



RETURN BIDS TO:

RETOURNER LES SOUMISSIONS À:

Bid Receiving Public Works and Government
Services Canada/Réception des soumissions
Travaux publics et Services gouvernementaux
Canada

The Cambridge Building
3 Queen Street/ 3, rue Queen
Charlottetown, PEI C1A 4A2
Bid Fax: (902) 566-7514

**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

Title - Sujet Design Consultant Svcs-DJM Bldg,PEI	
Solicitation No. - N° de l'invitation ED001-180782/A	Date 2017-10-06
Client Reference No. - N° de référence du client ED001-180782	
GETS Reference No. - N° de référence de SEAG PW-\$PWC-023-4198	
File No. - N° de dossier PEI-7-40048 (023)	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2017-11-20	Time Zone Fuseau horaire Atlantic Daylight Saving Time ADT
F.O.B. - F.A.B. Plant-Usine: <input type="checkbox"/> Destination: <input checked="" type="checkbox"/> Other-Autre: <input type="checkbox"/>	
Address Enquiries to: - Adresser toutes questions à: Ellis-Herring, Alison	Buyer Id - Id de l'acheteur pwc023
Telephone No. - N° de téléphone (506) 636-3908 ()	FAX No. - N° de FAX (506) 636-4376
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: DEPARTMENT OF PUBLIC WORKS AND GOVERNMENT SERVICES CANADA PO BOX 1268 3 QUEEN ST CHARLOTTETOWN Prince Edward Island C1A4A2 Canada	

Instructions: See Herein

Instructions: Voir aux présentes

Vendor/Firm Name and Address

**Raison sociale et adresse du
fournisseur/de l'entrepreneur**

Issuing Office - Bureau de distribution

Commercial Acquisitions (PEI)
The Cambridge Building
3 Queen Street/3 rue, Queen
Charlottetown, PEI C1A 4A2

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

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REQUEST FOR PROPOSAL (RFP)

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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. This is a single phase selection process. The nature of the services required and strict time frames to implement this project do not allow sufficient time to conduct the usual two phases selection process.
3. Proponents responding to this RFP are requested to submit a full and complete proposal. The proposal will cover not only the qualifications, experience and organization of the proposed Consultant Team, but also the detailed approach to the work, and the pricing and terms offered. A combination of the technical and price of services submissions will constitute the proposal.

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);
R1410T (2017-08-17), General instructions (GI) – Architectural and/or Engineering services – Request for Proposal;
Submission Requirements and Evaluation (SRE);

Subsection 2.b. of section GI16, Submission of proposal of R1410T, 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";
- (e) any amendment to the solicitation document issued prior to the date set for receipt of proposals; and
- (f) the proposal, Declaration/Certifications Form 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 solicitation period must be submitted in writing to the Contracting Authority named on the RFP - Page 1 as early as possible. Enquiries should be received no later than [7] 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 North American Free Trade Agreement (NAFTA), the World Trade Organization - Agreement on Government Procurement (WTO-AGP) and the Canadian Free Trade Agreement (CFTA).

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 **R1410T** (2017-08-17), General instructions 1 (G11), 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 (available at the bottom of the page of the Employment and Social Development Canada (ESDC) - Labour's website (<https://www.canada.ca/en/employment-social-development/programs/employment-equity/federal-contractor-program.html>)).

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.

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SI6 - 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)

<https://www.canada.ca/en/employment-social-development/programs/employment-equity/federal-contractor-program.html>

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 (2017-08-17), 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
 - (c) Project Brief / Terms of Reference;
 - (d) the document entitled "Doing Business";
 - (d) any amendment to the solicitation document incorporated in the Agreement before the date of the Agreement;
 - (e) the proposal, the Declaration/Certifications Form and the 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;

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- (g) Project Brief / Terms of Reference;
- (h) the document entitled "Doing Business";
- (i) the proposal.

SUPPLEMENTARY CONDITIONS (SC)

SC1 SECURITY REQUIREMENT

1. There is no security requirement applicable to this Agreement.

SC2 LANGUAGE REQUIREMENTS

Use the following in Agreements where the consultant must be capable to provide services in both official languages.

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. The 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.

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.

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SUBMISSION REQUIREMENTS AND EVALUATION

- SRE 1 General Information
- SRE 2 Proposal Requirements
- SRE 3 Submission Requirements and Evaluation
- SRE 4 Price of Services
- SRE 5 Total Score
- SRE 6 Submission Requirements - Checklist

SRE 1 GENERAL INFORMATION

1.1 Reference to the Selection Procedure

An 'Overview of the Selection Procedure' can be found in R1410T General Instructions to Proponents (GI3).

1.2 Calculation of Total Score

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

Technical Rating x 90%	=	Technical Score (Points)
<u>Price Rating x 10%</u>	=	<u>Price Score (Points)</u>
Total Score	=	Max. 100 Points

SRE 2 PROPOSAL REQUIREMENTS

2.1 Requirement for Proposal Format

The following proposal format information should be implemented when preparing the proposal:

- Submit PDF electronic files and:
- Submit one (1) bound original plus six (6) bound copies of the proposal
- Paper size should be - 216mm x 279mm (8.5" x 11")
- Minimum font size - 11 point Times/Arial 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 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 Forty (40) 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 - Associated Information
- 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 PSPC Evaluation Board members for evaluation.

SRE 3 SUBMISSION REQUIREMENTS AND EVALUATION

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, licensed, 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 law in the province of Nova Scotia.

3.1.2 Consultant Team Identification

The consultant team to be identified must include the following:

Proponent (prime consultant) – Architect

Key Sub-consultants / Specialists:

- Mechanical Engineer
- Energy Modeling Specialist
- Electrical Engineer
- Interior Designer
- Sustainability Specialist
- Cost Consultant

Additional consultants/specialists required to be identified but not evaluated:

- Structural Engineer
- Control System Specialist/Engineer
- Thermographer
- Workshop Facilitator

Information required: name of firm and key personnel to be assigned to the project. For the prime consultant, indicate current license and/or how it is intended 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.

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 Forms as required.

3.1.4 Integrity Provisions - Associated Information

In accordance with the Ineligibility and Suspension Policy (<http://www.tpsgc-PSPC.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 R1410T (2016-04-04), General instructions 1 (GI1), Integrity Provisions – Proposal, **section 3a**.

3.2 RATED REQUIREMENTS

3.2.1 Achievements of Proponent on Projects

Describe the Proponent's accomplishments, achievements and experience as prime consultant on projects.

Select a **maximum** of 3 projects undertaken within the last 10 years. Joint venture submissions are not to exceed the maximum number of projects. Only the first 3 projects listed in sequence will receive consideration and any others will receive none as though not included.

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
- client references - name, address, phone and email address of client contact at working level - references may be checked
- names of key personnel responsible for project delivery
- awards received

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

Select a **maximum** of 2 projects undertaken within the last 10 years per key sub consultant or specialist (six in total). 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.

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
- client references - name, address, phone and email address of client contact at working level - references may be checked
- names of key personnel responsible for project delivery
- awards received

3.2.3 Achievements of Key Personnel on Projects

Describe the experience 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.

Information that should be supplied for each key personnel:

- professional accreditation
- accomplishments/achievements/awards
- relevant experience, expertise, number of years of experience
- role, responsibility and degree of involvement of individual in past projects

In addition to these achievements the key personnel assigned to do the GHG Option Analysis described in RS10 – Sustainable development, should provide the following information:

- Energy Modeling Specialist:
Minimum 5 years of experience modeling high performance buildings.

ASHRAE BEMP (Building Energy Modeling Professional) certification or on CaGBC Experienced Modellers listing.

Demonstrated experience modelling large commercial buildings using IESVE or other equivalent preapproved and leading-edge software.

Demonstrated successful production of no less than ten energy models.

Demonstrated successful experience in rapid modeling as part of a workshop or design charrette.

Demonstrated experience modeling buildings served by a Central Heating / Cooling Plant.

3.2.4 Understanding of the Project:

The proponent should demonstrate understanding of the goals of the project, the functional and technical requirements, the constraints and the issues that will shape the end product.

Information that should be supplied in the proposal to describe:

- The functional and technical requirements
- Broader goals (federal image, sustainable development, sensitivities)
- Significant issues, challenges and constraints
- Project schedule and cost. Review schedule and cost information and assess risk management elements that may affect the project
- The Client User's philosophies and values

3.2.5 Scope of Services:

The proponent should demonstrate capability to perform the services and meet project challenges and to provide a plan of action.

Information that should be supplied in the proposal to describe:

- Scope of Services - detailed list of services

- Consultant Team Work Plan - detailed breakdown of work tasks and deliverables
- Project schedule - proposed major milestone schedule
- Risk management strategy

3.2.6 Management of Services:

The Proponent should describe how he /she proposes to perform the services and meet the constraints; how their 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 disciplines and specialists required to complete the consultant team.

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:

- Confirm the makeup of the full project team including the names of the consultant sub-consultants and specialist personnel and their role on the project.
- Organization chart with position titles and names (Consultant team). Joint Venture business plan, team structure and responsibilities, if applicable
- What back-up will be committed
- Profiles of the key positions (specific assignments and responsibilities)
- Outline of an action plan of the services with implementation strategies and sequence of main activities
- Reporting relationships
- Communication strategies
- Response time: demonstrate how the response time requirements will be met

3.2.7 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:

- Design Philosophy / Approach / Methodology
- Describe the major challenges and how your team approach will be applied to those particular challenges.

3.3 EVALUATION AND RATING

In the first instance, price envelopes will remain sealed and only the technical components of the proposals which are responsive will be reviewed, evaluated and rated by a PSPC Evaluation Board in accordance with the following to establish Technical Ratings:

Criterion	Weight Factor	Rating	Weighted Rating
Achievements of Proponent	2.0	0 - 10	0 - 20
Achievements of Key Sub-consultants / Specialists	1.0	0 - 10	0 - 10
Achievements of Key Personnel on Projects	2.0	0 - 10	0 - 20
Understanding of the Project	1.5	0 - 10	0 - 15
Scope of Services	1.0	0 - 10	0 - 10
Management of Services	1.0	0 - 10	0 - 10
Design Philosophy / Approach / Methodology	1.5	0 - 10	0 - 15
Technical Rating	10.0		0 - 100

Generic Evaluation Criteria

PSPC 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: To be considered further, proponents **must** achieve a minimum Technical Rating of sixty (60) points out of the hundred (100) points available.

Generic Evaluation Table

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

To be considered further, proponents **must** achieve a minimum Technical Rating of sixty (60) points out of the hundred (100) points available as specified above. For any proposals receiving less than 60 points Price Proposals will be returned unopened.

SRE 4 PRICE OF SERVICES

All price proposal envelopes corresponding to responsive proposals which have achieved the pass mark of sixty (60) 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.

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All price proposals which are greater than twenty-five percent (25%) above the average price will be set aside and receive no further consideration.

The remaining price proposals are rated as follows:

- The lowest price proposal receives a Price Rating of 100
- The second, third, fourth and fifth lowest prices receive Price Ratings of 80, 70, 60, and 50 respectively. All other price proposals receive a Price Rating of 0.
- 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 5 TOTAL SCORE

Total Scores will be established in accordance with the following:

Rating	Possible Range	% of Total Score	Score (Points)
Technical Rating	0 - 100	90	0 - 90
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 6 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.

Proponents may choose to introduce their submissions with a cover letter.

- Team Identification - see typical format in Appendix A
- Declaration/Certifications Form - completed and signed - form provided in Appendix B
- Proposal - one (1) original plus six (6) paper 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 form provided in Appendix C.

END OF SRE

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Project Requirements

PR 1.1 Project Information
PR 1.2 PSPC Project Team
PR 1.3 Project Description
PR 1.4 Budget (Order of Magnitude Estimate)
PR 1.5 Existing Documentation
PR 1.6 Codes, Acts, Standards and Regulations
PR 1.7 Schedule
PR 1.8 Project Administration
PR 1.9 Building Permit
PR 2.0 Health and Safety Plan
PR 3.0 Definitions

Part 3 - Required Services (RS) and Additional Services (AS)

RS 1.0 Pre-Design Services
RS 2.0 Schematic Design
RS 3.0 Design Development
RS 4.0 Construction Documents
RS 5.0 Tender Call, Bid Evaluations & Construction Contract Award
RS 6.0 Construction & Contract Administration, Post Construction Warranty Review
RS 7.0 Risk Management (All Stages)
RS 8.0 Project Time Planning, Scheduling and Control (All Stages)
RS 9.0 Estimating and Cost Planning (All Stages)
RS 10.0 Sustainable Development Strategies and Reports (All Stages)
RS 11.0 Commissioning
RS 12.0 Change Management
RS 13.0 Signage
AS 1.0 Site Resident Supervisor

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PR 1 PROJECT REQUIREMENTS

PR 1.1 Project Information

PR 1.1.1 PSPC Project Title: Daniel J. MacDonald Modernization

PR 1.1.2 Facility Name and Location of project: Daniel J. MacDonald Building
161 Grafton Street, Charlottetown, PEI

PR 1.1.3 PSPC Project Number: R.056687.005

PR 1.1.4 Client Department: Public Services and
Procurement Canada (PSPC)

PR 1.1.5 Tenant Department: Veteran's Affairs Canada (VAC)
Shared Services Canada (SSC),

PR 1.2 PSPC Project Team - TBD

PR 1.2.1 PSPC Project Manager and Departmental Representative: Phone:

PR 1.2.2 Design Manager (RTL): Phone:

PR 1.2.3 Property Manager (BGIS): Phone:

PR 1.2.4 Project Leader: Phone:

PR 1.2.5 Project Architect: Phone:

PR 1.2.6 Interior Designer: Phone:

PR 1.2.7 Structural Resource: Phone:

PR 1.2.8 Mechanical Resource: Phone:

PR 1.2.9 Electrical Resource: Phone:

PR 1.2.10 Commissioning & GHG: Phone:

PR 1.2.11 Environmental Resource: Phone:

PR 1.2.12 Contract Mgmt. Officer: Phone:

PR 1.2.13 Communications Officer: Phone:

The Departmental Representative is the Departmental officer directly concerned with the project and responsible for its progress. The Departmental Representative is the liaison between the Consultant,

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Public Services and Procurement Canada, Resources, the Commissioning Manager, the Contractor and the Tenant Department (VAC).

PR 1.3 Project Description

PR 1.3.1 Purpose of the Project

Public Service and Procurement Canada (PSPC), formally known as Public Works and Government Services Canada (PWGSC), plays an important role in the daily operations of the Government of Canada as a key provider of services for federal departments and agencies. It supports them in the achievement of their mandated objectives as their central purchasing agent, linguistic authority, real property manager, treasurer, accountant, integrity adviser, and pay and pension administrator. The department's vision is to excel in government operations, and our strategic outcome and mission is to deliver high-quality, central programs and services that ensure sound stewardship on behalf of Canadians and meet the program needs of federal institutions.

The intent of this PSPC project is to renovate the Daniel J MacDonald - Veterans Affairs Canada (VAC) building located in Charlottetown, Prince Edward Island.

The Daniel J MacDonald building is in need of large capital repairs and upgrades. Both the electrical and mechanical systems are at the functional end of their life span. The building currently is at staffing capacity and the recent expansion of employees (450 to 750) following a VAC program growth has increased strain on the electrical and mechanical systems of the building.

Veteran's Affairs Canada (VAC) has identified a long-term need for space. VAC has expressed the need for the same amount of space currently held, 12,236.9Um²/13,690.5 Rm². However, modernization to an Activity Based Workplace solution (ABW) would allow for more efficient use of space, a more functional workplace and allow space for an additional 150 persons. Those persons can be brought into the DJM from leases at the National Bank (81FTE's) and the Crown Facility Jean Canfield Building (69 FTE's).

The overall requirement of this project is to implement an upgraded replacement to the Daniel J MacDonald Building's mechanical and electrical systems, upgrade necessary safety equipment, and complete a new fit-up to A Workplace 2.0 and an Activity Based Workplace (ABW) standard.

All mechanical and electrical systems at the end of their useful life will be replaced and upgraded to support the demand for the increased population. The need to modernize the DJM Building is an opportunity for PSPC to implement ABW. Currently the DJM building has 743 occupants, an ABW capacity study anticipates that an additional 157 spaces could be provided. A full fit-up of the entire useable space would be completed to an ABW solution. It is anticipated that the project will require external swing space for approximately one third of the space and occupants.

This project of modernization is dependent on swing space for VAC staff. Swing space is necessary for three years while the main project construction occurs. PSPC will be seeking other accommodations in Charlottetown to house 250 of the 750 staff at the DJM. The intent is that approximately 1/3 of the staff can be relocated outside the DJM and staff remaining in the DJM can be reorganized into internal swing space to allow for a 3 or 4 phased construction approach. The phasing of construction will likely be determined by the ability to replace all services within an area within the building. This may be a top down approach or a floor by floor approach. The number of internal moves must be considered and multiple small relocations should be avoided.

The project will also assist with meeting goals in environmental performance in real property under the Federal Sustainable Development Strategy. Following the renovations with the project is to seek

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certification for Green Globes 4 for Existing Buildings and Sustainable Interiors. Currently the building has a BOMA BEST 3 (Gold) and it is anticipated that the building may achieve BOMA BEST 4 (platinum) (the highest achievable).

All existing work space furniture will be replaced. The team will evaluate whether the people being moved to swing space will move with existing furniture to be disposed of at the end of the project, or will be provided with new at the time of the move.

Except as required for mechanical or electrical services, the project will not include any work on the building envelope.

While the majority of the space is to be general purpose office space, with some special purpose space, there are specific design goals for sustainability and innovation in design using both Workplace 2.0 and Activity Based Workplace (ABW) concepts. At this time, one tenant, PSC, will require a fit-up designed to meet Workplace 2.0 standards, a more prescriptive approach. For PSC, and the remaining major tenants, the fit-up will be to Activity Based Workplace standards. This progressive standard for workplace design will incorporate a combination of various types of workpoints, including compact unassigned work stations, benching and collaborative areas. These concepts are described in greater detail in PR1.3.3.5. This project description addresses the scope of work required for the interior fit-up and base building improvements.

PR 1.3.2 Project History Synopsis

The Daniel J MacDonald Building located at 161 Grafton Street in Charlottetown has been in operation since 1985 and is the headquarters of Veterans Affairs Canada. However, some of the buildings systems are at the end point in their lifespan, and others are reaching their functional limit because of the out of date design. This project was initiated to address the building's aging mechanical and electrical systems which have reached their maximum lifespan. As such, accommodation options for VAC are being analyzed.

Based on the recommendations by MCA Consultants Inc., the feasibility report on modernization analyzed the possibility of renovating the DJM Building by replacing the mechanical and electrical systems, while increasing the total occupancy of the building by implementing ABW.

The current location and building meets VAC's functional needs; however, it is currently at maximum capacity with no room for expanding operations.

The Daniel J MacDonald Building was constructed in 1985 and is 32 years old, which is considered to be the mid-point in the building's life span. The building is considered a Class B office building and spans a city block between Grafton and Kent Streets. It is located on 161 Grafton Street in the City of Charlottetown on a 7,600 m² site and provides a total of 12,754m² of gross space on five contiguous floors plus an additional 937m² of gross heated basement storage space. The building has a stepped up design that maximizes its height along the street.

The DJM Building provides office space for VAC's national headquarters. It is a Crown-owned asset under custodianship of Public Services and Procurement Canada and is operated by Brookfield Global Integrated Solutions (BGIS). The original design occupancy of 450 has greatly increased to 750. The increase in occupancy has caused greater strain on the mechanical and electrical systems within the building. The most significant increase in building population was in 2008 when the third floor was converted from storage space to office space in order to meet the greater needs of the building's

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occupants for space. With the building nearly at mid-point in its life cycle, a number of systems are beginning to wear out.

Architectural: The Building Condition Report (BCR) was completed at the DJM Building in March 2012. The 2012 BCR did not identify any major issues with the architectural elements. The windows and passenger elevators are expected to last until the 2030's and no issues were noted concerning the exterior brick (repointed 2002) and aluminum cladding. The roof on the DJM Building was replaced in 2010 and is expected to last another 20 years. The BCR indicated that much of the tile ceilings are original and that in 2006 they would last another 10 years. The BCR identified a number of routine cyclical projects to replace interior finishes including carpet, tile, and paint.

The only major architectural project identified at the DJM Building concerns the atrium. The BCR notes that the atrium has leaked for many years. Efforts have been made to patch the roof; however, these efforts have not completely stopped the leaking. A separate Atrium project is under consideration as part of the Building Maintenance Program and the repair/replacement should be completed prior to this project.

Mechanical/Electrical: Much of the electrical and mechanical systems are original to the building, making them over thirty years old, and because of such they are nearing the end of their expected life. Compounding the issue of the electrical and mechanical systems reaching the end of their expected life, is the increased demand being placed on the systems. Changes in workplace use with the increase in electronic equipment has also put demand on the systems and an upgrade to both electrical and mechanical system is necessary for the building to continue as a viable location for VAC's use. Modernization and upgrading to ABW will provide an opportunity to house more people.

The building currently houses approximately 710 employees. The mechanical systems are original and were originally designed for approximately 450 persons.

Building deficiencies that have been identified include:

- mechanical systems have not been adjusted for changes in floor plans or occupancy;
- due to the age of existing Air Handling Units (AHU) and other mechanical systems they are difficult to maintain;
- concerns for air quality;
- Power distribution systems are original and are deteriorating. Some components are obsolete and replacement parts are unavailable;
- lighting is somewhat inadequate The fixtures are at the end of their useful lives and many of them are metric standard size;
- data and communication wiring has been modified to Cat 6 in the last two years;
- no common grid for electrical and data systems;
- Configuration and usage of space.

Previous Studies:

According to the Real Property Services Policy on Seismic Resistance of PSPC Buildings A seismic screening is not required. This building is located in Charlottetown, PEI which is considered **not** to be of moderate to high seismicity (Ze of 1).

There is asbestos located in within the facility in the black caulking, transite pipes in the mechanical rooms, ceiling texture in 4th floor offices (404-413). All asbestos containing materials are in good

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condition. There is potential for additional Asbestos Containing Material fittings in wall cavities and above ceilings.

A Workplace 2.0 Capacity Study was completed in 2013. It shows according to the WP 2.0 Calculator the building can house up to 900FTE's. Occupant loads for the building codes are satisfactory for the increase; however, upgrades to the Mechanical and Electrical Systems are required.

Generally fit-up is original to the building in 1985. There have been some pockets of space with recent fit-up and furniture replacement. There is little opportunity to salvage existing fit-up spaces 'as is' under a Workplace 2.0 or Activity Based Workplace update.

Phasing

Renovation of the building will be done with VAC staff in the building while the construction is taking place. This will be achieved by allowing approximately 250 (1/3) of staff to work offsite in a short term leased facility. Then within the DJM, occupants will be relocated within the building to vacate for a construction phase. It is anticipated that there would be 3 or 4 construction phases. Consultants will determine this phasing structure during the Schematic Design Phase and will work with PSPC and VAC to implement the required internal moves. It is not yet determined if this will be a top down phasing or a floor by floor. This will be largely determined by the ability to shut down and replace building systems. The consultants will determine the Construction phasing, any temporary systems design and install to facilitate shut downs and include in contract documents. Consultants will also determine entrances, egress routes and hoarding requirements of the various phases within the contract documents.

As part of the Government of Canada's efforts to modernize its employee's work environment, and promote efficiency of service delivery to the Canadian Public, the design of the each department's space will include a combination of the latest accommodation standards in office design, suited to each department's operation. These standards will range from the latest accommodation standard, Activity Based Workplace and the standard Work Place 2.0.

The project scope will address necessary base building upgrades as well as fit-up in tenant space. From the base building perspective, the design will include the upgrade of building washrooms, plumbing, domestic water, sanitary and storm water drainage, elevator control (or access lobbies), Life Safety systems, sprinkler layouts, electrical systems and fire exiting/ egress, HVAC upgrades, lighting, ceilings and flooring. Fit-up design will address floor layouts, client requirements for special purpose space, furniture and work surface design, work point and work station accessory requirements, branch circuit wiring, finish selection, flooring, tenant security requirements and support spaces.

The project is to be completed by the **Spring of 2023** or earlier with all occupants in their new space. Scheduling of the design and construction will be a key component to the successful implementation of the project. Creative solutions will always be open for discussion during the course of the project.

PR 1.3.3 Detailed Scope of Work

1.3.3.1 Architectural and Interior Design Requirements

Provide an office space that delivers flexible, functional, safe, healthy, and responsive environments that effectively meet the operational needs of the occupant groups while maximizing space utilization.

1.3.3.1.1 Demolition

The Workplace 2.0 /Activity Based Workplace standards promote an open office concept and as such restrict the use of enclosed spaces, particularly offices. All enclosed spaces are to be located in the interior of the space and not on exterior windows, wherever possible. Therefore, there will be demolition of any existing partitioned spaces which cannot be incorporated into the new layout. Interior partitions of stairwells, elevator shafts and most M&E shafts will remain. Demolition will include but is not limited to the following:

- Removal of most interior partitions, glazing, doors and frames.
- Removal of all existing finishes on all surfaces.
- Removal of all existing suspended ceilings and bulkheads.
- Removal of all rooms to accommodate new M&E design.

1.3.3.1.2 Space Planning

The consultant is to develop a Functional Program and from that program new layouts will be developed and form the basis of the new interior design. The Interior Design must meet the requirements of the NBCC, CSA B651-12 barrier free requirements, and the Workplace 2.0 and ABW fit-up standards.

Existing area measurement CADD drawings are included as Appendix F.

The consultant will conduct user meetings to gather more specific user information and technical requirements in order to develop the functional program for each tenant as described in RS-1. This will involve developing a questionnaire (with the assistance of PSPC) that will help the users collect information about the most suitable types of workstations and collaborative spaces. The consultant's expertise and recommendations will be essential in assisting the tenants meet their objectives, that of Workplace and ABW, and creating a successful new workplace.

See additional information in regards to Workplace 2.0, ABW and related challenges in section PR 1.3.3.1.5.

1.3.3.1.3 Space Requirements Summary

The following describes the space requirement (Note, all areas are usable m²)

Anticipated Space Demand Information				
Occupant	Um ² Office	Um ² SPS*	Um ² Total	FTE
Veteran Affairs Canada (includes SSC)	10,925	1,311	12,236	930

* Special Purpose Space includes learning, wellness, shipping/receiving, records and storage.

1.3.3.1.4 Furniture

The consultant will be required to perform an analysis of all the client's furniture requirements and make recommendations. This includes the assessment and possible recommended reuse of any existing furniture. Any existing furniture recommended for reuse will require undertaking inventory, clear documentation, and direction for its reuse on furniture layouts. Generally, furniture will be new with any existing incorporated as appropriate.

New furniture for this project will be acquired through various methods, primarily through the use of PSPC Supply Arrangements and as well as other PSPC internal procurement processes. The types and quantities of furniture required will determine the procurement methods used and the consultants will be expected to recommend to PSPC each tenant's detailed furniture requirement and to prepare documents and drawings required to procure the furniture using the aforementioned Government of Canada tools. Furniture is identified as a mandatory commodity to be purchased only through the Government of Canada procurement tools.

The consultant will be required to develop detailed furniture specification documents for workstation furniture, freestanding furniture and collaborative furniture that will be used to procure new furniture through the various furniture procurement instruments PSPC has at their disposal.

The consultants will be required to review Furniture Manufacturers/Suppliers quotations for technical compliance as well as installation plans for freestanding furniture, systems furniture and reconfiguration of existing furniture. They will ensure compliance with the approved furniture plans and specifications and the Client Department's functional requirements.

The Consultant shall oversee the installation of furniture by the Furniture Manufacturer/Supplier. They shall be available on site for verification of product receipt, its condition and acceptance, installation, inspection and periodically to resolve problems/issues as required.

The Consultant shall prepare a Furniture Deficiency/Discrepancy Inspection Report during the furniture installation inspections. The consultant shall review and revise the list until all efficiencies/discrepancies are rectified.

1.3.3.2 Mechanical Requirements

The majority of the mechanical systems are original to the building and have been identified as at, or nearing, their end of life cycle and need to be replaced.

Plumbing – The entire plumbing system requires replacement. The intent is to replace everything (main water service entrance, all plumbing fixtures, drinking fountains, domestic and sanitary piping and associated rough-ins, trap primers, etc.), however, the storm piping has some sections that will require replacement prior to beginning of RS3 work and, therefore, may not all need to be replaced. The consultant must identify any sections of storm piping to remain as required.

Heating – Entire heating system requires replacement. The intent is to replace everything (boilers, chimneys, pumps, controllers, convectors, unit heaters, all piping, etc.).

Chilled Water – The existing chilled water system consists of four (4) rooftop air-cooled chillers and associated constant speed chilled water pumps that were installed in 2011 and could possibly remain. The remainder of the chilled water system needs to be replaced (chilled water loop piping, loop pumps, etc.). Note that having relatively new chillers must not limit the potential options to be developed or considered in the GHG Options Analysis requirements (see RS 10) but must be included as a consideration and may or may not inform its outcome and the outcome of the life cycle cost analyses.

Ventilation – Entire ventilation system requires replacement. The intent is to replace everything (air handlers, louvers, ductwork, VAV boxes, diffusers and grilles, etc.), with the possible exception of AHU-6 on the roof of the 3rd floor. AHU-6 was installed in 2008 to replace AHU-3 and is in good condition, however, this must not limit the potential options to be developed or considered in the *GHG Options Analysis* requirements (see RS 10) but must be included as a consideration and may or may not inform its outcome and the outcome of the life cycle cost analyses.

Controls – Entire Energy Management and Control System (EMCS) must be replaced with completely new control system.

Fire Protection – Entire fire protection system must be replaced with completely new system.

Mechanical systems and equipment should be coordinated with the architectural, structural, electrical and other building systems and be designed to accommodate the new building occupancy following the functional programming as required. The system selection will be justified in accordance with the PSPC Strategic Planning Cycle resulting from GHG Options Analysis. Refer to RS10 – Sustainable Development and the Green House Gas Options Analysis requirements for further information.

As this project is to be implemented in phases while the building is partially occupied and functional, design and specification must be carefully done to ensure working environment and building systems function in occupied areas to meet all standards while under construction. This includes dust control, noise, temperature, humidity and IAQ, etc.

Tenant needs and their comfort as well as applicable code requirements shall be considered.

Systems and equipment should be fail-safe and of a quality consistent with the anticipated building life and the required reliability of service. Distribution runs should be accessible, and allow for inexpensive and future load shifts alterations.

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Mechanical engineering should consolidate layouts using the minimum space consistent with maintenance and service requirements. Systems should be designed considering the potential impact of power outages. Mechanical systems should be specifically designed to function at both full load and part load associated with all projected occupancies and modes of operation.

Maintainability and reliability are major concerns in the operation of Federal buildings. As such, the design and installation of all mechanical equipment and components should allow for removal and replacement of major equipment such as air-handling equipment, as well as sub-components such as heating and cooling coils.

PSPC does not allow use of experimental, or unproven equipment or systems. Documented proof of historical capability and adaptability of all equipment and systems proposed for a project should be made available to PSPC.

Air distribution should be achieved by means resulting in proper air diffusion and mixing, without short-circuiting of supply air into return air openings. Supply air discharge temperatures from ceiling diffusers must be limited to reduce the effects of buoyancy.

1.3.3.2.1 Codes, Standards and Guidelines

The latest editions of publications and standards listed here are intended as guidelines for design. They are mandatory where referenced as such in the text of this chapter or in applicable codes. The list is not meant to restrict the use of additional guides or standards. When publications and standards are referenced as mandatory, any recommended practices or features should be considered "required". The requirements of all other Authorities having Jurisdiction shall apply.

PSPC Guides and Standards

- MD 15000: Mechanical Environmental Standard for Federal Office Buildings
- MD 15116: Computer Room Air Conditioning Systems
- MD 15161: Control of Legionella in Mechanical Systems
- MD 250005: EMCS Design Guidelines
- Commissioning Manuals and Guidelines
- Documentation Submission Standards
- National Master Specifications.
- Seismic Design Guideline

Other Canadian Publications

- CAN/CSA B44: Safety Code for Elevators
- CAN/CSA B52: Mechanical Refrigeration Code
- CAN/CSA B149: Natural Gas & Propane Code
- CAN/CSA Z204: Guideline for Managing Indoor Air Quality in Office Buildings
- CAN/CSA282: Emergency Electrical Power Supply for Buildings
- "Canada Labour Code, part II". Human Resources Development Canada.
- Canadian Electrical Code
- Federal Halocarbon Regulations, Canadian Environmental Protection Act

- Ozone Depleting Substances Regulation, Canadian Environmental Protection Act
- "Handbook of Occupational Safety and Health". Treasury Board of Canada. Occupational Health and Safety Act and Regulations for Construction Projects
- National Fire Code of Canada
- National Plumbing Code
- National Building Code
- Model National Energy Code for Buildings
- Treasury Board Standards and Guidelines

- ASHRAE: Handbook of Fundamentals.
- ASHRAE: Handbook of HVAC Applications.
- ASHRAE: Handbook of HVAC Systems and Equipment.
- ASHRAE: Handbook of Refrigeration.
- ASHRAE: Standard 15: Safety Code for Mechanical Refrigeration.
- ASHRAE: Standard 52: Gravimetric and Dust-Spot Procedures for Testing Air-Cleaning Devices Used in General Ventilation for Removing Particular Matter

- ASHRAE: Standard 55: Thermal Environmental Conditions for Human Occupancy.
- ASHRAE: Standard 62.1: Ventilation for Acceptable Indoor Air Quality.
- ASHRAE: Standard 90.1: Energy Standard for Buildings Except Low-Rise Residential Buildings
- ASHRAE: Standard 100: Energy Conservation in Existing Buildings.
- ASHRAE: Standard 105: Standard Methods of Determining, Expressing and Comparing Building Energy Performance and Greenhouse Gas Emissions.

- ASHRAE: Standard 111: Practices for Measurement, Testing, Adjusting and Balancing of Building HVAC Systems.

- ASHRAE: Guideline #4: Preparation of Operating and Maintenance Documentation for Building Systems.

- ASHRAE: Standard 135: BACnet: A Data Communication Protocol for Building Automation and Control Networks.

United States Publications

- American National Standards Association: ANSI Z 223.1.
- American Society of Mechanical Engineers: ASME Manuals.
- American Society of Plumbing Engineers: ASPE Data Books.
- Associated Air Balance Council: National Standards for total system balance
- NFPA Standards
- SMACNA Standards

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1.3.3.2.2 Commissioning

Refer to RS11 for details on commissioning.

1.3.3.2.3 Design Criteria

All analysis and design must provide systems in accordance with MD 15000: "Mechanical Environmental Standard for Federal Office Buildings" and MD 15116: "Computer Room Air Conditioning Systems"

1.3.3.2.4 Indoor Air Quality

Prior to occupancy of each renovated space and after all works including painting are done, VOC release should be accelerated by maintaining the space temperature to 21 deg C for at least a full week (24/7) with outside air purge cycle be provided to air-handling equipment enabling removal of VOC build-ups. This should be continued for an additional week after occupancy.

PSPC recognizes the importance of adequate ventilation to maintain indoor air quality. The ventilation rates of ASHRAE Standard 62 are the minimum acceptable in Federal buildings. The outside air should be maintained under all conditions for a variable air volume system. Measurement devices should be provided to assure outdoor air intake rates are maintained within 90 percent of required levels during occupied hours.

Supply air should be evenly distributed to fully cover the entire occupied space. The minimum air supply at all times to achieve occupied space air motion requirement during the space occupancy should be maintained.

Where occupancy requirements are likely to generate high levels of airborne particles, special air filtration should be provided on the return air system or dedicated and localized exhaust systems should be used to contain airborne particulates.

1.3.3.2.5 Zoning Criteria

Separate systems should be provided for interior and perimeter zones.

The HVAC system should be carefully zoned such that unoccupied areas can be set back for energy conservation, where feasible, without total shutdown.

Interior control zones should not exceed 140 m² per zone for open office areas or a maximum of three offices per zone for closed offices. Perimeter zones should be no more than 4 metres from an outside wall along a common exposure and should not exceed 50m². Rooms and/or exposures that have unique load variations should have individual zones.

Independent zones should be provided for spaces such as dedicated printing and photocopying rooms, meeting rooms, entrance lobbies and atriums, kitchen areas, dining areas, childcare centers, physical fitness areas and mailrooms.

The supply of zone cooling and heating should be sequenced to prevent the simultaneous operation of heating and cooling systems for the same zone. Supply air temperature reset control should be utilized to extend economizer operations and to reduce the magnitude of reheating, re-cooling or mixing of supply air streams.

1.3.3.2.6 HVAC Systems

General

All Federal Government buildings are officially designated as non-smoking. There should be no smoking areas within the building or its lobbies.

Where possible, HVAC components like dampers, VAV boxes, and coils should be located outside of private offices to minimize disturbance. Components are ideally placed above corridors and other circulation routes. The horizontal routing of major HVAC systems should be kept above the corridors and open spaces.

Potential for water damage shall be minimized by careful design of HVAC components with provision for drainage of condensate, and leakage from damaged pipes or coils. Water protection should also address frost proofing of pipes, coils, ducts, and, also condensation over ducts, pipes, and equipment.

All work regarding HVAC systems shall be coordinated and integrated with other divisions including architectural, structural, and electrical.

Psychrometric analyses (complete with chart diagrams) should be prepared for each air-handling unit application, characterizing full and part load operating conditions. All designs shall assure that conditioned space temperatures and humidity levels are within an acceptable range, per programmed requirements, MD 15000, and ASHRAE Standards 55 and 62.

1.3.3.2.7 Humidification and Water Treatment

Make-up water for humidification systems shall originate directly from a domestic cold-water source with backflow prevention provided and water treatment where recommended by humidifier type or manufacturer. All associated equipment and piping shall be of corrosion resistant material where required.

Freeze Protection (where applicable)

PSPC does not encourage the use of Ethylene Glycol as a heat transfer fluid, due to its toxicity. Non-toxic substitutes such as Potassium Formate based formulations or propylene glycol should be considered as an alternative to Ethylene Glycol.

1.3.3.2.8 Heat Recovery Systems

While the GHG Options Analysis will uncover the preferred energy saving strategies for the building, the use of heat recovery systems should be utilized in all ventilation units and where the temperature differentials between supply air and exhaust air is significant. Heat recovery systems should operate at a minimum of 70 percent efficiency.

Special Cooling Systems

Computer Room Air-Conditioning Units

The requirements of MD15116 Computer Room Air Conditioning Systems shall be met.

1.3.3.2.9 Hydronic Systems (where applicable)

Variable speed pumping for hydronic systems shall be utilized. Each terminal unit or coil should be provided with isolation valves on both the supply and return, and a flow-indicating balance valve on the return line. Isolation valves should be provided on all major pipe branches, such as at each floor level, building wing or mechanical room.

1.3.3.2.10 Noise Control, Vibration Control and Seismic Design

For Acoustical criteria for all building spaces refer MD 15000: Mechanical Environmental Standard for Federal Office Buildings.

Fans, pumps, compressors and other moving machinery are to be set on foundations isolated from the building structure to prevent transmission of noise and vibration. Heavy Reciprocating

Noise and Vibration Isolation

Refer to and incorporate the basic design techniques as described MD 15000: Mechanical Environmental Standard for Federal Office Buildings. Isolate all moving equipment in the building.

Mechanical Shafts and Chases

Mechanical shafts and chases should be closed at top and bottom, as well as the entrance to the mechanical room. Any piping and ductwork should be isolated as it enters the shaft to prevent propagation of vibration to the building structure. All openings for ducts and piping should be sealed.

Ductwork

Use of silencers is the preferred method for reducing fan-generated noise. If acoustic liners are used, all installation and commissioning procedures should be clearly specified to eliminate any possible environmental problems. All ductwork connections to equipment having motors or rotating components should be made with 150mm length of flexible connectors.

Noise Control in VAV Systems (where applicable)

System sound levels at maximum flow should be carefully evaluated to ensure acoustic level requirements are met. Duct noise control should be achieved by controlling air velocity, by the use of sound attenuators, and by not over sizing terminal units. Terminal units should be selected so that design air volume is approximately three-quarters of the terminal box's maximum capacity. Volume dampers in terminal units should be located at least 1.8 m from the closest diffuser and the use of grille mounted balance dampers should be restricted except for those applications with accessibility problems.

1.3.3.2.11 Energy Monitoring and Control System (EMCS) General Requirements

Provide all new EMCS for the building with native BACnet firmware. The designer must incorporate the proper decommissioning of the existing EMCS coinciding with the phases of work within the building. The existing EMCS must continue to operate existing systems as required until construction begins in each building construction zone, or as deemed appropriate.

1.3.3.2.12 Start-up, Testing, and Balancing Equipment and Systems Start-up

The specifications should indicate that factory representatives will be present for start-up of all major equipment, such as boilers, chillers, automatic control systems, etc. (See RS10 for full requirements).

Testing and Balancing

Testing, adjusting and balancing of air distribution and hydronic systems performed by the Contractor must be verified and documented. (See RS10 for full requirements).

1.3.3.2.13 Fire Protection

The existing fire protection system is to be replaced with an all new fire protection system. The existing fire protection system shall be modified as required to provide the required protection during construction to accommodate the work to be carried out in each phase and area of construction.

1.3.3.3 Electrical Requirements

1.3.3.3.1 General description

This work includes an upgrade of power distribution, emergency power, lighting and communications systems to improve operations.

The interior lighting will be a complete replacement and will require the replacement of the metric ceiling grids to a more standard 2 foot by 4 foot grid. A combined indirect direct fixture should be considered. The existing lighting control system shall be replaced to allow for automatic control of lighting loads in the building while in keeping a high level of user control and security.

Due to problems in the electrical systems, a complete replacement of the power distribution is required including new panel boards in new electrical rooms, new feeders, distribution and devices. Early in the process, sizes for electrical rooms and communications rooms will need to be updated to ensure that the new electrical rooms have adequate room for all proposed equipment and wire plus room for a future 25% increase in the future. New electrical rooms are anticipated throughout the building. In addition, the bus duct should be replaced with individual cabling to each floor.

The majority of the Building will be of a new wireless WIFI system. A complete rebuild of the communications system is also required including new communications rooms, pathways and spaces, wiring, racks and terminations. All communication lines were replaced with Cat6 wiring in the last two years.

The replacement of the existing UPS is not part of the scope; however the change to the emergency service equipment (panels, feeder, and breakers) must be sized to allow for a full double capacity upgrade to this UPS in the future.

The upgrading of the fire alarm system is required. Branch wiring and devices are to be replaced.

A sound masking system is required.

The high voltage entrance has been replaced in 2010. All switchboards and panel boards beyond the main service distribution board shall be replaced. The main distribution board shall be extended to accommodate additional riser feeds. Twelve digital ion meters one for the main service nine for the electrical rooms' one for mechanical penthouse and one for the emergency power, with connection to the internet and a standalone data computer are required.

All new electrical wiring, motor starters and connections for the mechanical systems are required.

Provide a full fault co-ordination study of existing components which are to remain and second version including new components that are proposed for replacement. This study is to include the high voltage implications and shall proceed to the first protection unit on the Utilities power grid. An arc flash study (max. 2 seconds) is required Secondary transformers should be the harmonic mitigating type with all copper windings

1.3.3.3.2 Design Basis

Base the electrical design on providing the following features at the most economical cost, considering both investment and operating expenditures:

Safety to personnel during operation and maintenance.

Ease of maintenance of equipment.

Flexibility of electrical services.

Proper co-ordination of all elements of the system as to:

- insulation levels,
- interrupting capacities,
- protective devices,
- mechanical strength, and
- hazardous location classification.

Energy Conservation

- Meet or exceed Model National Energy Code of Canada for Buildings 1997 for energy efficiency.
- Meet objectives of the design decisions formed from the Green House Gas Options Analysis.
- Meet objectives of Green Globes 4.
- Meet the Enercan proposed amendment to the energy efficiency regulations.
- Submit calculations for review.

ION Sub-metering capability

- Provide the ability to easily monitor the electrical consumption of various building systems.

1.3.3.3.3 Codes and Standards

- Electrical work to conform to the Canadian Electrical Code 2015 and application local regulations.
- Require CSA approval on equipment. Other approval agencies as applicable.
- Specify applicable standards for equipment; i.e., EEMAC, CSA, ULC, ASTM, NFPA, ANSI, etc.

- The electrical design and installation shall meet the specific requirements of the Handbook of Occupational Safety and Health; specifically, the Canada Labor Code and Treasury Board of Canada Standards.

1.3.3.3.4 Materials and Equipment

Provide generic descriptions and special features required. Avoid specifying trade names. Where trade names must be used due to nature of product provide a minimum of three names where at all possible. Avoid specifying products limited to one manufacturer.

1.3.3.3.5 Incoming Electrical Services

The incoming high voltage electrical service was replaced in 2010. This service originally consisted of one High Voltage line and transformer. The new service entrance replaced the high voltage portion placing it outdoors. The existing main service board was replaced with a new main fusible service switch board and distribution reconnecting the existing sub switchboards and bus duct.

Replace remaining electrical switchboards / breakers located in the adjacent electrical rooms.

Verify existing and provide a complete single line drawings for the facility including emergency circuitry identified in red for ease of reading. Verify format and layout with PSPC for approval prior to completion. This single line drawings shall be provided to in PSPC - CAD format with a paper copy posted in the electrical room.

Determine the emergency power load and size the system for the loads and future growth.

New distribution raceway system to be EMT conduit and wire.

1.3.3.3.6 Electrical Room

Review and expand all electrical rooms for immediate and future growth requirement. Size shall allow for a 25 per cent increase in the future. Upgrade all electrical panelboards, breakers and wiring.

Upgrade independent ventilation system (gravity where possible) with intake and exhaust direct to the outside.

Ensure electrical room(s) with transformers are not located adjacent to any office areas or areas which may be occupied by individuals for extended periods. This is to limit exposure to EMF. Place transformers and panels in electrical rooms.

1.3.3.3.7 Office Space Distribution

System to be capable of supplying power to office areas and to be flexible with respect to future changes in office layout. Ensure compatibility / interoperability with other anticipated systems (e.g. furniture, screen systems.) Circuit density shall be 6 (six) 2 wire circuits for approximately every 40 square meters. Do not share neutrals or grounds.

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Replace office grid system with a new grid capable of supplying power to office areas and flexible with respect to future changes in office layout. Ensure compatibility / interoperability with other anticipated systems (e.g. furniture, screen systems).

Systems are to incorporate current harmonic reducing devices (i.e. Harmony transformers) and techniques (i.e. no shared neutrals).

As required, provide additional electrical rooms to reduce the wire size and control voltage drop problems. Voltage drop shall be calculated based on each circuit being loaded to 80 % of the breaker rating.

Branch wire system to be EMT conduit

1.3.3.3.8 Fire Alarm System

General: Upgrade system and raceway in accordance with:

- CAN/ULC-S-524-M91, Installation of Fire Alarm Systems.
- ULC-S525-1978, Audible Signal Appliances for Fire Alarm.
- CAN/ULC-S526-M87, Visual Signal Appliances, Fire Alarm.
- CAN/ULC-S527-M87, Control Units, Fire Alarm.
- CAN/ULC-S528-M91, Manual Pull Stations.
- CAN/ULC-S529-M87, Smoke Detectors, Fire Alarm.
- CAN/ULC-S530-M91, Heat Actuated Fire Detectors, Fire Alarm.
- CAN/ULC-S531-M87, Smoke Alarms.
- CAN/ULC-S536-M86, Inspection and Testing of Fire Alarm Systems.
- CAN/ULC-S537-M86, Verification of Fire Alarm Systems.
- CAN/ULC-S541-M87, Speakers for Fire Alarm Systems.
- TB OSH Chapter 3-3, 01-02-92, Treasury Board of Canada, Occupational Safety and Health, Chapter 3-3, Fire Protection Standard for Electronic Data Processing Equipment.
- TB OSH Chapter 3-4, 01-02-92, Treasury Board of Canada, Occupational Safety and Health, Chapter 3-4, Standard for Fire Alarm Systems.
- NBC-1995, National Building Code of Canada.
- CSA B222.0.
- Treasury Board Personnel Management Manual - Chapter 7-5

Verify doors that are required to be closed for fire protection and provide magnetic hold-open devices on these doors such that the magnetic holds automatically release the doors on a fire alarm condition.

Verify that all ventilation and components related to ventilation (such as heat coils) will shut off safely on fire alarm condition. This control shall be provided by the fire alarm system directly. (For instance, a controlled shut down initiated by the fire alarm system through the DDC system would not be acceptable)

Provide to PSPC a single line drawing of all fire alarm components including riser details and interconnections. These drawings shall be in PSPC - CAD format and a paper copy of this single line drawing shall be posted in the electrical room.

1.3.3.3.9 Lighting General

The existing lighting is to be replaced with energy efficient combination direct and indirect pendant LED lighting. The existing metric fixtures (troffers) shall be replaced with imperial sized units. The existing ceiling grid is metric and must be replaced with a new ceiling grid. Preferred voltage is 120 volt.

For each room or area, determine the task performed and provide maintained lighting levels as shown in PSPC Standard RPSB/DGSI 1-4:95-1 Office Lighting April 1995, Canada Labor Code - Part II, and IESNA Lighting Handbook.

Video display terminal task lighting to PSPC Standard RPSB/DGSI 1-4:95-1 Office Lighting, Canada Labor Code and IES recommended practice for lighting offices containing computer visual display terminals (ANSI/IES RP-1).

Incorporate energy control of lighting levels, including remote control of dimming.

Replace existing lighting control system with the following options:

- High resolution color monitor.
- Desk top laser printer.
- Manual switch, motion detection and digital telephone override.
- Submit a life cycle cost analysis with the design synopsis.
- Motion control sensors
- Light shedding at window locations
- Dimmable fixtures

Submit a computer analysis of the lighting for typical spaces. Output to show in tabular format:

- Explicit light loss factors.
- Horizontal luminance.
- Vertical luminance where relevant.
- V C P
- R V P
- C R F (C o n t r a s t R e n d e r i n g F a c t o r)

Approaches to providing natural daylight must be considered holistically, as a part of the overall lighting strategy, and requires integrated systems and decision-making. Issues regarding 'intelligence' of systems (e.g.: sensors), types of controls, degree of individual control, quality of light, and reduction of glare must all be thoughtfully addressed.

Co-ordinate the design with the space/unit requirements.

Design new lighting system for the atrium

1.3.3.3.10 Emergency Lighting

Review emergency lighting requirements and provide generator backup in new lighting system to meet all emergency requirements

Emergency lighting systems must be installed in accordance with Federal Fire Prevention Committee Standard No. 501, issued by the Office of the Fire Commissioner of Canada, and the National Building Code. Emergency lighting units must be performance certified by CSA as meeting

CSA Standard C22.2, No. 141.

1.3.3.3.11 Exit Signs

Upgrade Exits lighting to meet the National Building Code and the Office of the Fire Commissioner of Canada. The new "Green Running Man" shall meet the bilingual requirement.

1.3.3.3.12 Security Systems

Upgrade components. Supply new raceway and cable throughout all the building

1.3.3.3.13 Card Access and Security Systems

Upgrade components

1.3.3.3.14 Sound Masking

A new system is to be installed in the entire building. The system is to consist of, but not be limited to the following components:

- sound masking amplifiers with multiple input channel mixer;
- sound masking generator;
- speakers;
- volume control

Consultant is to investigate if existing PA system could be modified to incorporate sound masking system.

1.3.3.3.15 Mechanical Connections

Review and understand the scope of the mechanical upgrades and provide the electrical design and protection design for all electrical connections to all mechanical components.

Design and provide all electrical conduits required for control systems required in the mechanical design.

Co-ordinate heating / ventilation with mechanical and architectural design. If electrical heating is used, ensure that the heating units specified provide the required wattage, but do not exceed specified values. Integrate the heating controls with the total environmental aspect of the building. Verify the SCR design does not contribute to voltage fluctuations or harmonics within the electrical grid. Use low watt density heaters.

Replace all MCCs to meet the requirements of the mechanical requirements throughout building

Coordinate electrical work with mechanical design, insure electrical work is reflected on mechanical drawings

1.3.3.3.16 Standby Power

Upgrade the emergency power systems. Locate the generator room in penthouse and verify surrounding space. Ensure room is set up to meet CSA space requirements and CSA 282 lighting / heat requirements. Design upgrades as required by code or CSA 282.

Design and place a load bank adjacent generator on roof

1.3.3.3.17 U.P.S. and Power Conditioner

No upgrades to the UPS is required under this proposal. The emergency power feed will be affected in the panel board replacement to support the ups. Provide a Harmony isolation transformer on the utility side of the UPS to reduce to harmonic distortion to less than 10%. Allow for a future sizing of two times the existing unit.

1.3.3.4 Communications

1.3.3.4.1 Design Basis

Base the communications design on providing an economic, flexible system that allows ease of communications among co-workers and the larger virtual communities. Portability of services within the building are a priority. All communications rooms and distribution method is to be reviewed and updated to current T530 standards. The new design will require a new wireless WIFI system throughout the building as well as hard wired communications in some locations. This may necessitate complete replacement including backbone and vertical runs, trays and pathway.

1.3.3.4.2 Codes and Standards

Design a telecommunications system in accordance with the following guidelines and standards. Provide justification and recommendations whenever following guidelines is not recommended.

- CAN/CSA-T527 - Grounding and Bonding for telecommunications in Commercial Buildings
- CAN/CSA-T528 - Design guidelines for Administration of telecommunications Infrastructure in Commercial Buildings
- CAN/CSA-T529 - Design Guidelines for Telecommunications Wiring Systems in Commercial Buildings
- CAN/CSA-T530 - Building Facilities, Design Guidelines for Telecommunications
- TBITS 6.9 COSAC - Canadian Open Systems Application Criteria (COSAC), Telecommunications wiring system in Government-Owned and leased buildings - Technical Specifications
- CEC - 22.1 - 2015 - Canadian Electrical Code

1.3.3.4.3 Spaces

Base the communications design on providing an economic, flexible system that allows ease of communications among co-workers and the larger virtual communities. Portability of services within the building are a priority. All communications rooms and distribution method is to be reviewed and updated to current T530 standards.

Provide recommendation for location, design and layout for new communications spaces to meet CAN/CSA T530 recommended standards. Ensure communications closets and rooms are well planned at the early stages to allow flexibility for recommended designs and future layouts. Provide input to mechanical consultant for ventilation requirements.

1.3.3.4.4 Pathways

Update communications pathway for this building. Provide a new horizontal and vertical pathway system compatible with usable floor space. This will include a tray above the ceiling,

Verify early in the process the pathway requirements.

1.3.3.4.5 Wiring

Provide recommendations with respect to the wiring system using flexibility, reduced future churn costs and sustainability as part of the design criteria. Entire building has newly installed Category 6 wiring. Consider category 6 and 6E, fibre to the desk with fibre or copper backbone. Provide comparison of wired structure to latest wireless systems providing risks, economics and recommendations. Bandwidth considerations may include VoIP, video conferencing web cams etc. Provide design based on accepted recommendation.

Upgrade the risers with both voice and data cables. Data cables shall be both copper and fibre optic and shall terminate in both the entrance rooms and each communications room.

During the Pre-Design stage of the project, VAC needs analysis will be required to determine the extent of wired structure to be utilized within each area. Wireless communications will facilitate the majority of all spaces within the DJM. Identify the requirements for a wireless horizontal communication system. Show a detailed design and cost analysis.

VAC security directorate will provide final direction on wiring and pathways.

Consider the interconnection of the communications and data systems to the risers looking at jumpers, patch cords and electronic jumpering. Consider all costs including training and trained on site personnel requirements. VAC will have final say on any design proposal.

1.3.3.4.6 Voice Communications System and Backbone Cabling

Consideration is to be given into the risks, reliability and economics of various voice communications systems existing or proposed for this building. Systems may include the standard PBX, key or centrex as a base line and comparison of all related cost to a personal communications systems (PCS) or customer owned cell within the building, voice over IP, regular cell phone, or other recommended voice communications system. Consider requirements such as voice mail, FAX rerouting, caller ID, call forward, conference, etc. and any currently available feature that may be required. The intent of this consideration is to justify the wiring for voice.

PR1.3.3.5 Security Requirements for Building Design

VAC have design guidelines relating to security within the building which will impact all disciplines. Although the requirements within these guidelines focus primarily on controlling physical access to given areas, for certain situations they also include items such as ensuring that mechanical or electrical services are not routed through spaces they do not directly serve, providing acoustic privacy, providing visual privacy or providing electronic privacy.

The consultant will be responsible to review the security guidelines and incorporate all applicable requirements into the design.

The security guidelines will be provided to the successful consultant.

PR1.3.3.6 Construction Phasing

The building will remain occupied during construction.

A portion of the building population (about 1/3 – 250 employees) will be moved to swing space outside the building for the duration of the construction. The work required to design and fit up the swing space located outside the building will not form part of the work under this contract.

The remainder of the population will stay in the building. The remaining employees and workstations will be relocated and reconfigured to produce vacant space for phased construction.

By the end of the project, 100% of the building population will have been relocated to achieve the final layout. Along with the implementation of the upgrades to the mechanical and electrical systems, this will result in the need for phasing of the construction. The consultant will be responsible for the development of a workable construction phasing plan which will be provided to the contractor within the contract documents.

The phasing will need to take into account the present location of the functional groups and their final location. Phasing will most likely result in the need for temporary layouts during certain phases.

The phasing plan will need to balance the requirements of the functional groups with the technical requirements of the mechanical and electrical systems and their options for phasing.

Phasing will result in phased commissioning and warranty periods.

1.3.3.7 Activity Based Workplace and Workplace 2.0 Fit-up Standards

Approximately 6 years ago, PWGSC (now PSPC) introduced the Workplace 2.0 Fit-up Standards which were intended to begin the modernization of the federal workplace and to standardize space types and sizes for typical office functions. These standards are still in place, and since they are considered our minimum standards, continue to be used in some situations. Workplace 2.0 has been a successful first step toward workplace renewal for the federal government and it is now recognized that our workplaces need to go further in support of the federal government objectives for Blueprint 2020 and in becoming a workplace of choice. The most recent development in the

federal government's workplace modernization is called Activity Based Workplace (ABW) and the Government of Canada has adopted a version that incorporates unassigned seating. This renovation/fit-up will incorporate the principles and guidelines of the Activity Based Workplace as adopted by the Government of Canada.

ABW anticipates the provision of a completely non-prescriptive, customized design approach to suit each group's needs using a common design philosophy to enhance flexibility. The resulting workplaces will provide a wide variety of unassigned workpoints (from high concentration areas to semi-private and shared collaboration areas) in a flexible, near-paperless, wireless environment permitting employees complete flexibility to choose a workpoint suited to the task at hand throughout their workday.

Activity Based Workplace Philosophy within the federal government:

To make work more efficient but also more enjoyable for employees and also more effective for the organization. This vision is realized by focusing on the employees and giving the freedom to decide for themselves how to work, where to work, when to work, the tools to use and with whom to collaborate to get the work done.

Concept:

Activity Based Workplace (ABW) is a concept which recognizes that through the course of any day, people engage in many different activities and that they need different types of work settings to accommodate these activities.

1. The activity based workplace solution is a modern open work environment which is bright, healthy, sustainable and flexible.
2. Supports a diverse activity-based workplace providing diversity and choice of work points to enhance performance, wellness, and engagement of employees.
3. Provides a workplace of unassigned work points in a variety of solutions, furniture types and configurations to support diverse activities and personal preferences.
4. The workplace reflects the activities of the employees, whether they are of an individual nature, collaborative, private or social. The workplace respects the employees' need for acoustic and visual privacy for both individual and collaborative work, supporting wellness and reducing stress in the workplace.
5. The workplace supports the tenant's virtual environment vision, where information and collaboration is available to employees in any place, at any time, without requirement for paper-based processes or records; to the greatest extent possible.
6. Respecting the tenant's program culture, create a variety of spaces and activity based work points leveraging mobility, and inspiring engagement, collaboration, creativity and innovation.

More information on the Government of Canada's approach to Activity Based Workplace can be found at the following link:

http://www.gcpepedia.gc.ca/wiki/Fit-up_Standards

Challenges

PSPC acknowledges that there are two particular challenges with implementing Workplace 2.0 and ABW in this project.

The first is that it is a new approach and it is critical that the consultant clearly understand the objectives of Workplace 2.0 and ABW and its implications on the tenants' work environment.

The second is that it is an approach which the employees have not yet experienced and is significantly different from their current work environment.

The consultant will be a key component in the change management aspect of this project, both in the functional programming role and in support of the PSPC led change management team.

Due to the transformative nature of implementing the Workplace 2.0 and ABW approach, above normal effort on the part of the consultant will be required throughout the project. During the early stages, from problem identification to development of options, significant employee engagement on the part of the consultant must be recognized. Ensuring that user requirements are gathered with the optics of WP 2.0 and ABW in mind is critical.

PSPC will put in place a Change Management team. Employee acceptance will be critical to the success of the project. From ensuring users are confident their needs have been understood and then explaining the benefits of various proposed solutions will require considerable work. See RS 11 for specific duties in support of this team.

1.3.3.8 Sustainability Requirements

Green Globes (formerly BREEAM/Green Leaf) is a points-based rating system used to assess the environmental performance of buildings. It can be used for both new construction and for interior space fit-ups of existing spaces. Buildings are awarded one to five 'Green Globes' based on their score.

Refer to section RS 10 for detailed requirements.

The Renovation will require Green Globes Existing Buildings and Sustainable Interiors Certification. A rating of 3 is the minimum but all efforts should be made to obtain 4.

The Green Globes rating system consists of environmental performance criteria in seven categories for a total of 1000 points:

1. Project Management (120 points)
2. Energy (180 points)
3. Water (65 points)
4. Resources (245 points)
5. Emissions (45 points)
6. Indoor Environment (275 points)
7. Space and Amenities (70 points)

The Prime Consultant will be responsible to prepare and submit documentation for the Green Globes certification of the project and coordinate work performed by all consultant team disciplines and incorporate into the reporting. Refer to the Green Globes website (www.greenglobes.com) for tools and support.

The Government of Canada is committed to improving the sustainability of its infrastructure. This requires improvements in consumption of electricity, water, heating, cooling and reducing waste.

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PR 1.3.4 Site Conditions

There is minimal space at the site. The building has two fronts on two different streets. There is a large exterior public court yard. There is underground Parking.

PR 1.3.5 Issues/Constraints/Challenges/Opportunities/Training

- Gathering and determining functional program requirements to help determine VAC's building fit-up requirements. As noted earlier, this will involve the use of more than one standard and more than one approach.
- Developing innovative approaches to achieve a modernized workplace by incorporating flexibility, workpoint and workspace variety that supports an array of work activities. Assess and filter the amount of physical file storage an employee needs to perform their work.
- Changing employees' perception that work can only be done in a workstation, workspace sizes are an entitlement and that the workspace is an employee's personal space. Promote the benefits of being mobile and gain employee acceptance of a modernized working environment which will impact the way in which all levels of PSPC, and tenants, work.
- Employing an efficient and integrated approach with key stakeholders such as but not limited to Shared Services Canada, BGIS, PSPC, and VAC to facilitate an alignment between the needs of the modernized workplace with the tools needed to successfully implement the initiative.
- Review the proposed implementation strategy, analyze and validate its premise and implications and provide recommendations for the most effective implementation strategy for the project.

PR 1.3.6 Consultant Access to the Site

During the planning, and design phases the Consultant will be required to conduct site reviews, investigations and testing, and will have access to the sites during daylight hours by pre-arranging site visit times with the Project Manager at least 48 hours in advance. Building access will require the possession of a PSPC Reliability Status security clearance.

PR 1.4 Budget (Order of Magnitude Estimate)

The Class 'D' construction cost estimate for this project is \$26,000,000 excluding HST.

The construction estimate does not include taxes, furniture, artwork, plants, telephone service, moving, and Consultant fees and is in "Budget-Year" (Current Canadian) dollars.

The construction cost estimates are to be produced and updated at each stage and closely monitored by the consultant and adjusted as necessary by the Client progressively for the duration of the project. The consultant is responsible to produce a design solution that is within the approved project budget. Any issues in this regard are to be brought to the attention of the Departmental Representative immediately.

PR 1.5 Existing Documentation

The following information is provided as Appendices:

Appendix E – Space measurement Drawings
Appendix F – Capacity Study
Appendix G – Building Condition Report

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Appendix H – Commissioning Oversight Requirements

Federal Building standards are on the internet at <https://PSPC-acq.gisat1.ca/sites/spss/AE/Consultant%20Reference%20Documents/Forms/AE%20Managers.aspx>

Federal accessibility standards for real property are on the internet at <https://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=12044>

Government of Canada Workplace 2.0 fit up standards are on the internet at <https://www.tpsgc-pwgsc.gc.ca/biens-property/amng-ftp/index-eng.html>

Government of Canada Activity Based Workplace (ABW) fit up standards are on the internet at

Operation & Maintenance Manuals are available from BGIS upon request.

PR 1.6 Codes, Acts, Standards and Regulations

1.6.1 General

Notwithstanding those Codes, Acts, Standards and Regulations already legislated and commonly accepted as applicable by the Design Professionals and Construction Industry, those described in the articles below may also apply to the Work (In all cases the most stringent applies):

- a) The NRC National Building Code of Canada 2015,
- b) The NRC National Fire Code of Canada 2015,
- c) The NRC National Plumbing Code of Canada 2015,
- d) The Canada Labour Code: <http://laws.justice.gc.ca/en/L-2/>,
- e) The Canada Occupational Health and Safety Regulations: <http://laws.justice.gc.ca/eng/SOR-86-04/index.html>,
- f) Accessible Design for the Built Environment CAN/CSA B651 2012,
- g) All other Provincial and Municipal Acts, Codes, By-laws and regulations appropriate to the area of concern.
- h) National Energy Code of Canada 2015
- i) PSPC Mechanical Design (MD) Standards applicable to the project scope
- j) PSPC Best Practices; describing indoor humidity levels for Federal Buildings –2006
- k) Government of Canada Workplace 2.0 Fit-up Standards

1.6.2 Authorities Having Jurisdiction (AHJ)

Codes, regulations, by-laws and decisions of local authorities having jurisdiction will be respected. In the case of conflict, the most stringent will apply.

The Consultant will identify other jurisdictions appropriate to the project.

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PSPC will voluntarily comply with the applicable Provincial construction health and safety acts and regulations, in addition to the related Canada Occupational Health and Safety Regulations.

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PR 1.7 Schedule

The following is the proposed schedule for the Renovation:

RS 1 Pre-design Services	15 weeks
RS 1.1 Analysis of Project Requirements	
RS 1.2 Functional Programming	
RS 1.3 Green House Gas Emissions Options Analysis	
RS 2 Schematic Design	
Completion of RS 2 Schematic Design	12 weeks
PSPC and Client Review	2 weeks after RS2 submission
RS 3 Design Development	
Completion of RS 3 Design Development	15 weeks
PSPC and Client review	3 weeks after RS3 submission

Project not to proceed until Expenditure Authority Depending on Project Estimates approval may take up to 6 months

RS 4 Construction Documents	
33% submission	6 weeks
PSPC and Client review	2 weeks after 33% submission
66% submission	6 weeks
PSPC and Client review	2 weeks after 66% submission
99% submission	6 weeks
PSPC and Client review	2 weeks after 99% submission
Final submission	2 weeks
RS 5 Tender Call, Bid Evaluation & Contract Award	12 weeks
Completion of RS5 Tender & Award	
PSPC & Client Department Review:	1 week after RS 5 completion
RS 6 Construction and Contract Administration & Post Construction Warranty Review	42 months (incl. all phases of implementation)

PR 1.7.7 Tenant Move-In

The tenant move-in & occupancy dates are dependent upon the various phases/move-in dates for various occupant groups.

Schedules shall be developed as part of the Consultant scope and shall be reviewed and approved by the PSPC Project Team.

PR 1.8 Project Administration

1.8.1 Project Deliverables

Where deliverables and submissions include summaries, reports, drawings, plans or schedules, six (6) hard copies shall be provided plus one (1) copy shall be provided in electronic format and loaded to the

SharePoint site. Consultant will be responsible to load submissions to the SharePoint site. Documents will not be circulated through email or FTP sites.

1.8.2 Lines of Communication

The consultant's primary contact with PSPC shall be with the Project Manager who is responsible for the overall project delivery.

In order to perform the services under this contract, the consultant will be required to communicate with various stakeholders. Such communications will require approval from the Project Manager.

During construction tender call, PSPC conducts all correspondence with bidders and makes the contract award.

1.8.3 Media

The consultant shall not respond to requests for project related information or questions from the media. Such inquiries are to be directed to the Project Manager.

1.8.4 Meetings

The Project Manager shall arrange meetings throughout the entire project development period, for all members of the project team, including representatives from:

- VAC -Tenant department
- PSPC project delivery team
- Consultants
- Commissioning Agent (BGIS)

The Consultant shall attend the meetings on site, and when requested, record the issues and decisions and prepare and distribute minutes within 48 hours of the meeting.

As the project proceeds the consultant will provide information as required to inform PSPC and building tenants of project progress for use on their internal electronic communication message board system.

1.8.5 Project Response Time

It is a requirement of this project that the key personnel of the successful proponent and sub consultant or specialist firms be personally available to attend meetings or respond to inquiries within 2 business days.

1.8.6 Submissions, Reviews and Approvals

Work in progress is to be reviewed by the Project Manager as well as the following:

PSPC in-house services

- Submission Format: report, drawings and specifications, etc.
- Submission Schedule: Submissions are reviewed when completed work has been forwarded to the Project Manager.
- Expected Turnaround Time: 1 week
- Number of Submissions: until approval has been received

Stakeholder Management – Steering/Sub Committee

- Submission Format: Presentation

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- Submission Schedule: Approximately 2 weeks after each design phase submissions and at significant milestones during construction phase (assume 4 times per year, for 3 years). These presentations shall take place on site.

Design review Committee - PSPC

- Submission Format: drawings and specifications, oral presentation.
- Submission Schedule: Submissions are reviewed when completed work has been forwarded to the Project Manager. PSPC will schedule meetings at a minimum two weeks in advance.

Municipal authorities

- Submission Format: drawings and specifications
- Submission Schedule: as required by City of Charlottetown bylaws
- Expected Turnaround Time: 1 month
- Number of Submissions: two (2)

PR 1.9 Building Permit

The building contractor will be responsible to apply for and obtain the building permit. The consultant shall prepare all design related documents required by the authorities having jurisdiction for the application process.

PR 2.0 Health and Safety Plan

- .1 Prior to commencement of Work, develop written Health and Safety Plan specific to the Work. Implement, maintain, and enforce Plan for entire duration of Work and until final demobilization from site.
- .2 Health and Safety Plan shall include the following components:
 - .1 List of health risks and safety hazards identified by hazard assessment.
 - .2 Control measures used to mitigate risks and hazards identified.
 - .3 On-site Contingency and Emergency Response Plan as specified below.
 - .4 On-site Communication Plan as specified below.
- .3 On-site Contingency and Emergency Response Plan shall include:
 - .1 Operational procedures, evacuation measures and communication process to be implemented in the event of an emergency.
 - .2 Evacuation Plan: prior to entering the Work Site confirm escape routes, marshalling areas, and location of firefighting equipment.
 - .3 Emergency Contacts: name and telephone number of officials from:
 - .1 Departmental Representative.
 - .2 Pertinent Federal and Provincial Departments and Authorities having jurisdiction.
 - .3 Local emergency resource organizations.
 - .4 Harmonize Plan with Facility's Emergency Response and Evacuation Plan. Departmental Representative will provide pertinent data including name of PSPC and Facility Management contacts.
- .4 On-site Communication Plan:
 - .1 Procedures for sharing of work related safety information to Sub consultants, including emergency and evacuation measures.
 - .2 List of critical work activities to be communicated with Facility Manager which have a risk of endangering health and safety of Facility users.
- .5 Address all activities of the Work including those of sub consultants.
- .6 Review Health and Safety Plan regularly during the Work. Update as conditions warrant to address emerging risks and hazards, such as whenever a new sub consultant arrives at Work Site.
- .7 Departmental Representative will respond in writing, where deficiencies or concerns are noted and may request re-submission of the Plan with correction of deficiencies or concerns.
- .8 Plan must outline how the consultant will share information, collaborate and cooperate with building facility manager, BGIS, throughout duration of project, particularly in the context of managing Health and Safety aspects, in an integrated fashion.

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PR 3 Definitions

ACCEPTANCE: A formal action by an assigned authority (contractual or otherwise) to declare some aspect of the project is permitted to proceed. Accountability for the specific aspect of the project remains with the designer.

Activity Based Work (ABW): A concept of working based on the premise that no employee 'owns' or has an assigned workstation. Rather, the broader workspace provides employees with a variety of predetermined activity areas that allow them to conduct specific tasks including learning, focusing, collaborating and socialising. See also Workpoint.

BASE BUILDING: As per Government of Canada Work Place 2.0 Fit-up Standards – see Glossary. Also refer to Building definition.

BASIS OF DESIGN (BOD): Documentation of the primary thought process and assumptions behind design decisions to meet the Occupying Tenant requirements stated in this RFP and as determined on site.

A report component submitted at the conclusion/sign-off at each of the RFP Required Services.

- a) Live document updated during the various provisions of Services.
- b) Integral component of the Schematic and Design Development Reports and ongoing Cx Plan development.

BGIS: the Company providing Facility Management Services to the Crown for the Dominion Public Building.

BUILDING PERFORMANCE VERIFICATION: Landlord formally submitted verification statements indicating the Building, as per the LDP, remains capable to support Tenant Improvements requirements throughout all the project life cycle services submissions from Pre-Design Service through to Post Construction Services.

COMMISSIONING (CX): In general, a systematic planning, testing and documenting process to ensure that the Building and Tenant Improvements Work performs interactively according to the design intent and the Occupying Tenant(s) operation needs.

Specific to Tenant Improvements Work, Commissioning Services focus is the Leased Premises endpoints proof of performance.

- a) End point performance verification is, as defined in, for example, CSA Z320- Functional Performance Testing.

COMMISSIONING (CX) PLAN:

- a) As identified in CAN/CSA Z320.
- b) Updated throughout projects life cycle.
- c) Also refer to Basis of Design (BOD).

COMPONENT (FUNCTIONAL PROGRAMMING): Functional Programming term. A group of spaces that is functionally similar but not necessarily contiguous or spatially cohesive. A component is comprised of one or more Elements (see definition).

DECISION LOG: Debrief of minutes and resultant decisions/action summary.

Suggested column format headings: Date Raised, Topic, OPI, Action Plan, Update, and Status.

ELEMENT (FUNCTIONAL PROGRAMMING): Functional Programming term. A group of spaces, open or enclosed, that are functionally similar, reliant on each other and are spatially cohesive/contiguous.

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FIT-UP (TENANT IMPROVEMENTS): Work to bring office space to “in-service” functionally and operationally.

FIT-UP STANDARDS: Space and cost (funding) allocation and workplace configuration and furnishing as per Framework for Office Accommodation and Accommodation Services – Government of Canada Workplace 2.0 and Activity Based Workplace Fit-up standards.

FUNCTIONAL PROGRAM: The document which assembles all of the tenant functional visions and user requirements.

Functional Programming tools developed by PSPC (in MS Excel).

- a) The space calculator data, due to its level detail breakdown may be considered a form or an element of a functional program to directly initiate a schematic design.

INTEGRATED PROJECT DELIVERY: Mechanism that enables early and ongoing engagement of a project team to provide a better designed, constructed, cost effective and timely project.

Early and strategic engagement of the stakeholders allows for the potential of early start in the Construction sequence, as the design is proceeding.

ISSUES LOG:

- a) Log contains description of issues and variances on matters such as Program, Fit-up Standards, Budget, Schedule and Performance, Commissioning, Basis of Design and Building Project Related Requirements.
- b) On an ongoing basis the log maintains status of current and resolved issues
- c) Issues are identified and tracked as encounter during all design phases, construction and operations of the lease premises and building.
- d) Issues Log is included as part of the monthly design and construction phase reporting. LEAD: Identified entity to facilitate an activity and be accountable for the resulting deliverable.

LEASE/TENANT IMPROVEMENTS: Also means Fit-up.

MASTER COST PLAN: Master Cost Plan is produced and updated by and is the responsibility of the PM with input and responsibilities of the Consultant Team addressing elements such as:

- a. Design cost
- b. Construction cost
- c. Risk allowance
- d. Escalation
- e. Cost variance
- f. Earned value to date
- g. Actual and budget variances

MASTER PROJECT SCHEDULE: Master Schedule is produced by and is the responsibility of the PM with input and support from the Consultant Team.

A primary project schedule to which all other schedules roll up and are coordinated.

OCCUPYING TENANT: Tenant “Client” or an occupying tenant in Leased Premises.

OWNER PROJECT REQUIREMENTS (OPR): Tenant Project Requirements (TPR) used in the RFP is the same as the industry term Owner Project Requirements (OPR) with the purpose to:

- a) Define performance benchmarks and acceptance criteria by which project success is assessed. OPR/TPR may be available in advance of the TOR development otherwise; the Landlord develops the document, in advance of any design, as may be described in TOR Scope and Activities.
- b) Form the basis from which all design, construction, acceptance, and operation decisions are made. The OPR/TRP may be modified during the design and construction process as the

Owner's/Tenant's objectives and criteria are refined.

c) Evaluate BOD and Construction Documentation compliance with the OPR.

START-UP MEETINGS: Meeting led by the PM addressing, as may be appropriate, depending on the attendee, following items such as:

- a) Roles and responsibilities, b) Rules of engagement,
- c) Project status, goals, objectives, elements, scope, funding, preliminary schedules, d) Project risks and development of initial risk management plan,
- e) Review of existing available documentation and site,
- f) Schedule bi-weekly project and milestone meetings, g) Establish communication and document control plan.

PM and Consultant Team as part of the design team are responsible for matters such as the Master Schedule and Commissioning Plan and provide input into matters such as design, phasing, constructability, availability of materials and equipment.

PLANNING DIAGRAM: A schematic representation of spaces whose functional relationships may be sufficiently complex to still require further detail design.

A planning diagram is illustrative and, as such, does not include all design-specific spaces and therefore is not a resolved floor plan layout.

PROJECT PROCEDURES PLAN: A dynamic and evolving plan to establish how the design, construction and closeout process will be structured to deliver the improvements on time and within budget and scope. A measure against which performance is evaluated and success is judged.

Includes items such as:

- a) Organization and communication charts.
- b) Master Cost Plan including narratives discussing cost estimating, control and management techniques.
- c) Master Project Schedule complete with a detailed Work breakdown structure.
- d) Quality Management Plan, a procedures and documentation plan to determine for example documentation completeness and suitability, testing, inspection and submissions requirements.
- e) Construction procurement options and/or number and sequence of tender packages.
- f) Contracting/procurement strategies, bid packaging description, bidders cost breakdowns. g) Site Mobilization.

QUALITY MANAGEMENT PLAN (QMP): Quality Management goal is to assure:

- a) Design Quality:
 - i. Confirmation design satisfies the Tenant ("Owner") Project Requirements,
 - ii. Complementary design principles,
 - iii. Planning/layout efficiency,
 - iv. Accuracy, adequacy, conformance to standards of practice, compliance with codes and standards, cost effectiveness, quality, and fitness for purpose and function as per the RFP.
- b) Construction Quality:
 - i. Construction preparation – review schedule and check points.
 - ii. Follow-up of inspection and testing to confirm on-going performance compliance.
 - iii. Final acceptance.
- c) Management Quality:
 - i. Management assignments,
 - a. Managers associated with design, project and construction,
 - b. Quality process reporting and resolution forums,
 - c. Decision making protocols.
 - ii. Document control,

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iii. Risk management program.

SWING SPACE: A temporary work environment which provides generic office accommodation for other government departments on a short term basis, while their permanent office accommodation is under renovation.

WORK: "Work" means all work set forth in this RFP. "Work" includes Professional and Construction Services and at times in the RFP may also be addressed as a "project" in a matter such as Project Management or Project Administration.

WORKPLACE 2.0: The Workplace 2.0 concept is space being allocated based on the functional requirements of workers and the amount of time spent in the workplace. Workplace 2.0 optimizes office accommodation while supporting public servants in their work, encouraging a collaborative environment and providing the latest technologies.

WORKPOINT: A workpoint provides conducive and alternative workspace for an individual or group to complete tasks which could include open and closed workspaces, support spaces, meeting spaces, collaboration areas, etc

REQUIRED SERVICES (RS)

RS 1.0 Pre-Design Services

1.1 Analysis of Project Requirements

1.1.1 Intent

The purpose of this stage is to ensure that the Consultant has reviewed and understood all the project requirements including:

- identifying and evaluating conflicts or challenges
- performing a risk management assessment of the entire project
- presenting and receiving acceptance on the project scope, project delivery process, project schedule and the project budget

These requirements are necessary to deliver a cohesive quality project. This document and any additional deliverables/services identified in the Consultant's proposal submitted in response to the RFP call, will become the Project Scope of Services and will be utilized throughout the project to guide the delivery.

1.1.2 Scope and Activities

- Visit the site
- Study and document any aspects of existing furniture and/or equipment in the facility that could potentially affect building design. (While touring existing site, the Consultant will be accompanied by VAC and PSPC personnel, who will identify any such key components.)
- Verify the availability and capacity of services needed for the project
- Attend project start up meeting
- Analyze the preliminary project requirements, including existing and new technologies, and project program
- Gather the necessary information in order to produce the GHG Option Analysis as per section RS10 – Sustainable Development
- Review all available existing materials related to the project
- Identify any missing components or areas of concern and work with PSPC Departmental Representative to complete or resolve.
- Review the proposed project schedule for verification that all milestone dates are achievable
- Review the cost plan/budget for verification that the costs are realistic and achievable
- Review critique and/or expand on Technical Requirements as identified.
- Identify and verify all authorities having jurisdiction for the project
- Identify the codes, regulations and standards that apply and investigate key implications
- Establish an environmental plan which, at this stage will include a policy for this project to minimize environmental impacts consistent with the project objectives and economic constraints, and the application of the *Canadian Environmental Assessment Act* (CEAA).
- Prepare consolidated work plan / recommendations regarding next steps, key drivers and overall approach to the project
- Commissioning input to interface with existing occupancy

1.1.3 Project Start-up

A start-up meeting will be held at a time and place to be determined by the Project Manager. The Departmental Representative will convene the Project Start-up meeting. The meeting will provide a venue

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for the introduction of all parties involved in the project and will provide a forum to initiate group discussion of the Project Requirements that will ensure all requirements related to the delivery of the project are fully understood. The meeting will also be used to assist in defining procedures and requirements. The Consultant shall provide a list of clarifications and any required additional information in advance of the meeting.

In preparation for the Project Start-up meeting, the participants are expected to prepare for the meeting as follows:

- To review and be familiar with the Project Requirements.
- To review the proposed Project Schedule to verify that all milestones are achievable and that the deliverables under RS 8 can be submitted as specified.
- To review the available list of reports, studies, standards and other documentation and determine which copies are required.

Minutes for this meeting will be recorded and distributed by the PSPC Departmental Representative.

1.1.4 Deliverables

Provide a comprehensive summary of the project requirements demonstrating understanding of the scope of work. This summary shall include, but not be limited to the following:

- All applicable codes, regulation, standards and authorities having jurisdiction;
- Work plan / outline of next steps
- Report re: any potential impacts which will influence building or interior design;
- Environmental impact, sustainability, preliminary environmental assessment and CEAA screening;

Technical Requirements:

- The Consultant Team is required to review and report on the Technical Requirements outlined RS10 – Sustainable Development. Revise as required and resubmit for final acceptance. In part, the Consultant Team shall report on the requirements as they relate to various facility occupancies, design challenge, risks and project objectives.
Notwithstanding these requirements, the Consultant Team shall recognize that this is not an all-inclusive list. The Consultant Team shall expand these requirements to include those additional requirements relevant to this project.

Risk Management Assessment:

- Provide a written identification of the challenges, conflicts or other perceived information/clarifying assumptions for the acknowledgement of the Departmental Representative.

Project Work Breakdown Structure:

- The Consultant will prepare a Project Work Breakdown Structure (PWBS) as per RS 8
Project Master Plan/Cash Flow Projection
- Prepare a Project Master Plan and dependent Cash Flow Projection that accounts for all major project activities and costs as per RS 9
Project Schedule as per RS 8

Commissioning as per RS 10

RS 1.1 Feasibility Studies / Options Analysis

A Green House Gas Emissions Options Analysis is required, scope is described under RS10 – Sustainability Requirements.

RS 1.2 Functional Requirements/Programming

1.2.1 Intent

Functional Requirements/Programming:

A written statement which describes client requirements for various design criteria including design objectives, site requirements and constraints, spatial requirements and relationships, building systems overview, and future expandability. The purpose of this stage is to describe the requirements which a building/facility must satisfy in order to support end user activities. For any interior work related to office fit-up, the consultant shall follow the current Government of Canada Fit-up Standards and ABW.

This process seeks to answer the following questions:

- What is the nature and scope of the problem?
- What information is required to develop a proper built solution to the problem?
- How much and what type of space is needed?
- What space will be needed in the next five to ten years to continue to operate efficiently?
- How can sustainability be addressed at this stage?

1.2.2 Scope and Deliverables

In order to complete a functional program, the consultant must understand users' requirements. In addition, the consultant must clearly understand the objectives and general impact of implementing WP 2.0 and ABW.

In developing functional programs, the Consultant's main task is to examine VAC's world in detail to confirm their needs and objectives. These requirements will establish criteria for evaluating potential design solutions and contribute to the development of the Retrofit/GHG Option Analysis. This will require consultation with VAC representative. These Final program requirements will become the basis for the conceptual designs.

The Consultant must understand:

- The impacts of VAC and their processes on the built environment;
- To review the final functional program, the consultant shall confirm:
- The proposed occupant groups of the building and their work activities.
- Building infrastructure requirements such as mechanical, electrical and telecommunication rooms and the spatial requirements of the associated distribution systems.
- The type and volume of activity planned for specific facility components, such as the proposed common-use, office-related spaces.
- Flow patterns/proximity requirements.
- Confirmation of the proposed space to be incorporated into the building conceptual plan.

The Consultant shall also advise PSPC on alternatives, such as the schedule and financial implications of various renovation options. The Consultant shall assist PSPC in assessing; the advantages / benefits; or the disadvantages / costs of each alternative.

The first step in gathering user requirements will be to understand the organizational/functional vision of each tenant department. To that end, the consultant will meet with management to determine the department's purpose, philosophy, values and goals. The consultant will then utilize the data collection tools currently being developed by PSPC (questionnaires, surveys, interviews etc.) to be used in the next stage of the process with the goal of migrating to WP2.0 and ABW. Present these along with the functional vision statement to management of each tenant department for approval.

The next step will be to gather detailed information on the functions, processes and user requirements for each tenant. Focus groups based on business lines will be created for The consultant will work with the various focus groups and use the data collection tools previously approved to gather the detailed user requirements. Information to be captured must include (but not be limited to):

- description of work activities and processes,
 - including special technical requirements (finishes, equipment, mechanical, electrical, etc.)
 - implications on space requirements including storage, special purpose, etc.
- proximity requirements and flow patterns
- security

Once the user requirements have been assembled, the consultant will meet with management of each tenant group to review these and obtain approval. Although at this point, design solutions would not yet be developed, the consultant is to discuss with management the broad implications of implementing WP2.0 or ABW on the organizations work environment.

After having obtained management approval, prepare the final functional programming document.

1.2.3 Deliverables

The final Functional Program is a report which will include (but not limited to):

- The client's philosophy, values, goals, and desired "image";
- Explicit space requirements for the renovated building, including:
 - Definition of the activities which will take place in each space;
 - The functional relationships of the spaces;
 - "Bubble" diagrams and flow diagrams;
- Other requirements including:
 - Regulatory issues such as building code requirements;
 - Other requirements from Authorities having Jurisdiction;
 - Ecological and environmental concerns;

RS 1.3 Implementation Strategy and Schedule

1.3.1 Intent

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The purpose of this work is to prepare an implementation strategy and or project schedule to meet the project goals and objectives at the pre-design stage.

1.3.2 Scope and Deliverables

The consultant shall provide an implementation strategy and schedule including (but not limited to):

- A report that outlines all activities, milestones and deliverables required for the effective delivery of the project including time frames for submissions, reviews and acceptances.
- Prepare a project Time Plan (Project Schedule) that identifies, in a graphic format such as Critical Path Method (CPM), all major activities and important milestones.
- The Implementation Strategy and Schedule may include known elements such as:
 - Space acquisition strategy, building master plan;
 - Decommissioning and environmental clean-up strategy;
 - Major move milestones and swing space requirements;
 - Construction strategy.

Advise the Departmental Representative of any risk issues that may affect schedule or are inconsistent with instructions or written acceptances previously given.

Submit the Implementation Strategy and Schedule for review. Revise as required. Resubmit for final acceptance. The final accepted schedule will become the "Baseline" schedule to monitor project progress.

Throughout the project, monitor critical path and deadlines for submissions, revisions and acceptances.

Submit progress reports at agreed times identifying completed deliverables, slippage and upcoming activities.

RS 2 SCHEMATIC DESIGN

2.1 Intent

To translate the project requirements into viable options in the most economical, and environmentally sustainable manner. To explore the design options and analyze them with respect to the priorities and program objectives previously identified. Out of this process, one option will be recommended to proceed to Design Development.

2.2 Scope and Deliverables:

- Consultant will develop design options exploring possible technical and environmental strategies which are viable and which have potential for development;
- Analyze each solution with regard to the project goals including cost and schedule;
- Ensure full co-ordination of all disciplines' work in developing the concepts through an integrated design approach.
- Provide a minimum of two (2) alternative design options for the project exploring possible technical and environmental strategies which are viable and have potential for development keeping in mind phasing and constructability;
- Analyze each solution with regard to the project goals including cost and schedule;
- Write a preliminary project description report outlining the various components and system options while constantly checking decisions and choices against how they contribute to the overall project objectives as noted in RS10 Sustainable Development. Produce an environmental assessment ,
- Each discipline will begin reviews of applicable statutes, regulations, codes and by-laws as appropriate for this stage of design.
- Produce a Class 'C' cost estimate for the various options; Class 'C' Estimate: to be in elemental cost analysis format latest edition issued by the Canadian Institute of Quantity Surveyors and 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; Class 'C' estimates are developed during the Schematic Design Phase.
- Produce an implementation schedule, including alternative procurement and construction strategies for the various options;
- Recommend one option for further development with all supporting background and technical justifications;
- Consultant Team members are to participate in Design Review meetings as requested by the Departmental Representative.
- Proximity Recommendations - the recommendations shall reflect the modernized approach by considering the impacts and solutions to unassigned workspaces. Assigned workspaces or anchor points such as, but not limited to Leadership offices shall be identified as there may be adjacency requirements for the assigned spaces. By default, the assigned workspaces may create neighbourhoods. The intent is to minimize the number of neighbourhoods by having unassigned workspaces.
- Furniture and Workstations Recommendations

For the purpose of this RFP, the recommendations shall reflect the modernized approach by linking work functions and activities with spaces. Include a variety of solutions that will satisfy different work styles and fall within the mandatory PSPC Consolidation Procurement Instrument (CPI) Supply Arrangement components / kit of parts must be used.

- Definition of the activities which will take place in each space in the building usually expressed in "room data sheets" showing;
 - The function, name and size of each space;
 - The functional relationships of the room to other spaces;
 - Furniture and equipment;

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- Finishes to all surfaces;
- Mechanical and electrical requirements;
- Special technical / communication requirements;
- Sketch (schematic) design options;
- Other requirements including:
- Regulatory issues such as zoning and building code requirements;
- Other requirements from Authorities having Jurisdiction;
- Internal goals and concerns;
- Ecological and environmental concerns;
- Sustainable Development as RS 10.

2.3 Detailed Description

2.3.1 Architectural Drawings:

- Provide schematic building plans of alternatives showing relative disposition of main accommodation areas, circulation patterns, numbers of floors, etc.;
- Design analysis, showing all key site-related information and drivers which influence design approach and proposed solution.
- Bubble diagrams or sketches that heavily influenced the design.
- Conceptual building plans showing relative disposition of main accommodation areas, circulation patterns, floor layouts, etc.
- Summary of main accommodation areas relative to known program requirements
- Description of sustainable design aspects incorporated into the design.

2.3.2 Structural Drawings: Provide the following:

- A recommended structural system in areas of change, including the structural frame materials, the structural grid layout and the foundation.
- A summary of alternative systems that were considered.
- The design loads applicable to the building.

2.3.3 Mechanical:

- The schematic design submission shall include a description of general mechanical requirements and function for the project. The concept submission shall include a description of specific mechanical requirements and function for each area in the building. Incorporate in the submission a schedule of requirements listing all rooms and identify the mechanical building services to be provided.
- Explain in the submission the manner in which the proposed mechanical systems correlate with VAC requirements.
- Identify the volume of outdoor air to be supplied per person.
- Identify the delivery rate of supply air to occupied spaces.
- The building mechanical system is to be designed such that full-time specialist operators are **not** required to control the building functions. Mechanical systems are to be designed for maximum efficiency and flexibility for environmental control while at the same time being managed by staff with minimal building experience. Remote monitoring of the primary mechanical functions should also be available.
- Identify location of entry point into the building of all mechanical services into the building.
- Identify in square meters the area to be provided for mechanical rooms, and in conjunction with Architectural staff, identify what percentage of total building area this represents. Identify location of mechanical spaces in the building.

2.3.4 Electrical:

- Show proposed basic electrical systems of significance to the early design.
- Identify any unique or specialized equipment required by the subject facility
- Prepare schematic Floor plans complete with locations of major electrical equipment and distribution centres.
- Provide an electrical design synopsis, describing the electrical work in sufficient detail for assessment by the Department. Include feasibility of proposed systems complete with estimated loads.

2.3.5 Commissioning

- Provide support to the commissioning agent as described in RS10.
- The design consultant's responsibilities in regards to commissioning are described in form COMM 301 03 RP1 found in appendix I

2.3.6 Specifications:

- Prepare preliminary outline of NMS specification sections indicating main building components and any options for use of "Green" components and systems.

2.3.7 Cost Plan:

- Prepare preliminary cost plan from the selected schematic design;
- Provide advice and recommendations on project planning in order to achieve the most cost effective project sequence;
- Identify potential risks and make recommendations to minimize negative cost impacts; and/or
- Identify, forecast and analyze project-related issues including possible market shortages and potential price fluctuations.

2.3.8 Cost Estimate:

- Prepare Class 'C' cost estimates;
- Quantify design and construction costs, contingencies and risks;
- Prepare and investigate costing alternatives to assist in the identification of the most cost-effective design and/or construction approach;
- Investigate and report on life-cycle costs; and / or
- Document all unit pricing, analysis, and valuation

2.3.9 Time Plan (Schedule):

- Prepare project master schedule;
- Identify potential risks to schedule;

2.3.10 Deliverables

Provide the following for the project:

- All outputs described in sections 3.2 Scope and Activities, 3.2.1 Details
- Schematic Design Drawings, including additional drawings as may be required to explain alternative options;
- Description of the options with recommendation of preferred solution;
- Project specification outline;
- Environmental Assessment Report and recommendations;
- Class 'C' Cost Estimate, including methodology of the estimate, assumptions made, costing alternatives and life cycle costs. Confirmation that Class "C" estimate is within project budget and comes with discipline sign-off;
- Report on deviation from schedule and recommend corrective measures or updated time line.

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- Submit the Hazardous Waste Disposal Strategy for review, in a report
- Detail Project Schedule as per RS 8
- Description of sustainable design aspects of the design
- Commissioning (RS10).

RS 3.0 DESIGN DEVELOPMENT

3.1 Intent

To further develop the accepted option presented at the Schematic Design stage. The Design Development documents consist of drawings and other documents to describe the size and character of the entire project as to Architectural, Structural, Mechanical and Electrical systems, materials, equipment and such other elements as may be appropriate.

3.2 Scope and Deliverables:

- Obtain written approval from Departmental Representative for development of one of the previously recommended Schematic Design options;
- If any alterations are required, document all required changes, analyze the impact on all project components, and resubmit for acceptance if required;
- Expand and clarify the Schematic Design intent for each design discipline;
- Present the design materials to the client, design review or other committees as indicated by the Departmental Representative;
- Prime Consultant to ensure ongoing coordination between all disciplines';
- Analyze the constructability of the project and advise on the construction process and duration;
- Based on all material available at the time, prepare a milestone schedule for consideration with special attention to the impact on tenants;
- Each discipline will continue to review all applicable statutes, regulations, codes and by-laws to ensure that the selected option will be compliant in all areas.
- Consultant Team members are to participate in Design Review meetings as requested by the Departmental Representative.
- Risk Management Report as per RS 7.
- Provide Estimating and Cost Planning Report as per RS 8;
- Sustainable Development as per RS 9.

3.2.1 Detailed Description

- Provide Floor plans including all disciplines showing all floor plan elements and services to a level of detail necessary to make all design decisions and to substantially estimate the cost of the project;
- Provide Architectural, structural, engineering, millwork and finishing details sufficient to show choice of materials and finishes;
- Provide Preliminary construction schedule including long term delivery items;
- Provide Fire Protection Report including requirements, strategies or interventions for protection of the building and its' occupants;
- Provide Project dossier detailing the basic assumptions of the project and the justifications for all major decisions;
- Coordinate the initial development of the Interior Design concepts including selection of finishes, colours and materials. Consultant will develop the concepts for inclusion in the tender documents.

3.2.2 Architectural Drawings:

- Provide Floor Plans of each floor showing all accommodation required with room names and calculated areas, including all necessary circulation areas, stairs, elevators, etc., and ancillary spaces for service use. Indicate building grids, modules, etc., and key dimensions;
- Provide preliminary Furniture and Equipment plans;
- Provide preliminary Reflected Ceiling plans showing proposed grids and for future coordination with mechanical and electrical services.

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- Provide Preliminary Demolition plans, finish schedules, door/window schedules, etc.
- Develop a minimum of two (2) colour schemes on illustration boards that further define the 'general look and feel' and clearly demonstrate the intended use of materials including, as a minimum, architectural finishes and finishes for furniture and furnishings.
- In a written legend, identify the colour, pattern, texture, name, manufacturer and reference number for each finish and colour identified.

3.2.3 Structural - (for areas of change)

- Preliminary drawings that indicate the structural framing system, the grid layout, the structural frame materials, the foundation and any other significant or unusual details.
- The design loads applicable to the building.
- Impact on existing occupancy to be identified

3.2.4 Mechanical

- Drawings showing preliminary sizing of ventilation systems showing locations, and all major equipment layouts in mechanical rooms.
- A drawing showing preliminary extent of existing equipment removals
- Drawings showing preliminary phasing.
- Drawings of plumbing system, showing routing and sizing of major lines and location of pumping and other equipment where required
- Drawings of the fire protection systems showing major components.
- Update the schedule of requirements.
- Provide information of all internal and external energy loads in sufficient detail to determine the compatibility of the proposal with existing services, approved concept.
- Analysis of selected equipment with schematics and calculations sufficient to justify the economy of the selected systems.
- Describe the mechanical systems to be provided and the components of each system. Describe the perceived operation of the mechanical systems.
- Explain the level of involvement that will be required by outside contractor or AFD staff to operate the building systems and the expected functions of the operation staff.
- Describe the building systems control architecture. Provide preliminary EMCS, mechanical control schematics, and sequence of operation.
- Explain the acoustical and sound control measures that are to be included in the design. Refer to the sound rating requirements specified in the space data sheets.

3.2.5 Electrical Drawings

- Provide drawings showing advanced development of the following:
- Single line diagram of the power circuits with their metering and protection, including:
 1. Complete rating of equipment in preparation for fault coordinating study.
 2. Description of relays when used.
 3. Maximum short circuit levels on which design is based.
 4. Identification and size of services.
 5. Connected load and estimated maximum demand on each load centre.
- Electrical plans with:
 1. Floor elevations and room identification.
 2. Legend of all symbols used.
 3. Circuit numbers at outlets and control switching identified.

4. All conduit and wire sizes except for minimum sizes which should be given in the specification.
5. Typical access floor box layout and locations.
6. A panel schedule with loading for each panel.
7. Communication system distribution including proposed telecommunications rooms locations and pathway recommendations.
 - Floor layout for lighting, power, telecommunication systems, fire alarm, security and other systems.
 - Elementary control diagrams for each system.
 - Schedule for motor and controls.
 - Complete lighting layout and fixture schedule clearly indicating methods of circuiting, switching and fixture mounting.
 - Electric heating layout and schedule (if applicable).
 - Owners metering and control connections
 - Elevator equipment and control (if applicable)
 - Provide the following data:
 - Total connected load.
 - Maximum demand and diversity factors.
 - Sizing of standby load.
 - Short-circuit and Protective Device Co-ordination requirements and calculations showing the ratings of equipment used.

3.2.6 Commissioning (see RS 11)

The design consultant's responsibilities in regards to commissioning are described in form COMM 301 03 RP1 found in appendix I

3.2.7 Specifications

- Provide a list and draft specification sections of all NMS sections to be used;
- Submit outline specifications for all systems and principle components and equipment;
- Provide in the outline specifications manufacturers' literature about principal equipment and system components proposed for use in this project;
- Highlight proposed "Green" materials, components and systems.

3.2.8 Cost Plan

- Update cost plan;
- Highlight changes from preliminary cost plan;
- Include cash flow analysis.

3.2.9 Cost Estimate

- Provide Class 'B' cost estimate;
- Highlight changes from Class 'C' cost estimate.

3.2.10 Time Plan (Schedule)

- Update time plan (Schedule);
- Highlight changes to the time plan.

RS 4.0 CONSTRUCTION DOCUMENTS

4.1 Intent

- To prepare coordinated A&E drawings and specifications setting forth in detail the requirements for the construction and final cost estimate of the project.
- Document submissions to conform to the PSPC drawing standards as outlined in Doing Business.
- 33% indicates the level of technical completeness of all working documents;
- 66% indicates substantial technical development of the project - Substantial Architectural and Engineering plans, details, schedules and specifications;
- 99% is the submission of complete Construction Documents ready for tender call and submission to local authorities for permit purposes;
- Final Submission incorporates all revisions required from the 99% version and is intended to provide PSPC with complete construction documents for the tender call.

4.2 Scope and deliverables:

Activities and deliverables are similar at all three stages; the current submission stage of the project should be reflected in the completeness of each submission.

- Obtain Departmental Representative's acceptance of the final Design Development submission;
- Confirm format of drawings and specifications;
- Clarify special procedures (i.e. phased construction);
- Submit drawings and specifications at the required stages. (33%, 66%, 99% and final);
- Prime Consultant to confirm that comments from various PSPC review stages have been reviewed / addressed / answered in a formal response process and incorporated into the Construction Documents where required;
- Advise as to the progress of cost estimates and submit updated cost estimates as the project develops;
- Update the project time plan (schedule);
- Prepare a final Class 'A' (substantive) estimate;
- Prime Consultant to ensure ongoing coordination between all disciplines;
- Risk Management Report as per RS 7;
- Estimating and Cost Planning Report as per RS 8;
- Commissioning as per RS 10;
- Sustainable Development as per RS 9.

4.2.1 Detailed Description

The production of tender documents will proceed from general design solutions to eventually include all project specific requirements in the final documents. At each stage development of technical solutions for all disciplines will proceed at the same rate and will be coordinated for each submission.

Each discipline will continue to review all applicable statutes, regulations, codes and by-laws in relation to the design of the project to ensure that the project will be compliant in all areas.

Note: The Scope of Work and Activities required are similar for each of the three stages of Document production. The Consultant's presentation will be reviewed and confirmed for completeness for the level submitted initially by the Consultant's in-house quality review process as per **RS 11** and subsequently by the PSPC review team. Any submission not meeting the requirements of the intended level will be returned for completion before the review process is started.

4.2.2 Scope and Activities

- Obtain Departmental Representative's approval for Construction Document submissions (33%, 66%, 99% and final) as detailed in sections 5.4.3, 5.4.4, 5.4.5 & 5.4.6.
- Confirm format of drawings and specifications
- Clarify special procedures (i.e. phased construction)
- Submit drawings and specifications at the required stages. (33%, 66%, 99% & Final Submission)
- Provide written response to all technical review comments indicating acceptance or outlining justification for the work shown and incorporate the required revisions into Construction Documents.
- Submit updated Class 'B' cost estimate.
- Update the project schedule.
- Prepare a final Class 'A' estimate c/w discipline sign off.

4.2.3 Technical and Production Meetings

- All Submitted construction documents at the (33%, 66%, 99% and final); submissions will be reviewed as arranged by Departmental Representative and Consultant;
- Representatives from Client Department(s) and PSPC support staff will be present as required;
- Consultant shall ensure that his or her staff and the sub-consultant representatives attend the technical and production meetings as required;
- Consultant shall ensure all documents are coordinated between all sub-consultants;
- Consultant shall arrange for all necessary data, progress prints, etc.;
- Consultant shall prepare minutes of the meetings and distribute copies to all participants.

4.2.4 Progress Review

General

- Prior to each submission, the consultant will submit the full set of Construction Documents to their own in-house quality review team. The quality review team members must not be part of the design team and shall be responsible for reviewing the documents to ensure that they meet the standards of the appropriate submission level. One set of the documents must be initialed by the reviewer prior to submission to PSPC. This review time is to be indicated and allowed for within the Detail Project Schedule identified in RS 8.
- Formal Technical Reviews will be conducted by PSPC at each of the 33%, 66% and 99% submissions, and outstanding issues/concerns will be highlighted in written form for the Consultant to address.
- The Consultant is required to respond in writing to any questions, comment or requests regarding the construction documents, within one week of receiving the request.
- Working Documents (calculations) submitted shall not necessarily be reviewed. They are required for record purposes and in certain instances, to assist in the understanding and interpretation of designs. Calculations shall be submitted in a format that is legible, logical in format, neat, easily understandable and complete.
- Specifications and an index of specifications. The specifications shall consist of typed and edited PSPC amended NMS sections, PSPC in-house master specs sections and NMS sections.

4.2.5 Reviews

- PSPC reviews all submissions and returns either a marked-up set of documents to the Consultant, retaining a copy for record purposes, or a narrative. For specific changes, the Consultant may be asked to revise and resubmit documents to obtain Departmental approval of each submission stage. Changes requested must be corrected in the subsequent document submission.

- Reviews are not intended to indicate complete and detailed checks of the documents, and in no way relieve the Consultant of his professional responsibility for checking his own work and for co-ordinating that of his sub-consultants.
- PSPC must not be considered as the Consultant's quality review team. If a review of the submission by the PSPC Departmental Representative determines that the requirements of the submissions as outlined below are not met, the documents will be returned to the Consultant. The Consultant will resubmit the documents when the appropriate level of completion is reached. Any delay in the document production and/or costs incurred by PSPC for additional review for this reason will be attributed to and shall be borne by, the Consultant.
- During each review period, maintain full production on the project, and revise documents as necessary when review comments are received. The extent of revision necessary will depend largely on the quality and accuracy of work submitted, and on the effectiveness of regular Production Meetings.
- CADD submission will be reviewed for compliance with PSPC Standards as described in the PSPC Atlantic Region CADD Data Specification, latest version.

4.3 DELIVERABLES

4.3.1 Submit Working Documents for review and record purposes.

4.3.2 Submit working drawings and specification material and current CADD files as follows:

Status	Designation	Paper Copies	CADD Files, PDF and Word
1/3 Complete	33% Submission	Six(6)	One (1)
2/3 Complete	66% Submission	Six(6)	One (1)
Complete	99% Submission	Six (6)	One (1)
Subject to Final Review, Complete with all revisions ready for tender call	Tender Final Submission	1 signed set of original drawings. 1 signed set of original specifications	One (1)

Typical requirements for these submissions and their reviews are outlined in the following clauses.

4.3.3 33% and 66% Submission

The 33% submission translates the Design Development Documents into Construction Documents.

The 66% submission indicates substantial technical development of the project - well advanced architectural and engineering plans, details, schedules and specification data. The submission includes but is not limited to the following:

1. General

.1 Updated list of working drawings and specification sections from the previous stage.

.2 Updated intermediate cost estimate and analysis c/w discipline sign off.

2. Architectural Drawings

1. Plan of each floor showing room names and numbers, all door swings, fire hose cabinets, drinking fountains, etc.
2. Detailed wall, partition, details, sections.
3. Construction details Millwork and finishing carpentry details.
4. Door, window and finish schedules, and details.
5. Hardware Schedules
6. Reflected ceiling plans for all ceilings, showing lights, sprinklers, diffusers and any other ceiling mounted fixtures.
7. All grid lines, dimensions, scales and detail symbols.
8. Furniture and equipment plans showing new and existing furniture as identified during the Design Development. Plans shall include, but not necessarily limited to:
 - Final layouts pertaining to all workstations / work settings, support space and special purpose space;
 - Identification of end-user/staff names (or position function) at each location;
 - Review of supplier/manufacture component counts and accessories;
 - Confirmation of electrical, telephone, data, radio and voice/video requirements;

3. Structural Drawings - (for areas of change)

- .1 Framing plans that show the grid layout. The size of all structural elements and the structural framing materials.
- .2 The foundation details including footings, floor slabs and walls with bearing values and loading.
- .3 Design details for all structural floors and ceilings showing loading assumptions.
- .4 Design loads and calculations.

4. Mechanical Drawings

- .1 Floor plans showing all mechanical components accurately located and specified.
- .2 Sections updated from design development stage.
- .3 Detailed plumbing layouts and pipe sizes.
- .4 Detailed ductwork layouts and duct sizes.
- .5 Detailed sprinkler layout with source equipment located and specified.
- .6 Detailed schematics of control system and wiring diagrams of all mechanical units.
- .7 Drawings for mechanical specialties should show sizes and locations of all components. Schematic drawings, diagrams and schedules should be well advanced from the design development stage and most details should be nearing completion.
- .8 Any outstanding details to be completed must be described.

6. Electrical Drawings -

Provide continually advancing drawings and specifications showing development of the concept including the following:

.1 Single line diagram of the power circuits with their metering and protection, including:

- Complete rating of equipment.
- Description of relays when used.
- Maximum short circuit levels on which design is based.
- Identification and size of services.
- Connected load and estimated maximum demand on each load centre.

.2 Electrical plans with:

- Floor elevations and room identification.
- Legend of all symbols used.
- Circuit numbers at outlets and control switching identified.
- All conduit and wire sizes except for minimum sizes which should be given in the specification.
- A panel schedule with loading for each panel.
- Telephone conduits system layout for ceiling/floor distribution.
- Riser diagrams for lighting, power, telephone and telecommunication cable systems, fire alarm and other systems.
- Detailed control diagrams for each system.
- Schedule for motor including detailed control for MCCs.
- Complete lighting layout and fixture schedule clearly indicating methods of circuiting, switching and fixture mounting. Include lighting level analysis.

.3 Provide the following data:

- Total connected load.
- Maximum demand and diversity factors.
- Sizing of standby load.
- Short-circuit requirements and calculations showing the ratings of equipment used.

7. Specifications

.1 Specification Index.

.2 Draft Section General Requirements.

.3 Draft Section for Elevators

.4 Draft Section Mechanical General Requirements.

.5 Draft Section Electrical General Requirements.

.6 Other draft sections available (at least 33% of the full specification should be available for review at this stage).

4.3.4 99% Submission

1. General

This submission indicates the Consultant's conception of complete working drawings ready for tender call. The specification will be a fully printed and bound document. Documents must include all revisions required by previous reviews.

2. Colour Schemes

Submit colour schemes to indicate overall theme and intent of proposed colour ranges only, i.e. earth tones or grey/blue range, etc. Colour schemes should include all usual surfaces and materials to be coloured on site, plus any items provided with a colour finish or texture during prefabrication. Indicate any untreated or natural-finish surfaces contributing to the overall aesthetic appearance of the project. Provide colour chips, material samples, etc. to fully illustrate the scheme. Revise the scheme if necessary to obtain final approval. Two copies of the approved scheme will be retained by PSPC for verification of final results on site. One of these copies will be provided to the General Contractor constructing the building as a reference for colour selections.

3. Submissions

The submission includes but is not limited to the following:

- .1 Completed working drawings and specification.
- .2 Final cost estimate, c/w discipline sign off.
- .3 Updated production schedule with explanation of changes in target dates, etc.
- .4 All necessary standard details and master specification clauses from PSPC incorporated into the working drawings and/or specification.
- .5 Support data, studies, calculations, etc., required by PSPC engineering disciplines for final checking and record purposes.
- .6 Final Project Description. This consists of a report that details the entire design, systems, materials, equipment, etc. and their relationship to the project design objectives and methodology.
- .7 Four copies of the preliminary colour schedules, including textures, colour chips and material samples
- .8 Final Environmental Plan
- .9 Updates to the Commissioning Plan, Commissioning Specification and Systems Operations Manual for the 99% submission.

4. 99% Review

The 99% submission is reviewed by the Departmental Representative and support staff in PSPC to ensure that the documents are acceptable to the Department as final working documents. This review verifies that all changes required by previous reviews have been made.

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The Consultant shall forward the documents to PSPC and to all jurisdictions having authority for final comments and approval.

The specification is reviewed since many sections may be new from the time of the previous submission, and subject to revisions. At this time the specification should have been completely customized and tailored to the needs of this project. All references to materials, information or directions not specifically applicable to this project are to be deleted from the specification.

All project drawings will be returned to the Consultant electronically at this stage with a PSPC Technical Information & Drawing Inventory System (TIDIS) reference number on each drawing. These numbers must appear on all drawings submitted as part of the Final Submission.

4.3.5 Final Submission

This submission incorporates all revisions required by the 99% review and is intended to provide the PSPC with satisfactory Working Documents for tender call. Provide the following:

- .1 One complete set of signed and sealed originals of the working drawings and CADD files.
- .2 One typed original of final specifications with electronic copies in word and pdf format.
- .3 One complete set of drawings and specifications in pdf format.
- .4 Written confirmation of the Final Cost Estimate (Class "A") and Elemental Analysis. Estimate must be broken out in the same format as the tender form in the documents with support information as required for the estimate. All disciplines to sign off.
- .5 Commissioning Plan to level specified in RS 11.
- .6 Two complete sets of original Colour Schedules.
- .7 One set of designated substance survey report.
- .8 As a safeguard against loss or damage to the originals, retain a complete set of drawings in reproducible form and one copy of specification (i.e. submit only one set to PSPC relative to items .1 and .2 above).
- .9 Inspection Authorities Submission
- .10 Fire Engineers report on the project documents
- .11 Submit and obtain approval on plans and specifications required by Inspection Authorities before tender call.
- .12 Phasing plan for the project.

RS 5.0 TENDER CALL, BID EVALUATION & CONSTRUCTION CONTRACT AWARD

5.1 INTENT

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To obtain and evaluate bids from qualified contractors to construct the projects as per the Tender Documents. To award the construction contracts according to government regulations, including Federal Rules for Bid Depositories.

5.2 SCOPE AND ACTIVITIES

- Direct all inquiries during the tender period to the PSPC Contracting Officer.
- Prepare addenda based on questions arising during the tender period and as required from inquires and requests for alternatives, etc. All addenda to be considered by Departmental Representative and issued by RPC. Departmental Representative
- Maintain a log of all questions asked during the tender period indicating the question asked, the inquirer and company, the date asked, the response and the responder's name.
- Provide the Departmental Representative with all information required by tenderers to fully interpret the Construction Documents and any addenda.
- Keep full notes of all inquiries during the bidding period and submit same to Departmental Representative at the end, for PSPC records.
- Assist in tender evaluation by providing advice on the following:
 - The completeness of tender documents in all respects.
 - The total number of questions addressed during the tender period.
 - The technical aspects of the tenders.
 - The effect of alternatives and qualifications submitted in the tender.
- If PSPC is required to re-tender the project due to cost overruns, provide advice and assistance to the Departmental Representative
- Revise and amend, at your cost, and as approved by the Departmental Representative, the construction documents to bring the cost of the work within the limits stipulated and as per section SR 9 of the Terms and Conditions.

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5.3 DELIVERABLES

- Clarification of all questions raised by contractors or PSPC during the tendering phase and notes of all inquiries.
Addenda as required with associated drawings and specifications.
- Changes to the documents, if re-tendering is necessary
- Updated cost estimate and/or schedule, as required due to changes.
- Listing of all required extended warranties, maintenance materials and spare parts to be provided as part of the contract.
- Listing of all required site work/materials testing required comes with detailed budget.

RS 6.0 CONSTRUCTION & CONTRACT ADMINISTRATION, POST CONSTRUCTION WARRANTY REVIEW

6.1 INTENT

To implement the project in compliance with the Contract Documents and to direct and monitor all necessary or requested changes to the scope of work during construction.

6.2 SCOPE AND ACTIVITIES

- During the implementation of the project, act on PSPC's behalf to the extent provided in this document.
- Carry out the review of the work at intervals appropriate to determine if the work is in conformity with the Contract Documents. As a minimum, the Architect shall be expected to review the work status at the project site every two weeks in conjunction with regularly scheduled biweekly job meetings. For other consultants, this number is to be doubled and shall be split among the major disciplines (Mechanical and Electrical, ID/Fit up). Determining which discipline will be required on site and the total number of visits by discipline, shall be the responsibility of the Consultant. The Consultant shall obtain the Departmental Representative's concurrence prior to each discipline's site visit. The Consultant is responsible for documenting the number of trips per discipline and reporting this information to the Departmental Representative at time of Final Inspection and Acceptance.
- Keep PSPC 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
- Ensure compliance with Commissioning Plan, update plan as necessary
- Act as interpreter of the requirements of the Contract Documents
- Provide cost advice during construction
- Review the Contractor's submittals with recommendations of acceptance or suggested changes to the submitted documents within ten (10) calendar days.
- Prepare and justify contemplated change notices c/w estimates and subsequent change orders for issue by the Departmental Representative.
- Evaluate contemplated change notices pricing from Contractor and provide recommendations to the Departmental representative.
- Maintain a list of all design changes introduced during the construction that will require changes to the final as-built record drawings.
- Indicate any changes or material/equipment substitutions on Record Documents
- Gather from the contractor, all as-built record information and compare with consultants listing of as-built changes.
- Update all project documents with as-built information and issue final copy of all project drawings clearly labelled as As-Built condition. Original drawing (.DWG) files shall be updated with any changes to work and properly identified on the drawings with the use of revision notes. This shall be taken as As-Built information and the updated drawing sheets shall be labeled "AS-BUILTS" so as to delineate between As-Built and Original drawing sheets.
- Prepare and post Systems Operating Instructions
- Finalize Systems Operations Manual

6.3 DETAIL

6.3.1 Construction Meetings

- Immediately after contract award assist the Departmental Representative with a Construction Start-up meeting with the Contractor. Attend and prepare minutes of the meeting.
- The Consultant is responsible for the preparation of all construction meeting minutes. Copies shall be distributed to all participants and to other persons agreed upon with the Departmental Representative.
- Subsequent to the construction start-up meeting, the Consultant shall attend all biweekly job meetings as required by the job conditions or as specified in these documents. The meetings should include the General Contractor's job superintendent, the Resident Construction Services Representative, all sub-contractors involved for that stage of construction, all affected sub-consultants and as per the allowance for the number of trips detailed in section 7.2, any appropriate testing agencies, the PSPC

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Departmental Representative plus additional representatives from PSPC as appropriate. Prepare minutes of the meeting and distribute copies to all participants. The Departmental Representative may invite representatives from VAC to attend any of these meetings.

6.3.2 Project Schedule

- Review Project Schedule with detailed commissioning component shown separately, as soon as possible after contract award and ensure proper distribution.
- Monitor the approved construction schedule, assist the Departmental Representative with necessary steps to ensure that the schedule is maintained and submit a detailed report to the Department concerning any delays.
- Keep accurate records of causes of delays and total time affected.
- Make every effort to assist the Contractor to avoid delays.

6.3.3 Clarifications

- Provide clarifications on Plans and Specifications or site conditions, as required in order that project not be delayed.

6.3.4 Progress Reports

- Report to the Department regularly on the progress of the work. Submit biweekly reports.

6.3.5 Detail Drawings

- Provide for the Departmental Representative's information any additional detail drawings as and when required to properly clarify or interpret the contract documents.

6.3.6 Shop Drawings

- Create a log of all shop drawings required for the project indicating, description, supplier, discipline, date of delivery, date of return and status.
- Ensure that all shop drawings include the project number.
- In addition to the number of shop drawings to be returned to the Contractor for their use, ensure that all approved shop drawings are delivered to the groups as noted herein:
 - 1 copy - Prime Consultant
 - 1 copy - Applicable sub-consultant
 - 4 copies - PSPC Departmental Representative for distribution to PSPC Resources
- All shop drawings shall be stamped: "Checked and Certified Correct for Construction" by the Contractor before being distributed.
- The Consultant (or appropriate Sub-consultant) shall stamp each shop drawing: "reviewed" with date and initial of individual responsible before returning to the Contractor.
- The Consultant will be expected to expedite the processing of Shop Drawing approval with approved drawings returned to the Contractor within 10 calendar days of Contractor's submission.

6.3.7 Materials Testing and Inspection

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- Prior to tender, provide PSPC with recommended list of site work related tests to be undertaken
- PSPC will be responsible for contracting and paying directly, the costs of all testing carried out on their behalf for this project.
- Review all test reports and take necessary action with Contractor when work fails to comply with contract.
- Immediately notify Departmental Representative when tests fail to meet project requirements. Provide a detailed report of the failure when necessary corrective work will affect schedule.

6.3.8 Construction Changes

- The Consultant does not have authority to change the work or the price of the Contract. However, the Consultant will prepare Contemplated Change Notices (CCN's) complete with detailed estimates as well as subsequent Change Orders (CO's). Evaluate scope details and pricing received from contractors in response to CCN's. Comment and recommend to PSPC.
- All Contemplated Changes must be approved by the PSPC Departmental Representative.
- Upon PSPC approval obtain quotations from the Contractor in detail. Review prices and forward promptly within one (1) day, recommendations to the PSPC Departmental Representative.
- The PSPC Departmental Representative will issue Consultant-prepared CCN's and CO's to the Contractor, with one copy to Consultant.
- All changes, including those not affecting the cost of the project, will be covered by Change Orders. Note: To be a valid change order, there must be a transfer of funds of at least \$1.00.
- The practice of "trade offs" is not allowed.

6.3.9 Contractor's Progress Claims

- Each month the Contractor submits a progress claim for work and materials as required in the Construction Contract.
- The Consultants shall review the progress claims and recommend for payment.
- The claims are made by completing the following forms as provided by PSPC where applicable:
 - Request for Construction Payment
 - Cost Breakdown for Fixed Price Contract
 - Statutory Declaration Progress Claim
- The Contractor shall submit with each progress claim:
 - Updated schedule of the progress of the work.
 - Photographs of the progress of the work.

6.3.10 Interim Inspection

- The Acceptance Board shall inspect the work and list all unacceptable and incomplete work on a designated form. The Board shall accept the project from the Contractor subject to the deficiencies and uncompleted work listed.
- The Consultant will provide an estimate of completion costs for all deficiencies and incomplete or outstanding work identified in the Interim Certificate.

6.3.11 Interim Certificates

Payment requires completion and signing, by the parties concerned, of the following documents:

1. Interim Certificate of Completion
2. Cost Breakdown for Fixed Price Contract

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3. Inspection and Acceptance
4. Statutory Declaration Interim Certificate of Completion
5. Worker's Compensation Board Certificate.

- The Consultant shall verify that all items are correctly stated and ensure that completed documents and any supporting documents are furnished to PSPC for processing.

6.3.12 Building Occupancy

- The official take-over of the project, or parts of the project, from the Contractor is established by the PSPC Project Team and the Consultant. The date of Interim Certificate of Completion signifies commencement of the 12 month warranty period for work completed on the date of each certificate in accordance with the General Conditions.
- VAC will occupy the Facility (phase by phase) after the date of acceptance of the work by the Acceptance Board. Each phase may be accepted independently. When all phases are accepted, the final acceptance date is normally that of the Interim Certificate issued to the Contractor. As of the acceptance date, the Contractor may cancel the Contract Insurance, and PSPC assumes responsibility for:
 - Security of the work(s).
 - Fuel and utility charges.
 - Proper operation and use of equipment installed in the project.
 - General maintenance and cleaning of the work(s).
 - Maintenance of the site. (Except for any maintenance specifically covered by the contract)

6.3.13 Final Inspection

- Inform the Department when satisfied that all work under the contract has been completed, including the deficiency items and outstanding works identified during the Interim Inspection. The Department reconvenes the Acceptance Board which makes a final inspection of the project. If everything is satisfactory the Board acknowledges final acceptance of the project from the Contractor.

6.3.14 Final Certificate

- The final payment requires completion and signing, by the parties concerned, of the following documents:
 1. Final Certificate of Completion
 2. Cost Breakdown for Fixed Price Contract
 3. Inspection and Acceptance
 4. Statutory Declaration Final Certificate of Completion
 5. Worker's Compensation Clearance Certificate
- The Consultant shall verify that all items are correctly stated and ensure that completed documents and any supporting documents are furnished to the Department for processing.

6.3.15 As-Built Drawings, Record Drawings and Specifications

- Throughout the project the Contractor shall maintain an accurate record of all as-built changes introduced to the project. The status of these changes shall be reported in the biweekly progress reports.
- Following the Interim Inspection and Acceptance, obtain as-built marked-up hard copy from the Contractor:
- Show all deviations in construction from the original Contract drawings, including changes shown on Addenda, Post-Contract Drawings, and changes resulting from Change Orders and/or from On Site Instructions.
- Check and verify all as-built records for completeness and accuracy and submit to PSPC.

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Consultant to produce electronic Record Drawings by incorporating As-Built information into project drawings and specifications.

- Submit Record Drawings and Specifications (six paper copies plus one electronic copy) within six (6) weeks of final acceptance.

6.4 DELIVERABLES

- Written reports from site visits including persons involved
- Written reports on the progress of the work and the cost of the project at the end of each month
- Additional detail drawings when required to clarify, interpret or supplement the Construction Documents
- Post contract drawings and specifications
- Interim or Final certificates
- Description of Commissioning Activities
- As built records

6.5 EVALUATION AND CONFIRMATION OF ENERGY CONSUMPTION

Once the Facility is reoccupied, the Consultant shall monitor the building systems under operation during the warranty period. A report is to be compiled and submitted to PSPC, at the end of the warranty period, regarding the actual building performance and the effectiveness of the various design decisions made, including:

- the actual energy consumption as compared with the projections of the energy analysis conducted earlier;
- the actual water consumption compared with that anticipated;
- ensure that the metering equipment required to conduct this evaluation is included in the Construction documents. Refer to energy analysis report description and ensure the various elements are satisfied.

6.6 POST CONSTRUCTION COMMISSIONING - at each Construction phase and re-occupancy

- During the twelve (12) month warranty period investigate all defects and alleged defects identified by VAC or PSPC staff.
- As appropriate, issue written instructions to the Contractor to rectify problems identified in the buildings
- When contractor involvement is not required, provide written explanation of the condition and any instruction necessary to ensure problem does not recur.
- The Commissioning Agent will be required to carry out two seasonal system adjustments (at start of Summer and Winter) to ensure all systems are functioning properly in both summer and winter modes.
- Once the adjustments are completed, the Commissioning Agent will further carry out mid season checks of all systems to verify that they are operating at peak performance.
- Provide any necessary system calibration or adjustments necessary to ensure peak performance of all building systems.
- Provide a report explaining any adjustments carried out and the effects on system operation for the changes made.

6.7 WARRANTY INSPECTIONS - at each Construction phase and re-occupancy

- The Consultant and the design team, including the Commissioning Manager, Architectural, Structural, Civil, Mechanical and Electrical Consultants shall conduct a site inspection 10 months after the date of the Interim Inspection.

At the time of the **10 Month Warranty Inspection**, survey PSPC and or VAC building staff for their concerns/observations about the building operation. Submit a report on the status of any outstanding deficiencies, incomplete work and any issues or concerns encountered.

- The Consultant must also allow for a total of five (5) additional site visits during the warranty phase to resolve unforeseen problems or issues that require consultant intervention. These site visits may apply to any of the Consultant's team members with the assignment responsibility delegated to the Consultant.
- The Consultant shall conduct a **Final Warranty Review** one year from start of warranty period and confirm that all outstanding items have been corrected. The Final Warranty Review shall be carried out with the following team members present as a minimum: Commissioning Manager, Architectural, Mechanical and Electrical Consultants. Provide a detailed report identifying any deficiencies or problems related to the design or construction that remain outstanding together with recommendations for correcting the work

6.8 POST OCCUPANCY EVALUATION

The purpose of this evaluation is to obtain information on the quality of the Renovated Facility and to systematically assess if the Sustainable Development work incorporated in the project has achieved PSPC and VAC goals.

6.8.1 Benefits

- Opportunity to identify aspects of the Facility which do not achieve stated objectives
- Provides feedback on building system performance
- Improves the attitude of users as a result of being actively involved in the evaluation process
- Identifies program requirements which may have changed since move-in, acknowledging the dynamic nature of evolution
- Provides a learning tool that can be used as a database/body of knowledge to improve delivery and solutions on future projects
- Provides a process for continuous improvement via a feedback loop to Property Management.

6.8.2 Scope and Activities

- Conduct surveys/questionnaires with Staff. Questionnaires to be prepared and delivered by the Consultant and should be organized to permit easy tabulation. The questionnaires must be formulated with a preface explaining the purpose of the questionnaire and providing detailed instructions or back-up information where required. Questionnaires may be delivered by mail, e-mail, courier, etc. PSPC and VAC will assist in preparation of the questions to be used in the questionnaire.
- Carry out interviews with select internal stakeholders, namely VAC Staff (15-20% sampling), PSPC Departmental Representative, Project Leader, Security and other Branches involved in the Project Delivery.
- Interviews with select external stakeholders, including contractors (General plus key subcontractors), Commissioning Manager, Federal Fire Commissioner, service contractors / O&M staff and representatives from the Municipality
- Information and Recommendations resulting from the surveys and interviews to be compiled in a complete narrative, Lesson's Learned Report

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- At the completion of the Consultant's Contract, (i.e. end of the warranty period), the Consultant will provide feedback to PSPC in regard to the effectiveness of the Contract Administration process followed by PSPC. The Consultant will be asked to comment on the effectiveness of the Request for Proposal process, the Consultant Contract, the Design Development Process, the timeliness of the design reviews as well as the overall project management by PSPC. In order for this process to be effective, the Consultant must provide comments on the things that work well as well as the issues that created problems during the process.

6.9 DELIVERABLES

Mid-season commissioning report on any system adjustments, outstanding deficiencies, incomplete work or other identified issues

10 Month Warranty Inspection report on the status of deficiencies, incomplete work and issues identified.

Twelve month Warranty Inspection Report including questionnaire results.

Consultant feedback and lesson's learned report.

RS 7.0 RISK MANAGEMENT (ALL STAGES)

7.1 Intent

The Consultant is to provide support to the Departmental Representative in identifying risks throughout the project life cycle.

7.2 Scope and Deliverables

7.2.1 Risk Management Process:

- Identify risk events based on past experience and using checklist or other available lists;
- Qualify/quantify risk events (Low, Medium, High) and their impact (Low, Medium, High);
- Prioritize risk events (i.e. concentrate efforts on risk events with High probability and Medium to High impact);
- Develop risk response, (i.e. evaluate alternatives for mitigation.)
- Prepare Risk Management Reports at Design Development, (66%, and 100%), submission stages and throughout Construction Implementation.
- Include input from all sub-consultants, and from Client.
- Recommend further analysis, investigations, site meetings, site supervision, etc.

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RS 8.0 PROJECT TIME PLANNING, SCHEDULING AND CONTROL

8.1 PLANNING/SCHEDULING REQUIREMENTS & APPLICATION

Planning and Scheduling are high priorities with all Federal Government projects. The concept of planning and scheduling is to facilitate the accomplishment of objectives and should be thought of as a continuous interactive process involving planning, action, measurement, evaluations and revision through to project completion.

8.2 CONSULTANT SYSTEM FOR PROJECT CONTROL

The Consultant shall provide a project control system based on network techniques such as Critical Path Method (CPM) for Planning, Scheduling, Progress Monitoring and Reporting of project progress. The Project Control System shall be fully computerized using **MS Project** unless otherwise approved.

8.3 PERSONNEL

It is required that fully qualified, experienced **Planning and Scheduling** personnel play a major role in the **development and monitoring** of the project schedule. This person must have experience in phasing of construction where a large percentage of the building must remain fully operation. The Planning & Scheduling specialist shall provide Consultant scheduling services from commencement of the project design stage through to construction completion. The Consultant shall provide Time Planning/Scheduling services in accordance with the following general scope and detail specific services.

8.4 SCOPE OF WORK

The general scope of work for the Design, Drawings, and Award Phases of Planning and Scheduling services include the following activities:

- Develop a Work Breakdown Structure
- Assist in developing the Project Objectives.
- Develop a Project Master Network.
- Develop, monitor & maintain Schedules, Bar Charts, and Milestone Listings.
- Identify Project Activities including all major elements/phases of work.
- Attend tender, start up, production, construction and all other meetings as required.
- Identify construction Tendering and Sequencing requirements.
- Identify design team co-ordination requirements.
- Prepare monthly Progress Reports.
- Prepare Pre-construction Schedule.
- Prepare Pre-commissioning Schedule.

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RS 9.0 ESTIMATING AND COST PLANNING (ALL STAGES)

9.1 Cost Estimate Definitions

The current Treasury Board (TB) classification definitions are as follows:

An **Indicative Estimate** is an estimate that is not sufficiently accurate to warrant TB acceptance as a cost objective and provides a rough cost projection used for budget planning purposes in the early stages of concept development of a project. It is usually based on an operational Statement of Requirement (SOR), a market assessment of products and technological availability that would meet the requirement and other considerations such as implementation, life cycle costs and operational savings.

Indicative Estimates are used to seek [Preliminary Project Approval \(PPA\)](#) and Lease Project Acceptance (LPA)

A **Substantive Estimate** is one of high quality and reliability and is based on:

Detailed system and component design, design adaptation, work plans and drawings for components, construction or assembly, and installation. It includes site acquisition, preparation and any special requirements estimates. Contingency funding requirements must be justified based on line-by-line risk assessments, including market factors, industrial capability and labour considerations;

All agreed objectives, including those resulting from procurement review; and,

Market assessment, where acquisition is through lease, lease purchase or capital lease. The provisional allowance for fit-up or special tailoring requirements will be subject to review and possible revision at the contract acceptance stage.

Substantive Estimates are used to seek [Effective Project Approval \(EPA\)](#)

Real Property Branch (RPB) Estimating Process:

For complex or sizeable projects, five categories of estimates are prepared in RPB. The process begins with the development of an initial estimate that is further developed during the early phases of the project. Estimates should generally differentiate between base building and fit-up costs, as well as all site, PSPC, consulting, other contracts and risk potential costs.

Broad Cost Projection: based on historical data from similar projects, indicates a budget for resources to develop a project up to PPA as well whether or not total project costs are expected to exceed \$1 million. This is not a construction estimate.

Class 'D' (Indicative) Estimate: to be in unit cost analysis format (such as cost per m² or other measurement unit) based upon a comprehensive list of project requirements (i.e. scope) and assumptions; the Class 'D' estimate is evolved throughout the phases of the Project Identification Stage, finally being incorporated into the cash flows in the Analysis Phase; for more complex projects such as laboratories, elemental cost analysis and the input of specific disciplines may be required; *the Class D Indicative estimates developed during the National Project Management System (NPMS) Feasibility Phase shall be revisited with cost planners in the Analysis Phase before finalizing.*

Class 'C' Estimate: to be in elemental cost analysis format latest edition issued by the Canadian Institute of Quantity Surveyors and 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; *Class C estimates are developed during the NPMS Schematic Design Phase*

Class 'B' (Substantive) Estimate: to be in elemental cost analysis format latest edition issued by the Canadian Institute of Quantity Surveyors and based on design development drawings and outline

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specifications, which include the design of all major systems and subsystems, as well as the results of all site/installation investigations; *Class B estimates are developed during the NPMS Design Development Phase;*

Class 'A' (Pre-Tender) Estimate: to be in both elemental cost analysis format as well as trade divisional format latest edition issued by the Canadian Institute of Quantity Surveyors and based on completed construction drawings and specifications prepared prior to calling competitive tenders. The Class 'A' Estimate is generally expected to be within 5% to 10% of the actual contract award price for new construction. Tendering risks should be included in the project risk plan and costed accordingly. The accuracy of Class 'A' estimates can be influenced by many factors, including complexity of project, volatile market, remote locations, tight schedules, and unclear contract documents; *Class 'A' estimates are prepared during the NPMS Implementation Phase and can be a more accurate Substantive Estimate, depending on the complexity of the project;*

9.2 Cost Specialist:

Delivering projects on time and within budget is a high priority. A fully qualified cost estimating, cost planning and cost control resource(s), referred to herein as the Cost Specialist, with a demonstrated record of successful cost management on construction projects may be required. This Cost Specialist will be conversant with all aspects of construction cost estimating during the design stages including the use of Elemental Cost Analysis, Risk Analysis, Life Cycle Costing and Value Engineering/Management techniques.

- The purpose of cost planning and cost control is to assist in the accomplishment of project cost objectives. It is a continuous and interactive process involving planning, action, measurement, evaluation and revision.
- For projects budgeted at more than \$1,000,000 construction value, the "Cost Specialist" shall hold one of three designations:
 - a) PQS (Professional Quantity Surveyor) or
 - b) CEC (Construction Estimator Certified) or
 - c) "Gold Seal Certified Estimator
- For projects budgeted at more than \$5,000,000 construction value, an independent cost consulting firm shall be hired to perform the Cost Planning/Estimating functions.
- Cost Plan presentation format: The link shown is to the NPMS system which gives the required forms and formats.

<http://www.tpsgc-pwgsc.gc.ca/biens-property/sngp-npms/conn-know/couts-cost/definition-eng.html>

- When an estimate, at any stage, is presented for PSPC review it must be covered by a "sign-off" sheet encompassing the names and signatures of all those sub consultants who contributed to the estimate. The submitting cost specialist will also verify, by signature, that the estimate has been coordinated, to properly contain all required elements relevant to the "class" of the submission.

9.3 Scope and Deliverables

The Cost Specialist shall provide an interactive cost consulting service from the commencement of project design through to construction completion and subsequent evaluation, including the preparation of complete estimates for all construction trades, escalation, inflation and contingency costs.

The Cost Specialist shall provide to PSPC and the Consultant, a cost advising and cost Monitoring / Reporting service.

The Cost Specialist shall attend all relevant project and production meetings throughout the design phases and be prepared to present and defend the estimates directly to the Departmental Representative.

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9.4 Exception Report

The Cost Specialist is to provide cost monitoring, timely identification and early warning of all changes that affect or potentially affect the estimated construction costs of the project.

If the estimate significantly falls short of or exceeds the Construction Cost Limit due to such changes, the Cost Specialist with the Consultant team shall fully advise the Departmental Representative. The Cost Specialist with the Consultant team shall submit to PSPC proposed alternative design solutions.

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

1. Scope Change: Identifying the nature, reason and total cost impact of all identified and potential project scope changes affecting Construction Cost Estimate.
2. Cost Overruns and Underruns: Identifying the nature, the reason and the total cost impact of all identified and potential cost variations.
3. Options enabling a return to the Construction Cost Estimate: Identifying the nature and potential cost effects of all identified options proposed, in order to return the project within the Construction Cost Estimate

9.5 Responsibilities to PSPC

PSPC will review all respects of the Cost Specialist's work on a continuing basis to determine the validity and completeness of the information provided. In the event PSPC may identify areas of concern including errors and omissions as well as areas of inadequate detail or areas that require further explanation, the Cost Specialist shall re-examine the estimates provided and make such revisions as are subsequently agreed to be necessary and/or provide ample acceptable evidence that such corrections or amendments are unnecessary.

9.6 Abrogation

No acceptance by PSPC, whether expressed or implied, shall be deemed to relieve the Cost Specialist, or the Consultant, of professional or technical responsibility for the estimates and cost reports.

Neither does acceptance of an estimate by PSPC in any way abrogate the Consultant Team's responsibility to maintain the specified Construction Cost Limit throughout the life of the project, or the requirement to redesign should the lowest acceptable bid differ significantly (more than 10% above) the accepted Class 'A' estimate, unless and until the Departmental Representative indicates otherwise in writing.

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RS 10.0 Sustainable Development Strategies and Reports (ALL STAGES)

10.1 Intent

PSPC has established a goal for the project to achieve 4 Green Globes, Green Globes Existing Buildings and Sustainable Interiors, licensed for use by the Green Building Initiative (GBI).

The project is to earn points toward certification by meeting or exceeding each 4 Green Globes credit's technical requirements. The Consultant is to work collaboratively with the PSPC project team and provide advice and guidance on which credits points are best pursued for the project.

Refer to the Green Globes website (www.greenglobes.com) for tools and support.

10.2 Scope and Deliverables

10.2.1 Green Globes 4 for Existing Buildings and Sustainable Interiors

-The consultant shall review applicable criteria for achieving the target level of 4 Green Globes and shall consult with PSPC with regard to such requirements. The consultant shall attend meetings during the design and construction phases, communicate with members of the project team and issue progress reports as appropriate to coordinate the Green Globes certification process for the project.

-The consultant shall coordinate the Green Globes certification services provided by the consultant and sub-consultants.

-The consultant shall provide the owner with copies of all agreements required to register the project and the consultant shall pursue the anticipated 4 Green Globes certification.

- during the design process, including the design kick off meeting, minutes should be taken to illustrate the integrated design process as required by the Green Globes standard.

-At the conclusion of the schematic design phase, the consultant, with their sub-consultants, shall conduct a design workshop with the owner and the owners consultants, during which the consultant will review the Green Globes building rating system, review the pre-design survey which illustrates the targets/credits this project is pursuing, examine strategies for implementation of the targeted Green Globes credits and discuss the potential impact of these credits on the project schedule, program and budget .

-The consultant shall register the project with the GBI through the Green Globes website. Registration fees and any other fees charged by the GBI, and paid by the consultant, shall be a reimbursable expense.

-The consultant shall collect documentation, calculations and submittals necessary to meet the 4 Green Globes certification requirements from all pertinent team members including, but not limited to, the PSPC, Commissioning Agent and General Contractor.

-The consultant shall ensure they have access to all required back up documentation that could be requested by the Green Globes verifier in order to appeal a ruling or other interpretation denying a minimum program requirement to achieve the 4 Green Globes certification.

The consultant shall:

-Prepare and submit the pre-design, construction and post construction surveys for the project using the Green Globes website. They shall follow up with the third party verifier to ensure they have all of the required documentation for their review as well.

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- Prepare responses to and submit any additional documentation required by comments or questions received from the Green Globes Third-Party Verifier.

-Prepare responses to questions from prospective bidders and provide clarifications and interpretations of the bidding documents relating to 4 Green Globes certification to all prospective bidders in the form of addenda.

-Consider request for substitutions and prepare and distribute addenda identifying approved substitutions related to 4 Green Globes certification to all prospective bidders.

-Review requests, by the contractor, for additional information about the contract documents related to 4 Green Globes certification and provide a detailed written statement indicating the specific drawings or specifications in need of clarification and the nature of the clarification requested.

-Prepare supplemental drawings, specifications and other information in response to request for information by the contractor related to 4 Green Globes certification

-Visit the site, at intervals appropriate to the stage of construction, or as otherwise required to become generally familiar with and to keep the owner informed about the progress of the portions of the work related to 4 Green Globes certification.

10.2.2 GHG Option Analysis (feasibility study)

This Statement of Work was developed by Public Services and Procurement Canada (PSPC) with no hard targets. The project requirements, asset characteristics and its geographical location will dictate what must be included in each design option to provide best value for the crown. The different options will provide best financial, Greenhouse Gas (GHG) reduction and combination value so PSPC can make an informed decision on the recommended option selection.

Background

As part of the 2016-19 Federal Sustainable Development Strategy (FSDS)¹, the Government of Canada committed to reducing GHG emissions by 17% by 2020, and 40% by 2030 when compared to the 2005-06 baseline. In the 2015-16 Departmental Performance Report (DPR)², a 13.2% decrease in PSPC National GHG emissions has been achieved thus far, which is noted as, currently “on track” to achieve this target.

In addition, PSPC’s Real Property Branch Business Plan (released September 28, 2016) identified the first priority as “Greening Government Operations”. In that document, the Real Property Services Branch of PSPC has committed to “initiating measures to achieve a Carbon Neutral portfolio by 2030”. Consequently this Statement of Work provides a methodology to evaluate project options based on their GHG emission savings opportunity in order to strive for Carbon Neutral.

CARBON NEUTRAL DEFINITION

PSPC defines carbon neutrality as the efficient operation of its buildings and portfolio to conserve energy and reduce GHG emissions internally, complemented with fuel switching and installation of renewable energy generation to further reduce the GHG impact of its operations. Any remaining carbon-emitting

¹ 2016-19 Federal Sustainable Development Strategy (FSDS) <http://fsds-sfdd.ca/index.html#/en/intro/>

² PSPC - Departmental Performance Report (DPR) <http://www.tpsgc-pwgsc.gc.ca/rappports-reports/rmr-dpr/2015-2016/rmr-dpr-04-eng.html#a1>

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energy consumption will be neutralized through procurement of renewable electricity, renewable electricity certificates (RECs), or carbon offset credits.

Clean energy is defined as energy from non-GHG emitting sources, including hydro, nuclear, wind, solar, geothermal, biomass, tidal, etc.

RECENT PROJECTS

BGIS is expected to provide the Consultant with a record of recent projects or currently planned projects at the building that may impact the study. The purpose of this is to understand what has recently taken place in the building (but not limited to) such as: last major fit-up work, renovations, major repairs or replacements etc. This information must be clearly outlined in the report.

DETAILED SCOPE OF WORK

The consultant is to provide multi-disciplinary architectural and engineering services to undertake a GHG retrofit feasibility study of 4 options with the intent of determining the best value to crown and lowest GHG impact. The consultant will be required to analyze and evaluate 4 options with increasing levels of enhanced (long term) sustainability and high-efficiency (energy, GHGs and water) performance.

SUSTAINABILITY OPTIONS ANALYSIS USING ENERGY MODELLING AND SIMULATION

This mandate relies on building energy modelling and simulation to quantify the energy savings, energy cost savings and GHG emission reductions of energy conservation measures. This section provides a background on building energy modelling and simulation.

A building can be considered as a whole system composed of elements that interact with one another. These elements include: building envelope, mechanical system, lighting, people, plug and other equipment loads and the external environment, including weather and site.

Energy modelling and simulation of a building takes into account the interaction of the building elements and considers the building as a whole system. It takes into account the energy, air and moisture flows into and out of the building and between the building elements, thus predicting the building's energy requirements in a holistic manner.

Major projects are defined as projects that are multi-disciplinary in nature (impacting more than one of the building elements defined above), and major renovations. Major projects will require building energy modeling and simulation. It is the only accepted tool that is capable of accounting for the interaction between different building elements and of analyzing multiple energy conservation measures simultaneously. Energy modelling and simulation promotes the application of an integrated design process among building professionals: architects designing the building envelope, mechanical and electrical engineers designing the HVAC and lighting systems and other members of the design and project team.

TEMPLATE/Guidance

The 25-55 St Clair Ave Strategy-Sustainability and Greening Feasibility Study, will serve as a template document to this project for information on the expected level of detail and content. Each option (including the existing building) must also provide:

- Building Energy profile (Energy Use intensity kWh/m², GHG Emissions, Annual Energy Intensity). An explanation and demonstration of how the design meets the sustainability performance goals. Energy modelling is to be included to provide real life justification as to energy efficiencies as per operational savings in both the short and long term. Indicate potential, resulting GHG impacts;

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- Description of the architectural /envelope, mechanical, electrical, and overall energy upgrades;
- Cost impact including life-cycle costing as per operations and where possible functional and environmental evaluation (see section 2.3 below); and
- Schedule impact (A high level implementation timeline)

Sustainability Options Analysis Using Life Cycle Costing

This mandate relies on life cycle costing which will accompany energy modelling results in order to determine best value for the crown. Life cycle costing for each option must include, (but not be limited to):

- Capital costs including all hard and soft costs
- Available Incentives
- Operating and Maintenance costs such as maintenance, anticipated repairs and replacement of equipment;
- Energy & utilities costs (electricity, gas, water etc...) including future escalation costs
- Resulting carbon price* based on anticipated GHG emissions (CO_{2e})
- Salvage value and/or disposal costs
- Life Cycle Costing Outputs:
 - Net present value assessment (cost neutral over 25 years)
 - 25-year lifecycle costing (with and without carbon pricing)
 - Simple payback period (Return on Investment)

The following four design options are provided for guidance, with the expectation that the consultant will investigate innovative approaches to provide the best value for Canada.

Option 1: Design to Meet Minimum Departmental Commitments (baseline option)

This option will require the building design to meet the minimum departmental green building commitments. The minimum density of numbers of employees for each floor should be in line with the future requirements of the building/space. PSPC's diverse green building commitments are formalized in the Department's response to the FSDS, specific targets in past Sustainable Development Strategies (SDSs), input to the Report on Plans and Priorities (2012-2013), the Department's Sustainable Buildings Policy (Departmental Policy 100), and various Ministerial announcements. Key sustainability and energy performance commitments for building project types that have been approved by the department are presented in Table 1.

Table 1: Project Design and Delivery

Building Project Type	Threshold ³ (\$ or m ²)	Assessment Tool & Target	Energy Efficiency Target	Lifecycle Assessment
New office buildings	All projects	LEED Gold or 4 Green Globes	28% more energy efficient than NECB performance and/or 35% more energy efficient than the building being replaced.	Athena EIE/EC (>\$5M, location restrictions)
Other types of newly constructed buildings⁴	All projects	LEED Silver or 3 Green Globes	24% more energy efficient than NECB performance and/or 35% more energy efficient than the building being replaced.	Athena EIE/EC (>\$5M, location restrictions)
Long-term lease office buildings (including build-to-lease, lease-to-purchase, sale-leaseback)	All projects ≥500 m ²	LEED Gold or 4 Green Globes	24% more energy efficient than NECB performance and/or 35% more energy efficient than the building being replaced.	No
Building acquisition	All projects	LEED Silver or 3 Green Globes	24% more energy efficient than NECB performance.	No
Buildings undergoing Major Renovations⁵	All projects	LEED Silver or 3 Green Globes	24% more energy efficient than NECB performance.	Athena EIE/EC (>\$5M, location restrictions)
Space Fit-Up and Retrofits	≥1000 m ² (Office)	LEED Silver or 3 Green Globes		No

Every project team should reference and provide the design team the “PSPC – Real Property Sustainability Framework”

Option 2: Design to Achieve Cost-neutral GHG Emission Reductions

Option 2 will meet all of the Departmental commitments to sustainability, and environmental performance standards, as identified in Option 1.

In addition, the consultant will assess individual measures that improve energy performance and reduce the greenhouse gases emitted by the facility. Energy modeling and simulations will be performed on

³ This only includes buildings where PSPC is the custodian or leases where PSPC is the lease holder.

⁴ This does not include special purpose buildings for which no appropriate green assessment tool is available.

⁵ Heritage buildings undergoing major renovations are subject to the Sustainable Heritage Guide

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bundled measures until the best option is identified that shows a positive Net Present Value (NPV) on the incremental cost (compared to option 1), when calculated over the life cycle of years identified for the project in question (25 years). Priority should be given to energy conservation, before fuel switching alternatives are considered for reducing GHG emissions. For example, switching a building component'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 component's energy use, no matter its fuel source. Once the building energy performance has been optimized, on site or network fuel switching and renewable energy generation should be evaluated.

As Option 2 will lead to a positive, or very close to positive, NPV over the project's lifecycle, it should always be recommended over Option 1 as it provides the crown the best option for deep GHG reductions at no additional cost over the life of the project.

Option 3: Design to Achieve Maximum GHG Emission Reductions

Option 3 will meet all of the Departmental commitments to sustainability, and environmental performance standards, as identified in Option 1.

In addition, the consultant will 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 should 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 should be evaluated and presented.

This option will provide two key pieces of information: (1) it will provide PSPC the maximum GHG reduction potential of the project, and (2) it will provide PSPC the cost associated with this Maximum GHG Emissions Reduction Design Option.

Option 4: Hybrid GHG Emissions Reduction Design

Using the information collected and calculated in the three defined options above, the consultant, in consultation with PSPC and Regional Centre of Expertise Specialists, will be asked to evaluate and propose an optimized recommended option that balances GHG emissions with construction and building operating costs. The recommended option may be one of the three options defined above, or may be a combination of individual measures that were investigated in Options 1 to 3. The individual measures themselves can be evaluated in terms of cost, cost avoidance, energy consumption and GHG reductions. The modeling and simulation of different energy/GHG measure combinations will be required to determine the recommended combination of measures that provides the best value for the Crown. In other words, the crown is requesting that the professional consortium use their expertise to determine a fiscally responsible option that takes GHG reductions into consideration.

RECOMMENDATION

As a final deliverable, the consultant is to provide a recommended best financial, GHG reduction and combination value so PSPC can make an informed decision on recommended option selection.

The results of the Study will be fed into the PSPC Strategic Planning Cycles (but not limited to) such as: Asset Management Plans, Building Management Plans, and Investment Analysis Reports etc.

Deliverables and Key Dates

The consultant shall meet with the PSPC to discuss the project objectives and protocols as well as to establish a detailed schedule for the project.

Deliverable	Details and Review Framework	Deadline Date
Building Tour	The consultant is expected to tour the building to obtain an understanding of the asset. Prior to the Building Tour, He must have reviewed all drawings (Architectural, Mechanical and Electrical) provided.	Within 2 weeks of project award.
Visioning Session 1	The consultant is expected to chair an initial workshop/visioning session with PSPC Team and other key Stakeholders to present high-level view of the building, long term vision and brainstorm options analysis. Stakeholders may include (but are not limited to): Owner/Investor, Client Accommodations Officer, Environmental Specialists, etc.	Within 1 month of project award.
50% DRAFT Report	Consultant is expected to provide the 50% Draft Report. PSPC will review the 50% report and will provide comments within 1 week. The purpose of this deliverable is to review high level options analysis and ensure the consultant is on track with deliverables and to resolve any questions or issues.	Within 2 months of project award
80% DRAFT Report and Visioning Session 2	The consultant is to present results of the 80% Draft Report. It is expected that Energy Modelling and Life Cycle costing of 4 options should be mostly complete. PSPC is to provide feedback at this session and may provide minor tweaking of options analysis.	Within 2.5 months of project award
99% Final DRAFT Report	The consultant is expected to provide the 99% Final Draft Report for PSPC prior to final report delivery. This report is expected to be complete with the exception of minor required changes by PSPC.	Within 3 months of project award
Final Report Presentation to Key Stakeholders	The final report will provide the Final Report and present best value for the crown and lowest GHG emissions. The results of the Study will be fed into the PSPC Strategic Planning Cycles (but not limited to) such as: Asset Management Plans, Building Management Plans, Investment Analysis Reports etc.	Within 3.5 months of project award

Study Team Requirements

The consultant is expected to assemble a team made up of suitable disciplines to complete this study. A team required to complete this study could include disciplines (but not limited to):

- Architect
- Building Envelope Specialist
- Mechanical Engineer

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- Electrical Engineer
- Control system specialist/ Engineer
- Energy Modeling specialist
- Costing Consultant
- Scheduling Consultant/Workshop facilitator
- Thermographer

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RS 11 Commissioning

An independent 3rd party Commissioning Agent will be separately engaged by PSPC and will have to comply with the BGIS requirements as per Appendix I document COMM 302 02 RP1 entitled: Commissioning Oversight Requirements and Scope of Work for 3rd Party Commissioning Agent.

The design consultant's responsibilities in regards to commissioning are described in form COMM 301 03 RP1 found in Appendix I. These responsibilities include providing support to the 3rd party commissioning agent.

Please see Appendix I for the following commissioning related documents:

- COMM 301 01 RP1: Commissioning Oversight Risk Assessment and Evaluation
- COMM 302 02 RP1: Commissioning Oversight Requirements and Scope of Work for 3rd Party Commissioning Agent
- COMM 301 03 RP1: Commissioning Oversight Requirements and Scope of Work for Consultants.

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RS 12 Change Management Services

Due to the transformative nature of this project on the users' work environment, PSPC and VAC will put in place a Change Management team. This team will be led by 2 members for the VAC tenant. Employee acceptance of the new work environment will be critical to the success of the project.

The consultant will provide support to the team in two ways. The first being the work performed as part of the design services during the entire duration of the project, described in the previous RS sections. The second, which is the focus of this RS section, will be to assist in the communication to the tenants of the benefits of this new approach. This will generally include preparing presentation material, participating in presentations and developing talking points for tenant management.

An awareness session in regards to ABW has taken place for the VAC tenant. There will be awareness sessions taking place for the remaining tenants in regards to ABW.

Once schematic design options have been developed, there will be a requirement for presenting these to management of tenant department in order to obtain their approval. In collaboration with the PSPC Change Management team, the consultant will prepare the presentation material and participate in the presentation. A comprehensive list of the pros and cons for each proposed option or solution is required so that management can make an informed decision based on all the available facts. *Allow for five (5) presentations.*

Once tenant management approval of the preferred option has been obtained, presentations to focus groups leaders will be required. The objective will be to gain employee acceptance of the proposed solutions. In collaboration with the PSPC and VAC Change Management team the consultant will prepare the presentation material, talking points for tenant management and participate in the presentation. *Allow for ten (10) presentations.*

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RS 13.0 INTERIOR SIGNAGE

1.0 Design Requirements

The Consultant will meet, at a minimum, the following signage and graphics design requirements:

- 1 The signs shall be attractive and exhibit a professional quality of workmanship, which will reflect positively on Canada.
- 2 Signage and graphics should incorporate all room, wayfinding, directional (including lobby), emergency panels and equipment signage.
- 3 Signage should incorporate the spatial organization of the facility and utilize architectural design features, destinations zones, landmarks, shape, color, lighting, etc.
- 4 Signage should be easy to recognize, consistent, clear, distinctive, and easy to read.
- 5 Signage shall be compliant with 2010 ADA Standards for Accessible Design. Graphics and signage must meet the requirements set by the *Policy on Communications and Federal Identity* for the application of the Coat of Arms and flag symbol with bilingual titles, and the use of the "Canada" wordmark. For design standards, refer to the *Federal Identity Program Manual* issued by the Treasury Board as well the following requirements:

signs for washrooms, elevators, stairwells, emergency exits, and doors of main corridors must comply with the tactile signage section of the *Federal Identity Program Manual*;

all equipment and piping in maintenance rooms and in mechanical and electrical rooms, must be provided with signage.

- 6 The Contractor should have a primary goal of ensuring that signage works in unity with all building occupants, in order to generate a well-coordinated facility.
- 7 Signage should be updateable by Canada and utilize Canada's internal resources whenever possible.

2.0 Deliverables

The Consultant will provide, at a minimum, the following:

- 1 Develop an understanding of appropriate national and local building codes, ordinances and other requirements, as they relate to signage for the Dominion Public Building
- 2 Perform a site review to verify locations, determine available areas for signage, confirm dimensions and avoid potential conflicts with architecture designs.
- 3 Prepare budget estimates as part of the overall building cost estimates.
- 4 Coordinate all procurement activities as part of the larger procurement package.
- 5 Develop wayfinding and circulation solutions.
- 6 Develop sign location plans and messages schedules. These location plans and message schedules will be submitted and approved by Canada, BGIS and other tenants.

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7 Prepare conceptual designs in sketch form to determine design direction and review, with the design team, considerations for materials, finishes, color, typography, lighting and scale. The Consultant shall develop a menu of recommended signage types for programming review.

8 Finalize all elements of the sign system design including materials, fabrication specifications, graphic design and installation details.

9 Prepare sign layouts based on actual sign messages to determine sign and letter sizes and to determine the need for variations to the wayfinding/signage program.

10 Provide final fabrication submittals based on approved design.

11 Be responsible for the oversight of fabrication of the interior wayfinding/signage program in accordance with the approved design.

12 Develop an installation schedule to assure timely, accurate and code compliant installation.

13 Be responsible for the installation of the interior wayfinding/signage program in accordance with the design intent of the approved program.

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Additional Services

AS 1 RESIDENT CONSTRUCTION SERVICES

1.1 INTENT

The intent of the provision of Resident Construction Service is to implement the project in compliance with the Contract Documents and to ensure contractor compliance with the contract documents. The Consultant shall provide a Resident Construction Services representative for specific periods of the construction contract stage of the Project.

1.2 DURATION OF SERVICES

The period of services of the Resident Construction Services representative for the construction contract stage of the Project shall be equal to an amount of time equal to the estimated construction contract period. For the purposes of this contract the time period of those services for the Project shall therefore be **4000 Working hours – approximately 20 to 25 hours per week during construction** and shall be so identified by the consultant in Appendix C.

For the purposes of this contract the Resident Construction Services representative's service shall commence no earlier than the date the contractor physically mobilizes on site and finish no later than the date of interim inspection and acceptance. The Consultant shall bare all costs associated with the training, instructing, acquisition, termination, etc. of the Resident Construction Services representative prior to and after these dates.

The consultant shall be responsible to distribute and assign the time of the construction services representative in such a manner that the **intent** of these services is assured. **The consultant shall ensure, via his planned allotment of the construction services representative's time, that quality assurance is maintained and that all critical aspects of the work by the construction contractor's forces occur in the presence of the Resident Construction Services representative.**

The consultant shall, prior to the PSPC construction contract tender provide Detail Project Schedules as detailed in RS 8, identifying the key stages of construction and the planned allotment of applicable hours for when the Resident Construction Services Representative shall be on site.

The PSPC representatives may, at their discretion, request additional amounts and/or less amounts of services of the Resident Construction Services representative. Those additional and/or less services shall be calculated utilizing the hourly rate identified by the Consultant in Appendix "C."

1.3 ALL-INCLUSIVE HOURLY RATE

The hourly rate, for the services of the Resident Construction Services representative, required to be identified in appendix C shall include an allowance for all travel to and from site, overtime premium, disbursements, required Personal Protective Equipment, overhead, applicable federal and provincial government deductions, administration costs, etc. and shall be an "all-inclusive" hourly rate.

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1.4 RESIDENT CONSTRUCTION SERVICES DURING CONSTRUCTION 1.4.1

Educational Requirements

The Resident Construction Services representative shall:

- be a Professional Engineer/Architect registered in the province of Prince Edward Island, or eligible for registration in the province, or other provincial equivalent with a minimum three years' experience in Construction or;
- A Certified Engineering/Architectural Technician registered in the province of Prince Edward Island, or eligible for registration in the province, or other provincial equivalent with a minimum seven years' experience in Construction.

1.4.2 Description of Services

The purpose of Resident Construction Services representative is to ensure the presence of the Consultant on site for the project. The representative is to inspect, coordinate and monitor all aspects of the work during key periods of the construction of the Project, and liaise with the contractor, Public Services and Procurement Canada and other agencies as appropriate to the work.

The Resident Construction Services representative is responsible for providing resident inspection (including overtime) during the construction work and maintaining records of all construction work placed. The Consultant shall ensure that the Resident Construction Services representative ensures that a sufficient level of communication is maintained with the PSPC Departmental Representative, Consultant, Contractor and any other organization applicable to the construction and construction contract administration of the construction contract.

The Resident Construction Services representative shall:

- Be directly responsible to the Consultant but ultimately responsible to the PSPC Departmental Representative.
- Become thoroughly familiar with the Contract documents, the National Building code and all Fire Standards for Construction operations. He/she shall be aware of all Federal, Provincial and Municipal standards for the health and safety of construction workers.
- Become thoroughly familiar with the requirements of the Consultant Project DESCRIPTION and project responsibilities of others which relate to these services.

1.4.3 Specific Duties and Responsibilities

Provide Resident Construction Services including inspection, co-ordination and monitoring during the construction work and be responsible to the Consultant. In addition, the PSPC Departmental Representative may delegate additional responsibilities subject to the Consultant's Agreement.

In case of emergencies, the Consultant's Resident Construction Services representative is empowered to stop the work, or give orders to protect the safety of the workers or Crown property.

Maintain daily records of all construction work placed and ensure constant communication amongst PSPC Departmental Representative, the Consultant and Contractor. A daily summary report is to be provided to PSPC.

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The Consultant shall ensure that the Resident Construction Services representative maintains, records and submits time sheets. The Consultant shall submit the payment request for the Resident Construction Services along with regular Consultants progress claims.

1.4.4 Inspection and Reporting

The Resident Construction Services representative shall inspect all phases of the work in progress, for the purpose of bringing to the attention of the Contractor, after checking with the Consultant and PSPC Departmental Representative, any discrepancies between the work, the contract documents and accepted construction procedures. Keep a daily log of such inspections and issue a weekly written report to the Consultant in the form directed. The Consultant shall review and approve weekly reports prior to distribution to the Departmental Representative (Departmental Representative). Reports shall be distributed within five (5) working days of the report's week ending date. The Resident Construction Services representative shall make any other reports or surveys as may be requested by the Departmental Representative through the Consultant.

1.4.5 Interpretation of the Contract Documents

Interpretation of the contract documents shall be the responsibility of the Consultant. The Consultant may, however, have the Resident Construction Services representative provide him with information regarding job conditions and may require him to relay day-to-day instructions to the Contractor.

It shall be the duty of the Resident Construction Services representative to assist the Consultant and further inform the Consultant of any anticipated problems which may delay the progress of the work. The method of relaying such information shall be determined by the Consultant.

1.4.6 Changes in the Work

The Resident Construction Services representative shall 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 PSPC Departmental Representative.

The Consultant may call upon the Resident Construction Services representative to assist in the evaluation of changes in the work, where a knowledge of job conditions is required.

1.4.7 Communication & Liaison

The Resident Construction Services representative shall:

1. Convey the Consultant's instructions regarding the required standards of workmanship to the Contractor;
2. Check specifications, confer and obtain guidance on these findings with the Consultant. The matter is then to be brought to the attention of the Contractor's Superintendent. Although informal discussions with Sub-trade Superintendents are usually permissible, (but only with the agreement of the Contractor), the Resident Construction Services representative should not deal directly with foreman or tradesmen, or interfere with the progress of the work.
3. Communicate formally with the contractor via memorandum form only. When this form is issued the Resident Construction Services representative must immediately file copies with PSPC and the Consultant.
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 notices, site instructions, details, drawings, etc.

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5. Accompany PSPC representatives on inspections and report to the Consultant requirements, comments or instructions of PSPC's forces. Note that the Resident Construction Services representative should encourage such requirements, comments or instructions to be provided to him in writing.
6. Consider and evaluate any suggestions or modifications to the documents advanced by the Contractor and immediately report these to the Consultant with comments.
7. Ensure that PSPC and the Consultant are notified promptly when key pieces and/or components of materials and equipment are delivered, so that these parties can arrange for the appropriate personnel to have an opportunity to inspect same prior to installation.

1.4.8 Daily Log

The Resident Construction Services representative shall keep a daily log while on site recording:

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;
4. start, stop or completion of activities;
5. presence of inspection and testing firms, tests taken, results, etc.;
6. unusual site conditions experienced;
7. significant developments, remarks, etc.;
8. special visitors on site;
9. authorities given contractor to undertake certain or hazardous works;
10. environmental incidents;
11. reports, instructions from Appropriate Authorities Response Actions.

Note: The log is the personal property of the Resident Construction Services representative. Copies of the log book, certified as copies, are to be provided to PSPC and consultant at the end of the project.

1.4.9 Weekly Records

The Resident Construction Services Representative shall prepare weekly reports for the Consultant in the form directed:

1. progress relative to schedule;
2. major activities commencing or completed during the week; main activities now in progress;
3. major deliveries of materials and/or equipment;
4. difficulties which may cause delays in completion;
5. materials and labour needed immediately;
6. cost estimates of work completed and materials delivered (cost plus contracts);
7. outstanding information or action required by Consultant or PSPC;
8. work force;
9. weather;
10. remarks;
11. accidents on site;
12. life safety or building hazards caused by the work, the contractor or his agents.

1.4.10 Site Records

The Resident Construction Services representative shall maintain orderly and updated files at the site for the use of the PSPC, Consultant and himself as follows:

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1. Contract and Tender Documents.
2. Approved Shop Drawings.
3. Approved Samples.
4. Samples.
5. Site Instructions.
6. Contemplated Change Notices.
7. Change Orders.
8. Memoranda.
9. Test and Deficiency Reports.
10. Correspondence and Minutes of Meeting.
11. Names, addresses, telephone numbers of Client representatives, Consultant and all Contractors, sub-trades key personnel associated with the contract; including home telephone numbers in case of emergencies.

In addition, the Resident Construction Services representative shall maintain an updated progress schedule.

A reproduction of the original contract drawings shall be carefully preserved and shall be kept marked up to date with all addenda, change orders, site instructions, details, as-built conditions, etc., issued subsequent to the award of the contract.

1.4.11 Inspection of the Work

The Resident Construction Services representative shall make on site observations and spot checks of the work to determine whether the work, materials and equipment conform with the contract documents and supplementary conditions. The Resident Construction Services representative shall advise the Contractor of any deficiencies or unapproved deviations via memorandum and report immediately to the Consultant and PSPC Departmental Representative any of these on which the Contractor is tardy or refuses to correct.

The Resident Construction Services representative shall arrange for the Consultant's architectural, structural, mechanical, electrical and other consultants to make the periodic inspections required by the Consultant's contract, and for these inspections to be made timely with respect to the progress of the work.

The Resident Construction Services representative shall also report if materials and equipment are being incorporated into the project prior to approval of relative shop drawings or samples.

The Resident Construction Services representative shall assist in the preparation of all deficiency reports, interim, preliminary, and final, in collaboration with the PSPC and Consultant's representatives.

The Resident Construction Services representative shall be responsible for the measurement of all work to be done by the Contractor on a unit-cost basis.

1.4.12 Site Meetings

The Resident Construction Services representative shall attend and participate in all job-site meetings held during the period of construction.

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1.4.13 Inspection and Testing

The Resident Construction Services representative must see that the tests and inspections required by the contract documents are conducted, and should observe these tests and report the results in the daily log.

The Consultant should be notified if the test results do not meet the specified requirements, or if the Contractor does not have tests undertaken as required.

1.4.14 Emergencies

In the case of emergency where safety of persons or property is concerned, or work is endangered to safeguard the interests of PSPC, the Resident Construction Services representative shall give immediate written notice to the Contractor of the possible hazard. She/he shall further, if necessary, stop the work or give orders for remedial work, and contact the Consultant immediately for further instruction.

1.4.15 Limitations

The Resident Construction Services representative shall not:

1. Authorize deviations from the contract documents.
2. Conduct tests.
3. Approve shop drawings or samples.
4. Advise the contractor in any matter without obtaining guidance from the PSPC Departmental Representative.
5. Accept any work or portions of the building.
6. Enter into the area of responsibility of the Contractor's Field Superintendent.
7. Stop the work unless concerned that an emergency exists as noted above.

1.4.16 Hazardous Construction Operations

The Resident Construction Services Representative is to communicate regularly with the Construction Safety Professional regarding any issues of site safety. All safety related issues must be forwarded immediately to the Safety Professional, as well as the PSPC Departmental Representative.

1.4.17 Equipment Required and Provided by Consultant

Costs of all equipment required shall be covered in the quoted fixed fee. Equipment required shall include but, not necessarily be limited to:

- Digital Camera
- Personal Protective Equipment
- Office Supplies required to perform services
- Cell Phone
- Laptop
- Fax machine
- Office furniture

PSPC will provide a site office and cover costs associated with same.

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1.4.18 Building Security

Special precautions must be taken at all times to prevent unauthorized entry into the Facility. The Resident Construction Services representative is to ensure that all contractor-made openings and means of access, are firmly secured when the contractor leaves the site.

The Resident Construction Services representative will liaise closely with the Consultant and PSPC Departmental Representative on all security and/or safety problems that may arise due to the contractor's operations.

1.4.19 Security Monitoring

The Resident Construction Services representative will be responsible for verifying that all construction workers have had the appropriate clearances carried out. This does not imply that the Resident Construction Services representative is responsible for site security, however, when on the site, will be expected to challenge new work construction workers appearing on the site confirming their clearance designation. Workmen without proper clearances will be refused access to the site.

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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, 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:
.....
.....

Key Individuals and provincial professional licensing status and/or professional accreditation:

.....
.....
.....
.....
.....

II. Key Sub Consultants / Specialists:

Mechanical Engineer

Firm Name:
.....
.....

Key Individuals and provincial professional licensing status and/or professional accreditation:

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.....
.....
.....
.....

Electrical Engineer

Firm Name:
.....
.....

Key Individuals and provincial professional licensing status and/or professional accreditation:

.....
.....
.....
.....
.....

Interior Designer

Firm Name:
.....
.....

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Key Individuals and provincial professional licensing status and/or professional accreditation:

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Sustainability Specialist

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

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Energy Modeling Specialist

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

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Cost Consultant

Firm Name:
.....
.....

Key Individuals and provincial professional licensing status and/or professional accreditation:

.....
.....
.....
.....
.....

II. Additional Sub Consultants / Specialists that should be identified but will not be evaluated:

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Structural Engineer (Identify Only)

Firm Name:
.....
.....

Key Individuals and provincial professional licensing status and/or professional accreditation:

.....
.....
.....
.....

Control System Specialist /Engineer (Identify Only)

Firm Name:
.....
.....

Key Individuals and provincial professional licensing status and/or professional accreditation:

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.....
.....
.....

Thermographer (Identify Only)

Firm Name:
.....
.....

Key Individuals and provincial professional licensing status and/or professional accreditation:

.....
.....
.....
.....

Workshop Facilitator (identify Only)

Firm Name:
.....
.....

Key Individuals and provincial professional licensing status and/or professional accreditation:

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.....
.....
.....

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APPENDIX B - DECLARATION/CERTIFICATIONS FORM

Project Title:

Name of Proponent:

Street Address:

Mailing Address:

Telephone Number: ()

Fax Number: ()

E-Mail:

Procurement Business Number:

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

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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

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)

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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.

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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.

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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 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.

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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.

PROPOSERS SHALL NOT ALTER THIS FORM

Project Title:

Name of Proponent:

The following will form part of the evaluation process:

REQUIRED SERVICES

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

SERVICES	FIXED FEE
RS1 - Pre-Design Services	\$.....
RS2 - Schematic Design	\$.....
RS3 - Design Development	\$.....
RS4 - Construction Documents	\$.....
RS5 - Tender Call, Bid Evaluations & Construction Contract Award	\$.....
RS6 - Construction & Contract Administration, Post Construction Warranty Review	\$.....
RS7 - Risk Management	\$.....
RS8 - Project Time Planning, Scheduling and Control	\$.....
RS9 - Estimating and Cost Planning	\$.....
RS10 - Sustainable Development Strategies and Reports	\$.....
RS11 - Commissioning	\$.....
RS12 - Change Management	\$.....
RS13 - Signage	\$.....
TOTAL MAXIMUM FIXED FEES (Required Services)	\$.....

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ADDITIONAL SERVICES

Time Based Fees* (R1230D (2016-01-28), GC 5 - Terms of Payment– Architectural and/or Engineering Services)

SERVICE *	ESTIMATED HOURS Column A	HOURLY RATES** Column B	TIME BASED FEE Columns AxB
Resident Construction Services	4000	\$.....	\$.....
MAXIMUM TIME BASED FEES			\$.....

*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 ADDITIONAL SERVICES \$.....

TOTAL COST OF SERVICES FOR PROPOSAL EVALUATION PURPOSES

Total Fee for Required Services \$.....
Total Fee for Additional Services + \$.....
Total Evaluated Fee \$.....



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Appendices

Appendix 'A'	Checklist for the Submission of Construction Documents
Appendix 'B'	Sample Addendum Format
Appendix 'C'	Sample Index for Drawings and Specifications
Appendix 'D'	User Manual on Directory Structure and Naming Conventions Standards for Construction Tender Documents on CDROM, dated May 2005
Appendix 'E'	Basic Reference Guide on Converting Construction Drawings into Portable Document Format (PDF), dated May 2005

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:

- y 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.
- y 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.
- y 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.

- y CSA standards: <http://www.csa.ca>
- y CGSB standards: <http://www.pwgsc.gc.ca/cgsb>
- y ANSI standards: <http://www.ansi.org>
- y ASTM Standards: <http://www.astm.org>
- y ULC standards: <http://www.ulc.ca>
- y 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":

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

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

- y Per construction document submission, a completed and signed Checklist for the Submission of Construction Documents. See Appendix 'A'.
- y Specification: originals printed one side on 216 mm x 280 mm white bond paper.
- y Index: as per Appendix 'C'
- y Addenda (if required): as per Appendix 'B' (to be issued by PWGSC).
- y Drawings: reproducible originals, sealed and signed by the design authority.
- y Tender information:
 - y Including a description of all units and estimated quantities to be included in unit price table.
 - y Including a list of significant trades including costs. PWGSC will then determine which trades, if any, will be tendered through the Bid Depository.
 - y 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:

- y General and Special Instructions to Bidders
- y Bid and Acceptance Form
- y 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 its 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 than 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.

There 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.

Work Breakdown Structure (indent tree):

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.

<u>DIVISION</u>	<u>SECTION</u>	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:

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PWGSC

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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).

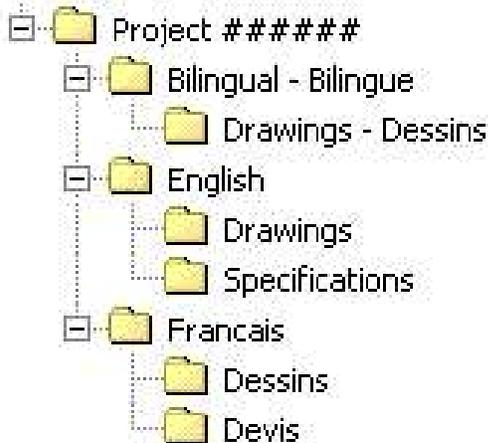
There is therefore a need to adopt a common directory structure and file-naming convention to ensure that the information made available to contractors electronically and in hard (printed) copy is in accordance with the sequence adopted in the real property industries, both for design and construction. 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:

- f 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;
- f 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;
- f 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 (1 st , 2 nd and 3 rd Tier folders) are always required and cannot be modified.

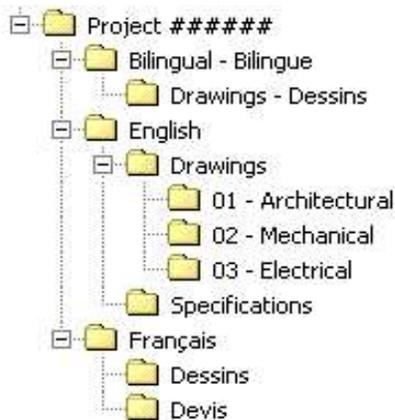
1.2 4th Tier Sub-Folders for Drawings

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

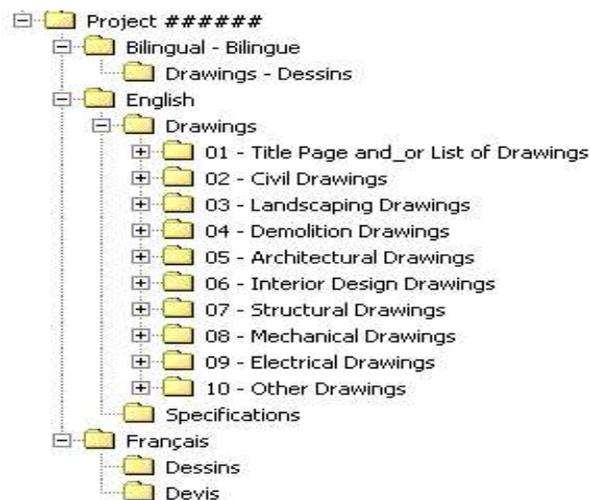
Because the order of appearance of the sub-folders on the screen will also determine the order of printing, it is necessary to start with a number the identification name of the sub-folders in the “Drawings – Dessins”, “Drawings” and “Dessins” folders.

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:

- f* The alphanumerical sorting is done on an ascending order;
- f* 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...);
- f* 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:

- f* The alphanumerical sorting is done on an ascending order;
- f* 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...);
- f* 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:

- f* 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);

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

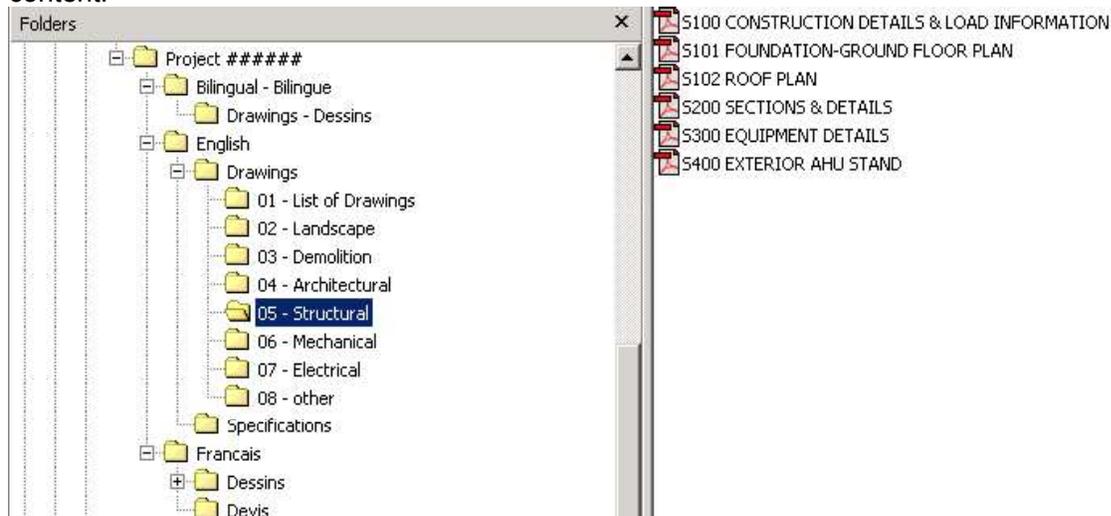
Where:

- ## = 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:

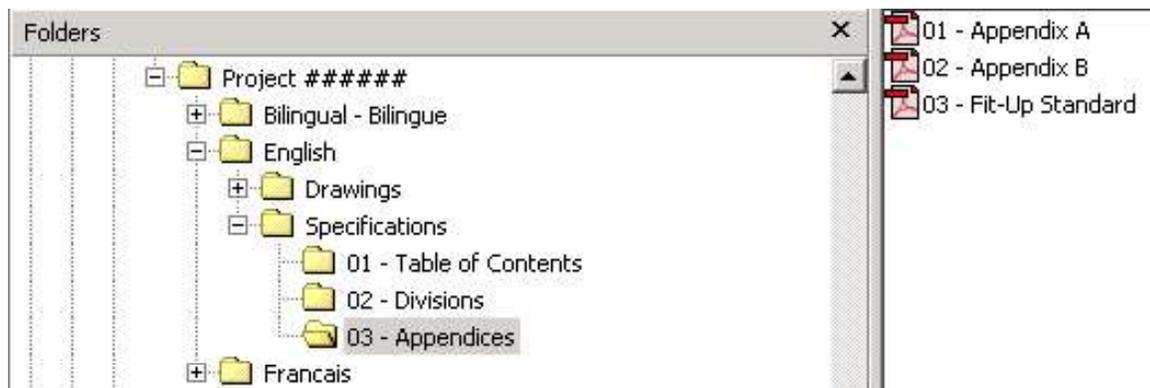
- Y

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:

- f 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

Documents for Tender / Documents pour appel d'offres
CD 1 of/de 1

APPENDIX 'E'

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

Issued by:

Real Property Contracting Directorate

PWGSC

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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 be 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 through 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.