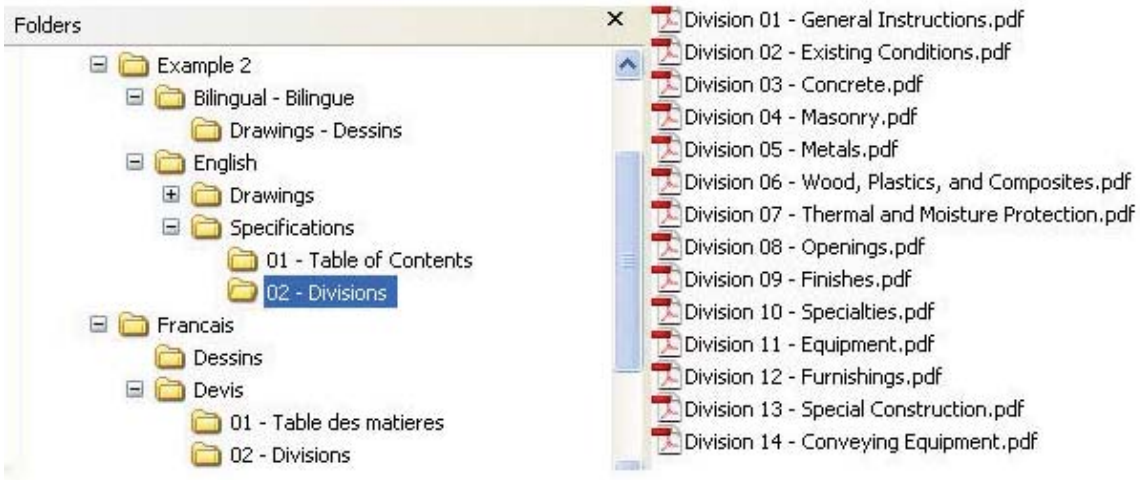
Where:

Division ## =	The actual word "*Division*" followed by a space and a two digit number ranging from 01 to 99 (with leading zeros required)
Y =	Name of the Specifications Division as per **CSC/CSI MasterFormat™**
Example:	Division 05 – Metals

The following important point about specifications is to be noted:

- The Numbering of the Divisions **cannot** be altered from **CSC/CSI MasterFormat™** even if some Divisions are not used in a given project. For example, Division 05 will always remain Division 05 even if Division 04 is not used for a given project.

Example of a "*Divisions*" sub-folder content:



3. CD-ROM LABEL

Each CD-ROM is to be labeled with the following information:

Project *Number* / *Numéro* de projet
Project Title / *Titre du projet*
Documents for Tender / Documents pour appel d'offres
CD *X* of/de *X*

Example:

Project 123456 / Projet 123456
Repair Alexandra Bridge / Réparation du pont Alexandra

APPENDIX 'E'

BASIC REFRENCE GUIDE ON CONVERTING CONSTRUCTION DRAWINGS INTO PORTABLE DOCUMENT FORMAT (PDF)

Issued by:

Real Property Contracting Directorate

PWGSC

May 2005Last Updated: May 3, 2005

Version 1.0

PREFACE

Portable Document Format (PDF) is the standard format for documents that are posted on the Government Electronic Tendering System (GETS). There is therefore a need to obtain from architectural and engineering consultants an electronic copy of drawings and specifications in PDF for tendering Government of Canada (GoC) construction projects.

In order to have the highest quality in term of resolution and printing, consultants should to the greatest extent possible have the PDF drawing and specification files derived from the native software in which they were created. Scanning is permissible but only in special circumstances, for example when there is no electronic version of a drawing being included in a construction tender package.

The purpose of this document is to provide basic information on the conversion of Computer Aided Design and Drafting (CADD) drawings in PDF. Creating a PDF file from a CADD drawing is a relatively simple process once all the necessary configurations and settings are in place. It actually should not take any longer than it would take to create a plot file or to send a drawing to a printer. The information in this guide is not intended to cover all technical aspects of the conversion, which can be done using various methods, but rather to highlight important points about the process and file settings. The conversion of specifications is not covered in this basic reference guide since it does not require any special configuration or setting.

The information provided in this basic reference guide is not an indication that consultants are relieved from following the established standards for the production of drawings and specifications. The sole purpose of this guide is to provide basic information on the PDF conversion process bearing in mind that additional detailed technical information is available from the various software manufacturers.

1. PRINTER DRIVERS

Adobe Acrobat provides two different printer drivers that are able to convert CADD drawing into PDF format, Acrobat PDF Writer and Acrobat Distiller. Before creating a PDF file from a CADD drawing, a choice must be made as to which one will be used.

Acrobat PDF Writer is a non-PostScript printer driver that works best with documents that don't contain complex graphics

Acrobat Distiller is a PostScript printer driver that works best with documents that contain PostScript fills, Encapsulated PostScript (EPS) graphics, or other complex elements.

It is recommended that Acrobat Distiller be used to create PDF file of architectural and engineering drawings due to their size and complex graphical nature.

2. PRINTER CONFIGURATION

Before converting a CADD drawing to PDF, an Acrobat printer configuration file for the PDF paper size needs to be created. This function can be done in the CADD software rather than using a custom paper size defined for the Acrobat distiller feature. The recommended method is to add a PostScript Adobe plotter in the CADD software and making the necessary setting in terms of media source and size, scale and orientation. The configuration can then be re-used to simplify the conversion process for future files that use the same page size.

As an alternative, although not recommended, a custom-defined size can be created in Acrobat Distiller in the *properties* menu.

3. CREATING PDF FILES

Once the printer configuration has been done in the CADD software, open up Acrobat Distiller and make the necessary settings in the *preferences* and *job options* sub-menu. Ensure that the page size match the sheet size selected in the CADD software to create the file. Particular settings can be saved under different names for future use.

With the Acrobat Distiller application open, ensure the required sheet size is displayed in the *job options* window. Then it is simply a matter of bringing the CADD file into the Acrobat Distiller creation box.

A progress bar will show during the conversion and the newly converted PDF file should open up and be displayed for verification.

4. PDF FILES SETTINGS

4.1 Security

Adobe Acrobat contains security features that can de used to secure the files by restricting any changes to the files. However, since the files will be posted on GETS and will be used for printing copies, the files **must not** be password protected and **must** allow printing.

4.2 Drawing Orientation

The final PDF drawing files must be displayed on the screen in the same direction that the users are intended to view them. This can be achieved by adjusting the setup of the plotter. If the drawing is not oriented properly after the conversion, it can be rotated manually within Adobe Acrobat.

4.3 Font Type

In order to avoid any problems during the conversion and to minimize the potential for font display errors, the fonts used for the production of construction drawings must be *PostScript or True Type fonts.*

4.4 Resolution

Since the PDF files will be used for printing, it is important that a proper resolution be selected. It is recommended to select 600 dots per inch (dpi).

4.5 Scale

When choosing the Plot scale in Adobe, it is important to choose the 1:1 scale to ensure the integrity of the scale from which the drawings were created in the CADD software.

5.SCANNING

Scanning is not recommended and should be done only when the drawing is not available electronically. When scanning a drawing, it is important that it be done in real size (scale 1:1) to ensure that the scale remains intact in subsequent printing. It is recommended that each scanned drawing be opened and verified to ensure that the resolution, scale and border are of an acceptable quality.

6.FINAL CHECKLIST

When the drawing file has gone trough the PDF conversion, it is recommended to open it and verify the following:

- That the sheet size displayed is what was intended to be created (the size is viewable in the lower left corner of the drawing).
- That the orientation of the sheet is correct.
- That the line types, line weights and fonts match the CADD drawing.
- That the PDF file is in black and white.
- That each drawing is a single PDF file.
- That the PDF file is not password protected and printable.

If all the items are verified, the PDF file is useable

7.ADDITIONAL INFORMATION

For more information about the creation of PostScript and EPS files please refer to the User's Guide of the CADD software being used to produce the drawings. For more information about creating PDF file please refer to the Acrobat Distiller User's Guide and/or visit the Adobe Web site at www.adobe.com.

Security Requirements Check List (Appendix E)

RECEIVED
APR 24 2017

Government of Canada / Gouvernement du Canada

Contract Number / Numéro du contrat
EH900-173222
Security Classification / Classification de sécurité UNCLASSIFIED

SECURITY REQUIREMENTS CHECK LIST (SRCL)
LISTE DE VÉRIFICATION DES EXIGENCES RELATIVES À LA SÉCURITÉ (LVERS)

PART A - CONTRACT INFORMATION / PARTIE A - INFORMATION CONTRACTUELLE

1. Originating Government Department or Organization / Ministère ou organisme gouvernemental d'origine: Public Works and Government Services Canada	2. Branch or Directorate / Direction générale ou Direction: RPB
3. a) Subcontract Number / Numéro du contrat de sous-traitance	3. b) Name and Address of Subcontractor / Nom et adresse du sous-traitant

4. Brief Description of Work / Brève description du travail
Prime Consultant services for the West Memorial Building Rehabilitation Project

	No / Non	Yes / Oui
5. a) Will the supplier require access to Controlled Goods? Le fournisseur aura-t-il accès à des marchandises contrôlées?	✓	
5. b) Will the supplier require access to unclassified military technical data subject to the provisions of the Technical Data Control Regulations? Le fournisseur aura-t-il accès à des données techniques militaires non classifiées qui sont assujetties aux dispositions du Règlement sur le contrôle des données techniques?	✓	
6. Indicate the type of access required / Indiquer le type d'accès requis		
6. a) Will the supplier and its employees require access to PROTECTED and/or CLASSIFIED information or assets? Le fournisseur ainsi que les employés auront-ils accès à des renseignements ou à des biens PROTÉGÉS et/ou CLASSIFIÉS? (Specify the level of access using the chart in Question 7. c) (Préciser le niveau d'accès en utilisant le tableau qui se trouve à la question 7. c)		✓
6. b) Will the supplier and its employees (e.g. cleaners, maintenance personnel) require access to restricted access areas? No access to PROTECTED and/or CLASSIFIED information or assets is permitted. Le fournisseur et ses employés (p. ex. nettoyeurs, personnel d'entretien) auront-ils accès à des zones d'accès restreintes? L'accès à des renseignements ou à des biens PROTÉGÉS et/ou CLASSIFIÉS n'est pas autorisé.	✓	
6. c) Is this a commercial courier or delivery requirement with **no** overnight storage? S'agit-il d'un contrat de messagerie ou de livraison commerciale **sans** entreposage de nuit?	✓	

7. a) Indicate the type of information that the supplier will be required to access / Indiquer le type d'information auquel le fournisseur devra avoir accès

Canada ✓	NATO / OTAN ☐	Foreign / Étranger ☐

7. b) Release restrictions / Restrictions relatives à la diffusion

No release restrictions Aucune restriction relative à la diffusion ✓	All NATO countries Tous les pays de l'OTAN ☐	No release restrictions Aucune restriction relative à la diffusion ☐
Not releasable À ne pas diffuser ☐		
Restricted to: / Limité à : ☐	Restricted to: / Limité à : ☐	Restricted to: / Limité à : ☐
Specify country(ies): / Préciser le(s) pays :	Specify country(ies): / Préciser le(s) pays :	Specify country(ies): / Préciser le(s) pays :

7. c) Level of information / Niveau d'information

PROTECTED A PROTÉGÉ A ☐	NATO UNCLASSIFIED NATO NON CLASSIFIÉ ☐	PROTECTED A PROTÉGÉ A ☐
PROTECTED B PROTÉGÉ B ☐	NATO RESTRICTED NATO DIFFUSION RESTREINTE ☐	PROTECTED B PROTÉGÉ B ☐
PROTECTED C PROTÉGÉ C ☐	NATO CONFIDENTIAL NATO CONFIDENTIEL ☐	PROTECTED C PROTÉGÉ C ☐
CONFIDENTIAL CONFIDENTIEL ☐	NATO SECRET NATO SECRET ☐	CONFIDENTIAL CONFIDENTIEL ☐
SECRET SECRET ✓	COSMIC TOP SECRET COSMIC TRÈS SECRET ☐	SECRET SECRET ☐
TOP SECRET TRÈS SECRET ☐		TOP SECRET TRÈS SECRET ☐
TOP SECRET (SIGINT) TRÈS SECRET (SIGINT) ☐		TOP SECRET (SIGINT) TRÈS SECRET (SIGINT) ☐

Government of Canada / Gouvernement du Canada

Contract Number / Numéro du contrat
EH900-173222
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PART A *(continued)* / PARTIE A *(suite)*

8. Will the supplier require access to PROTECTED and/or CLASSIFIED COMSEC information or assets? ☑ No Non ☐ Yes Oui
Le fournisseur aura-t-il accès à des renseignements ou à des biens COMSEC désignés PROTÉGÉS et/ou CLASSIFIÉS?
If Yes, indicate the level of sensitivity:
Dans l'affirmative, indiquer le niveau de sensibilité :

9. Will the supplier require access to extremely sensitive INFOSEC information or assets? ☑ No Non ☐ Yes Oui
Le fournisseur aura-t-il accès à des renseignements ou à des biens INFOSEC de nature extrêmement délicate?

Short Title(s) of material / Titre(s) abrégé(s) du matériel :
Document Number / Numéro du document :

PART B - PERSONNEL (SUPPLIER) / PARTIE B - PERSONNEL (FOURNISSEUR)

10. a) Personnel security screening level required / Niveau de contrôle de la sécurité du personnel requis

☑ RELIABILITY STATUS COTE DE FIABILITÉ	☐ CONFIDENTIAL CONFIDENTIEL	☑ SECRET SECRET	☐ TOP SECRET TRÈS SECRET
☐ TOP SECRET– SIGINT TRÈS SECRET – SIGINT	☐ NATO CONFIDENTIAL NATO CONFIDENTIEL	☐ NATO SECRET NATO SECRET	☐ COSMIC TOP SECRET COSMIC TRÈS SECRET
☐ SITE ACCESS ACCÈS AUX EMPLACEMENTS			

Special comments:
Commentaires spéciaux : _____

NOTE: If multiple levels of screening are identified, a Security Classification Guide must be provided.
REMARQUE : Si plusieurs niveaux de contrôle de sécurité sont requis, un guide de classification de la sécurité doit être fourni.

10. b) May unscreened personnel be used for portions of the work? ☑ No Non ☐ Yes Oui
Du personnel sans autorisation sécuritaire peut-il se voir confier des parties du travail?
If Yes, will unscreened personnel be escorted? ☑ No Non ☐ Yes Oui
Dans l'affirmative, le personnel en question sera-t-il escorté?

PART C - SAFEGUARDS (SUPPLIER) / PARTIE C - MESURES DE PROTECTION (FOURNISSEUR)

INFORMATION / ASSETS / RENSEIGNEMENTS / BIENS

11. a) Will the supplier be required to receive and store PROTECTED and/or CLASSIFIED information or assets on its site or premises? ☐ No Non ☑ Yes Oui
Le fournisseur sera-t-il tenu de recevoir et d'entreposer sur place des renseignements ou des biens PROTÉGÉS et/ou CLASSIFIÉS?

11. b) Will the supplier be required to safeguard COMSEC information or assets? ☑ No Non ☐ Yes Oui
Le fournisseur sera-t-il tenu de protéger des renseignements ou des biens COMSEC?

PRODUCTION

11. c) Will the production (manufacture, and/or repair and/or modification) of PROTECTED and/or CLASSIFIED material or equipment occur at the supplier's site or premises? ☑ No Non ☐ Yes Oui
Les installations du fournisseur serviront-elles à la production (fabrication et/ou réparation et/ou modification) de matériel PROTÉGÉ et/ou CLASSIFIÉ?

INFORMATION TECHNOLOGY (IT) MEDIA / SUPPORT RELATIF À LA TECHNOLOGIE DE L'INFORMATION (TI)

11. d) Will the supplier be required to use its IT systems to electronically process, produce or store PROTECTED and/or CLASSIFIED information or data? ☐ No Non ☑ Yes Oui
Le fournisseur sera-t-il tenu d'utiliser ses propres systèmes informatiques pour traiter, produire ou stocker électroniquement des renseignements ou des données PROTÉGÉS et/ou CLASSIFIÉS?

11. e) Will there be an electronic link between the supplier's IT systems and the government department or agency? ☑ No Non ☐ Yes Oui
Disposera-t-on d'un lien électronique entre le système informatique du fournisseur et celui du ministère ou de l'agence gouvernementale?

Government of Canada / Gouvernement du Canada

Contract Number / Numéro du contrat
EH900-173222
Security Classification / Classification de sécurité UNCLASSIFIED

PART C - *(continued)* / PARTIE C - *(suite)*

For users completing the form **manually** use the summary chart below to indicate the category(ies) and level(s) of safeguarding required at the supplier's site(s) or premises.
Les utilisateurs qui remplissent le formulaire **manuellement** doivent utiliser le tableau récapitulatif ci-dessous pour indiquer, pour chaque catégorie, les niveaux de sauvegarde requis aux installations du fournisseur.

For users completing the form **online** (via the Internet), the summary chart is automatically populated by your responses to previous questions.
Dans le cas des utilisateurs qui remplissent le formulaire **en ligne** (par Internet), les réponses aux questions précédentes sont automatiquement saisies dans le tableau récapitulatif.

SUMMARY CHART / TABLEAU RÉCAPITULATIF

Category Catégorie	PROTECTED PROTÉGÉ			CLASSIFIED CLASSIFIÉ			NATO				COMSEC					
	A	B	C	CONFIDENTIAL CONFIDENTIEL	SECRET	TOP SECRET TRÈS SECRET	NATO RESTRICTED NATO DIFFUSION RESTREINTE	NATO CONFIDENTIAL NATO CONFIDENTIEL	NATO SECRET	COSMIC TOP SECRET COSMIC TRÈS SECRET	PROTECTED PROTÉGÉ A	PROTECTED PROTÉGÉ B	PROTECTED PROTÉGÉ C	CONFIDENTIAL CONFIDENTIEL	SECRET	TOP SECRET TRÈS SECRET
Information / Assets Renseignements / Biens					✓											
Production																
IT Media / Support TI					✓											
IT Link / Lien électronique																

12. a) Is the description of the work contained within this SRCL PROTECTED and/or CLASSIFIED?
La description du travail visé par la présente LVERS est-elle de nature PROTÉGÉE et/ou CLASSIFIÉE?

☑ No / Non ☐ Yes / Oui

If Yes, classify this form by annotating the top and bottom in the area entitled "Security Classification".
Dans l'affirmative, classifier le présent formulaire en indiquant le niveau de sécurité dans la case intitulée « Classification de sécurité » au haut et au bas du formulaire.

12. b) Will the documentation attached to this SRCL be PROTECTED and/or CLASSIFIED?
La documentation associée à la présente LVERS sera-t-elle PROTÉGÉE et/ou CLASSIFIÉE?

☑ No / Non ☐ Yes / Oui

If Yes, classify this form by annotating the top and bottom in the area entitled "Security Classification" and indicate with attachments (e.g. SECRET with Attachments).
Dans l'affirmative, classifier le présent formulaire en indiquant le niveau de sécurité dans la case intitulée « Classification de sécurité » au haut et au bas du formulaire et indiquer qu'il y a des pièces jointes (p. ex. SECRET avec des pièces jointes).

Security Classification Guide (EH900 - 173222)

Level	Description
Reliability	Reliability Security Clearance level is required for Designated Organization Screening and all personnel on the Consultant team performing all services in the contract as defined by the Request for Proposal EH900 - 173222
Level II (Secret)	Facility Security Screening (FSC) and personnel requiring access to classified or protected information is required at Secret Security Clearance Level. **Prime Consultant**: Requires the following at Secret Level: FSC, Document Safeguarding, personnel requiring access to classified or protected information **Security Specialist:** Requires the following at Secret Level: FSC, personnel requiring access to classified or protected information **Information Technology Specialist**: Requires the following at Secret Level: FSC, personnel requiring access to classified or protected information **Structural Enginner**: Requires the following at Secret Level: FSC, personnel requiring access to classified or protected information **Mechanical Engineer:** Requires the following at Secret Level: FSC, personnel requiring access to classified or protected information **Electrical Engineer**: Requires the following at Secret Level: FSC, personnel requiring access to classified or protected information

Information Related to Security Requirement (Appendix F)

(Appendix E - SRCL Security Classification Guide - **Secret**)

Proponent (Prime Consultant) - Architect	
Legal Name:	
Complete Address:	
Telephone Number:	
CISD File Number:	
Organization Security Clearance:	

(Appendix E - SRCL Security Classification Guide - **Secret**)

Sub-consultant/Specialist – Structural Engineer (with Heritage Building Conservation specialty)	
Legal Name of Sub-consultant/Specialist:	
Complete Address:	
Telephone Number:	
CISD File Number:	
Organization Security Clearance:	

(Appendix E - SRCL Security Classification Guide - **Secret**)

Sub-consultant/Specialist – Mechanical Engineer	
Legal Name of Sub-consultant/Specialist:	
Complete Address:	
Telephone Number:	
CISD File Number:	
Organization Security Clearance:	

(Appendix E - SRCL Security Classification Guide - **Secret**)

Sub-consultant/Specialist – Electrical Engineer	
Legal Name of Sub-consultant/Specialist:	
Complete Address:	
Telephone Number:	
CISD File Number:	
Organization Security Clearance:	

(Appendix E - SRCL Security Classification Guide - **Secret**)

Sub-consultant/Specialist – Security Specialist	
Legal Name of Sub-consultant/Specialist:	
Complete Address:	
Telephone Number:	
CISD File Number:	
Organization Security Clearance:	

(Appendix E - SRCL Security Classification Guide - **Secret**)

Sub-consultant/Specialist – IT Specialist	
Legal Name of Sub-consultant/Specialist:	
Complete Address:	
Telephone Number:	
CISD File Number:	
Organization Security Clearance:	

The proponent's Key Personnel

Key Personnel – Proponent (**Secret**)	
Legal Name of Individual:	
Name of Firm:	
Level of Security Clearance:	
Validity period of Security Clearance:	
Security Screening Certificate and Briefing Form File Number or CISD File Number:	

Key Personnel – Structural Engineer (with Heritage Building Conservation specialty) (**Secret**)	
Legal Name of Individual:	
Name of Firm:	
Level of Security Clearance:	
Validity period of Security Clearance:	
Security Screening Certificate and Briefing Form File Number or CISD File Number:	

Key Personnel – Mechanical Engineer (**Secret**)	
Legal Name of Individual:	
Name of Firm:	
Level of Security Clearance:	
Validity period of Security Clearance:	
Security Screening Certificate and Briefing Form File Number or CISD File Number:	

Key Personnel – Electrical Engineer (**Secret**)	
Legal Name of Individual:	
Name of Firm:	
Level of Security Clearance:	
Validity period of Security Clearance:	
Security Screening Certificate and Briefing Form File Number or CISD File Number:	

Key Personnel – Security Specialist (**Secret**)	
Legal Name of Individual:	
Name of Firm:	
Level of Security Clearance:	
Validity period of Security Clearance:	
Security Screening Certificate and Briefing Form File Number or CISD File Number:	

Key Personnel – IT Specialist (**Secret**)	
Legal Name of Individual:	
Name of Firm:	
Level of Security Clearance:	
Validity period of Security Clearance:	
Security Screening Certificate and Briefing Form File Number or CISD File Number:	

SUBMISSION REQUIREMENTS AND EVALUATION

SUBMISSION REQUIREMENTS AND EVALUATION

SRE 1 GENERAL INFORMATION

1.1 Reference to the Selection Procedure

An 'Overview of the selection procedure' can be found in R1110T General instructions to Proponents (GI3).

1.2 Calculation of Total Score

For this project the Total Score will be established as follows:

Phase One Rating x 30%	=	Phase One Score (Points)
Phase Two Technical Rating x 60%	=	Technical Score (Points)
Phase Two Price Rating x 10%	=	Price Score (Points)
Total Score	=	Max. 100 Points

SRE 2 PROPOSAL REQUIREMENTS

2.1 Requirement for Proposal Format (for phases one and two)

The following proposal format information should be implemented when preparing the Phase One and Phase Two proposals.

- Phase One - Submit one (1) bound original plus five (5) bound copies of the proposal
- Phase Two - Submit one (1) bound original plus five (5) bound copies of the proposal
- Paper size should be - 216mm x 279mm (8.5" x 11")
- Minimum font size - 11 point Times or equal
- Minimum margins - 12 mm left, right, top, and bottom
- Double-sided submissions are preferred
- One (1) ‘page’ means one side of a 216mm x 279mm (8.5" x 11") sheet of paper
- 279mm x 432 mm (11" x 17") fold-out sheets for spreadsheets, organization charts etc. will be counted as two pages.
- The order of the proposals should follow the order established in the Request for Proposal SRE section

2.2 Phase One Specific Requirements for Proposal Format

The maximum number of pages (including text and graphics) to be submitted for the Rated Requirements under SRE 3.2 is twenty-five (25) pages.

The following are not part of the page limitation mentioned above;

- Covering letter
- Consultant Team Identification (Appendix A)
- Declaration/Certifications Form (Appendix B)
- Integrity Provisions – Required Documentation
- Information related to Security Requirement (Appendix F)

Consequence of non-compliance: any pages which extend beyond the above page limitation and any other attachments will be extracted from the proposal and will not be forwarded to the PWGSC Evaluation Board members for evaluation.

2.3 Phase Two Specific Requirements for Proposal Format

The maximum number of pages (including text and graphics) to be submitted for the Rated Requirements under SRE 4.2 is thirty (30) pages.

The following are not part of the page limitation mentioned above;

- Covering letter
- Consultant Team Verification
- Front page of the RFP
- Front page of revision(s) to the RFP
- Price Proposal Form (Appendix C)

Consequence of non-compliance: any pages which extend beyond the above page limitation and any other attachments will be extracted from the proposal and will not be forwarded to the PWGSC Evaluation Board members for evaluation.

SRE 3 PHASE ONE SUBMISSION REQUIREMENTS AND EVALUATION

Intent: The intent of Phase One evaluation activities is to verify that the submissions meet the mandatory screening requirements and to evaluate and rate the proposed teams.

3.1 MANDATORY REQUIREMENTS

Failure to meet the mandatory requirements will render the proposal as non-responsive and no further evaluation will be carried out.

3.1.1 Licensing, Certification or Authorization

The Proponent shall be an architect(s) licensed in the province of Ontario, or eligible to be licensed, certified or otherwise authorized to provide the necessary professional services to the full extent that may be required by provincial or territorial law.

3.1.2 Consultant Team Identification

The consultant team to be identified at Phase One must include the following:

Proponent (prime consultant)
- Architect

Key Sub-consultants / Specialists
- Conservation Architect
- Structural Engineer (with heritage building conservation specialty)
- Mechanical Engineer
- Electrical Engineer
- Security Specialist
- Information Technology Specialist
- Interior Designer

If the proponent proposes to provide multidisciplinary services that might normally be provided by a sub-consultant, this should be indicated here.

Information required - name of firm, key personnel to be assigned to the project. For the prime consultant indicate current license and/or how you intend to meet the provincial or territorial licensing requirements. In the case of a joint venture identify the existing or proposed legal form of the joint venture (refer to R1110T General Instructions to Proponents, GI9 Limitation of Submissions).

Proponents will be required to carry over the consultant team identified in Phase One to Phase Two.

An example of an acceptable format (typical) for submission of the team identification information is provided in Appendix A.

3.1.3 Declaration/Certifications Form

Proponents must complete, sign and submit the following:
- Appendix B, Declaration/Certifications Form as required

3.1.4 Integrity Provisions – Required documentation

In accordance with the Ineligibility and Suspension Policy (http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html), the Proponent must provide, as applicable, to be given further consideration in the procurement process, the required documentation as per R1110T (2016-04-04), General instructions 1 (GI1), Integrity Provisions – Proposal, section 3a.

3.1.5 Security Requirement

1) Proponents must meet the security requirements as outlined under SI6 and SC1.

2) At bid close, the following conditions must be met:

   a. The Proponent should provide this security information as indicated in Appendix F to align with the requirements as set out in the following table:

Proponent/Sub Consultants/Specialists (Firms)	Security Clearance (FSC Secret) at Bid Close	Document Safeguarding (Secret) at Bid Close
Proponent (Prime Consultant)	X	X
Structural Engineer (with heritage building conservation specialty)	X	
Mechanical Engineer	X	
Electrical Engineer	X	
Security Specialist	X	
IT Specialist	X	

   b. The Proponent should provide this security information Appendix F to align with the requirements for the key personnel as set out in the following table:

Key Personnel Category (Individuals)	Security Clearance (Secret) at Bid Close
Proponent (Prime Consultant)	X
Structural Engineer (with heritage building conservation specialty)	X
Mechanical Engineer	X
Electrical Engineer	X
Security Specialist	X
IT Specialist	X

3.2 RATED REQUIREMENTS

The evaluation criteria for the Phase One proposal addresses only the previous achievements and experiences of the proposed Consultant Team. No material is to be prepared or presented on the subject project itself. The Phase One proposal provides the opportunity for proponents to present their past work in the context of the proposed project. It is at this time that interested firms submit to PWGSC a history of their accomplishments in order to establish the capabilities of their teams and lead designers as well as other key team members.

3.2.1 Achievements of Proponent on Projects

Describe the Proponent's accomplishments, achievements knowledge and experience as Prime Consultant on a maximum of three (3) projects comparable/ relevant to the project in this RFP.

For at least one (1) of the three (3) projects, construction should have reached substantial completion or have been completed within the last 10 years. The other two (2) projects presented should be significantly advanced (i.e. at least 50% of the construction completed) to be considered. Only the first three (3) projects listed in sequence will receive consideration and any others will receive none as though not included. Joint venture submissions are not to exceed the maximum number of projects.

The Proponent should clearly demonstrate experience pertinent to:

a) Heritage conservation including rehabilitation, adaptive re-use, additions, and materials conservation work (masonry, metals, plaster);

b) Abatement and selective demolition;

c) Seismic upgrade of a heritage building;

d) External stakeholder involvement;

e) Replacement of base building systems;

f) Working with a Construction Management project delivery approach;

g) Sustainable design;

h) Life cycle costing; and

i) Value engineering.

Information that should be supplied:

- clearly indicate how this project is comparable/relevant to the requested project.
- brief project description and intent. Narratives should include a discussion of design philosophy / approach to meet the intent, design challenges and resolutions.
- budget control and management - i.e. contract price & final construction cost - explain variation
- project schedule control and management - i.e. initial schedule and revised schedule - explain variation
- names of key personnel responsible for project delivery
- awards received

The Proponent (as defined in R1110T General Instructions to Proponents, GI2 Definitions) must possess the knowledge on the above projects. Past project experience from entities other than the Proponent will not be considered in the evaluation unless these entities form part of a joint venture Proponent.

Please indicate those projects which were carried out in joint venture and the responsibilities of each of the involved entities in each project.

3.2.2 Achievements of Key Sub-consultants and Specialists on Projects

Describe the accomplishments, achievements and experience either as Prime Consultant or in a Sub-consultant capacity on a maximum of two (2) projects per key sub consultant or specialist identified in section 3.1.2, which are comparable/relevant to the project in this RFP. If the Proponent proposes to provide multi-disciplinary services which might otherwise be performed by a sub-consultant, this should be reflected here.

For at least one (1) of the two (2) projects, construction should have reached substantial completion or have been completed within the last 10 years. The other project presented should be significantly advanced (i.e. at least 50% of the construction completed) to be considered. Only the first 2 projects listed in sequence (per key sub consultant or specialist) will receive consideration and any others will receive none as though not included.

The Proponent should clearly demonstrate experience pertinent to:

a) Heritage conservation

b) Abatement and selective demolition

c) Seismic upgrade of a heritage building

d) Replacement of base building systems

e) Working with a Construction Management project delivery approach

f) Sustainable design

g) Life cycle costing

h) Value engineering

<u>Information that should be supplied:</u>

- clearly indicate how this project is comparable/relevant to the requested project.
- brief project description and intent. Narratives should include a discussion of design philosophy / approach to meet the intent, design challenges and resolutions.
- budget control and management
- project schedule control and management
- names of key personnel responsible for project delivery
- awards received

3.2.3 Achievements of Key Personnel on Projects

Describe the experience, expertise and performance of key personnel to be assigned to this project regardless of their past association with the current proponent firm. This is the opportunity to emphasize the strengths of the individuals on the team, to recognize their past responsibilities, commitments and achievements. All key personnel identified should have at least 10 years' experience in their field of expertise. If multiple functions are proposed to be performed by one Key Personnel, it should be identified here.

Information that should be supplied:

1. Individuals name, title and name of firm

2. Professional accreditation details (province, year, status, etc.)

3. A description of expertise and experience (with number of years) relevant to this project

4. A demonstration of roles, responsibilities and degree of involvement of individual on past projects that will corroborate the person's experience and expertise.

5. Special accomplishments / achievements / awards

3.3 EVALUATION AND RATING

Past experience of the Proponent and the consultant team will be evaluated at the Phase One submission stage and the scores for this evaluation will be carried over to the Phase Two submission.

Phase One proposals which are responsive will be reviewed, evaluated and rated by a PWGSC Evaluation Board in accordance with the following:

Criterion	Weight Factor	Rating	Weighted Rating
3.2.1 Achievements of Proponent on Projects	4.0	0 - 10	0 - 40
3.2.2 Achievements of Key Sub-consultants / Specialists on projects	4.0	0 - 10	0 - 40
3.2.3 Achievements of Key Personnel on Projects	2.0	0 - 10	0 - 20
Phase One Rating	**10.0**		**0 - 100**

The Phase One rating which is assigned to each responsive proposal in accordance with the procedure outlined in the General Instructions to Proponents is the total weighted rating assigned to the Phase One proposal in accordance with the above table. The Phase One rating is recorded for subsequent inclusion as a percentage of the total score to be established following the evaluation and rating of Phase Two proposals.

Generic Evaluation Table
PWGSC Evaluation Board members will evaluate the strengths and weaknesses of the Proponent's response to the evaluation criteria and will rate each criterion with even numbers (0, 2, 4, 6, 8 or 10) using the generic evaluation table below:

	INADEQUATE	WEAK	ADEQUATE	FULLY SATISFACTORY	STRONG
0 point	2 points	4 points	6 points	8 points	10 points
Did not submit information which could be evaluated	Lacks complete or almost complete understanding of the requirements.	Has some understanding of the requirements but lacks adequate understanding in some areas of the requirements.	Demonstrates a good understanding of the requirements.	Demonstrates a very good understanding of the requirements.	Demonstrates an excellent understanding of the requirements.

	Weaknesses cannot be corrected	Generally doubtful that weaknesses can be corrected	Weaknesses can be corrected	No significant weaknesses	No apparent weaknesses
	Proponent do not possess qualifications and experience	Proponent lacks qualifications and experience	Proponent has an acceptable level of qualifications and experience	Proponent is qualified and experienced	Proponent is highly qualified and experienced
	Team proposed is not likely able to meet requirements	Team does not cover all components or overall experience is weak	Team covers most components and will likely meet requirements	Team covers all components - some members have worked successfully together	Strong team - has worked successfully together on comparable projects
	Sample projects not related to this requirement	Sample projects generally not related to this requirement	Sample projects generally related to this requirement	Sample projects directly related to this requirement	Leads in sample projects directly related to this requirement
	Extremely poor, insufficient to meet performance requirements	Little capability to meet performance requirements	Acceptable capability, should ensure adequate results	Satisfactory capability, should ensure effective results	Superior capability, should ensure very effective results

SRE 4 PHASE TWO SUBMISSION REQUIREMENTS AND EVALUATION

Intent: The intent of Phase Two evaluation activity is to verify that the submissions meet the mandatory screening requirements, to evaluate and rate the proposals and to recommend contract award to the Proponent with the highest total score.

4.1 MANDATORY REQUIREMENTS

Only those submissions from proponents that have met the following requirements will be evaluated and rated by a PWGSC Evaluation Board:

4.1.1 Having submitted a responsive Phase One proposal

4.1.2 Consultant Team Verification submittal of a statement indicating the Consultant Team identified in Phase One is being carried over to Phase Two.

4.2 RATED REQUIREMENTS

Intent: The evaluation criteria for the Phase Two proposal addresses the Consultant Team's "understanding of the project" i.e. technical, schedule and estimate requirements, "scope of services" "management of services" and "design philosophy/approach" based on the requirements described in the Project Brief. Past achievements and experience of the Proponent and Key Sub-Consultants are evaluated in Phase One and will not be re-evaluated in Phase Two. The Phase Two Proposal gives the proponents the opportunity to describe what they intend to offer PWGSC in terms of their understanding of the project, scope of services and management of the project.

The following requirements will be evaluated and rated by a PWGSC Evaluation Board. The price proposal of each Proponent may or may not be opened.

4.2.1 Understanding of the Project:

The proponent should demonstrate understanding of the goals of the project, the functional/technical requirements, the constraints and the issues that will affect the design, delivery and implementation of the project.

Information that should be supplied:

1. An interpretation of the project's functional and technical requirements including the interrelation of complementary and / or co-dependent project components.

2. A critical assessment of broader goals as they relate to heritage conservation, sustainable development and site sensitivities.

3. Demonstrate an understanding of project significant issues, challenges and constraints.

4. Demonstrate an understanding of Project Implementation strategy.

5. Demonstrate an understanding of the project schedule and cost and provide a high-level risk management strategy for both schedule and cost.

6. Integration Strategy which would discuss the integration of the PSPC separately contracted consultants and the Construction Manager

7. Demonstrate an understanding of the project Stakeholder

8. Demonstrate an understanding of the application of life cycle costing and value engineering to this project.

4.2.2 Design Philosophy / Approach / Methodology

The proponent should elaborate on aspects of the project considered to be a major challenge which will illustrate design philosophy / approach / methodology. This is the opportunity for the Proponent to state the overall design philosophy of the team as well as their approach of resolving design issues and in particular to focus on the unique aspects of the current project.

Information that should be supplied:

1. Architectural Vision specific to this project

2. Design Philosophy / Approach / Methodology

3. Describe the major challenges and how your team approach will be applied to those particular challenges, including challenges related to implementing construction in a partially occupied building.

4. A conservation approach that demonstrates understanding of the significance of this Classified federal heritage building's values.

4.2.3 Scope of Services:

The Proponent should demonstrate an understanding of the full scope of service for this project. Describe the Proponent's capability to perform the services and meet project challenges. Describe how the Proponent proposes to organize and manage the delivery of all project services and deliverables and provide a plan of action.

Information that should be supplied:

1. A demonstration of the Proponent's understanding of the full scope of services and deliverables required for this project;

2. Quality Assurance and Control;

3. Project schedule - proposed major milestone schedule including tender and construction using a Construction Management approach;

4. Risk management strategy – including risk techniques applied to project budget and schedule;

5. Project Cost Control – proposed methodology, including an explanation of how cost control will be applied to maintain the project budget; and

6. A description of a program for the Resident Site Services during Construction.

4.2.4 Management of Services:

The Proponent should describe their internal processes and methodologies to ensure that all project services are delivered on time, on budget, on scope and at the highest level of quality; how they propose to perform the services and meet the project constraints; how the services will be managed to ensure continuing and consistent control as well as production and communication efficiency; how the team will be organized and how it will fit in the existing structure of the firms; to describe how the team will be managed. The proponent is also to identify sub-consultant, including Principal resident site representative, disciplines and specialists required to complete the consultant team. Refer to supplementary Sub-Consultants/Specialist in section PD 7 Consultant Services.

If the Proponent proposes to provide multi-disciplinary services which might otherwise be performed by a sub-consultant, this should be reflected here.

Information that should be supplied:

1. Confirm the makeup of the full project team including the names of the consultant sub consultants and specialists' personnel and their role on the project.

2. Organization chart with position titles and names (Consultant team), what back-up will be committed and reporting relationships. Joint Venture business plan, team structure and responsibilities, if applicable

3. Profiles of the key positions (specific assignments and responsibilities) including principal resident site representative.

4. Outline of an action plan of the services with implementation strategies and sequence of main activities

5. Work Plan - detailed breakdown of work tasks and deliverables including all required reviews and approvals; clear assignment of responsibilities for activities and deliverables to project team personnel with an estimation of levels of effort.

6. Communication strategies – lines of communication and reporting structure within Proponent team and with PSPC and Construction Manager.

7. Project Response Time - demonstrate how the response time outlined in PA 1.12 requirements will be met

4.2.5 Consultant Presentation

This is a high profile project requiring an important investment of public funds. Project reviews will be rigorous at the federal level and the proponent team will be required to make several presentations to various approval agencies.

The intent of this section is to evaluate the consultants' ability to make effective presentations. The people making the presentation during this evaluation shall be the same people who will present during the development of the project.

The proponent team will be required to make a presentation in the National Capital Area (NCA), not to exceed forty-five (45) minutes, to the PWGSC evaluation board. Proponents must be available to make the presentation within two (2) to three (3) weeks following the closing date of Phase 2 submission proposals. A maximum of four (4) representatives per proponent team will be allowed. The proponent team can make use of audio / visual material as they wish.

The presentation should summarize all the points of the proposal in relation to the project and services to be rendered. No new information which has not been included in the Phase 1 and 2 proposals will be evaluated.

4.3 EVALUATION AND RATING

4.3.1 Technical Rating

Phase Two proposals that are responsive (i.e. which meet all the mandatory requirements set out in the RFP) will be reviewed, evaluated and rated by a PWGSC Evaluation Board. In the first instance, price envelopes will remain sealed and only the technical components of the Phase Two proposal will be evaluated in accordance with the following to establish Technical Ratings:

Criterion	Weight Factor	Rating	Weighted Rating
4.2.1 Understanding of the Project	2.0	0 - 10	0 - 20
4.2.2 Design Philosophy/Approach/Methodology	1.5	0 - 10	0 - 15
4.2.3 Scope of Services	2.0	0 - 10	0 - 20
4.2.4 Management of Services	3.0	0 - 10	0 - 30
4.2.5 Consultant Presentation	1.5	0 - 10	0 - 15
Phase Two Technical Rating	**10.0**		**0 - 100**

Generic Evaluation Table

PWGSC Evaluation Board members will evaluate the strengths and weaknesses of the Proponent's response to the evaluation criteria and will rate each criterion with even numbers (0, 2, 4, 6, 8 or 10) using the generic evaluation table found in the above section 3.3 Evaluation and Rating.

4.3.2 Combined Technical Rating

The Phase One Rating and Phase Two Technical Rating will be combined to establish a Combined Technical Score:

Combined Rating	Possible Range	% of Total Score	Score (Points)
Phase One Rating	0 - 100	30	0 - 30
Phase Two Technical Rating	0 - 100	60	0 - 60
Combined Technical Score		90	0 - 90

To be considered further, proponents **must** achieve a minimum Combined Technical Score of fifty-four (54) points out of the ninety (90) points available as specified above.

No further consideration will be given to proponents not achieving the pass mark of fifty-four (54) points.

SRE 5 PRICE OF SERVICES

All price proposal envelopes corresponding to responsive proposals which have achieved the pass mark of fifty-four (54) points will be opened upon completion of the technical evaluation. An average price is determined by adding all the price proposals together and dividing the total by the number of price proposals being opened.

All price proposals which are greater than 25 percent above the average price will cause their respective complete proposals to be set aside and receive no further consideration.
The remaining price proposals are rated as follows:

A. The lowest price proposal receives a Price Rating of 100
B. The second, third, fourth and fifth lowest prices receive Price Ratings of 80, 60, 40, and 20 respectively. All other price proposals receive a Price Rating of 0.
C. On the rare occasions where two (or more) price proposals are identical, the matching price proposals receive the same rating and the corresponding number of following ratings are skipped.

The Price Rating is multiplied by the applicable percentage to establish the Price Score.

SRE 6 TOTAL SCORE

Total Scores will be established in accordance with the following:

Rating	Possible Range	% of Total Score	Score (Points)
Phase One Rating	0 - 100	30	0 - 30
Phase Two Technical Rating	0 - 100	60	0 - 60
Price Rating	0 - 100	10	0 - 10
Total Score		100	0 - 100

The Proponent receiving the highest Total Score is the first entity that the Evaluation Board will recommend for the provision of the required services. In the case of a tie, the proponent submitting the lower price for the services will be selected.

SRE 7 SUBMISSION REQUIREMENTS - CHECKLIST

The following list of documents and forms is provided with the intention of assisting the Proponent in ensuring a complete submission. The Proponent is responsible for meeting all submission requirements.

Please follow detailed instructions in R1110T General instructions to proponents**,** GI16 Submission of proposal, as amended in SI2 Proposal documents. Proponents may choose to introduce their submissions with a cover letter.

PHASE ONE:

Team Identification - see typical format in Appendix A
Declaration/Certifications Form - completed and signed - form provided in Appendix B
Proposal - one (1) original plus five (5) copies
Integrity Provisions – Required documentation – **as applicable** in accordance with the Ineligibility and Suspension Policy (http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html) and as per R1110T (2016-04-04), General instructions 1 (GI1), Integrity Provisions – Proposal, **section 3a.**
Integrity Provisions - Declaration of Convicted Offences – **with its bid, as applicable** in accordance with the Ineligibility and Suspension Policy (http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html) and as per R1110T (2016-04-04), General instructions 1 (GI1), Integrity Provisions – Proposal, **section 3b.**
Information Related to Security Requirement (Appendix F)

PHASE TWO:

Verification of Team - confirmed Phase One team identification information
Proposal - one (1) original plus five (5) copies
Front page of RFP
Front page(s) of any solicitation amendment

In a separate envelope:

Price Proposal Form - one (1) completed and submitted in a separate envelope

PROJECT BRIEF CONTENTS

TERMINOLOGY AND ACRONYMS

The following terminology and acronyms are used in this document:

Building Components and Connectivity (BCC) –

Components - Furniture fixtures and equipment including, built-in furniture and equipment.

Connectivity - Information technology (IT), multi-media (MM), Integrated Security Systems (ISS).

Conservation - All actions or processes that are aimed at safeguarding the tangible character-defining elements of a heritage place to retain its heritage value and extend its physical life. This may involve preservation, rehabilitation, restoration, or a combination of these actions and processes.

Construction Tender Packages - Specific tender documents for a segment of work.

Construction Manager (CM) - The construction management firm engaged by PWGSC to provide construction-related advice during the planning, design and construction documentation phases and to provide construction management services during the execution of multiple contracts (tenders).

Crime Prevention Through Environmental Design (CPTED) - CPTED is a proactive design philosophy built around a core set of principles that is based on the belief that the proper design and effective use of the built environment can lead to a reduction in the fear and incidence of crime as well as an improvement in the quality of life.

Drawings - The 2 Dimensional drawings generated from the Building Information Model. All drawings designated as deliverables must follow the requirements of the PWGSC National CADD Standard.

Environmental Consultant (EC) - The firm, contracted by PWGSC, to provide environmental services.

Federal Heritage Buildings Review Office (FHBRO) - The primary objective of Parks Canada's FHBRO is to assist federal government departments in the protection of their heritage buildings, in accordance with the Treasury Board Policy on Management of Real Property.

Federal Sustainable Development Strategy (FSDS) - The document that sets out the sustainable development strategy objectives for the Federal Government of Canada on a three-year cycle. Departments that must respond to the FSDS, including PWGSC, state their own objectives in response to the FSDSA in the annual Report on Plans and Priorities **(RPP)** and their actual performance in the annual Departmental Performance Report **(DPR)**. These minimum sustainability commitments established by PWGSC for all Real Property Projects are further detailed in the *Real Property Sustainability Framework v2015 (***RPSF)** *(*addressing the government wide commitments set forth in the Federal Sustainable Development Strategy (FSDS) 2013-2016).

Geotechnical Services Consultant - The firm separately contracted by PWGSC to provide geotechnical services.

Heritage Assets - The broad encompassing term used to describe tangible character defining elements and the integrated arts in a building. They include a range of cultural property managed and cared for by various custodians. They are divided into the following three categories.

Movable - Furnishings and other portable assets, e.g. movable furniture, wall-hung fine art, historical material culture and portable sculpture.

Fixed-removable - Heritage elements that are fastened to the base building fabric using screws or other fastening devices which can be easily unfixed, e.g. light fixtures, grilles, radiators, doors, hollow-metal partitions demountable wood panels and wall mounted handrails.

Fixed - Heritage elements which are fixed or embedded into the building fabric which, if possible to remove, would require extensive effort and careful disassembly, e.g. architectural fine art relief sculpture, woodwork and paneling, elevator doors and cabs, ceramic tiles, brass metalwork, marble and stone finishes.

Heritage Conservation Services (HCS) - PWGSC's Centre of Expertise for Heritage Conservation, that provides expert advice and quality assurance for key architectural, conservation, engineering and landscape architecture professional disciplines. For work on federal heritage buildings, HCS takes a lead design advisory role (also known as design management) and assembles a team of professionals from within PWGSC Technical Services sector, to provide expert advice throughout the project. Members of the design management team come from Architecture and Engineering Services and Environmental and Geotechnical Services.

Leadership in Energy and Environmental Design (LEED) – Is a voluntary, third party certified, green building rating system that evaluates the environmental performance of whole buildings during the design, construction and operational phases of the building's life cycle.

Life Cycle Assessment (LCA) – A scientific method for measuring the environmental footprint of materials,

products and services over their entire lifetime (Ref: Athena Sustainable Materials Institute, http://www.athenasmi.org/).

Life Cycle Cost (LCC) – Measures, in present-value terms, the sum of all relevant costs associated with owning and operating a building or building system over a specified time period (Ref: ASTM E917-05 Standard Practice for Measuring Life-Cycle Costs of Buildings and Building Systems, available at http://www.astm.org/Standard/standards-and-publications.html.

Model - Building Information Model (BIM) - A Model is the product of the modelling process and is an object-based digital representation of the physical and functional characteristics of a facility. The (*Building Information*) Model serves as a shared knowledge resource for information about a facility, forming a reliable basis for decisions during its lifecycle from inception, design, construction and onward, as well as defined use cases such as heritage asset management or building automation.

Project - All services and work required to fulfill the work described in this Project Brief.

Project Delivery Close-Out – Completion of the project management activities relative to the Delivery Phase of a project and to provide an assessment of the project performance against its objectives and requirements.

Project Management Support Services (PMSS) - The Project Management entity in contract with PWGSC for project management support services for this project.

Project Management Team – (PM Team) The combined PWGSC Project Management and PMSS Team, including the Cost Consultant and Schedule Consultant responsible for project and program management.

Project Team - The combined private sector and government sector team responsible for delivering the project including the PM Team, Consultant, CM, representatives from PWGSC, the Users and other government organizations.

Useable Floor Area - Useable space to accommodate fit-up requirements does not include building loss factor or circulation.

User's - The Supreme Court of Canada (SCC); Federal Courts (FC); Royal Canadian Mounted Police (RCMP); and Public Works and Government Services Canada (PWGSC), will be the new interim users of the West Memorial Building (WMB).

Value Engineering (VE) - A creative, organized effort, which analyzes the requirements of a project for the purpose of achieving the essential functions at the lowest total costs (capital, staffing, energy, maintenance) over the life of the project or system. Through a group investigation, using experienced, multi-disciplinary teams, value and economy are improved through the study of alternate design concepts, materials, and methods without compromising the functional and value objectives of PWGSC.

Viable Schematic Design Option – All Schematic Design Option must respect the objectives of the Project of cost, schedule, design and heritage quality and sustainability while satisfying the requirements of the swing space and the long-term Functional Programs in order to be “viable”.

PD 1 PROJECT INFORMATION

This Project Brief identifies the requirements to deliver the West Memorial Building Rehabilitation Project and provides overall project information. The Project Brief is divided into two (2) main sections: Project Description (PD) and Description of Services. The Description of Services is further divided into two (2) main sections: Project Administration (PA) and Required Services (RS).

1. Project Information

Public Works and Government Services Canada (PWGSC) intends to retain an architectural firm in the capacity of Prime Consultant, supported by a multidisciplinary team of sub-consultants and specialists, for the design and implementation of the West Memorial Building (WMB) Rehabilitation Project (Project), including all base building systems as well as the fit-up of office and special purpose space required to be used as swing space by the Users.

The Prime Consultant (Consultant) must: review all related documentation; recommend and perform further examination of the building as required; prepare a minimum of three (3) distinct viable design options; develop the PWGSC preferred design to construction tender documents; perform construction and contract administration services including resident site services; and provide design management services including cost, scheduling, project control, and commissioning services required for this Project. The delivery of the Consultant services is anticipated to be a continuous process from contract award to Project delivery closeout.

Construction will be implemented by a Construction Manager (CM), hired by PWGSC under a separate contract.

This Project Brief is intended to provide overall project information and identify the project requirements proponents need to submit a proposal for Prime Consultant Services. Information concerning PWGSC standards and policies for Consultant Services is provided in “Doing Business with the National Capital Area (NCA)”, and must be adhered to in conjunction with requirements of this Project Brief.

1.1 Project Identification

Project Title:	West Memorial Building Rehabilitation Project
Location of the Project:	344 Wellington Street, Ottawa, Ontario, Canada
Project Number:	R.086471.405
User’s:	Supreme Court of Canada (SCC)
	Federal Courts (FC)
	Royal Canadian Mounted Police (RCMP)
	Public Works and Government Services Canada (PWGSC)

PWGSC Project Team (Individual's names to be provided at Contract award)

Project Director:

Senior Project Leader:

Senior Project Manager:

Project Manager:

Contract Officer:

PD 2 PROJECT DESCRIPTION

2. Project Description

2.1 Project Overview

The purpose of this Project is to rehabilitate and modernize the base building services and structure of the West Memorial Building so it can accommodate a generic Workplace 2.0 Fit-up Standards occupancy for its long-term use. In the short-term, however, the WMB Rehabilitation Project must be fit-up as swing – space, to temporarily accommodate the Users' functions, currently carried out in the Supreme Court of Canada Building (SCCB), allowing that building to be rehabilitated.

The Project scope of work includes, but is not limited to:

- Landscape work;
- Limited excavation, as required by the final design;
- Potential infill of light wells, as required by the final design;
- Architectural rehabilitation;
- Universal accessibility;
- Heritage conservation;
- Selective demolition and abatement of designated substances, as required by the final design;
- Sustainable development;
- Structural, seismic and building envelope upgrades;
- Mechanical and electrical systems including fire protection and energy monitoring and control system (EMCS) upgrades;
- Refurbishment of vertical circulation and loading dock (potential relocation the loading dock);
- New Building Components and Connectivity (BCC) including all furniture fixtures and equipment (FF&E) and information technology (IT), multimedia (MM), and security requirements; and
- Interior space fit-up for an interim User's.

2.2 Building Users

There will be four (4) user groups accommodated in the swing space at WMB.

2.2.1 The Supreme Court of Canada (SCC)

The SCC is a function of Canada's Constitution Act of 1867. The courts specific roles are defined as part of the Supreme Court Act (R.S.C., 1985, c. S-26).

The SCC is Canada's final court of appeal. It serves Canadians by deciding legal issues of public importance and contributing to the development of law applicable within Canada. The Supreme Court consists of a Chief Justice of Canada, and eight (8) puisne judges. Each Judge is appointed by the Governor in Council.

The Registrar's Office is the administrative body of the SCC, which provides all necessary services and support for the Court to process, hear and decide cases. It also serves as the interface between litigants and the Court. Both the Registrar and Deputy Registrar are appointed by the Governor in Council whereas all Court employees are public servants employed by the Registrar's Office.

The SCC organization is comprised of four (4) Sectors / Branches, each lead by either a Director General or a Governor-in-Council appointee: Corporate Services Sector, Court Operations Sector, Executive Services Branch and Library & Information Services Sector. Each Branch / Sector directly participates in the operations of the SCC.

2.2.2 Court Administrative Services (Federal Courts [FC])

The Courts Administration Service was established in July 2003 by the Courts Administration Service Act (S.C., CAS 2002, c. 8). This legislation consolidated the former registries of the Federal Court of Canada.

The role of the Courts Administration Service is to provide administrative services to four (4) courts of law: the Federal Court of Appeal, the Federal Court, the Martial Appeal Court of Canada and the Tax Court of Canada. These courts permit individuals, companies, organizations and the Government of Canada to submit disputes and other matters to the courts, and enable the courts to hear and resolve the cases.

In 2003, the Federal Courts relocated from the SCCB to a separate facility but still maintains a right of access to two (2) courtrooms adjacent to the Grand Hall (the main entryway), two (2) Judges' Anterooms and offices.

2.2.3 Royal Canadian Mounted Police (RCMP)

The RCMP is organized under the authority of the RCMP Act (R.S.C., 1985, c. R-10). In accordance with the Act, it is headed by the Commissioner who is under the direction of the Minister of Public Safety Canada.

Protective Policing business line is part of Federal Services provided by the RCMP. As part of this service, the RCMP maintains a detachment within the SCCB to ensure protective policing for both the occupants and protection of the asset.

2.2.4 Public Works and Government Services Canada (PWGSC)

PWGSC is organized under the authority of the Department of Public Works and Government Services Act (S.C., 1996, c. 16). The department's Real Property Branch manages one of the largest and most diverse portfolios of real estate in Canada. The department provides federal departments and organizations with affordable, productive work environments and a full range of real property services.

As the custodian of the SCCB and associated grounds, PWGSC is responsible for ensuring that the SCCB is maintained at the highest standards associated with a heritage Classified property.

PWGSC has the same responsibilities as the custodian of the WMB.

2.3 Classified Heritage Building

The West Memorial Building was designated a "Classified" Heritage Building in 1992. The West Memorial Building is connected by the Memorial Colonnade and three (3) underground service tunnels, to the East Memorial Building. The heritage value of both the West and East Memorial Buildings is outlined in the buildings' Heritage Character Statement, but generally resides in their monumental scale and massing, architectural design, materials and craftsmanship, and site relationships.

2.4 Cost

The WMB Rehabilitation Project must respect the reserved construction preliminary budget of $ 186.7M, as outlined below. It is the Consultant's responsibility to manage the Project's scope within the construction budget. The current indicative estimate (not including HST, risk allowance or professional fees) is as follows:

2.4.1 Class D Estimate

Hard Construction and BCC Estimates		Current $ 000
Hard Construction		
A-Shell	A1- Substructure	$ 180
	A2- Structure	$ 21,317
	A3- Exterior Enclosure	$ 21,653
B-Interiors	B1- Partitions & Doors	$ 12,602
	B2- Finishes	$ 8,149
	B3- Fittings and Equipment	$ 5,777
C- Services	C1-Mechanical	$ 29,705
	C2- Electrical	$ 15,341

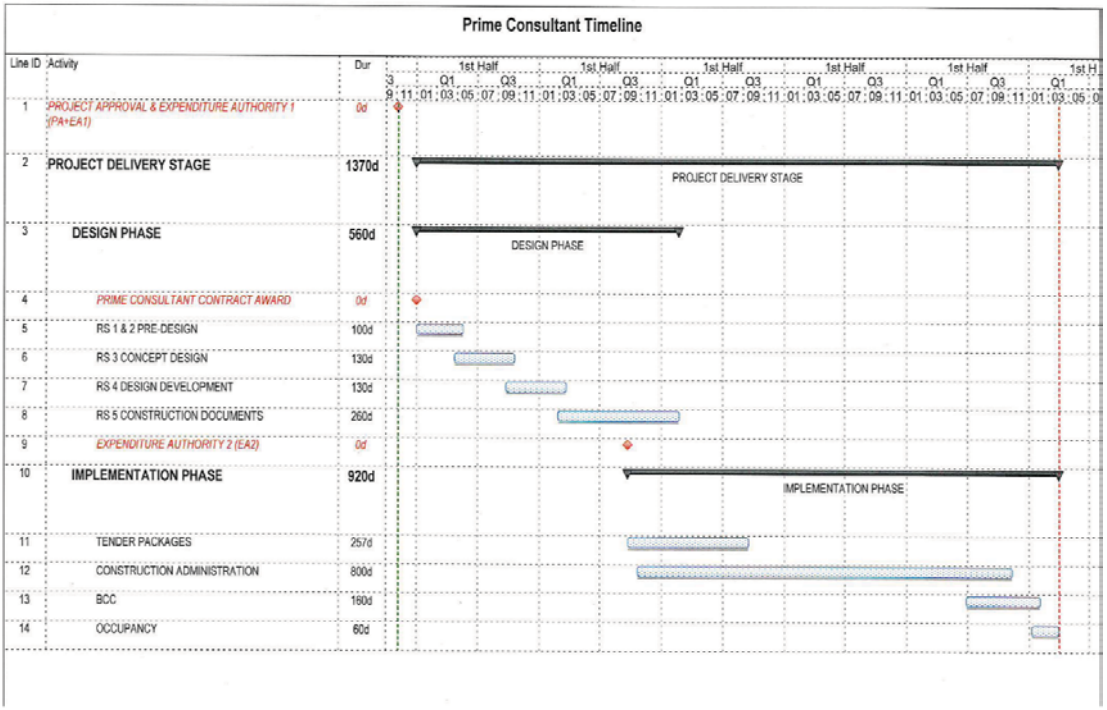
Hard Construction and BCC Estimates		Current $ 000
D- Site & Ancillary Work	D1- Site Work	$ 728
	D2- Ancillary Work	$ 5,376
Total Hard construction		$ 120,828
General Requirements 12%		$ 14,499
Estimating allowances 20%		$ 27,065
Total Hard construction Costs Including Allowances		$ 162,393
Building Components and Connectivity (BCC)		
BCC	Building Components	$ 3,258
	Building Connectivity	$ 18,850
Total BCC		$ 22,108
Estimating Allowances 10%		$ 2,211
Total BCC Costs Including Allowances		$ 24,318.80
Global Cost Estimate		**$ 186,711.63**

2.5 Schedule

2.5.1 Key Project Activities

Activity durations are preliminary and the Consultant is responsible for verifying and confirming the feasibility of the Prime Consultant Timeline, below, as part of their scheduling mandate. The Project schedule is being driven by the need to vacate the SCCB as soon as possible.

The Consultant must work closely with the DR, the CM and the Users to maintain or reduce the durations set out in this schedule. Warranty services will be considered over and above these estimated completion dates.



2.6 Implementation Strategy

The Project implementation strategy must optimize critical decision making in order to prioritize the design and interim approvals, allowing construction to start early and in a streamlined sequence.

2.6.1 Phased Design Method

A phased design method is required. While the design development is taking place, certain aspects of the base building design could be accelerated so that construction tender documents can be produced for those areas that do not require the design to be fully completed, such as; the building envelope, excavation and backfill.

While the construction tender documents are being developed, iteratively, the Consultant must sequentially release, to the CM, construction tender document packages for CM tender, to optimize the construction schedule.

During the design phase, the Consultant must work closely and in a cooperative manner, with the CM to develop the design. The Consultant must ensure that all information is made available to the CM, so they can provide accurate and complete advice on construction activities such as, but not limited to, the following:

1. Construction costs;
2. Material delivery and construction schedules;
3. Constructability;

4. Suitability and availability of materials and components; and
5. Sustainable design, construction, and operational principles and practices.

2.6.2 Integrated Design Process

In collaboration with the DR and CM, the Consultant must adopt and lead a holistic and integrated approach to the design of this Project. In so doing, the Consultant Team will provide an efficient, cost effective and environmentally responsible approach, recognizing strategies that can facilitate future changes in use and occupancy, while meeting current user needs and project requirements.

It is a methodology for the delivery of a collaborative strategy that must:

- Consider the design, construction, operation and occupancy of the building over its complete life-cycle;
- Engage the Users and other stakeholders, early in the Project, to develop and realize a common vision, performance priorities and clearly defined functional, environmental and economic goals and objectives;
- Build a multi-disciplinary Consultant Team that includes or acquires the skills required to address all design issues;
- Proceed from whole building system strategies working through increasing levels of specificity to realize more optimally integrated solutions; and
- Use team workshops/partnering sessions as key decision making tools to initiate and stimulate discussions, evaluate options and build consensus.

2.6.3 Construction Manager (CM)

A Construction Management (CM) approach will be implemented for the WMB Rehabilitation Project.

The CM will provide a construction management function participating in Project meetings and workshops, providing bid-ability and constructability advice, define construction phasing, construction tender package sequencing, establish and manage the Project construction schedule and manage the construction budget. The CM will provide advice throughout Project.

The CM will provide an on-site multidisciplinary team for the entire duration of the Project. The CM and the Consultant’s on-site team must have the authority, ability and capacity to immediately respond to evolving situations, daily, in all parts of the site, coordinating and integrating ongoing construction operations with the design production.

The Project will be implemented based on a prioritized design approach using multiple, simultaneous construction tender packages prepared by the Consultant and tendered by the CM. The CM will define the requirements and sequencing of construction document packages for the DR and Consultant, for the Consultant Team to plan their tasks and activities accordingly. The Project Team must work collaboratively to coordinate and integrate all the required work.

2.6.4 PWGSC Consultants

The following Consultants will be retained by PWGSC and will report directly to the DR. They will provide additional information, as required, as well as provide third party advice and reviews.

2.6.4.1 Environmental Consultant (EC)

The Environmental Consultant will be responsible for all abatement work and will provide related consultant services. The Consultant, the EC and the CM will work closely to establish the Abatement and Demolition Program, for design requirements that have not already been addressed by the WMB Asset Integrity Project. It is expected that the scope of the abatement and demolition package will be required only for work that is directly related to the Consultants final design of the Project.

The Consultant is responsible for all abatement and demolition and must coordinate with the EC to ensure a seamless delivery of the abatement and demolition scope of work. The EC will provide all field review services during tender and construction for their field of expertise.

2.6.4.2 Geotechnical Services Consultant (GSC)

The Consultant must coordinate with PWGSC's Geotechnical Services Consultant, to review the geotechnical reports, to identify areas where additional geotechnical information may be necessary for design purposes, and to work in collaboration with the GSC during construction phase inspections and site monitoring activities.

2.6.4.3 Cost Consultant (CC)

PWGSC will engage a Cost Consultant to provide Project support. They will operate as an extension of PWGSC's Project Management Team and will provide an independent assessment of the Consultant's and CM's cost, risk management and quality assurance services.

2.6.4.4 Schedule Consultant (SC)

PWGSC will engage a Scheduling Consultant to provide Project support. They will operate as an extension of PWGSC's Project Management Team and will provide advisory services for the scheduling planning, monitoring and control and quality assurance.

2.6.4.5 Security Consultant

PWGSC will engage a Security Consultant, to provide security-related services. They will provide; a Threat and Risk Assessment, Security Design Brief and security support services related to the Draft Preliminary Functional Program and quality assurance services.

2.6.4.6 IT/ MM/ ISS Consultant

PWGSC will engage an IT Consultant to provide IT related services. They will provide; Information Technology (IT), Multi-Media (MM) and Integrated Security Systems (ISS), support services related to the Draft Preliminary Functional Program and quality assurance services.

2.6.4.7 Third Party Structural/Seismic Design Review

The Consultant's structural and seismic design will be reviewed throughout the Project by third

party peer review experts retained by PWGSC.

2.7 Building Information Modelling (BIM)

Building Information Modelling (BIM) (referred to as the “Model”) is an object-based digital representation of the physical and functional configuration, characteristics and attributes of a project, and will be used for the WMB Rehabilitation Project.

BIM supports an integrated design process built around coordinated, reliable digital information about a project from design through construction and into operations. BIM, facilitated by a common data environment, will be used on this Project for visualization, analysis and communication of Project information for and between all stakeholders including, the, Project Management Team, Consultant Team, CM, Users and the PWGSC Property Manager’s Operations Team. It represents a shared data resource that will assist in the decision-making and approval processes, as well as augment productivity, efficiency and quality of the end product delivery.

2.8 Related Projects

There are three (3) projects underway which will facilitate the work on the WMB Rehabilitation Project. The outcomes of these three (3) projects are outlined below.

2.8.1 West Memorial Building - Asset Integrity Project:

The WMB Asset Integrity Project will be completed in the summer of 2018 and does not form part of the requirement for this Project. The WMB Asset Integrity Project will inform the requirements for the WMB Rehabilitation Project and includes the following scope:

1. Preservation of the heritage value of this Classified Heritage Building, through protection or temporary removal of heritage elements;
2. Coordination and removal of designated substances in the building interior;
3. Modifications of the existing HVAC, electrical and life safety systems to maintain system integrity;
4. Removal of non-functioning or outdated building systems;
5. Selective demolition of partitions, floors, ceilings and finishes in the interior of the building; and
6. Replacement of roof membranes on the main flat roofs.

Once the WMB Asset Integrity Project is complete, the WMB will be left in a “mothballed” state and will have the following temporary conditions in place:

1. Temporary heat and ventilation for the overall building;
2. Temporary general lighting, and emergency (battery pack) lighting throughout the building;
3. Protection measures installed for all Heritage Assets left in-situ throughout the building. All removable Heritage Assets, designated for reuse, will be stored in a secured enclosure in the basement level garage;

4. Temporary fire protection system, detection throughout the building and sprinklers on the ground and first floors only;
5. One functioning WC;
6. No potable water; and
7. Three (3) functioning elevators; two (2) passenger, one (1) freight.

2.8.2 West Memorial Building, Building Information Model (BIM) Project:

The WMB, Building Information Model (BIM) is currently being developed and is anticipated to be complete by the end of 2017. This project will develop an As-Is/Record Model of the building conditions of the WMB in its current state before the WMB Asset Integrity Project has been implemented.

The Consultant must verify and update this Model once the WMB Asset Integrity Project is complete. Verification of the existing conditions must be performed using laser SCAN-to-BIM technology.

2.8.3 Draft Preliminary Functional Program:

The Draft Preliminary Functional Program will be made available in Phase II of this RFP, for the fit-up of the User space in the WMB. A summary of the Functional Requirements is included in this document in Annex C.

The Consultant must review, validate update and incorporate all functional requirements into the Project design, as well as provide continual updates to the Functional Program as the Project progresses.

PD3 PROJECT BACKGROUND

3. Project Background

3.1 Existing Building Information

The following provides a summary profile of the WMB Building:

West Memorial Building Profile	
Location	344 Wellington Street, Ottawa, Ontario, Canada.
Number of Stories	Seven (7) above-grade stories plus basement and sub-basement. Three (3) pedestrian links and one (1) sub-basement service tunnel link to the East Memorial Building. One (1) pedestrian link is in the Memorial Colonnade, above ground level and the other two (2) are at the basement and ground levels, underground.
Building Footprint	Including the light wells approximately 5,368 m^2, (excluding the foundations for the planters and stairs on Wellington Street)
Inside Gross Area	33,621 m^2
Useable Floor Area	20,071 m^2
Future Planned Use; Swing Space / Long Term	Swing space for the Users. Some building space is anticipated to be left unoccupied. After the Users leave WMB, all space will be fit-up to accommodate Federal Government administration space, using Workplace 2.0 Fit-up Standards.
Current Occupancy	Unoccupied.
Built	1954-1958 By Government of Canada.
Architects	Allward and Gouinlock
Additions	No additions to date.
Acquired by Crown	n/a
Heritage Designated	Designated as “Classified” by FHBRO, 1992.
Pedestrian Access	Access via; Wellington Street, Sparks Street, Lyon Street and Bay Street.
Loading Dock	Access via; Bay Street.
Parking	Access via; Bay Street Basement level parking garage provides approximately 70 parking spaces.

West Memorial Building Profile	
Vertical Transportation	Nine (9) passenger elevators; one (1) freight elevator.
Construction	The steel and reinforced concrete structure is clad in smooth-faced Indiana limestone with a plinth of Stanstead granite.
Facade	Original

NOTE: The following elements linking the East Memorial Building to the West Memorial Building are excluded from the scope of work:

- The Memorial Colonnade link located above Lyon Street; and
- Two (2) below grade tunnel links located directly below the Memorial Colonnade under Lyon Street.

3.2 Site

The site sits on one (1) complete city block; bounded by Wellington, Sparks, Lyon and Bay Streets. There is hard and soft landscaping between the exterior walls and the public sidewalk on all four (4) sides of the building.

The East Memorial and West Memorial Buildings have a prominent presence in the urban context which is reinforced by their strong visual relationship with their surroundings, including the adjacent built environment and the modernist landscape of the Garden of the Provinces to the west.

In addition to the West Memorial Building proper, this Project includes the rehabilitation of the below-grade sub-basement service tunnel which connects the East Memorial Building to the West Memorial Building, under Lyon Street, at the north side of the building and continues under the entire length of the WMB toward Bay Street, at the sub-basement level.

3.3 Architecture

3.3.1 Building Envelope

The exterior wall is constructed of limestone and granite veneers, block back-up, clay tile and plaster, which provides very little insulation value. The building envelope has performed relatively well to date, due in part to the drying effect created by low levels of interior humidity and constant heat loss through the walls.

The building masonry, containing silica, requires abatement.

The exterior windows consist of a steel frame with multiple panes of single glazing set into steel mullions.

There are two (2) types of roofs;

1. Standard build up-tar and gravel flat roof, and
2. Sloped copper roof with a pre-cast concrete structure underneath.

3.3.2 Building Interior

Interior finishes detailing and craftsmanship reflect the hierarchical importance of the various spaces, generally diminishing in richness on upper floors.

A variety of marbles, often book and end-matched, clad the floors and dados of the main entrance lobbies, elevator lobbies, and main floor corridors. Significant woodwork elements include the panelling of the former Minister's suites on the fifth floor.

The interior remains largely intact from its initial construction. The green colour scheme, which is a reference to the veterans, manifests itself in the use of green marble wall base, green enamel elevator cabs and doors and green glazed tiles.

3.3.3 Accessibility

Of the four (4) existing entrances, the main entrance (at the corner of Wellington Street and Lyon Street) is barrier-free with exterior ramps only to the main elevator lobby on the first floor. Access to the remainder of the first floor is blocked with stairs to the south and west.

3.4 Heritage

3.4.1 Building History

The WMB was built in 1954-1958 and is located on the south side of Wellington Street, facing the Library and Archives Canada building.

The WMB is an imposing, seven (7) storey structure which takes up an entire city block. The building is clad in smooth Indiana limestone and features distinctive carved relief of Canadian fauna and flora. The building's main roof is low-pitch, copper clad, with dormer windows complete with a tall corner tower and pavilion roof, visually uniting this building with other downtown buildings, including the SCCB. The consistent placement and rhythmic grid-like pattern of the steel framed windows, interspaced between tall, narrow piers accentuates the building's prominence and formality as a civic building.

The WMB was designated a Classified Federal Heritage Building because of its historical associations, architectural qualities, and environmental value.

Construction of the East and West Memorial Buildings, originally called "Veterans Memorial Buildings", began following the Second World War as a memorial honouring those who served and those who died in that war. The buildings were designed to accommodate, under one roof, the employees of the Department of Veterans Affairs and the associated Agencies, who were housed in several locations throughout Ottawa at that time. Most recently the building has been unoccupied and dormant for ten years.

The Memorial Colonnade which connects the East and West Memorial Buildings, spans Lyon Street. The East and West Buildings remain to this day a Memorial to the Canadians who served in the military.

3.4.2 Heritage Character Statement

The architectural character defining elements that contribute to the WMB designation are described

on the following website:

http://www.historicplaces.ca/en/rep-reg/place-lieu.aspx?id=4374

3.4.2.1 West Memorial Building Preliminary Conservation Strategy, Inventory and Conservation Guidelines

A Preliminary Conservation Strategy and inventory has been developed for the WMB Building, by the PWGSC Heritage Conservation Directorate, (2014). The inventory was updated for the WMB Asset Integrity Project (2017).

The Conservation Guidelines are to assist PWGSC in the stewardship of this Classified building and its site (site, building exterior and building interior). The Guidelines explain the value of the WMB character-defining elements and are meant to guide the development of future interventions. The Guidelines seek to guide and mitigate the impact of potential changes to the building's overall heritage character.

Heritage Components have been protected or removed from the area of construction, until required, for preservation or reinstallation. The Heritage Materials Database (HMD) and a Heritage Materials Management Protocol (HMMP), listing all Heritage Components and the protocols to be adhered to for this Project, have been developed.

3.5 Structural

1. The exterior walls of the building are constructed on a concrete clad steel frame with a terra cotta block infill;
2. The structure of the sloped roofs including the corner tower consist of structural steel beams supporting light-weight precast concrete panels;
3. Typical floors consist of cast-in-place reinforced concrete slabs of varying thicknesses bearing on concrete beams or joists supported on concrete columns. From the basement to the second floor on the north side of the building, there are also some steel beams and some steel columns supporting the concrete slabs;
4. The foundations are reinforced concrete footing bearing on rock;
5. The WMB contains no 'formally designed' lateral load resisting system. Currently, the building is stabilized by a combination of reinforced concrete walls around elevator shafts, unreinforced clay masonry exterior infill walls and walls around stair shafts, and the inherent frame action of the cast-in-place concrete beam and column system; and
6. A seismic and load assessment has been carried out and the report is available in Phase II of this RFP (refer to: PD 6 Existing Documentation).

3.6 Mechanical

1. The Mechanical systems are original to the WMB and have long surpassed their normal acceptable life. Some of the systems are already inactive or decommissioned;
2. Steam from the Cliff Street Central Heating Plant supplies steam to the perimeter heating

units with self-contained thermostats on all floors, 100% outdoor air handling units with steam heating coils, as well as unit heaters for the seventh floor, loading dock, garage and other high heat-loss areas;

3. There is a steam and condensate pump and piping system with steam entering at the sub-basement on the Lyon Street side of the building coming from the East Memorial Building. Steam and condensate pipes run below the length of the building inside the sub-basement service tunnel;
4. There is no major humidification equipment in the building;
5. Ventilation is provided by a few air handling units (100% air make up type) located in the basement and on the seventh floor and a few exhaust air fans. In most cases the air handlers provide ventilation air to the corridors. A section of the parking garage exhaust system traverses through the Memorial Colonnade;
6. The building doesn't have a centralized air cooling system. Some perimeter areas used to have small window type air conditioning units which have now been removed. Cooled water from the Central Heating Plant is supplied to the East Memorial Building only, stopping at the east end of the sub-basement service tunnel connecting the two (2) buildings;
7. The plumbing system is supplied with two (2) 150mm water main that enters the building through the east mechanical room. Two (2) domestic water booster pumps increase the city water pressure to serve plumbing fixtures on the upper floors;
8. The drainage system consists of separate sanitary piping system and storm piping system. In 1996, some modifications were made to the sanitary and storm systems. Storm water is collected in a lower basement sump tank at the Lyon Street end of the building. The storm water is then pumped out to the street storm piping system which consists of a 38mm pipe main;
9. There is a building tile drainage system with sump tanks at the lower levels of the building
10. For the sanitary services refer to: section PD 3 Project Background, 3.7 Site Services;
11. The control system is an assortment of electric, pneumatic, electronic and self-contained components;
12. The only functional washroom is adjacent to the loading dock;
13. There is no potable water;
14. The WMB Asset Integrity Project will provide temporary heating and ventilation to the building; and
15. Although there are no existing mechanical "as-found drawings" available for the building systems, as-built drawings will be available from the WMB Asset Integrity Project.

3.7 Site Services (Civil/Municipal Engineering)

1. The building is currently fed with two (2) 203mm water services from the City of Ottawa

municipal water distribution network on Lyon Street. The valving and configuration of such provides full redundancy of water supply to the building. These services, along with the City of Ottawa's water distribution system in the vicinity of Lyon Street and Wellington Street, were upgraded in the late 1990's as part of the City of Ottawa's rehabilitation of Wellington Street, Phase 1;

2. Included in the City of Ottawa's rehabilitation of Wellington Street, Phase 1, a new 375mm storm service was provided to the WMB, in coordination with the Plumbing Separation project of the WMB; and
3. The building is fed with one (1) 200mm sanitary service, which remains original to the West Memorial Building itself. This 200mm service discharges to an existing 600mm sewer that was once a combined sewer and in turn, this sewer discharges to the City of Ottawa Wellington Street Interceptor sewer at the north end of Lyon Street at Wellington Street.

3.8 Fire Protection

1. The existing fire alarm system is past its life expectancy and needs to be replaced;
2. The fire protection system consists of a 200mm fire line which enters the east mechanical room and splits to serve the standpipe as well as the sprinklers on the basement and ground floors only. Water piping to fire hose cabinets has been maintained; and
3. There is a fire pump installed in the basement.

3.9 Electrical

1. The WMB is fed via a 15KV Hydro Vault located on the ground floor. The High Voltage distribution consists of a four cell Load Break Switch which feeds three single phase 333KVA transformers. This provides a total transformation of 1,000KVA. Reducing to 600V, the H.V. transformers feed a 1600A, 600V, 3Ph, 4W Switchboard which was installed in 1994. The 1600A, 600V, 3ph, 4W Switchboard then feeds downstream transformers and panels which in turn feed end of line equipment;
2. Currently there is no emergency power generator on site. There seems to have been a generator in the past but has since been removed. Current emergency lighting is being supplied by battery packs;
3. Most the interior lighting system has been removed minus life safety lighting, but there are some Heritage Components which will need to be refurbished. There are also some exterior quartz lights that partially flood the building, which may need to be replaced and supplemented;
4. Existing connections servicing the fountain in the Garden of Provinces as well as lighting for the Portage Bridge are to be maintained and kept operational;
5. The WMB Asset Integrity Project will provide temporary general lighting throughout the building; and

6. Although there are no existing electrical “as-found drawings” available for the building systems, as-built drawings will be available from the WMB Asset Integrity Project.

3.10 Vertical Transportation

1. There are nine (9) gearless and one (1) geared overhead traction passenger elevators in the building. 9 Elevators are original. They were imported from England and are character-defining elements. 1 Elevator was installed in 1997;
2. Some modernization has been performed to the elevators over the years, nonetheless there are outstanding CSA B44 Safety Code recommendations for all elevators, as well as outstanding maintenance items. At this time, seven (7) elevators are locked by TSSA. Two (2) passenger elevators and the freight elevator are being maintained; and
3. The original passenger elevators must not to be used for construction access. Only elevator 6 and the freight elevator, will be available for use.

3.11 Building Components and Connectivity (BCC)

3.11.1 Building Components

There are no existing Building Components in the WMB.

3.11.2 Connectivity

Connectivity in the WMB consists of intrusion alarms on the exterior doors (along with associated connectivity).

3.12 Security

The existing security system consists of Security Guards who control the main egress manually through the loading dock entrance adjacent to Bay Street and video monitoring of the exterior of the building. The four (4) main entrances are kept locked at all times.

PD4 PROJECT OBJECTIVES

4. Project Objectives

Several objectives have been developed to ensure and the success of the Project.

4.1 Objective One: Cost Management

A key objective is to deliver the Project within the limits of its authorized funding, substantiating the viability and cost benefits of design choices, respecting and enhancing the WMB and its associated landscape symbolic values (the building is a War Memorial) while utilizing best practice conservation standards. This will be achieved through the following measures, but not limited to:

1. A rigorous cost management system will be put in place to both monitor and report on cost;
2. Formal costing submissions for each construction tender package and for the overall project, in accordance with all Required Services (RS) sections;
3. Redesign work to be undertaken to maintain the construction cost budget when required;
4. Determination of appropriate contingencies;
5. Iterative and continuous design analysis and adaptation to maintain cost objective in collaboration with the PWGSC's Cost Consultant;
6. Strong and disciplined change control system;
7. Strong communications;
8. Clear approval process; and
9. Management of risk fund.

Since the construction budget is of a fixed value, value engineering (VE) as well as appropriate design choices must be a continuous process throughout the project.

4.2 Objective Two: Aggressive Schedule

The WMB Rehabilitation Project plays a key role in the, Judicial Precinct Program of Works, by providing the swing space for the Users, allowing the SCCB Rehabilitation Project to be implemented. As such, it is critical that an aggressive schedule is developed for this Project to allow the relocation of the users, into their swing space, as soon as possible, while still conforming to the policies of PWGSC. Any methods to accelerate the schedule must be tabled and, if approved, implemented.

4.3 Objective Three: Design and Heritage Quality

Provide a building that is fully rehabilitated and will serve the swing space requirements of the Users, as well as a permanent occupant for subsequent years. The Consultant must maintain a high standard of architectural design, based on recognized contemporary design principles, while respecting the heritage characteristics and value of the WMB. All design elements, planning, architectural, engineering and landscaping, must be fully coordinated, and consistent in adherence to good design principles. The level of quality is to meet the following objectives as a minimum:

1. Quality of materials, construction methods and execution must commensurate with the rehabilitation of a Classified Federal Heritage Building and the Project budget. Avoid experimental materials. Materials used should have a proven record of good performance and success before being used in a heritage building;
2. A building which continues to display its intended Classical-Moderne architectural style within the context of good conservation practices. The design of new construction layers should be compatible with and enhance existing character defining layers;
3. Operating costs must be kept to a minimum and reflect the projected operating costs in the cost plan. This is to be achieved by compliance with the Energy Budget, selection of equipment, requiring the minimum of operating personnel, and finishes for easy maintenance, etc.;
4. Any proposed changes to the exterior of the building must respect the building's current environment, including important views to and from the building;
5. Design for maximum flexibility in interim and long-term use of space;
6. Deliver the Project with an integrated solution for architectural design encompassing conservation of the resources to a high standard of design. Provide balanced solutions to design challenges for elements including planning, programming, security, architectural, conservation, engineering, energy savings and landscape architectural elements, as well as the work product of other specialties; and
7. Fabric and systems that will remain for the long-term must be of a high quality; designed in response to sound building science, life cycle cost effectiveness, general ease of maintenance and easily repaired and/or replaced and constructed with the best workmanship possible.

4.4 Objective Four: Integrated Project Delivery

Deliver the Project utilizing best practices in support of User's needs, respecting the approved cost, schedule, scope, quality requirements, and sustainability objectives. Integrated project delivery includes, but is not limited to:

1. A partnership and open communications between all members of the Project Team and stakeholders throughout all phases of the Project life;
2. Rigorous quality assurance reviews during the design and construction phases and commissioning of facilities;
3. A rigorous quality management plan in order to respond and correct, in a timely and effective manner, all issues as they occur, which addresses the technical aspects of the Project such that the performance of all components and systems will be tested against the intended design performance and the design life-cycle analyses;
4. A Consultant, experienced in major capital renovation projects with a significant heritage component, who must be responsible for the production and delivery of all documents, and

must ensure that there is a continuity of key personnel working as an integrated dedicated Consultant, for the full duration of the project;

5. A CM project delivery approach of multiple tendering and construction activities in a major capital project, featuring significant heritage rehabilitation work;
6. Professional conduct in all phases of the project, employing best practices for budget, schedule, quality, and scope management;
7. A continuous risk identification and management program employing effective methodologies to ensure construction safety as well as claims avoidance; and
8. Continuous and comprehensive documentation of the Project at all phases of the project implementation.

4.5 Objective Five: Sustainable Development

Sustainability can be defined in broad terms as the capacity to endure, to sustain now and in the future. It's about building lasting social and cultural equity, economic prosperity and protecting and restoring ecological integrity. As a prominent heritage building within the Judicial Precinct, the WMB presents an opportunity to demonstrate leadership for adoption of clean, healthy and environmentally responsible design strategies that set a higher benchmark for a recognized federal heritage building. Sustainable development includes, but is not limited to:

1. Delivery using integrated design principles, the Project must meet, and exceed where possible, applicable PWGSC standards and green building commitments (as outlined in the *Real* Property Sustainability Framework [RPSF] v2015). Accordingly, the Project must certify **to a minimum** of 3 Green Globes or equivalent industry recognized standard, but should not be limited to the design strategies within the rating system itself or performance level. Demonstrate a realistic, timely and life-cycle approach, integrating best practices that support the Government of Canada's priority for innovative sustainable and low carbon solutions for smarter, healthier and more productive workplaces;
2. Sustainability objectives and innovative strategies must be integrated throughout the evolution of the Project, balancing environmental, social (including heritage) and economical values and impacts with every Project decision; and
3. Deliver an enhanced, healthy, liveable work environment; and, provide an appropriate facility with high performance and efficient, flexible, adaptable systems, components and technologies that support the occupants in the conduct of their business, as well as accommodating the present and evolving operational and functional requirements.

4.6 Objective Six: Security

Incorporate physical security requirements within a publically accessible building. Ensure balance between the security requirements and allowing for a welcoming and transparent experience for visitors arriving at the Supreme Court through a "Grand Hall". Ensure the security requirements are fully integrated in to the design in a balanced, layered approach providing complete accessibility for it's users without visual

distraction from the heritage character defining elements of the building and is surroundings.

PD 5 PROGRAM OF WORKS

5. Program of Works

5.1 Intent

The WMB is presently unoccupied. Following the Users' interim use of the building, as swing space, the WMB will revert to general federal government office accommodations conforming to Workplace 2.0 Fit-up Standards for capacity and base building services. The ease in which the buildings' usage can be altered from the swing space use for the Users and its future long-term use as general office accommodations, must be sought during the design. All base building systems are to be designed to accommodate the long-term occupancy.

Interior layouts, including mechanical and electrical distribution systems, must be designed with flexibility. Base building fit-up is to account for options that might include light well infills and entrance and loading dock relocation.

Complete vertical distribution of services is to be designed and installed in the WMB, with minimal horizontal distribution of services only, on any floors not required for the Users swing space. Floors occupied by the swing space are to be fully designed and installed to suit the Users' requirements.

5.2 Design Services

5.2.1 Scan-to-BIM

The Consultant must verify and update the BIM provided by PWGSC as existing conditions prior to WMB Asset Integrity Project the once the project is complete, using laser SCAN-to-BIM technology.

5.2.2 Functional Program

PWGSC is preparing a Draft Preliminary Functional Program that will provide the User requirements that are to be incorporated into the design of this Project. This document will be available to all Proponents in Phase II of this RFP.

The Consultant must prepare a complete and validated Functional Program based on the information provided in the Draft Preliminary Functional Program.

The Consultant must review, validate update and incorporate all functional requirements into the Project design, as well as provide continual updates to the Functional Program as the Project progresses.

An initial summary of the User requirements is listed in Annex C: Summary of the Users' Requirements

5.2.3 Site

5.2.3.1 Landscape

The Consultant must provide the landscape design services listed below as a minimum:

1. Site development as per options presented including, but not limited to; reconfiguring entrances, loading dock, driveways and parking;

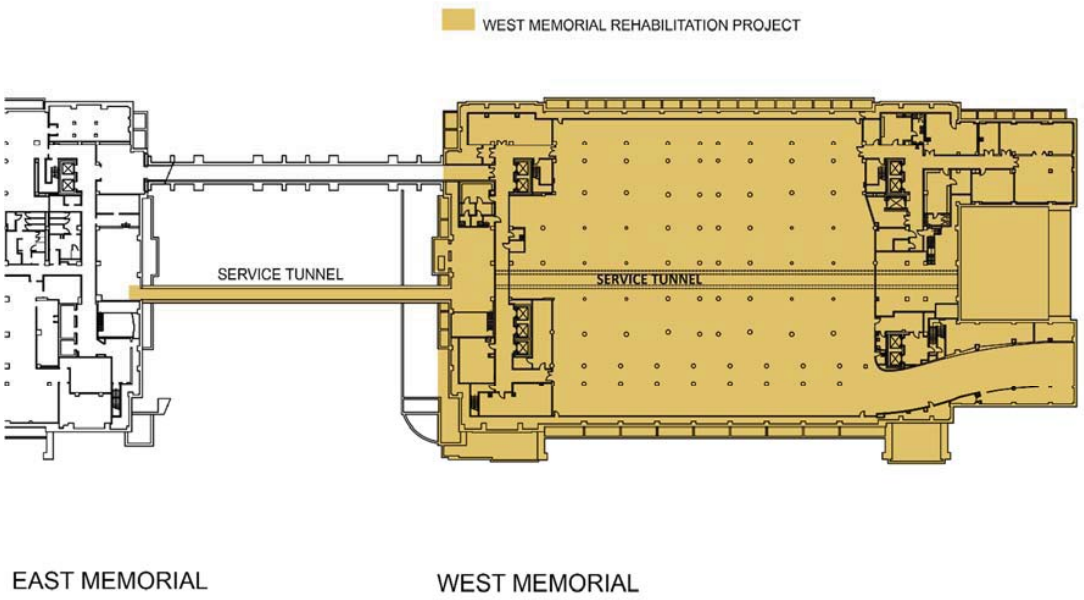
2. Implementing exterior physical security measures as per options presented, potentially including, but not limited to; bollards, rated site furniture, fences etc.;
3. New landscape, including site furniture; and amenities such as shaded areas and wind protection; Explore exterior circulation patterning, pedestrian use of exterior spaces at street level and roof levels, bicycle path and access to the site, storm water management; and
4. Crime prevention through environmental design (CPTED) incorporation in site development.

5.2.3.2 Architectural Lighting

Exterior lighting of building facades, entrance ways, service dock areas, connecting pathways, drop-off pick-up points and security cameras must be integrated with the building to improve and enhance the function and operation of the building and its environs. The lighting design must be suitable to the Long-Term Vision and Plan, Lighting Master Plan as well as the Capital Illumination Plan, under development by the National Capital Commission (NCC).

5.2.3.3 Underground utilities

The rehabilitation of the service tunnel connecting the East Memorial Building to the West Memorial Building and running under the entire length of the West Memorial Building, at the sub-basement level, as highlighted in the drawing below, is included in this project. This service tunnel is required to bring building services from the East Memorial Building to the West Memorial Building.



5.2.4 Architecture

5.2.4.1 General Architecture

The architectural requirements include a complete rehabilitation, modernization and fit-up of the WMB to accommodate new functional and technical requirements and as a minimum:

1. Upgrades to the building for life safety and building code compliancy;
2. Refurbishment and potential relocation of the loading dock facilities;
3. Restoration of vertical circulation throughout;
4. Integration of new mechanical, electrical, Information Technology (IT), Multimedia (MM) and Integrated Security Systems (ISS) into the heritage fabric;
5. Provision of a new broadcast capable courtroom for the Supreme Court.
6. Comprehensive planning and fit-up, that includes at a minimum:
   - Special purpose spaces such as; courtrooms, security requirements and public spaces;
   - Meeting rooms and offices;
   - Base building, support services;
   - Design of BCC Components and Connectivity;
   - Compatibility between the swing space use of the building for the Users and its long-term use as general office space, conforming to Workplace 2.0 Fit-up Standards for capacity and building services. Interior layouts, mechanical and electrical distribution systems, must be designed with flexibility; and.
7. Emergency and evacuation gathering areas that are clearly identified when required but do not impact the overall building statement.

5.2.4.2 Building Envelope

1. Replacement of roof membranes and renewal of underlying substrates necessary to maintain and protect the assets and provision for safety roof anchor system as required for future inspection and maintenance work; and
2. Rehabilitation of the building envelope including thermal performance (roof walls windows), integration of seismic requirements, and selective blast and ballistic mitigation measures in accordance with approved security design requirements.

5.2.4.3 Building Interiors

1. Materials selected are respective of the buildings' architectural design and their application respects the established material hierarchy. Selection should generally support sustainability and should focus on durable, long lasting materials easy to maintain;
2. Repair and or restoration of character defining elements and heritage finishes such as, light fixtures, woodwork and panelling, decorative metalwork, and ornamental plaster; and

3. The original skylights in the east and central light wells were removed several years ago. The use of one or more of the light wells is an opportunity to establish free-span spaces for courtroom functions.

5.2.4.4 Accessibility

PWGSC is committed to making its facilities accessible to persons with disabilities. Accessibility scope includes the building and the site, utilizing an integrated approach. The principals governing federal regulations, policies and standards are:

1. PWGSC Technical Reference for Office Building Design;
2. Treasury Board's Policy on the Management of Real Property;
3. Treasury Board's Accessibility Standard for Real Property;
4. Canada Occupational Health and Safety Regulations (COHS); and
5. Accessible Design for the Built Environment (Canadian Standards Association [CAN/CSA B651-12 and its supplements] and the NBCC).

These documents establish minimum requirements for accessibility within Crown-owned property.

Additional and specialized programmatic requirements of the Users must be incorporated on an as-required basis. Requirements for universal accessibility must be coordinated with the proposed landscape.

5.2.5 Heritage

As part of the stewardship role of PWGSC, architectural components being salvaged or disposed must be carefully considered to ensure that the heritage value is respected. The Government of Canada has established a legal and policy framework for the protection of heritage buildings, sites and moveable heritage assets in its care. In addition to the Treasury Board Policy on Management of Real Property the following documents affect how salvaged items are to be assessed and managed:

Treasury Board Policy on the Management of Materiel

(http://www.tbssct.gc.ca/pol/doc-eng.aspx?section=text&id=12062)

Guide to the Management of Movable Heritage Assets

(http://www.tbs-sct.gc.ca/pol/doceng.aspx?id=13872&section=text)

As a deliverable of the WMB Asset Integrity Project, a conservation approach was developed and reviewed by FHBRO. The intent was to protect all the character-defining features in the absence of a design for the future rehabilitation, so they could be later analysed as part of a new conservation approach tailored for the future rehabilitation. The Asset Integrity Conservation Approach incorporates the following:

1. "General Conservation Goals for the West Memorial Building:
   - Every effort must be made to protect the original features and volumes of the West

Memorial Building:

- The Classical Beaux-Arts organization of the interior with entrances at the four corners, and offices organized along major and minor axes and around two light wells;
- The simple and elegant detailing and hierarchy of finishes; and
- Special features such as the entrance lobbies, elevator lobbies, washrooms, and wood paneled Ministers' Suites, etc.

2. Conservation Goals for Zones of High Heritage Value:
   - High Heritage Value areas within the building have been identified as: Entrance Lobbies, Elevator Lobbies, First Floor North, East and West Corridors, Ministers' Suites and other Wood Paneled Offices on various floors; and
   - Every effort must be made to protect the clear circulation patterns, volumes and finishes of the entrances and elevator lobbies throughout the building and heritage corridors that demonstrate the original design intention through materiality and colour palette.
3. Conservation Goals for Zones of Medium Heritage Value:
   - Medium Heritage Value areas within the building have been identified as: Stairs, Washrooms & Corridors.
4. Conservation Goals for Zones of Low Heritage Value:
   - Low Heritage Value areas within the building have been identified as: "Most offices on all floors."

5.2.5.1 Heritage Conservation

5.2.5.1.1 Rehabilitation Conservation Approach

The Consultant must present their conservation approach for the project, taking into consideration the building's Heritage Character Statement, the Conservation Guidelines, the Preliminary Conservation Strategy for the WMB and findings from the WMB Asset Integrity Project. The Conservation Approach should build on the Approach formulated for the WMB Asset Integrity Project. The overall objective of the Conservation Approach for the major rehabilitation is to present a solid framework for decision-making for the Project with respect to heritage elements. The approach is meant to be updated at different phases of the project, as necessary. It should be based on an understanding of the building's core heritage value and should focus on protecting key aspects of the building's heritage value and character-defining elements, throughout the rehabilitation exercise.

5.2.5.1.2 Heritage Materials Database (HMD)

The Consultant must update the Heritage Material Database, for the architectural components of this Classified Federal Heritage Building, further developing the

spreadsheets in the Heritage Elements Inventory as the Project evolves for those heritage components not identified and specified in the report developed by the WMB Asset Integrity Project. This database identifies: the item description, location and quantity; assessment of heritage value; material value; and links to photographs from heritage recording report prepared by others.

The Consultant must recommend the salvage/disposal/protect/reinstate requirements for each heritage component based on the project, architectural design, and the conservation approach. Further detail must be provided if the item is selected for salvage including; who will remove it, storage requirements for long term or short term, outdoor or indoor storage.

The recommendation provided by the Consultant will be reviewed by PWGSC. This database must be continually updated and maintained during the design and construction phases of the Project by the Consultant, with monthly update reports to PWGSC. The completed Heritage Materials Database is to be used by the CM, to track conservation treatments, crating, relocation and removals of building elements.

5.2.5.1.3 Heritage Materials Management Protocols (HMMP)

The Consultant must update the Heritage Material Management Protocols for any heritage components developed by the WMB Asset Integrity Project. It will describe the protocols associated with handling heritage materials on the project. It is to be read in conjunction with the contract documents to be prepared for the project.

The HMMP is a document containing the heritage protective measures. This document details the protocol for the CM and must detail as a minimum:

1. The initial material actions;
2. The various steps and types of cataloguing: the purpose of this is to provide guidance to the CM for the appropriate cataloguing of heritage materials that are disassembled from their current location, including those that will be reinstalled or permanently stored;
3. Material handling during removal: the purpose is to provide guidance for the appropriate handling of all heritage material during the removal from their location;
4. The protection, including protection in-situ, protection removal to undertake work, crating protection;
5. Transportation procedures;
6. Temporary storage;
7. Permanent storage;
8. Unanticipated heritage element discovery protocols;

9. Unanticipated damage to heritage elements during construction protocols;
10. Sample heritage material condition report; and
11. Sample crating tag and heritage material I.D. tag.

The Project will involve in-situ and off-site conservation of Heritage Assets as well as any new work that impacts heritage values and character defining elements associated with the WMB and the surrounding site:

1. In-situ conservation includes all work associated with the interior and exterior base-building and landscape heritage assets and character defining elements within WMB; and
2. Off-site conservation includes all work associated with the Heritage Assets requiring removal from the building during construction and rehabilitated and managed off-site.

The DR will provide direction as to where these works and objects are to be stored, and the requirements for their placement in the WMB prior to occupancy.

5.2.6 Abatement and Selective Demolition (AD)

The WMB Asset Integrity Project (refer to: PD 2, 2.7Related Projects) is responsible for the removal of hazardous substances throughout the WMB and will perform selective abatement and demolition which will prepare the WMB for the rehabilitation and fit-up, as described in this Project Brief. This abatement and demolition work is scheduled to be complete in the summer of 2018.

Based on the Consultant's design for the Project, if additional investigations, abatement or demolition are required the Consultant must provide comprehensive details of the work to be done, to the DR, so they can engage the Environmental Consultant (EC).

5.2.6.1 Abatement

Hazardous substances in the WMB have been detailed in a Designated Substance Report. If additional investigation or work is required, PWGSC will engage an EC, who will be required to plan, design and develop specifications in connection with the abatement.

This will include the development of a program to remove hazardous substances during demolition as well as the field review related to abatement for all requirements not already specified in the WMB Asset Integrity Project.

5.2.6.2 Demolition

The Consultant must be responsible for the demolition scope and to fully coordinate directly with the EC to develop their design and construction documents and to ensure the delivery of coordinated AD construction tender documents for all remaining demolition requirements. A high level of cooperation, coordination and integration is therefore required between the EC and the Consultant.

Demolition will follow a construction, renovation, and demolition (CRD) waste management plan.

The Consultant will ensure that all activities are monitored and coordinated under the supervision of their Structural Engineer to ensure that the building integrity is not compromised and that the building remains safe.

The Consultant must be responsible for building and heritage protection. Careful protection and on-going monitoring of the building elements that will remain and guidelines shall be required regarding the protection of character-defining elements for any AD that happens. The FHBRO will need to be consulted on any demolition or removal of character-defining elements. Demolition activities which may affect character-defining elements (materials, assemblies, spaces) requires planning and documentation. Salvaging guidelines shall be required.

All work must be compliant with the City of Ottawa and NCC requirements for demolition.

5.2.7 Sustainability and Environmental Requirements

The Project will incorporate innovative, sustainable and environmentally responsible decision making and design into the WMB rehabilitation. To address the government wide commitments set forth in the Federal Sustainable Development Strategy (FSDS) 2013-2016, and to confirm its specific green building commitments established in previous PWGSC Sustainable Development Strategies, PWGSC has defined specific sustainability objectives and actions for implementation in its Real Property Sustainability Framework (RPSF) v2015. The framework represents a starting point, confirming minimum Departmental green building commitments as they relate to environmental performance, waste reduction, life cycle assessment, intelligent buildings, water management and energy reduction. Accordingly, the Project must meet **a minimum** of 3 Green Globes or equivalent industry recognized standard.

In accordance with Canada's ratification of the Paris Agreement on Climate Change and the newly tabled Federal Sustainable Development Strategy 2016-2019 targeting a 40% reduction in greenhouse gas (GHG) emissions by 2030 from government operations and encouraging innovative sustainable workplace practices, the Government of Canada has more recently committed to demonstrating further leadership in reducing carbon emissions, in optimizing opportunities for enhanced sustainability performance and in investment and use of emerging, clean technologies. In addition, the Real Property Branch of PWGSC has committed to achieving a carbon neutral portfolio by 2030.

While the Project must be designed to at least meet the existing RPSF sustainability commitments, all efforts must be made by the Consultant to exceed these for healthier more productive modern workplaces. Sustainable design, construction and systems options must be based on good science and sound life-cycle analysis (impact assessment and costing), connecting both Project and building performance in the long term.

The Consultant must evaluate and integrate strategies that result in a Project design supportive of the following high level goals:

1. Careful integration of new technologies and design strategies that respect, preserve and/or enhance designated heritage characteristics;

2. Strategies that recognize and capitalize on the synergies and benefits of advancing measures that are connected at building, site and where possible, precinct scale;
3. Minimize the carbon footprint (moving towards carbon neutral solutions);
4. Not only reduce life-cycle environmental impacts from design/material choices, functional and operational uses, but be a catalyst for positive change supporting improvements to ecological systems and social livability;
5. Durable, resilient yet flexible design of systems and spaces in support of a stronger more adaptive environment;
6. Maximize pollution prevention and waste reduction opportunities, and water efficiency strategies;
7. Long term savings through improved efficiencies; and
8. Improve comfort and productivity of occupants in a responsive, flexible and healthy environment.

The Consultant must produce a Sustainable Development Strategy report from SR2 Pre-Design, onwards in the design process, (to be re-evaluated/ updated at every project phase) that will identify and clearly detail, through narrative (as well as supporting scorecards), the Project's specific sustainability design strategies, and will confirm the design decisions, recommendations, limitations and any follow-up required to meet PWGSC sustainable development commitments and the project's high level sustainability goals/performance targets described herein.

- The Consultant must provide guidance to PWGSC as to which environmental performance rating system would be most appropriate and realistically achievable for the project, that can best support the project's sustainability objectives. For recommendation and approval by the DR, the consultant must perform an initial assessment at the Pre-Design Phase to inform PWGSC which rating system, and which level of rating the Project will most likely be able to achieve; and
- The sustainability strategy to be developed should not be limited by or to credits/measures identified in the chosen rating tool. The rating tool is a guide to verify an industry recognized level of performance, but it should not define the sustainable design or delivery of the project. There may be innovative opportunities beyond those defined in the tool that are worth exploring, as well as credits where compliance proves too challenging but whose intent can be met anyway. The consultant must balance the requirements of said rating systems with other Project requirements including functional program, heritage value, life cycle costing, energy performance, environmental life-cycle impacts (etc.) to ensure pragmatic recommendations supportive of a sustainable strategy best suited for this Project and site.

The Consultant must apply for and obtain, on behalf of PWGSC, certification(s) for the Project under an industry recognized environmental performance rating system prior to the expiration of the warranty period. The Consultant must be responsible for all tasks, including preparation of

documentation and all submissions required for verification and final certification, and must balance the requirements of the rating systems' prerequisites and credits with other Project requirements.

5.2.7.1 Sustainability Performance Options

The Consultant must initially prepare a minimum of three (3) complete, distinct and viable Schematic Design (SD) options to be presented separately for review and assessment. Each of the three (3) design options, and final preferred design option with adjustment/changes made during the SD phase, must support the High-Level Sustainability Goals detailed above and must meet the Minimum Sustainability Performance commitments as described:

5.2.7.1.1 Minimum Sustainability Performance Commitments:

1. Compliance with commitments identified in Real Property Sustainability Framework, 2015 (RPSF);
2. Meet/certify to at least 3 Green Globes or equivalent industry recognized standard;
3. Energy efficiency target of 24% more efficient than the NECB 2011 baseline performance; and
4. Once the preferred design option has been chosen during SD, as a final step, the consultant must prepare two (2) sub-options (sub-option A and sub-option B) to analyse the requirements of and changes to the preferred design option in order to meet A-Deep Sustainability and GHG Design target; and B-Maximum GHG Emissions Reduction and Clean Design target as described below. These are based in part on *PWGSC's Guideline - Project GHG Options Analysis Methodology.*

Each subsequent sub-option must demonstrate incremental improvements resulting in an overall better Project performance (where feasible).

NOTE: The feasibility for inclusion of resilient, restorative and/or regenerative solutions (with a positive impact on social liveability and ecological health) must be considered across all options. Sub-option B will demonstrate the greatest potential for solutions based on these principles.

The targeted energy performance of each option will be investigated using strategies that:

1. Optimize the building envelope;
2. Reduce internal loads;
3. Design high-efficiency systems; and
4. Investigate potential for on-site renewable energy generation (where applicable).

5.2.7.1.2 Sub-Option A: Deep Sustainability and GHG Design

- Sub-Option A must meet, if not exceed, all of the minimum sustainability commitments as identified and exceed overall sustainability performance;

- Integrate applicable measures from industry recognized health and wellness standards, such as WELL; and
- The Consultant must assess individual measures that improve energy performance and reduce the GHG's emitted by the facility. Energy modeling and simulations must be performed on bundled measures until the best option is identified. The best option results in a positive net present value (NPV) on the incremental cost (compared to the minimum sustainability performance commitments), when calculated over the life cycle of years identified for the project. Priority should be given to energy conservation, before fuel switching alternatives are considered for reducing GHG emissions. For example, switching an equipment's fuel source from natural gas to electricity in a province with a clean grid will reduce the facility's GHG emissions but will not necessarily improve the building's energy efficiency. The priority should be to reduce the building's energy use, no matter its fuel source. Once the building energy performance has been optimized, fuel switching and on-site renewable energy generation should be evaluated.

5.2.7.1.3 Sub-Option B: Maximum GHG Emissions Reduction and Clean Design

- Sub-Option B must meet, if not exceed, all of the minimum sustainability commitments as identified and must exceed Sub-Option A sustainability performance;
- Provides greatest opportunities (where possible) for adaptive, restorative and regenerative design solutions that improve social liveability and ecological integrity; and
- The Consultant must evaluate the measures required for the Project to reduce the carbon emissions footprint to as close to or beyond carbon neutral as possible, excluding the use of carbon offsets or renewable energy credits. The Consultant must focus on reducing emissions through improved energy efficiency first, followed by the selection of non-emitting fuel sources. The production of on-site carbon-free renewable energy generation must be evaluated and presented.

With regards to design strategies for improved energy performance and reduced GHG emissions, the Consultant in consultation with the Project Team must evaluate and propose an optimized, recommended option based on the above analysis that balances GHG emissions with construction and building operating costs. The individual measures themselves are to be evaluated in terms of cost to GHG reduction impact, in order to select the combination of measures that lead to the optimal recommendation for the Project. In other words, the Project is seeking a fiscally responsible option that takes GHG reductions into consideration. To aid in decision-making identify the incremental cost increases to the Project, capital as well as over the life of the project, with payback

calculations to determine the return on investment for each recommendation. Energy performance option based on PWGSC's *Guideline - Project GHG Options Analysis Methodology*

The sub-options to be developed must include, but not be limited to:

1. Full costing breakdown;
2. Risks and impacts to the building;
3. Operations and maintenance;
4. Improvements to energy, water, waste, air quality and other environmental performance metrics;
5. Improvements to health and wellness;
6. Ecological integrity; and
7. Results from the energy model and life cycles assessment will help to inform and evaluate these strategies.

Both sub-option A and B will be presented and weighed accordingly, demonstrating incremental improvements in sustainability performance and allowing PWGSC to choose a preferred design that best integrates all other disciplines and best balances heritage value, planning framework and functionality with Project cost, time and scope constraints.

5.2.7.2 Energy Model:

The Consultant must develop a whole building, design assist energy model of the existing building, to be used to identify existing performance and set a baseline for the rehabilitation analysis. The energy model must be used to evaluate design options and sub-options through multiple simulations that lead to a combination of measures that best enables the Project to optimize energy performance and maximize GHG reduction, while maintaining the best value for the Project.

The Consultant must be guided by the energy performance options included herein when investigating design options for evaluation.

The energy models must be developed, revised and resubmitted for use in discussions at the milestone of, the Pre-Design, Schematic Design; Design Development, and Construction Documentation phases as well as one (1) year after completion of the Project as part of enhanced commissioning.

Modelling is required to confirm the mode of operations, energy balance and energy use of the proposed designs, and to explore and evaluate the best combination of measures accounting for life cycle costs and GHG impacts towards an optimal design solution. Additional requirements to be accounted for are:

1. Possible energy strategies may include the use and generation of renewal energy on site such as solar, geothermal, heat recovery, etc., where pragmatic;

2. Consider the requirements for resilient design or future proofing for climate change impacts (i.e, increase in energy costs, increased power outages, increased passive requirements);
3. Maximize thermal performance of the envelope assemblies, identifying any limitations including impact on heritage characteristics, durability of materials, environmental life cycle impact, structural limitations, etc.;
4. The energy model produced must use pre-approved energy modeling software;
5. The energy model must have the ability to perform hourly simulations and meet the ASHRAE 140 Standard;
6. The energy model must be of a level of sophistication but be clearly described with assumptions and validation data described;
7. The energy model must be calibrated to the utility bills for the facility, (to be supplied by PWGSC);
8. Design decision support may include special modelling runs and detailed energy models of building equipment (in addition to “whole building” model);
   - The GHG emission factors to be used to assist with the evaluation will be confirmed and supplied by PWGSC (based on accepted values published by Environment Canada in the National Inventory Report).

5.2.7.2.1 Life Cycle Assessment:

The Consultant must account for the life-cycle environmental effects of the proposed options. In accordance with PWGSC’s sustainable development commitment detailed in its RPSF (2015), the Consultant must complete a whole building life-cycle assessment (LCA) using the Athena Impact Estimator for Buildings to measure and compare the life-cycle environmental impacts (and operational performance) associated with the design, construction and material choices when weighing various design options.

The LCA will contribute to an optimal and balanced strategy that can best support the various Project sustainability objectives, performance goals and additional user requirements of the Project. The Consultant must conduct the LCA as follows:

1. Evaluate opportunities for reducing associated environmental impacts, including embodied energy (alongside operating energy), embodied carbon and air and water pollution (etc.), which will inform the selection of architectural materials and systems. The preferred design option should illustrate a minimum 10% reduction in embodied GHG over a baseline, as well as demonstrate reduction in two (2) other environmental impact categories by 5% (no other categories should increase by more than 5%);
2. Identify hotspots i.e. the biggest contributors to the environmental footprint of the buildings (in its life cycle), in order to enable design modifications with the most

meaningful and efficient improvement to overall building environmental footprint;

3. The LCA must be completed and used as a design assist-tool and revised and resubmitted for use in discussions at the Schematic Design; Design Development, and Construction Document phases; and
4. Operational energy data resulting from the Energy Models should feed into the LCA when possible for the most holistic and accurate assessment.

5.2.7.2.2 Life Cycle Cost:

During preparation of Schematic Design and Design Development phases, the Consultant is to perform life cycle cost analysis (to be updated at the end of the preparation of the Construction Documents [100%]).

The life cycle cost analysis must include:

1. Capital costs including all hard and soft costs;
2. Operation/Maintenance costs;
   - Energy & utilities costs (electricity, gas, water etc.)($total/yr., $/m2/yr.);
   - Materials ($total/yr., $/m2/yr.);
   - Equipment ($total/yr., $m2/yr.);
   - Periodic replacement ($ Total, $m2);
   - Residual value, including demolition, recycling, disposal ($ Total, $/m2).
3. Resulting carbon price* based on anticipated GHG emissions (CO2e);
   - *Carbon price to be used is $50/metric tonne of GHG (CO2e), fixed rate over life cycle (25 and/or 40 year);
   - The life cycle costing outputs.
4. 25 and 40-year lifecycle costing (with and without carbon pricing); and
5. Simple payback period (Return on Investment).

Assumptions regarding life cycle duration, discount rates, fuel cost escalations, inflation, facility alteration improvement and demolition, recycling and disposal must be described.

5.2.7.2.3 Non-Hazardous Solid Waste Management

Pursuant to PWGSC's Real Property Sustainability Framework (v2015), and in response to the FSDS 2013-2016, all PWGSC Real Property projects over $1M and in communities where industrial recycling is supported must implement construction and demolition waste management practices, with waste material being reused or recycled, and must achieve a minimum waste diversion rate of 75%.

The PWGSC Construction, Renovation, and Demolition (CRD) Non-hazardous Solid Waste Management Protocol to which PWGSC is bound, provides directions on the undertaking of non-hazardous solid waste management actions for CRD projects*. The protocol is designed to meet the requirements of federal and provincial policies and the objectives of PWGSC's Real Property sustainable development commitments as these relate to non-hazardous solid waste generated in CRD projects.

*CRD waste should not include any hazardous materials (i.e. waste generated from asbestos, mould, lead abatements, PCB ballasts, fuels, other chemicals). Therefore, a clear distinction must be established between CRD waste and hazardous waste.

5.2.7.2.4 Non-Hazardous CRD Waste Management Program

The Consultant must develop a Non-Hazardous CRD Waste Management Program for the Project which must include the following key deliverables:

1. Prior to construction:
    - Waste Audit – Determines the types and volumes of construction materials that will be produced as surplus to the Project, as well as the preliminary options and diversion potentials for waste reduction, reuse and recycling. Although PWGSC has committed to a diversion target of 75%, all efforts must be made to maximize waste avoidance and diversion, setting a revised target based on the results of the waste audit. The PWGSC Environmental Consultant (EC) will prepare the Consolidated Waste Inventory to inform the Waste Audit in full consultation and coordination with the Consultant based on the demolition and construction scope; and
    - Waste Reduction Work Plan – Identifies the overall waste diversion goal and material specific targets. It describes project specific procedures to maximize the recovery of those materials identified in the Waste Audit. This also includes the Material Source Separation Program that details on-site sorting and labelling practices, tracking and reporting procedures and destinations for the materials recovered to be implemented during the construction phases of the project.
2. During and post-construction:
    - Training – Includes presentation of a mandatory training session to be given prior to the commencement of the work on site and attendance at a midpoint update meeting, convened by the DR, to discuss progress and challenges of the Waste Reduction Work plan; and
    - Waste Diversion Report – Documents the recovered construction materials to ensure that the results anticipated in the Waste Audit and Waste Reduction Work plan are realized to the highest degree possible. It records

the results at the end of the project, using hauling and tracking records to confirm the quantities (percent and tonnage) and final destinations of the materials diverted/landfilled.

5.2.7.3 Regulatory Requirements:

PWGSC must ensure that every project it undertakes complies with Federal and, where applicable, Provincial Environmental Laws and Regulatory requirements. Under the Federal Government, most of these laws and regulations are governed by Environment and Climate Change Canada, Department of Fisheries and Oceans, and Transport Canada. Provincial regulations as well as municipal by-laws include requirements concerning soil, water and air quality as they relate to varying land uses and receptors.

The Project will be implemented in compliance with all applicable environmental regulations, guidelines, and by-laws. This must include consideration and conformance with City of Ottawa by-laws, and specific NCC requirements. Any potential compliance risks associated with the work must be identified and mitigation measures developed to limit or prevent the severity of any identified adverse environmental outcomes.

5.2.8 Structural

The structural requirements include providing structural support to accommodate new functional and technical requirements and base building repair, upgrade and/or modifications and as a minimum the Consultant must:

1. Perform a site assessment to document characteristics including: member and frame geometry; material type; visually evident deterioration, deformation, damage; surface conditions; and critical connection details;
2. Evaluate existing floor and roof load capacities with respect to the existing occupancies and uses and intended occupancies and uses;
3. Confirm the existing structure is adequate to support all imposed loads. Identifying the structural systems that do not meet current building code loading requirements, this includes any change of use or load increases to meet the functional program requirements. Deficient structural systems identified must be reinforced or the use is to be relocated to an area that is structurally adequate;
4. Design for structural modifications to satisfy the technical and functional program requirements such as the reinforcement or repair of the original building fabric; including new additions and modifications to existing structural systems (including temporary and permanent openings);
5. Detail engineered repairs to structural members and assemblies to restore/upgrade structural material integrity, this includes items listed in the most current building condition report, including, but not limited to; the existing roof structure, roof anchors, one (1) service tunnel, retaining walls, window wells, handrails and railings, and ramps;
6. Detail seismic upgrade of structure and non-structural elements (including exterior cladding,

operational and functional components [OFC's]) including conservation of the masonry containing repair, replacement, resetting, consolidation and repointing;

7. Analyze the structure versus a defined threat, and upgrade as required to meet the specified level of protection for Blast Hazard;
8. Upon request by PWGSC, submit all structural calculations for review;
9. Provide safe loads that can be applied into the WMB or any other structure that is above or below grade imposed by construction activities, such as, the temporary scaffolding systems, shoring, material and equipment loads, to enable continuous construction work;
10. Specify all structural temporary work required as part of construction and construction phasing, including the specific requirements and sequencing of temporary structural bracing; and
11. Detail structural elements and systems monitoring during construction and post-construction, coordinated with geotechnical and heritage monitoring.

5.2.8.1 Seismic Retrofit

Currently the WMB does not meet the performance objective of the current PWGSC RPS Policy Seismic Resistance of PWGSC Buildings. Seismic retrofit to meet PWGSC's policy for seismic reinforcement is a requirement of the comprehensive rehabilitation of WMB.

The Consultant must propose the seismic reinforcement of the WMB as part of the holistic rehabilitation. It is expected that the retrofit strategy considers all other proposed works to WMB in developing the options, especially any new service or circulation shafts, structural strengthening of gravity systems, new additions, and blast hardening works. This will require significant collaboration between the CM and the Consultant Team to realize the objective of stabilizing the building and upgrading its seismic resistance and minimize, the impact on heritage fabric. This includes a cost/benefit analysis of the seismic upgrade options that must consider; base isolation, new stiff concrete shear walls and new steel brace frames in combination with new movement gaps between the perimeter frame and infill stone/masonry. The consultant is to identify the sensitivity of each option to the interior fit-up options. Where the seismic upgrade option is found to be sensitive to the fit-up layout option, the Consultant must analyze that seismic option for each of the sensitive fit-up layout options.

5.2.9 Mechanical

Full replacement of the mechanical equipment and systems will be required for the WMB Rehabilitation Project. The Cliff Street Heating and Cooling Plant will be retained as the source for heating and cooling the WMB, however, in the future, steam will be changed to low temperature hot water. All buildings are to be designed to operate on low temperature hot water as well (Guideline for Hot Water Heating System for Buildings Connected to Central Heating Plants in NCA).

During the Schematic Design the Consultant must provide the best option for the three (3) distinct design options presented in the SD phase. Once a preferred design option is selected, the

Consultant must provide two (2) fully developed design sub-options (sub-option A and Sub-option B) for the base building HVAC and for the floors to be occupied by the Users, complete with life cycle costs analysis, advantages, disadvantages, risks and recommendations. For each option energy simulations must be completed to demonstrate energy use and provide comparisons of the options.

The Consultant's design must consider but is not be limited to:

1. The base building mechanical systems must be designed to serve the Users swing space occupancy for five (5) years, while being flexible and adaptable enough for future changes of occupancy for the long-term based on a Workplace 2.0 Fit-up Standards;
2. The new mechanical systems must be closely coordinated with all other building systems and closely integrated with the heritage character defining elements of the building;
3. HVAC systems must meet speech privacy (e.g. SPC 85, etc.) in spaces identified in the Functional Program; and
4. Coordination of the building envelope design upgrade with the mechanical design in order to provide the lowest energy consumption.

The scope of work must include, but is not limited to

1. Evaluate the condition and sizing of the water meter to confirm appropriateness for current and future requirements. If any changes are required, the Consultant must take the lead in the discussions with the City of Ottawa;
2. Evaluation of all existing storm drainage piping and accessories and reuse of the storm main piping system installed in the late 1990's, if in good condition. Existing storm piping and pumping system that collects drainage in the sub-basement sump tank at the east side of the building is to be replaced by a new gravity (no pumps, no sump tank) drainage system and new connection to the street storm main pipe. Coordinate with civil consultant in assessing the extent of removal of pumped systems;
3. Evaluate existing building weeping tile drainage and collection system. New tile drainage system if required as per evaluation;
4. Evaluate the standpipe systems based on age and conditions and code compliance and replace if necessary;
5. Evaluate capacity of all existing mechanical utility services entering the building: domestic water and fire protection, sanitary, storm, steam and chilled water. Where existing services are of lower capacity, compared with what is required by the building, notify the DR at the early phases of the Project;
6. Evaluate and review requirement for snow melting systems for roof;
7. Evaluate compliance of new hot water heating system with Low Temperature Guidelines. Provide calculations to support selected temperatures and equipment types. Coordinate evaluation with architectural discipline in order to evaluate the improvements in envelope

(windows, wall insulation, ait tightness) heat transfer that are necessary to achieve the design guideline of the low temperature heating water system;

8. Clean and reuse original porcelain sinks in washrooms;
9. Provide full mechanical support systems such as ventilation, heating, cooling, plumbing, and drainage for new washrooms, kitchen and kitchenettes as required by the Functional Program;
10. New plumbing fixtures in all washroom areas, with the exception of the reinstalled heritage lavatories;
11. New steam heating source domestic hot water system with new heat exchangers, storage tanks or instantaneous/semi-instantaneous heater type and pumps;
12. New domestic water piping and sanitary drains to core washrooms and other plumbing fixtures throughout the building;
13. New sanitary piping system and connect to new plumbing fixtures;
14. Remove all steam and condensate services located in the underground sub-basement service tunnel between the East Memorial and West Memorial buildings complete with heat exchangers and pumps in basement mechanical room, including removal of three (3) existing condensate tanks and associated pumps, existing pressure reducing valves and pressure relief valves, replace with new connection as per the new heating system requirement;
15. Remove existing steam piping throughout the building including risers to perimeter radiation. Provide abatement for designated substances from mechanical piping;
16. Remove existing steam radiators from cabinets and retrofit cabinets with new hot water radiation;
17. Remove existing air handling units and exhaust fans. Confirm that the exhaust from the parking garage is located in the Memorial Colonnade. Its' refurbishment, relocation or replacement is included in the Projects requirements.

NOTE: The efficient air handling of the parking garage is included in this Project;

18. Remove pneumatic systems control;
19. New washroom exhaust and building smoke exhaust systems;
20. Provide new energy efficient HVAC systems for the building. The base building HVAC systems need to be flexible and adaptable for the use of the areas to be occupied in the short term by the Users and for future use by the long-term building occupants;
21. New heating transfer plant complete with steam to hot water heat exchangers, pumps, glycol system and distribution;
22. New cooling chilled water system plant complete with primary to secondary heat

exchangers, pumps and chilled water distribution to all air handling units and terminal equipment. Design of chilled water temperatures will be according to Central Heating Plant design requirements;

23. New generator exhaust system and fuel oil system if required;
24. Provide seismic restraint systems for the mechanical equipment, piping and ductwork according to the NBC;
25. New hot water piping and glycol from building heat exchangers to air handling systems throughout the building and perimeter radiation, new steam pressure reducing valves, condensate tanks and pressure relief valves to suit new facility heating and domestic hot water systems;
26. New ductwork distribution mains from air handling units' and new floor distribution mains;
27. New Building Automation System (BAS) and intelligent devices controlling all equipment and devices. All sequences of control coordinated to provide the most intelligent control system; and
28. New supply and return chilled water piping from the East Memorial basement mechanical room and new chilled water heat exchangers.

5.2.10 Fire Protection

Full replacement of the fire protection systems will be required for the rehabilitation.

1. Replace existing fire pump system with new;
2. New sprinkler systems throughout the building (Consider reuse/relocation of the existing sprinkler system in the basement and ground floor); and
3. Replace existing fire protection system with new.
4. New addressable fire alarm system for whole building, add & modify fire alarm devices, wiring & testing to suit base building and swing space layout;

5.2.11 Electrical

Full replacement of the electrical equipment and systems will be required for the WMB Rehabilitation Project. The Consultant must confirm, that the existing electrical vault location is to remain.

The Consultant's design must consider, but is not be limited to:

1. The base building electrical systems must be designed to serve the Users swing space occupancy for five (5) years, while being flexible and adaptable enough for future changes of occupancy in the long-term and based on Workplace 2.0 Fit-up Standards occupancy; and
2. The new electrical systems must be closely coordinated with all other building systems and closely integrated with the heritage character defining elements of the building.

The scope of work must include, but is not limited to

1. Expand & upgrade existing 347/600V 3P 4W main switchboard as per the Project requirements;
2. New emergency power distribution system including Diesel generator set and associated transfer switch(s);
3. New UPS system;
4. Additional distribution panels, transformers & feeders to suit new functional requirements;
5. Power connections required to mechanical equipment;
6. Preserve, clean and rewire selected heritage light fixtures and propose new lighting in heritage area;
7. Lighting & Power in Core areas, Parking & service areas. LED lights in swing space areas, such as: Library, Fitness, Court & Judges Chambers, Kitchenette & Cafeteria and offices;
8. Lighting control system allowing energy savings through controlled dimming/switching/daylight harvesting in selected areas;
9. Empty conduit & wiring for security equipment and A/V systems as per the Project requirements identified in Functional Program;
10. Communications racks, patch panels, cable tray, trunk conduit & cabling, outlets & cabling in core areas;
11. Wireless GPS clock system in core area, and as required by the Functional Program;
12. Lightning protection & grounding;
13. Seismic protection; and
14. Coring, x-ray, cutting patching & fire stop.

5.2.12 Vertical Transportation

The existing vertical transportation systems requires review for Building Code compliance and functionality. The building includes four (4) interior stairwells to meet requirements and nine (9) passenger elevators and one (1) freight elevator.

5.2.13 Building Components and Connectivity (BCC)

The provision of Building Components (fixtures, furnishings and equipment) and Connectivity (Information Technology, Multi-Media and Integrated Security Systems [IT/MM/ISS]) (BCC) are essential to meet the functional, operational, and security requirements of the Users. Occupancy will not occur without successful design and sensitive integration of these elements into the heritage fabric of the WMB as well as other aspects of the Project. The objective of the BCC program is to meet the operational requirements of the User to allow immediate occupancy of the space.

While the Consultant has the most significant role in design and the overall coordination of BCC requirements, the CM plays a role in the sequencing, and delivery of all BCC elements.

5.2.13.1 Building Components

5.2.13.1.1 Overview – Building Components

The Consultant must select and/or design all BCC Components in keeping with the overall design strategy for WMB. This includes the preparation and ongoing update of a comprehensive quantity and specification listing (Building Component Matrix [BCM]) of new and existing elements and corresponding cost estimates for all BCC Components.

Substantial coordination effort is required by the Consultant to integrate the requirements from the Functional Program into the overall design and prepare numerous procurement packages for tender.

The Consultant services for BCC Components includes, but is not limited to the:

1. Development and continuous update of required Components lists;
2. Design of the furniture and equipment layouts;
3. Selection of commercially available Components or design custom Components that are aesthetically compatible with the architectural vocabulary of each space;
4. Design of custom furniture, including those requiring embedded IT and/or MM equipment, in coordination with the manufacturer specifications;
5. Development of a procurement strategy in liaison with the DR and the CM;
6. Prepare Component / furniture statements of work/specifications;
7. Specification, installation and commissioning requirements of Components in all procurement packages;
8. Definition and selection of appropriate suppliers;
9. The coordination, overseeing of the installation, and inspection of all BCC Components in consultation with the DR and the CM including the loading dock availability;
10. Site verification of delivery and installation approval, and preparation of and rectification deficiency lists (in conjunction with the DR);
11. Cost services for all BCC Components; and
12. Coordination and integration of BCC Components into the BIM and all other elements of the Project.

5.2.13.1.2 Heritage Furniture and Art and Artefacts

The WMB Rehabilitation Project includes re-location of some Heritage Furniture and Art and Artefacts from the SCCB. The heritage furniture relocation, of up to 10 Judges Suites and numerous portraits and art works, will be the responsibility of the Consultant to plan and detail. The Consultant must prepare a plan for the integration of heritage

furniture and art and artefacts into the Project design as well as for their safe transport to the WMB (protection, transportation etc.). Some heritage furniture could also require IT integration to be planned and approved when complete.

5.2.13.1.3 Existing Building Components to be Relocated from SCCB to WMB

The majority of non-heritage Building Components will be new, however, there is a requirement for the relocation of some existing furniture and equipment from the SCCB to the WMB.

The Consultant services for relocated BCC Components includes but is not limited to the:

1. Review the requirements for existing BCC Components;
2. Assess the quality and usability of all existing items to be moved;
3. Add the required BCC Components to the BCM; and
4. Prepare move requirements (sort the BCM, tag BCC Components) for all BCC Components to be moved.

5.2.13.1.4 Building Signage

The Consultant's responsibility includes the design, drawings and specifications of all temporary and final exterior and interior signage for the Project. Interior way finding, and room signage must be fully coordinated with approved room numbering;

5.2.13.1.5 BCC Components inclusions and exclusions

BCC Components include, but are not limited to:

1. Commercially Available Furniture;
2. Case Goods;
3. Purpose-Built Furniture and Shelving (custom furniture);
4. Soft Seating;
5. Chairs;
6. Task Lighting;
7. Heritage Furniture;
8. Art and Artifacts;
9. Maintenance Equipment;
10. Food Service Equipment;
11. Security Equipment;
12. Health and Safety Equipment;

13. Material Handling Equipment; and
14. Other Equipment (such as computers, photocopiers, printers, scanners, digital radios, etc.) in support of the delivery of common services (i.e., security posts, printing services, building management).

BCC Components do not include the following:

1. Office equipment related to administrative functions such as: computers, printers, fax machines, television sets, VCRs, converters, phone sets or radios; and
2. Office Accessories such as: garbage cans, supplies, plants, decorative drapes and rugs.

5.2.13.1.6 Procurement

Each procurement package must include a package specific Statement of Work (SoW), detailed specifications for all elements to be procured, detailed installation drawings, and a cost estimate.

The DR will determine the procurement method. Typically, any Building Component built-in or physically attached (fixed) to the building, structure, or site including millwork are considered part of the base building requirement for procurement by the CM. Custom Components and commercially available Components, as identified in manufacturer's catalogues, are routinely procured through PWGSC, but may be procured through the CM if there are Project scheduling constraints or other issues, as determined by the DR.

5.2.13.2 BCC Connectivity

5.2.13.2.1 Overview – Information Technology, Multimedia

The Consultant will be responsible, for the validation of requirements and definition of specifications for all aspects associated with the BCC Connectivity (Information Technology, Multimedia and Integrated Security System [IT/MM/ISS]) elements related to the Users requirements and other BCC Connectivity items.

The Consultant is required to design and integrate/coordinate the BCC Connectivity program with all base building and fit-up requirements which support a fully coordinated set of construction documents.

The Consultant services for BCC Connectivity includes, but is not limited to the:

1. Preparation of detailed technology and security designs for all information and security monitoring and control systems for the Project;
2. Preparation of a detailed Statement of Work (SoW) for each BCC Connectivity, IT/MM/ISS, construction tender package;
3. Planning, design, coordination and full integration of the infrastructure to accept Connectivity elements as described in this Project Brief, including, but not limited

to; conduits, cable trays; junction boxes and terminations points; technical grounding; specialized power configurations; cabling to termination points; termination cabling to outlets; lighting (including television and teleconference, as required) building and site security; harmonic analysis and HVAC to ensure a seamless base building solution, with due regard to how it impacts aspects of lighting, acoustics, power requirements, maintainability, acoustical treatments and commissioning, and integration with building heritage elements;

4. Identification of any existing multimedia devices currently located in the SCCB that can be reused in the WMB Project;
5. The planning for segregated pathways and minimize interferences with other building services;
6. Instruction for the CM to control dust migration. Due to the sensitive nature of electronic equipment, the construction site must be maintained as clean as possible during and after installation of electronic components;
7. Commissioning of the technology components and systems is the responsibility of the Consultant's qualified sub-consultant (IT Engineering Consultant). The commissioning of interface or connection of base building to the technology components and systems is the responsibility of the Consultant and the CM;
8. There are significant design challenges integrating technology requirements in heritage spaces. The level of effort and coordination among design disciplines and with the CM within the Model cannot be understated and
9. Conducting specific workshops for BCC Connectivity during the implementation of the Project are critical to successful and timely integration of requirements.

5.2.13.2.2 BCC Connectivity Inclusions and Exclusions

BCC Connectivity includes, but is not limited to:

1. Infrastructure fit-up;
2. Cabling;
3. Integrated Security System;
4. CATV, Network;
5. Public Address System;
6. Wi-Fi;
7. Telephony;
8. Multimedia;
9. External Media (Broadcast);
10. Digital Radio;

11. Exterior Cameras;
12. Communications Centre Operational Training;
13. Initial Operation and Maintenance Requirements;
14. Fire Alarm Monitoring System; and
15. Extended Warranties.

BCC Connectivity does not include the following:

1. Operation and maintenance requirements subsequent to transfer of assets; and
2. Base building renovation and construction activities.

5.2.13.2.3 Integrated Security Systems (ISS)

The WMB will be housing a number of key functions including, Court Rooms and Judges Chambers. A Security Brief will provide information and guidance related to the future security design at Phase II of this RFP.

The Consultant must provide design requirements, guidelines, security construction documents and related addenda. The Consultant must coordinate the full integration of the security component pathways, physical and other related security features into the base building and fit-up, achieving the required solutions. The Consultant must coordinate and integrate security requirements with the base building and fit-up systems, seamlessly integrating them into the heritage fabric of the building.

In defining the requirements, concepts of operations and detailed design, the Consultant must consider a number of factors, including, but not limited to:

Architecture

1. Crime Prevention Through Environmental Design (CPTED);
2. Site Hardening (specially walls & doors, structural integrity, standoff distances, redundancy of building systems);
3. Security Lighting;
4. Windows (glass types, bars, film, security shutters, blast curtains);
5. Doors, Door Hardware;
6. Acoustics & Speech Security;
7. Fences;
8. Gates;
9. Barriers (bollards, planters, street furniture); and
10. Security Posts and Screening Facilities.

Personnel:

1. Administration & Organization;
2. Roles and Responsibilities;
3. Screening, Training;
4. Security Posts and Post Orders; and
5. Policies & Procedures.

Technology areas:

1. Integrated Security Systems;
2. Access Control;
3. Photo Identification;
4. CCTV Surveillance;
5. Intrusion Detection;
6. Security Intercom;
7. Other Systems Integration; and
8. Contraband Detection (weapons, explosives, biohazards, drugs, audio recording devices, cameras).

5.2.13.2.4 BCC Connectivity CATV, Voice and Data, Security Cabling, and Multimedia

The Connectivity system designs must be fully integrated into the Consultants' base building and fit-up design, as it progresses and not after such design is completed.

Pathways, conduit run, recessed terminal boxes and junction boxes, etc. must form part of the Consultants' drawings and coordinated with all disciplines.

Contract documents must clearly describe the extent and timing of work such that the CM can properly plan, coordinate and control the work site.

5.2.13.2.5 Procurement

Each construction tender package must include a package specific Statement of Work (SoW), detailed specifications for all elements to be procured, detailed installation Drawings, and a cost estimate.

The DR will determine the procurement method. Generally speaking, any BCC Connectivity element built-in, integrated within or physically attached (fixed) to the building, structure, or site and custom Connectivity elements are considered part of the base building for procurement by the CM, thus integration of these elements into coordinated tender packages is critical. Other BCC Connectivity goods or services, security related requirements are routinely procured through PWGSC, but may be procured through the CM if there are Project scheduling or safety constraints or other

issues, as determined by the DR.

5.2.14 Temporary Work

The Consultant, in consultation with the CM, must identify and design temporary architectural, structural, mechanical, communication, electrical and fire protection requirements related to the abatement and demolition tender packages and for the transitional periods between construction tender packages to include, but not limited to:

1. Any additional heritage protection measures, that were not completed by the WMB Asset Integrity Project in phased sequence that prioritizes activities to meet the sequence of work as determined by the CM;
2. Mechanical portion of the temporary fire protection systems;
3. Demolition of the existing heating systems and the installation of new ones;
4. Mechanical ancillary systems required to maintain electrical systems supporting the generator and other life safety equipment;
5. Temporary structural supports;
6. Temporary electrical requirements related to the construction site;
7. Security measures, including compartmentalizing classified information and procedures for the segregation of personnel from classified information;
8. Isolation and dust protection of rooms or building parts to allow BCC installations;
9. Maintaining operational capacity for required civil/municipal, mechanical, electrical and life safety systems; including lighting, security, emergency power for heating, lighting, ventilation, fire protection, lightning protection and life safety and exterior services;
10. Architectural (physical and dust) and structural bracing, underpinning, and supports, including scaffolding (unless the scaffolding is being designed and erected by the CM or the CM's sub-trades), enclosures and barriers including implementation sequence instructions; and
11. Fire protection for the entire building and other elements of the overall Project to support construction operations.

Fully coordinated and continuous follow-up for implementation compliance and further site issues of this aspect of temporary work cannot be understated. The provision of this work will be critical to the successful completion of the project. The Consultant must take a leading and proactive role in this matter throughout the entire design and implementation periods.

PD 6 EXISTING DOCUMENTATION

6. Existing Documentation

6.1 Available to all proponents

1. Heritage Character Statement, Federal Heritage Buildings Review Office (November 1995)

http://www.pc.gc.ca/apps/dfhd/page_fhbro_eng.aspx?id=5596

2. Standards and Guidelines for the Conservation of Historic Places in Canada, Parks Canada (January 2010)

http://www.historicplaces.ca/media/18072/81468-parks-s+g-eng-web2.pdf

3. A Guide to Working with the Federal Heritage Buildings Review Office (FHBRO), Parks Canada (January 2009)

http://www.historicplaces.ca/media/7313/fhbro_manual_parks%20canada.pdf

4. A Guide to the Management of Movable Heritage Assets, Government of Canada (July 2008)

https://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=13872

5. Treasury Board Policy on the Management of Real Property, PWGSC (November 2013)

https://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=12042

6. Treasury Board Accessibility Standard for Real Property, PWGSC (June 2006)

http://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=12044#cha3

7. PWGSC National CADD Standard, PWGSC (December 2016)

http://www.tpsgc-pwgsc.gc.ca/biens-property/cdao-cadd/index-eng.html

8. Policy on the Management of Materiel, Government of Canada (June 2006)

https://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=12062

6.2 Available to all proponents in Phase II of this RFP

Provided in the language in which the document was written. (Available on USB key by contacting the Contracting Authority):

1. Designated Substances Report for West Memorial Rehabilitation Project, West Memorial Building 344 Wellington Street, Ottawa Ontario Prepared by: DST Consulting Engineers Inc., 013-08-13
2. Designated Substances Report for the West Memorial Rehabilitation Project, West Memorial Building, 344 Wellington Street, Ottawa, Ontario" (DST Consulting Engineers) March 2014 and Designated Substance Report Specifications Section 011425 (DST

Consulting Engineers) – 2014

3. Supplemental Designated Substances and Hazardous Materials Survey, West Memorial Building Asset Integrity Project [R.066170.001] 344 Wellington Street, Ottawa, Ontario, prepared by DST Consulting Engineers - January 20, 2017
4. Conservation Guidelines for West Memorial Building and Site, Heritage Conservation Directorate (June 2014)
5. Preliminary Conservation Strategy, Heritage Conservation Directorate (December 2014)
6. Documentation Analysis and FHBRO Reviews, Heritage Conservation Directorate (March 2014)
7. Interior Inventory Report, Heritage Conservation Directorate (March 2014)
8. Heritage Recording Report Volumes 1 and 2, Heritage Conservation Directorate (March 2013)
9. Level 1 Screening 2013-2014, Heritage Conservation Directorate (May 2014)
10. Heritage Elements Inventory 2014-2015, Heritage Conservation Directorate (January 2015)
11. Building Envelope Document Analysis, Heritage Conservation Directorate (December 2014)
12. Building Envelope Study, West Memorial Building; prepared by CLEB, 2017.01.24
13. Building Condition Report, Alcaide Webster Architects Inc. (December 2014)
14. Infra-Red Thermography Investigation Volume 1 – Report, Heritage Conservation Directorate (March 2015)
15. Final Report: West Memorial Building Roof Inspection, Robertson Martin Architects (August 2015)
16. WMB Asset Integrity Project Construction Documents including Heritage Materials Database and Heritage Materials Management Protocols, FGMDA and Perkins + Will Joint Venture Architects (January 2015)
17. WMB Asset Integrity Project Design Development Report including Final Conservation Approach, FGMDA and Perkins + Will Joint Venture Architects (January 2015)
18. CADD Building Cross Sections, Heritage Conservation Directorate (January 2015)
19. Final Report: West Memorial Building Rehabilitation- Seismic and Loading Assessment, Halsall Associates (May 2015)
20. Report for West Memorial Rehabilitation Project Class D Construction Cost Estimate, Turner & Townsend (May 2017)
21. Supplemental Phase II Environmental Site Assessment, Geofirma Engineering (January 2015)
22. CADD As-Found Exterior Building Elevations, Heritage Conservation Directorate (January

2014)

23. West Memorial Building Rehabilitation Project, Draft Preliminary Functional Program (2017)
24. Environmental Compliance Management Program (ECMP) Checklist, PWGSC (January 2013)
25. Preliminary Identification of Environmental Services Required (PIESR), PWGSC (October 2016)
26. Building Systems Decommissioning Procedures Manual, CIMA (March 2008)
27. Fire and Life Safety Report – Building Condition Review, Leber-Rubes Inc. (January 2001)
28. Geotechnical Investigation, Jacques Whitford (January 1998)
29. PEO Structural Condition Assessments of Existing Buildings and Designated Structures Guideline
30. Original Construction Drawings, Allward & Gouinlock Architects (March 1954)
31. Heritage Materials Testing Scope, Canadian Conservation Institute (December 2016)
32. PWGSC Technical Reference for Office Building Design, PWGSC (April 2017)
33. RPS Policy: Seismic Resistance of PWGSC Buildings, PWGSC (November 2006)
34. Parliamentary Precinct: Exterior Lighting Master Plan, Lemay + Cha/ Lightemotion (January 2015)
35. PWGSC's Guideline - Project GHG Options Analysis Methodology
36. PWGSC's Real Property Sustainability Framework v2015
37. Guideline for Hot Water Heating System for Buildings Connected to Central Heating Plants in NCA
38. ESAP Requirements for Building Heating and Cooling Systems Connected to the PWGSC District Energy Systems in the NCR, PWGSC (December 2016)
39. PWGSC's Protocol for Construction, Renovation, and Demolition (CRD) Non-hazardous Solid Waste Management

6.3 Available to the successful Proponent

Documents made reference to within this document, beyond list below, will be made available to the successful Proponent in the language written:

1. West Memorial Building BIM Model, SNC-Lavalin; (2017)
2. Supreme Court of Canada Security Brief; (2017)
3. Base Building Infrastructure- Security Review (Corporate Security Directorate, PWGSC) - 2013

4. West Memorial Building Timeline, Heritage Conservation - Repository of all technical documentation available for the building.

PD 7 CONSULTANT SERVICES

7. Consultant Services

Members of the Consultant Team may have the necessary qualifications and expertise to provide services in more than one discipline or specialty. The Consultant Team for this Project must be capable of providing the following integrated services:

7.1 Regulatory Analysis Planning and Development Services:

1. Building Code and Life Safety;
2. Universal Accessibility;
3. Municipal Zoning; and
4. Occupational Health and Safety.

7.2 Architecture, Interior Design and Specialty Services:

1. Landscape Architect;
2. Urban Design Specialist;
3. General Architecture;
4. Building Envelope Science with Expertise in Heritage Masonry Building Envelopes;
5. Interior Design;
6. Universal Accessibility Specialist;
7. Acoustics;
8. Lighting, with Expertise in Heritage Buildings and Broadcast Lighting;
9. Hardware, with Expertise in Heritage Buildings;
10. Signage and Way-Finding;
11. Indoor / Outdoor Air Quality Design and Control;
12. Sustainable Design Specialist;
13. Scan-to-BIM; and
14. Building Information Modelling and Management.

7.3 Heritage Building Services:

1. Heritage Conservation Architecture;
2. Heritage Conservation Structural Engineering;
3. Masonry Conservation;
4. Heritage Materials Conservation for Plaster and Wood;

5. Building Science Engineering; and
6. Building Information Modelling and Management.

7.4 Engineering and Specialty Services:

1. Civil Engineering;
2. Transportation/Traffic Specialist;
3. Municipal;
4. Structural / Seismic Engineering, including Heritage Building Expertise and Base Isolation Expertise;
5. Mechanical Engineering;
6. Electrical Engineering, including Expertise in IT and Communications, Multimedia and Security Systems;
7. Whole Building Energy Modelling and Simulation/Analysis;
8. Power Systems including UPS, Backup Generators and Supplementary Power;
9. Building Automation/ Energy Management Control Systems;
10. Fire Protection;
11. Vertical Transportation;
12. Security;
13. Environmental Design (Indoor/Outdoor Air Quality Design and Control);
14. Commissioning Services (Specifications, Design Intent, Witnessing and Manual Development); and
15. Scan-to-BIM.
16. Building Information Modelling and Management;

7.5 Project Control Services:

1. Cost Planning, Estimating and Control (PQS); and
2. Time Planning, Scheduling and Control (recognized specialists).

7.6 Specialty Consultant Services

The following outlines expectations regarding some of the specific specialty consultant expertise required by the Project:

7.6.1 Building Code and Life Safety Specialist

The Consultant Team must have specialized expertise in building code analysis and life safety system design requirements (code specialist). The code specialist will provide detailed assessment of building assemblies and provide written direction to the Consultant and PWGSC with respect to all building code, life safety and construction operation requirements, as well as providing direct input to the detailed design and participate in the execution of all life safety testing, at each phase of occupancy. The code specialist will prepare both NBC and OBC code matrices and tables of equivalencies throughout the Project and assist in the negotiation with municipal and federal officials for building and occupancy permits. The code specialist will play a key role in establishing the requirements for temporary fire protection for construction operations and verify, routinely, that such protection is correctly installed and is being properly maintained.

7.6.2 Acoustics Specialist

The Consultant Team must have expertise in architectural and mechanical acoustic design, construction and measurement, with emphasis on speech security and intelligibility for building areas such as; Judges Chambers and courtrooms as well as a good working knowledge of heritage conservation requirements. Expertise is required for broadcasting, speech security and speech intelligibility design with acoustical commissioning. The Consultant's acoustic specialist is also required to prepare for presentations and discussions and computer-based acoustic models to demonstrate the performance of proposals to meet acoustic requirements.

7.6.3 Sustainable Design Specialist(s)

The Consultant Team must include expertise in sustainable design having a minimum 10 years' demonstrated experience in projects involving new design or retrofit and/or rehabilitation for high performance, sustainable buildings and certification for industry recognized high-level environmental project and/or building performance ratings.

Demonstrated experience includes the integration and application of environmental protection and sustainable development policies and strategies, environmental assessment policies, programs and guidelines, environmental management and performance, strategies and tools, and site and/or community scale sustainability solutions beyond the building footprint. The expertise must include certified professional with a valid LEED AP or equivalent industry recognized professional accreditation and be familiar with Green Globes Design for New Buildings and Retrofits. The sustainable design specialist must be prepared to work in a cross disciplinary fashion and participate in the Integrated Delivery approach including all design meetings.

7.6.4 Building Information Modelling and Management (BIM) Specialist

The Consultant Team must include expertise in Building Information Modelling and Management, having experience in the coordination, processes, exchange and interoperability of information relating to Building Information Modelling and the Management of BIM Planning, Delivery and Clash Detection for major projects. The BIM Specialist must have experience working with Point Cloud data, BIM strategies and tools, as well as have experience leading major BIM Project Teams.

7.6.5 Energy Modeler

The Consultant Team must include an energy model specialist having experience completing whole building, design-assist energy model simulations to determine and evaluate the mode of operations, energy balance and energy use of proposed designs, accounting for life cycle costs and resulting GHG impacts towards carbon neutral solutions. The energy model specialist must have demonstrated experience modelling large commercial buildings using pre-approved leading-edge software, including the successful production of no less than 10 energy models. The modeller must be prepared to participate in all design meetings and provide design decision support through special modelling runs and detailed models of building components (in addition to “whole building” model).

7.6.6 Buildings Controls Specialist

The Consultant Team must have a building controls specialist with expertise in Energy Monitoring and Control System (EMCS). The building controls specialist must co-ordinate the controls interface for mechanical, electrical and possible other building infrastructures such as fire alarms and design the interface and the functional integration of all devices required to meet the building’s proposed targets. The EMCS must be direct digital control (DDC) technology with networked distributed processing and must be user-programmable in the field for all required automated functions of all energy and water consuming systems.

7.6.7 Vertical Transportation Consultant

The Consultant Team must have a vertical transportation consultant whose expertise is in vertical transportation and experience with heritage buildings. The vertical transportation consultant must be retained throughout the Project.

7.6.8 Security Specialist

The Consultant Team must have a physical security specialist, a security system specialist and a security designer who must be retained throughout the Project.

7.6.9 Scan-to-BIM

The Consultant Team must have expertise in the collection of point-cloud data using laser scanning technologies for the recording of as-built conditions, as well as experience producing large and coordinated point-clouds for Modelling use.

7.6.10 Cost and Time Specialist(s)

Cost estimates are required as prescribed in “Doing Business with the National Capital Area (NCA)”. Delivering this Project on time and within the approved construction budget is a high priority. The purpose of cost planning and cost control is to assist in the accomplishment of the Project cost objectives.

The Time Specialist must play a major role in the development and monitoring of the Project schedule and provide scheduling services from the award of the Consultant contract, through to construction and commissioning completion, including the warranty period.

Both services are a continuous and interactive process involving planning, action, measurement,

evaluation and revision. (refer to: RS 9 & RS 10).

DESCRIPTION OF SERVICES

PA 1 PROJECT ADMINISTRATION

1. Project Administration

The following administrative requirements apply during all phases of project delivery.

1.1 PWGSC Senior Project Management/Departmental Representative

The PWGSC Senior Project Manager assigned to the Project is the Departmental Representative (DR).The DR is responsible for the Project progress and is the liaison between the Consultant, other sectors of PWGSC and the Users. PWGSC administers the Project and exercises continuous control over the Consultant's work during all phases of the project. Unless directed otherwise by the DR, the Consultant must obtain, or cause to be obtained, all federal, municipal and other governmental or regulatory requirements and approvals necessary for the Project.

1.2 Lines of Communication

All correspondence from the Consultant must be distributed as directed by the DR. There must be no correspondence or communication between Users and the Consultant unless directed by the DR. The Consultant must develop a Communication Management Plan, to be approved by the DR and incorporated into the Project Design Management Plan and executed.

All communications must carry the contract name/number, PWGSC Project title and PWGSC Consultant contract Project number and a date in a non-ambiguous format (i.e. 01/09/02 is ambiguous and is not acceptable). Automatic date fields must not be used except when preceded by the text "printed on."

1.3 Media

The Consultant must not respond to any requests for Project related information or questions from the media. Such inquiries must be directed to the DR.

The Consultant must ensure that no staff of the Consultant (including sub-consultants or specialists) grant interviews with the media unless requested to do so by the DR. All contact by reporters or others, requesting information about the WMB Rehabilitation Project, must be referred to the DR immediately, without response to those requesting the information.

1.4 Security of Information

The Consultant and any person contracted or employed by the Consultant must not discuss issues relating to the WMB Rehabilitation Project specifically including, but not limited to; building layout, design and security provisions, except as they relate to the direct provision of services related to this contract.

1.5 General Project Deliverables

Where deliverables and submissions include summaries, reports, drawings, plans, specifications and schedules, five (5) hard copies must be provided along with a copy in native electronic format and PDF format, unless otherwise specified. Where deliverables and submissions include models or the results from

any given modelling process, five (5) copies of the native electronic format and IFC or COBie format (as directed by this RFP and Annex B – Building Information Modeling [BIM]), unless otherwise specified.

Electronic format shall mean:

Deliverable	Acceptable PWGSC Format
Written reports and studies:	MS Word
Spreadsheets and budgets:	MS Excel
Presentations:	MS PowerPoint and/or MS Visio
Schedules:	Microsoft Project/ Primavera
Change management, daily logs, etc.:	MS Word
Drawings:	AutoCAD and PDF
Models:	Native Electronic Format and IFC or COBie
Specifications:	NMS, in MS Word format
Web (Internet):	Adobe PDF, HTML, Macromedia Flash, etc.

Specifics around interim, milestone and coordination Model-based deliverables between Project Team members, and including all information exchange requirements, will be captured in the BIM Project Execution Plan (PxP)

1.6 Writing Style

The writing style must be presented in a logical, objective, clear and concise manner. Reports must be written so that the reviewer can easily locate references and respond to related information contained in the report. Typically, reports will include the following sections:

1. A cover page indicating the Project title, nature of the report, consultant contract number and author name, PWGSC contract name and reference number, and date in a non-ambiguous format, i.e. January 1, 2018;
2. A table of contents;
3. An executive summary;
4. An introduction;
5. A methodology section explaining the methods and tools used, such as weightings, comparative analysis;
6. A conclusion or synopsis; and
7. Appendices containing supporting material referenced in the report, supplementary and supporting information.

1.7 Report Content

Report contents must:

1. Ensure that the executive summary is an accurate and complete summary of the report following an identical structure, including only key points, results and recommendations requiring review and acceptance;
2. Use an organizing system, such as MS Word Document Map, for ease of reference and cross-referencing;
3. Use correct grammar including complete sentences to avoid ambiguity and facilitate translation when required. The use of technical terms, industry jargon and cryptic phrasing must be avoided;
4. Be efficiently written with only essential information included in the body of the report and supporting information in an appendix, if required; and
5. Ensure all correspondence has been critically analyzed against accepted goals and objectives, PWGSC standards and the requirements identified in this Project Brief.

1.8 Acceptance of Consultant Deliverables

Acceptances indicate that, based on a general review of material for specific issues, the material is considered to comply with governmental and departmental objectives and practices, and that overall Project objectives should be satisfied. The DR, PWGSC Technical Services Team and other Quality Assurance teams, the Users and other Authorities Having Jurisdiction (AHJ's) will review the Consultant's work product and will provide review comments. The Consultant must respond formally in writing to all comments and adjust documentation until all comments are resolved to the satisfaction of and acceptance by all authorities. In the case of conflicting comments, the Consultant must identify these to the DR, who will make the final decision on the differing perspectives.

PWGSC reserves the right to reject incomplete, undesirable or unsatisfactory work and any such rejected work must be redone and resubmitted for acceptance at the Consultant's sole expense. PWGSC acceptances do not prohibit rejection of the work that is determined to be unsatisfactory at later phases of review. If progressive Project design or technical investigation reveals that earlier acceptances should be withdrawn, the Consultant is responsible for redoing the work and resubmitting it for acceptance at the Consultant's sole expense.

The Consultant must obtain the DR's acceptance, in writing, during each of the project phases before proceeding to the next phase.

No acceptance or approval by PWGSC, whether expressed or implied shall be deemed to relieve the Consultant of professional or technical responsibility. Neither does acceptance of an estimate by PWGSC in any way abrogate the Consultant's responsibility to not exceed the approved construction budget throughout the life of the Project, or the requirement to redesign, should the lowest acceptable bid differ significantly from the approved construction budget.

1.9 Co-ordination by the Consultants

The Consultant must:

1. Ensure submissions are fully coordinated and complete. That they are reflective of an approved quality management/assurance process for this Project including those from the sub-consultants. The importance of this cannot be understated, PWGSC will reject submissions which fail to be fully coordinated;
2. Coordinate with the work products of stakeholders;
3. Ensure clear, accurate and ongoing communication of design, construction, estimates and scheduling issues (including changes) as they relate to the responsibilities of the Consultant from initial base building reviews to post construction reports;
4. Provide how the Consultant will monitor and ensure quality of Consultant deliverables in the Design Management Plan;
5. Co-ordinate input for the DR's risk management plan;
6. Maintain a decision log documenting parameters of all design decisions taken, including: record of options considered, parties involved in the decision, and rationale for the decision;
7. Co-ordinate quality assurance process ensuring submissions are complete and signed-off by the designated senior reviewer; and
8. Ensure to provide adequate site inspection services and attend all required meetings.

1.10 Meetings and Workshops

Regular meetings with the design and construction teams throughout the Project are required.

1.10.1 Core Team Meetings

Project Core Team meetings will be Chaired by the DR and will direct the activities of the Project Team. These meetings will be held for the duration of the Project at the PWGSC offices located in the National Capital Area, or on the Project site.

The Consultant must prepare and deliver the agenda, notice to invitees, and minutes. The Consultant must issue final meeting minutes within two (2) working days of meeting. The format of the meeting minutes must be approved by the DR prior to the issuance.

The Consultant must create and maintain a current, searchable database containing meeting action items and issues that are directly linked to the risk management services of the Consultant. The top 10 risks from this database must accompany the meeting minutes.

Membership of the Project Core Team will vary in accordance with the schedule and milestones and usually includes the DR (and other Project Management Team members), representatives from the Users, the CM, and the Consultant Team members who must participate as required and according to the work/issues in question.

The purpose of these meetings is to:

1. Monitor the Project progress against Project objectives;
2. Monitor the Project progress against the approved, construction cost estimates, cash flow, prioritized construction schedule and scope;
3. Assess design and construction productivity against agreed upon performance requirements;
4. Ensure clear communication between all participants; and
5. Identify opportunities or issues, assigning responsible individuals and dates for resolution.

1.10.2 Design Meetings

The Consultant will co-chair the Project Design meetings with the DR to coordinate and review the activities of the Project Team. These meetings will occur at the PWGSC offices located in the National Capital Area, or on the Project site.

The Consultant must prepare and deliver the agenda, notice to invites, and minutes. The Consultant must issue final meeting minutes within two (2) working days of meeting. The format of the meeting minutes must be approved by the DR prior to the issuance.

The Consultant must create and maintain a current, searchable database containing meeting action items and issues that is directly linked to the risk management services of the Consultant. The top 10 risks from this database must accompany the final meeting minutes.

At minimum, meetings must be organized under two (2) main categories:

1. Overall design requirements; and
2. BCC and their design integration.

Attendance at these meetings will vary in accordance with the phase of Project design and will include: the DR (and other Project Management Team members), the Consultant Team, site services personnel, sub-consultants (as identified by the Consultant and according to the work in question), the CM and User representatives.

The purpose of these meetings is to:

1. Monitor design progress against the approved, construction cost estimates, construction schedule and scope;
2. Ensure clear and efficient communication between all participants;
3. Ensure effective BCC design and tender package coordination;
4. Identify opportunities or issues, assigning responsible individuals and dates for resolution; and
5. Ensure effective quality management, including integration of approval body requirements.

1.10.3 Construction Meetings

The Consultant must attend weekly construction meetings during the Project Construction Phase,

to be held either at the PWGSC offices located in the National Capital Area, or on the Project site.

The CM will prepare and deliver the agenda, notice to invites and minutes. The CM will issue the final meeting minutes within two (2) working days of meeting.

The CM will create and maintain a searchable database of action items and issues that is directly linked to the risk management services of the CM. The top 10 risks from this database will accompany the final minutes of the meeting.

The attendance of the Consultant Team's site services personnel and sub-consultants are required at each meeting (as identified by the Consultant and according to the work in question).

The purpose of these meetings is to:

1. Monitor the progress and administration of the prioritized construction against the approved scope and construction cost estimate, and the construction schedule;
2. Ensure efficient communication between all participants;
3. Ensure effective construction coordination with site and building operations;
4. Ensure effective and efficient site coordination of all disciplines and sub-contractors;
5. Identify opportunities or problem issues, assigning responsible individuals and dates for resolution; and
6. Ensure effective quality management.

1.10.4 Technical and Submission Meetings

The Consultant must co-chair additional meetings associated with technical subjects and submission reviews with the DR. Meetings will occur either at the PWGSC offices located in the National Capital Area, or on the Project site.

The Consultant must prepare and deliver the agenda, notice to invitees, and minutes. The Consultant must issue final minutes to all attendees within two (2) working days of meeting. The format of the meeting minutes must be approved by the DR prior to the issuance.

Meetings will include, but are not limited to:

1.10.4.1 Conservation meetings

Requiring the presence of the Consultant, key specialists and disciplines relevant to the topic, the CM and appropriate Project Management Team members. The conservation meetings will occur monthly or as required by the Consultant or DR. Presentations must be supported by graphic accompaniment.

1.10.4.2 Technical meetings

Requiring the presence of the Consultant, key specialists and disciplines relevant to the topic, the CM and appropriate Project Management Team members. The technical meetings will occur on an as-required basis, as determined by the Consultant or DR. Presentations must be supported by graphic accompaniment.

1.10.4.3 BIM Project Execution Planning sessions

Requiring the presence of all stakeholders specifying or delivering content within the Model environment. These sessions will develop and update the BIM PxP, a document that captures the logistics and technical details needed to deliver on Model-based requirements. The first BIM PxP meeting must be held 20 days after the contract award, and the PxP must be updated and in place for the remainder of the project, with approval for changes deriving from the DR. This meeting is to be led by the Consultant Team's designated BIM expert.

NOTE: The elements required to cover the Project BIM Requirement (Annex B) are part of the larger BIM PxP process.

1.10.4.4 Submission meetings

Requiring the attendance of the Consultant, key specialists and disciplines relevant to the topic. Submission meetings for all approvals and construction tender packages will generally be synchronized with the schedule of submissions as outlined throughout the Project Brief.

1.10.5 Stakeholder Workshops

The Consultant must chair Stakeholder workshops, unless otherwise specified. The Consultant must prepare and deliver the agenda, notice to invitees, and minutes. The Consultant must issue final meeting minutes within two (2) working days of meeting. The format of the meeting minutes must be approved by the DR prior to the issuance.

The Consultant must create and maintain a current, searchable database containing workshop action items and issues.

Attendance at these workshops will typically include the Project Management Team, CM, the Consultant Team, (as required and according to the subject of the workshop), representatives from the Users (when required), and, in some instances, third party experts invited by PWGSC.

Workshops will include, but are not limited to:

1.10.5.1 Subject Matter Specific Workshops

These workshops will be focused working sessions intended to address specific technical topics and design approaches, project implementation strategies, and/or particular Project challenges. These workshops are required at 50% SD, 50% DD, and at other phases of the Project as required by the DR. BIM will be used for visualization, analysis and management of discipline specific. Following a general submission overview workshop by the Consultant at each of the aforementioned submissions, individual subject matter specific workshops include, but are not limited to:

1. Sustainability strategy/targets and options development;
2. Sustainability design matrix and credits;
3. Landscape architecture;
4. Architectural lighting;

5. Mechanical systems;
6. Electrical systems;
7. Physical security and enterprise integrated security systems;
8. Multi Media;
9. Information Technology;
10. Broadcast lighting;
11. Broadcast acoustics;
12. General acoustics;
13. Accommodations; and
14. Model quality, design, and information exchange coordination;

1.10.5.2 Structure/Seismic/Blast Design Workshops:

These workshops will be focused working sessions intended to address specific upgrading seismic/blast design topics and design approaches, including architectural and heritage fabric impacts. BIM will be used for the visualization, analysis and management of seismic/blast design iterations; and

1.10.5.3 Functional Program Workshops:

The Consultant must collaborate with and assist the DR in organizing and conducting these workshops. These workshops will be held during the Pre-Design Phase of the Project, to identify and clarify specific requirements in the Draft Preliminary Functional Program with the third-party Consultant, who prepared the Preliminary Functional Program, and the User.

1.10.5.4 BCC Workshops:

The Consultant must collaborate with and assist the DR in organizing and conducting these workshops. These workshops must be held during the SD and DD phases of the Project to identify specific activities, schedules and scope for upcoming phases of the BCC. In addition to the specific subject matter workshops outlined earlier in this section.

1.10.5.5 Risk Management and Lessons Learned Workshops:

The Consultant must actively participate with and assist the DR in organizing and conducting these workshops. These workshops must be held to provide input to and analysis of the Consultant's, CM's, and PWGSC's risk registers, noting potential opportunities to be leveraged and risks to be mitigated, as they occur throughout the Project. Include lessons learned from the Project implementation and other projects in discussions to leverage opportunities and mitigate risks.

1.10.5.6 Value Engineering Workshops:

The Consultant and CM must actively participate at these workshops chaired by the DR. These workshops will seek to ensure value for money of the proposed design and construction. In addition

to the typical list of workshop attendees, the third-party peer review body may attend these workshops.

1.10.5.7 Constructability Workshops:

The CM will chair, record all issues and decisions and prepare and distribute minutes within two (2) working days of the workshop. These will typically be full day workshops addressing constructability, work restrictions plan, scheduling and cost implications. The BIM will be used for the visualization, analysis and solutions identification of contractibility issues. A specific constructability workshop will be held for every tender package submission at 50%, 90%, 95% completion;

1.10.6 Frequency of Meetings, Workshops and Presentations

	RS 1, RS 2	RS 3	RS 4	RS 5	RS 6, 7, 8, 9,10
Meetings:					
Core Team Meetings	Monthly	Monthly	Monthly	Monthly	Monthly
Design Meetings		Weekly	Weekly	Weekly	Until all construction tender package are awarded
Construction Meetings*					Weekly
Conservation Meetings*	Monthly	Monthly	Monthly	Monthly	Monthly
Technical Meetings	As required	As required	As required	As required	As required
BIM Project Execution Meetings	As required	As required	As required	As required	As required
Submission Meetings	Monthly	Monthly	Monthly	Every construction tender package submission	As required
Workshops:					

	RS 1, RS 2	RS 3	RS 4	RS 5	RS 6, 7, 8, 9,10
Subject Matter Specific Workshops	As required	15	15	As required	As required
Seismic/Blast Design workshops	Monthly	Monthly	Monthly	As required	As required
Functional Program Workshops	15		2	0	0
BCC Workshops	10				
Risk Management and Lessons Learned Workshops	Every 6 months	Every 6 months	Every 6 months	Every 6 months	Every 6 months
Value Engineering Workshops		2	2		2
Constructability Workshops	Monthly	Monthly	Monthly	Every construction tender package submission	As required

* Commence with investigations planning.

1.11 Partnering and Team Building Sessions

PWGSC intends to "partner" both the design phase and construction phases of this project.

Partnering is a collaborative, ongoing team-building process, based on improving communication and understanding amongst Project Team Members to achieve a common goal, putting the Project first. While the contract resulting from this RFP establishes the legal obligations of the parties, the partnering process strives to establish positive working relationships which will maximize the benefits to the Project from the knowledge and experience of all stakeholders, while at the same time allowing all stakeholders to maximize their benefits from the project.

A successful partnering process leads to improved effectiveness, quality, timeliness and team morale. Members of the Consultant Team, including representatives from the senior management of all firms must attend partnering sessions. Representatives from the Project Management Team, the Users CM and others

will also attend partnering sessions.

PWGSC may employ a third party as facilitator for these sessions. The Consultant's cost to attend is to be included as part of the proposed fee for this Project.

A one (1) day design partnering workshop will be arranged during the design phase and another one (1) day session during construction. These workshops will be held in the National Capital Area.

1.12 Project Response Time

It is a requirement of this Project that the key personnel of the Consultant and sub-consultant or specialist firms be personally available to attend meeting or respond to inquiries within four (4) hours' notice.

1.13 Submissions, Reviews and Approvals

This is a high-profile Project of national significance requiring a significant investment of public funds. A facility with extensive interventions to a structure of high architectural, historical and national significance is required. Project reviews will be rigorous at the federal level.

1.13.1 Authorities Having Jurisdiction (AHJ's)

The DR as well as the authorities identified below will review work in progress on a continuing basis. Formal presentations are required for design and project approvals in accordance with the project delivery phases outlined in Required Services (RS). Ad hoc presentations will be required for various committees and senior officials.

Below is a list of federal authorities that will require presentations and/or submissions for approval. The frequency of meetings indicated is an estimate only. It will be affected by the Project phase, issues and requirements for decisions and approvals. The Consultant must attend all other meetings as needed and make presentations to satisfy Authorities as identified.

The following are authorities having federal government jurisdiction over the project:

Authority	Federal Government Jurisdiction
Treasury Board of Canada	Project and contract approvals
Public Works and Government Services Canada (PWGSC)	Contracting authority and project delivery
Supreme Court of Canada/ Federal Courts /RCMP	Functional design and security
PWCSC (Users)	requirements and standards,
PWGSC Project Review Advisory Committee (PRAC)	Design quality assurance.
National Capital Commission (NCC)	Federal Design and Land Use Approval Canadian Environmental Assessment Act 2012 (CEAA 2012) for site, building design, landscape, hoarding, exterior signage, exterior lighting.

Parks Canada (PC) Federal Heritage Building Review Office (FHBRO)	Design requirements to ensure preservation of site heritage character values.
Environment Canada	Environmental Compliance Management Program (ECMP).

1.13.2 Other Authorities Having Jurisdiction (AHJ's)

Although the federal government does not formally recognize jurisdiction at other levels of government, voluntary compliance with the requirement of these other Authorities is required unless otherwise directed by the DR. In areas of conflict concerning provincial requirements, federal authority prevails. Codes, regulations, by laws and decisions of AHJ's must be observed. In cases of overlap the most stringent will apply.

PWGSC will voluntarily comply with the applicable Ontario Construction Health and Safety Acts and regulations, in addition to the related Canada Occupational Safety and Health Regulations.

Authority	Jurisdiction
Ontario Ministry of Labour	Employment Standards, Construction Safety, Designated Substance Management, Workers Compensation, Ontario Construction Health and Safety Acts and Regulations.
Ontario Ministry of the Environment	Environmental Protection Act: 3R, Regulations Building Discharges into the air, water and ground, Disposal of Designated Substances including Asbestos.
Ontario Ministry of Consumer and Commercial Relations – TSSA	Construction Hoists. Elevators, Escalators and Dumb Waiters, Pressure vessels.
City of Ottawa	Planning and Design Submissions for Information, Building Demolition and Plumbing Permits and Inspection, Fire Safety, Equipment and access for

	firefighting equipment, Ottawa Built Heritage Advisory Committee, Planning Committee and City Council, Occupancy Permit.
Electrical Safety Authority (ESA)	Electrical Permits and Inspection.

The Consultant must, with the assistance of the DR, identify any other AHJ's and endeavor to ensure that all design work meets or exceeds all codes, regulations and standards of these other AHJ's.

1.13.3 Municipal Building Permit and Other Permits Building Permit/ Occupancy Permits

On behalf of PWGSC, the Consultant must apply through the CM for building permits from the City of Ottawa, by supplying the supporting documentation for permit application. Payment of the permit shall be the responsibility of the CM. The Consultant must participate in any negotiations and assist in resolving related issues prior to tender of each package. Submissions will begin at the end of Design Development and will be followed by a final submission at 99% construction tender documents. Additional submissions/presentations may be required if requested by the City of Ottawa.

The CM will apply for interim and final Occupancy Permits and coordinate the resolution of all outstanding issues relating to obtaining the permit. Municipal authorities will have access to the site as required and will provide reporting of their findings. The Consultant must address and respond to all issues raised by Municipal officers.

1.13.4 Presentations and Submissions

Presentations for approval bodies are required in advance for review by the DR and subsequent revision by the Consultant. The Consultant must plan the time to tailor Project information for each formal presentation.

Approvals and presentations must be derived from and facilitated by Models and Model-based data. The importance of the Model for visualization, real-time analysis and coordinated information sharing is paramount. The User will benefit from this data source, where an easier understanding of the Project can lead to an increase in time spent on value-added tasks, inspections, and including precise commentary and recommendations, both in collaborative sessions and individual reviews.

Collaborative sessions must be facilitated by the Consultant in order to present and navigate the Model. The Consultant and CM will provide the necessary technical and support services, where appropriate, to facilitate these sessions in an interactive and audience-responsive manner.

Models must be submitted for reviews of functional and technical Project requirements.

1.13.4.1 Senior Management - PWGSC

Purpose of Review/Approval: Final decision authority for all options;

Submission Format: Oral presentation including Power Point decks/boards;

Submission Schedule: Submissions are reviewed at key milestones including review of the schematic design update phase, design development phase, at 100% tender documents and for key mock-ups, when completed work has been forwarded to the DR;

Number of Submissions: One (1) mandatory per submission as outlined above plus any follow-up reviews [minimum five (5)];

Expected Turnaround Time: Four (4) weeks.

1.13.4.2 Project Team (including PWGSC Technical Services Team, Buildings in Transition (BIT) Team, Users and CM)

Purpose of Review/Approval: Program, Design and Technical Quality Assurance and constructability reviews;

Submission Format: Reports, drawings and specifications, oral presentations including Power Point decks/boards;

Submission Schedule: Submissions are reviewed at the schematic design update review phase, two (2) updates; design development phase (50%, 99 % and 100% completion), construction documents phase (50%, 99 % and 100% completion), Tender Documents one (1) review when completed work has been forwarded to the, DR;

Number of Submissions: Minimum Nine (9) mandatory and supplement Senior Management presentations plus any follow-up;

Expected Turnaround Time: Schematic Design Update review four (4) weeks, DD eight (8) weeks and two (2) to four (4) weeks for each construction documents submission.

1.13.4.3 Project Review Advisory Committee (PRAC)

Purpose of Review/Approval: Design Quality Assurance;

Submission Format: Reports, drawings and specifications, sample boards, oral presentations including Power Point decks/boards;

Submission Schedule: Submissions are reviewed at Schematic Design and Design Development when completed work has been

	forwarded to the DR;
Number of Submissions:	Minimum two (2) mandatory plus any follow-up;
Expected Turnaround Time:	The committee will provide comment and feedback at the presentation followed by minutes in three (3) weeks.

1.13.4.4 Federal Heritage Buildings Review Office (FHBRO)

Purpose of Review/Approval:	Conformance review of proposed interventions to a federal heritage building, as per the Standards and Guidelines for the Conservation of Historic Places in Canada;
Submission Format:	Report, drawings and specifications, sample boards, Photographs, Model and oral presentations including Power Point decks/boards;
Submission Schedule:	50% and 90% SD and 50% and 90% DD phases, and during the construction documents phase. Some reviews will be formal Federal Heritage Buildings Committee (FHBC) reviews and others will be Federal Heritage Buildings Review Office (FHBRO) Review of Intervention Report (ROIR's). Recommendations may include design changes, so it is recommended to liaise periodically throughout the planning and design process with the FHBRO office to obtain consensus in the process. These reviews should be scheduled after FHBRO concerns have been addressed. Refer to the Guide to Working with the FHBRO (www.pc.gc.ca/progs/beefp-fhbro/ManRefrnce.aspx);
Number of Submissions:	Four (4) formal plus three (3) follow-up. Three (3) follow-up ROIR'S;

NOTE: Refer to the Guide to Working with the FHBRO for further detail.

www.pc.gc.ca/progs/beefp-fhbro/ManRefrnce.aspx

Expected Turnaround Time:	Six (6) to eight (8) weeks for formal FHBC reviews and three (3) weeks for follow-up ROIR's.

1.13.4.5 National Capital Commission (NCC)

Purpose of Review/Approval: NCC design approval, specifically the "Federal Land Use, Transaction and Design Approval" - Level 3;

Submission Format: Report, drawings and specifications, Photographs, Model and oral presentations including Power Point decks/boards;

Submission Schedule: 50% and 90% Schematic Design (SD) and 50% and 90% Design Development (DD) Submissions will be reviewed for "Federal Land Use, Transaction and Design Approval" - Level 3 at a stage decided by the DR and NCC staff. Supplemental submissions during the construction documents phase are more than likely required;

Number of Submissions: Four (4) mandatory plus any follow-up reviews;

NOTE: Supplemental submissions for construction tender packages might be required.

For a Level 3 review process, timing of submissions is critical as the Advisory Committee on Planning, Design and Reality (ACPDR) meets only five (5) times per year: March, May, August, October and December. As recommendations from ACPDR may necessitate design changes, through the DR, liaise with NCC periodically throughout the planning and design process to obtain consensus. ACPDR presentations should be scheduled only after Federal Heritage Buildings Committee (FHBC) review letters & FHBRO Review of Interventions Reports (ROIR) have been obtained and issues raised in these letters and reports have been addressed by the Consultant;

Expected Turnaround Time: ACPDR will provide comments and feedback at the presentation followed by meeting minutes in three (3) weeks. ACPDR formal approval usually follows by the NCC Board of Directors approval approximately four (4) weeks thereafter.

1.13.4.6 City of Ottawa

Purpose of Review/Approval: To obtain Municipal building permit;

Submission Format: Drawings, specifications, oral presentations including Power Point decks/boards;

Submission Schedule: Submissions are reviewed when completed work has been forwarded to the DR for site plan and building permit approvals, interim consultations are required, when the application is submitted on each tender package 90% SD and 90% DD, and 90% for construction tender package which involves a building permit;

Number of Submissions: As required until permit/approval has been received;

Expected Turnaround Time: Dependent on type of submission, usually four (4) weeks to three (3) months.

1.13.5 Project Approvals

1.13.5.1 Cost

Throughout the Project the cost must be closely monitored by the Consultant to ensure that the project does not exceed the approved construction budget.

1.13.5.2 Stakeholders Consultation and Approvals

The WMB was attributed significant values in all three (3) evaluation categories of historic associations, architecture and environment. It was designated a Classified Federal Heritage Building. The implications of this designation are defined in the Treasury Board Policy on the Management of Real Property (http://www.tbs-sct.gc.ca/rpm-gbi/doc/gmrp-ggbi/gmrp-ggbi06-eng.asp#a6.6.5). Generally, interventions to a Classified Federal Heritage Building must be submitted to the FHBRO for review in the planning phase. Large rehabilitation activities, such as those taking place as part of this Project, will be reviewed through a formal review process by the Federal Heritage Buildings Committee (FHBC). The Consultant must develop and follow a clear conservation approach in accordance with the Standards and Guidelines for Conservation of Historic Places in Canada, which will help guide the design process. FHBC bases its conformance reviews of proposed interventions on the conservation approach set out in this document.

The National Capital Act makes the National Capital Commission (NCC) responsible for coordinating and approving projects related to federal lands and buildings in Canada's Capital Region. The NCC role includes reviewing all proposals for work or alterations to federal heritage buildings and sites through the federal land use, transaction and design approvals process (FLUDA). This Project will be a Level 3 (a major project having a high symbolic value for the Capital). Level 3 projects require a detailed internal review by a team of NCC professional staff and are presented to the Advisory Committee on Planning, Design and Realty (ACPDR) prior to being submitted to the NCC Board of Directors for approval. Abatement, demolition and fit-up construction will not proceed until the FLUDA is obtained.

The WMB Rehabilitation Project will include a large number of stakeholders including the above mentioned FHBRO/FHBC (Parks Canada), NCC, the Supreme Court of Canada, Federal Courts, RCMP, PWGSC, City of Ottawa, and the public.

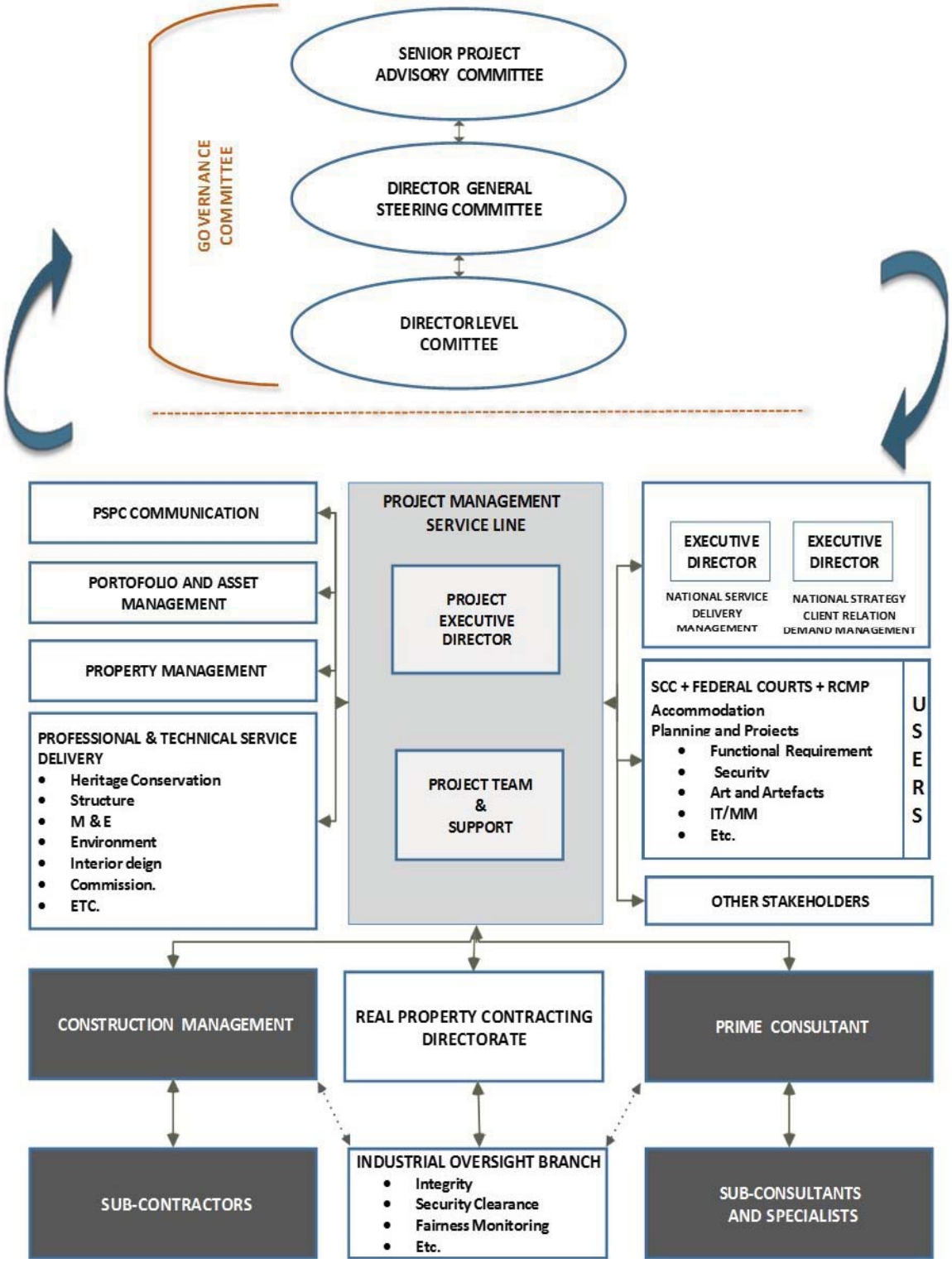
PA 2 PROJECT TEAM ORGANIZATION

2. Project Team Organization

This Project is to be managed and implemented in a collaborative manner. All members of the Project Team are required to work cooperatively at every phase of the design and construction process in order to assure the creation of a successful and meaningful end result. Under the leadership of the DR, all Project Team members are responsible for establishing and maintaining a professional and cordial relationship.

The Project Team refers to the key representatives, involved in coordinating and delivering this Project. The PWGSC Departmental Representative leads the Project Team, with membership representing those responsible for project implementation. The following chart identifies the PWGSC organizational relationships:

- AHJ's are not indicated.
- Solid lines indicate functional reporting relationships.
- Dotted lines indicate Project communication relationships.


GOVERNANCE COMMITTEE
SENIOR PROJECT ADVISORY COMMITTEE
DIRECTOR GENERAL STEERING COMMITTEE
DIRECTOR LEVEL COMITTEE
PSPC COMMUNICATION
PORTOFOLIO AND ASSET MANAGEMENT
PROPERTY MANAGEMENT
PROFESSIONAL & TECHNICAL SERVICE DELIVERY
Heritage Conservation
Structure
M & E
Environment
Interior deign
Commission.
ETC.
PROJECT MANAGEMENT SERVICE LINE
PROJECT EXECUTIVE DIRECTOR
PROJECT TEAM & SUPPORT
EXECUTIVE DIRECTOR
NATIONAL SERVICE DELIVERY MANAGEMENT
EXECUTIVE DIRECTOR
NATIONAL STRATEGY CLIENT RELATION DEMAND MANAGEMENT
SCC + FEDERAL COURTS + RCMP
Accommodation
Planning and Projects
Functional Requirement
Security
Art and Artefacts
IT/MM
Etc.
USERS
OTHER STAKEHOLDERS
CONSTRUCTION MANAGEMENT
REAL PROPERTY CONTRACTING DIRECTORATE
PRIME CONSULTANT
SUB-CONTRACTORS
INDUSTRIAL OVERSIGHT BRANCH
Integrity
Security Clearance
Fairness Monitoring
Etc.
SUB-CONSULTANTS AND SPECIALISTS

2.1 Roles of the PWGSC Project Team and the User

2.1.1 Director General

The Director General holds overall accountability for the Project and reports to executive management within PWGSC.

2.1.2 Directors

The Executive Project Director is accountable for the expenditure of public funds and the delivery of the Project in accordance with terms accepted by the Treasury Board;

The Project Director reports to senior PWGSC executive management and is the formal point of contact with the Users; and

The other Directors are responsible for the technical aspect related to the design and construction of the Project.

2.1.3 User Representatives

The SCC will play an important role on the Project Team as a stakeholder and user representative and will participate throughout all phases of the Project as it relates to the fit-up components and functional operations of the SCC. Their representative will be responsible for the provision information pertaining to: functional programming, design, fit-up, occupancy planning, and move management.

There is a single point of contact for the SCC Users who is responsible for all internal management and communications of the Project within the SCC.

The FC, RCMP, and PWGSC are also users who will be represented by the Project Management Team on the Project Team.

2.1.4 PWGSC Departmental Representative

The Senior Project Manager is the Departmental Representative (DR) for this project. The Senior Project Manager is accountable to the Project Director for management of the project implementation. The DR can delegate to the Project Manager. The Consultant reports to the DR.

2.1.5 PWGSC Senior Project Managers and Project Managers

Numerous Project Managers (PM's) will be responsible for various roles affecting design and implementation of elements such as systems, architecture, engineering, heritage, etc. The PM's will support the role of the DR.

2.1.6 Project Management Support Services

PWGSC has engaged external Project Management Support Services (PMSS) to provide project management, construction advice and project management administration support for the PWGSC Project Manager. PMSS reports to the DR and will assist in the day-to-day management of the project. PMSS will operate on this Project as an extension of and part of the PWGSC Project Manager's responsibilities. These services will provide independent third party review of information produced by the Consultant and their sub-consultants and the CM.

2.1.7 PWGSC Senior Communications Advisor

The Senior Communications Advisor is the PWGSC representative responsible for all communications requirements and activities including contact with the media and the public.

2.1.8 PWGSC Property Manager

The PWGSC Property Manager is the building operator and manager. The Property Manager and members of the Buildings in Transition Team (BIT) are present on the Project Team to ensure the PWGSC facility management requirements are identified and incorporated into the project. The Property Manager and BIT Team will play a very active project role during project commissioning and turn over.

2.1.9 PWGSC Technical Services (TS) Team

The PWGSC Technical Services Team provides technical advice and quality assurance to the Project Management Team for key architectural and engineering professional disciplines and other specialists including BIM. The purpose of the TS Team is to offer strategic and technical advice, to advise of risks, to review Consultant deliverables, to track and confirm compliance with Project requirements. Members of the PWGSC TS Team will participate regularly in all phases of the project. During construction, some of the PWGSC TS Team may attend construction meetings and field reviews on an ad hoc basis to advise the DR.

A Design Manager will coordinate the services of the Technical Services Team. The Design Manager is the assembler and coordinator of the Technical Services Team.

2.1.10 PWGSC Commissioning Manager

The PWGSC Commissioning Manager represents the Users, Project and Property Manager's interests and maintains overall responsibility for representing PWGSC in the commissioning process. The PWGSC Commissioning Manager is responsible for overseeing all commissioning activities during the design, development, implementation, and post construction phases of the project, assuring that all program issues are addressed. Responsibilities include the review and input into the Commissioning Plan and Systems Operations Manual (SOM), Systems Operating Procedures Manual (SOP), approval of commissioning schedule, approval of commissioning report, and certification of final completion and input to the evaluation report. The Commissioning Manager will review O&M reports and commissioning specifications, training and performance verifications procedures at all phases of the Project and will ensure all O&M aspects are addressed.

The Consultant must work closely with the PWGSC Commissioning Manager, throughout the project. Reporting to the DR, the Commissioning Manager will review and approve all documentation at all phases of the project delivery and will monitor all commissioning activities, including the accuracy of reported results and manuals produced by the Consultant and the CM.

REQUIRED SERVICES

General Requirements

The Consultant must provide the Required Services (RS) described in sections RS 1 to RS 5, RS 8 to RS 12 and Optional Required Services**.** Detailed reporting requirements are noted within each Required Service section. Reporting must meet the format and style outlined in the Project Administration (PA) section, with the technical content (text, drawings, photographs, etc.) described within the listed tasks (intent, design services and deliverables.) and summarized in the reporting sections within each Required Service section.

The Consultant, as an expert in matters of design, planning and implementation, must:

1. Provide comprehensive and continuous design planning, analysis, management and implementation services throughout the Contract until the completion of the Project and the DR has approved/signed the Certificate of Completion. The Consultant's services include any warranty related call-back and repair required after the issuance of the Certificate of Completion; and
2. Actively participate with the DR and CM, and all stakeholders, as required, in a collaborative manner.

RS 1 DESIGN MANAGEMENT

1. Design Management Plan (DMP)

1.1 Intent

The Consultant must prepare, submit, maintain and implement a Design Management Plan (DMP) governing the Consultant's activities, as well as the effective management of the Consultant's team;

1.1.1 Content

The Consultant's DMP must be comprise of seven (7) distinct plans as listed below and described herein:

1. Cost management plan;
2. Time management plan;
3. Scope management plan;
4. Quality management plan;
5. Communications management plan;
6. Risk management plan; and
7. Human resource management plan;

The Consultant must submit for each of the plans:

1. An initial proposed layout, format, template, samples including Table of Content for review by the DR within 30 working days of Contract Award;
2. A draft plan addressing all issues and in compliance with the agreed layout and format for review by the DR within 20 working days of the acceptance of the plan layout and format; and
3. A final plan for acceptance by the DR within 20 working days after receiving DR's review comments are received.

The Consultant's plans are to clearly detail how the Consultant's services will be managed, monitored, reported on and controlled during all phases of the Consultant's services.

Once the final plans are accepted by the DR, the Consultant must implement each plan and submit quarterly DMP updates, including all sub-plans. The Consultant must be available to discuss the contents and implementation of each of the plans and/or its quarterly updates and take the necessary actions as may be required to address any concerns of the Project Team as directed by the DR.

The quarterly plans and/or updates must accompany the Consultant's invoice for services rendered. The invoice will not be accepted unless the quarterly plans are attached, reviewed and accepted by the DR.

Ensure the DR is engaged in any modifications to the Design Management Plan.

1.2 Design Services

1.2.1 Cost Management Plan

The Consultant must develop and maintain a design cost management plan and cost control system specific to this Project including the Consultant's fees, ensuring they are in accordance with the projected expenditures and that contingency and risk budgets are being correctly identified, authorized for use, and allocated per expense category.

The Consultant's plan must include, but is not limited to:

1. Approach and methodology for the identification and management of all costs, including Consultant fees;
2. Approach and methodology to contingency identification and quantification, conditions and authorization for usage, and documentation and notification processes;
3. Approach and methodology to assessing, determining, and reassessing escalation rates;
4. Approach, methodology and frequency for assessing and validating the CM's construction estimates and how the CM's estimates are reflective of the design production; and
5. Approach and methodology to assessing sub-contractor, supplier or conservation specialist's bids, conditional bids, and alternative or equivalent proposals.

The Consultant must continuously implement the plan and, in conjunction with the DR and Cost Consultant (CC), ensure the DR and CC are engaged in the reassessment process and any modifications to the cost management plan.

1.2.2 Time Management Plan

The Consultant must develop and maintain a time management plan and time control system specific to this Project to ensure that each of the Consultant's tasks/activities are identified, monitored and controlled. The Consultant's plan must include, but is not limited to:

1. Approach and methodology for the planning, scheduling and control of all Consultant services, include the role of the Consultant, DR and Schedule Consultant (SC);
2. Approach and methodology for establishing durations per work task/activity;
3. Approach and management of float quantification per work task/activity, including how, when and who will authorize the reallocation of float within the Consultant's overall design and site services schedule;
4. Approach and methodology of analyzing the Consultant's design production; and
5. Approach and methodology of monitoring, documenting (laser scanning, modelling, etc.) and administering the CM's construction and conservation work;

The Consultant must continuously implement the plan and, in conjunction with the DR and SC. Ensure the DR and SC are engaged in the reassessment process and any modifications to the cost management plan.

1.2.3 Scope Management Plan

The Consultant must develop and maintain a scope management plan specific to this Project to ensure that all aspects of the design produced by the Consult is properly scrutinized, prioritized and thoroughly understood by the Consultant's team.

The Consultant's scope management plan must ensure that the design is composed of all the work required to complete the Project successfully. The Consultant's plan is the blueprint for how the scope of work will be defined, developed, verified and controlled.

The Consultant must immediately notify the DR, in writing of any potential increases or decreases in the scope of work that could affect the ability to meet the Project objectives.

The Consultant's scope management plan must include, but is not limited to:

1. Approach and methodology of how functional and operational requirements from the Users will be obtained, scrutinized, and disseminated through the Consultant's team, as well as the Consultant's internal control processes;
2. Approach and methodology for identifying, prioritizing, and sequencing individual design elements or groups of design elements of the Consultant's production, meeting the stipulated Project milestone dates and prioritized construction tender documents as defined by the CM;
3. Approach and methodology of analyzing the Consultant's design information and coordination with the Model(s), including the assessment of design completeness and the ability to construct the proposed design;
4. Approach, methodology and frequency of analyzing the coordination of the Consultant's individual design elements and the overall design;
5. Approach and methodology for determining how individual elements (end devices, material quantities, etc.) within the construction tender packages, while not completely reflective of the final design requirement, will be properly identified and quantified to ensure value for money when tendering, limiting post-tender changes to the work;
6. Approach and methodology how and when to engage the CM in a design assist function to support the Consultant's development of the design;
7. Approach and methodology of how alternative building materials, or construction methods will be considered and how life-cycling analysis will factor into the analysis of the design;
8. Approach and methodology for protecting and conserving the tangible and intangible heritage fabric of the WMB building. Indicate the roles and responsibilities of the Consultant and the interaction with the CM's conservation specialists and the DR's PWGSC Technical Services Team; and
9. Approval and methodology for identifying, analysing and managing, scope changes and their impact on cost and schedule after the construction budget for Design Development is established.

1.2.4 Quality Management Plan

The Consultant must develop, revise when required, and implement a design quality management plan specific to this Project to the approval of the DR.

The Consultant must continuously adhere to the specific quality management processes for the duration of the Project and:

1. Ensure that quality problems with the construction are eliminated and to respond and correct in a timely and effective manner all issues as they occur;
2. Ensure the quality of the processes used to manage and create the deliverables are followed; and
3. Validate that the Project deliverables are completed with an acceptable level of quality.

All Consultant and CM deliverables and processes are subject to quality review The Consultant's quality management plan must include, but is not limited to:

1. Approach and methodology for the day-to-day execution of the quality management plan, describing who, how many resources, the scope of their mandate and responsibilities, and where these services will occur;
2. Approach and methodology for developing and maintaining documentation standards, benchmarks and timeframes (both submission and review by the Consultant) for analyzing, validating, commenting on, approving or rejecting submittals (any type), notices, or any other document from the DR, or CM;
3. Approach and methodology for developing, managing, and maintaining a searchable data for all quality management matters, and if or how this database might/will be linked to the functional program or documentation of action items in meeting/workshop minutes;
4. Approach and methodology for preparing and issuing quality management documentation and reports;
5. Approach and methodology for quality management awareness training of the Consultant's personnel; and
6. Approach and methodology for providing, documenting and following-up on quality management matters related to the construction.

The Consultant must continuously implement the plan and, in conjunction with the DR. Ensure the DR is engaged in the reassessment process and any modifications to the quality management plan.

1.2.5 Communications Management Plan

The Consultant must develop a communication management plan specific to this Project. The Consultant is to work closely with the DR to ensure the Consultant's communication plan is consistent with and complimentary to all other communication plans.

The Consultant's plan must define the structure and methods of information collection, screening, formatting, and distribution and outline understanding among the Consultant's Team regarding the actions and processes necessary to facilitate the critical links among people, ideas, and information that are necessary for Project success.

The Consultant's communication management plan must include, but is not be limited to:

1. Approach and methodology for internal Consultant Team and Project Team communications including a matrix mapping communication interactions;
2. Communication requirements and standards during meetings and workshops and reporting or follow-up afterwards;
3. Description as to how correspondence, reports and performance records are managed;
4. Actions and processes necessary to facilitate the critical links among people, ideas, and information for Project success; and
5. A directory of the Consultant Team is to be included to provide contact information for all involved in the Project including their areas of responsibility.

1.2.6 Risk Management Plan

The Consultant must develop and implement a risk management plan for services and work that is specific to this P. The purpose of the plan is to identify the processes and methodologies for opportunity and risk identification, qualification and management within the Consultant's risk registry.

The Consultant's risk management plan must include, but is not limited to:

1. Approach and methodology to creating a risk registry including when, and how data will be integrated into the registry;
2. Approach and methodology to the quantification of opportunities and risks;
3. Approach and methodology for determining, applying and reassessing the probability of occurrence per risk registry element;
4. Approach and methodology for determining how, when and by whom, relevant opportunities and risks are, included, tracked and archived in the risk registry;
5. Approach and methodology for establishing, implementing and managing a services and work claims avoidance program related to the Consultant's sub-consultants and suppliers; and
6. Approach and methodology for how, when and to whom lessons learned are disseminated,

including the timing and frequency of follow-ups to validate the lessons learned are being applied in the application of the services and work and the Consultant's services.

The Consultant must continuously implement the plan in conjunction with the DR. Ensure the DR is engaged in the reassessment process and any modifications to the Consultant's risk management plan.

1.2.7 Human Resource Management Plan

The Consultant must develop and implement a human resource management plan specific to this Project. The purpose of the plan is to achieve Project success by ensuring the appropriate human resources are deployed with the necessary skills, resources are trained if any gaps in skills are identified, team building strategies are clearly defined, and team activities are effectively managed for Project success.

The Consultant's human resource management plan must include, but is not limited to:

1. Roles and responsibilities of the Consultant's Team throughout the Contract;
2. Consultant Team organization charts and how positions interact/relate to other members of the Project Team;
3. Staffing plan to include:
   - How and when resources/skills will be deployed;
   - Timeline for resources/skill sets;
   - Training required to develop skills and frequency of retraining;
   - Transition period required for succession of all positions;
   - A forward-looking work plan reflective of all Consultant services required over the duration of the Project that considers succession; and
   - Any other relevant information regarding the provision of the Consultant's services for the Contract.

The Consultant must continuously implement the plan and, in conjunction with the DR, Ensure the DR is engaged in the reassessment process and any modifications to the human resource management plan.

1.3 Deliverables

The Consultant must provide the DR a draft, final and updated Plans as prescribed and must continuously execute the Design Management Plan.

RS 2 PRE-DESIGN

2. Analysis of Project Requirements and Existing Information

2.1 Intent

The intent of the Pre-Design Phase of the Project is to; review and integrate the Project requirements, identify and evaluate conflicts or problems, identify gaps in the available information for Project advancement and to develop and receive approval for the Project cost, schedule, scope, quality assurance, and integrated delivery process.

The Pre-Design Phase will be a continuous process feeding the Project as it evolves. To respond to the aggressive schedule, the Consultant will be required to prioritize the analysis of some elements of the Project and produce interim Pre-Design reports for review by the DR and advance these elements to Schematic Design before completion of the Pre-Design Phase.

The Consultant must actively manage and prioritize work in coordination with the DR.

NOTE: The WMB will be under construction at contract award and access to the site will be restricted. Expressed permission from the DR is required to gain access to the site. All construction site health and safety training requirements and policies of the General Contractor (GC), working on the WMB Asset Integrity Project will be enforced.

2.2 Design Services

2.2.1 Review of Existing Documentation and Site Conditions

There is a significant amount of existing documentation detailing findings from previous investigation work and projects (i.e. The West Memorial Building Asset Integrity Project) building condition assessments, as well as information on approval process, standards, policies, etc. These documents provide the information necessary to understand the general condition of the property and the extent of existing damage or deterioration. (refer to: PD 6 Existing Documentation).

The Consultant must:

1. Review all relevant background reports including related projects to understand the general condition of the property and the extent of existing damage or deterioration;
2. Conduct site reconnaissance, inspections, surveys, measurements, studies, evaluations, etc., to validate and acquire all pertinent information; and
3. Interview operational personnel and Users to confirm existing conditions, as required.

2.2.2 Regulatory Analysis

The intent of the regulatory work is to identify immediate health and safety deficiencies and consider interim requirements. This will assist in the initial phases of forming strategies and identification of opportunities that will inform the Project in later phases.

The Consultant must prepare:

1. A summary of regulatory and statutory requirements;
2. A description of AHJ's;
3. The identification of applicable codes, regulations, plans, policies and standards including those for structural assessment;
4. A Building Code analysis identifying constraints and issues; and
5. The identification of opportunities and strategies to protect the heritage components of the building and limit the effects on heritage character defining elements from the regulatory requirements for the Project.

2.2.2.1 Life Safety Regulatory Analysis

The Consultant must conduct a life safety regulatory audit of WMB and:

1. Identify critical deficiencies that would require immediate attention for health and safety reasons; and
2. Report on interim life safety considerations during the implementation of the Project.

2.2.3 Exploratory Work and Investigations

Preliminary and detailed exploratory work and investigations are required to collect information required to advance the design and Model of the Project. The purpose is to confirm, analyze, test and determine various conditions either known or unknown. The Consultant must undertake, a systematic site verification of the building, site, installations and associated infrastructure and of all existing documentation and prepare a prioritized and detailed exploratory work and investigation program to maximize investigation work.

NOTE: Any exploratory work which risks affecting character-defining heritage elements must be planned to minimize damage and must be submitted to FHBRO for review.

The Consultant must prepare a preliminary investigation plan for approval by the DR, with a description and rationale of proposed investigation, locations and methodologies, including observations and measurements, non-destructive testing, destructive testing, digging, and laboratory testing to include but is not limited to:

1. Identify individual investigation requirements;
   - Identify information that can be acquired during the investigation;
   - Description of the risk or consequence to the Project if the investigation is not completed;
   - Detailed schedule indicating start and completion times, for both construction documents

and construction, including durations for reinstatement;

- A list of all Consultants, including all sub-trades and conservation specialists, who will be performing the investigations;
- Identify the type of speciality or access equipment and the locations of the access equipment (scaffold, laser scanner, crane, lift, swing stage, etc.); and
- Validation of the security clearance requirement for all personnel and vehicle access requirements.

2. Continuously supervise the implementation of each investigation during the day, at night or weekends;
3. Ensure sequencing of the investigation is conducted as planned and approved;
4. Provide an inspection report documenting each inspection;
5. Provide the DR a detailed report of all investigation findings within two (2) weeks of each investigation, or as agreed by the DR; and
6. Incorporate into the Model all findings resulting from each investigation.

2.2.4 Draft Preliminary Functional Program Analysis and Update

The Consultant must analyse validate update and revise the Draft Preliminary Functional Program, prepared for the Users fit-up for swing space at the WMB for all Users requirements.

In addition to the Users requirement for swing space, the Consultant must define and analyse the capacity and code compliance of the WMB to accommodate Workplace 2.0 Fit-up Standards, for a yet undefined user, for the long–term use of the building.

2.2.4.1 Base Building Requirements Analysis

The Consultant must prepare the base building requirements analysis based on the long-term fit-up of the building for a Workplace 2.0 Fit-up Standards accommodation to include but not limited to:

1. Testing the capacity of the WMB to accommodate the Workplace 2.0 Fit-up Standards functional requirements, and detail the results;
2. Coordinate with the DR to provide early advice on construction challenges arising from the functional requirements;
3. Building system requirements including a flexible approach to evolving use and occupancy from swing space to the long-term requirement; and
4. Prepare a gap analysis and a risk assessment within 12 weeks of contract award.

2.2.4.2 User Fit–Up Requirements Analysis

The Consultant must prepare the User fit-up requirements analysis that includes but is not limited to:

1. Participation in information workshops to be held with the consultant who prepared the pre-design functional requirements to outline the information;
2. Functional requirements analysis for space allocation and all functions within all spaces to include but not limited to;
   - Support space and special purpose space;
   - Acoustics;
   - Interior fit-up;
   - Programmatic options including circulation paths;
   - User reports, studies;
   - Room data sheets updates;
   - Security requirements including a design approach;
   - Site;
   - BCC Component requirements (furniture, fixtures and equipment) including a design approach; and
   - BCC Connectivity requirements including a design approach.
3. Identification of information gaps in the recording of the Functional Program with recommendations to the DR as to further investigations and/or studies relative to the objectives and approach and any other Project requirements.

2.2.4.3 Functional Program Update

The consultant is responsible for the verification, update and finalization of the Functional Program and the related fees must be included in the global fee proposal. The Functional Program update is to all aspects of the document including the Executive Summary and room data sheets.

The Consultant must revise and update the preliminary functional program based on:

1. Updated User requirements information;
2. Circulation flows for judicial employees, public and security;
3. Options that resolve functional program spatial and functional conflicts;
4. Area calculations that include summaries of building areas and all the accommodation areas and functions in the functional program;
5. Furniture storage analysis (to include circulation routes between storage rooms and designated locations);
6. BCC definition and integration of Components and Connectivity equipment and pathways into the base building; and
7. Strategy and protocols to manage and control the Model definition for base building, BCC

Components and Connectivity.

2.2.5 Site Analysis

2.2.5.1 Landscape Architecture Analysis

The Consultant must prepare a landscape architecture, site analysis that includes but is not limited to:

1. Analysis of existing conditions of the site including all above and below grade landscape features, signage and way-finding (regulatory, directional, information), exterior lighting, landscape furniture, vegetation, grading, soil and soil structure condition, drainage and irrigation, and mechanical, electrical and fire protection infrastructure;
2. Circulation and universal accessibility analysis, including pedestrian, bicycle and vehicular (private vehicles). Include parking areas, delivery material handling and loading areas, gathering places, decision points, events staging areas, etc.;
3. Site security analysis, including vehicular screening facilities, perimeter bollards systems, surveillance cameras and sightlines, security lighting, on-site patrolling, security buffer zones. Review current infrastructure and potential future requirements with the Security sub-consultant;
4. Visual impact analysis that considers views within the Project boundaries, to and from the WMB and from key vantage points;
5. The identification of opportunities and strategies to limit and protect the impact to landscape features of planned interventions including physical security requirements;
6. Identification of landscape design objectives and approach; and
7. Identification of information gaps in the recording of existing landscape features with recommendations to the DR as to further investigations and/or studies relative to the landscape design objectives and approach and other Project requirements.

2.2.5.2 Architectural Lighting Analysis

The Consultant must prepare an architectural lighting analysis that includes but is not limited to:

1. Consideration of the impact of architectural lighting installations on the building envelope and requirements for new or reuse of existing site lighting.
2. Identification of information gaps in the recording of the architectural lighting with recommendations to the DR as to further investigations and/or studies relative to the objectives and approach and any other Project requirements.

2.2.5.3 Legal and Topographic Survey Analysis

The Consultant must prepare a legal and topographical survey analysis that includes but is not limited to:

1. An audit of current PWGSC survey data;
2. Identification of information gaps in the recording of the legal and topographical survey with recommendations to the DR as to further investigations and/or studies relative to the objectives and approach and any other Project requirements;
3. Perform additional building and surveys as required; and
4. Validate and update the Model with current survey information.

2.2.6 Architectural Analysis

2.2.6.1 Building Envelope Analysis

The Consultant must prepare a building envelope analysis to supplement the existing information, including all required information to inform each of the building design options including, but not limited to:

1. A detailed visual and tactile inspection of the condition of the building, including all exposed exterior and interior masonry stonework and concrete, foundations, windows, doors and louvers, roof systems and structures, copper roofing, metalwork, and openings of all roof elements; to analyse the condition of the different components;
2. Hygrothermal analysis of envelope performance;
3. The roof and overall water management;
4. Test pits to confirm construction and condition of foundation walls;
5. Exterior and interior inspection openings (intrusive) to verify the condition of the masonry, concrete, connections, bonding, ties, windows attachment details and condition;
6. Testing to identify hidden cracks, voids, and presence of steel;
7. Assessment of mechanical, physical, structural, and chemical properties of units, assemblies, systems or in-situ stresses, using tests such as shear test of masonry, flat jack and pull-out test, thermographic imaging, ground penetrating radar, sonic, ultrasonic, etc.;
8. Material sampling for laboratory analysis;
9. Assessment and identification of critical components for structural monitoring and recommendation of appropriate scope;
10. Masonry wall assembly, foundation, roof assemblies, windows, light wells, all component assemblies between the interior and exterior, etc.;
11. Ensure the following considerations are incorporated in the building envelope investigation and analysis work:

- The performance of the masonry including spalling of masonry at the shelving angles of the windows in the light well areas and performance of the wall assemblies in the event of high humidity in the interior;
- The performance of the flat and the sloped roofs and condition of concrete panels;
- The performance of the windows and doors including the bronze elements;
- Water damage to the building envelope and the interior of the building due to water infiltration to the interior;
- Monitoring of displaced exterior masonry units and moisture in the building.
- The presence of physical moisture inside the wall cavities and condition of ties;
- Possible pilot project work for window conservation and repair to establish requirements for the long-term conservation of these building envelope elements. This would include conservation of some windows to identify the techniques and the materials for conservation of the windows and frames and improvements to their energy efficiency and considering the recommendations of the 1997 report entitled “A Window Retrofit Program and Dynamic Buffer Zone for the West Memorial Building”;
- Investigative to ascertain the condition of the back pointing, laboratory tests and research to ascertain the composition of the existing and new mortar and stone; and
- Ways to improve envelope thermal insulation and minimize heat losses;

12. An envelope assembly performance and material stabilization;
13. Substructure and foundations, including basement;
14. Masonry conservation requirements;
15. The impact on indoor environment, e.g., temperature, humidity, air pressure and flows and mitigation;
16. Identification of information gaps in the recording of the building envelope analysis with recommendations to the DR as to further investigations and/or studies relative to the objectives and approach and any other Project requirements; and
17. Incorporate building envelope layers into the Model in sufficient detail for simulations and analysis of the building envelope assemblies for the SD.

2.2.6.2 Accessibility Analysis

The Consultant must prepare an accessibility analysis that includes, but is not limited to:

1. Conduct an accessibility review highlighting the risks and constraints of the building configuration and the limits of the current accessibility measures for the building; and

Identification of information gaps in the recording of the accessibility analysis with recommendations to the DR as to further investigations and/or studies relative to the objectives and approach and any other Project requirements.

2.2.6.3 Acoustic Analysis

The Consultant must prepare an acoustic analysis that includes, but is not limited to:

1. Conducting acoustic testing in existing Court Rooms, Judges Chambers and other sensitive areas to determine baseline acoustic performance in the SCCB;
2. Conduct other tests as appropriate to provide the Project Team a comprehensive summary of existing acoustical conditions; and
3. Identification of information gaps in the recording of the acoustics with recommendations to the DR as to further investigations and/or studies relative to the objectives and approach and any other Project requirements.

2.2.7 Heritage Conservation Background Analysis

The Consultant must prepare a heritage conservation background analysis that includes, but is not limited to:

1. Review of relevant guidance documents related to conservation, including policies, practices, and guidelines for the Project, regulatory frameworks and jurisdictions, as well as the Standards and Guidelines for the Conservation of Historic Places in Canada;
2. A demonstrated understanding of the heritage character of the building, landscape site and setting, including:
   - Analysis of the initial building planning, spatial organisation and design;
   - Identification of the building's heritage values and character-defining elements;
   - Zones of high, medium and low heritage value (on plans);
   - Design principles, patterns of use;
   - Tangible and intangible heritage values; and
   - Construction methods, materiality and craftsmanship;
3. Identification and summary of strategies to limit and protect the impact to heritage values and character-defining features, and opportunities for higher levels of intervention to building, site, and setting;
4. Updating of the heritage conservation approach, leading to the elaboration of project-specific heritage conservation principles and guidance for the building, the landscape site and setting;
5. Preparation of a cross-analysis that evaluates the proposed conservation objectives and approach against other Project requirements;
6. A review of the Heritage Materials Database and description of how this database will be managed. Each heritage component is to be documented in a manner suitable to requirements of the Project;

7. Prepare a preliminary strategy for the sourcing and quantification of:
   - Replacement stones, quarried from the original or similar deposits, suitable for repairs to exterior and interior finishes; and
   - Replacement and new materials required for interior spaces, consistent with the qualities and grade of original heritage finishes;
8. Summarize the requirements for material quality control testing; and.
9. Identification of information gaps in the recording of heritage features with recommendations to the DR as to further investigations and/or studies relative to the objectives and approach and any other Project requirements.

2.2.8 Abatement and Demolition Analysis

The Consultant must prepare an abatement and demolition analysis that includes, but is not limited to:

1. Identification of any materials sampling and testing as required to validate and update the existing designated substance survey;
2. Identification of information gaps in the recording of abatement and demolition with recommendations to the DR as to further investigations and/or studies relative to the objectives and approach and any other Project requirements; and
3. Incorporate existing and new information into the Model.

2.2.9 Sustainable Design Analysis

The Consultant must develop a Sustainable Development Strategy Report that includes, but is not limited to:

1. The establishment and description of the approach and potential for the Project to minimize environmental impacts and support a high sustainability performance and low carbon solution consistent with the Project, PWGSC, User and Government of Canada goals and objectives;
2. The assessment of sustainable design strategies to develop options, opportunities and challenges, risks and limitations requiring further discussion, review and follow-up with the Project Team. These should help to guide the option development across all Project requirement. Strategies should present a complete picture in the Sustainable Design narrative of the report, however, be further detailed and well integrated across all report sections as applicable;
3. Confirm recommended/selected sustainability rating tool for application. Include preliminary assessment scorecards estimating the probability of securing each credit (i.e. high, med, low) and justification for sustainability decisions. For those credits identified, provide a short description on how they will be achieved;
4. Identify any environmental features that would affect the sustainable design strategy;

5. Review potential for environmental impacts and application of the Canadian Environmental Assessment Act (CEAA); and
6. Complete pre-design energy model to create baseline preliminary energy performance & loads (of building and those attributed to envelope assemblies) and associated GHG emissions. Present preliminary simulations of proposed options

2.2.10 Structural Analysis

The Consultant's work throughout the pre-design phase must promote a solid understanding of the Project scope and objectives, existing structures, informing the analysis and design of all structural interventions. All items referenced in PD 5 Program of Works, 5.8 Structural, including, but not limited to; repairs, additions, seismic, blast, ballistic, functional program support and building code upgrades options must be identified.

The goal of this phase is to assess the current structural condition and performance of the building, and understand the required changes and areas that require structural intervention to meet the Project scope and objectives.

The Consultant must prepare a structural analysis that is iterative and use increasing levels of sufficiently detailed static and dynamic methods and assumptions that reflect the evolving level of the Consultant Team's understanding of the structure.

The Consultant must provide an analysis appropriate for the unique building construction characteristics of the WMB and must include, but is not limited to:

1. Structural investigations to supplement existing information and inform the structural, seismic and blast analysis:
2. A structural condition assessment in accordance with PEO Structural Condition Assessments of Existing Buildings and Designated Structures Guideline;
3. Structural exploratory work and investigations program that assesses:
   - All structural systems;
   - Structural system assemblies, components and materials;
   - Load paths;
   - Evidence of structural damage or distress;
   - Unique structural features and/ or discontinuities;
   - Areas that require structural intervention to meet the project scope and objectives;
   - Gaps in knowledge or understanding of the construction of the structural systems; and
   - Requirements for the detailed assessment of the structural systems;
4. Advise the DR immediately of any critical structural deficiencies related to the safety and serviceability of the structures that require immediate remedial measures;

5. Define and conduct a detailed program to investigate, test and monitor, in an iterative and cumulative fashion using the following prioritized techniques as required to understand the structural assembly and conditions:
   - The least destructive investigative techniques;
   - Visual observations and simple tools (tactile);
   - Thermographic imaging, ground penetrating radar, sonic, ultrasonic;
   - In-situ load testing, flat jack, in-place shear test, forced vibration tests;
   - Exploratory openings, core drilling; and
   - Destructive openings and sample removal for laboratory testing of physical properties;

2.2.10.1 Structural Modelling Framework

A framework for the structural analysis and for creating an analytical Model to aid the structural analysis, using both detailed static and dynamic methods. Identify the software proposed. The framework and subsequent Model must:

1. Communicate the relationship between and methodology to be followed for the structural analysis and the Model;
2. Define the various components of the structure, identifying how:
   - Properties will be estimated or measured;
   - Interconnection of the assemblies will be determined; and
   - The above will be modeled;
3. Identify uncertainties such as material properties, gaps in understanding of structural system construction, condition and behaviour and how they will be minimized and modeled, and the implications of these uncertainties on the accuracy of the Model and results;
4. Identify where simplified analysis or modelling of members, assemblies and connections can be used in the analysis;
5. Identify loading, acceleration and deformation conditions and define how they will be modelled including:
   - Gravity load breakdown and distribution on members;
   - Wind load and distribution;
   - Seismic load;
   - Environmental loads;
   - Blast loading (blast from both explosives during rock excavation and acts of terrorism) from various blast scenarios and loading resulting from progressive collapse; and
   - Existing crack and damage patterns;

6. Define boundary conditions, their potential impact on the analysis and results, and how/whether they will be modeled in the analysis;
7. Define a parametric analysis that will be used to calibrate the Model:
   - Identify how anticipated upper and lower bounds of material properties, component behavior, and boundary conditions will be determined;
   - Define upper and lower boundaries for key parameters to bracket actual behavior;
   - Provide the design and Model input assumptions for review and approval of the DR;
8. Define how operational and functional components (OFC) such as roof parapets; decorative masonry columns, arches and partitions; ceiling systems, mechanical and electrical systems and fixtures) will be analyzed and modeled;
9. Define the OFC risk analysis to be performed based on CSA S832;
10. Meet the requirements of NBCC 2015;
11. Demonstrate how information from the assessment of the foundation, including geotechnical rock information and Modelling, will be incorporated into the structural Modelling and analysis;
12. Be capable of:
    - Analyzing the effects on WMB;
    - Analyzing the effects of options for, evaluating the effectiveness of various different seismic isolation and upgrade techniques; and
    - Assessing the impact of seismic loads on the large amount of heavy, non-load bearing masonry and other OFC's and heritage finishes;
13. Define a regulatory review that will be completed to establish an appropriate design standard and target reliability level for the seismic evaluation and upgrade of the WMB.

2.2.10.2 Structural Modelling Analysis

Upon review and acceptance of the modelling framework by the DR, continue to refine and test the analytical Model using information gathered from the preliminary and detailed exploratory work and investigations by:

1. Considering parametric analysis to calibrate the Model, relating the damage predicted by the Model to the observed condition of the structural system, exterior and interior building finishes:
   - Identify additional testing or investigations that are necessary to address anomalies in behavior or gaps in understanding that become apparent during calibration of the Model;
   - Update and incorporate into the detailed investigations program as required; and
   - Revise the Model as required and re-calibrate;

2. Describe the preliminary seismic upgrade options (e.g. base isolation, new stiff shear walls, and new steel brace frames in combination with new movement gaps between the perimeter frame and infill stone/masonry);
3. Define the extent of work involved and effectiveness of seismic upgrade options;
4. Describe in sufficient detail the inter-relationships between the structural system and :
   - Building envelope;
   - Architectural finishes and heritage fabric;
   - Building functions;
   - Proposed modifications;
   - Building systems;
   - Life cycle cost;
   - Design life span; and
   - Maintainability;
5. Identify the technical justification for each preliminary option and analysis with respect to Project objectives;
6. Describe the past performance of the structural system, including identifying pertinent information gathered from the detailed exploratory work and investigations program;
7. Ensure consensus of the Project third party design review committee on the development of the analytical Model. Obtain approval from the DR; and
8. The Consultant Team must engage a third-party entity to calibrate the structural model with highly sensitive vibration sensors temporarily deployed on structure platforms to measure minute vibrations coming from micro tremors, winds, traffic and human activity. This information is to be analyzed with advanced algorithms to determine modal properties (natural frequencies, damping ratio and mode shapes) of the structure. The intent is to confirm that the analytical model's behaviour corresponds to the measured building behaviour.

2.2.11 Geotechnical Analysis

The Consultant must prepare a geotechnical analysis that includes but is not limited to:

1. Identification of information gaps in the recording of existing of any geotechnical information with recommendations to the DR as to further investigations and/or studies relative to the objectives and approach and other Project requirements to supplement existing information so PWGSC can obtain the required geotechnical information; and
2. Incorporate new and existing results into the Model.

2.2.12 Mechanical Analysis

The Consultant must:

1. Conduct an analysis of existing building systems, approach and guidelines to support and service the mechanical requirements for construction including the construction yard and the enclosed scaffold environment (heating, ventilation and fire protection). Take into consideration WMB heating systems (High pressure steam, chilled water, gas and electricity) restrictions and include analysis and confirmation of available system limitations, tie-in locations, and capacities to support construction requirements;
2. Provide an analysis and approach to quality control monitoring of temperature and relative humidity during masonry construction and curing period, including building interior, and to protect and preserve features;
3. Analyze the capacities of the existing mechanical building services to the building (water, sanitary, storm, steam, chilled water) and existing interior HVAC and plumbing and drainage systems and the potential opportunities and limitations considering the project's program, the necessity to relocate, replace and upgrade underground utilities and any required reconstruction of the site;
4. Analyze the capacities of the existing parking garage exhaust system and the potential opportunities and limitations considering the project's program, the necessity to relocate, replace or upgrade;
5. Identify new or temporary mechanical systems necessary to implement the project;
6. Identify assumptions regarding life cycle duration, discount rates, fuel cost escalation and the inflation rate to be employed in analysis;
7. Identify the methodology and criteria for life cycle cost analysis;
8. Incorporate into the Model and analyze the entry points for mechanical services and opportunities or limitations considering the site and adjacent and dependent buildings;
9. Incorporate into the Model existing outdoor air supply and exhaust systems and determine a preliminary proposal to meet the project's requirements for outdoor air supply and exhaust;
10. Determine the opportunities for innovation to achieve integrated building systems;
11. Decommissioning:
    - Incorporate into the Model the existing components of infrastructure to be decommissioned as part of the Project; and
    - Propose a strategy, timelines and procedures to decommission and isolate WMB;

12. Utilities (buried and in tunnels), HVAC, plumbing and fire protection connection:
    - Provide a narrative description of existing systems connections and capacities;
    - Understand the new system requirements and provide a narrative description;
    - Review existing information and perform on site audits of existing systems distribution infrastructure layouts and chases. Model systems and provide narrative description of findings as well as constraints; and
    - Survey and incorporate into the Model existing infrastructure horizontal and vertical pipe and duct runs. Use typical floor Drawings and sketches to identify locations and constraints;
13. Security:
    - Provide options for controlling/containing all air borne contaminants;
14. The Model
    - Incorporate into the Model:
        - Site drawings with footprint of all buildings showing the common services /utilities how they connect to the WMB and how these will be dealt with during the project; and
        - All services (utilities, air intakes/exhausts) that are to remain, to be added and/or modified.

2.2.13 Civil/Municipal Analysis

The Consultant must:

1. Verify and obtain from the City of Ottawa existing boundary conditions (HGL at required domestic flow demands and fire flow requirements) for the municipal water distribution system supporting the WMB;
2. Analyse capacities of the site storm water drainage collection systems and sanitary collection systems, including any limitations or restrictions imposed on these systems by municipal infra-structure that would affect the WMB Rehabilitation;
3. Field verify sewers' and building services'; invert and size to the extent required to permit a professional assessment of existing capacity, and for storm infrastructure the feasibility of converting all or more of the present pumped system to a full gravity system;
4. Define and conduct a detailed Closed Circuit Television (CCTV) inspection of building services and supporting sewers, including building services, from their inception point (furthest upstream maintenance hole), (nearest building cleanouts), to their respective downstream maintenance hole; Include a visual assessment of respective maintenance holes, and include photographic records of findings (the existing sanitary sewer under Lyon

Street from point of discharge from the WMB sanitary service, to the connection to the Wellington Street Interceptor Sewer drop manhole, is to be included);

5. Review CCTV inspection reports and video and provide the DR a written opinion based on findings of the overall condition of the sewers;
6. Verify the sizing of the existing building water services, under the following conditions;
   - Both feeds operating; and
   - Only one (1) feed operating.
7. Summarize analyse and confirm if any upgrades may be required; and
8. Undertake a calculation of required site fire flows using FUS Guidelines (Water Supply for Public Fire Protection, A Guide to Recommended Practice, prepared by Fire Underwriters Survey). In addition, prepare fire flow calculations employing Ontario Building Code, Section 3.2.5 Provisions for Fire Fighting including Annex A. Compare required flows calculated to that available from the municipal distribution system. Report any deficiencies and provide recommendations as to achieve required fire flow for both calculation methods.

2.2.14 Fire Protection Analysis

1. Report on the following in coordination with the output of the WMB Asset Integrity Project:
   - Existing fire detection and alarm systems for life safety and asset protection. Identify systems, panel locations and other features that potentially contribute to an integrated life safety approach.

2.2.15 Electrical Analysis

The Consultant must:

1. Conduct an analysis of existing electrical systems, approach and guidelines to support and service the electrical requirements for construction. Include analysis and confirmation of available system limitations, tie-in locations, and capacities to support construction requirements; and
2. Report on the following in coordination with the output of the WMB Asset Integrity project:
   - Condition, loads, capacities, routing of existing electrical and IT systems;
   - Risks associated with the relocation, replacement, reuse and upgrade of electrical and IT systems;
   - Lighting levels and other electrical requirements based on the Project's program requirements, ensuring that the architectural lighting master plan and those of the Canada Occupational Health and Safety Regulations and Illuminating Engineering Society of North America are respected;
   - Hydro Ottawa's requirements and capacity including requirements for loop systems conductors and Hydro's labour costs;

- Identify the existing components of infrastructure to be decommissioned as part of the project;
- Propose a strategy, timelines and procedures to decommission;
- Identify designated substances to be addressed and the related procedures;
- Normal, Emergency and UPS Electrical Distribution which must consider the future conversion of the building to a Workplace 2.0 Fit-up Standards accommodation:
  - Provide narrative description of existing electrical distribution;
  - Provide tables and projections of future theoretical requirements capacities;
  - Comparison Graph must be used to demonstrate power requirements over the year timeline. (existing and future load results); and
  - Provide narrative description and sketches of findings incorporated into the Model as well as constraints on existing electrical distribution infrastructure layouts and conduits/chases;
- Public Address System:
  - Provide narrative on existing system type and capacity;
- Lightning Protection System:
  - Provide narrative on existing system type and capacity.

2.2.16 Vertical Transportation Analysis

The Consultant must prepare a vertical transportation analysis that includes, but is not limited to:

1. An analysis of existing elevators functionality and capacity. Provide the scope of work required to make operational.
2. An analysis of the staircases, that will support Building Code requirements for vertical transportation and building evacuation; and
3. Include analysis of capacities to support building occupancy and accessibility.

2.2.17 Building Components and Connectivity (BCC) Analysis

The Consultant must prepare a BCC analysis that includes but is not limited to:

1. An analysis of existing Building Components, a review of the requirement and a strategy for acquisition;
2. An analysis of the Building Connectivity requirement to meet the Functional Program requirements; and
3. An analysis of the existing security measures in the WMB to meet the Functional Program requirements.

2.3 Deliverables

2.3.1 Deliverables in advance of the Pre-Design Report

The Consultant must;

1. Summarize documentation reviewed and provide an initial gap analysis report for each discipline within 12 weeks of contract award. Update the gap analysis at least quarterly until the end of RS 4 Design Development; and Include an overall summary in the Pre-Design Report; and
2. Based on the review of the documentation, preliminary inspection and preliminary analysis, the Consultant Team must prepare a Detailed Field Investigation and Testing Program Proposal to be conducted in collaboration with the relevant disciplines.

2.3.1.1 Detailed Field Investigation and Testing Program Proposal

The Consultant must prepare the preliminary investigation plan within four (4) weeks of contract award and detailed exploratory work and investigations program within 12 weeks of contract award. In collaboration with the relevant disciplines, the Consultant must include;

1. Proposed tests, specific locations, cost, and schedule in the basic testing program;
2. Justification for the detailed tests and inspection;
3. Options for testing whenever possible;
4. Strategy to minimize openings to reduce cost and impact on historic fabric;
5. Field Investigation Contractor Scope of Work, drawings, construction tender package set ups and specifications, as required, identifying the location of the openings, testing and the type of access equipment and the temporary locations of the access equipment (building and vehicle access requests, scaffold, crane, lift, swing stage, etc.);
6. Defining and managing the testing program and the interpretation of the results are to be included in the Consultant fees;
7. Detailed investigation reports and investigation specific Model updates within two (2) weeks of each investigation, or as agreed by the DR; and.
8. PWGSC will retain the contractor to perform the testing.

2.3.1.2 In-Situ Testing - Non-Destructive/Minor Destructive Testing

Testing may include, but is not limited to;

1. Test pits to confirm construction and condition of foundation walls;
2. Exterior and interior inspection openings (intrusive) to verify the condition of the masonry core, inner wythe, bonding, ties, and windows attachment details and condition;
3. Non-destructive testing to identify hidden cracks, voids, and presence of steel where openings are not feasible;

4. Assessment of mechanical, physical, and chemical properties of units, assembly, systems or in-situ stresses, using tests such as shear test of masonry, flat jack and pull-out test, etc.;
5. Material sampling for laboratory testing program; and
6. Other testing as recommended by the Consultant and approved by the DR.

2.3.1.3 Laboratory Testing Program

In collaboration with the relevant disciplines, the Consultant must;

1. Confirm and conduct materials analysis/laboratory testing on existing materials as required where existing information from background documents is not sufficient for design;
2. Be responsible for delivering and managing the laboratory testing, and for the interpretation of the test results;
3. Pay costs to the testing laboratory from the testing allowance to be reimbursed by PWGSC; and
4. Define and manage the testing program and the interpretation of the results are to be included in the Consultant fees.

2.3.1.4 Conservation Approach

The Consultant must prepare and update, Project specific, Conservation Approach and the key points of the heritage background analysis.

2.3.2 Pre-Design Report

The Consultant must submit a comprehensive Pre-Design Report for review by the DR, identifying the project requirements. The Consultant must revise the report as required by the DR. Interim submittals of the Pre-Design Report are required at 50%, 90% and 100% complete phases. The final 100% Pre-Design Report will consolidate any completed exploratory work and investigations reports, progress of on-going exploratory work and investigations and discipline specific deliverables gathered from the activities identified above. The Pre-Design Report will illustrate an analysis of the Project requirements and also serve as a benchmark project control document to monitor progress of the project.

The body of the Pre-Design Report is to include as a minimum the following sections:

1. Executive summary;
2. Glossary of terms;
3. Summary of reviewed documentation;
4. Regulatory analysis;
5. Exploratory work and investigations;
6. Preliminary Functional Program analysis;
7. Site analysis;

8. Architectural analysis;
9. Heritage Conservation Background analysis;
10. Abatement and Demolition analysis;
11. Sustainable Design analysis;
12. Structural/Seismic analysis;
13. Mechanical analysis;
14. Civil/Municipal analysis;
15. Fire Protection analysis;
16. Electrical analysis;
17. Vertical Transportation analysis; and
18. Building Components and Connectivity (BCC) analysis.

Include as a minimum:

1. Conservation approach and heritage background analysis;
2. Identify opportunities to accelerate the Project delivery;
3. Identify potential conflicts with the implementation of phased construction tender packages;
4. Analyze risk implications and preliminary mitigations strategies for managing risk during the subsequent RS phases of the Project; and
5. Prepare PowerPoint presentations on the framework for structural modelling and analysis for discussion at meetings and workshops.

2.3.3 Design Management Plan

The Consultant must provide an update to the Design Management Plan with the Pre- Design Report from RS1.

2.3.4 Response to Pre-Design Report

The Consultant must:

1. Review and analyse all the comments provided by the DR;
2. Prepare and submit a written response within 20 working days to all the submission comments; and
3. Integrate comments into the subsequent submissions as directed by the DR.

RS 3 SCHEMATIC DESIGN

3. Schematic Design (SD)

3.1 Intent

It is expected that the Schematic Design (SD) will overlap with some services occurring during Pre-Design Phase, as well as with the Design Development Phase.

The intent of the SD Phase is to investigate, develop and analyze design options, weighing them against the Project requirements and constraints, including, but not limited to the functional program, for both the swing space and the long-term users, cost, time, scope, heritage values, and sustainability requirements, constraints and the on-going operations, etc., in order to confirm the scope and direction of design and to provide a sufficiently developed design to permit the preparation of construction tender documents.

The SD Phase will be a continuous process feeding the following Design Development (DD) Phase as the Project evolves. In order to respond to the aggressive schedule of this Project, it is important to prioritize some elements of the Project for early development and advance those elements, or group some of the elements together, in order to advance the design development and construction tender package for review and approval.

NOTE: The WMB will be under construction at contract award and access to the site will be restricted. Expressed permission from the DR is required to gain access to the site. All construction site health and safety training requirements and policies of the General Contractor (GC) will be enforced

3.2 Design Services

3.2.1 General

The Consultant must:

1. Coordinate all services of the Consultant Team and with the CM;
2. Integrate all ongoing Pre-Design investigation work;
3. Verify and update the Model once the WMB Asset Integrity project is complete. Update and verification of the existing conditions must be performed using laser Scan-to-BIM technology;
4. Prepare all required documents and deliver the presentations to the FHBRO, NCC, and other Authorities Having Jurisdiction (AHJ's), integrate their recommendations and obtain their support and approval;
5. The Consultant must provide a comparative analysis of all design options; and
6. Identify a preferred option that best integrates all other disciplines and best balances heritage value and functionality with Project, cost, time and scope constraints.

3.2.2 Regulatory Analysis

The Consultant must prepare:

1. A detailed site and building code analysis and requirements;
2. A fire and life safety strategy, exemptions, including smoke control and the means of egress and exit; and
3. Preliminary standards analysis.

3.2.3 Exploratory Work & Investigations

The Consultant must work closely with the DR to:

1. Continue exploratory work and investigations as outlined in the program developed in the RS 2, Pre-Design to refine the design assumptions and the design itself;
   - Conduct additional exploratory work and investigations;
   - Coordinate laboratory and in-situ testing and monitoring; and
   - Compile, analyze and submit the results of the exploratory work and investigations into the report as defined in RS2 Pre-Design. The reports must be updated regularly as required throughout the duration of the Project;
2. Prepare all required documents and deliver the presentations to the AHJ's, integrate their recommendations and obtain their support and approval; and
3. Ensure the Model is continuously updated to reflect the scope and actual findings of all exploratory work and investigation using Scan to BIM technology, including the update to the existing building conditions after the completion of the WMB Asset integration Project.

3.2.4 Functional Program Update

The Consultant must revise the Pre-Design Functional Program based on:

1. The elements identified in the gap analysis prepared during the RS2 Pre-Design phase;
2. Advancement of the design, notably structural/ seismic and physical security design options; and
3. The heritage impact analysis.

The final Functional Program and SD are an interrelated process, and as the building systems strategies are defined, so will the Functional Program be refined. An updated Functional Program is required at the 100% SD Phase, reflecting the preferred design option for formal approval by the Users and the DR.

For each option, this section is to include:

1. Updated Functional Program;
2. Circulation flows for judicial employees, public and security;

3. BCC definition and integration of Components and Connectivity equipment and pathways into the base building;
4. Options that resolve Functional Program spatial and functional conflicts;
5. Area calculations that include summaries of building areas and all the accommodation areas and functions in the Functional Program of the User;
6. Furniture storage analysis (to include circulation routes between storage rooms and designated locations); and
7. Strategy and protocols to manage and control the Model definition for base building, BCC Components and Connectivity.

3.2.5 Provision of Three (3) Distinct Design Options

The Consultant must prepare a minimum of three (3) complete, distinct and viable SD options to be presented separately. Each submission must be illustrated in graphic format, including Models, and narrative formats (e.g., reports, BIM Modelling, energy modelling, Life Cycle Assessment [LCA], Drawings and PowerPoint) fully integrated and supported by sub-solutions for components such as structure, mechanical, electrical, building envelope and interior layouts in sufficient detail to allow comparison, analysis against Project requirements and a selection of design direction for continuation in DD. Indicate a recommended option and sub-option and indicate the advantages and disadvantages of each.

The Consultant must provide a comparative analysis of all three (3) options and develop the preferred design option that best integrates all other disciplines and best balances heritage value, planning framework and functionality with Project cost, time and scope constraints.

3.2.6 Program Requirement Analysis

The Consultant must provide an analysis of each of the three (3) proposed design options against the Functional Program for the swing space requirements as well as the long-term utilization requirements of the WMB indicating;

1. How each option will accommodate both the swing space and long-term functional program requirements;
2. The efforts required to change the swing space fit-up to the proposed long term Workplace 2.0 Fit-up Standards space.

3.2.7 Site Options

3.2.7.1 Landscape Architecture

The Consultant must prepare SD options in coordination with all stakeholders and is to include for each option:

1. Landscape architectural vision for each option;
2. Complete graphic and narrative description of each option including, but not limited to:
   - All works proposed in each option, including new interventions;

- Colour-coded landscape architectural plans indicating the requirements of the functional program and proposed materials. Provide a narrative that indicates the degree of compliance with the functional program and landscape master plan;
- Grading Drawings, sections and elevations and explanatory sketches;
- Planting Drawings and listings;
- Integration of all landscape features and infrastructure existing and new signage and way finding (regulatory, directional, information), architectural and security lighting, security features (surveillance cameras, bollards, lockable pull-boxes, etc.), landscape furniture, vegetation, grading, soil and soil structure condition, drainage, storm water management and irrigation, and mechanical, electrical and fire protection infrastructure;
- Description of construction and heritage conservation methodologies and mitigation measures, cross reference with heritage conservation plan;
- Description of the inter-relationships between the landscape and the buildings and build infrastructure and materials;
- Identification of conflicts and discrepancies;
- Proposed new street furniture design and materials;
- Material samples;
- Key factors that drive Project cost, schedule, risk and procurement;
- Detailed Modelling of each option; and
- Model renderings;

3. Signage Drawing indicating way finding strategy including regulatory, directional, information signs;
4. Site security Drawing, including vehicular screening facilities, perimeter bollards systems, surveillance cameras and sightlines, security lighting, on-site patrolling, security buffer zones, Crime Prevention Through Environmental Design (CPTED);
5. Visual impact analysis, including design strategies, views within the Project boundaries, to and from the WMB and from key vantage points for each option;
6. Comparative analysis of options; and
7. Identification of a preferred design option that best integrates all other disciplines and best balances heritage value, planning framework and functionality with Project cost, time and scope constraints.

3.2.7.2 Architectural Lighting

The Consultant must prepare coordinated architectural lighting options for the site in coordination with the Consultant Team, stakeholders (including the Long-Term Vision and Plan [LTVP]) and AHJ's, and is to include and incorporate into the Model:

1. Architectural lighting vision of for each option;
2. Complete graphic and narrative description of each option including. but not limited to:
   - All works proposed in each option including heritage impact of new interventions;
   - Colour-coded lighting Drawings indicating programmatic requirements and proposed materials. Provide a narrative that indicates the degree of compliance with the lighting master plan;
   - Proposed design for existing and new site lighting;
   - Material samples;
   - Key factors that drive Project cost, schedule, risk and procurement;
   - Detailed Modelling of each option; and
   - Model renderings;
3. Visual impact analysis including design strategies of all building facades, for each option.

3.2.8 Architectural Options

3.2.8.1 General

1. The Consultant must coordinate all Project requirements in coordination with Project Team, stakeholders and AHJ's. The Consultant must:
   - Demonstrate that each SD option meets the Functional Program, Project objectives and Project requirements;
   - Ensure a comprehensive and fully coordinated and integrated design approach; and
   - Test for coordination and interference in the Model.
2. The Consultant must include for each option:
   - The architectural vision;
   - Complete graphic and narrative description including, but not limited to:
     - All works proposed in each option including heritage conservation and new construction;
     - Colour-coded architectural floor Drawings for every level of the Project indicating the requirements of the Functional Program and proposed materials. Provide a narrative that indicates the degree of compliance with the Functional Program, including area calculations, and options in narrative and graphic formats proposing mitigation of these conflicts or anomalies;

- Interiors including circulation (public and judicial business), material handling circulation and storage, vertical and horizontal paths, service cores and other vertical and horizontal interventions;
- Building sections indicating the composition of walls, floors, roofs, foundations, windows and doors;
- Below grade Drawings showing program accommodation of each option. Design and cost/benefit analysis and recommendation for excavation options;
- Services including vertical transportation, plumbing, HVAC, fire detection and suppression, electrical, telecommunications, building automation;
- Interior and exterior elevations; and
- Material samples;

- Modelling for each option; and
- Interior and exterior Model renderings and fly-bys of selected areas;

3.2.8.2 Building Envelope

The Consultant must, develop building envelope strategies that align with the findings from the exploratory work and investigations and support the SD options. The Model should be used to simulate and evaluate the proposed strategies;

1. Run various energy simulations, including estimated annual energy performance, cost savings, greenhouse gas (GHG) emissions, and impact to base building systems, to define optimal solution for meeting performance option targets.

The Consultant must provide for each option:

1. An envelope component, assembly and material conservation approach;
2. The water management approach;
3. Substructure and foundations, including basement, approach;
4. Building envelope sections including masonry wall assemblies, foundation, roof assemblies, windows, insulation, light wells, all component assemblies between the interior and exterior;
5. Building envelope with the structural stabilization approach;
6. Masonry conservation approach including cleaning, re-pointing and back-pointing approaches, mortar mix analysis and design options, pinning, grouting, plastic repairs, scaling, consolidation, removal of ferrous inserts and parging, dutchmen stone replacement, stone resetting of displaced stone; types and amounts of stone deterioration; causes/mechanisms; options for repair, estimated quantities of stone replacement;
7. Approach to roof, water shedding, window conditions;

8. The impact of indoor environment, e.g., temperature, humidity, air pressure and flows and mitigation;
9. Concept for temporary support for monitoring scope and equipment;
10. Special construction and dismantling, including heritage structures, hazardous materials abatement, etc.;
11. In consultation with the DR, architectural, structural and masonry conservation expert, selection and quantification of replacement stones, potential quarry location(s), and stone procurement strategy;
12. In consultation with the DR, architectural and structural and masonry conservation expert, approach for envelope quality control testing;
13. Unit rate tables for all elements of the envelope rehabilitation, mapping the unit rates to the building facade for each option;
14. Impact analysis of building envelope of each option; and
15. Simulations of the building envelope approaches using the Model, including consideration for adding insulation to the existing heritage masonry walls and copper roof.

3.2.8.3 Accessibility

The Consultant must provide for each option:

1. A universal accessibility site and building analysis, strategy and exemptions; and
2. Circulation and universal accessibility Drawing detailing strategies and exceptions, including pedestrian, bicycle and vehicular. This Drawing must include parking areas, delivery and loading areas, gathering places, decision points, events staging areas etc.;

3.2.8.4 Acoustics

The Consultant must provide for each option:

1. Acoustic strategies including the approach to construction of the acoustic provisions;
2. With the input of the Project Team, develop acoustic requirements per discipline to support the design options being prepared:
   - Consider impacts to heritage fabric and the requirement for speech privacy, in areas such as Judges Suites, court rooms and public and ceremonial spaces;
   - Consider utilization of mock-ups (Modelling and physical) in order to determine the best integrated design approach; and
   - Identify speech security or broadcast acoustic specialty materials or installation requirements.

3.2.9 Heritage Analysis Plan and Database

3.2.9.1 Heritage Impact Analysis of Design Options

The Consultant must prepare a heritage impact analysis in collaboration with relevant disciplines, stakeholders and AHJ's, along with input from the DR. Revise as required for the approval of the DR. Include for each option and where appropriate, incorporate into the Model:

1. A comparative evaluation of the impact that the proposed rehabilitation options (including structural/seismic, physical security, site alterations) will have on the heritage fabric of the WMB, measured against:
   - Applicable conservation policies, practices, plans and guidelines as identified in the heritage conservation background analysis;
   - The objectives set forth in the heritage conservation approach and identified in the heritage conservation background analysis; all landscape planning and urban design and landscape planning framework; and
   - The construction schedule and conservation budget;
2. Identification of opportunities and strategies that limit the impact to or enhance the heritage-character defining and the heritage character-contributing elements;
3. Identification of methodology of conservation work and mitigation measures, including evaluation of proposed repair materials and treatments, as required for each option;
4. Identification of a preferred design option that addresses the root causes of problems and that best balances heritage value and functionality with Project cost and time constraints, scope, and quality;
5. Narrative explaining how new design elements are compatible with the original building heritage value and character-defining elements in terms of planning, massing, architecture vocabulary, visual impact, materials, details and colour palette;
6. Elaboration of the methodology of conservation work and mitigation measures for the rehabilitation of the exterior envelope (masonry, roof, windows, and exterior doors), in consultation with the building envelope and structural disciplines; and
7. Conclusions and recommendations in a comprehensive heritage conservation plan that best conserves the WMB in the context of the Project Functional Program, WMB guiding principles and Project requirements. The conservation strategy must describe the conservation philosophy and be in sufficient detail to inform decisions and direct the subsequent conservation plan.

3.2.9.2 Heritage Conservation Plan

The Consultant must prepare a heritage conservation plan in collaboration with relevant disciplines, stakeholders and AHJ's along with input from DR. Revise as required for the approval of the DR.

The heritage conservation plan is to include and be based on the most updated conservation approach, the heritage background analysis and the heritage impact analysis. This enables the implementation of the recommended design option and is to include, as a minimum, for each conservation discipline:

1. Description of the proposed conservation scope of work for all Heritage Assets, including proposed methodologies, materials, requirement for mock-ups, and related documentation (e.g., drawings, sections, elevations, detail specifications, and qualitative acceptance criteria);
2. Narrative demonstrating compliance of proposed interventions with applicable conservation principles and practices, as identified in the heritage conservation background analysis;
3. A strategy for the implementation and reporting/monitoring of conservation treatment;
4. Selection and quantification of all materials required for conservation;
5. Updated terms of reference for quality control testing of conservation work and related materials;
6. Coordination and consistency of conservation scope, methodology and finishes for Heritage Assets that have a relationship to each other across the building or site through e.g. location/grouping, spatial hierarchy, finishes; and
7. Recommendations for the conservation long-term maintenance plan.

3.2.9.3 Heritage Asset Database

The Consultant must continue to identify and compile the data for each Heritage Asset and finalize the Heritage Asset Database, incorporate into the Model as it is being developed in support of the heritage conservation plan. Ensure proposed interventions, methodologies and mitigation measures are included per database entry, as well as all information on the existing heritage materials.

3.2.10 Abatement and Demolition Options

The Consultant must define the scope and implementation options related to hazardous materials abatement for each SD option.

3.2.11 Sustainable Design Options

The Consultant must, for each SD option, the final preferred design option and subsequent sub-options A and B:

1. Confirm sustainability priorities and targets, and feasible sustainable design opportunities and strategies to meet these targets (further distinguishing targeted from potential) and how they compare in performance, functionality from other options, how they respond to project

sustainability goals;

2. Run various energy simulations, updating model to evaluate proposed designs, including estimated annual energy performance, cost savings, greenhouse gas (GHG) emissions, and impact to base building systems, to define optimal solution for meeting performance option targets;
3. Demonstrate the life cycle costing and consider Life cycle assessment (LCA) results that indicate the benefits to PWGSC of the proposed sustainable designs;
4. Complete Life Cycle Assessment (LCA) to measure impact from various material and design choices in order to weigh additional criteria when evaluating final design options;
5. Prepare preliminary budgets; and
6. Update report narrative as per above and the sustainability assessment scorecards, confirming likely performance rating and any outstanding risks or challenges that may impede desired performance.

Both sub-options A and B will be presented and weighed accordingly against the Preferred Option, demonstrating incremental improvements in sustainability performance and allowing PWGSC to choose a preferred design that best integrates all other disciplines and best balances heritage value, planning framework and functionality with Project cost, time and scope constraints.

3.2.12 Structural

The work throughout SD must enhance the solid understanding of the structural scope work and interventions required for a holistic rehabilitation that meets all Project goals. All items referenced in PD 5 Program of Works, 5.8 Structural, including, but not limited to; repairs, additions, seismic, blast, ballistic, functional program support and building code upgrades options must be identified and evaluated.

The Consultant must, in coordination with the Consultant Team, perform a detailed assessment and perform analytical Modeling of the structural systems to support and accommodate the new functional and technical requirements, base building repair, upgrade and/or modifications for each design option proposed.

3.2.12.1 Structure Modeling and Analysis

1. Complete structural analysis using the analytical Model developed, in RS 2 Pre-Design. Analyze for dead, live, snow, wind, seismic (60% and 100% of NBCC requirements), environmental loads, blast, and progressive collapse:
   - Use first an undamaged condition as a baseline;
   - Follow this with an analysis including all proposed modifications to the building;
   - Follow this with an analysis based on its current degraded and partially repaired condition. Assess the risk levels associated with current condition; and

- Identify vulnerable building elements (e.g. masonry, operational and functional components [OFC], etc.) that should be temporarily supported, strengthened or dismantled prior construction activities that create vibrations such as rock excavation using explosives or hoe ramming.

2. Complete a design option analysis, for each option, that must include:

- Seismic upgrading options (Base isolation, new stiff shear walls, and new steel brace frames in combination with new movement gaps between the perimeter frame and infill stone/masonry);
- Resolution of spatial, functional and operational conflicts;
- Limitation of vibration and noise for rock excavation and construction to adjacent infrastructure;
- Identification of building elements that would be at risk from rock excavation and proposed options for mitigation;
- Description of the inter-relationships between the structural systems and building envelope and architectural finishes;
- Model analysis including description of methodology and confirmation of seismic approach complete with backup calculations and Model details to support each option, including conventional upgrade and base isolation option;
- Determination of the loading conditions based on the provisions identified in the regulatory analysis and any modifications to the structure;
- Determination of the specific seismic loading conditions;
- Determination of the potential blast and ballistic loading conditions using the parameters provided by the Security Design consultant;
- Identification of structural, deficiencies, deterioration and distress;
- Determination of allowable loads that can be imposed on the building by the anticipated construction activities;
- Comparative analysis of options including impact on heritage fabric, impact on building functions, impact on building systems, design lifespan, life cycle cost, constructability and maintainability;
- The Consultant is to identify the sensitivity of each option to the interior fit-up options. Where the upgrade option is found to be sensitive to the fit-up layout option, the Consultant must analyze that option for each of the sensitive fit-up layout options;
- Impact analysis of different target reliability levels (60%,vs. 100% NBCC 2015 seismic load requirements);
- Operational and Functional Components (OFC) analysis;

- Phasing approach to seismic and structural upgrades/ modifications, include temporary bracing scope and sequencing;
- Detailed calculations in support of preliminary conclusions;
- Documentation of all major assumptions and describe at how they were arrived;
- Limitations and uncertainties with respect to material properties and structural system construction and behavior;
- Identification of required information that is still outstanding;
- Identification of a preferred design option that resolves the Functional Program, structural, seismic and physical security requirements and that best balances heritage value and functionality with Project scope, cost and time, constraints; and
- Recommendations for immediate action, if required;

3. Conduct monthly technical workshop to review and discuss:
   - An overview of the overall status of the structural scope, modelling and analysis;
   - Changes or modifications to the Modelling and analysis that have been made since the previous working meeting, including identifying the reason for the changes;
   - Progress of third party calibration of the structural model with highly sensitive vibration sensors;
   - Proposed changes or modifications to the Modelling and analysis, including identifying the reason for the changes;
   - Proposed changes to the exploratory work and investigations program that are apparent as a result of anomalies in behavior or gaps in understanding that become apparent during the Modelling and analysis; and
   - Impact of the changes and proposed changes on the Modelling and analysis schedule.

3.2.12.2 Structural Assessment

Complete a detailed condition assessment that must include, as a minimum, the following information:

1. Description of the structural system, its construction, components and materials;
2. Description of the condition of the structural system, including deterioration locations and types and a discussion of their causes and impact on the long-term health of the structural system;
3. Description of the inter-relationships between the structural system and building envelope and architectural finishes and a discussion of the impact of these relationships on both the structural system and the building envelope and architectural finishes;
4. Description of the past performance of the structural system, including identifying associated

damage, and a discussion of the impact on the long-term health of the structural system;

5. Description of any proposed changes, modifications and load increases on the building and their impact on the structural system. Determine if these changes are structurally significant. If so, provide strengthening options and recommendations;
6. Description and discussion of the results of the structural analysis, including:
   - Analysis results for gravity, wind, environmental, seismic and blast loading scenarios, including appropriate load combinations;
   - Identification of structural deficiencies based on analysis results; and
   - Summary and prioritization of identified structural deficiencies issues that need to be addressed prior to, and during, construction work, including evidence based explanations for why these deficiencies and issues must be addressed to demonstrate the best method to address this issues as a holistic approach;
7. Recording of existing conditions in the Model and on Drawings (plans, elevations, sections) showing: areas and quantities of damage/poor performance colour-coded to explanatory text, with photographs;
8. Appendices with analysis details, computer runs; and
9. Scope of options to address functional program requirements, structural deficiencies, seismic, blast and ballistic requirements with technical justification for each.

3.2.12.3 Structural Health Monitoring Program

1. Based on the project scope and requirements, prepare an appropriate 3 Phase structural health monitoring plan for review and approval by the DR. Include activities and processes for;
   - Phase 1: Monitoring to inform the building condition assessment/evaluation and model calibration during pre-design, schematic design and design development, that would impact design decisions;
   - Phase 2: Monitoring of the construction implementation, including control for activities causing vibrations that could adversely impact heritage fabric, or structural safety; and
   - Phase 3: Opportunities for Smart monitoring of long-term, post-construction performance that is designed and installed during construction.
2. Identify all monitoring equipment, techniques, and activities (testing, calibration, installation, verification, operation, maintenance, data acquisition, management and storage) necessary to monitor the safety of systems, assemblies, materials and environment as well as the construction workforce. Take into account the following criteria;
   - The least destructive techniques must be used wherever possible;
   - Minimize the adverse impact on the heritage values and fabric during installation,

operation, maintenance, and removal;

- Use a common platform for data acquisition, management and storage;
- Co-ordinate development of the monitoring program with the exploratory work and investigation program; and
- Demonstrate coordination among the Consultant's services.

3.2.13 Geotechnical

The Consultant must develop, recommendations that align with the structural, seismic and physical security analysis of the design options required at 50% SD, and with further development of the preferred design option.

Incorporate into the Model and provide special documentation and specifications for:

3. Excavation method and support;
4. Identify existing services/structures that may interfere with proposed works;
5. Identify mitigation measures required to deal with special issues;
6. Review of related Drawings by others that include geotechnical components;
7. Construction monitoring plan that is coordinated with structural and heritage monitoring;
8. Backfill requirements;
9. Waterproofing design; and
10. Pre-construction survey.

3.2.14 Mechanical Options

The Consultant must, for each option:

1. Provide building service strategies including elevators, plumbing, HVAC, fire protection, building automation, security, acoustical isolation or speech privacy and intelligibility, protection of fresh air intakes, blast relief dampers/systems;
2. Describe the energy reduction achieved in each HVAC option and provide energy simulations with recognized energy simulation software;
3. Describe new gravity storm piping systems in lieu of the existing sump and pump system. Provide elevations and connection points to the street storm system;
4. Describe mechanical requirements during construction;
5. Prepare the SD for mechanical components and systems for site and building services including plumbing, HVAC, fire suppression and detection, energy management and controls, and security. Provide recommendations complete with supporting justification and implications;
6. Prepare SD options with analysis of monthly energy consumption, operating and

maintenance costs for life cycle analysis. Review with the DR assumptions regarding a life cycle duration and costs of facility alteration, improvement, demolition, recycling and demolition. The Consultant will use an approach agreed upon with the DR for all energy simulations. Analysis will illustrate monthly energy consumption of each building system, and overall annual operating and maintenance costs over a calendar year. Life cycle analysis must be integrated with sustainability and commissioning requirements;

7. Provide detailed analysis and design for tie-in methodology, tie-in locations for temporary and permanent services, including metering as required. Identify in the Model the interim and final underground utility relocations, replacements and upgrades;
8. Narrative and Drawings that indicate for each of the proposed mechanical systems and components;
   - The advantages, disadvantages and recommendations for mechanical systems and components;
   - Adaptability and flexibility of mechanical systems;
   - System schematics describing each mechanical system and component;
   - Preliminary energy analysis for each system proposed;
   - Building control strategies for each system complete with supporting analysis;
   - In conjunction with the PWGSC Commissioning Manager and Building in Transition (BIT) team, identify whether full-time operating personnel are required to operate any mechanical equipment or if specialized personnel are required for on-going operations; and
   - Determine whether personnel are required because of code requirements or because of the nature and size of the Project;
9. Description of ventilation systems. The per capita supply of outdoor air is to be determined for each option and the long-term requirement and include relevant assumptions;
10. Description of snow melting systems;
11. The air supply, heating and cooling to each occupied space is to be described including relevant assumptions;
12. Whether or not the building will be provided with humidification systems if the building envelope allows;
13. The location of each entry point for mechanical services;
14. The connection and separation, relocation and replacement of services;
15. Water supply requirements, for domestic, fire protection and chilled water;
16. The area required for mechanical functions and identify all mechanical spaces within and serving the Project;

17. Evaluate compliance of new hot water heating system with Low Temperature Guidelines. Provide calculations to support selected temperatures and equipment types. Coordinate evaluation with architectural discipline in order to evaluate the improvements in envelope (windows, wall insulation, air tightness) heat transfer necessary to achieve the design guideline of the low temperature heating water system. Select perimeter heating systems and provide description of these systems;
18. The requirements for all mechanical rooms;
19. Incorporate into the Model all systems, showing all pipes, ducts and equipment diagrams; and
20. List of all equipment/excel spread sheet (minimum information for each item: equipment number, location, service).

3.2.15 Civil/Municipal Options

The Consultant must, for each option:

1. Verify and confirm information and/or previous assumptions to support design assumptions;
2. Obtain the approval of the Ottawa Fire Service for proposed isolation, removal or reconfiguration of the water mains, all temporary and permanent fire hydrants;
3. Obtain the approval of the City of Ottawa for proposed isolation, removal or reconfiguration of all storm water systems and all sanitary sewer systems; and
4. In full coordination with the Consultant Team, propose design options for all below and above grade infrastructure and services within the Model, including sizing, materials and capacities. Each option must provide Drawings and sections complete with backup data to support each option.

3.2.16 Fire Protection Options

The Consultant must, for each option:

1. Provide options for an entirely new fire protection system;
2. Provide detailed narrative of new fire protection system with indication type and stages.
3. Provide narrative on code requirements;
4. Provide a narrative for decommissioning the existing system; and
5. Incorporate into the Model and provide single line block diagram which indicates the configuration of the system as well as the main components capacity.

3.2.17 Electrical Options

The Consultant must, for each option:

1. Propose the electrical design in sufficient detail for PWGSC's assessment and approval. Include the feasibility of proposed systems complete with energy consumption and design loads in consideration of sustainable and commissioning requirements;

2. Describe the normal, emergency and UPS electrical distribution:
   - Provide a narrative explanation and description;
   - Include the major and minor pros/cons in tabular format;
   - Provide details explanations for theoretical load calculations for normal, emergency and UPS power needs. Include major load groups, their associated load management priorities, and their connected, demand loads and final loads;
   - Detail the emergency power load management strategy. Determine how the requirements can be met;
   - Provide a narrative for the decommissioning the existing system; and
   - Incorporate into the Model options and provide single line sketches with block diagram configuration of the system and equipment capacity;
3. Lighting and Lighting Controls:
   - Incorporate into the Model existing lighting and controls. All existing lighting fixtures must be identified. Differentiate between heritage to be retained/refurbished and those to be demolished;
   - Provide options of the new lighting integrated with existing to maintain. Incorporate into the Model and provide floor Drawing and sketches;
   - Provide a detailed narrative of options for lighting technologies and controls as well as pros/cons and final recommendations. Pay particular attention to sustainability objectives, including the life cycle cost analysis. Review in detail with the PWGSC Commissioning Manager and the Building in Transition (BIT) team;
   - Provide tables of intended lighting levels and corresponding light source colour temperatures associated to major and minor areas;
   - Provide a detailed narrative of the lighting control backbone intention and strategy including interconnection with building automation system (BAS);
   - Provide a narrative for decommissioning the existing system; and
   - Updated table of lighting fixtures which are to be removed, maintained due to heritage value must be identified. Include strategy for refurbishment. Identify heritage lighting and fixture refit;
4. Public Address System:
   - Provide a narrative and recommended best options on new system;
   - Review and provide a recommendation of a white noise generation system; and
   - Incorporate into the Model and provide single line block diagram of different systems and configurations;

5. Lightning Protection System:
   - Incorporate into the Model and define new lightning protection system. Provide final options with typical elevations and floor Drawings;
   - Provide narrative for new lightning protection system. Indicate constraints; and
   - Indicate possible methods of installation/hiding of the down lead conductors.
6. Indicate expansion capacity of the proposed electrical systems and components;
7. Provide a complete energy analysis for the each option;
8. Indicate the spare capacity provided, when compared with the WP 2.0 typical requirements; and
9. Incorporate into the Model and provide narrative all decommissioning and temporary utilities during construction.

3.2.18 Commissioning

The Consultant must, for each option:

1. Identify the spatial, functional and operational requirements for PWGSC operations personnel, including storage and workshops throughout the WMB including, if necessary, requirements for temporary alteration or relocation of existing space;
2. Summarize requirements (outline scope and frequency) for all maintenance contracts in accordance with code, regulatory requirements, including specialty equipment, prudent materials and equipment redundancies and long-term conservation maintenance per class or type of Heritage Asset, as agreed by the DR;
3. Include an assessment of staffing and skill requirements to operate and maintain each system forming part of the Project, including temporary systems during Project implementation;
4. Summarize the projected annual energy consumption of each utility (water, gas, electricity, steam, chilled water); and
5. Prepare a design intent brief as described below;
   - Prepared and submit at the end of SD. Update and resubmitted at the end of each delivery phase; design development, construction tender packages commissioning and finalized prior to Completion, reflecting as-commissioned components and systems;
   - It must be well-organized using simple non-technical language with graphics to facilitate its use as a reference document for all building systems;
   - It must include, but is not limited to:
     - A narrative of the operational intent for every building system, indicating how the operational requirements were translated into the design intent for the Project;

- An explanation of what a system or component does, areas it serves, why the system or components were selected and, in general terms, how the design and operating concepts of the systems and components are accomplish, including:
  - general control strategies, sequences and reset schedules;
  - seasonal switch-over procedures;
  - emergency procedures during a fire event, power or equipment failure;
  - reduced and simplified Drawings illustrating system configurations, including single line and plan Drawings of each system;
  - interfaces with existing systems;
  - monitoring and maintenance requirements; and
- A record of, and rationale for, design decisions made throughout the Project and how these impacts or change the operational intent.

3.2.19 Building Components and Connectivity (BCC)

The Consultant must prepare the preliminary BCC design for Components and Connectivity including security requirements.

3.2.19.1 Building Components

The Consultant must assemble and develop the requirements for BCC Components for each option including, but not limited to:

1. A furniture recommendation report based on the Functional Program and parameters developed with the DR and the Users. The furniture recommendation report is to include:
   - Schematic layout for furniture types; and
   - Finishes;
2. Recommendations are to reflect the integration of existing and heritage furniture and art and artefacts, the vision of the Users, functional requirements, proposed alternatives, the space allocation or furniture and furniture storage as well as a cost estimate;
3. Building Component Matrix (BCM):
   - The BCM is a tool for recording all items to be procured under the BCC Components mandate, for following these items through the procurement phase, for listing the procurement process for each item and for tracking items through delivery and installation. As such, it will serve as the definitive instrument for the BCC Components. The BCM provides a more streamlined strategy for information recording and tracking. Imbedding the information for each Component into the Model. Each Component must be tagged with a code number which is linked in the Model to an attributes list. The list is to identify the type, finish, dimensions, Connectivity requirement, and other characteristics of the item;

- Develop the format for the BCM. The BCM will be the document that includes, but is not limited to, the following information for each individual Component. (This information will be required when the design is more advanced during DD);
  - Component room number and location;
  - Dimensions;
  - Manufacturer, make, and model number;
  - Generic description including mandatory requirements and finishes;
  - Work Breakdown Structure (WBS) category (Tier 1 and Tier 2);
  - Procurement group number;
  - Delivery requirements;
  - Installation requirements;
  - Confirmation of the Component as a new procurement or is from an existing inventory; and
  - For existing inventory, include original location of Component;
- Design dynamic blocking for all Components and incorporate the blocking into the Model. The dynamic blocking must include Component dimensions. The blocking structure and component layout Drawings must directly link to the BCM. The BCM must automatically update as changes are made to the blocking structure and Component layout Drawings;
- Develop the format for a Building Components List (BCL) that directly links and is updated with the BCM. This information will be required when the design is more advanced during DD. The BCL will be a document that includes, but is not limited to, the following information for each unique Component type:
  - Quantity;
  - Unit cost;
  - Total cost estimate per unique Component type;
  - Dimensions;
  - Manufacturer, make, and model number;
  - Generic description including mandatory requirements and finishes;
  - WBS category (Tier 1 and Tier 2);
  - Procurement group number;
  - Delivery requirements;
  - Installation requirements;
  - Confirmation of if the Component is a new procurement or existing inventory;

- For existing inventory, include original location of Component; and

4. In consultation with the DR, the requirements for scheduling the procurement of furniture and equipment.

3.2.19.2 Building Connectivity / Security

The Consultant must assemble and develop the requirements for BCC Connectivity for each option including, but not limited to:

1. Recommendations are to reflect the integration of existing and new multi media devices, the vision of the Users, functional requirements, proposed alternatives, the space allocation, as well as a cost estimate
2. IT, MM and enterprise integrated security services (IT/MM/EISS) to accommodate each option;
3. Provide an impact analysis of physical security Components to the building interiors;
4. Provide a narrative on the integration of IT/MM/EISS;
5. Fully integrate and incorporate into the Model.

3.3 Deliverables

3.3.1 Schematic Design Report

At a minimum, the Consultant must:

1. Coordinate all services of the Project Team;
2. Develop all options, sub-options, analysis and recommendations;
3. Integrate all ongoing RS 2 Pre-Design information submitted prior to the completion of each RS 3 SD sub-phase; and
4. Prepare all required documents and present to the FHBRO and AHJ's, integrate their recommendations and obtain their support and approval.

Acknowledging the advanced state of the structural options and the potential impacts to architecture and heritage, ensure reports are integrated and coordinated at 50% completion, 90% completion, and final submission of 100% completion. Each submission will be reviewed by the Project Team.

The Consultant must maintain full production during the submission review process, revise the final draft in response to the compiled review comments and submit a final submission for acceptance to the DR.

The draft and final reports must contain integrated and viable SD options that balance sometimes competing project objectives:

1. Comply with the requirements of the functional program and all applicable plans, policies, practices, standards and guidelines;

2. Include Drawings that illustrate the functional relationships of the Project and its scale and character and include scope narratives, with consideration of impacts to construction planning and scheduling, construction cost, and construction risk;
3. Present graphic and narrative options to resolve conflicts, anomalies and other issues and present the advantages and disadvantages of each option; and
4. Consolidate the SD proposals, findings, analysis and recommendations.

Provide a recommendation for the option that best balances the requirements of the Project with functionality, viability, cost, and schedule, understanding that this option could be a hybrid of the three (3) viable options presented. Present the advantages and disadvantages of each option and ensure alignment of these points with the objectives: The Consultant must present the options to the various stakeholders for their review. The format of presentations/ workshops may need to be customized to meet the needs of each review group.

Presentations are to contain, but are not to be limited to the following information:

1. Construction schedule and implementation plan;
2. Construction cost;
3. Functional, operational and security requirements;
4. Impact on future building use and operations;
5. Impact on site operations;
6. Impact and benefits on the environment and overall sustainability objectives of the Project; and
7. Impact on heritage values and heritage character-defining elements.

Reports must consolidate all the information gathered to illustrate an integrated analysis of the design options. They must be concise, coordinated and must integrate and consolidate information from the Consultant Team, with detailed information attached in appendices. Include as a minimum:

1. Executive summary outlining all recommendations;
2. Glossary of terms;
3. Summary of information gathered and documentation reviewed, with an annotated bibliography;
4. Regulatory Summary;
5. Exploratory work and investigations;
6. Functional Program update and summary;
7. Design Options, including the preferred design option for the ;
8. Site;

9. Architectural;
10. Heritage Analysis, Plan and Database;
11. Abatement and Demolition;
12. Sustainable Design;
13. Structural/Seismic;
14. Mechanical;
15. Civil/Municipal;
16. Fire Protection;
17. Electrical;
18. Commissioning and design intent brief;
19. Building Components and Connectivity;
20. Cost, time and risk analysis that considers the input of the Stakeholders;
21. Updated Design Management Plan; and
22. Updated Model.

3.3.2 Response to Schematic Design Report

The Consultant must:

1. Review and analyse all the comments provided by the DR;
2. Prepare and submit a written response within 20 working days to all the submission comments; and
3. Integrate comments into the subsequent submissions as directed by the DR.

RS 4 DESIGN DEVELOPMENT

4. Design Development (DD)

4.1 Intent

It is expected that the Design Development (DD) will overlap with some services occurring during SD and ongoing investigation work. Obtain written authorization from the DR before proceeding with DD work for the various elements of the Project.

The intent of DD is to further refine and develop the Preferred SD option, which may be a combination of elements from each SD option, as well as baseline the cost estimate for the Project. The Consultant must address and resolve all design conflicts and anomalies and ensure full coordination and optimal design iteration and work flow of the Consultant Team.

DD includes drawings and other documents that describe the scope (including the full resolution of all major components), quality and cost of the project in sufficient detail to facilitate high quality Class ‘B’ (substantive) cost estimates, design approvals, confirmation of code compliance, detailed planning of construction and project approval. Developed designs are to be computer drawn.

The DD Phase must be a continuous process feeding the construction tender packages as the Project evolves with 50%, 90% and 100% completion submissions. In order to respond to the aggressive schedule, it is important to prioritize some elements of the Project, review those elements already prioritized during Pre-Design and SD Phases and identify additional ones, as required. Advance the design deliverables for those elements, or group of the elements, that lead eventually to construction tender packages. On-going consultation is required with the CM and DR to prioritize those elements and to update the construction tender packages requirements. The CM will continually participate in the design process, provide design review in order provide cost and schedule analysis and support decision making.

The Consultant must ensure design interferences within the Model are identified and resolved weekly. Revise and optimize the individual work flow of each Consultant Team member to meet schedule requirements.

4.2 Design Services

4.2.1 Review of Existing Documentation and Site Conditions

Continued from the SD Phase, the Consultant must continually inform themselves of changes to the building condition during the Project. The ongoing requirement is to:

1. Review all reports to understand any changes in the general condition of the building;
2. Conduct site reconnaissance, inspections, surveys, measurements, studies, evaluations as required; and
3. Interview operational personnel and Users to confirm any changes in requirements.

4.2.2 Regulatory Analysis

The Consultant must, in collaboration with Consultant Team, to refine the:

1. Site and building code analysis and requirements;
2. Fire and life safety strategy; and
3. Standards analysis.

Continue discussions, reviews and integrate commentary from AHJ's.

4.2.3 Exploratory Work and Investigations Finalization

The Consultant must continue exploratory work and investigations as outlined in the program developed in the Pre-Design Phase to:

1. Finalize its exploratory work and investigations to advance the design;
2. Compile, analyze and submit results of each investigation into a comprehensive summary report as defined in the Pre-Design Phase; and
3. Update the Model with as-found survey data (wall/floor assemblies and elevations, windows and door opening sizes, etc.).

NOTE: Some investigations may include inspection of the existing systems in the Supreme Court of Canada, Building, as this project will be based on the Users expectations imitating the existing arrangements.

4.2.4 Functional Program Update

The Consultant must advance the Functional Program in coordination with Project Team.

1. Identify proposed changes to the approved functional program:
   - Advise the DR and CM of all proposed changes;
   - Inform the DR of potential opportunities or risks related to the proposed change;
   - Review potential cost impacts with the CM;
   - Obtain the approval of the DR before incorporating any proposed change; and
   - Updated and track functional program changes within individual data sheets, with a summary of changes;
2. Refine in detail and incorporate into the Model programmatic layouts, including;
   - Detail listing and numbering strategy for all rooms;
   - Update spatial relationship diagrams;
   - Update area calculations and analysis; and
   - Update functional program data sheets as required.

4.2.5 Site Design

4.2.5.1 Landscape Architecture

The Consultant must refine the landscape design approach approved at SD, incorporating new information into the Model and narrative descriptions including all work proposed including, but not limited to:

1. Planting Drawings and listings;
2. Tree/landscape protection and monitoring requirements;
3. Detailed requirements and dimensioning for all landscape features and infrastructure, including, signage and way finding, exterior lighting, security elements, street furniture, site amenities, vegetation, grading, cut and fill, soil and soil structure, drainage, storm water and irrigation;
4. Heritage conservation details, methodologies and mitigation measures, cross reference with heritage conservation plan;
5. Temporary construction requirements;
6. Details of the inter-relationships between the landscape and the buildings and build infrastructure and materials;
7. Details of proposed new furniture design and materials;
8. Construction phasing and sequencing dependencies;
9. Signage indicating way finding strategy including regulatory, directional, information signs;
10. Circulation and universal accessibility for including pedestrians;
11. Circulation for vehicles, bicycles and pedestrians, include parking areas, delivery and loading areas, gathering places, decision points, events staging areas etc.;
12. Detailed site security, including vehicular screening facilities, perimeter bollards systems, surveillance cameras and sightlines, security lighting, on-site patrolling, security buffer zones, CPTED;
13. Visual impact assessment, including views within the Project boundaries;
14. Sustainability strategies; and
15. Customized Model renderings and sample boards to support approval processes.

4.2.5.2 Architectural Lighting

The Consultant must advance the approved architectural lighting option for the Project in coordination with Consultant Team, stakeholders and AHJ's. Incorporate new information into the Model including:

1. Detailed graphic and narrative description including, but not limited to:
   - All works proposed including heritage impact of new interventions;

- Colour-coded lighting Drawings indicating programmatic requirements and proposed materials;
- Site Drawings, sections and elevations and explanatory sketches;
- Integration of security lighting, security features (surveillance cameras, bollards, lockable pull-boxes, etc.), landscape furniture, and vegetation;
- Description of electrical load and distribution requirements; construction and heritage conservation methodologies and mitigation measures, cross reference with heritage conservation plan;
- Description of the inter-relationships between the landscape and the buildings and built infrastructure and materials;
- Individual building and whole system control sequencing, (public, ceremonial and event requirements) and building system support for control room(s);
- Identification of conflicts and discrepancies;
- Proposed design for existing and new site lighting; and
- Prepare comprehensive Model renderings;

2. Prepare Material samples;
3. Summarize and explain key factors that drive Project cost, schedule, risk and procurement;
4. Prepare detailed and rendered views of each building façade; and
5. Incorporate sustainability design requirements.

4.2.6 Architectural Design

4.2.6.1 General

The Consultant must coordinate the Consultant Team's advancement of the approved SD ensuring the functional program and Project objective requirements are met. Incorporate new information into the Model including:

1. Detailed and coordinated design narratives from all members of the Consultant Team;
2. Floor Drawings for each floor, including mezzanines, indicating all required accommodation, circulation, stairs, elevators, ancillary spaces, service areas. Building grid lines and key dimensions must be indicated;
3. Reflected ceiling Drawings for all floors;
4. Detailed elevations of all exterior facades indicating all doors and windows. Indicate finished and structural floor and ceiling heights and any concealed spaces;
5. Cross sections indicating floor levels, room heights, corridor elevations, interior elevations of significant spaces including the Court Rooms, public and ceremonial spaces, meeting rooms and other spaces;

6. Detailed wall sections and special design features with sufficient illustration and explanation including physical, acoustic and physical security features to permit design approval;
7. Detailed services locations and layouts including elevators, plumbing, HVAC, fire protection, electrical, telecommunications, security, building automation;
8. Architectural features, including materials, millwork, finishing details and samples sufficient to permit choice of materials and finishes;
9. Drawings, elevations, sections, typical details for built in furniture and case goods, all schedules (room, door, window etc.);
10. Lighting design for interior;
11. Sample boards for all finish materials including, but not limited to wall and carpet colour options; and
12. Comprehensive interior and exterior renderings using the Model (minimum of six [6] different spaces).

4.2.6.2 Building Envelope

The Consultant must advance the building envelope design in coordination with Consultant Team, stakeholders and AHJ's. Incorporate new information into the Model including:

1. Detailed building envelope design with elevations, sections and details of all building envelope components, including masonry walls, roofing, windows, doors, stonework, damp proofing, waterproofing, flashing, building insulation, caulking and sealants, finishes, and showing existing and new structural members;
2. Substructure Drawings, including foundations and basement, below grade work;
3. Structural conservation engineering; (e.g. masonry, mortar, gables, chimney, roof);
4. Detailed structural stabilization requirements;
5. A repair material selection and description of methodology for all envelope treatments. Cross reference with heritage conservation plan;
6. Special construction, dismantling and demolition, including heritage structures; and hazardous materials abatement;
7. Indicate the limits of and requirements for temporary support, scaffolding, and permanent reattachments;
8. Indicate envelope and material stabilization, masonry cleaning and water management requirements;
9. Refinement of the compatibility analysis for the various types of envelope components including replacement, estimated quantities of replacement, procurement strategy and terms of reference for procurement. Advance this element if procurement lead time warrants early purchase;

10. Final terms of reference for envelope quality control testing; and
11. Updated unit rate tables for all elements of the envelope rehabilitation, mapping the unit rates to the building facade, indicating the measured/anticipated quantities.

4.2.6.3 Accessibility

The Consultant must provide:

1. A refined universal accessibility site and building strategy;
2. A detailed universal accessibility drawing;
3. Continue discussions, reviews and integrate commentary from AHJ's.

4.2.6.4 Acoustics

The Consultant must

1. Prepare an acoustical design that includes wall, floor and ceiling sections and details for all spaces requiring acoustic security. Include required acoustical ratings for doors, transfer ducts, conduits and other assemblies;
2. Complete required investigations to finalize the approved design approach;
3. Incorporate lessons learned from mock-ups into the acoustic design. Ensure comprehensive acoustic design requirements reflect the approved functional program. Provide the requirements to all disciplines;
4. Finalize acoustic testing and inspection requirements for all disciplines;
5. Validate all disciplines, understand the acoustic requirements as they apply to them;
6. With the CM, assess potential constructability impacts. Identify construction inspection and performance testing processes and their frequencies, along with final testing. and
7. Validate the design of all disciplines incorporate the acoustic requirements into their designs and into the Model prior to the 90% DD submission

4.2.7 Heritage Conservation Plan

The Consultant must refine and coordinate all aspects of the heritage conservation plan with the Consultant Team, the CM, DR, stakeholders and AHJ's for each conservation discipline and for each conservation treatment to the point where a performance specification per discipline/treatment can be prepared.

Update the Heritage Asset Database and incorporate into the heritage conservation plan, and Model.

4.2.8 Abatement and Demolition Design

The Consultant must specify the scope and implementation options related to hazardous materials abatement for the design. Provide details on special construction and demolition including hazardous materials abatement.

4.2.9 Sustainable Design

The Consultant must:

1. Update sustainable design solutions for optimal performance of preferred design option (or hybrid thereof) (including revised performance rating scorecard with expected level to be achieved, indicating where/what supporting documentation/reference can be found, and which measures will or will not be met). Update budgets, and identify any outstanding design issues impacting the sustainable performance targets that require immediate follow-up, describing any risks/changes/issues to mitigate prior to tender;
2. Update energy model (and budgets across all disciplines) of the preferred design option, including details on energy loads, estimated annual energy performance cost and GHG emissions as predicted by using current energy cost for Ottawa;
3. Update LCA of the preferred design option, including details on embodied energy, carbon, and impacts on other environmental metric – considering whole building footprint;
4. Submit waste audit and waste reduction work plan as required and in consultation with the Environmental Consultant; and
5. Narrative should confirm process and evaluation that resulted in preferred SD option (or hybrid thereof) and how it meets/aligns with the Project sustainability objectives, goals, and performance targets.

4.2.10 Structural Design

The Consultant must complete the analysis and design of the selected seismic upgrade approach and all structural interventions, as well as any final investigations in coordination with the DR, Consultant Team and CM. The Consultant must:

1. For the approved design option incorporate new information to complete the structural design into the Model:
   - Design for all structural deficiencies and issues that need to be addressed prior to and during construction;
   - Provide detail Drawings, sections, elevations, and connection or other details for modifications to existing and new systems and materials, components, cladding and load-bearing details, blast and ballistic requirements, fireproofing methods and any significant or unusual details or components and operational functional components;
   - Design structural system to support all new mechanical, electrical functional program and technical requirements and BCC loads;
   - Coordinate the design for all architectural and engineering components and systems below grade, in floors, walls and ceilings and their relationships with the building structure. Identify and resolve all clashes/interferences in the Model;
   - Confirm that target reliability level for seismic upgrade to NBCC 2015 is met;

- Identify and Model elements that may be vulnerable to vibrations, including temporary stabilization strengthening or dismantling prior to construction. Include loading, bracing, and support requirements for scaffolding as it relates to the structure and building envelope;
- Develop construction phasing and details necessary for the implementation of the structural work, including the sequencing of temporary bracing, shoring or stabilization;
- Include the inter-relationships between the structural systems, building envelope and architectural finishes;
- Identify proposed changes or modifications to the Model and analysis, including identifying the reason for the changes and impact;
- Develop approaches for the use of mock-ups, testing and investigations to validate the feasibility, constructability and effectiveness of the proposed work. Review with the CM and DR and obtain approval from the DR;
- Update the exploratory work and investigation plan to validate existing conditions and further the design; and
- Include all dead and live loads, seismic loads, blast and ballistic loads and any atypical loads and all detailed calculations.

4.2.10.1 Structure Monitoring Plan

The Consultant must develop and implement a monitoring plan for the construction and post construction phases. Incorporate information into the Model where appropriate. The monitoring plan must include the following:

1. System, assembly, component, material or area to be monitored;
2. Phenomenon to be monitored;
3. Objective(s) of the monitoring;
4. Types or techniques of monitoring possible;
5. Techniques, equipment, and specialists required to install, maintain and operate the monitoring;
6. Access requirements for installation, operation, data collection and maintenance;
7. Maintenance requirements;
8. Relevant standards (CSA, ASTM, appropriate European standards when there is no equivalent North American standard) to be referenced and followed, if applicable;
9. Duration of the monitoring;

- Identify if monitoring should continue into the post-construction phase; and
- Identify if monitoring devices must be removed at the end of monitoring;

10. Benefit of monitoring the system or component;
11. Risk or consequence of not monitoring the system or component;
12. Risk to operations and Heritage Assets resulting from the installation, operation and maintenance of the monitoring; and
13. Recommended schedule and sequencing of monitoring to ensure an integrated monitoring plan across all disciplines.

4.2.11 Geotechnical

The Consultant must review all documentation and identify to PWGSC any missing geotechnical information required to evaluate the approved design that has been developed.

Incorporate new information, refine the Model and provide special sketches and specifications for:

1. Excavation method and support including detailed design such as rock anchor spacing, shotcrete, etc.;
2. Excavation support including proposed alternatives;
3. Subsurface conditions;
4. Protection of existing buildings including design details;
5. Underpinning and support including detailed design information;
6. Dewatering design and mitigation;
7. Foundation system design details;
8. Identify existing services/structures that may interfere with proposed works;
9. Identify mitigation measures required to deal with special issues;
10. Review of the design disciplines that include geotechnical components;
11. Final vibration monitoring plan coordinated with structural and heritage monitoring;
12. Geotechnical instrumentation monitoring coordinated with structural and heritage element monitoring;
13. Construction monitoring plan;
14. Backfill requirements;
15. Waterproofing design; and
16. Pre-construction survey.

4.2.12 Mechanical Design

The Consultant must complete the design of the approved SD option in coordination with the Consultant Team and CM. Detail and incorporate into the Model:

1. Service entrances for heating, chilled water, domestic water, sanitary and storm drainage,

and connections to utility services including all invert elevations;

2. Sizing and materials of ventilation, cooling and heating systems with locations and layouts of all major equipment and showing all security systems protection of fresh air intakes, blast relief/ dampers systems;
3. Primary and secondary and sub-metering requirements and locations;
4. Plumbing and piping systems showing routing and sizing of lines and location of pumps and other equipment;
5. Acoustic control measures for the mechanical design;
6. In consultation with the CM, update energy consumption per system and the overall consumption by utility; and
7. Include equipment list of all equipment with equipment number and location.

Finalize the design concept of the heating systems in compliance with the Low Temperature Guidelines. Provide calculations to support selected temperatures and equipment types. Coordinate evaluation with architectural discipline in order to evaluate the improvements in envelope (windows, wall insulation, ait tightness) heat transfer that are necessary to achieve the design guideline of the low temperature heating water system.

The Consultant must describe in detail:

1. The proposed mechanical systems and components including any ancillary devices needed to support emergency power systems; and
2. The building systems control architecture including the proposed EMCS network architecture, mechanical control schematics and the sequence of operation for each building system. Include the interconnection and alternation requires for all connected buildings.

4.2.13 Civil/Municipal Design

The Consultant must advance the design and incorporate new information into the Model including:

1. Site services and building service connections with references to building outlines, site access roads and sidewalks and including existing and proposed grades and existing and proposed drainage;
2. All manholes with invert elevations, valves, hydrant locations, tunnels, duct banks, proposed pipe sizes and slopes and pipe invert elevations at the building foundations;
3. All pipe capacities and estimated storm and sanitary flows. Where the proposed system connects to existing sewers describe the impact of the connection on the existing system. Create a summary sheet; and
4. All trench, duct bank and tunnel details including profiles and elevations of below grade services.

4.2.14 Fire Protection Design

Detail and incorporate into the Model:

1. Floor Drawings for new fire alarm system to show end of line device location;
2. Table of every piece of fire alarm equipment to be identified;
3. Single line diagrams with main equipment and approximate amount of end of line devices;
4. Decommissioning floor Drawing with existing fire alarm system devices to be removed.

4.2.15 Electrical Design

The Consultant must complete the design of the approved SD option in coordination with the Consultant Team and CM. Provide a short narrative description of all systems and major components ensuring that it contains a detailed description of demarcation lines between the services provided to serve the User portion of the building and the part of the building left for future Workplace 2.0 Fit-up Standards. Detail and incorporate into the Model:

1. Normal, Emergency and UPS Electrical Distribution:
   - The chosen electrical option;
   - Theoretical load calculations for normal, emergency and UPS power requirements. Refine load tables for every piece of equipment and divide in their particular load management priority;
   - Electrical equipment sizing;
   - Distribution Single Line Diagram with nomenclature, capacities;
   - Distribution floors Drawings with identified equipment location;
   - Emergency power load management system sequence of operation;
   - Floor Drawings of every floor with tables associated to each room indicating every type of power;
   - Decommissioning floor Drawings to include location of major equipment to be demolished and or maintained with associated demolition phase; and
   - Primary metering and sub-metering. Indicate the short circuit information at point of entry; Indicate metering locations;
2. Lighting and Lighting Controls:
   - Floor Drawings with layout of existing lighting to maintain and new additional lighting;
   - Lighting schedule for new lighting fixtures;
   - Lighting control layout and control logic, associated light fixture zones;
   - Specific rooms which will contain specific lighting control systems, including architectural lighting systems;

- Decommissioning floor Drawings with lighting to be removed and re-instated, if required;
- Provide Drawings and details for site and building lighting include proposed typical fixtures; and
- Updated table of lighting fixtures which are to be removed, maintained due to heritage value must be identified. Include strategy for refurbishment. Confirm scope for heritage lighting and fixture refit;

3. Public Address System:
   - Floor Drawing to indicate locations of main equipment and end of line devices;
   - Single line diagram with main equipment; and
   - Review and design (if required) of a white noise generation system;
4. Lightning Protection System:
   - Roof Drawing with device location;
   - Single Line Diagram of new system with main equipment and interconnection of buildings; and
   - Decommissioning implementation strategy;
5. Confirm expansion capacity of the proposed systems and components;
6. In consultant with the CM, update a complete energy analysis for the proposed options;
7. Confirm spare capacity provided; and
8. Define and Model all decommissioning and temporary utilities during construction.

4.2.16 Commissioning Plan

The Consultant must coordinate the input of all disciplines and:

1. Prepare preliminary commissioning and training plans in consultation with the CM, the PWGSC Commissioning Manager and Building in Transition (BIT) Team for all building systems and integrated systems, comprehensive construction monitoring (geotechnical, envelope and structural, base isolation components as applicable, temperature, humidity, air quality, heritage elements, etc.), and full load dynamic testing of all building systems. Include in the training plan:
   - Operator skills training requirements and prerequisites;
   - Schedule for all training that includes at least two (2) separate follow-up training sessions per type of training; and
   - Schedules that limit training sessions to a maximum of three (3) hours per day. Stagger the training so that personnel can attend without major disruption to ongoing operations;
2. Updated design intent brief for every building system;

3. Compile information in support of the heritage conservation long-term maintenance plan. The documentation will support the effective care of Heritage Assets by class or type, as well as new materials integrated into the Project. This will be compiled for the approval of the DR, in collaboration with the Consultant Team, FHBRO, and the CM's conservation specialists. Within the Heritage Assets database, document all proposed maintenance requirements per asset including:
   - Ongoing routine or periodic maintenance procedures;
   - Cleaning or maintenance materials used or to be employed in the future;
   - Frequency and scope of recommended inspections or surveys; and
   - Required skills/qualifications of personnel to undertake maintenance;
4. Forecast or discretionary maintenance tasks.

4.2.17 Building Components and Connectivity (BCC) Design

4.2.17.1 BCC Components

The Consultant must incorporate into the Model all BCC Components, including existing Components, Heritage Assets and Art and Artefacts to be moved to the WMB from the SCCB. Indicate multiple furniture layouts, location Drawings and specifications, finishes and colours; and the location and identification of all equipment. Drawings and specifications for BCC Components are to include BCC Component storage and circulation routes.

Prepare Component Drawings and Component information that includes but is not limited to:

1. Layout of all custom-made furniture and furnishings, case goods, workstations, work settings, support and special purpose spaces;
2. Location and identification of all equipment;
3. All window treatments;
4. Based on the colour scheme approved at SD prepare and submit a final finishes presentation board(s) for all furniture requirements;
5. Review and confirm all Component counts, fittings and all accessories;
6. Provide a report with narrative and graphic representation of all furniture finishes, including samples and specifications for all furniture, fittings, window coverings and accessories requirements;
7. Coordinate Component Drawings based on final equipment and furniture layout Drawings with architectural, mechanical and electrical disciplines and Security Design and IT Engineering Consultants;
8. Mechanical and electrical space and location requirements on the final equipment and furniture Drawings and ensure the mechanical and electrical Drawings accurately reflect the furniture and equipment layout including:

- Final Lighting layout;
- Final location of light switches;
- Final location of HVAC controls;
- BCC Connectivity devices;
- Plumbing location and space requirements; and
- Additional cooling and exhaust location requirements;

9. Coordinate with electrical and BCC Connectivity designs;
10. Confirm all electrical, telephone, data and video layouts;
11. Provide elevations of all areas to reflect locations of electrical end devices including plugs, controls, switches based on final equipment and furniture layout Drawings;
12. Update the BCL and the BCM; and
13. Prepare move plans for existing Components, heritage furniture and art and artefacts.

4.2.17.2 BCC Connectivity / Security

The Consultant must incorporate into the Model all BCC Connectivity and security requirements.

The Consultant must

1. Provide detailed integration and full coordination of the IT Engineering consultants BCC Connectivity components and equipment, including security features with built in furniture;
2. Ensure complete coordination of furniture layout and BCC Connectivity designs;
3. Coordinate and Model BCC Connectivity (IT/MM/EISS) components and equipment.
4. Update and integrate the IT Engineering consultant's requirements for and design of all IT, MM and enterprise integrated security services (IT/MM/EISS). Model and fully integrate IT/MM/EISS requirements for the Project;
5. Provide a narrative on the integration of IT/MM/EISS; and
6. Prepare move plans for existing multimedia equipment.

4.3 Deliverables

4.3.1 Design Development Report

The Consultant must:

1. Coordinate all services of the Consultant Team and with the CM;
2. Integrate all ongoing Pre-Design and SD investigation work submitted; and
3. Prepare all required documents and deliver the presentations to the FHBRO, NCC, and AHJ's, integrate their recommendations and obtain their support and approval.

Integrated and coordinated draft reports are required by the Consultant at 50% completion, at 90% completion and at 100% completion. Each submission will be reviewed by the Project Management Team and the Users. PWGSC will compile the reviewer's comments and the Consultant will respond to each of the compiled comments prior to proceeding to the next submission. The Consultant will revise each submission based on the compiled review comments and submit a 100% submission for acceptance. Consultant may be required to proceed with the preparation of some construction tender packages for tender prior to acceptance of the DD Submission.

The DD report will update the SD report and consolidate the scope and activities described above. The report must be concise and it must integrate and consolidate reports from the Consultant's sub-consultants and specialists with detailed information attached in appendices. The final DD report will be used as a control document to monitor the progress of the Project. The DD report will contain integrated and viable DD that:

1. Comply with the requirements of the functional program, all applicable plans, policies, practices, standards and guidelines and that is consistent with the accepted SD including accepted options;
2. Include Modelling that illustrates the functional and building systems relationships of the Project and its scale and character;
3. Present Model renderings and narrative options to resolve conflicts, anomalies and other issues and present the advantages and disadvantages of each option; and
4. Consolidate the DD proposals, findings, analysis and recommendations.

The Consultant must ensure that DD reports communicate the entirety of the proposed design, referencing all disciplines and indicating the relevant components and systems required to a level of detail to make decisions regarding the design and for the confirmation of the high quality substantive Class B Cost Estimate of the work proposed. The body of each DD report is to include as a minimum:

1. Executive summary with précis of the report and outlining all recommendations;
2. Glossary of terms;
3. Summary of information gathered and documentation reviewed, with and annotated bibliography;
4. Regulatory Requirements;
5. Exploratory work and investigations;
6. Functional Program update;
7. Site Analysis Design;
8. Architectural Design;
9. Heritage Conservation Plan;

10. Abatement and Demolition Design;
11. Sustainable Design;
12. Structural/seismic Design;
13. Mechanical Design;
14. Civil/municipal Design;
15. Fire Protection Design;
16. Electrical Design;
17. Commissioning Plan;
18. Building Components and Connectivity (BCC);
19. Cost , time and risk analysis that also considers the input of the CM;
20. Updated Design Management Plan; and
21. Updated Model

4.3.2 Response to Design Development

The Consultant must:

1. Review and analyse all the comments provided by the Project Team;
2. Prepare and submit a written response within 20 working days to all the submission comments; and
3. Integrate comments into the subsequent submissions as directed by the DR.

RS 5 CONSTRUCTION DOCUMENTATION

5. Construction Documents

5.1 Intent

Obtain written authorization from the DR before proceeding with any construction tender package. The services required of the Consultant in this section apply to all construction tender packages.

The CM will take the lead role and inform the Consultant in specifying and updating the construction tender packages and sequencing to optimize the schedule. The Consultant must confirm the intent and scope of each construction tender package.

The construction tender packages are to include comprehensive, coherent, and fully coordinated sets of Drawings and specifications (tender documents) compliant with Project requirements in sufficient detail to enable competitive tendering by the CM and guide and direct the sub-contractors to successfully implement each phase and sub-phase of the Project. The tender documents as modified following tenders will be issued as Construction Documents.

The CM will take some of the construction tender packages and split them into trade specific tender packages to secure the sub-contractors necessary to undertake each phase and sub-phase of the Project. The Consultant is to review the tender packages submitted by the CM to ensure completeness and provide comments and suggestions for revisions. Validate productivity, expectations, measurement processes and acceptance criteria for each sub-trade prior to tender.

The Consultant is to produce Modelling, depicting in detail, the coordinated and interference free relationships between building elements and their location, name or identity, dimensions, shape and form and the details required to execute and achieve the intended results. Ensure design interferences within the Model are identified and resolved weekly. Revise and optimize the individual work flow of each Consultant Team member to meet schedule requirements and shorten durations.

Construction tender packages, including Drawings and specifications, must be prepared in accordance with “Doing Business with the National Capital Area (NCA)”. The construction tender packages must describe the products, materials, standards, equipment, services, construction systems, methods and processes and level of workmanship required. Specifications also describe the physical and environmental conditions to be created and maintained in work areas, on-site, in adjacent work areas or off-site. Specifications also indicate the procedures for contract administration to control and monitor the quality of the work, performance verification requirements, and the reporting of work progress.

5.2 Design Services

5.2.1 General

The Consultant must ensure congruency between all construction tender packages and:

1. Confirm the content and timing of each construction tender package with the Project Team;
2. Coordinate with the CM on the scope and content of each construction tender package submission;

3. Coordinate with the DR and the CM to prepare and finalize performance specifications per conservation discipline that includes the complete conservation scope;
4. Participate in the required meetings and workshops, record and distribute minutes;
5. Coordinate and integrate all the submissions from the Consultant Team;
6. Define commissioning procedures, construction monitoring requirements, performance expectations, Consultant led and Contractor led training sessions, requirements for operating and technical maintenance manuals, post-construction monitoring, and record Drawings/Model;
7. Submit construction tender packages, conduct design charrettes and respond to construction tender package comments;
8. Coordinate and integrate all construction tender package submission review comments;
9. Confirm the format of the Model, Drawings and specification and comply with the stipulated requirements for the Project;
10. Confirm Drawings and specification format requirements with CM;
11. Update the Consultant`s design schedule and ensure coordination with the CM's construction schedule;
12. Provide continual input for the construction tender packages and overall construction estimate by the CM; and
13. Provide all support required for the CM when the CM splits the construction tender packages into the trade specific tender packages such as content, cost estimates, unit prices, etc.

5.2.2 Construction Tender Package Content

The Consultant must, for each construction tender package, use the Model graphical information to generate discipline specific Drawings complete with elevations, sections, details and schedules. Create Project-specific specifications for each construction tender package. The construction tender packages can be generally categorized to include:

5.2.2.1 Regulatory

1. Final building code data summary;
2. Final fire separations, life safety, accessibility, smoke control Drawings, specifications and exemptions; and
3. AHJ's review reports, recommendations and approvals.

5.2.2.2 Program Design

1. Programmatic accommodation, including horizontal and vertical zoning diagrams;
2. Spatial relationship diagrams; and
3. Area calculations and analysis.

5.2.2.3 Site Design and Site Drawings

1. Site Drawings including property line with dimensions, benchmarks, existing structures, new structures, site improvements, fencing, roads, streets, drainage, right of ways;
2. Municipal infrastructure, subsurface and above grade services. Describe capacities and limitations. Include building and flow-through services;
3. Underground utilities relocation;
4. Historical site features;
5. Environmental features including sustainable design strategies;
6. Existing conditions site Drawings;
7. Removals Drawings;
8. Landscaping Drawings;
9. Layout Drawings;
10. Grading and drainage Drawings;
11. Signage Drawings;
12. Irrigation Drawings;
13. Planting Drawings;
14. Cross sections, elevations, sections, schedules, details of critical areas for all of the above Drawings, fully dimensioned; and
15. Details need to show type of material, size, colour, layout pattern (if applicable) with unit numbered for heritage or envelope elements building reconstructed, site furniture, railings, tactile markers for accessibility, security bollards and other related security elements on the site.

5.2.2.4 Architecture and Engineering

1. Floor Drawings including walls, floor elevations and grade elevations at building line, construction to remain, references to other details and elevations, room names (subject to security requirements), room numbers, door swings and numbers, window numbers, floor materials, plumbing fixtures, built-in fixtures, stairs, special equipment, vertical transportation, legend as required, and dimensions;
2. Roof Drawings including roof outline, overall dimensions, setbacks, slopes, drainage, reference to other Drawings and details, roof materials, penetrations and roof mounted equipment;
3. Reflected ceiling Drawings including partitions extending to and through the ceiling, ceiling material and grid lines, ceiling heights, location of all lights including exit lights, diffusers, access panels, speakers, sprinklers, all other equipment and ceiling penetrations, and expansion joints;

4. Exterior elevations including structural grid centre lines, vertical dimensions, floor-to-floor heights, opening heights, references to other Drawings and details, floor lines, elevations of major elements, grade lines, foundation lines, materials, windows, doors and all other openings, symbols for window/door schedule, gutters, and signs;
5. Building sections including dimensions to grid centre lines, face of wall dimensions to other components, vertical dimensions from foundations to parapet relating all elements to top of structural members, materials, all connection methods, mechanical and electrical elements shown schematically, roof construction, floor construction, and foundation construction;
6. Interior elevations including vertical dimensions to critical elements, reference to other Drawings and details, openings in walls, wall finishes, built-in fixtures, location of switches, and all wall mounted equipment;
7. Schedules including room schedule, door schedule, window schedule, hardware schedule and schedules for all architectural work, louvers and equipment;
8. Structural Drawings including footing and foundation Drawings, rebar layout, framing Drawings, structural sections, details, seismic/blasting reinforcing schedules and connection details, all temporary structural bracing/shoring requirements complete with timing and sequencing of bracing/shoring and all loads;
9. Mechanical Drawings including plumbing, HVAC and Fire Protection Drawings, including riser diagrams of all mechanical systems, equipment/systems section details, location of equipment, layout of ductwork, pipes fixtures and all other components, plumbing isometrics, fire protection components, floor plan layouts and details, mechanical rooms layouts, details all connections and support, and equipment schedules;
10. Electrical Drawings including power, lighting, telecommunications Drawings, IT, MM, signal and integrated security systems, one-line diagrams, transformer, equipment and fixture schedules, building automation, pathways and service infrastructure, layout and details for all electrical and telecommunications rooms;
11. Energy monitoring control system (EMCS) network architecture, control schematics, sequence of operation including where applicable seasonal switchover, alarm thresholds, digital data control (DDC) input and output point schedules for each mechanical and electrical system;
12. Acoustic construction requirements (Drawings, sections, details, construction specifications) and performance verification requirements;
13. Temporary structures, partitions, physical, dust and water protection, mechanical and electrical systems, construction constraints and sequencing;
14. Construction tender package documents for all mock ups;
15. Updated energy model including building load calculations, energy consumption per system and totalized for each utility for 50% and 90% submissions ensuring the analysis is reflective

of the mechanical and electrical sequences of operation per system;

16. Provide with the 95% submission all calculations for structural, civil, mechanical, electrical, acoustical, building science design and equipment selection. The calculations will be indexed and provided in a format suitable to the DR. Confirm the format;
17. Review and approve materials and construction processes specifications to meet sustainable development objectives and commissioning requirements;
18. Temporary maintenance requirements for building components and systems during construction and for 12 months after Substantial Performance of the work. Include requirement for service call-back with stipulated response times;
19. Construction and post construction building component and system monitoring systems including all details and specifications;
20. Provide updates to design intent brief;
21. Include commissioning plan, performance verification procedures for components, systems and integrated systems within each specification subsection. Include expected testing results and maintenance management information for each piece of base building equipment and each system, and for integrated systems. Include seasonal commissioning testing, adjusting and reporting requirements;
22. Establish timing and requirements for two separate integrated systems (life safety compliance) tests, prior to Substantial Performance and again prior Final Completion;
23. Identify and include all tests to be conducted at manufacturer's plants, on-site during construction, installation, commissioning on-site and during the operation phase;
24. Include complete infra-red scan of entire electrical system under full load (occupied) conditions;
25. Develop a training requirements for operations and maintenance personnel;
26. Building Health Monitoring Plan:
    - After monitoring Plan approval, prepare appropriate contracting documentation (terms of reference, scopes of work, drawings and/or specifications for purchase or tendering to contractors) necessary to complete the monitoring system installation, operation and maintenance work as per Deliverables:
        - Contracting documents to clearly define the scope of work and include details and information to complete the installation, operation and maintenance of monitoring systems; and
        - Conservation specialists to be part of the team to plan, define and complete site work to install, operate and maintain equipment when heritage assets are adjacent to or impacted by the work;
    - Submit contract documents for review and approval by the DR prior to initiation of the

installation, operation and maintaining work;

27. Special construction and demolition including heritage structures, hazardous materials abatement; and
28. Update and optimize sustainable design opportunities and strategies including LCA with final changes/modifications from DD.

5.2.2.5 Building Envelope Design

In collaboration with the relevant disciplines prepare fully integrated complete discipline specific Drawings, sections, elevations, details, schedules, and specifications including design narratives, decision logs, calculations, etc.

Sections/Drawings including:

1. Substructure Drawings, including foundations and basement, below grade work;
2. Interiors, including interior construction, protection;
3. Services, including, fire protection, electrical and mechanical, building automation, hygrothermal or other envelope monitoring during construction and post-construction (coordinate with structural, heritage and other disciplines);
4. Building envelope Drawings and sections including masonry wall assemblies, roof and roofing assembly's windows, doors, stonework, damp proofing, waterproofing, flashing, building insulation, caulking and sealants, finishes etc., and showing existing and new structural members;
5. Structural conservation engineering;
6. Performance specification for scaffolding and enclosure system, and temporary support requirements;
7. Detailed Drawings and directions for masonry repair: including, replacement, dismantling, rebuilding, grouting;
8. Detail directions for stone cleaning: including the cleaning process and methodology, and acceptable level of patina requirements;
9. Architectural lighting Drawings with components, connection details, envelope penetration details and specifications cross-references as required to electrical Drawings;
10. Detailed Drawings and directions for mock-ups;
11. Detailed Drawings and directions for the restoration of windows;
12. Complete envelope screening and remedial repair six (6) months prior Substantial Performance;
13. Thermographic scan of the entire envelope in winter conditions during the warranty period after Substantial Performance of the work;

14. Detail directions on unit price, fixed price, work and measurements for payment;
15. Detail directions on any other Project specific conservation work deemed necessary;
16. Support data, studies, calculations;
17. Special construction and dismantling, including heritage structures, hazardous materials abatement;
18. Final specifications (including prequalification and sustainable procurement strategies);
19. Written reports for updated design narrative and calculations; and
20. Include copies of all investigation reports and tests.

5.2.2.6 Conservation Performance Specifications

1. In collaboration with the DR and the CM, create and finalize detailed performance specifications per material, application and condition. Integrate the information developed in support of a long-term conservation maintenance plan in preparing performance specifications. Include Observed existing conditions;
2. Detailed treatment and methodology requirements;
3. Mock-ups and pilot projects;
4. Sequencing of conservation phase and milestones. Consider the implementation of the overall construction. Integrate requirements with the CM for construction and conservation coordination;
5. Implementation and quality monitoring requirements; and
6. All treatment and conservation documentation as entries within the Heritage Asset Database.

The final decision on the scope and extend of conservation work rests with the DR.

5.2.2.7 Geotechnical

1. Excavation method and support;
2. Underpinning and support including detailed design;
3. Protection of existing building;
4. Dewatering requirements;
5. Foundation system requirements;
6. Identify existing services/structures that may interfere with proposed works;
7. Identify mitigation measures required to deal with all technical issues;
8. Review of related Drawings by others that include geotechnical components; and
9. Subsurface conditions.

5.2.2.8 Building Components and Connectivity

5.2.2.8.1 BCC Components

BCC Components will be separate construction tender packages prepared by the Consultant. Prepare Building Component Drawings based on updated information in the Model and specification that include:

15. Final layout of all custom-made and commercially available Building Components;
    - Final location and identification of all furniture fixtures and equipment;
    - Final window treatments cross-references as required to electrical Drawing;
16. Prepare and submit a final finishes presentation board(s) for all Building Components;
17. Confirmation of all Component counts, fittings and all accessories;
18. Confirmation of all electrical, telephone, data and video layouts;
19. Coordinated Component Drawings based on final equipment and furniture layout Drawings, with architectural, mechanical and electrical disciplines and BCC Connectivity designs and Security Design;
20. Mechanical and electrical space and location requirements on the final equipment and furniture Drawings and ensure the mechanical and electrical Drawings accurately reflect the furniture and equipment layout including:
    - Final lighting layout;
    - Final location of light switches;
    - Final location of HVAC controls;
    - BCC Connectivity devices and wiring attachments;
    - Plumbing location and space requirements; and
    - Additional cooling and exhaust location requirements;
    - Identification of the location and number of telephone, data and video outlets;
    - Elevations of all special purposed areas to reflect locations of electrical end devices including plugs, controls, switches based on final equipment and furniture layout Drawings;
    - Updated BCL and BCM listings that are completely integrated into the Model; and
    - A report with narrative and graphic representation of all furniture finishes, including samples and specifications for all furniture, fittings, window

coverings and accessories requirements.

5.2.2.9 Procurement and Installation of BCC Components

The Consultant must:

1. Minimize the number of required procurement groups and construction tender packages. Ensure construction tender packages are as approved by the DR, list sample components and equivalent mandatory technical criteria for evaluation. Group all Building Components in the BCM into procurement groups and construction tender packages of like items;
2. Produce Building Component lists for procurement purposes and advise the CM of Building Component procurement and installation requirements in the specifications. Include contract specific installation Drawings showing delivery site, path of travel, and final installation locations. Review and obtain approval of CM for delivery and installation Drawing. The procurement of the Building Components will require a significant quantity of individual construction tender packages;
3. Work closely with the CM to coordinate delivery and any staging required for Building Components; and
4. Review the procurement planning and schedule with the CM and DR. Adjust as required to meet construction operations' requirements.

5.3 Deliverables

The Consultant is to prepare and submit construction tender packages derived from Model information as described below:

1. Finalize and issue various terms of reference and specifications for field quality control testing to be done by and independent firms engaged by PWGSC or the CM. The Consultant is to review, comment and make recommendations regarding the independent firm's response(s) the terms of reference or proposed alternative solutions;
2. Prepare separate construction tender package documents for full scale mock-ups to serve as a learning experience for the Consultant Team and construction trades for:
   - A Court Room wall assembly, complete with all mechanical, electrical or other systems;
   - Typical Judges bench and chair in the Supreme Court Room;
   - A Judges Suite;
   - Interior and exterior doors and their complete hardware;
   - Skylight section over light well
   - Typical window and wall section in exterior wall, including window preservation and modifications as well as penetration of power supply to exterior lighting;
   - Architectural lighting connection to power supply, with penetration of the building envelope; and

- Specific elements of conservation work to be determined by the DR, in consultation with the Consultant and CM.

The Consultant Team must apply the lessons learned from each mock-up and ensure construction tender packages reflect the lessons learned.

5.3.1 50% Complete Construction Documentation

The Consultant must provide the following for each construction tender package:

1. An updated Model with the design coordinated and clash detection identified and resolved;
2. All Drawings and specifications included with preliminary performance requirements per specification sub-section;
3. Preliminary door, window, hardware, colour and other schedules, including textures, sheens, colour chips and material samples;
4. Quantities of each type of heritage material replacement and confirmation of supplier compatibility and availability;
5. Preliminary unit rate tables for materials;
6. Draft Division 01 specifications;
7. Preliminary Drawings and specifications for all temporary protection, bracing, supports, etc., building component and systems monitoring, including installation sequencing and performance requirements, and required mock ups;
8. 50% design intent brief;
9. Class C Cost Estimate; and
10. Updated critical path and milestone schedules for design activities.

5.3.2 90% Complete Construction Documentation

The Consultant must prepare each 90% complete construction tender package that will be fully coordinated and integrated and include specifications. This includes:

1. An updated Model with the design coordinated and clash detection identified and resolved;
2. Extensively detailed Drawings and specifications included with detailed performance requirements per specification sub-section and commissioning equipment coding identified;
3. Extensively detailed door, window, hardware, colour and other schedules, including textures, sheens, colour chips and material samples;
4. Quantities of each type of heritage material replacement and confirmation of supplier compatibility and availability;
5. Extensively detailed unit rate tables for materials;
6. Extensively completed Division 01 specifications;

7. Building code analysis sorted in the prescribed Ontario Association of Architects matrix and an equivalent matrix for the National Building Code. Where the OBC and the NBC differ, prepare a comparison table to highlight the differences; Finalize all code exemptions, including rationale, approval body, approved decisions;
8. Extensively detailed Drawings for all temporary protection, bracing, supports, etc., building component and systems monitoring, including installation sequencing and performance requirements, and required mock ups;
9. Class B Cost Estimate;
10. Updated critical path and milestone schedules for design activities; and
11. Updated waste audit and waste reduction work plan for inclusion with aligned specifications.

5.3.3 95% Complete Construction Documentation

The Consultant must prepare each 95% construction tender package that is fully coordinated and integrated Drawings, specifications and includes:

1. An updated Model with the design coordinated and clash detection identified and resolved;
2. Final signed and sealed original Drawings and specifications included with final performance requirements per specification sub-section and final commissioning equipment coding identified;
3. Final door, window, hardware, colour and other schedules, including textures, sheens, colour chips and material samples;
4. Quantities of each type of heritage material replacement and confirmation of supplier compatibility and availability;
5. Final unit rate tables for materials;
6. Final Division 01 specifications;
7. Final Drawings and specifications for all temporary protection, bracing, supports, etc., building component and systems monitoring, including installation sequencing and performance requirements, and required mock ups;
8. 95% complete design intent brief, detailing each building system; and operational criteria, performance requirements;
9. Update energy simulation estimated annual energy consumption for each utility as predicted;
10. Provide data, studies, detailed calculations, etc. that are fully indexed for final review and records for all disciplines;
11. Class A Cost Estimate; and
12. Updated critical path and milestone schedules for design activities.

5.3.4 100% Complete Construction Documentation

The 100% submission will be provided after the issuance of the last tender addendum.

RS 6 CONSTRUCTION TENDER

6. Tender Calls, Bid Evaluations & Contract Award

6.1 Tendering services

The Consultant's services include, but not limited to:

1. Preparation of pre-qualification requirements in collaboration with the DR and CM. Revise as required and submit to the DR for approval;
2. Attendance at the bidders' briefing meetings for pre-qualification construction;
3. Analyzing and responding to questions from municipal officials, or during the pre-qualification of suppliers or construction tender period or tender package tendering. Provide the DR and CM with responses within two (2) days of question, or as agreed by the DR;
4. Updating the Model and specifications based on bidder's questions. Provide the DR and CM with addenda inclusive of all information required by bidders to fully interpret the tender documents. CM will issue all addenda to all bidders;
5. Maintaining a record of all inquiries directed to DR and CM during the bidding period and submit the record to the DR and CM at the close of bidding for audit's records;
6. Assisting in the evaluation of tenders by providing advice on the following:
   - The completeness of the tender response in all respects;
   - The technical/design aspects of the tenders;
   - The effect and suitability of alternatives and qualifications that may have been included in the tender. Revise the Model as required to reflect any impact of accepted alternates or qualifications;
   - The tenderer's ability to undertake the scope of work;
   - The availability of adequate qualified labour, equipment and materials to do the work; and
   - Participate in the bid variation analysis between bids and the latest Class 'A' Cost Estimate;
7. Actively follow up with municipal officials, through the CM, until permits are obtained. Provide a summary of follow-up meetings with municipal officials regarding the status of building permit applications; and
8. Issuing a complete commissioning plan tailored for each construction tender package.

6.2 Pre-Qualification and Tender Documents

The Consultant must prepare a tendering report for each tender and submit to the CM and DR, to include, but not limited to:

1. A summary of the information required by the bidders to fully interpret the tender documents;

2. A summary of addenda issued based on questions arising out of the bidders briefing meetings and requests for clarification;
3. A summary of the cost with respect to the Class “A” estimate; and
4. A summary of the effect and suitability of alternatives and qualifications that may have been included in the tender.

6.3 Retender as required

The Consultant must:

1. As required and approved by the DR, redesign and reissue construction tender package(s), updating the Model and specifications as necessary to bring the cost within the stipulated limits; and
2. If required, in coordination with the CM, prepare and submit a detailed narrative of the implications for BCC Component retendering, including cost impacts and the risk implications and proposed mitigations.

6.4 100% Construction Documents Issued for Construction

The Consultant must, in collaboration with relevant disciplines, the CM and the DR:

1. Prepare and update construction tender packages to include all revisions resulting from the addenda issued during the tender period;
2. Confirm in writing to the CM and DR that all addenda have been integrated into the tender documents to be issued for construction, that the Model is fully updated and coordinated with all component and system clashes resolved, and that the updated specifications reflect all addenda; and
3. Sign and seal all “Issued for Construction” documents (Drawings and specifications) within five (5) days of the issuance of the last addendum. Provide one (1) reproducible copy of the complete construction tender package.

6.5 BCC Components

The Consultant must update the BCM and the Model with the final make, model, and description of all awarded Building Components within 10 working days of contract award.

RS7 CONSTRUCTION AND CONTRACT ADMINISTRATION

7. Construction and Contract Administration

7.1 Intent

The intent of this phase is to implement the project in accordance with the Contract Documents and to direct and monitor all necessary or requested changes to the scope of work during construction, commissioning and closeout. The Consultant must work in the spirit of information sharing with PWGSC. All material specifications, mixes and test results must be turned over to PWGSC for future maintenance purposes. The following services are required for each construction phase, and for each tender package.

7.2 Design Services

7.2.1 General

The Consultant must:

1. Coordinate all services of specialists and sub-consultant's disciplines as applicable, and advise and consult with the DR;
2. Prepare a communications protocol in consultation with the DR. Issue to Project Team after receiving DR approval;
3. Update detailed, critical path and milestone project schedules;
4. Update sustainability documentation to reflect changes which occur during construction, ensuring necessary waste management training session is delivered and waste diversion reporting is completed; and
5. Revise and update the Consultant work plan provided as part of the Consultant's Proposal in response to this Request for Proposal. The updated work plan must reflect the detailed Services required to the completion of the project. Indicate which member of the Consultant Team is performing which Service, when and at what frequency. Submit to DR for approval. The updated work plan will be the control document to manage and monitor the Consultant's Services throughout the demolition, construction, commissioning and warranty phases of the project. If necessary, revise the work plan during the construction and commissioning phases.

7.2.2 Site Visits

The Consultant must:

1. Conduct weekly construction inspection services ensuring that the architect of record and sub- consultants and specialist's disciplines as applicable are in attendance. Ensure compliance with contract documents;
2. Establish a written understanding with contractors as to what phases or aspect of the work are to be inspected prior to being covered up;
3. Assess quality of work and identify in writing to the CM and the DR, all defects and

deficiencies observed at the time of such inspections;

4. Inspect materials and prefabricated assemblies and components at their source or assembly plant, as necessary for the progress of the project; and
5. Issue in writing, to PWGSC, any directions, clarifications or deficiency lists.

7.2.3 Construction Meetings

The Consultant must:

1. Immediately after award of each construction package, arrange and participate in a construction briefing meeting with the successful construction sub-trade, the CM, and the DR. Ensure participation from all pertinent specialist sub-consultant disciplines;
2. The CM will prepare minutes of construction briefing meetings and distribute copies to all participants and to other persons agreed upon with the DR; and
3. Participate in weekly construction progress meetings, commencing with the construction briefing meeting. The meetings will be chaired by the CM, and will typically include the main sub-contractors, the Consultant and its specialist sub-consultant disciplines, the DR, and various other PWGSC representatives. The DR may invite Users and other project Stakeholders to attend any of these meetings as necessary. Minutes of these meetings will be prepared and distributed by the CM.

7.2.4 On-Site Interference Meetings

The Consultant, including the lead architect, lead mechanical designer, lead electrical designer and other sub-consultants as and when required, must participate in twice weekly on-site meetings with the CM and key sub-trades, at or near the commencement of construction, to resolve construction interference problems. IT/MM/ISS related interference problems must be incorporated as part of this coordinated and integrated on-site construction solution. The Consultant Team must issue Site Instructions and, if required Contemplated Change Notices, to the CM to immediately resolve interference issues and facilitate the construction process.

7.2.5 Project Schedule

The Consultant must:

1. Monitor the CM's construction schedule, take necessary steps to ensure the schedule is maintained, and submit a detailed report to the DR concerning activities that are at risk of being delayed. Submit correspondence to the DR demonstrating that a detailed review of the schedule has been completed;
2. Keep accurate records of causes of construction delays on site, as well as the actual amount of construction personnel and equipment down time resulting from delays, and submit to DR as they occur;
3. Make every effort to assist the CM in avoiding delays; and
4. Ensure the CM's detailed Commissioning Schedule is updated before the start of the Commissioning Phase of the project. Routinely monitor and assist in updating this schedule

throughout the commissioning of the work.

7.2.6 Contract Documents

The Consultant must:

1. Carry out reviews of the work, to determine if the work is in conformity with the Contract Documents. Submit deficiency reports on a bi-weekly basis;
2. Interpret the requirements of the Contract Documents and make findings as to the performance by the sub-contractors;
3. Meet with the CM and construction sub-trades, as required, to clarify potential ambiguities in the Construction Documents. Requests for Information (RFI's) identified as critical to the project schedule must be responded to promptly and with priority;
4. Render interpretation, in writing and graphic form, as may be required, with reasonable promptness on the written request of either the DR, or the CM. A maximum of five (5) working days will be tolerated for Consultant response to CM RFI's;
5. Render written findings, within a reasonable time, on all claims, disputes and other matters in question between PWGSC and the CM relating to the execution or performance of the work or the interpretation of the Contract Documents; and
6. Render interpretation and findings consistent with the intent of and reasonably inferable from the Contract Documents. Provide two (2) updates to each construction document issuance "Issued for construction" (plans and specifications) incorporate all change orders in outline. Timing of each update must be determined in coordination with DR and CM.

7.2.7 Inspection

The Consultant must:

1. Reject work which does not conform to the Contract Documents and whenever in the Consultant's opinion, it is necessary or advisable for the implementation of the intent of the Contract Documents, require special inspection or testing of work, whether or not such work has been fabricated installed or completed; and
2. Order minor adjustments in the construction work which are consistent with the intent of the Contract Documents, when these do not involve an adjustment in the construction contract prices and or an extension of the construction contract durations.

7.2.8 Supplemental Instructions

The Consultant must:

1. Furnish supplemental instructions to the sub-contractors, with reasonable promptness, or in accordance with a schedule for such instructions agreed to by the DR and the CM;
2. Keep the DR informed of the progress and quality of the work and report any defects or deficiencies in the work observed during the course of the site review; and
3. Determine the amounts owing to the CM based on the progress of the work and certify

payments to the CM.

7.2.9 Change Control

The Consultant does not have authority to change the work or the price of any Contract(s). The Consultant must:

1. Obtain the approval of the DR for any changes which affect cost or design concept;
2. Upon the DR's approval, obtain quotations from the CM in detail. Review prices and promptly forward recommendations to the DR;
3. Detail all changes with Change Orders (CO), including those not affecting the cost of the project;
4. Utilize an existing PWGSC change control process for scope change. Identify and track type of change as one of: Site Condition, User Requested, Design Condition on each submitted Contemplated Change Notice (CCN). DR may disagree with the chosen type of change and has the option to advise that a change may be a different type than that chosen by the Consultant;
5. Prepare Contemplated Change Notices (CCN) and Change Orders (CO), verify quantities, and provide justification for approval and signature by the DR in accordance with the Contract Documents. An estimate for each submitted CCN must be provided by the Consultant;
6. Advise the DR of all potential changes to scope for the duration of the implementation;
7. Assess/analyze time impact of all proposed changes, advise the DR of impact analysis including all potential delays;
8. Provide cost planning and estimating advice during construction;
9. When a CCN is to be issued based on unit prices, keep accurate account of the work, recording dimensions and quantities;
10. Indicate any changes or material/equipment substitutions on Record Documents; and
11. Review the Contractor's submittals within five (5) working days; prioritize review and processing to ensure the project schedule is maintained;

7.2.10 Commissioning

The Consultant must:

1. Prepare performance testing requirements for each system/integrate system and indicate expected results for each system and integrated system test;
2. Ensure compliance with Commissioning Plan for each phase of occupancy/completion, update plan as necessary;
3. Ensure continued review and witnessing of all activities related to the commissioning process;

4. Participate in the processes for systems and integrated systems (life safety compliance) testing, at each stage of occupancy; and
5. Ensure Commissioning the Facility requirements are delivered.

7.2.11 Project Close Out

The Consultant must:

1. Prepare Certificates of Substantial Performance and Certificates of Completion;
2. Collect the written warranties and related documents from the CM and forward to DR for review;
3. During the 12-month warranty period, investigate all defects and alleged defects and issue instructions to the CM. Participate in two (2) formal building walkthroughs and provide reports for each visit;
4. Update training plan and complete commissioning processes;
5. Prepare and provide to the DR and the CM all Systems Operating Instructions (name plate instructions);
6. Finalize Systems Operations Manual and User O&M Manual to 100% status, reflecting as-commissioned operation of all building systems; and
7. Conduct a final warranty review with all applicable Consultant members, PWGSC representatives and sub-contractors. Issue instructions to the subcontractors as may be required. Follow up as required. Complete a narrative report and submit to the DR.

7.2.12 Shop Drawings

The Consultant must:

1. Review sub-contractor submittals including shop drawings, product data, and samples, within five (5) working days from receipt, for conformance with the general design concept of the work as provided in the Contract Documents. Prioritize reviews of submission to expedite construction;
2. Provide a list of all shop drawings, samples and product data to be submitted by the subcontractors;
3. Verify that shop drawings include the project number and are recorded in sequence;
4. Establish and implement a shop drawing handling/distribution protocol acceptable to the Project Team. Verify the number of copies of shop drawings required. Consider additional copies for User review;
5. Shop drawings must be stamped: “Checked and Certified Correct for Construction” by the sub-contractors and stamped: “reviewed” by the Consultant before return to the sub-contractors; and
6. All equipment must be CSA approved, or CSA equivalent. In the case of equivalency,

provide letters of approval for use in Canada.

7.2.13 Inspection and Testing

The Consultant must:

1. Provide the DR with specified and recommended list of tests to be undertaken, including on site and factory testing;
2. Ensure all testing is detailed within the Commissioning Plan;
3. Once the contract is awarded, assist DR in briefing testing firm on required services, distribution of reports, communication lines, etc.;
4. Participate on-site at all testing. Certify results in accordance with design and operational intent. Review all test reports and take necessary action with the CM when work fails to comply with contract;
5. Immediately notify the DR when tests fail to meet project requirements and when corrective work will affect schedule; and
6. Assist the DR in evaluating testing firm's invoices for services performed.

7.2.14 Construction Manager’s Progress Claims

The Consultant must:

1. Review CM monthly progress claim request in detail. Submit to CM, copying DR, all concerns with the claimed levels of completion. Discuss with CM and come to agreement on any items of disagreement;
2. Verify at each progress payment that sub-contractors have accurately recorded information on the site as-built set of Contract Documents;
3. The claims are made by completing the following forms where applicable:
   - Request for Progress Payment; and
   - Cost Breakdown Statutory Declaration Progress Claim;
4. Review and sign designated forms and promptly forward claims to the DR for processing;
5. Submit with each progress claim:
   - Updated schedule of the progress of the work; and
   - Detailed photographs of the progress of the work.

7.2.15 Materials on Site

1. The CM and their sub-contractors may claim for payment of material on site, but not yet incorporated in work;
2. Material must be stored in a secure place designated by the DR;
3. The Consultant must check and verify a detailed list of materials with supplier's invoice

showing price of each item which must accompany a claim;

4. Items must be listed separately on progress payment forms after the breakdown list and total; and
5. As material is incorporated in the work, the cost of this material must be added to the appropriate breakdown list and removed from the material list.

7.2.16 BCC Components Delivery and Installation

The Consultant must:

1. Coordinate the delivery and installation of BCC Components in consultation with all suppliers and the CM. Final delivery dates to be confirmed with the DR;
2. Have representatives on-site during the delivery of BCC Components to accept and confirm delivery of appropriate product, and acquire all packing slips;
3. Confirm that all quantities of all BCC Components have been delivered. Consultant to prepare a deficiency list of all damaged or missing items;
4. Oversee installation/set-up of BCC Components by supplier; and
5. Provide deficiency list to the DR for each floor or area of BCC Components completed.

7.2.17 Acceptance Board

The Consultant must inform the DR and the PWGSC Commissioning Manager, once satisfied, that the project is substantially completed. The Consultant, CM, and major sub-trades representatives must form part of the Project Acceptance Board and attend all meetings as organized by the DR.

7.2.18 Interim Inspection

1. The Acceptance Board must inspect the work and list all unacceptable and incomplete work on a designated form. The Board shall accept work from the sub-contractor’s subject to the deficiencies and uncompleted work listed and priced;
2. The sub-contractors must provide a work plan of actions and schedule to correct all deficiencies; and
3. The Consultant must coordinate with the DR to monitor, inspect and report on the progress of deficiencies corrections.

7.2.19 Substantial Completion

The DR will formally issue the official Certificate of Substantial Performance forms (formerly called Interim Certificate of Completion) to the CM. It is anticipated that multiple "Partial" Certificates of Substantial Performance will be issued to reflect the phased project implementation approach.

The Consultant must:

1. Prior to the issuance of each Certificate of Substantial Performance, obtain as built marked-up drawings from the Construction Team. Provide a copy to the DR;

2. For payment, obtain the required completion and signing, by the parties concerned, of the following documents:
   - Certificate of Substantial Performance – PWGSC form 1796;
   - Statutory Declaration – PWGSC form 2835; and
   - Other submittals required to support the progress claim are:
     - Workman's Compensation Clearance Certificate;
     - Contractor's Invoice;
     - Cost Breakdown; and
     - Certificates or written approval from AHJs such as HRSDC, City of Ottawa, Electrical Safety Authority, TSSA, etc.;
3. Verify that all items are correctly stated and ensure that completed documents and any supporting documents are furnished to the DR for processing.

7.2.20 Building Occupation

PWGSC or the Users may occupy the building after the date of acceptance of the building by the Acceptance Board. The acceptance date is normally that of the Certificate of Substantial Performance issued to the subcontractors. As of the acceptance date, the sub-contractors may cancel the Contract Insurance, and PWGSC or the Users (as the case may be) assumes responsibility for:

1. Security of the work(s);
2. Fuel and utility charges;
3. Proper operation and use of equipment installed in the project;
4. General maintenance and cleaning of the work(s); and
5. Maintenance of the site (except any landscaping maintenance covered by the contract).

7.2.21 Take-over

The official take-over of the project or parts of the project, from the CM is established by the PWGSC Project Management Team and the Users. The date of the Certificate of Substantial Performance signifies commencement of the 12-month warranty period for work completed on the date of each certificate in accordance with the General Conditions of the Contract.

The Consultant must:

1. Provide the DR and the PWGSC Commissioning Manager with original copies of sub-contractor warranties for all materials and work covered by an extended warranty or guarantee, according to the conditions of the specifications. Verify their completeness and extent of coverage.

7.2.22 Operation and Maintenance Data Manual

The Consultant must:

1. Provide four (4) sets of the Operation and Maintenance Data Manuals, each volume, produced by sub-contractors in accordance with the project specification and verified for completeness, relevance and format by the Consultant and submitted to the DR and the PWGSC Commissioning Manager prior to interim acceptance or actual start of operation and instruction period, whichever occurs sooner;
2. Prior to submission to the PWGSC Commissioning Manager, provide written comment in detail indicating the acceptability of all manuals. The sub-contractors shall retain one (1) copy of each volume for their record and use during the instruction period.

7.2.23 Training

The Consultant must:

1. Ensure all training is detailed within the Commissioning Plan;
2. Provide training sessions on design and operational intent, including, but not limited to HVAC, and electrical systems. Make arrangements and ensure that PWGSC Operations and Users are properly instructed on the operation of all services and systems using the final Systems Operations Manuals as reference; and
3. Participate and document content at every training session.

7.2.24 Keys

The Consultant must ensure that all keys and safe combinations are delivered to the DR.

7.2.25 Final Inspection

The Consultant must:

1. Inform the DR when satisfied that all work under the contract has been completed, including the deficiency items at all agreed completion points

PWGSC reconvenes the Acceptance Board which makes a final inspection of the Project. If everything is satisfactory the Board issues interim and final acceptance of the Project to the sub-contractors.

7.2.26 Final Completion

The official take-over of the Project is established by the official Certificate of Completion forms (formerly called Final Certificate of Completion). The DR will formally issue these forms to the CM.

The Consultant must:

1. Verify that all items are correctly stated and ensure that completed documents and any supporting documents are furnished to the DR for processing. The final payment requires completion and signing, by the parties concerned, of the following documents:

- Certificate of Completion (Final) – PWGSC form 1797;
- Statutory Declaration - PWGSC form 2835; and
- Submission of all Project submittals including, but not limited to reports, O&M manuals, as-built drawings;
- Other submittals required to support the progress claim are:
  - Contractor's Invoice;
  - Cost Breakdown;
  - Workmen's Compensation Clearance Certificate iv. ESA Certificate v. TSSA Certificates;
  - Hydro Certificate(s); and
  - Any other applicable certificates (i.e. Building Permits, Occupancy Permits, Notice of Project Closure, etc.).

7.2.27 As-Built and Record Drawings and As-Built Specifications

As the Project, will have multiple tender sets under the CM model for each construction tender document package, the Consultant must:

1. Check and verify sub-contractor as-built records for completeness and accuracy;
2. Obtain from the sub-contractors all modification/updates to as-built records from Substantial Completion to Final Completion;
3. Show deviations in construction from the original Contract Documents including changes resulting from Change Orders or from Site Instructions;
4. Indicate maintenance management system (MMS) numbers for each piece of mechanical and electrical equipment on each drawing;
5. Produce Record Drawings and specifications, incorporating final as-built information into project drawings;
6. Provide a complete set of final shop drawings in hard copy and electronic format; and
7. Submit a comprehensive consolidated final package of Record Drawings and As-Built Specifications within 12 weeks of issuance of the Certificate of Completion.

7.3 Deliverables

The Consultant must prepare and consolidate the following information:

1. Written reports from site visits including persons involved;
2. Monthly written reports on the progress of the work and cost of construction, including updated as-built records;
3. Cost and scheduling reports with updates at the end of each month;

4. Additional detail drawings when required to clarify, interpret or supplement the Construction Documents;
5. Written Site Instructions;
6. Copies of reviewed shop drawings and of reviewed drawings from furniture/equipment suppliers;
7. Update the “Issued for construction plans and specifications;
8. Acoustical performance assessment report;
9. Certificates of Substantial Performance and Certificates of Completion including respective reviews and acceptances;
10. Final Area Measurement / Space Usage Report;
11. Debrief of Commissioning activities outlining the commissioning process, major activities, and lessons learned from this project;
12. Finalize the Systems Operation Manual and Users O&M Manual to reflect as commissioned operation and maintenance of each building system;
13. Training summary;
14. List of Spare Parts;
15. Certified and dated Performance Verification (PV) results;
16. As-built drawings and as-built specifications based on the as-built marked up drawings obtained from sub-contractors;
17. Other Management Manuals as required including Standard Operating Procedures Manual as per the Canada Labour Code Part 2;
18. Sustainability performance assessment rating (i.e. Green Globes) documentation (including verification submissions) and final certification;
19. Warranty deficiency list;
20. Final Warranty Review and Report; and
21. Post-Construction Evaluation.

RS 8 COMMISSIONING

8. Commissioning the Facility

8.1 Intent

As a member of the PWGSC team, the PWGSC Commissioning Manager, represents the Owner's and User's interests, and is responsible for overseeing all commissioning activities during the development, implementation and post construction phases of the project.

Throughout this Phase, the Consultant must work closely with the PWGSC Commissioning Manager, CM, and the various sub-contractors to implement commissioning activities and create useful, well integrated drawings, reports and manuals, in compliance with Contract Documents.

8.2 Design Services

The Consultant must:

1. Review and provide complete documentation on the Operation and Maintenance (O&M) requirements for the new facility;
2. Prepare Systems Operations Manual (SOM) and Preventative Maintenance Support System (PMSS)/ Maintenance Management System (MMS) documentation;
3. Advise on O&M requirements for the new facility, including staffing, service contracts, training requirements, spare parts and special equipment;
4. Prepare contents of O&M Manuals SOM and Users O&M manual in accordance with the PWGSC Project Commissioning Manual current edition;
5. Carry out various checks and tests to determine if the new facilities function is in accordance with the contract documents;
6. Identify CM and sub-contractor commissioning, Performance Verification (PV) and testing responsibilities including Seasonal Commissioning requirements;
7. Plan the PV activities, develop the installation checklists and PV report forms, and prepare a detailed verification schedule. PV tests will be performed by the CM, witnessed and certified by Consultant. Maintain detailed development reports and review with the CM for special systems such as EMCS; and
8. Complete PV inspection forms for all components, sub-systems, and systems and a final PV report will be submitted to the PWGSC Commissioning Manager.

8.2.1 Design Development

8.2.1.1 O&M (General)

The Consultant must:

1. Submit an O&M report showing how the design will meet O&M requirements including the following subjects;
   - Spatial requirements for O&M staff (office, lockers, kitchen, showers, washrooms, flow of people and supplies, storage for special tools, spare parts, and maintenance materials;
   - Cleaning (janitor closets, receptacle for vacuum, equipment supply and storage);
   - Capacity of the facility to change in response to program changes over its life expectancy;
   - Spare equipment, extra material and redundancies needed to operate and maintain this facility over its life expectancy;
   - System selection based on life cycle cost analysis considering energy, maintenance and operational cost; and
   - "Phased" construction program;
2. Assist the PWGSC Commissioning Manager in preparation of a preliminary O&M budget. The O&M budget will contain detailed breakdown of various items with the assessment of the systems selection;
3. Provide an assessment of;
   - Staffing & skill requirements to operate and maintain the facility;
   - The need for service contracts, i.e. elevators, water treatment, controls emergency generators, fire alarm, security, etc.: and
4. Input into the Building Management Plan information regarding operational management requirements.

8.2.1.2 O&M Manuals and Systems Operations Manual (SOM)

The Consultant must complete design intent and prepare SOM. Submit at the end of the design development stage. Provide review comments and conditions for accepting preliminary O&M Manuals.

8.2.1.3 Commissioning Plan

Submit a preliminary commissioning plan to the DR for review and approval.

8.2.2 Construction Documents & Tendering

8.2.2.1 O&M (General)

The Consultant must:

1. In consultation with the PWGSC Commissioning Manager, continue the assessment which started during the design phase with respect to O&M concerns including staffing,

redundancies, spare equipment and extra material, service contracts, preventative maintenance and equipment identification, O&M facilities and the O&M budget. Ensure all review comments provided by the PWGSC Commissioning Manager are addressed;

2. Incorporate design and performance intent in the Construction Documents and identify anticipated performance outputs in PV forms; and
3. Identify CM and subcontractor commissioning, PV and testing responsibilities.

8.2.2.2 Standard Operating Procedures Manual

The Consultant must:

1. Provide all design and operational intent, sequence of operation, etc., for the SOM;
2. Provide emergency start-up/operations/shut-down procedures;
3. Provide Single Line Diagrams of all systems;
4. Provide PMSS/MMS inventory lists and Valve Schedules;
5. Provide Service Contract lists; and
6. Provide Shop Drawing lists.

8.2.2.3 Commissioning Specification

The Consultant must:

1. Use PWGSC disciplinary master specification for commissioning as the basis for the Project specifications for commissioning. Complete design information required in the PV report forms;
2. Specify detailed PV procedures and output, documents, scheduling and reporting requirements within each relevant specification subsection;
3. Identify and include in specification all tests to be conducted at manufacturer's plants, on site during construction, installation, commissioning on site and during the operation phase; and
4. Develop training package for O&M personnel and include in specification as required.

8.2.2.4 "PMSS/MMS" Specification

The Consultant must use the PWGSC Master Specification for the identification of equipment and inventory in conjunction with the PMSS/MMS. Provide PMSS/MMS coding and system nomenclature on tender documents. Coordinate with existing building equipment inventories.

8.2.2.5 Submission Requirements

The Consultant must:

1. Submit the commissioning plan at the end of the design phase and updated and resubmit at the end of each stage of the construction documents. The Consultant and the PWGSC Commissioning Manager must work together to update the Commissioning Plan;

2. Submit the commissioning specifications at the end of the 50% construction drawings stage and are updated and resubmitted at each subsequent stage of the construction documents;
3. Submit the SOM at the end of the 50% construction drawings stage, and is updated and resubmitted during subsequent phases of the construction documents; and
4. Respond to all PWGSC comments in writing at each stage.

8.2.3 Construction / Installation

8.2.3.1 O&M (General)

The Consultant must:

1. Assemble, review and approve all commissioning documentation, including check lists, PV report forms, PV procedures, instruments to be used, and instrument calibration, and incorporate relevant data from reviewed shop drawings and installed component data, three (3) months before the project substantial completion;
2. Assemble all certified tests results and incorporate into the O&M manuals which mean herein, Systems Operations Manual and Users O&M Manual;
3. Review the selected test instruments which are to be calibrated less than three (3) months prior to substantial completion;
4. In consultation with the various sub-contractors, select the commissioning test instruments;
5. Review CM and sub-contractor compliance with the contract documents;
6. Witness and certify tests conducted before concealment and start up;
7. Verify that each system is completed, safe to operate and ready for start-up; and
8. Ensure that all deficiencies are rectified and acknowledge that the installation of components and systems are ready for the commissioning phase.

8.2.3.2 Manuals

The Consultant must:

1. Revise the O&M manuals as construction progresses, ensuring that it reflects the installed systems;
2. Review for acceptance the sub-contractors' O&M Manuals; and
3. After their own review and acceptance, submit all manuals O&M manuals to the PWGSC Commissioning Manager for review and comment. Manuals must be in accordance with the PWGSC Commissioning Manual, current edition. Standard Operating Procedure as per Canada Labour Code Part 2.

8.2.3.3 Training

The Consultant must:

1. Co-operate with the PWGSC Commissioning Manager in making necessary arrangements for site O&M staff familiarization;
2. Prepare training material in accordance with this RFP and the approved Commissioning Plan; and
3. Document all training sessions.

8.2.4 Commissioning Phase

8.2.4.1 General

The Consultant must submit a list of the technical staff required to conduct all performance and verification tests for approval by the PWGSC Commissioning Manager prior to beginning testing and verification.

8.2.4.2 Manuals

The Consultant must review the 100% O&M Manuals and submit comments to the PWGSC Commissioning Manager. Manuals are to be in accordance with all modifications to the project.

8.2.4.3 Spare Parts

The Consultant must finalize the delivery of all the spare parts requirements through the project and assist the PWGSC Commissioning Manager in the definition of additional parts not listed in the Construction Documents.

8.2.4.4 Performance Verification

The Consultant must;

1. Witness that the components, sub-systems and systems are tested in accordance with the provisions of the Contract Documents and ensure all systems meet design intent. Include testing of BCC equipment that is interconnected to, and that impacts, the operation of the base building, and certify same, including testing during off-hours;
2. Witness that systems and integrated systems testing (life safety compliance testing) at partial occupancy and again at final occupancy and certify same, including testing during off-hours;
3. Report in writing to the DR and to the PWGSC Commissioning Manager indicating compliance or anomalies regarding witnessed events. The Consultant is to investigate and recommend in writing any corrective actions to be taken to facilitate compliance with design intent and design criteria;
4. Provide solutions during the PV process with respect to the variances from the design parameters;

5. In consultation with the PWGSC Commissioning Manager, and the DR, recommend take-over of the facility, after successful completion of the life safety compliance testing, subject to outstanding deficiencies or deferred tests during the operational phase; and

NOTE: Start-up and Test and Balancing (TAB) are construction activities and do not form part of the Commissioning Phase.

6. Instruct the CM to correct all the deficiencies identified and recorded during the PV and adjust or alter the systems to achieve the design parameters. Retest as required.

8.2.4.5 Training

The Consultant must coordinate the training of O&M personnel and conduct training sessions.

8.2.4.6 Documentation

The Consultant must:

1. Review all PMSS/MMS nomenclature, devices and submissions prepared by the CM and by the various sub-contractors. Ensure on site implementation and tagging of PMSS/MMS;
2. Draft the Technical Maintenance Manual (TMM); provide all required information for the proper maintenance of the heritage masonry and all building envelope elements; and
3. Prior to Interim Inspection, debrief the DR and the PWGSC Commissioning Manager on the commissioning process including training, problems; required changes to systems (with costs) which are outside the sub-contractor's responsibility, but which are deemed necessary to meet project requirements; commissioning procedures and other information, experiences and suggestions for future projects. Submit a report to the PWGSC Commissioning Manager. Repeat this process when 80% occupancy is achieved.

8.2.5 Post-Construction (Operation)

The Consultant must:

1. Make recommended revisions to documentation to reflect all changes, modifications, revisions and adjustments as finally set upon completion of commissioning;
2. In conjunction with the PWGSC Commissioning Manager, develop an occupant's comments/complaints audit system for the facility. O&M Supervisor to track problems that occur during the Operational Phase of the project. Prepare and conduct occupant surveys every two (2) months. Tabulate results; advise the DR and the PWGSC Commissioning Managers and implement corrective measures as required;
3. Witness completion of Performance Verification and review reports;
4. Monitor environmental and life safety system checks which must be carried out by the sub-contractors or O&M staff prior to the expiration of warranties;
5. Participate in warranty inspections with PWGSC Commissioning Manager, Operations Staff and sub-contractors. Prepare and submit detailed inspection reports within (5) days of inspection;

6. Identify and monitor all deficiencies to be rectified by the sub-contractors prior to the expiration of warranties;
7. Finalize the TMM manual;
8. Submit Project Archives to the DR and to the PWGSC Commissioning Manager, Operations staff and sub-contractors. Prepare and submit detailed inspection reports within five (5) days of inspection; and
9. Participate in lessons learned workshops with PWGSC and User representatives.

8.2.6 Post Construction (Evaluation)

The Consultant must prepare a final written debriefing report for the DR and the PWGSC Commissioning Manager reviewing the Commissioning Process discussing the following:

1. What component and or systems, if any, that were not commissioned - and why;
2. Lessons learned: What could have been done better;
3. A remedial work plan outlining prudent follow-up actions or projects by PWGSC. Include scope, estimated costs and duration per follow-up item; and
4. Any other Related information.

This report must be delivered 12 weeks after the final occupancy is achieved and must be updated after the 11-month warrantee inspection and reissued.

8.2.7 Design Intent Brief (Building Management Manual)

8.2.7.1 Objectives

The Design Intent Brief is intended to provide:

- A narrative description of the project's conceptual framework; and
- A record of and rationale for decisions made throughout the project.

The Design Intent Brief represents the Consultant's point of view. It will be produced initially at the Design Development phase and subsequently updated and submitted at the end of each subsequent project delivery phase (Construction Documents and Construction and Contract Administration).

1. This Brief will serve as a "Building Management Manual" and must be oriented towards the Owner/Investor.
2. The Design Intent Brief must be well organized in terms of text and graphics to facilitate future use as a building reference document.
3. The final version of the Design Intent Brief produced at the end of the Construction and Contract Administration phase will form part of the final submission package including the Record Drawings and Contractor's Operation and Maintenance (O&M) Manual. Reference may be made in the Design Intent Brief to these other packages.

8.2.7.2 General

The Consultant must prepare the Design Intent Brief. The Brief is a design document that outlines the design intent of the project and explains the purpose of the facilities and what they are meant to do.

The Brief must contain a design description of each facilities system; including structural, mechanical, electrical, civil, fire protection communication systems, public paging system, security system and sub-basement service tunnel systems.

The Design Intent Brief explains not only “what’ a system and/or components do, but “why” the system or the components are being selected and, in general terms, “how” the design and operating concepts of the systems and integrated systems will be accomplished.

The Design Intent Brief differs from the traditional Contractor’s Operations and Maintenance (O&M) Manual in that the O&M Manual identifies the materials and components used in a project without explaining the design intent. The O&M Manual details the materials, components, maintenance of the components, spare parts for the components, operation and performance of the components based on both the manufacturer’s stated performance criteria and the actual, operational performance of the final installation. The traditional Contractor’s O&M Manual identifies “what” component or system has been chosen, not “why” it has been chosen.

General requirements for all facilities systems, including ALL interconnected or ancillary systems must include, but are not limited to:

1. A narrative description of the system or component;
2. The purpose of the system or component;
3. Options and analysis that were considered (concept phase only);
4. The design intent;
5. Sustainable features and strategies and resulting implications for building performance and user (what changes for occupants) lessons learned and final certification awarded;
6. The design criteria and the applicable code/standard that was used, including load calculations for each discipline;
7. The area served by the system or component and, as applicable, all connected or related loads and system capacities;
8. Any special features or unique supply items/sources, general control strategies, sequences, and reset schedules;
9. Seasonal switch-over procedures;
10. Emergency procedures during a fire condition, power or equipment failure;
11. Reduced simplified plans illustrating system configurations, including single line and plan drawings of each system;

12. Interfaces with existing systems; and
13. All design assumptions.

Also include, as required:

1. Anticipated future changes not included in the project;
2. Any special maintenance issues; and
3. Any requirements for ongoing monitoring for geotechnical conditions or ground behaviour.

8.2.7.3 Production and Delivery

The format of the Design Intent Brief must:

1. Be professionally presented in a D-ring binder with 216 mm x 280 mm quality bond paper, complete with drawings and/or plans;
2. Contain a detailed index and dividers for all sections. The index must also include a complete detailed reference (sub-index) of the Contractor's O&M Manuals to describe where other related operations and maintenance information is located;
3. Contain a complete listing of names, addresses, telephone, and facsimile numbers of all firms, designers, and related agents who participated in the design and delivery of the project;

8.2.7.4 Interim Submission Requirements:

Unless otherwise indicated, the Consultant must:

1. Submit two (2) copies of the Design Intent Brief with each interim submission. Include the Sub-basement service tunnel system included in this Project and its purpose, outline control strategies and operation, relationships to connected systems, initial code analysis, and all design assumptions to date;
2. Submit in draft format at the Design Development and 50% Construction Documents;

Note that this is an evolving document and only an overview is required at these submissions.

3. Update and submit for review at 95% Construction Documents submission. The Brief should be essentially in its final format regarding its structure and organization, such that subsequent submissions need only add missing information.

Note that the Design Intent Brief should be 90% complete when the construction documents are tender ready.

8.2.7.4.1 Final Submission

Final Submission requirements the Consultant must submit are:

1. Submit the 99% complete Design Intent Brief to the DR for review towards the end of the Construction and Contract Administration phase, at Interim

Completion. Incorporate all comments and resubmit the Design Intent Brief as required;

2. Within 12 weeks of issuance of the substantial Certificate of Completion, but prior to issuance of the Final Certificate of Completion, Submit final, 100% complete Design Intent Brief with submission of Record Drawings and O&M Manual as one (1) submission package. In addition to the contract submission requirements, provide three (3) additional electronic copies; and
3. Give an overview presentation of the Design Intent to the Contractor/Supplier and Project Team at the initial stage of construction.

8.2.7.5 Training

Towards the end of the Construction and Contract Administration phase, the Consultant will present the Design Intent Brief as a training session for Facility Management and Operations staff.

The Consultant must prepare a training course outline and submit it to the DR for review and comment at least two (2) weeks prior to the proposed training dates. Update and resubmit as required. Include an agenda and a course outline summarizing the content and duration of training. The training provided must clearly relay:

1. An understanding of the intent of the design;
2. Limitations of the systems; and
3. Reasons for the choice of systems.

The Consultant must coordinate the date(s) of the training session(s) with the DR. The DR will organize the location and provide the lists of participants.

The Consultant must prepare a summary of the training sessions. Indicate dates, subject matter, and all personnel present for training. After training, submit the training summary to the DR outlining the content of training and who participated at each session.

8.3 Deliverables

The Consultant must:

1. Provide written reports on the progress of the work and the cost of the project at the end of each month;
2. Prepare additional detail drawings when required to clarify, interpret or supplement the Construction Documents;
3. Prepare post contract drawings;
4. Provide interim and/or final certificates;
5. Prepare commissioning requirements:
   - Design Intent Brief;

- Training summary;
- Spare Parts;
- Certified and dated PV results;
- As-Built, Record Drawings and Specifications reflecting the built works o Debrief of Commissioning Activities; and
- Warranty deficiency list;

6. Prepare a waste diversion summary indicating the destination (reuse, recycling or landfill) and quantity (by weight or volume) of all waste materials removed from site;
7. Prepare a report on final warranty review; and
8. Update the Model to incorporate all as-built conditions.

RS 9 ESTIMATING AND COST PLANNING

9. Estimating and Cost Planning

It is critical to maintain the master cost plan within the approved budget. The process is continuous and interactive involving planning, action, measurement, evaluation and revision in a diverse multidisciplinary environment.

A fully qualified cost estimating, planning and control team, referred to herein as the Cost Specialist, with a demonstrated record of successful cost management on large construction projects, with a strong heritage component, is required. At least one (1) member of the Cost Specialist team must hold professional accreditation as a quantity surveyor. This Cost Specialist must be conversant with all aspects of construction cost estimating, including the use of Elemental Cost Analysis, Risk Analysis, Life Cycle Costing and Value Engineering / Management techniques.

The Consultant must maintain the Project designs within the approved construction budget, including any necessary re-design, at no additional cost to PWGSC. The Cost Specialist and the entire Consultant Team must co-operate and coordinate all cost information with PWGSC's Cost Consultant and respond to all questions from the Cost Consultant.

The Consultant will work closely with the CM and reconcile all estimates with the ones prepared independently by the CM.

9.1 Overview

9.1.1 PWGSC will:

1. Always be responsible for the overall master cost plan and will continually provide direction to the Consultant and the CM on all matters of Project scope to ensure the Project is maintained within the approved budget;
2. Retain an independent third party Cost Consultant (CC) who will act as PWGSC's strategic advisor on all cost matters The CC will review the project costs with the Consultant and CM and provide analysis thereof; and
3. Review all aspects of the cost estimates and the Consultant's assessment of the CM's construction estimates, or partial estimates, on a continuing basis.

9.1.2 The CM will:

1. Be responsible for cost planning, estimating and cost control for construction;
2. Be responsible to build to the approved construction budget, established or revised as the Project progresses by the DR;
3. Include continual analysis and reporting of the Consultant's design ideas and design submissions as well as the construction itself; and
4. Prepare and provide to the Project Team, a monthly status report and summary of opportunities to reduce cost and design pressures, risks, that will raise the construction budget. Cost opportunities and risks will be accompanied with a management plan to ensure

that maximum savings are realized and risks are mitigated.

9.1.3 The Consultant must:

1. Design to the approved construction and BCC budgets, established or revised, as the Project progresses, by the DR;
2. Consider the recommendations of the CM with respect to overall cost management;
3. Provide a Consultant's services contract cash flow, inclusive of all related disbursements based on the monthly CM schedule;
4. Be responsible for BCC Components cost planning and estimating; continually co-operate and coordinate all BCC Components cost information with CC and respond in writing to their questions;
5. Provide life cycle cost analysis for all BCC Components;
6. Provide risk analysis for the Project costs;
7. Provide input and comment on the overall construction cost plan and estimates, life cycle costing analysis and value engineering throughout the Project;
8. Attend all meetings and workshops, specifically:
   - Cost control workshops with the DR, the CM, and CC to provide input and comment on all aspects of the construction budget and BCC estimates and methodology of construction implementation and must play an active challenge role to test the validity of the construction estimate assumptions, inclusions and exclusions, ensuring the construction estimate reflects the progression of the design at the time of the workshop and future scope pressures as become evident through Project meetings and discussions;
   - Working sessions with CC to reconcile elemental cost differences within each estimate, identify gaps in the reconciliation, and prepare and submit to the DR and CC an action plan with a reasonable and agreed upon timeline to resolve the reconciliation gaps; and
   - Include during the design phases a combination of customized spreadsheet or tabular summaries for all building components and use, when applicable, the Canadian Institute of Quantity Surveyors (CIQS) elemental format and detailed breakdown.

In the event the CC or DR may identify areas of concern including areas of inadequate detail or areas that require further explanation, the Consultant must provide the required information and/or ample acceptable evidence that such corrections or amendments are unnecessary.

9.2 Services – Project Phase Specific Activities

9.2.1 Schematic Design

The Consultant must review, identify gaps, confirm understanding, report on and update the approved Class D construction estimate. Prepare a revised Class 'C' Cost Estimate, for all three (3) distinct and viable Schematic Design option proposals (minimum) presented to PWGSC for

review. All SD options are considered viable only if they respect the Project cost restraints.

The Consultant must prepare, for the approval of the DR, a customized spreadsheet or tabular summaries for all building construction and components and use, when applicable, the CIQS elemental format and detailed breakdown.

Throughout the SD Phase, the Consultant must provide oral and written feedback to the Project Team, CC and the DR on construction cost estimates and budget reduction opportunities and budget pressures and mitigation strategies, including the life cycle analysis of materials, components and systems. Actively participate in value engineering sessions to achieve the best design solution that remains within the overall construction estimate. As required, progressively modify the design as it progresses through SD to remain within the approved construction budget. The revised Class "C" Cost Estimate shall become the Construction Cost Plan.

9.2.2 Design Development

Midway through DD, the Consultant must prepare cost estimates for the 50% and the 100% submissions, and milestone reports issued, to ensure the project is maintaining the budget requirements. Upon completion of DD, the Consultant must prepare a Class ‘B’ Cost Estimate representing the increased level of design detail available, including BCC Component costs. The reports must be prepared using detailed (elemental) costs i.e. measured quantities with minimal allowances or lump sums. The Class ‘B’ Cost Estimates must be broken down in conformity with the tender packages. Upon final acceptance, the Class ‘B’ Cost Estimate shall become the updated Construction Cost Plan.

Throughout the DD process, provide oral and written feedback to the CM and the DR on the CM’s construction cost estimates and budget reduction opportunities and budget pressures and mitigation strategies, including the CM’s life cycle analysis of materials, components and systems. Actively participate in value engineering sessions with to achieve the best design solution that remains within the overall construction estimate. As required, progressively modify the design as it progresses through DD to remain within the approved construction budget.

9.2.3 Construction Documents

During the production of the Construction Documents, a process of continuous cost control that is progressively more detailed must be provided by the Consultant. With each submission of Construction Documents, an up-to-date estimate must demonstrate compliance with the Construction Cost Plan. Non-compliance with the Construction Cost Plan will require revisions to the Construction Documents at no cost to PWGSC.

During the production of each construction tender package, the Consultant must, provide oral and written feedback to the CM and the DR on the CM’s construction cost estimates and budget reduction opportunities and budget pressures and mitigation strategies. As required, progressively modify the design as it progresses through the elaboration of construction tender packages to remain within the approved construction budget.

9.2.3.1 Pre-Tender

Upon completion of the Construction Documents for each of the tender packages, the Consultant must prepare a pre-tender Class 'A' Cost Estimate using 100% measured quantities. Provide a trade breakdown of the pre-tender estimate for construction packages for use in reviewing the submitted bids and the CM's estimate breakdown.

9.2.3.2 Tender Phase Construction Tender Packages

The Consultant must review bids received, including alternative proposals, with CM and confirm in writing to the CM and the DR that the lowest compliant bid price includes all elements of the construction tender package and all addenda or that alternative proposals are compatible and viable.

9.2.3.3 Tender Award

During each of the tender periods, the Consultant must examine and report on any cost impact created by the issue of Tender Documents/addenda. Incorporate the results of such addenda review into the final pre-tender estimate (both elemental and trade formats) after the close of addenda but prior to receipt of bids.

9.2.3.4 Bid Review and Analysis

The Consultant must assist the DR, as required, by analyzing and reconciling any differences between the pre-tender estimates and the submitted bids.

9.2.3.5 Negotiation

Should it be necessary to negotiate with any bidder prior to awarding a construction contract, the Cost Specialist must provide cost information as needed and the Consultant must participate in the negotiations if requested.

9.2.3.6 Reconciliation

After contract award of trade contracts, the Consultant, if necessary, must reconcile both the elemental and trade estimates, in detail, with the agreed contract sum. The Consultant must use these reconciled estimates during the construction phase of the project.

9.2.3.7 BCC Components

The Consultant must provide the following Services:

1. Addenda cost review: For each tender, assess and advise the DR and, as required the CM, on any cost impact created by addenda;
2. Bid Review and Analysis: Assist the DR and, as required the CM, by analyzing and reconciling any differences between the pre-tender estimates and the submitted bids. Assess and make recommendations to the DR on proposed alternatives for compliance with the design intent; and
3. Negotiation partipation: Should it be necessary to negotiate with any bidder prior to awarding a BCC component contract, the Consultant must provide information as needed and

participate in the negotiations.

9.2.4 Construction Tender Packages

During construction, including BCC Connectivity, the Consultant must provide the DR and CM:

1. Evaluation of completeness of the CM's estimate for each Site Instruction that attracts cost, Contemplated Change Notice, and Change Order;
2. Evaluation from the Consultant's perspective of potential impact to the Project, cost, time scope, and risk, related to the Site Instruction, Contemplated Change Notice, and Change Order;
3. Evaluation from the Consultant's perspective of potential claims; and
4. Evaluation of work completed monthly for the CM's quantitative and qualitative analysis.

Confirm to the DR that requests for progress billing is complete and only reflect the work that has progressed to the date of the billing.

9.2.5 Risk Management and Post-Construction Phase

The Consultant must provide a debriefing report on all cost related matters, including, from a cost perspective, lessons learned. Provide input to the CM's lessons learned related to the construction.

9.2.6 Techniques

The Consultant must make use of a broad range of cost techniques, including:

1. **Risk Analysis**: All estimates must include and identify design, construction, BCC Components inflation escalation and currency exchange allowances as are deemed necessary. The Consultant must provide a satisfactory explanation of the level and / or amount of all such sums included within any estimate;
2. **Continuing Estimate Process**: A process of continual adjustment of previous estimates may be used in place of total counting at each milestone reporting point. This is acceptable, provided that, the Consultant provide a full and up-to-date elemental summary, including BCC Components, and that at each milestone reporting point this elemental summary is supported by complete, detailed, standalone back-up/support documentation, as previously described;
3. **Project Research:** The Consultant must visit the construction site to become familiar with the site conditions site access etc., be familiar with supply market, bidding practices and competition to establish pricing levels including BCC Components. A written report detailing each reconnaissance activity is required;
4. **Value Engineering/Management**: PWGSC will hold value engineering workshops throughout the Project design. The Consultant must participate in the value engineering workshops and answer design questions and provide design information in order to arrive at the optimal design solutions that balance cost, time, scope and objectives of the Project; and

5. **Life Cycle Costing (LCC):** Life cycle costing will be undertaken as part of the CM's mandate. The Consultant must actively participate in LCC analysis providing the CM and the DR with building element (components, materials, etc.) and systems information, based on their own experience and industry information.

9.3 Deliverables

Submit to the DR monthly:

9.3.1 Cash Flow Projections

The CM will provide scheduling data on a monthly basis to the Consultant to support the Consultant's development and monthly updating of:

1. The BCC components cash flow for the Project and as a separate volume; and
2. The Consultant's services contract cash flow, inclusive of all fees and related disbursements in detail for the upcoming month, quarter, PWGSC fiscal year end, and annually to Project Completion. Forecast with an accuracy of +/- 3% by November 30th each year the expenditures projected to March 31 the following year. Include a narrative of all inclusions, exclusions and assumptions.

9.3.2 CM Construction Estimates

The Consultant must document the input to and comment on all elements of the CM's construction estimates, or partial estimates in a report format.

9.3.3 Progress Monitoring and Reporting

The Consultant must provide progress monitoring and reporting to include Elemental Summaries, supported by all backup work sheets, clearly detailing the process used in preparing the estimate. The detailed work sheets must be the prime basis on which estimates shall be reviewed by PWGSC. Cost comparisons and cost reports identifying and explaining the differences between each succeeding cost estimate and their cost effect are also required. Escalation and contingencies are to be identified separately from the raw components cost.

In addition, the Consultant must fully coordinate all estimates with schedules, providing detailed cash flows, inclusive of construction, BCC and Consultant fees as separate broken-down categories.

A written narrative must be provided, and progressively updated, detailing the process used in establishing the estimate.

A typical milestone cost report must contain:

1. Project estimate summary;
2. Elemental estimate;
3. Estimate backup detail;
4. Basis for escalation, inflation and contingency calculations;

5. Detailed measurement and pricing; and
6. A written narrative including:
   - Outline description of the estimate;
   - Description of information obtained and used in the estimate including the date received;
   - Listing of notable inclusions, exclusions and all assumptions;
   - Listing of items/issues carrying significant risk; and
   - Estimate reconciliation information including:
     - Variance to approved baseline estimate;
     - Reconciliation gap summary and detail;
     - Short-term work plan to resolve the reconciliation gaps; and
     - Any other relevant information.

9.3.4 Exception Reporting

The Consultant must provide continuous cost monitoring, timely identification and early warning of all changes that affect or potentially affect the estimated construction or BCC costs or the Consultant's fees or disbursements.

9.3.5 Debriefing and Lessons Learned Reporting

The Consultant must provide a debriefing and lessons learned for all cost matters related to construction or BCC.

9.3.6 Time Lag

Recognizing that estimates must follow the design production, estimates may lag a design submission by no more than two (2) weeks.

9.3.7 Time Use of all available information

The Consultant is responsible for providing a complete cost estimate including BCC costs, even though the information provided is incomplete during the SD, DD and early construction tender document phases and early construction phases are incomplete. Where requirements are not firmly defined, the Consultant must make assumptions and confirm these with the DR and CC in advance of submitting the estimate.

RS 10 PROJECT TIME PLANNING

10. Scheduling and Control

One of the most important commodities in the Project is time. The daily management of services and full coordination of the work product of the Consultant is essential. The criticality of this part of the Consultant's services cannot be understated. The managerial effort to continually ensure coordinated and integrated interdisciplinary submissions that are aligned to the specific audience needs is significant.

10.1 Overview

10.1.1 PWGSC will:

1. Always be responsible for the overall master schedule and will continually provide direction to the Consultant and the CM on all matters of time management to ensure the Project is maintained with the approved timeline; and
2. Retain an independent Scheduling Consultant (SC) who will act as PWGSC's strategic advisor on all time management matters. The SC will review the schedule with the Consultant and CM and provide analysis thereof. The SC will be responsible for the maintenance of the Project's master schedule.

10.1.2 The CM will:

1. Be responsible for construction planning, scheduling and control;
2. Define the Consultant's construction tender package framework (the format, content and number of packages) and the prioritization of when the construction tender packages are required. The prioritization of the construction tender package will ensure the optimal sequence of construction in order to achieve the shortest overall construction period and maximum design and construction cost control;
3. Include continual analysis and reporting of the Consultant's design ideas and design submissions as well as the construction itself;
4. Analyze and report on the Consultant's Team progress as well as schedule sub-trade pre-qualification tenders to be closed, analyze bids and short-listed firms ready for tendering prior to each 95% design submission;
5. Prepare and provide to the Project Team a monthly status report and a summary of opportunities to reduce work sequence durations or reorganize tasks with the objective of managing risks that will ultimately increase the overall duration of the Project and raise the total cost. Time saving opportunities and risk management strategies will be accompanied with a management plan to ensure that minimum task or work sequence durations are realized and risks are mitigated;
6. Integrate the design schedule into the overall construction schedule;
7. Define partial and final design submission due dates for each construction tender package; and

8. Clearly indicate the expectations of scope content in each construction tender package submission and the proposed tendering strategy of each construction tender package to the Consultant Team and DR.

10.1.3 The Consultant must:

1. Develop a detailed design schedule for the required work and activities associated with the Consultant's services. This includes the relationships and dependencies associated with the information input and output deliverables;
2. Provide a schedule for the BCC Components design, procurement, manufacture or fabrication, installation and commissioning; and
3. Provide a monthly report and a summary of opportunities to reduce work sequence durations or reorganize tasks with the objective of managing risks that ultimately will increase the overall duration of Project and raise the total cost.

NOTE: No action abrogates consultant's responsibilities.

No acceptance or approval by the DR, whether expressed or implied shall be deemed to relieve the Consultant, of professional or technical responsibility for the schedules and schedule reports.

10.2 Design Services

10.2.1 Design and BCC Schedule

The Consultant must:

1. Prepare a comprehensive critical path method (CPM) design production network diagram schematically displaying the detailed and logical relationships of all design activities or tasks for all elements of the Project including sub-project tasks or activities that must be accomplished to satisfy Project objectives;
2. Continually provide, based on experience from previous projects, input to and written commentary to the DR, SC and the CM on the overall construction plan and schedule, including the commissioning and warranty period;
3. Play an active role to test the validity of the construction schedule assumptions and durations ensuring the construction schedule reflects the progression of the design at the time of the workshop, consider scope pressures and their related potential design and schedule impacts, as these become evident through Project meetings and discussions;
4. Work with the CM to arrive at reasonable design durations for the production and delivery of fully coordinated construction tender packages along with the relevant intermediate submissions. Integrate the construction tender package schedule into the design schedule. Review with the CM and revise monthly as required;
5. Create and maintain a WBS dictionary to define the scope of all design and BCC Component activities and all related assumptions. Prepare baseline, summary and master schedules (network logic diagrams and bar charts) for each of the Project design and BCC

Component elements. Develop the critical path for each schedule. Ensure detail schedule critical tasks are no greater than 10 days in duration. A critical task is one that has less than five (5) days of float. Clearly identify all predecessor, successor and dependent tasks. Indicate float per task. Do not use relationship lags. Instead, use activities to mark the delay between the completion of one activity and its successor;

6. Monitor, update and maintain schedules for each design and BCC Component task of each Project element and sub element monthly, or more frequently as required. Task duration and sequencing analysis will require weekly or more frequent reassessment as design options are being evaluated. Evaluate the interdependencies of the various design elements and the impact these elements may have on others. Incorporate the input of all sub-consultants. Make recommendations to the DR and the CM on areas of optimization to achieve the shortest overall design duration that meets the construction schedule;
7. Organize and actively manage the Consultant Team in order to achieve the stipulated milestones of the Project and the CM's construction schedule;
8. Apply the level of effort required to deliver the required Consultant work product in accordance with the construction schedule, increasing or decreasing the number of resources required to meet deliverable dates with a high quality, fully coordinated design. Ensure human resource requirements are adequately anticipated and properly reflected in all Design Management sub-plans, particularly human resource and quality management sub-plans;
9. Work with PWGSC's SC and the CM, to define when the integration of BCC Components into the construction site will occur. The Consultant must carefully plan and develop the BCC Component tender packages, either phased or full component delivery and installation to ensure integration of the BCC Components occurs at the right time – just in time - and in complete coordination with the construction schedule. For some BCC Components, there could be a need for early delivery in order to allow sufficient time to integrate technology requirements within the components. Due consideration must be given for the participation of the User throughout the development of all BCC Component procurement packages;
10. Provide heightened attention in planning and scheduling the necessary Consultant tasks related to defining construction sequences and Consultant inspections to ensure all aspects of acoustical construction and acoustical testing are realized. This will have a direct impact on the scope and performance requirements stipulated in most construction tender packages. Appropriate and realistic consideration must be given regarding the conditions of the construction site (state of completion) and duration for acoustical testing in establishing the overall construction and commissioning schedule with the CM;
11. Attend time management workshops that will routinely occur with DR, SC, and CM to seek the input and comment of the Consultant on all aspects of the design and construction schedules. The design, as it is related to the proposed construction sequencing, will be an essential discussion topic for each workshop and at Project meetings; and

12. Provide design approvals which entail a significant level of planning and effort beyond the production of customized approval submissions. Each approval requires multiple successively refined presentations. The Consultant must plan, schedule and continually control the Consultant's services in order to prepare, coordinate and present the relevant information for each approval body.

10.3 Deliverables

10.3.1 Reporting

1. Submit the schedule in logic diagram, Gantt chart and native file format to the DR within eight (8) weeks of Contract Award. Revise and resubmit as required to the approval of the DR;
2. Update the schedule monthly throughout the implementation of the Project. Resubmit to the DR and CM with each Design Management Plan. Include an updated critical path method (CPM) schedule, in logic diagram, Gantt chart and native file format, tracking design progress and forecasting future milestones and completion dates;
3. Prepare monthly, as separate mini-schedules, a detailed two (2) month and summary six (6) and 12 month look-ahead schedule of Key Consultant activities. Indicate design or other activities that are anticipated to start or be completed. Include required design decisions, elements that require specific Consultant Team involvement or required Consultant Team progress, BCC Components activities, and all other relevant activities that are anticipated or required to occur; and
4. Prepare a monthly report detailing the progress of all aspects of the Consultant's services provided in the previous period as well as a three (3), six (6) and 12 month look ahead. Each report must contain a management section that identifies all instances where the design schedule is being exceeded or not being met and outline opportunities or actions taken to leverage a situation or resolve each problem. Identify any anticipated risks or opportunities in the short, mid and long term. List the top five (5) issues that must be resolved in order not to jeopardize the design or schedule. Provide comments and feedback on the construction schedule prepared by the CM and construction progress.

RS 11 RESIDENT SITE SERVICES

11. Resident Site Services During Construction

11.1 Intent

Site services are an essential aspect of the Consultant's mandate. These services are the primary focal point for the Consultant's production input to and in support of construction operations. The continuous flow of accurate and fully coordinated information to and from the construction site will ensure a very high level of design and construction sequencing and productivity.

This will be executed by several different individuals from the Consultant Team with varying skills depending on the type of work being executed. The Consultant's Resident Site Services Team must have the authority, ability and capacity to immediately respond to evolving situations daily, in all parts of the site, coordinating site information with ongoing design production, and providing immediate design direction to the CM for all site matters of construction and temporary protection.

Lead by a highly experienced and licensed architect, the Consultant's Resident Site Services Team must adapt in composition as the overall Project advances and include robust administration support.

Multidisciplinary site services are required, when construction is ongoing and is to be available when construction operations perform multiple shifts per day, in the proactive planning and management of activities with the CM and other Project stakeholders, including evenings and during weekends.

11.2 Design Services

The purpose of Resident Site Services is to ensure the presence of the Consultant's representatives on-site to inspect, coordinate and monitor all aspects of the work during the construction of the facility, and liaise with the CM, PWGSC and other agencies as appropriate to the work. This service is over and above those inspection services listed under RS7 Construction and Contract Administration.

11.2.1 Resident Site Representatives (RSR)

1. A minimum of two (2) RSR's are required to be on site at all times as soon as construction implementation begins:
   - The Principle RSR must be a Senior Architect with at least 10 years of resident site supervision experience on large and directly relevant construction projects, "Large" is considered to be a project with a construction value over $10M. This individual is required to be present on site during every work shift for the full duration of the project; and
   - An assistant to the Principal RSR with at least five (5) years of previous resident site services experience. This individual is also required to be present on site for the full duration of construction.
2. The RSR must:
   - Be directly responsible to the Consultant and all members of the Consultant Team;
   - Become thoroughly familiar with the contract documents, the applicable Building Codes and all Fire Commissioner of Canada Standards, all Federal, Provincial and Municipal

Standards for the health and safety of construction workers; and

- Become thoroughly familiar with the requirements of the Project Brief and Project responsibilities of others which relate to these services.

11.2.2 RSR Duties and Responsibilities

11.2.2.1 General

The RSR must inspect all phases of the work in progress to ensure that all work is proceeding in accordance with the Contract Documents. The RSR must bring to the attention of the CM, after verifying with the Consultant, any discrepancies between the work, the contract documents and accepted construction procedures. Issues of significance are to be reported immediately to the Consultant, appropriate Consultant Team members, the DR and Commissioning Managers.

The RSR must keep a daily log of inspections and must issue a weekly written report to the Consultant, for distribution to the Project Team. The written report will contain description of inspection, progress of work to date, relevant photos and any other supplemental information that will aid in communicating to the intended audience. The Consultant will submit a template of this weekly report prior to the start of construction for the approval of the DR. The RSR will make any other reports or surveys as required by the DR through the Consultant.

The RSR must verify quantities of materials received and record work progress through daily photographs. If work is based on unit prices, measure and record the quantities for verification of monthly progress claims and the Final Certificate of Measurement.

11.2.2.2 Interpretation of the Contract Documents

Interpretation of the contract documents will be the responsibility of the Consultant. The Consultant may, however, have the RSR provide them with information regarding job conditions and may require the RSR to relay day-to-day instructions to the CM. It will be the duty of the RSR to assist the Consultant and further inform the Consultant of any anticipated problems which may delay the progress of the work. The RSR and Consultant must provide any additional detail drawings as and when required to properly clarify or interpret the Contract Documents. The Consultant must determine the method of relaying such information.

11.2.2.3 Changes in the Work

The RSR must not authorize or order any change in the work which will constitute a change in design or in the value of the contract except as delegated by the DR. The Consultant may call upon the RSR to assist in the evaluation of changes in the work, where knowledge of job conditions is required.

11.2.2.4 Communication & Liaison

The RSR must:

1. Convey the Consultant's instructions regarding the required standards of workmanship to the CM;
2. Refer to specifications, confer and obtain guidance on these with the Consultant. The

matter is then to be brought to the attention of the CM's Superintendent. Although informal discussions with sub-trade Superintendents are usually permissible, (with agreement from the CM), the RSR must not deal directly with foreman or tradesmen, or interfere with the progress of the work;

3. Communicate formally with the CM via memorandum form only. When this form is issued, the RSR must immediately file copies with the Consultant the DR and the PWGSC Commissioning Managers;
4. Contact the Consultant immediately when it is apparent that information or action is required of the Consultant, (e.g., general instructions, clarifications, sample of shop drawing approvals, requisitions, contemplated change orders, site instructions, details, drawings, etc.);
5. Accompany PWGSC and User representatives on inspections and report to the Consultant requirements, comments or instructions from PWGSC;

NOTE: The RSR should encourage site inspection requirements, comments or instructions to be provided in writing.

6. Consider and evaluate any suggestions or modifications to the documents advanced by the Contractor(s) and immediately report these to the Consultant with comments;
7. Ensure that the DR and Commissioning Managers and Consultant are notified promptly when key pieces, of materials equipment or Building Components are delivered, so that these parties can arrange for the appropriate personnel to inspect them, prior to installation; and
8. The RSR will investigate, witness, review and approve in writing, all temporary or permanent connections into any of the buildings' systems prior to the work being undertaken.

11.2.2.5 Schedule

The RSR must:

1. Monitor the approved construction schedule, take necessary steps to ensure that the schedule is maintained and submit a detailed monthly report to the DR and the Consultant concerning any delays;
2. Keep accurate records of causes of delays and related issues;
3. Make every effort to assist the CM to avoid delays; and
4. In discussion with the CM, Consultant and DR ensure the commissioning schedule is updated throughout the project.

NOTE: Only PWGSC may approve any request for time extensions.

11.2.2.6 Inspection of the Work

As the work progresses, the RSR must make on-site observations and spot checks of the work to

determine whether the work, materials and equipment conform to the contract documents and supplementary documentation. The RSR must advise the CM of any deficiencies or unapproved deviations via memorandum and report immediately to the Consultant and the DR any of these on which the CM is tardy or refuses to correct.

Through effective and timely communications, the RSR must arrange for the Consultant to undertake periodic inspections with respect to the progress of the work. The RSR must further coordinate all inspections with AHJ's to review/inspect the construction work at appropriate times and must advise the Consultant, and DR of such inspections.

The RSR must also report if materials and equipment are being incorporated into the Project prior to approval of relative shop drawings or samples. The RSR must assist in the preparation of all deficiency, interim, preliminary and final reports and certificates in collaboration with the DR and the Consultant. The RSR must be responsible for the measurement of all work to be done on a unit-cost basis.

11.2.2.7 Site Meetings

The RSR must attend all job-site meetings. Immediately after Consultant contract award, arrange a briefing meeting with the Project Team.

11.2.2.8 Inspection and Testing Coordination

The RSR must see that the tests and inspections required by the Contract Documents are conducted, and is to ensure the designer of record is present to witness and certify the results. Report the results in the daily log. The Consultant and DR are to be notified by the RSR as to when testing will occur in advance of the tests.

11.2.2.9 Limitations

The Resident Site Representative must not:

1. Authorize deviations from the contract documents;
2. Conduct tests or certify test results;
3. Approve shop drawings or samples;
4. Advise the Users in any matter without obtaining guidance from the DR;
5. Accept any work or portions of the building;
6. Enter into the area of responsibility of the Contractor's Site Superintendent; and
7. Stop the work unless convinced that an emergency exists.

11.3 Deliverables

11.3.1 Daily Log

The RSR must keep a daily log recording the following at minimum:

1. Weather conditions, particularly unusual weather relative to construction activities in

progress;

2. Major material and equipment deliveries;
3. Daily activities and major work done through all shifts of construction work;
4. Start, stop or completion of activities through all shifts of construction work;
5. Presence of inspection and testing firms, tests taken, results, etc.;
6. Unusual site conditions experienced;
7. Significant developments, remarks, lessons learned etc.; and
8. Reports, instructions from appropriate authorities' response actions.

NOTE: The log and daily photographs are the personal property of the RSR. Copies of the logbook and daily photographs, certified as true copies, are to be provided to Consultant and DR weekly.

11.3.2 Site Records

The RSR must maintain orderly and updated files at the site for the use of the DR and the Consultant as follows:

1. Issued for Construction Documents;
2. Approved Shop Drawings;
3. Approved Samples;
4. Site Instructions (SI);
5. Contemplated Change Notices (CCN);
6. Change Orders (CO);
7. Daily Progress Photographs;
8. Memoranda;
9. Test and Deficiency Reports;
10. Correspondence and meeting minutes; and
11. Contact information including; names, addresses and telephone numbers of key personnel from PWGSC, Consultant and CM and their sub-contractors and key personnel associated with the contract.

Issued for Construction documents must be carefully preserved and kept up to date with all change orders, site instructions, details, as-built conditions, etc., for each construction contract. The RSR must follow approved protocol for the security and protection of the construction documents and information held on-site. The RSR must review monthly, the accuracy of as-built marked up drawings kept by the CM and report any discrepancies or deficiencies to the Consultant, prior to processing of progress payments.

RS 12 BILINGUAL DOCUMENTS

12. Bilingual Documents

12.1 Scope of Services

This Project requires services in both official languages. Throughout all phases of this Project the Consultant must be able to provide services orally and in writing in Canada's two (2) official languages. These services include, among other things, responses to questions and presentations to PWGSC and user groups.

Where formal submissions of deliverables in Canada's two (2) official languages are required, the following criteria will apply:

1. The languages are considered equal in status and neither is considered to be a translation
2. of the other;
3. The Consultant must be responsible for the accuracy and completeness of translations and
4. the consistency of documents; and
5. A single set of drawings (originals) on which written information is shown in both languages and separate written documents for each language for the executive summaries, specifications and operating and maintenance documentation must be produced.

12.1.1 Design Deliverables

The following must be prepared and delivered in Canada's two (2) official languages:

1. Schematic Design Report including seismic upgrade information;
2. Value Engineering and Life Cycle Costing reports;
3. Design Development Report; and
4. Presentations to AHJ's.

12.1.2 Construction Documents

All 100% construction contract documents prepared by the Consultant must be in Canada's two (2) official languages as per the terms of this contract and "Doing Business with the National Capital Area (NCA)".

12.1.3 Commissioning – Related and As-Built Documents

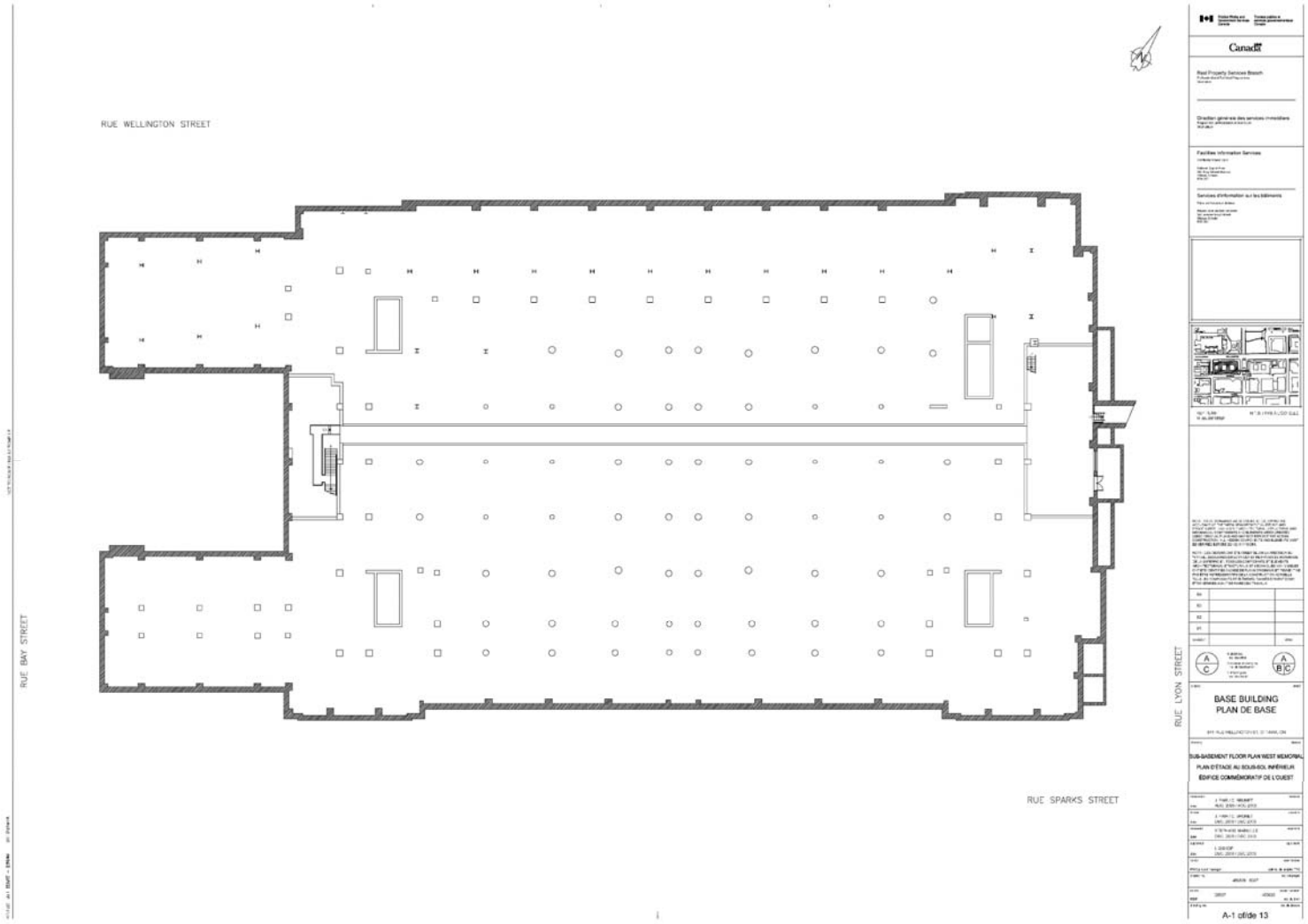
Produce the following commissioning-related documents in Canada's two (2) official languages:

1. Final Systems Operational Manual;
2. Training documentation; and
3. Design intent documentation.

12.2 Quality Standards

Ensure that the services and deliverables provided are of a professional standard in both official languages. Assume professional responsibility for accuracy, completeness and consistency of translation. Both languages are considered equal in status – neither is considered to be of lesser standing because it is a translation of the other.

ANNEX A: West Memorial Building Floor Plans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RUE SPARKS STREET
RUE LYON STREET
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Real Property Services Branch
Direction générale des services immobiliers
Facilities Information Services
Services d'information sur les bâtiments
BASE BUILDING
PLAN DE BASE
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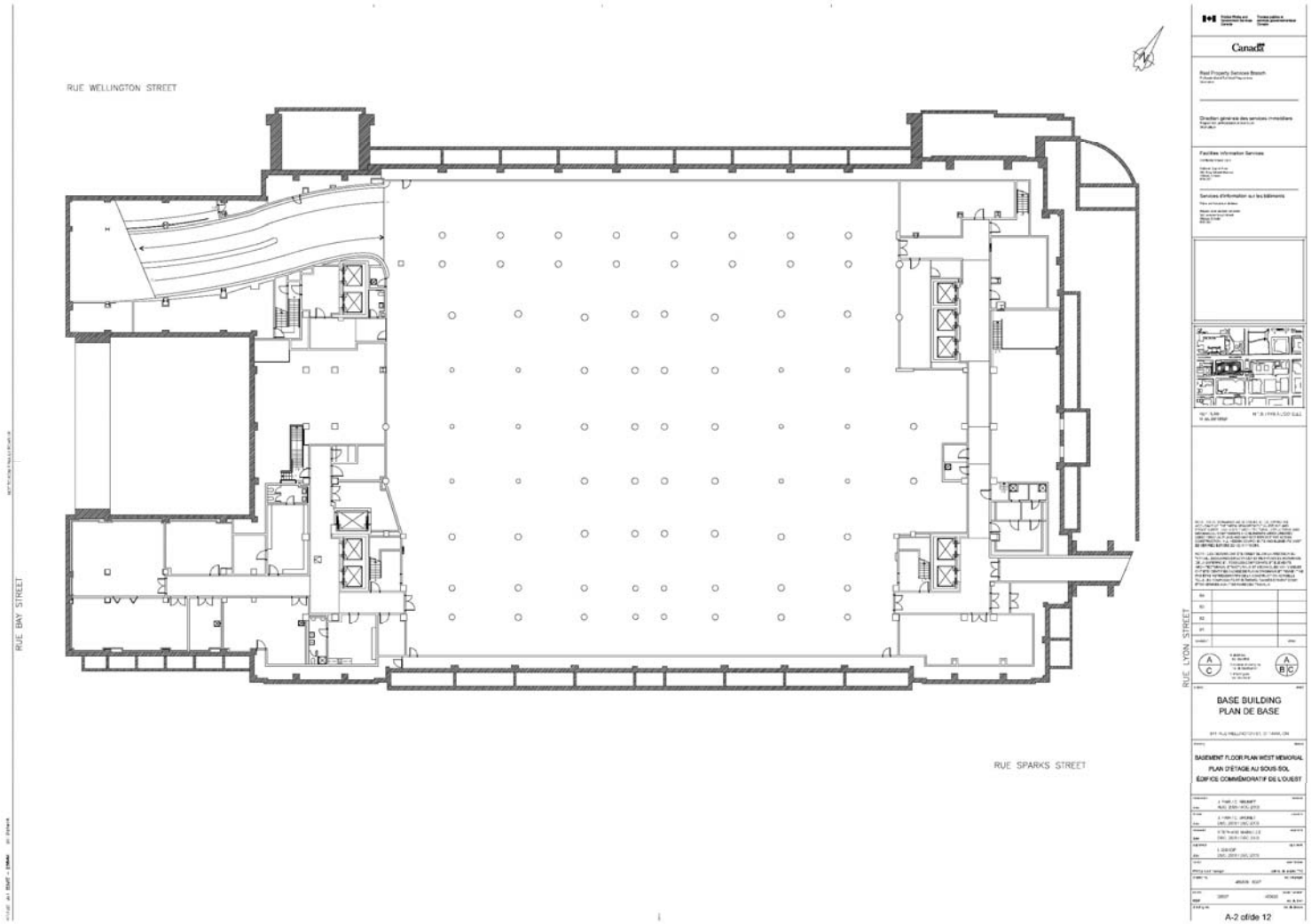
PLAN D'ÉTAGE AU SOUS-SOL INFÉRIEUR
EDIFICE COMMÉMORATIF DE L'OUEST
A-1 ofide 13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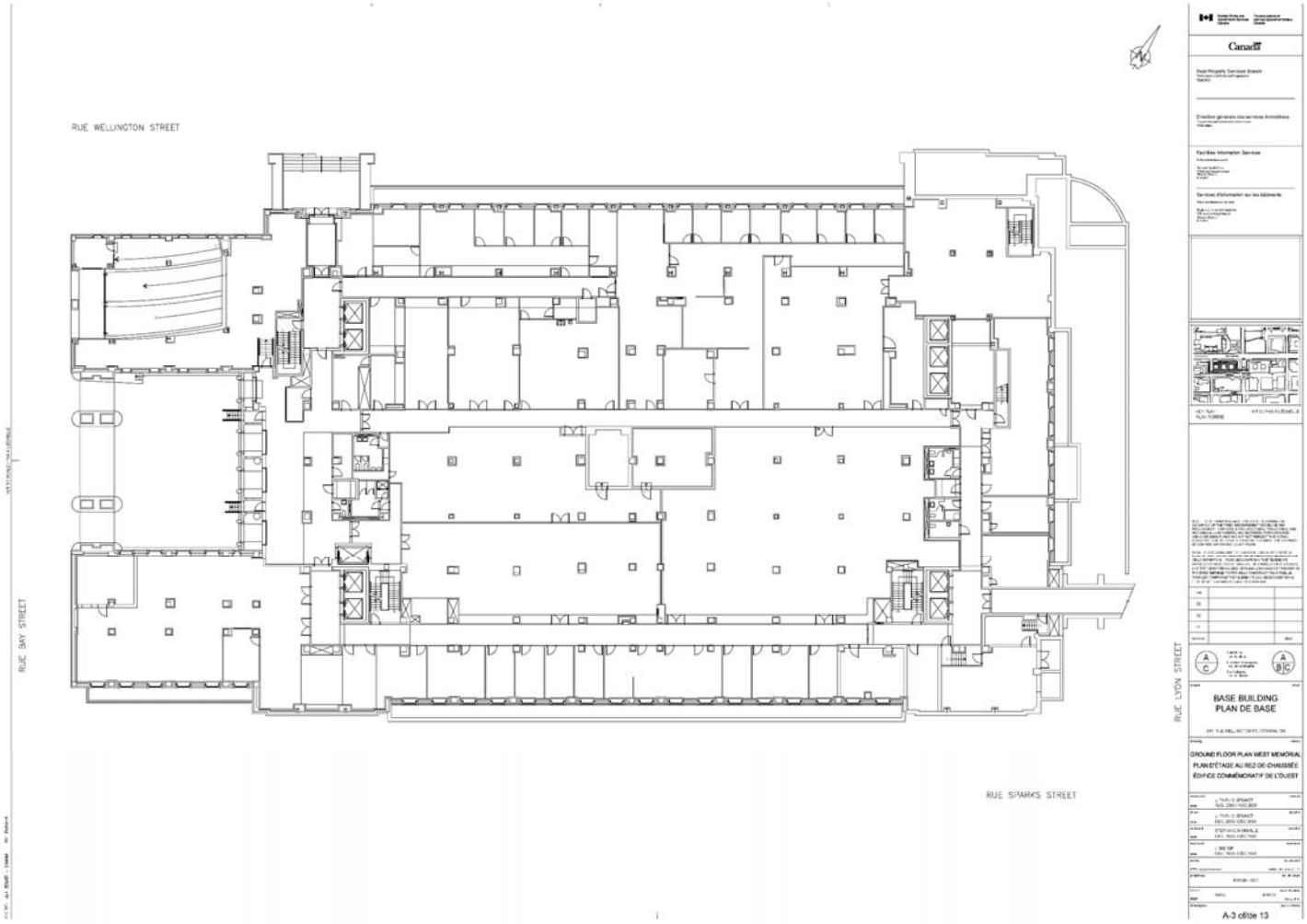
A-2 ofide 12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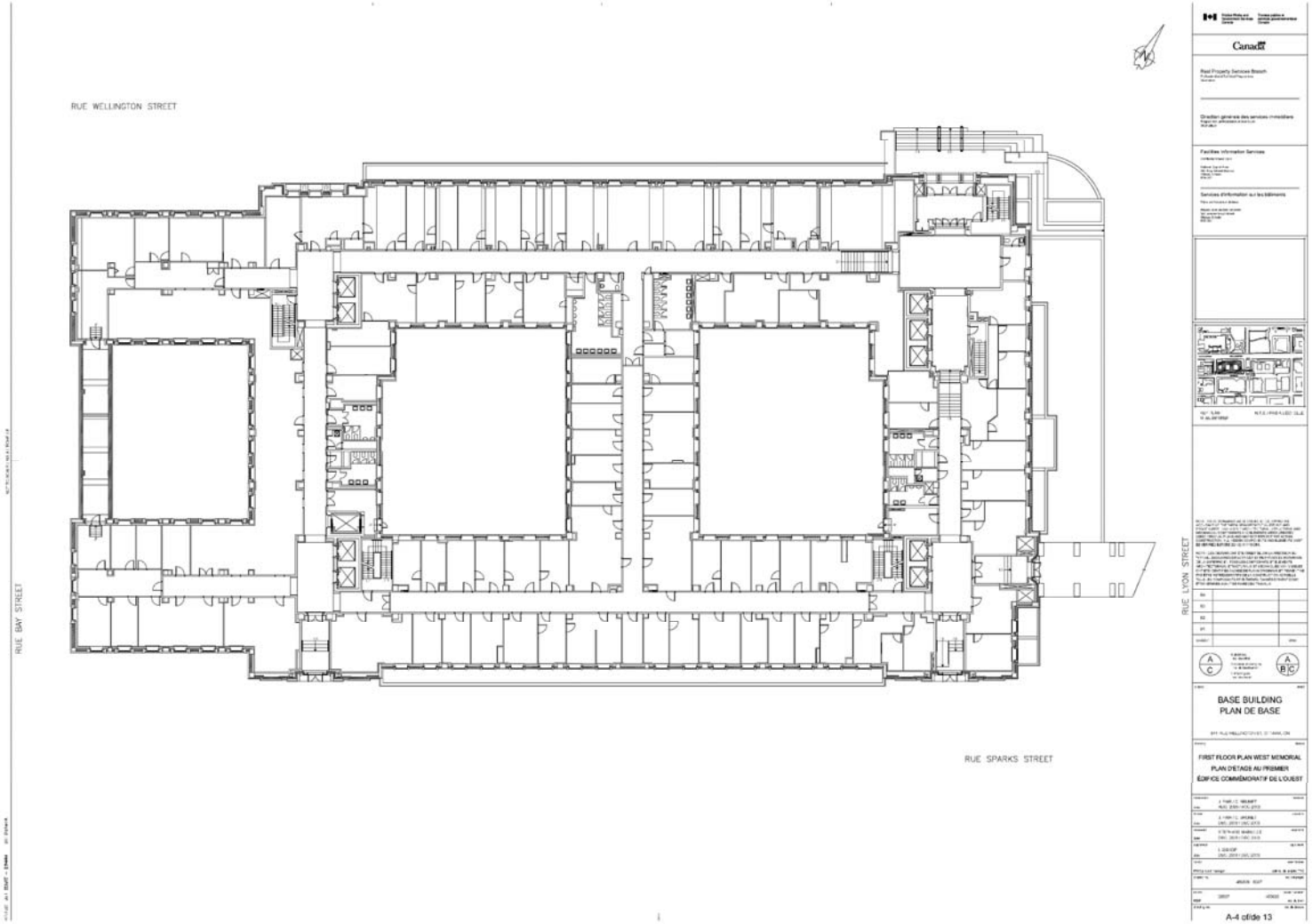
RUE LYON STREET
BASE BUILDING
PLAN DE BASE
GROUND FLOOR PLAN WEST MEMORIAL
PLAN D'ÉTAGE AU REZ-DE-CHAUSSÉE
ÉDIFICE COMMÉMORATIF DE L'OUEST
A-3 of/de 13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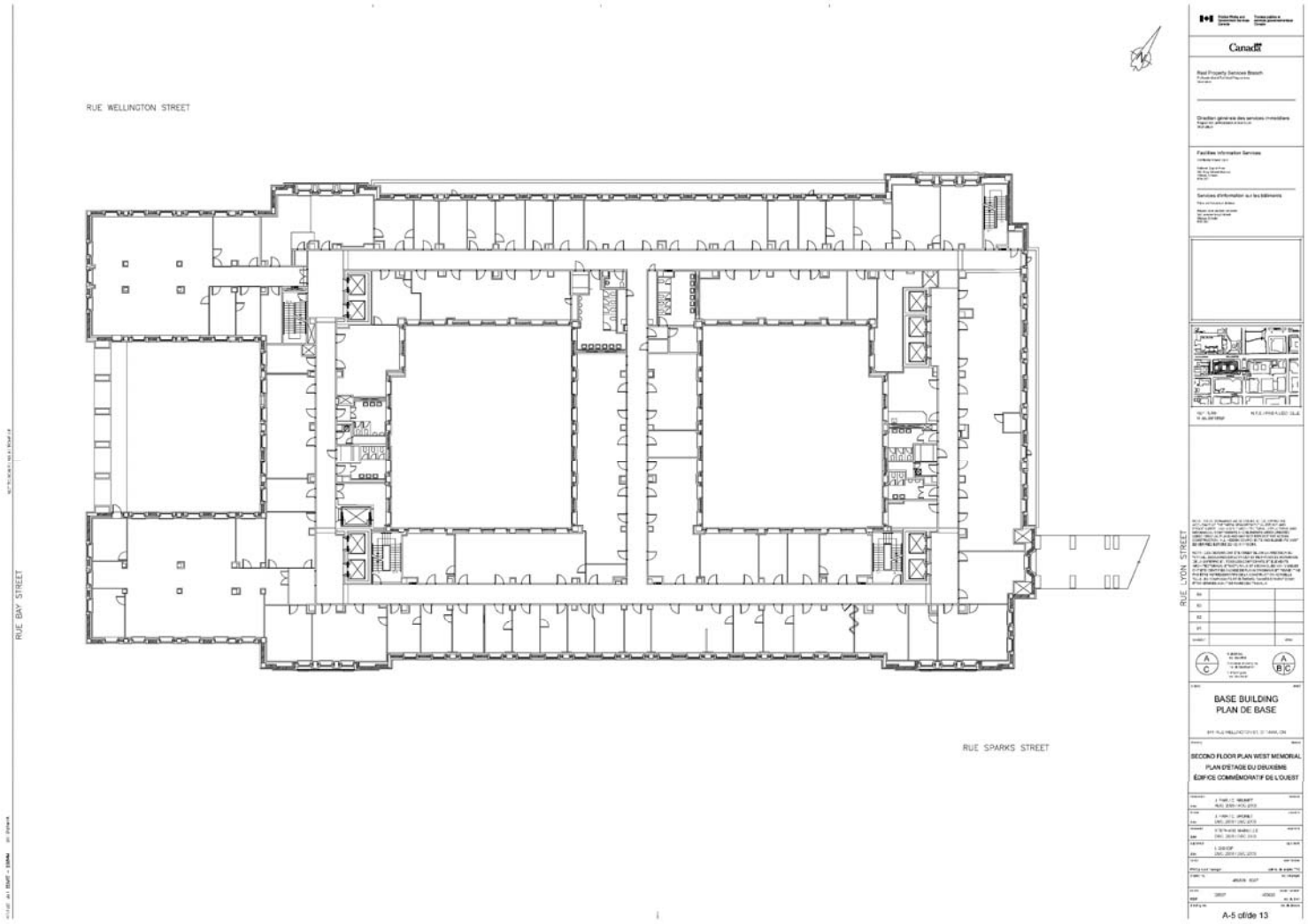
Facilities Information Services
Services d'information sur les bâtiments
BASE BUILDING
PLAN DE BASE
FIRST FLOOR PLAN WEST MEMORIAL
PLAN D'ÉTAGE AU PREMIER
ÉDIFICE COMMÉMORATIF DE L'OUEST
A-4 ofide 13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Services d'information sur les bâtiments
BASE BUILDING
PLAN DE BASE
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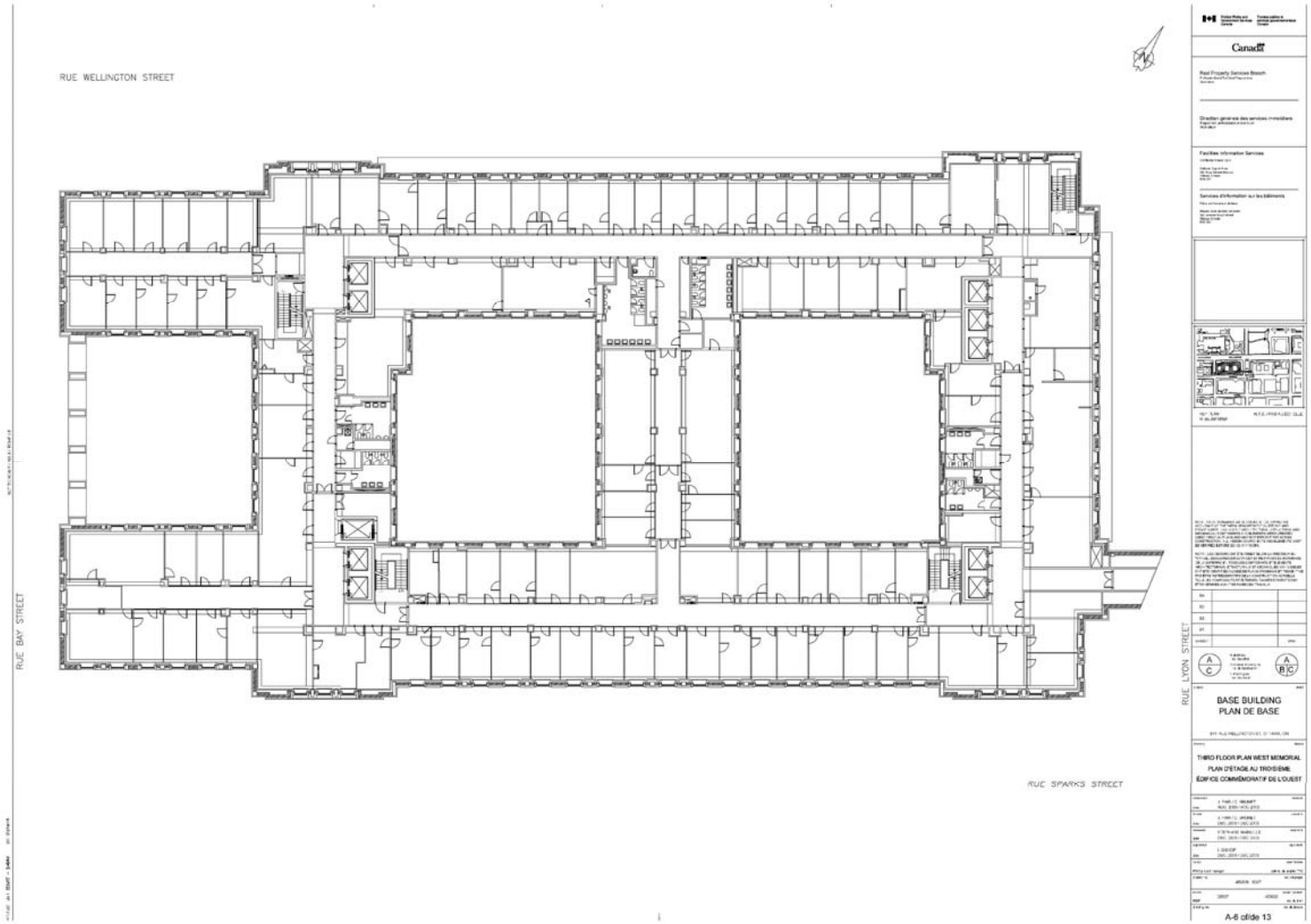
A-5 ofide 13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Services d'information sur les bâtiments
BASE BUILDING
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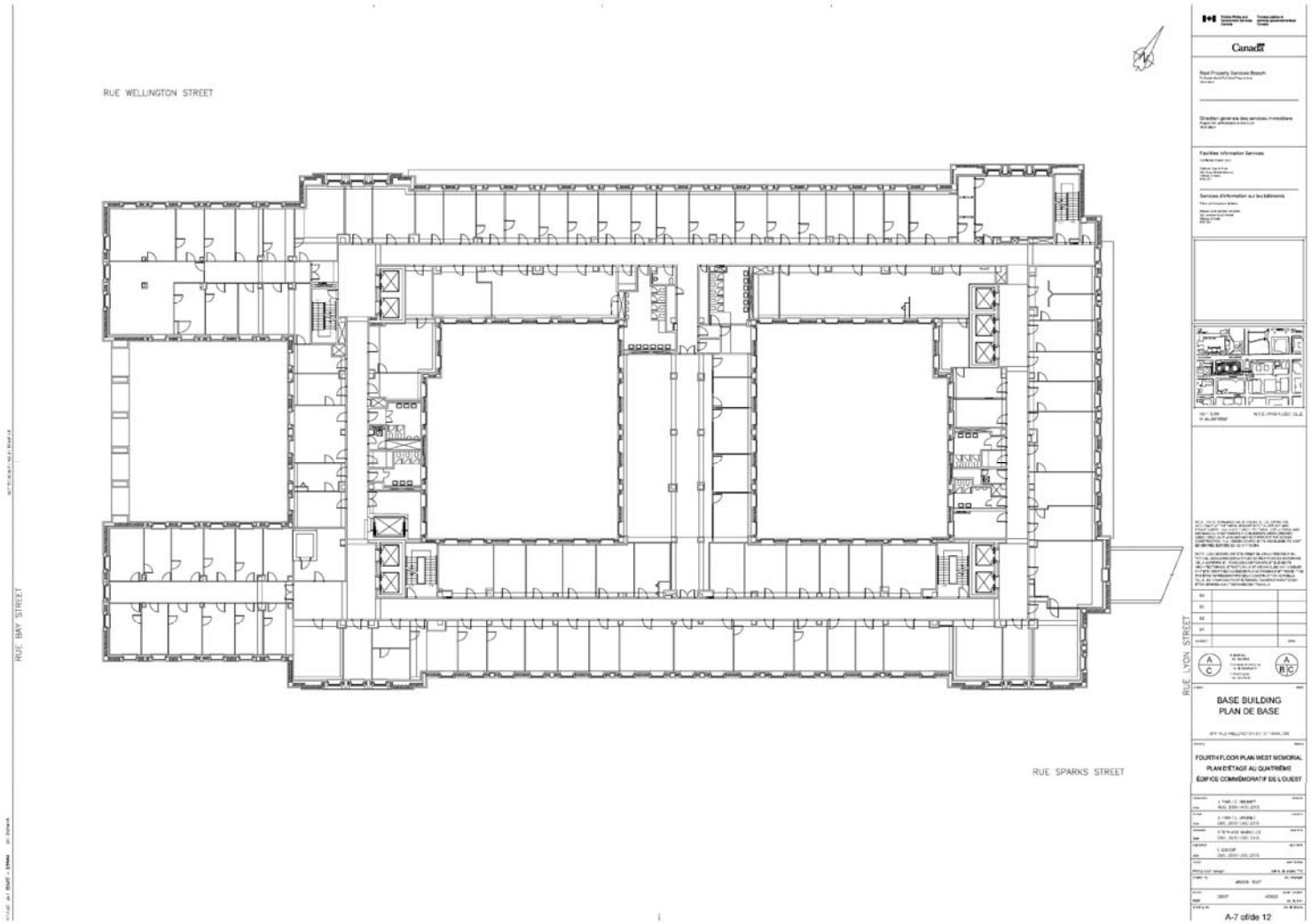
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Services d'information sur les bâtiments
BASE BUILDING
PLAN DE BASE
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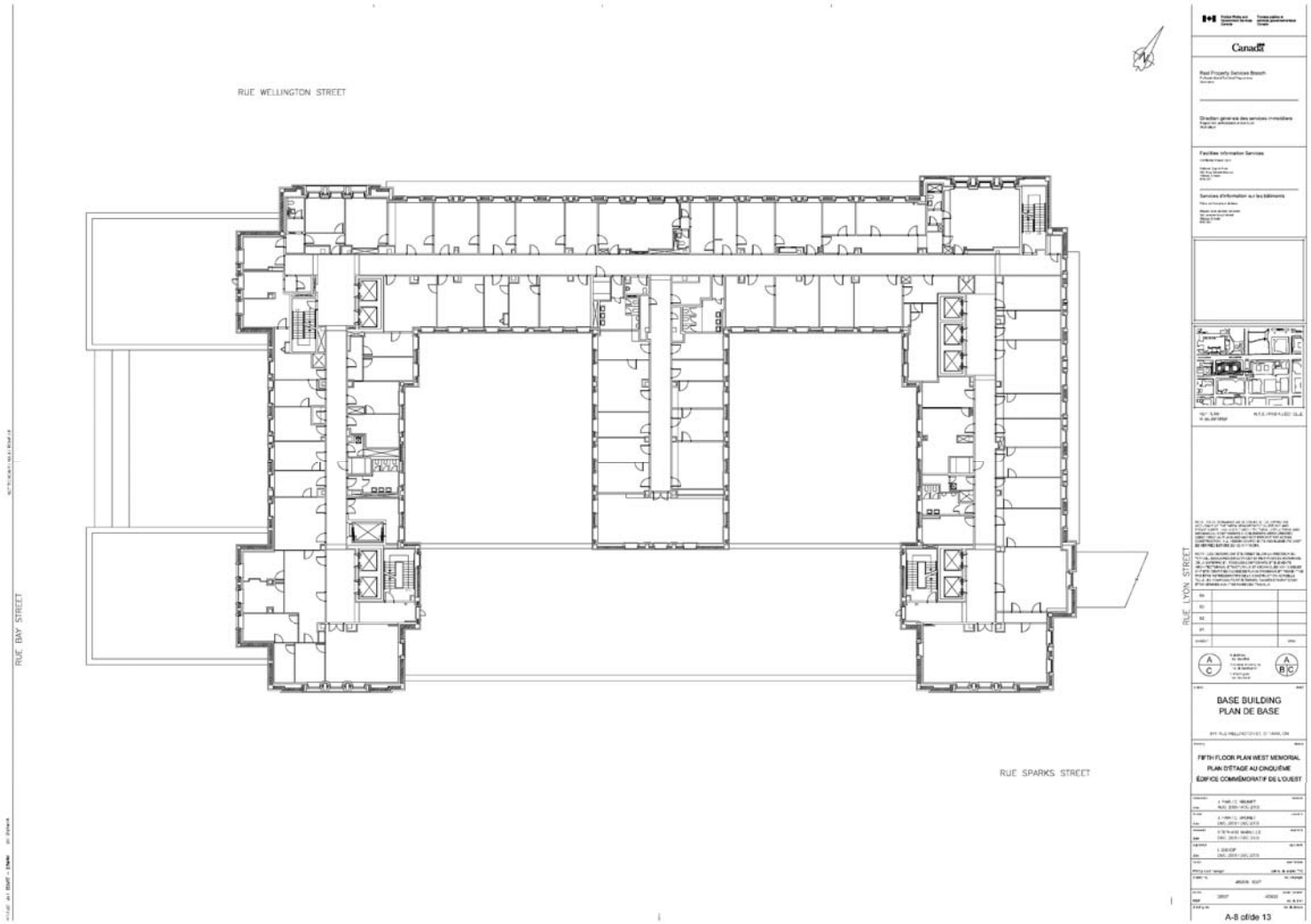
PLAN D'ÉTAGE AU QUATRIÈME
ÉDIFICE COMMÉMORATIF DE L'OUEST
A-7 ofide 12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Services d'information sur les bâtiments
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PLAN DE BASE
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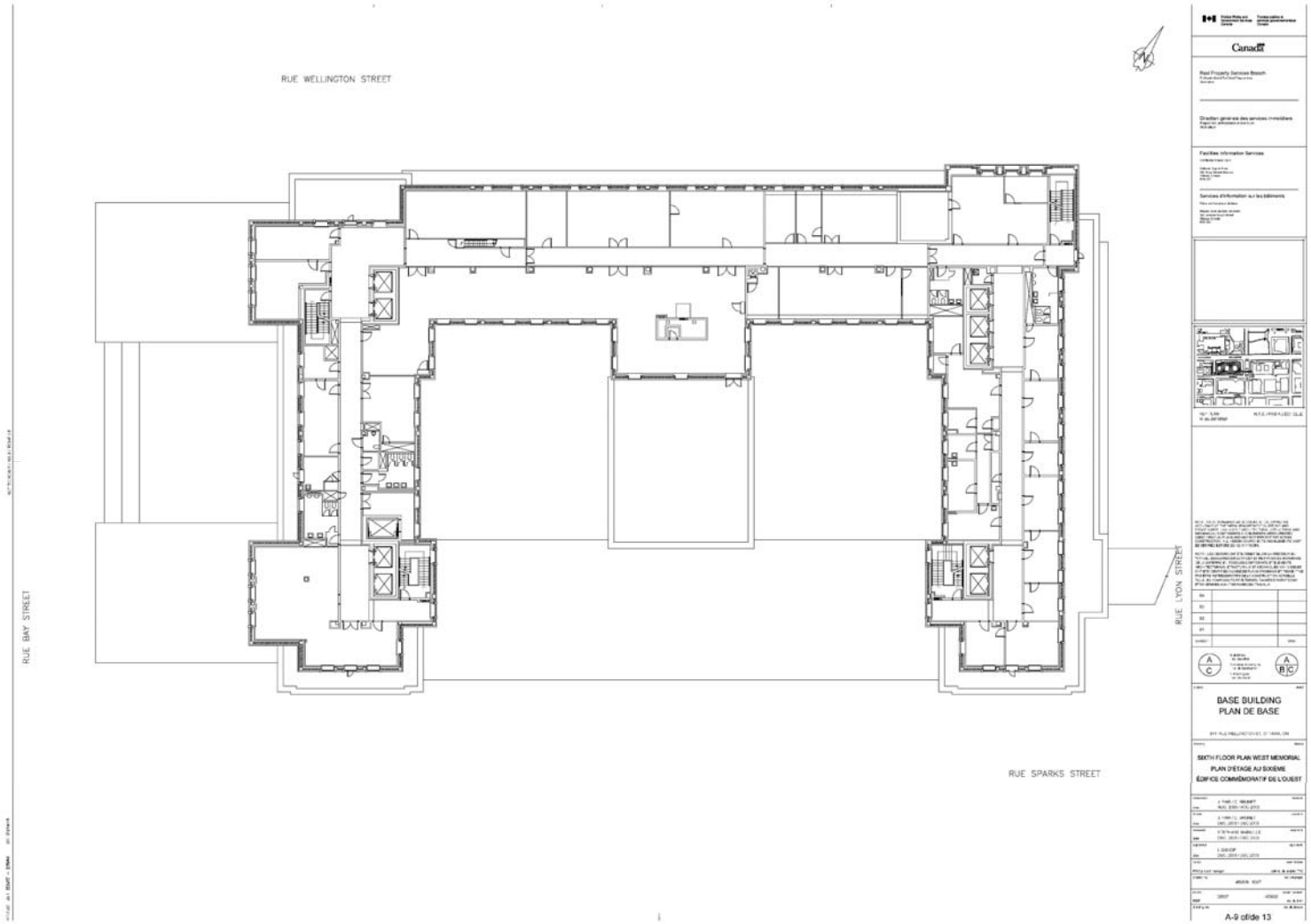
ÉDIFICE COMMÉMORATIF DE L'OUEST
A-8 ofide 13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Services d'information sur les bâtiments
BASE BUILDING
PLAN DE BASE
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PLAN D'ÉTAGE AU SIXIÈME
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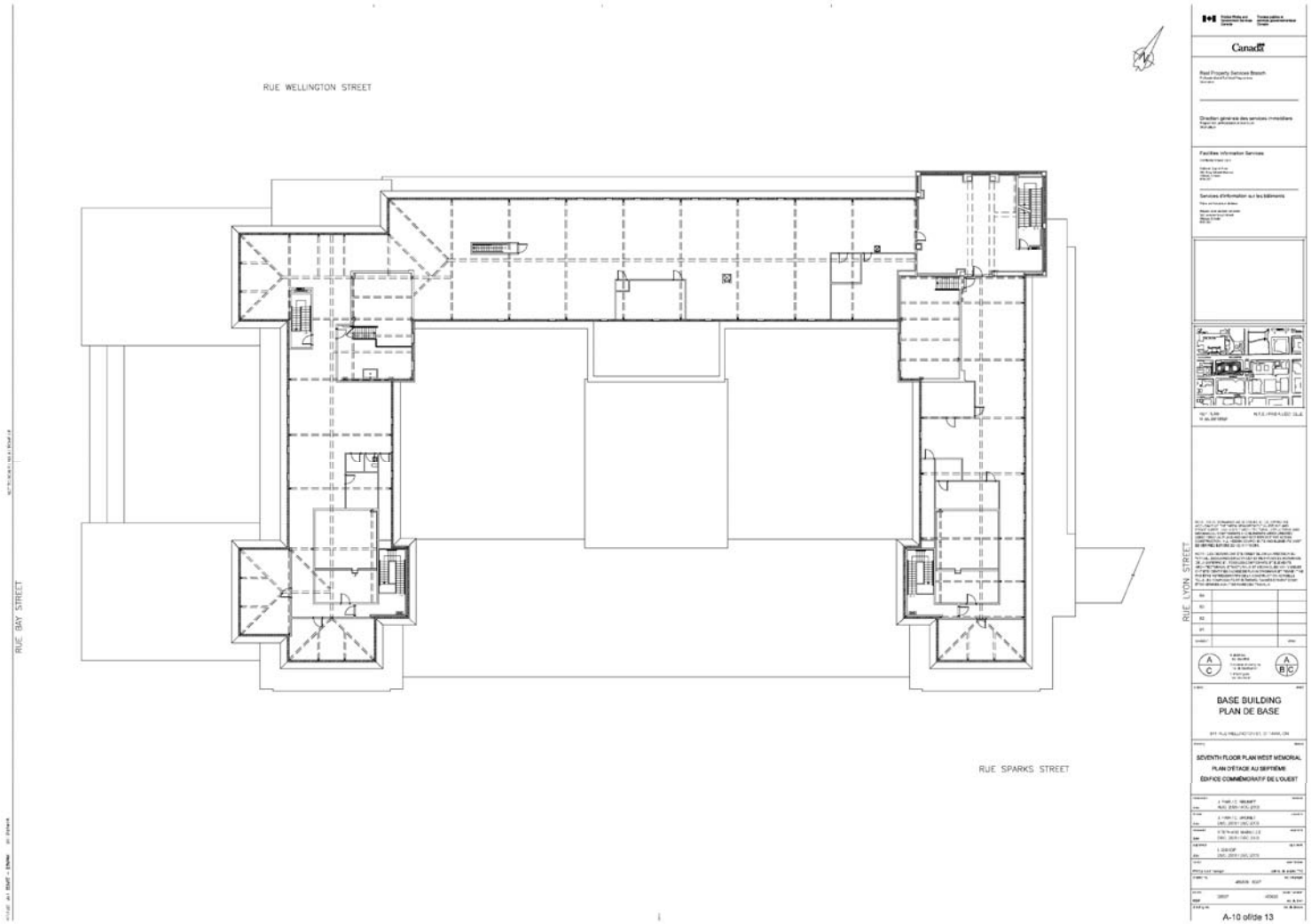
A-9 of/de 13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Services d'information sur les bâtiments
BASE BUILDING
PLAN DE BASE
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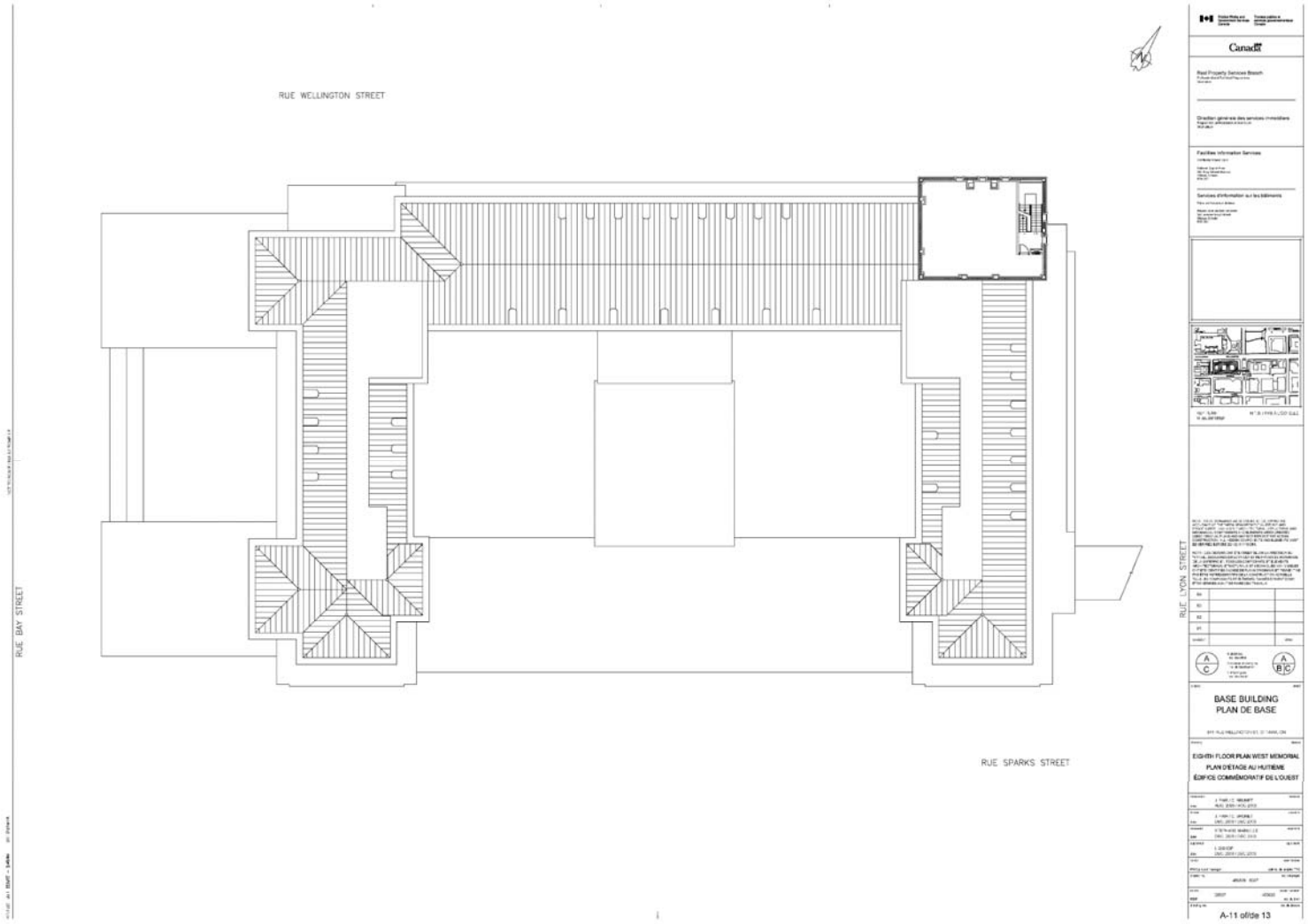
PLAN D'ÉTAGE AU SEPTIÈME
ÉDIFICE COMMÉMORATIF DE L'OUEST
A-10 of/de 13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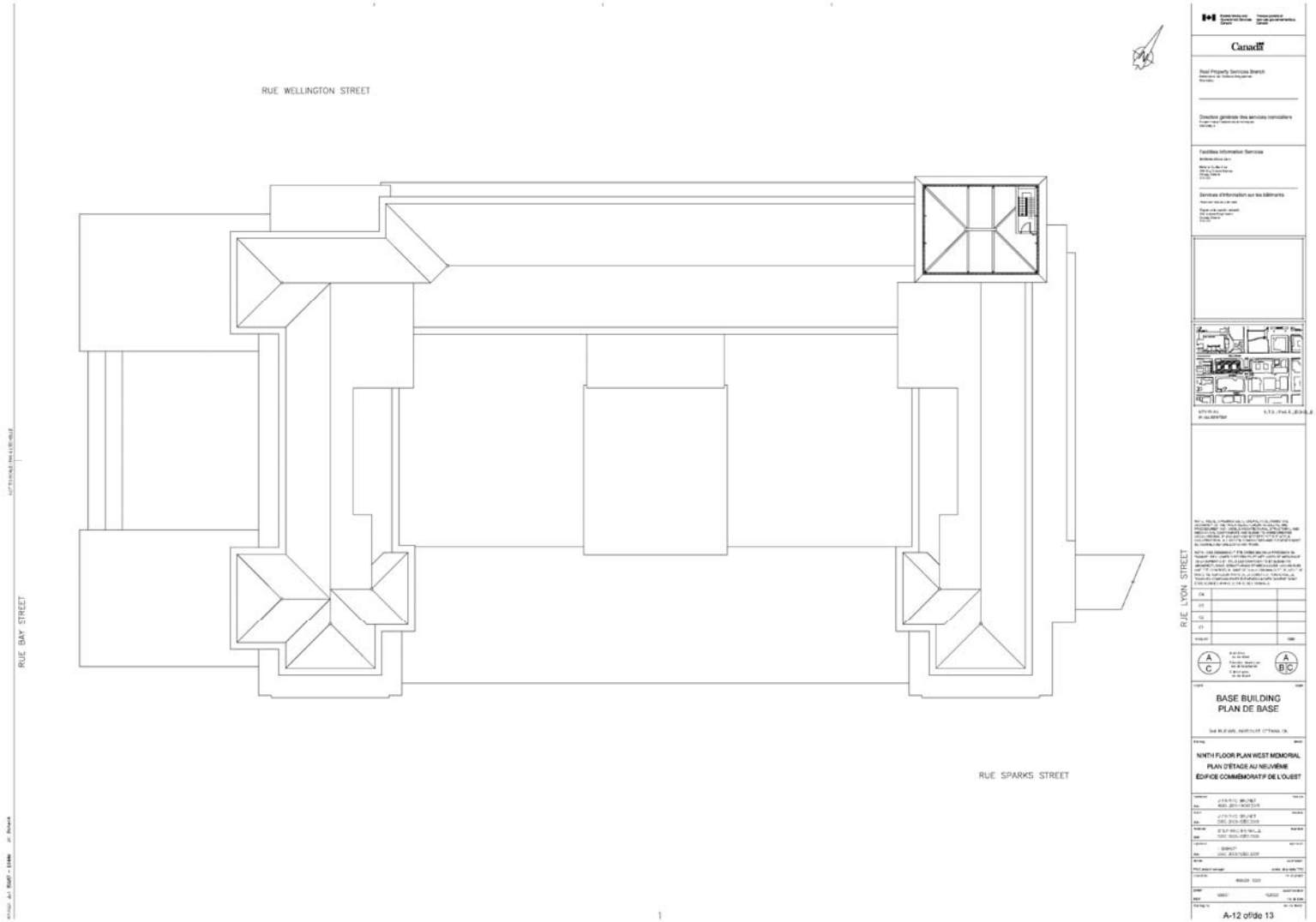
ÉDIFICE COMMÉMORATIF DE L'OUEST
A-11 of/de 13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Services d'information sur les bâtiments
BASE BUILDING
PLAN DE BASE
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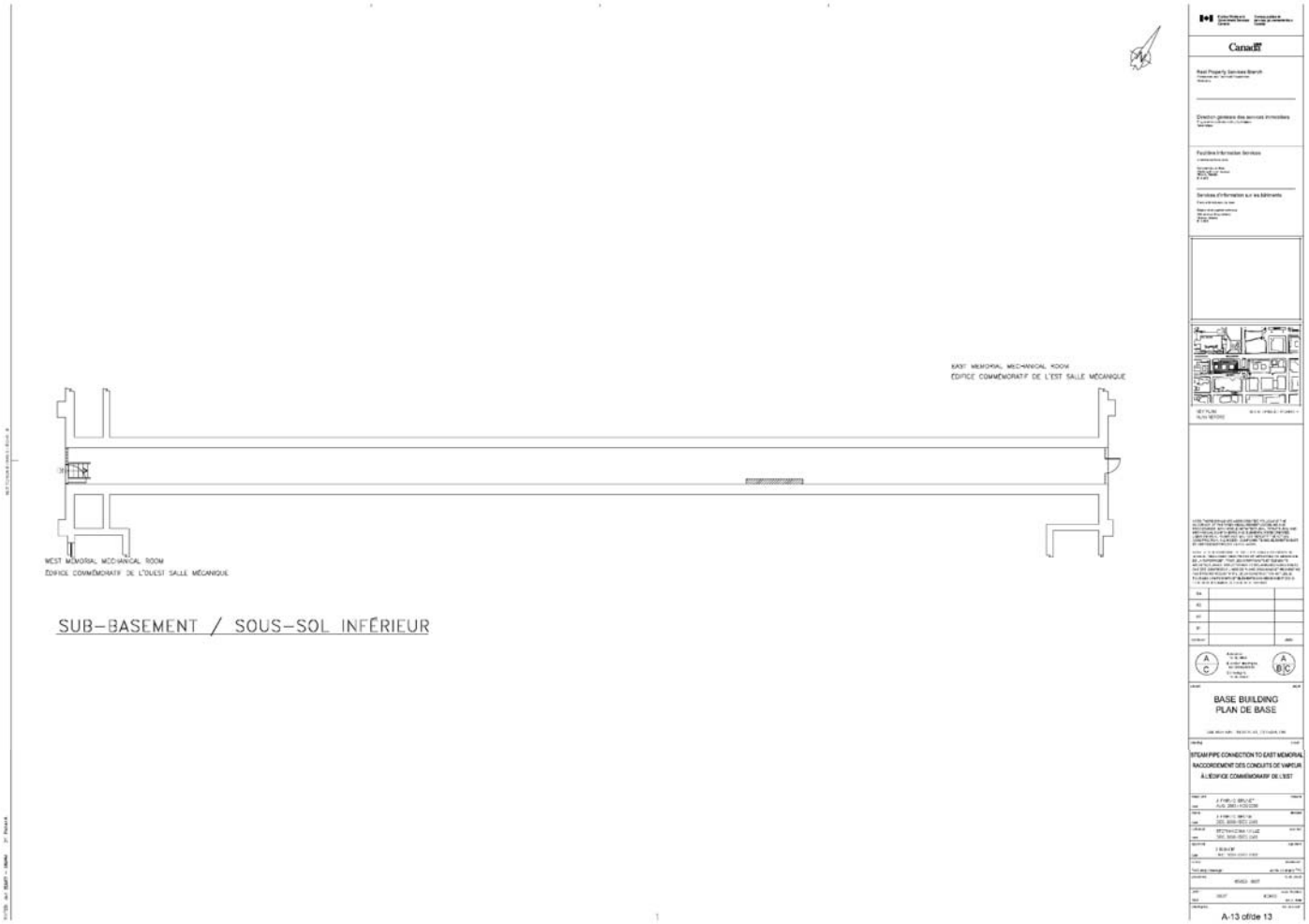
ÉDIFICE COMMÉMORATIF DE L'OUEST
A-12 of de 13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SUB-BASEMENT / SOUS-SOL INFÉRIEUR
Canada
BASE BUILDING
PLAN DE BASE
STEAM PIPE CONNECTION TO EAST MEMORIAL
RACCORDEMENT DES CONDUITS DE VAPEUR
À L'ÉDIFICE COMMÉMORATIF DE L'EST
A-13 ofide 13

ANNEX B: Building Information Modelling (BIM) Particular Conditions

BIM TERMINOLOGY AND ACRONYMS

Aggregated Model - The Aggregated Model refers to the deliverable set out for each project milestone within each project phase during the project delivery process, where a coordinated model is required to move to the next milestone or Phase Model. The Aggregated Model is provided to the DR for review by the relevant Project Team members for technical review.

As-Built Model - The As-Built Model refers to the deliverable during the construction, commissioning and close-out phases where a coordinated model is assembled from the previous project Phase Model and all changes resulting from approved Change Orders and Shop Drawings. The As-Built Model reflects all changes to the previous Phase Model that occur during, or as a result of, Construction. This includes field information collected during construction, especially relating to concealed conditions and information that is not available in the tender documents or previous Phase Model. The As-Built Model is the final model deliverable for the Construction Phase.

Building Information Model | Modelling | Management (BIM)

Model (the product of the modelling process) - The object-based digital representation of the physical and functional characteristics of a facility and its site. The Building Information Model serves as a shared knowledge resource for information relating to site and/or facility and its various systems and elements, forming a reliable basis for decisions during its lifecycle from inception, design, construction and onward.

Modelling (the process of modelling) - A collection of Authorized Uses, workflows, and modeling methods used to achieve specific, repeatable, and reliable information results from the final product. Modelling methods affect the quality of the information generated from the Model. The intended use (Authorized Use) of a Model dictates the methodologies of information generation, sharing, and coordination. Modelling methodologies reflect desired project outcomes and phasing.

Management (the definition of data and process management) **-** Building Information Management supports the data standards and data requirements for BIM use. Data continuity allows for the reliable exchange of information in a context where both sender and receiver understand the information. In addition, this data further supports ongoing maintenance of, and changes to, the data inherent in the operations and management of the physical contexts that it represents.

BIM Specialist - The BIM Specialist is an identified member of the Consultant Team responsible for the initial creation, verification, coordination, quality, and completion of the deliverables outlined by the BIM PxP.

Construction-Operations Building information exchange (COBie) – COBie is a performance-based specification for facility asset information delivery. Two (2) types of assets are included in COBie: equipment and spaces. COBie helps the Project Team organize electronic submittals for later business process needs. The PDF, drawing, and building information model files that accompany COBie are organized for coordination.

Discipline Model - The Discipline Model refers to the individual disciplinary or specialty models provided by sub-consultants or specialists. These models remain the responsibility of the Model Element Author (MEA's) specified, until received by the BIM Specialist for amalgamation into Aggregated or Phase Models. Discipline Models must be kept up-to-date throughout the project delivery process and must reflect all pertinent changes made throughout the design, construction and commissioning phases.

Industry Foundation Classes (IFC) - The IFC specification is a neutral data format used to describe, exchange and share information typically used within the building and facility management industry sector (AEC/FM). The IFC specification is developed and maintained by building SMART International (formerly known as International Alliance for Interoperability - IAI).

Information Delivery Manual (IDM) - The Information Delivery Manual defines the business needs, exchange requirements, technical rules and functional parts for information exchanges in the project. The IDM gives detailed specifications of the information that any given Consultant Team member would need to provide at any given project submittal and/or phase. The IDM addresses the need to understand and formalize the collaborative and contractual aspects of a client-consultant relationship, and how information will be delivered within that context.

Level of Development (LOD) - The Level of Development describes the level of completeness to which a Model Element is developed. It describes the levels through which the development of information relating to a Model Element can logically progress from the initial project phase, and lowest level of conceptual approximation, to the last project phase, and highest level of representational precision. LOD can be applied, according to the Protocol and PxP, to Model Element categories, systems or individual instances. When used to describe a Model as a whole it is generally taken that all individual Model Elements are, at a minimum, to the LOD described.

Level of Accuracy (LOA) - The Level of Accuracy describes the level of precision to which a Model Element is reflective of true as-built conditions. The LOA is determined as the tolerance of error range between individual Model Elements and their physical counterparts. When used in the PxP or Protocol, LOA shall refer to the minimum level of precision required, with the tolerance range as described. The LOA is typically used only in the construction, commissioning and operation phases of new-build projects, or from the first phase of rehabilitation or renovation projects.

Measurement Model - The Measurement Model describes the product of modelling an existing facility and/or site for the purposes of using BIM in a forthcoming project or for an anticipated Use Case (i.e. Facility Management, Asset Management and Energy Management etc.). The Measurement Model is similar to a Post-Construction Model in that its information has been gathered post-construction from on-site measurements using field verification of existing conditions. The Measurement Model, when triggered by a forthcoming project, is used as a basis from which project BIM can proceed, and as such is often procured either before or during Pre-Design.

Model Element - The Model Element refers to an individual part of the model, representing a portion of the project, system or assembly to which it belongs. The Model Element is made up of physical-, data- and catalogue-, based information. Product data, or data-sets, must be defined and identified in the Protocol and on a discipline-, system-, or assembly-, basis.

Model Element Author (MEA) - The Model Element Author refers to the Consultant Team member or specialist identified in the Model Element Table and PxP as responsible for the discipline, system, assembly or element being authored. The MEA is responsible for the development and contribution of a range of Model Elements to a Model.

Phase Model - The Phase Model refers to the deliverable set out for each project phase during the project delivery process where a coordinated model is required to move to the next phase. The Phase Model is the deliverable resulting from the technical review and application of Project Team comments generated by previous milestone Aggregated Models.

Project Execution Plan (PxP) - The Project Execution Plan is a document that lays out how BIM will be implemented on the project, and is a result of the collaboration of the Consultant Team and the DR and shall be dependent on the approval of the DR. The BIM PxP is a project delivery tool guiding the Consultant Team in the smooth delivery of the project BIM throughout its phases. Once approved, the Consultant Team must adhere to and update the BIM PxP throughout the project delivery.

Protocol - The Protocol refers to the set of project-specific and project-defined standardized procedures, conventions and guidelines documented and agreed upon by the Consultant Team for operation of the various software identified for use in the delivery of BIM for the project. The Protocol is a project delivery tool guiding the Consultant Team in the smooth coordination of processes used to deliver BIM for the project. The procedures, conventions and guidelines identified in the Protocol ensure that each contributing MEA maintains reliability, consistency and quality in keeping with project requirements and desired outcomes.

Record Model - The Record Model is the coordination of the Construction Phase Model, As-Built Model, as well as any shop drawings or Models resulting from the Commissioning or BCC procurement phases. The Record Model reflects the changes identified

to the Consultant by the CM and/or DR, and includes updating of the As-Built Model with commissioning, BCC, supplier and last moment change order information generated during procurement and installation. The Record Model is the final model deliverable during project close-out phase.

GENERAL

1. The Consultant agrees that BIM must be used for the project in accordance with this Annex, the PxP and Protocol (both of which may be revised during the course of the project), the Model Element Table and the Information Delivery Manual (IDM) which will be available in Phase II of this RFP;
2. The Consultant agrees that model content must be shared, used and relied upon throughout the course of the project in accordance with this Annex, PxP and Protocol; and
3. The Consultant must promptly report any errors, inconsistencies, omissions or hard/soft clashes discovered in a Model transmitted or shared as a deliverable, to the DR. In so doing, the Consultant shall not relieve any Model Element Author of liability for any of their contributions.

RISK and RELIANCE

1. PSPC will provide a Record Model at the Project outset for use in the development of the project BIM. The Consultant must verify the model accuracy and content using Scan to BIM, technology and carries the sole responsibility for this task, and the drawing accuracy.

MODELLING SCOPE

1. The Modelling scope for the project shall be as set out in this Annex and will be further documented and revised by the PxP, Protocol and Model Element Table.
2. The Phases of the project where Modelling is to be used are:
   - Pre-Design;
   - Schematic Design;
   - Design Development;
   - Construction Documentation;
   - Construction Contract Administration;
   - Building Components and Connectivity (BCC); and
   - Project Close-Out.
3. The anticipated Authorized Uses of models generated for this project are as listed below but not limited to:
   - Existing Conditions;
   - Energy Testing/Simulation;

- Structural and Seismic Analysis/Simulation;
- Design Development;
- Heritage Asset Management;
- Construction Contract Administration; and
- Building Components and Connectivity (BCC).

4. Detailed requirements for the provision of As-Built or Record Models can be found in the Project Brief;
5. The services associated with providing the information necessary for post-construction Model-Use shall only be required if designated in the list below. Detailed requirements can be found in the IDM to be provided in Phase II:

- Asset Management;
- Energy and Performance Management; and
- Space Management.

MODEL MANAGEMENT

1. The Consultant must in consultation with the Project Team, meet, and confer to agree on the content and details of the PxP and Protocol;
2. The Project Execution Plan (PxP) must include but is not limited to the sections outlined in the PxP Template as provided in this Project Brief;
3. To fulfill the requirements set out in the PxP Template, the Consultant must utilize:

- The Project Brief;
- Other supplied or generated documentation (e.g. Project Communication Plan);
- The Model Element Table attached to this document (LOD, LOA and Authorized Uses);
- The Protocol resulting from this Agreement; and
- The Information Delivery Manual (IDM).

4. The Protocol must include, but is not limited to, the following:

- Identification of all anticipated Discipline and/or Specialty Modelling requirements necessary to meet project BIM requirements as set out in this Annex and the Project Brief;
- Identification of the chosen software (to be IFC compliant) for each Model contributor;
- Identification of the preferred procedural protocols for each Model contributor in their chosen software;
- Proposed strategy for the coordination of a single Protocol from the procedural protocols (if identified) of each Model contributor in their chosen software; and
- Proposed strategy for ensuring interoperability between the software chosen by the

various members of the Consultant Team (i.e. IFC import/export, procedures for associated/embedded information, BCF or MVD's).

5. To fulfill the requirements set out above, the Protocol must utilize:
   - The Project Brief and other supplied documentation;
   - The Model Element Table attached to this document (LOD, LOA, and Authorized Uses);
   - The PxP resulting from this Agreement; and
   - Information Delivery Manual.
6. The Consultant must appoint a Consultant Team member as the BIM Specialist and must renew or designate another Consultant Team member as necessary to ensure that there is an active and qualified BIM Specialist at all times during the project;
7. The BIM Specialist must be the Consultant Team member as indicated below:

Project Milestone	BIM Specialist
From Pre-Design until otherwise specified	Consultant

8. If the BIM Specialist, or the role of the BIM Specialist, is to be changed at any point during project delivery, the Consultant must provide written notice and justification. All changes to the role of the BIM Specialist is subject to the approval of the DR.

ANNEX B-1: BIM Project Execution Plan (PXP) Template

BIM Project Execution Plan (PxP)

A PWGSC Template for Consultants - Version #.#

[This Template is a guide to the information required to successfully deliver a BIM for a PWGSC Project. This template must be completed to align to the specifics of each Project in which it is used]

[Date]

FOR

[Project Title]

[Project Number]

[Project Location]

BY

[Authoring Companies]

Table of Contents

1 Project Description

1.1 Project Information

1.1.1	**Project Title:**	
1.1.2	**Project Location:**	
1.1.3	**Project Number:**	

1.2 Project Team

1.2.1 PWGSC Project Team Members

Contact Name	Title/Role	Email	Phone
	Departmental Representative	_____@_____.__	(###) ###-####
	Technical Expert (BIM)[1]	_____@_____.__	(###) ###-####

1.2.2 BIM Specialist (as designated by the Prime Consultant)

Contact Name	Title/Role	Company	Email	Phone
	BIM Specialist		_____@_____.__	(###) ###-####

[1] The DR is assisted by a Technical Services Lead who assigns a BIM Coordinator to the project. This subject matter expert reviews model-based deliverables for quality assurance and control.

1.2.3 Consultant Team BIM Coordinators and Modellers (Sub-Consultants and Specialists)

Contact Name	Title/Role	Company	Email	Phone
			_____@_____.__	(###) ###-####
			_____@_____.__	(###) ###-####
			_____@_____.__	(###) ###-####
			_____@_____.__	(###) ###-####

1.3 Project Outline

1.3.1 Required Work

This section should include a general scope, and description of the high-level work required for this project that will be delivered through the implementation of BIM.

1.3.2 Project Goals

Based on the Consultant's understanding of the information provided in the Project Brief/Request for Proposal and Model Element Table describe how BIM is to be used to achieve the specific project goals during the specified project milestones and phases.

1.3.3 Security Requirements

Based on the Consultant's understanding of the information provided in the Project Brief/Request for Proposal, and the Project security requirements, describe how the specific BIM security requirements will be achieved.

Special consideration should be taken regarding both collaboration and exchange methods for information. Either a federated-, or cloud-based data exchange of information will be established at the discretion of the Prime Consultant (Consultant) (off-site) or the Departmental Representative (DR) (on-site).

1.3.4 Constraints/Opportunities

Project constraints and opportunities could include (but are not limited to) items such as:

- Measured Model data capture during phased abatement, demolition and renovation;
- Security requirements;
- Specialized Model Uses, presenting unique opportunities to optimize, test or utilize new or existing technologies for PWGSC;
- Collaboration with a Construction Manager (CM) and the CM's Team;
- Opportunities to implement BIM for Uses not mentioned in Project Documentation to increase efficiency or quality of delivery; and
- Learning opportunities for the various Project Team members when including a new workflow, process or software solution in the project delivery.

1.3.5 Project Schedule

Based on the Consultant's understanding of the information provided in the Project Brief, Model Element Table and Information Delivery Manual (IDM), a detailed schedule must be prepared for the implementation of BIM for the project delivery, that aligns with the Project Schedule.

Two (2) forms of schedule should be included in this PxP. First, a high-level schedule of Project Phases should be included as per Table 1 - Example below an describe how BIM is to be used to achieve the specific project goals during the specified project milestones and phases and updated to reflect any changes anticipated to the schedule due to the implementation of this PxP. This high-level schedule need only include the key deliverable Models (Phase Models) and serves as a central location for key dates related to BIM delivery.

Second, a detailed Gantt chart depicting the Phases, Milestones and Reviews expected during the implementation of BIM for project delivery should be aligned with those dates outlined in the Project Brief and Table 1. This second and more detailed schedule should be attached to the PxP as Annex B-1-2, and include a detailed project activity breakdown (to include, in addition to the Reviews, Milestones and Phases, any deliverables between Consultant Team Members such as Discipline Models, etc.). The dates associated with deliverables within the Consultant Team are to be listed for over all Project Team information, as well as to ensure the smooth delivery of the project BIM deliverables.

Table 1 – Example: Key Project Activities

Required Service #	Project Stage	Duration	Estimated Completion
-	Consultant Team Contract Award	_ Weeks	DD/MM/YYYY
-	Construction Manager Contract Award	_ Weeks	DD/MM/YYYY
RS 1	BIM PxP and Protocol (Design Management Plan)	_ Weeks	DD/MM/YYYY
RS 2	Pre-Design	_ Weeks	DD/MM/YYYY
RS 3	Schematic Design (SD)	_ Weeks	DD/MM/YYYY
RS 4	Design Development (DD)	_ Weeks	DD/MM/YYYY
RS 5/6	Construction Tender Documentation	_ Weeks	DD/MM/YYYY
RS 7	Construction and Contract Administration	_ Weeks	DD/MM/YYYY
RS 8	Commissioning	_ Weeks	DD/MM/YYYY

1.4 Existing Documentation

The Consultant, in keeping with the existing and supporting documentation listed in the Project Brief, must list all pertinent and referenced documents below for the purposes of providing BIM operators, coordinators and managers within the Consultant Team with a centralized list of resources. All documentation should be listed as retrievable links wherever possible.

e.g. The following documentation has been made available to the consultant, to assist in the completion of the required services of the contract which required the creation and signing of this Project Execution Plan:

- PWGSC's Doing Business with the NCA
- PWGSC's Information Delivery Manual
- Project Model Element Table
- Project Brief
- …etc.

2 Project BIM Use

2.1 BIM Objectives

To begin the PxP process, the Project Team must outline the objectives of using BIM as related to the identified Project Goals. These BIM objectives will mostly consist of project-specific and measurable outcomes, and the Consultant Team is encouraged to strive to improve the successes of the various project phases they address.

2.1.1 High Level BIM Objectives

Priority (1 - 3)	Objective Description	Associated Uses
e.g. 1	e.g. Accurate 3D Record Model for Asset Management	Record Modelling 3D Coordination
e.g. 2	e.g. Increase efficiency of Design Process	BIM Authoring Design Review 3D Coordination
e.g. 1	e.g. Condensed Schedule Project Delivery	4D Modelling 3D Coordination Project Phasing

2.2 Authorized Use Worksheet

The following Worksheet is intended to assist in the discussion between the Consultant Team and the DR during the verification of the Authorized Uses listed in Annex B of the Project Brief. Based on the Consultant's understanding of the information provided in the Project Brief and Model Element Table, list all anticipated BIM Uses for this project before seeking authorization[2]. The Worksheet provides a generic, non-exhaustive list of possible Uses; as such, it is the Consultants responsibility to provide the completed list.

[2] Between this Annex and the Model Element Table, these Uses refer to the primary desired outcomes for the implementation of BIM on a specific project, but may be subject to change during the lifecycle of the project. The Departmental Representative is the Authority for BIM Use.

Exchange Requirement	Planning & Pre-Design	Schematic/Design Development	Construction	Post Construction
Functional Programming				
Site Analysis				
Measured Model				
Scheduling				
Cost Estimation				
Design Coordination & Review				
Structural Analysis				
Energy Analysis				
Geotechnical Analysis				
Lighting Analysis				
Sustainability Evaluation				
M&E Analysis				
Building Automation Systems Planning & Programming				
Construction Specifications				
Design Packages				
3D Control & Planning				
As-Built Model				
Change Management				
Record Model				
Commissioning				
Heritage Asset Management				
Furniture & Equipment				
Space Management				
Other Specialty Deliverables:				

2.3 Authors and Users of BIM Deliverables

Based on the Consultant's understanding of the information provided in the Project Brief and Model Element Table , list the Model Element Authors (MEA's) and users for each BIM deliverable. Update and/or modify the Model Element Table to reflect anticipated items for each deliverable. Confirm the Level of Development (LOD), Level of Accuracy (LOA) and non-geometric attributes expected for each Model Element. Attach the updated Model Element Table to the PxP.

2.3.1 BIM Roles and Responsibilities

Describe all BIM roles and responsibilities below, (such as the BIM Specialist, BIM Coordinators/Managers for each Model Element Authoring group, Technologists etc.) The following list is an example only.

BIM Role	Contact	Responsibilities
e.g. BIM Specialist	Name of Team Member	Listed Responsibilities

2.3.2 BIM Teams and Staff

Describe the Consultant Team Members responsible for the various BIM Uses within the project.

BIM Use	Organization	Location	Lead Contact
e.g. Disciplinary Model	Discipline Organization	Organization Address	Lead Contact Name

2.3.3 Consultant Team Organization

Describe the organization and structure of the Consultant Team using a flow chart. This section is to be filled by the Consultant on behalf of the Consultant Team and is to be informed by the communications and planning strategies implemented for the project. Once completed, this org-chart will be used to assist in the development of process mapping.

3 Technological Resources

3.1 Software

Describe proposed software and versions in the tables below.

Note: **PWGSC requires that all software be IFC compliant (version 2X3 or later).**

3.1.1 Authoring Software

Consultant Team Member	Software	Version	Native Format	Comments
e.g. Architect	Name	XXXX	.XXX	

3.1.2 Coordination Software

Consultant Team Member	Software	Version	Native Format	Comments
e.g. BIM Specialist	Name	XXXX	.XXX	

3.1.3 Specialty Software

Consultant Team Member	Software	Version	Native Format	Comments
e.g. Energy Modeller	Name	XXXX	.XXX	

3.2 Interoperability

3.2.1 Propose an interoperability strategy describing the proposed implementation of the items included, but not limited to: IFC

3.2.2 Model View Definitions (MVD)

3.2.3 BIM Collaboration Format (BCF)

3.3 Hardware

Based on the understanding that hardware specification becomes valuable when information begins to be shared between several disciplines or organizations, and when ensuring that the downstream hardware is not less powerful than the hardware used to create the information, PWGSC requires a description of the proposed hardware solutions to be used for the project.

With this in mind, and to ensure that PWGSC can both use, and manage, the information generated during this project, the Consultant Team should choose the hardware that is in the highest demand and most appropriate for the majority of BIM Uses identified in Section 2. The hardware specifications chosen should reflect the minimum requirement for Consultant Team compliance in the table below.

Note: This information will be used by PWGSC in the development of lessons learned and future IT/IM solutions for internal business processes.

BIM Use	Operating System	Hardware Specifications
e.g. Design Authoring	Name	Processor Requirements Memory Requirements Graphics Card Requirements Network Card etc.

3.4 Associated Databases

Based on the Consultant's understanding of the information provided in the Project Brief, list all databases anticipated for amalgamation into, and/or linking to, the Modelling process.

Database	Format	Notes
e.g. Heritage Asset DB	e.g. XML	Notes should include additional information pertinent to the incorporation of secondary data sources to the Modelling process.

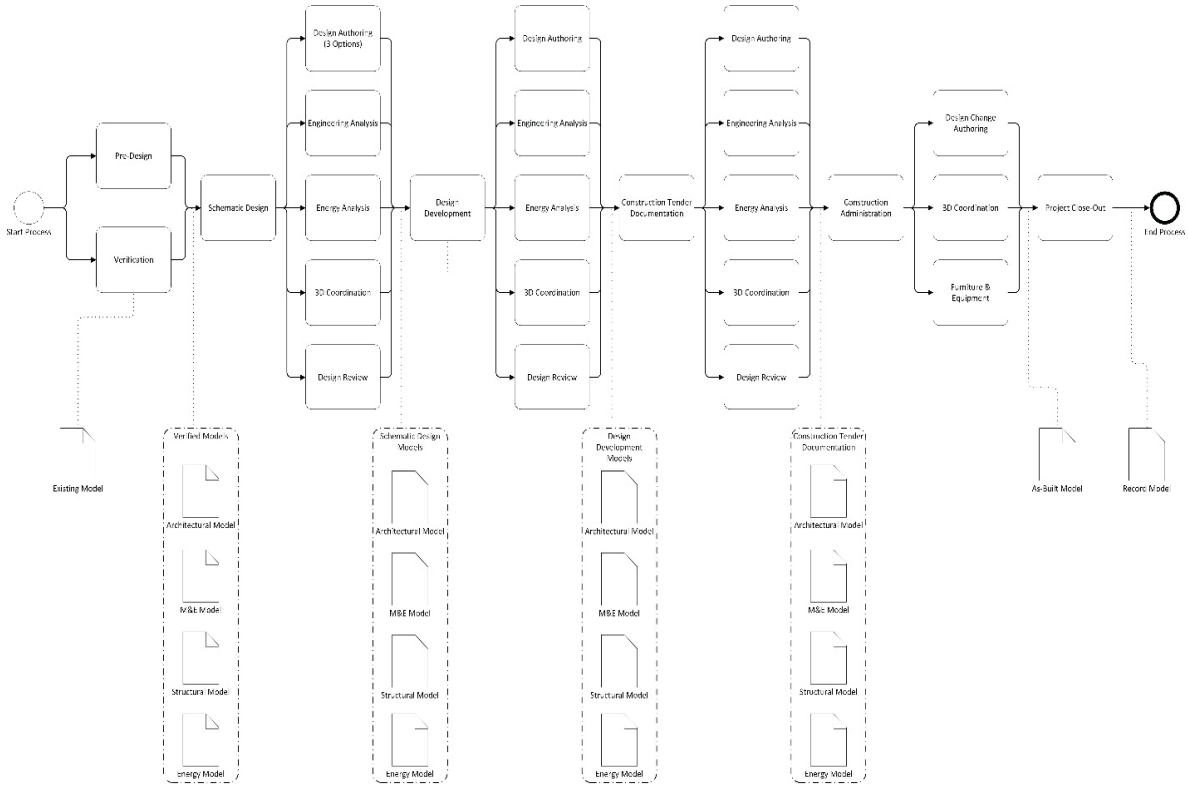
3.4.1 Database Integration Strategy

Based on the Consultant's understanding of the Project Brief, describe an integration strategy for those databases requiring amalgamation or linking to the Modelling Process.

3.5 Process Mapping

In accordance with the Information Delivery Manual, provide process maps for:

Level 1: A Project Map of all the BIM Uses in the larger setting of the project's phasing and delivery.



Level 2: A detailed Project Process Map of the BIM Uses identified in the Annex B-2. These process maps provide a detailed plan for execution of each BIM Use. They also define the specific Information Exchanges and control points for each activity.

Note: A legend and description of all elements/symbols included on the maps must be placed in this section. Sample maps are available in the IDM, but should be modified based on project specific information and requirements. All process maps should be compliant with the Business Process Modelling Notation (BPMN).

3.5.1 Level 1 – Project Map

The Project scale Process Map should be inserted here.

Figure 1 - Sample Level 1 Project Map

3.5.2 Level 2 – Project Process Map

Based on the Consultant's understanding of the Project Brief, Contract, Information Delivery Manual and Model Element Table, list the Project specific Modelling Processes that have been mapped and attached to this PxP. This list should take the form of a table as seen below.

Project Process	Consultant Team Member Responsible
i.e. Design Authoring	Name

4 Project Administration

Based on the Consultant's understanding of the information provided in the Project Brief and Model Element Table, define the following.

4.1 Collaboration Strategy

Describe the proposed strategy for collaboration during project delivery, in alignment with the overall Project Communication Plan. This strategy must take into account the various constraints, opportunities and security requirements identified in Section 1.3. The solution should include items such as communication methods, document management, document transfer, and record storage, etc.

4.1.1 Meetings

The following are examples of meetings that should be considered and/or used during the completion of this PxP.

Meeting Type	Project Stage(s)	Frequency	Participants	Location
e.g. BIM Requirements Kick-Off	e.g. Pre-Design	e.g. One-time		
Others:				

4.1.2 Electronic Communication Procedures

To be developed at the discretion of the Consultant Team, however please note that BCF is required for IFC Model View Definition.

4.2 Coordination

Describe the proposed solution for modelling coordination during project delivery. This solution must take into account the various constraints, opportunities and security requirements identified in Section 1.3.

4.3 Quality Control

Describe the overall strategy for quality control of the Model. This strategy should take into account the LOD and LOA described in the Model Element Table, as well as the Authorized Uses and desired outcomes for the project.

4.3.1 Quality Control Checks

This section of the PxP is to be filled at the discretion of the Consultant Team, and will be used by PWGSC for lesson learned and future BIM requirement development. Quality Control checking should reflect the best practices set out by the BIM Specialist as the lead for BIM implementation on the project.

Checks	Description	Party Responsible	Software	Frequency
Visual	Ensure that there are no unintended model components and the design intent has been followed.			
Clash	Detect problems in the model where two components are interfering with each other (industry refers to these as hard or soft clashes).			
Integrity	Describe the QC validation process used to ensure that the Project Data Set has no undefined, incorrectly defined or duplicated values, and the reporting process on non-compliant elements and corrective action plans.			

5 Information Exchanges

In accordance with the Information Delivery Manual, and as a result of the process mapping undertaken for this PxP, the following list of Exchange Requirements should be verified against project requirements, and project processes. These Exchange Requirements should then be attached to this document.

5.1 Information Delivery Schedule

List and document the information exchanges marked as deliverables that will occur for this project for submission and approval. Create a schedule for all submissions. Detailed Exchange Requirements for each Information Exchange listed in the schedule must be attached to this PxP.

ER	Date Due	Sender	Receiver	Model File	Format
e.g. Design Authoring - 3D Coordination	DD/MM/YYYY	e.g. Structural Engineer	e.g. BIM Specialist	e.g. DD Structural Model	.Native .IFC

6 Project Schedule (updated against BIM requirements)

Insert an updated Gantt Chart Schedule for the Project.

7 Project Process Mapping

7.1 Insert each individual Project Process Map here.

7.2 [Add additional process maps if required]

8 Project Exchange Requirements

8.1 Insert each individual Exchange Requirements here.

8.2 [Add Exchange Requirements if required]

9 Model Element Table

9.1 Insert the updated Model Element Table here.

9.2 Insert the Authorized Uses Table here.

9.3 Insert the Model Element Author Worksheet here.

ANNEX B-2: Model Element Table

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Annex B-2 - Model Element Table

Level of Development and Accuracy, Authorized Uses and Model Element Authorship

All LOD/LOA requirements specified reflect on new or original modelling content within the scope of the project this Table is used with. In cases where an element has not been listed, the average category requirements shall be used until such time as a change to this Table has been approved by the Departmental Representative.

Computer Aided Design Drafting (CADD) & Building Information Modelling (BIM)

Last revised: 2017-05 Project: West Memorial Rehabilitation
By: PSPC

Development (LOD)	
0	Not Modeled. Elements to be shown as 2D symbols.
100	Conceptual areas and volumes, purely geometric
200	An approximate modelled representation, information associated
300	An informed and modelled representation, information associated
400	A detailed/specific modelled representation, information associated
500	An accurate modelled representation, information associated
600	An accurate modelled representation, CAFM and Heritage information associated

Requirements Legend (REQ)	
●	Mandatory
○	Mandatory Req'd if exists
✖	Not Required by PSPC
✓	Optional Requirement
◆	See Comments
N.A.	None Applicable

of Accuracy (LOA)	
1	Accurate to within ± 10 mm in the X,Y, and Z coordinates
2	Accurate to within ± 25 mm in the X,Y, and Z coordinates
3	Accurate to within ± 50 mm in the X,Y, and Z coordinates
4	Accurate to within ± 250 mm in the X,Y, and Z coordinates
5	Accurate to within ± 500 mm in the X,Y, and Z coordinates
6	Information taken from original construction documents, with no tolerance specified.

Presicion by elements (LS/SH)	
LS	Located or Surveyed Elements
SH	Subsurface or Hidden Elements

Model Element Author (MEA)

As required in the Principle Agreement, use a three letter code to identify the Consultant Team member responsible as the MEA.

Level 1 Major Group Elements	Level 2 Group Elements	Level 3 Individual Elements	Level 4 Sub Elements	Project Phases/Milestones: Pre-Design REQ	Pre-Design LOD	Pre-Design MEA	Pre-Design LOA	Schematic Design REQ	Schematic Design LOD	Schematic Design MEA	Schematic Design LOA	Design Development REQ	Design Development LOD	Design Development MEA	Design Development LOA	Construction Docs REQ	Construction Docs LOD	Construction Docs MEA	Construction Docs LOA	Contract Admin. REQ	Contract Admin. LOD	Contract Admin. MEA	Contract Admin. LOA
PROJECT SETUP						LS/SH				LS/SH				LS/SH				LS/SH				LS/SH	
		Building Grids		●	0			●	0			●	0			●	0			●	0		
			Planning Grid	●	0		5	●	0		4	●	0		3	●	0		3	●	0		2
		Floor Levels		●	200		5	●	300		4	●	400		3	●	500		3	●	500		2
		Site Plan/Grading/Topography		●	200		5	●	300		4	●	400		3	●	500		3	●	500		2
	Other Elements:	All Elements not listed, but agreed upon in collaboration with the DR.																					
SUBSTRUCTURE						LS/SH				LS/SH				LS/SH				LS/SH					
	Foundations	Standard Foundations		●	200		5	●	300		4	●	400		3	●	500		3	●	500		2
		Slab on Grade		●	200		5	●	300		4	●	400		3	●	500		3	●	500		2
	Basement Construction	Basement Excavation																					
		Basement Walls		●	200		5	●	300		4	●	400		3	●	500		3	●	500		2
	Structures	Columns		●	200		5	●	300		4	●	400		3	●	500		3	●	500		2
		Beams		●	200		5	●	300		4	●	400		3	●	500		3	●	500		2
		Floor Construction		●	200		5	●	300		4	●	400		3	●	500		3	●	500		2
			Concrete Slab	●	200		5	●	300		4	●	400		3	●	500		3	●	500		2
			Vehicle ramps & curbs	●	200		5	●	300		4	●	400		3	●	500		3	●	500		2
			Joists	●	200		5	●	300		4	●	400		3	●	500		3	●	500		2
		Ceiling Construction		●	200		5	●	300		4	●	400		3	●	500		3	●	500		2
			Ceiling Beam	●	200		5	●	300		4	●	400		3	●	500		3	●	500		2
			Trusses	●	200		5	●	300		4	●	400		3	●	500		3	●	500		2
		Control (Expansion) joint		●	200		5	●	300		4	●	400		3	●	500		3	●	500		2
			Expansion joint seal cover									●	400		3	●	500		3	●	500		2
	Other Elements:	All Elements not listed, but agreed upon in collaboration with the DR.																					
SUPER-STRUCTURE						LS/SH				LS/SH				LS/SH				LS/SH					
	Super Structure	Floor Construction		●	200		5	●	300		4	●	400		3	●	500		3	●	500		2
			Floor Structural System	●	200		5	●	300		4	●	400		3	●	500		3	●	500		2
			Interior Structural Walls	●	200		5	●	300		4	●	400		3	●	500		3	●	500		2
		Roof Construction		●	200		5	●	300		4	●	400		3	●	500		3	●	500		2
			Dormer Roof	●	200		5	●	300		4	●	400		3	●	500		3	●	500		2
	Other Elements:	All Elements not listed, but agreed upon in collaboration with the DR.																					

Level 1 Major Group Elements	Level 2 Group Elements	Level 3 Individual Elements	Level 4 Sub Elements	Pre-Design				Schematic Design				Design Development				Construction Docs				Contract Admin.			
				REQ	LOD	MEA	LOA	REQ	LOD	MEA	LOA	REQ	LOD	MEA	LOA	REQ	LOD	MEA	LOA	REQ	LOD	MEA	LOA
BUILDING ENVELOPE							LS/SH				LS/SH				LS/SH				LS/SH				
	Exterior Walls		Non Load Bearing Exterior Walls	●	200		4	●	300		4	●	400		3	●	500		3	●	500		2
			Load Bearing Exterior Walls	●	200		4	●	300		4	●	400		3	●	500		3	●	500		2
			Retaining Walls	●	200		4	●	300		4	●	400		3	●	500		3	●	500		2
	Exterior Windows		Curtain Walls	●	200		4	●	300		4	●	400		3	●	500		3	●	500		2
			Skylights	●	200		4	●	300		4	●	400		3	●	500		3	●	500		2
	Exterior Doors			●	200		4	●	300		4	●	400		3	●	500		3	●	500		2
	Roofing	Roof Coverings		●	200		4	●	300		4	●	400		3	●	500		3	●	500		2
		Roof Openings		●	200		4	●	300		4	●	400		3	●	500		3	●	500		2
	Other Elements:	All Elements not listed, but agreed upon in collaboration with the DR.																					
INTERIORS							LS/SH				LS/SH				LS/SH				LS/SH				
	Interior Construction	Partitions		●	200		5	●	300		4	●	400		3	●	500		3	●	500		2
			Load Bearing Interior Walls	●	200		5	●	300		4	●	400		3	●	500		3	●	500		2
		Interior Windows		●	200		5	●	300		4	●	400		3	●	500		3	●	500		2
		Interior Doors		●	200		5	●	300		4	●	400		3	●	500		3	●	500		2
	Stairs	Stair Construction (& Railings)		●	200		5	●	300		4	●	400		3	●	500		3	●	500		2
			Ladders	●	200		5	●	300		4	●	400		3	●	500		3	●	500		2
		Stair Finishes						●	300		4	●	400		3	●	500		3	●	500		2
	Interior Finishes	Wall Finishes						●	300		4	●	400		3	●	500		3	●	500		2
		Floor Finishes						●	300		4	●	400		3	●	500		3	●	500		2
		Ceiling Finishes						●	300		4	●	400		3	●	500		3	●	500		2
			Ceiling grid	●	0			●	0			●	0			●	0			●	0		
			Bulkheads & Openings	●	200		5	●	300		4	●	400		3	●	500		3	●	500		2
			Access Door	●	200		5	●	300		4	●	400		3	●	500		3	●	500		2
	Other Elements:	All Elements not listed, but agreed upon in collaboration with the DR.																					
SERVICES							LS/SH				LS/SH				LS/SH				LS/SH				
	Conveying	Elevators & Lifts						●	200		4	●	300		3	●	400		2	●	500		2
		Escalators & Moving Walks						●	200		4	●	300		3	●	400		2	●	500		2
		Other Conveying Systems						●	200		4	●	300		3	●	400		2	●	500		2
	Plumbing	Plumbing Fixtures						●	300		4	●	400		3	●	500		2	●	500		2
			Urinal / W.C. / Bidets / Sink / Tubs					●	300		4	●	400		3	●	500		2	●	500		2
			Showers Stalls					●	300		4	●	400		3	●	500		2	●	500		2
			Drinking Fountains					●	300		4	●	400		3	●	500		2	●	500		2
			Washroom Partitions and Doors					●	300		4	●	400		3	●	500		2	●	500		2
			Floor Drains					●	300		4	●	400		3	●	500		2	●	500		2
		Domestic Water Distribution						●	300		4	●	400		3	●	500		2	●	500		2
			Hot & Cold water tanks					●	300		4	●	400		3	●	500		2	●	500		2
	HVAC	Energy Supply Units						●	200		4	●	300		3	●	400		2	●	500		2
		Heat Generating Systems						●	200		4	●	300		3	●	400		2	●	500		2
			Convectors					●	200		4	●	300		3	●	400		2	●	500		2
		Distribution Systems						●	200		4	●	300		3	●	400		2	●	500		2
			Supply & Return					●	200		4	●	300		3	●	400		2	●	500		2
		Controls & Instrumentation										●	300		3	●	300		2	●	500		2
			Thermostats									●	300		3	●	300		2	●	500		2
		Other HVAC Systems & Equipment						●	300		4	●	300		3	●	400		2	●	500		2
	Fire Protection	Sprinklers						●	300		4	●	400		3	●	500		2	●	500		2
			Sprinkler Pipes					●	300		4	●	400		3	●	500		2	●	500		2
		Standpipes						●	300		4	●	400		3	●	500		2	●	500		2
		Fire Protection Specialties										●	300		3	●	300		2	●	500		2

Level 1 Major Group Elements	Level 2 Group Elements	Level 3 Individual Elements	Level 4 Sub Elements	Pre-Design				Schematic Design				Design Development				Construction Docs				Contract Admin.			
				REQ	LOD	MEA	LOA	REQ	LOD	MEA	LOA	REQ	LOD	MEA	LOA	REQ	LOD	MEA	LOA	REQ	LOD	MEA	LOA
			Exit Signs / Buzzers / Bells									●	300		3	●	300		2	●	500		2
			Emergency Lighting									●	300		3	●	300		2	●	500		2
			Pull Stations / Motion Detectors									●	300		3	●	300		2	●	500		2
			Heat & Smoke Detectors									●	300		3	●	300		2	●	500		2
			Fire Hose Cabinets									●	300		3	●	300		2	●	500		2
			Fire Extinguishers									●	300		3	●	300		2	●	500		2
			Emergency Eye Wash & Shower									●	300		3	●	300		2	●	500		2
		Other Fire Protection Systems						●	300		4	●	300		3	●	300		2	●	500		2
			Annunciation panels									●	300		3	●	300		2	●	500		2
			P.A. Systems equipement									●	300		3	●	300		2	●	500		2
	Electrical	Electrical Service & Distribution						●	300		4	●	400		3	●	500		2	●	500		2
			Electrical Services panels					●	300		4	●	400		3	●	500		2	●	500		2
			Switch and outlets					●	300		4	●	400		3	●	500		2	●	500		2
		Lighting and Branch Wiring						●	300		4	●	400		3	●	500		2	●	500		2
		Communications & Security						●	300		4	●	400		3	●	500		2	●	500		2
			Conference Systems					●	200		4	●	300		3	●	400		2	●	500		2
		Other Electrical Systems						●	300		4	●	400		3	●	500		2	●	500		2
		Electrical Fixtures						●	200		4	●	300		3	●	400		2	●	500		2
			Light Fixtures					●	200		4	●	300		3	●	400		2	●	500		2
			Ceiling Fans					●	200		4	●	300		3	●	400		2	●	500		2
	Communication	Communication Service & Distribution										●	400		3	●	500		2	●	500		2
		Communication Cables and Equipment										●	400		3	●	500		2	●	500		2
		Other Communication Systems										●	400		3	●	500		2	●	500		2
			Phone / Fax / Cable jacks									●	400		3	●	500		2	●	500		2
			Telecom panels & Switches									●	400		3	●	500		2	●	500		2
	Security	Security Service & Distribution						●	300		4	●	400		3	●	500		2	●	500		2
		Security Cables and equipement						●	300		4	●	400		3	●	500		2	●	500		2
		Security Fixtures						●	200		4	●	300		3	●	400		2	●	500		2
			Surveillance cameras					●	200		4	●	300		3	●	400		2	●	500		2
			Gates & Pay booths					●	200		4	●	300		3	●	400		2	●	500		2
	Other Elements:	All Elements not listed, but agreed upon in collaboration with the DR.																					
FURNITURE & EQUIPMENT							LS/SH				LS/SH				LS/SH				LS/SH				
	Equipment	Commercial Equipment										●	200		5	●	300		4	●	500		2
		Washroom Fixtures (Universal Access)	Washroom Grab-Bars									●	400		3	●	500		2	●	500		2
			Other UA Washroom Fixtures									●	400		3	●	500		2	●	500		2
	Furnishings	Fixed Furnishings										●	300		4	●	400		3	●	500		2
			Benches									●	300		4	●	400		3	●	500		2
			Lockers									●	300		4	●	400		3	●	500		2
			Planters									●	300		4	●	400		3	●	500		2
			Shelving									●	300		4	●	400		3	●	500		2
			Built-in Cabinets									●	300		4	●	400		3	●	500		2
			Counter Tops									●	300		4	●	400		3	●	500		2
		Movable Furnishings										●	200		4	●	300		3	●	500		2
			Office Furnishings									●	200		4	●	300		3	●	500		2
		Signage										●	200		4	●	300		3	●	500		2
		Barrier Free Sign and Equipment										●	300		4	●	400		3	●	500		2
SITEWORK							LS/SH				LS/SH				LS/SH				LS/SH				

Level 1 Major Group Elements	Level 2 Group Elements	Level 3 Individual Elements	Level 4 Sub Elements	Pre-Design				Schematic Design				Design Development				Construction Docs				Contract Admin.			
				REQ	LOD	MEA	LOA	REQ	LOD	MEA	LOA	REQ	LOD	MEA	LOA	REQ	LOD	MEA	LOA	REQ	LOD	MEA	LOA
	Site Improvements	Roadways & Driveways		●	200		4	●	200		3	●	300		3	●	400		3	●	500		3
		Parking Lots		●	200		4	●	200		3	●	300		3	●	400		3	●	500		3
			Vehicle Ramps	●	200		4	●	200		3	●	300		3	●	400		3	●	500		3
			Parking Lines and Spaces	●	200		4	●	200		3	●	300		3	●	400		3	●	500		3
			Bicycle Stalls					●	200		3	●	300		3	●	400		3	●	500		3
			Parking Number					●	200		3	●	300		3	●	400		3	●	500		3

BIM - Level of Development (LOD)		Authorized Uses
0	Not Modeled. Elements to be shown as 2D symboles.	As specified in the Principle Agreement.
100	Model Elements may be geometrically represented in the model with conceptual areas and volumes (i.e. basic massing) or another generic representation (i.e. symbol), but does not satisfy the requirements for LOD 200. Information must be derived from another source.	Analysis Cost Estimating Schedule **Others:**
200	Model Elements may be geometrically represented in the model as an approximate system, object, or assembly with approximate quantities, size, shape, location, and orientation. Additional information may be attached to the Model Element.	Analysis Cost Estimating Schedule Coordination **Others:**
300	Model Elements may be geometrically represented in the model as a generic system, object or assembly in terms of size, shape, location, quantity, and orientation. Additional information may be attached to the Model Element.	Analysis Cost Estimating Schedule Coordination **Others:**
400	Model Elements may be geometrically represented in the model as a specific/detailed system, object or assembly in terms of size, shape, location, quantity, and orientation. Additional information may be attached to the Model Element.	Analysis Cost Estimating Schedule Coordination **Others:**
500	Model Elements are accurate representations (to the LOA specified) in terms of size, shape, location, quantity, and orientation with detailing, fabrication, assembly and installation information. Additional information may be attached to the Model Element.	Analysis Cost Estimating Schedule Coordination **Others:**
600	Model Elements are accurate representations (to the LOA specified) in terms of size, shape, location, quantity, orientation, and interfaces. Model Elements contain lifecycle information, maintenance requirements, ID numbers, manufacturer, element type as well as any other information identified as pertinent to Computer Aided Facility Management (CAFM) or Heritage BIM. Additional information may be attached to the Model Element.	Analysis Cost Estimating Schedule Coordination **Others:**

Public Services and Procurement Canada | Services publics et Approvisionnement Canada

Annex B2 - Model Element Table

Model Element Authorship

Computer Aided Design Drafting (CADD) & Building Information Modelling (BIM)

Last revised: 2017-03
By: PSPC

Project: West Memorial Rehabilitation

BIM - Model Element Authors	
ARCH	General/Prime Architect
	Landscape Architect
	Interior Designer
ENG	Electrical
	Municipal
	Structural/Seismic
	Mehcanical
	Electrical
	Others:
SPEC	Heritage Conservation
	Sustainability
	Others:

Level 1 Major Group Elements	Level 2 Group Elements	Level 3 Individual Elements	Level 4 Sub Elements	MEA Assignments: MEA	MEA Assignments: Notes
PROJECT SETUP					
		Building Grids			
			Planning Grid		
		Floor Levels			
		Site Plan/Grading/Topography			
	Other Elements:	All Elements not listed, but agreed upon in collaboration with the DR.			
SUBSTRUCTURE					
	Foundations	Standard Foundations			
		Slab on Grade			
	Basement Construction	Basement Excavation			
		Basement Walls			
	Structures	Columns			
		Beams			
		Floor Construction			
			Concrete Slab		
			Vehicle ramps & curbs		
			Joists		
		Ceiling Construction			
			Celing Beam		
			Trusses		
		Control (Expansion) joint			
			Expansion joint seal cover		
	Other Elements:	All Elements not listed, but agreed upon in collaboration with the DR.			
SUPER-STRUCTURE					
	Super Structure	Floor Construction			
			Floor Structural System		
			Interior Structural Walls		
		Roof Construction			
			Dormer Roof		
	Other Elements:	All Elements not listed, but agreed upon in collaboration with the DR.			
BUILDING ENVELOPE					
	Exterior Walls		Non Load Bearing Exterior Walls		
			Load Bearing Exterior Walls		
			Retaining Walls		
	Exterior Windows		Curtain Walls		
			Skylights		
	Exterior Doors				
	Roofing	Roof Coverings			
		Roof Openings			
	Other Elements:	All Elements not listed, but agreed upon in collaboration with the DR.			
INTERIORS					
	Interior Construction	Partitions			
			Load Bearing Interior Walls		
		Interior Windows			
		Interior Doors			
	Stairs	Stair Construction (& Railings)			
			Ladders		
		Stair Finishes			
	Interior Finishes	Wall Finishes			
		Floor Finishes			
		Ceiling Finishes			
			Ceiling grid		
			Bulkheads & Openings		
			Access Door		
	Other Elements:	All Elements not listed, but agreed upon in collaboration with the DR.			

Level 1 Major Group Elements	Level 2 Group Elements	Level 3 Individual Elements	Level 4 Sub Elements	MEA Assignments	
				MEA	Notes
SERVICES					
	Conveying	Elevators & Lifts			
		Escalators & Moving Walks			
		Other Conveying Systems			
	Plumbing	Plumbing Fixtures			
			Urinal / W.C. / Bidets / Sink / Tubs		
			Showers Stalls		
			Drinking Fountains		
			Washroom Partitions and Doors		
			Floor Drains		
		Domestic Water Distribution			
			Hot & Cold water tanks		
	HVAC	Energy Supply Units			
		Heat Generating Systems			
			Convectors		
		Distribution Systems			
			Supply & Return		
		Controls & Instrumentation			
			Thermostats		
		Other HVAC Systems & Equipment			
	Fire Protection	Sprinklers			
			Sprinkler Pipes		
		Standpipes			
		Fire Protection Specialties			
			Exit Signs / Buzzers / Bells		
			Emergency Lighting		
			Pull Stations / Motion Detectors		
			Heat & Smoke Detectors		
			Fire Hose Cabinets		
			Fire Extinguishers		
			Emergency Eye Wash & Shower		
		Other Fire Protection Systems			
			Annunciation panels		
			P.A. Systems equipement		
	Electrical	Electrical Service & Distribution			
			Electrical Services panels		
			Switch and outlets		
		Lighting and Branch Wiring			
		Communications & Security			
			Conference Systems		
		Other Electrical Systems			
		Electrical Fixtures			
			Light Fixtures		
			Ceiling Fans		
	Communication	Communication Service & Distribution			
		Communication Cables and Equipment			
		Other Communication Systems			
			Phone / Fax / Cable jacks		
			Telecom panels & Switches		
	Security	Security Service & Distribution			
		Security Cables and equipement			
		Security Fixtures			
			Surveillance cameras		
			Gates & Pay booths		
	Other Elements:	All Elements not listed, but agreed upon in collaboration with the DR.			
FURNITURE & EQUIPMENT					
	Equipment	Commercial Equipment			
		Washroom Fixtures (Universal Access)	Washroom Grab-Bars		
			Other UA Washroom Fixtures		
	Furnishings	Fixed Furnishings			
			Benches		
			Lockers		
			Planters		
			Shelving		
			Built-in Cabinets		
			Counter Tops		
		Movable Furnishings			
			Office Furnishings		
		Signage			
		Barrier Free Sign and Equipment			
SITEWORK					
	Site Improvements	Roadways & Driveways			
		Parking Lots			
			Vehicle Ramps		
			Parking Lines and Spaces		
			Bicycle Stalls		
			Parking Number		

ANNEX C: Summary of the Users' Requirements

The following is a summary of the types and initial quantities of spaces that will require fit-up for the WMB. This summary is not all inclusive.

1. Base Building Requirements

Certain base building spaces are required for both the swing space and the long-term occupancy and must be scaled for the more densely populated long-term occupancy. These spaces include but are not limited to:

1. General Security Requirements: to secure the building;
2. Public Washrooms: as per Building Code for long-term occupancy of the building;
3. Janitorial Rooms: as required to support building and occupancy functions;
4. Loading Dock: to support swing space occupancy and the long-term occupancy of the building;
5. Waste storage; including cold storage for food waste, if required, to meet long-term PWGSC standards and requirements of future building occupancy using Workplace 2.0 Fit-up Standards.

2. User Fit-Up Requirements

The SCCB will be vacated to allow for a major rehabilitation of that building. All functions now accommodated in the SCCB by the, SCC, FC, RCMP and PWGSC, will be temporarily located in the WMB. There will be no other tenants of the WMB while the Users are located there. The high-level requirement for this swing- space is to:

1. Relocate one (1) Supreme Courtroom and two (2) Federal Courtrooms along with all supporting staff and services to a fully operational space.
2. Implement a work place solution that accommodates the Users requirements; and
3. Provide technology, infrastructure and security requirements to meet SCC/FC/RCMP/PWGSC operational needs.

The SCC/FC/RCMP/PWGSC requires approximately 12,000 m² useable floor area for offices for approximately 300 Full Time Equivalent (FTEs) and the required Special Purpose Space, as estimated in the Draft Preliminary Functional Program. Parking and storage in the sub-basement is not included in the useable floor area requirement. A brief description of the required SCC/FC/RCMP/PWGSC spaces, is outlined below. The Draft Preliminary Functional Program will be available in Phase II of this RFP. The Consultant must review and update the Function Program, as required, throughout the Project.

The list of required space type includes, but is not limited to:

2.1 Supreme Court of Canada

2.1.1 Executive Style Office Space

1. **SCC Judges Chambers** (nine [9])**:** A suite of rooms;

2. **SCC Retired Judges Chamber** (one [1])**:** A suite of rooms;
3. **SCC Judges Library/Reading Room:** Used for events, interviews by the media, meetings with invited visitors and as an informal lounge area;
4. **SCC Judges Conference Room:** A secure recess room, located directly off the Supreme Courtroom, where the Justices can withdraw to discuss and deliberate. Including an adjacent robing room, private washrooms and kitchenette; and
5. **SCC Judges Dining Room and Kitchen:** Used exclusively by the Judges and their invitees. This space must accommodate up to 45/50 people for dining and provide a soft seating/ lounge area. The Judges Dining Room Kitchen is used solely to service the Judges Dining Room and is a fully equipped kitchen able to produce full course style meals.

2.1.2 Administration Space

1. **Closed** Offices - 88;
2. **Shared Offices -** 12; and
3. **Workstations** – 166

2.1.3 Special Purpose Space:

1. **The Supreme Courtroom:** Is to be the most prominent element in the building and is complete with audio visual and simultaneous interpretation booths;
2. **Grand Hall:** A large and dignified space with direct access the Supreme Courtroom for federal lawyers, visitors and the press. This space is used as an assembly area for the guided tours; provides an overflow viewing area for court proceedings; and provides assembly space for special events such as the swearing-in of new judges, press conferences, and celebrations;
3. **Barrister's Lounge:** Is for external lawyers use while at the SCC building;
4. **Robing Rooms:** Provided for external lawyers to change into the appropriate clothing and store personal belongings while working in the building;
5. **Press Room:** Primarily used for the press as a work area;
6. **Quiet Rooms:** Used by all Lawyers;
7. **Library:** Houses approximately 350,000 volumes with a staff of 30. It is a research library geared to meet the immediate needs of the SCC;
8. **Records:** SCC records department complete with high density filing;
9. **IT Server Rooms and Storage:** Used for SCC IT requirements;
10. **Mail and Printing Services:** These services are provided exclusively for the SCC for internal projects;
11. **Secure Print and Storage:** Rooms available for SCC use only;

12. **Service Counters:** Several service counters are located throughout the facility to service to the SCC staff as well as the public;
13. **Fitness Room:** Including changing facilities and showers;
14. **Kitchenettes:** For staff use; and
15. **Meeting rooms:** For staff use.

2.2 Federal Courts Requirements: (FC)

2.2.1 Executive Style Office Space

1. **Judges Chambers:** Two (2) chambers complete with one (1) shared anti-chamber;
2. **Robing Rooms: Provided for external Lawyers to change into the appropriate clothing and store personal belongings while working in the federal courts; and**
3. **Barrister's Room: For external lawyers' use while working in the federal courts.**

2.2.2 Administration Space

1. **Closed Offices** -2;
2. **Workstations** -2; and
3. **Consultation Rooms** -3.

2.2.3 Special Purpose Space:

1. **Federal Courts Rooms:** The Federal Courts and the Federal Courts of Appeal of Canada require two (2) courtrooms, complete with audio visual and simultaneous interpretation booths;
2. **Crush Space:** For access to the courtrooms; and
3. **Consultation Rooms:** For FC staff use only.

2.3 Royal Canadian Mounted Police (RCMP)

2.3.1 Administration Space

1. **Closed** Offices -3; and
2. **Workstations** -4.

2.3.2 Special Purpose Space:

1. **Security Screening Facilities:** Security screening facilities are located at all entrances to the building. Areas the public use will require an enhanced level of security. Security desk, x-ray machines, handheld and walk-through metal detectors are required;
2. **Locker Room:** Staff (male/ female) changing facilities complete with showers and lunch room facilities; and
3. **Security Operations Centre:** An enclosed, secure room for security systems, monitoring of the building.

2.4 Public Works and Government Services Canada (PWGSC)

2.4.1 Administration Space

1. **Closed** Offices -1;
2. **Shared Offices** -10; and
3. Meeting room -1;

2.4.2 Special Purpose Space:

1. **Operations Centre:** An enclosed, secure room for building monitoring;
2. **Work Shop:** requirements for PWGSC building facilities management;
3. **Chemical Storage:** for both PWGSC building facilities management and cleaners;
4. **Storage:** Storage within the building could include but is not limited to; furniture storage, equipment storage, chemical storage and paper storage. Storage rooms should be located within the department they serve; and
5. **Cafeteria:** Provides food services to the building occupants. Is designed to accommodate an influx of users during trials, as well as provide a consistent service for building occupants. Most of the food is prepared off site and delivered to the facility. The Cafeteria is managed by PWGSC.