RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:

Public Works Government Services Canada- Bid Receiving / Réception des soumissions
189 Prince William Street
Room 421
Saint John
New Brunswick
E2L 2B9

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
Consultant Svcs,RCMP J.Div.Mod.Proj

Solicitation No. - N° de l'invitation	**Date**
E0227-123011/A	2012-03-06

Client Reference No. - N° de référence du client
R.0033439.001

GETS Reference No. - N° de référence de SEAG
PW-$PWB-020-3064

File No. - N° de dossier	**CCC No./N° CCC - FMS No./N° VME**
PWB-1-34207 (020)	

Solicitation Closes - L'invitation prend fin
at - à 02:00 PM
on - le 2012-04-17

Time Zone
Fuseau horaire
Atlantic Daylight Saving Time ADT

F.O.B. - F.A.B.
Plant-Usine: ☐ **Destination:** ☐ **Other-Autre:** ☐

Address Enquiries to: - Adresser toutes questions à:	**Buyer Id - Id de l'acheteur**
Donovan, Janine PWB	pwb020

Telephone No. - N° de téléphone	**FAX No. - N° de FAX**
(506) 636-5347 ( )	(506) 636-4376

Destination - of Goods, Services, and Construction:
Destination - des biens, services et construction:
Consultant Services
RCMP J. Division Modernization Proj
Fredericton
New Brunswick
Canada

Instructions: See Herein

Instructions: Voir aux présentes

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

Delivery Required - Livraison exigée	**Delivery Offered - Livraison proposée**
See Herein	

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**

Issuing Office - Bureau de distribution
Public Works Government Services Canada- Bid Receiving / Réception des soumissions
189 Prince William Street
Room 421
Saint John
New Bruns
E2L 2B9

Canada

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REQUEST FOR PROPOSAL (RFP)

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Doing Business (Appendix D)

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Distribution of Functional Workgroups by Floor (Appendix H)

Identification of Functional Groups Moved to Leased Space for the Duration of the Construction (Appendix I)

Existing Locations (Appendix J)

SUPPLEMENTARY INSTRUCTIONS TO PROPONENTS (SI)

SI1 INTRODUCTION

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

2. Because of the considerable time and expense involved in the preparation, submission and evaluation of full proposals, proponents responding to this RFP are requested to submit a proposal in two phases. Phase One proposals cover only the qualifications, experience and organization of the proposed Consultant Team. Following evaluation and rating of these proposals, proponents are advised of their competitive standing and have the opportunity to decide whether or not to continue their participation by submitting a Phase Two proposal. Phase Two proposals cover the detailed approach to the work, and the pricing and terms offered. A combination of the Phase One and Phase Two submissions constitutes the final proposal. This procedure follows "open tendering" procedures in the context of Canada's trade agreements. It is followed, however, whether or not the procurement is covered by any trade agreement.

3. Initially, firms are invited to submit a proposal in the first phase of the selection procedure outlined below. Only the Phase One information asked for in the RFP is to be included in the Phase One proposal, and evaluation and rating of Phase One proposals will be carried out only on the Phase One information requested. **IN PHASE ONE, NO MATERIAL IS TO BE SUBMITTED ON THE SUBJECT PROJECT ITSELF**.

SI2 PROPOSAL DOCUMENTS

1. The following are the proposal documents:

   (a) Supplementary Instructions to Proponents (SI);
   R1110T (2011-05-16), General Instructions to Proponents (GI);

   Submission Requirements and Evaluation (SRE);

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

   (c) Project Brief ;

(d) the document entitled "Doing Business";

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

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

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

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

3. 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 (http://buyandsell.gc.ca/policy-and-guidelines) issued by Public Works and Government Services Canada.

SI3 QUESTIONS OR REQUEST FOR CLARIFICATION

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

SI4 CANADA'S TRADE AGREEMENTS

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

SI5 SECURITY REQUIREMENT

1. This procurement contains a Security Requirement as described in the Supplementary Conditions.

SI6 CHANGES TO R1410T (2011-05-16) General Instructions to Proponents (GI)

Section "GI Code of Conduct for Procurement" is deleted and replaced with the following:

GI1 Code of Conduct and Certifications

1. Proponents must comply with the Code of Conduct for Procurement. Furthermore, in addition to the Code of Conduct for Procurement, proponents must respond to bid solicitations in an honest, fair and comprehensive manner, accurately reflect their capacity to satisfy the requirements stipulated in the bid solicitation and resulting contract, submit bids and enter into contracts only if they will fulfill all obligations of the Contract. To ensure fairness, openness and transparency in the procurement process, the following activities are prohibited:

   (a) payment of a contingency fee to a person to whom the *Lobbying Act* (1985, c. 44 (4th Supp.)) applies;

   (b) corruption, collusion, bid-rigging or any other anti-competitive activity in the procurement process.

2. By submitting a proposal, the Proponent certifies that except for those offences where a criminal pardon has been obtained or leniency granted, neither the Proponent nor any of the Proponent's parent, subsidiaries or other affiliates has ever been convicted of a criminal offence in respect of the activities stated in (a) or (b) above or is the subject of outstanding criminal charges in respect of such activities filed subsequent to September 1, 2010.

3. Proponents further understand that the commission of certain offences will render them ineligible to be awarded a contract. By submitting a proposal, the Proponent certifies that except for those offences where a criminal pardon has been obtained, neither the Proponent nor any of the Proponent's parent, subsidiaries or other affiliates has ever been convicted or is the subject of outstanding criminal charges in respect of an offence under any of the following provisions:

section 121 (*Frauds on the government and Contractor subscribing to election fund*), section 124 (*Selling or Purchasing Office*), section 380 (*Fraud committed against Her Majesty*) or section 418 (*Selling defective stores to Her Majesty*) of the Criminal Code of Canada, or under paragraph 80(1)(d) (*False entry, certificate or return*) subsection 80(2) (*Fraud against Her Majesty*) or section 154.01 (*Fraud against Her Majesty*) of the *Financial Administration Act*.

4. For the purpose of this section, business concerns, organizations or individuals are Proponent's affiliates if, directly or indirectly, 1) either one controls or has the power to control the other, or 2) a third party has the power to control both. Indicia of control, include, but are not limited to, interlocking management or ownership, identity of interests among family members, shared facilities and equipment, common use of employees, or a business entity created following the charges or convictions contemplated in this section which has the same or similar management, ownership, or principal employees as the Proponent that is charged or convicted, as the case may be.

5. The Contracting Authority will declare non-responsive any proposal in respect of which the information contained in the certifications contemplated above is determined to be untrue in any respect by the Contracting Authority.

6. In circumstances where a proponent or any of the Proponent's parent, subsidiaries or other affiliates has pled guilty of an offence contemplated in subsections 1 and 3, the Proponent must provide with its proposal, a certified copy of confirming documentation from the Competition Bureau of Canada indicating that leniency has been granted, or a certified copy of confirming documentation from the National Parole Board indicating that a criminal pardon has been obtained, in relation to such offences.

7. The Proponent or any of the Proponent's parent, subsidiaries or other affiliates must remain free and clear of any charges or convictions contemplated in subsections 1 and 3 during the period of any resulting contract arising from this bid solicitation**.**

SI7 - CONSTRUCTION COST LIMIT

Construction Cost Estimates prepared by the Consultant shall not exceed the Construction Cost Limit as specified in the Supplementary Conditions.

SI8 - WEB SITES

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.justice.gc.ca/en/E-5.401/index.html

Federal Contractors Program (FCP)
http://www.hrsdc.gc.ca/eng/labour/equality/fcp/index.shtml

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

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

Lobbying Act
http://laws.justice.gc.ca/en/L-12.4/?noCookie

Contracts Canada
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 (2011-05-16), GC1 - General Provisions
   R1215D (2011-05-16), GC2 - Administration of the Contract
   R1220D (2011-05-16), GC3 - Consultant Services
   R1225D (2011-05-16), GC4 - Intellectual Property
   R1230D (2011-05-16), GC5 - Terms of Payment
   R1235D (2011-05-16), GC6 - Changes
   R1240D (2011-05-16), GC7 - Taking the Services Out of the Consultant's Hands, Suspension or Termination
   R1245D (2011-05-16), GC8 - Dispute Resolution
   R1250D (2011-05-16), GC9 - Indemnification and Insurance
   Supplementary Conditions
   Agreement Particulars
   (c) Project Brief;
   (d) the document entitled "Doing Business";
   (e) any amendment to the solicitation document incorporated in the Agreement before the date of the Agreement;
   (f) the Phase One proposal and Declaration/Certifications Form;
   (g) the Phase Two proposal and Price Proposal Form.

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

   The documents identified above by title, number and date are set out in the Standard Acquisition Clauses and Conditions (SACC) Manual, issued by Public Works and Government Services Canada (PWGSC). The SACC Manual is available on the PWGSC Web site:
   http://ccua-sacc.tpsgc-pwgsc.gc.ca/pub/acho-eng.jsp

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

   (a) any amendment or variation in the Agreement that is made in accordance with the terms and conditions of the Agreement;
   (b) any amendment to the solicitation document incorporated in the Agreement before the date of the Agreement;
   (c) this Agreement clause;
   (d) Supplementary Conditions;
   (e) General Terms, Conditions and Clauses;
   (f) Agreement Particulars;
   (g) Project Brief;
   (h) the document entitled “Doing Business”;
   (i) the proposal.

SUPPLEMENTARY CONDITIONS (SC)

SC1 SECURITY REQUIREMENTS

1. NIL security screening required, no access to sensitive information or assets. Contractor personnel will be escorted in specific areas of the facility or site, as and where required by Royal Canadian Mounted Police (RCMP) personnel or those authorized by the RCMP to do so on its behalf;

2. Contractor personnel must submit to local law enforcement verification by the RCMP, prior to admittance to the facility or site. The RCMP reserves the right to deny access to any facility or site or part thereof to any contract personnel, at any time.

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) shall be provided expeditiously in both languages, as necessary.

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

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

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

SC3 CONSTRUCTION COST LIMIT

1. The Construction Cost Limit is $12,000,000.00 (not including GST/HST).

2. In accordance with GC 3.11 Cost Control, throughout Project Development, the Construction Cost Estimate prepared by the Consultant shall not exceed the Construction Cost Limit as specified above. This disclosure of available funds does not commit Canada to pay Consultant fees based on such an amount.

SC4 Disbursements

Disbursements as follows shall be included in the fees required to deliver the consultant services and shall not be reimbursed separately**:**

Travel time and travel-related expenses for the delivery of services, within 200 km radium of Fredericton or within 200 km radium of the consultants local office, whichever is less;

Travel time and travel-related expenses for the delivery of services outside of a 200 km radius of Fredericton or outside of a 200 km radius of the consultants local office will be reimbursed at cost with no mark-up; in accordance with Treasury Board Guidelines in effect at time of travel or at the firms travel rates, whichever is less.

SC5 CHANGES TO CLAUSE R1210D

The following is required in the solicitation and resulting contract until changes are reflected in SACC.

Sections GC1.3 and GC1.4 of R1210D (2011-05-16), GC 1 - General Provisions are amended as follows:

Title and text of GC1.3 are deleted and the title "Not applicable" is inserted.

Text under subsection GC1.4.2 is deleted and replaced with "An assignment of the Agreement without such consent shall not relieve the Consultant or the assignee from any obligation under the Agreement, or impose any liability upon Canada."

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.

Mandatory Requirements

Bidders are responsible to ensure adequate information is enclosed in their bid submission to determine the following criteria. Failure to do so will result in their proposal being considered non-responsive.

Phase One Submission (See SRE 3.1 for complete list):

The proponent or its key personnel shall be an Architect, licensed, or eligible to be licensed to provide the necessary professional services to the full extent that may be required by provincial or territorial law in the province of New Brunswick.

The consultant team to be identified at this time must include the following:

Proponent (prime consultant) - Architectural
Key Sub-consultants / Specialists - Interior Design, Mechanical, Electrical, Structural, Elevator, Cost Specialist and Commissioning Resource

Proponents must complete, sign and submit the following:

- Team Identification form (sample found in Appendix "A")
- Declaration Form found in Appendix B.

Phase Two Submission (See SRE 4.1 for complete list)

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

Price Proposal form completed, signed and submitted in a separate envelop. Form(s) provided in Appendix C.

SUBMISSION REQUIREMENTS AND EVALUATION

SRE SUBMISSION REQUIREMENTS AND EVALUATION

SRE 1 GENERAL INFORMATION

1.1 Reference to the Selection Procedure

An 'overview of the selection procedure' can be found in GI 3 of R1110T (2011-05-16), General Instructions of Proponents

1.2 Calculation of Total Score

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

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

SRE 2 PROPOSAL REQUIREMENTS

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

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

- Phase One - Submit one bound signed original plus six (6) bound copies of the proposal
- Phase Two - Submit one bound signed 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 or equal
- Minimum margins - 12 mm left, right, top, and bottom
- Double-sided submissions are preferred
- One (1) ‘page’ means one side of a 219mm x 279mm (8.5" x 11") sheet of paper
- 279mm x 432mm (11" x 17") fold-out sheets for spreadsheets, organization charts etc. will be counted as two pages.
- The order of the proposals should follow the order established in the Request for Proposal SRE section

2.2 Phase One Specific Requirements for Proposal Format

- Maximum number of pages including text and graphics: **thirty (30)** pages

Consequence of non-compliance: any pages which extend beyond the maximum limits indicated, will be extracted from the proposal and will not be forwarded to the PWGSC Evaluation Boards members for evaluation.

The following page descriptions are required but are not considered to be part of the thirty pages submitted:

- letter of introduction
- team identification sample format form, Appendix A
- declaration form, Appendix B

2.3 Phase Two Specific Requirements for Proposal Format

- Maximum number of pages including text and graphics: **thirty (30)** pages

Consequence of non-compliance: any pages which extend beyond the maximum limits indicated, will be extracted from the proposal and will not be forwarded to the PWGSC Evaluation Boards members for evaluation.

The following page descriptions are required but are not considered to be part of the thirty pages submitted:

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

SRE 3 PHASE ONE SUBMISSION REQUIREMENTS AND EVALUATION

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

3.1 Mandatory Requirements

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

3.1.1 Licensing, Certification or Authorization

The proponent or its key personnel shall be an Architect, licensed, or eligible to be licensed to provide the necessary professional services to the full extent that may be required by provincial or territorial law in the province of New Brunswick.

3.1.2 Consultant Team Identification

During Phase One only the proponent and key sub-consultants are identified**.** During Phase Two other sub-consultants or specialists may be identified. Those sub-consultants identified at Phase Two are those considered to play a lesser role in the entire project context.

The consultant team to be identified at this time must include the following:

Proponent (prime consultant) - Architectural
Key Sub-consultants / Specialists - Interior Design, Mechanical, Electrical, Structural, Elevator, Cost Specialist and Commissioning Resource

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

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

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

3.1.3 Declaration/Certification Form(s)

Proponents must complete, sign and submit the following:

- Team Identification form (sample found in Appendix "A")
- Declaration Form found in Appendix B.

3.2 Rated Requirements

The evaluation criteria for the Phase One proposal addresses only the previous achievements and experiences of the proposed Consultant Team. No material is to be prepared or presented on the subject project itself. The Phase One proposal provides the opportunity for proponents to present their past work in the context of the proposed project. It is at this time that interested firms submit to PWGSC a history of their

accomplishments in order to establish the capabilities of their teams and lead designers as well as other key team members.

3.2.1 Achievements of Proponent on Projects

Describe the Proponent's accomplishments, achievements 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.

Information to be supplied:

- clearly indicate how this project is comparable/relevant to the requested project.
- brief project description and intent. Narratives shall 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 fax of client contact at working level - references may be checked
- names of key personnel responsible for project delivery
- brief description and intent of Sustainable Development related initiatives. Identify roles and achievements.
- provide clarification of how issues of this project directly relate to those design criteria outlined in PD 6 Project Objectives
- describe how the design team worked as a team in a co-ordinated effort to produce a 'holistic' design to obtain acceptable solutions. Describe team building experience, including organization and management of team.
- Project award(s) and or recognition(s)

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 multidisciplinary services which might otherwise be performed by a sub-consultant, this should be reflected here.
Select a **maximum** of 3 projects undertaken within the last 10 years per key sub consultant or specialist.

Information to be supplied:

- clearly indicate how this project is comparable/relevant to the requested project and services required/requested.

▪brief project description and intent. Narratives shall include a discussion of design philosophy / approach to meet the intent, design challenges and resolutions.
▪budget control and management (Mechanical, Electrical, Elevator and Cost Specialist only)
▪project schedule control and management (Mechanical and Electrical only)
▪client references - name, address, phone and fax of client contact at working level - references may be checked
▪names of key personnel responsible for project delivery

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 to be supplied for each team member:
- professional accreditation
- accomplishments/achievements/awards
- relevant experience, expertise, number of years experience
- role, responsibility and degree of involvement of individual in past projects

3.3 Evaluation and Rating

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

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

Criterion	Weight Factor	Rating	Weighted Rating
Achievements of Proponent	3.0	0 - 10	0 - 30
Achievements of Key Sub-consultants / Specialists	4.5	0 - 10	0 - 45
Achievements of Key Personnel on Projects	2.5	0 - 10	0 - 25
Phase One Rating	10.0		0 - 100

The Phase One rating which is assigned to each responsive proposal in accordance with the procedure outlined in the General Instructions to Proponents is the total weighted rating assigned to the Phase One proposal in accordance with the above table. The Phase One rating is recorded

for subsequent inclusion as a percentage of the total score to be established following the evaluation and rating of Phase Two proposals.

SRE 4 PHASE TWO SUBMISSION REQUIREMENTS AND EVALUATION

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

4.1 Mandatory Requirements

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

4.1.1 Having submitted a responsive Phase One proposal

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

Consequence of non-compliance: proposals will be returned to Proponent, unread. Price envelope will be returned, unopened.

4.2 Rated Requirements

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

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

4.2.1 Understanding of the Project:

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

Information to be supplied:

- The functional and technical requirements
- Project Objectives
- 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
- Resident site supervision. Review additional services and provide methodology/proposal for the provision of resident site supervision.
- The Client User's philosophies and values.

4.2.2 Scope of Services:

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

Information that should be supplied by the consultant:

Scope of Services - detailed list of services
Work Plan - detailed breakdown of work tasks and deliverables
Project schedule / phasing - proposed major milestone schedule
Risk management strategy
Commissioning

4.2.3 Management of Services:

The Proponent is to describe how he /she proposes to perform the services and meet the constraints; how the services will be managed to ensure continuing and consistent control as well as production and communication efficiency; how the team will be organized and how it will fit in the existing structure of the firms; to describe how the team will be managed. The proponent is also to identify sub-consultant disciplines and specialists required to complete the consultant team.

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

Information to be supplied:

- Confirm the makeup of the full project team including the names of the consultant sub-consultants and specialists personnel and their role on the project. The Consultant Team should include as a minimum the following:

- Architect, Interior Designer, Structural Engineer, Mechanical Engineer, Electrical Engineer, Elevator Engineer, Cost Specialist, and Commissioning Specialist.

▪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)
▪Approach and Methodology for Risk Management and Stakeholder Management and Integrated Consultant Team Quality Assurance (comes with a list of Senior Reviewers for each discipline and their experience profile)
▪Outline action plan of the services with implementation strategies and sequence of main activities
▪Reporting relationships
▪Communication strategies
▪Demonstrate how the response time requirements will be met.

4.2.4 Design Philosophy / Approach / Methodology

The proponent is to 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 to be supplied:
▪Design Philosophy / Approach / Methodology
▪Describe the major challenges and how your team approach will be applied to those particular challenges.

4.3 Evaluation and Rating

4.3.1 Technical Rating

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

Criterion	Weight Factor	Rating	Weighted Rating
Understanding of the Project	2.0	0 - 10	0 - 20
Scope of Services	2.0	0 - 10	0 - 20
Management of Services	2.0	0 - 10	0 - 20
Design Philosophy/Approach/Methodology	4.0	0 - 10	0 - 40
Phase Two Technical Rating	10.0		0 - 100

4.3.2 Combined Technical Rating

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

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

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

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

SRE 5 PRICE OF SERVICES

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

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

Price proposals will be 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, 60, 40, and 20 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.

Example:

Price Proposal	Price Rating
$100.00	100
$125.00	80
$140.00	60
$140.00	60
$190.00	20
$191.00	0

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

SRE 6 TOTAL SCORE

Total Scores will be established in accordance with the following:

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

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

SRE 7 SUBMISSION REQUIREMENTS - CHECKLIST

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

Please follow detailed instructions in "Submission of Proposals", GI16 of R1110T (2011-05-16), General Instructions of Proponents .
Proponents may choose to introduce their submissions with a cover letter.

PHASE ONE:

- ☑ Proposal - one signed original and 6 copies required
- ☑ Team Identification - see typical format in Appendix A
- ☑ Declaration/ Certification completed and signed form(s) - form(s) provided in Appendix B

PHASE TWO:

- ☑ Verification of Team confirmed Phase One team identification information; signed and dated
- ☑ Proposal - one signed original and 6 copies required
- ☑ Front page of RFP completed and signed

In a separate envelope:

- ☑ Price Proposal form completed, signed and submitted in a separate envelope, Form(s) provided in Appendix C.

PROJECT BRIEF
TABLE OF CONTENTS

DESCRIPTION OF PROJECT

PD 7 Consultant Services

PROJECT BRIEF

The Project Brief is provided by Public Works and Government Services Canada (PWGSC) to:

- inform prospective Consultants regarding the nature of the project being conducted by the department, during the Consultant selection process.
- direct and assist the Consultant in carrying out a building project for the Department.

As such, the Project Brief is:

- included as part of the Request for Proposals (two-phase procedure).
- forms part of the Explanatory Instructions referred to in the Consultant's Agreement.

The Project Brief is comprised of the following four sections:

- **Description of Project**
- **Project Administration**
- **Required Services**
- **Additional Services**

For standards relating to the service provisions herein please refer to the current version of the document "Doing Business with A&ES (Atlantic Region)." The standards in "Doing Business with A&ES (Atlantic Region)" must be adhered to in conjunction with this scope of services. For additional detail with respect to current CADD standards which must be followed, refer also to "PWGSC, RPS Atlantic Region CADD Data Specification (Latest Version)". These documents are both found in the Appendices.

PD 1 IDENTIFICATION OF PROJECT

Public Works and Government Services Canada (PWGSC) intends to retain a Consultant Design Team (referred to as the Consultant) of architects, engineers and specialists, for the provision of the professional services required for this project. The services for the project shall be as described in this Request for Proposal document with deliverables specified as noted.

1.1 PWGSC Project Title: Renovation of the RCMP J Division Headquarters Building

1.2 Location of Project: 1445 Regent Street, Fredericton, New Brunswick

1.3 PWGSC Project Number: R.033439.001

1.4 Clients / Users:`

PWGSC (Owner/Investor)

1.5 PWGSC Project Manager

Leonard D'Souza, Project Manager
Tel: (506) 636-5953
Fax: (506) 636-4408
E-mail: Leonard.D'Souza@pwgsc-tpsgc.gc.ca

The Project Manager assigned to the project is the Departmental Representative as defined in General Conditions of the Consultant Agreement.

The Project Manager is the Departmental officer directly concerned with the project and responsible for its progress. The Project Manager is the liaison between the Consultant, Public Works and Government Services Canada Resources, the Commissioning Manager, the Contractor and the Tenant Department (RCMP).

PD 2 KEY INFORMATION

2.1 DESCRIPTION

The intent of this project is to renovate the RCMP J division headquarters building located in Fredericton, New Brunswick which will remain nearly fully occupied and operational during construction. It is anticipated that approximately one-half (1/2) a floor will be made available at a time for renovations.

This project will include:

- major upgrades to the mechanical and electrical base systems with associated modifications to the architectural components,
- significant upgrades to the elevator
- changes to the interior layouts of approximately 70% of the building on floors 1 to 4. These changes will also result in changes to the electrical and mechanical distribution systems.
- preparing an inventory of the existing furniture in the affected areas and maintaining the inventory up to date during design and construction. In addition, Prepare a list of additional furniture / components required to complete the design.
- preparation of a construction phasing plan. An area of approximately 1000m2 will be available for internal swing space during phasing. This space will not be one contiguous space but will be made up from several smaller spaces.

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

2.2 COST

Construction Cost Limit

The Construction Cost as determined and set by PWGSC Class “D” Estimates is estimated at $12,000,000. excluding HST.

2.3 PROJECT SCHEDULE -

Stage	Time duration
Consultant award:	Start
Concept design/class “C”:	8 weeks
Design development/Class “B”:	22 weeks
EPA Approval:	46 weeks
Construction tender call:	91 weeks
	(anticipated start June 2014)
Contract award:	109 weeks
Construction Completion:	213 weeks
Warranty period:	265 weeks

Preliminary Project Approval (PPA)
Effective Project Approval (EPA)

2.4 FUNDING ALLOCATION

The project funding has been approved to develop the preliminary design and Class “B” estimate only. The consultant services to be provided will be phased in accordance with the proposed project schedule. Following award of the consultant contract the consultant shall commence work up to and including all services form RS1 to RS4 inclusive. This shall also include all related services in RS8, RS9, RS11 and RS12.

At the time of submission and acceptance of the Preliminary Design and Class “B” estimate at the end of RS4 the consultant shall cease any further work until PWGSC has received Effective Project Approval (EPA) and has formally notified the consultant that work under the contract can proceed.

It is anticipated the approval process may take up to 6 months (120 working days). Upon receipt of EPA the consultant will be advised in writing to proceed. Should the project not receive approval to proceed this agreement may be terminated in accordance with GC7 (Taking the Services out of the Consultant's Hands, Suspension or Termination.)

At the end of RS5, the consultant shall cease any further work until PWGSC has formally notified the consultant that work under the contract can proceed. PWGSC internal approval will be required before proceeding to tender call. Should the project not receive approval to proceed this agreement may be terminated in accordance with GC7 (Taking the Services out of the Consultant's Hands, Suspension or Termination.)

PD 3 PROJECT BACKGROUND

3.1 HISTORY OF PROJECT

The RCMP J-Division office building located at 1445 Regent Street in Fredericton with an overall gross area of 17,500 square meters, consists of five (5) floors, and a penthouse. The office building was built in 1985 with minor renovations carried out between 1986 and 2010.

The majority of the building was originally designed for general office space with a substantial portion designed for special purpose functions such as barracks, holding cells, etc.

The building was designed for sole use by the RCMP and will continue to be used solely for this .

The building currently houses 324 employees.

The mechanical systems are original and consist of 20 separate air handling and 55 exhaust units located through out the space and floors. Two central air handling units are required to replace 17 existing units. Two heat recovery ventilation units located in a new penthouse are required to replace the exhaust fans. Structural work is required. Two air handling units supplying air to the garage and one supplying air to the penthouse are not included in the replacement.

Building deficiencies that have been identified include:

- mechanical systems have not been adjusted for changes in floor plans;
- age of existing Air handling units (AHU) / difficulty in maintaining
- concerns for air quality;
- power distribution systems are original and are deteriorating. Some components are obsolete and replacement parts are unavailable;
- lighting is inadequate and the fixtures are at the end of their useful lives;
- data and communication wiring has been modified as much as possible to accommodate technology; however, it does not comply with current standards;
- no common grid for electrical and data systems;
- the conveying systems (two passenger elevator and one passenger / freight elevator) are also original and are due for life cycle replacement.
- Configuration and usage of space.

PD 4 EXISTING DOCUMENTATION

4.1 EXISTING DOCUMENTATION INCLUDED FOR ALL PROPONENTS

- Team Identification Format - Phase One (Attached as Appendix “A”)
- Declaration Form - Phase One (Attached as Appendix “B”)
- Price Proposal Form - Phase Two (Attached as Appendix “C”)
- Doing Business with A&ES (Atlantic Region) - Current Version (Attached as Appendix “D”)
- Commissioning manual (Attached as Appendix ”E”)
- Existing space measurement floor plans (Attached as Appendix "F")
- Space requirements for groups to be reconfigured (Attached as Appendix "G")
- Distribution of functional workgroups by floor (Attached as Appendix "H")
- Idenfication of functional groups moved to leased space for the duration of the construction (Attached as Appendix "I")
- Existing location of functional workgroups (Appendix "J")

4.2 EXISTING DOCUMENTATION - TO BE MADE AVAILABLE TO THE SUCCESSFUL PROPONENT

- RCMP Physical Security Standards and Design Specification Guide
- Latest PWGSC Building Condition Reports
  - PWGSC Documentation on “Factors Affecting IAQ” - “General Considerations” and “IAQ Guidelines” - “Specific Design Considerations
  - PWGSC Documentation on “Considerations for Open Offices, Closed Offices, Boardrooms and Meeting Rooms”, “Balancing Absorption and Reflection”, “Layout”, “Ceilings”, and “General Recommendations”

- PWGSC Documentation on “Thermal Comfort and Environmental Factors” and “General Recommendations”

- Available Existing as Built Drawings (hard copy only)
- Space measurement drawings in CADD format.
- Original Air balancing reports
- Operations and maintenance manual for new Energy Management Control System.
  - Basic Reference Guide on Converting Construction Documents to Portable Document Format (PDF)
  - CP1 - CP13 Commissioning Guidelines
  - Commissioning Manual CP1 - 2006
- User Manual on Directory Structure and Naming Convention Standard for Construction Tender Documents on CD-ROM
-

PD 5 PROGRAM

5.1 BUILDING PROGRAM

Overview of Project Requirements

The mechanical systems are original and consist of 20 separate air handling and 55 exhaust units located through out the space and floors. Two central air handling units are required to replace 17 existing units. Two heat recovery ventilation units located in a new penthouse are required to replace the exhaust fans. Two air handling units supplying air to the garage and one air handling unit supplying air to the penthouse are not included in the replacement.

The electrical system has a number of issues and a complete rebuild of the electrical system is required. This includes main distribution, lighting and communications system.

Changes in use of the building has resulted in some work groups being located in spaces originally designed for special purpose functions. In other portions of the building, changes in work groups has resulted in layouts which are not efficient and in some cases groups not located adjacent to primary work partners. Approximately 70% of the building layout on floors 1 to 4 will require reconfiguration.

It is the intent to reuse as much of the existing furniture as possible in the final layout. The consultant is required to provide a list of additional furniture / components required to complete the design.

The building layout will be reconfigured to accommodate the current population of 324 employees. The consultant is to confirm at the concept design the final number of occupants.

A detailed list of the space requirements for the work groups to be located in the portion of the building which will require reconfiguration is included in Appendix 'G' General Office Space requirements.

Plans indicating the areas which are to be reconfigured as well as a proposed distribution of the workgroups for these areas are included in Appendix 'H' Distribution by floor. The plans also indicate areas which do not require reconfiguration.

The groups which will be moved to leased space outside the building for the duration of the construction are identified in Appendix 'I' Sections to be moved out to leased space.

The location of the various work groups is shown in Appendix J.

PD 6 PROJECT OBJECTIVES

6.1 PRIMARY OBJECTIVES

The primary objectives of this project are as follows:

6.1.1. To **upgrade aged and/or obsolete building components** and systems which are reaching the end of their useful lives.

6.1.2 To reconfigure approximately 70% of the interior space on floors 1 to 4 to better accommodate the functional groups.

6.1.3 To complete the project while the facility is **occupied**.

6.2 Sustainable Development

The project will not be required to meet a specific LEED certification level. However, sustainability is to be integrated into the design of all disciplines. The consultant will be required to provide a description of the sustainable design aspects included in the design.

6.3 Building Systems

6.3.1 Architectural Objectives

This project has two aspects which will impact the architec*t*ural component of the building:

1. Changes resulting from the upgrades to the mechanical and electrical systems.

   These will include but not be limited to items such as new service rooms, new service shafts, new penthouse, reconfiguration of existing service spaces. The lighting system will be completely upgraded and this will result in the

replacement of the existing suspended acoustical ceiling system as it is metric in size.

2. Changes required as a result of the reconfiguration of the interior layout.

As stated in section PD 5.1, approximately 60% of the interior layout on floors 1 to 4 will be reconfigured to better accommodate changes in tenant requirements. The intent is to remove as many interior partitions as possible in order to open up the space. There will still be separations required between various work groups and a separation will also be required along the main circulation route leading to exits and elevators. Within each work group there will be requirements for hard walled rooms and there will be common use meeting rooms and business centers on each floor.

Flooring in the reconfigured areas will be replaced.

The following section provides information on the general requirements for the reconfiguration of the interior layouts.

6.3.2 Interior Layout Objectives

As stated in section PD 5, approximately 60% of the interior layouts of floors 1 to 4 will be reconfigured to better accommodate tenant requirements.

Some preliminary work has been carried out which includes:
- identification of the functional groups,
- detailed space requirements for each functional group,
- proposed distribution of the functional groups by floor,
- plans indicating which areas are to be reconfigured.

This information is included in Appendices G and H as stated earlier.

The consultant will be responsible to review this information with the RCMP and to further develop the requirements in order to prepare the interior layouts.

The consultant will be responsible to review RCMP security requirements (wall types, door hardware, power and communication requirements) to ensure these are integrated into the layouts.

The layouts will need to adhere to PWGSC’s fit up standards. A copy of these will be provided to the successful proponent.

As stated in section PD 6.4 Phasing, a number of temporary layouts will likely be required due to construction phasing. The consultant will be responsible to develop these temporary layouts in addition to the final ones.

It is the intent to reuse as much of the existing free standing and systems furniture as possible. The consultant will be responsible to prepare an inventory of existing furniture within the affected areas and maintain this inventory up to date during design and construction. In addition, the consultant is required to provide a list of additional furniture / components required to complete the design. This list will be provided to PWGSC who will be responsible to procure it.

6.3.3 Mechanical Objectives

6.3.3.1 General Requirements

This section identifies criteria for the design of ventilating, air conditioning systems, Energy Monitoring & Control Systems (EMCS) and fire protection systems.

In general the mechanical objectives are as follows:

- Remove 17 existing compartmental air handling units located in mechanical rooms on levels 1 to 4
- Two air handling units supplying air to the garage and one air handling unit supplying air to the penthouse are not included in the replacement.
- Supply and install 2 new AHU's located in a new roof mechanical penthouse. Provide structural modifications to roof as required.
- Reuse the existing fresh air and relief air duct risers
- Connect new supply and return from the new AHU's to the existing floor distribution ductwork
- Replace diffusers and grilles as required to accommodate a new ceiling grid
- Remove approximately 55 exhaust fans presently installed throughout the 4 levels and replace with 1 or 2 ERV's located in the new roof penthouse.
- Reuse the existing exhaust air duct riser.
- Make changes required to the distribution ductwork as required to suit any new zoning or space changes on the floors
- Building will be occupied during the renovation period.
- All existing duct risers shall be pressure tested to ensure they are suitable for the new system,
- All existing ductwork shall undergo duct cleaning

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 area meet all standards while under construction. This includes dust control, noise, temperature, humidity and IAQ, etc.

Mechanical systems and equipment should be co-ordinated with the architectural, structural, electrical and other building systems and be compatible with the building fabric. They should consist of systems selected for reliability, durability, flexibility, accessibility and ease of operation.

Mechanical systems should be adapted to support all performance objectives, typically involving sustainable development, fire safety, security, and improved operations & maintenance.

The system selection should be justified in accordance with the project requirements. The system selection should consider performance, service, maintenance, the total cost of ownership, as well as the operation cost. Tenant needs and the 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.

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.

The new air handling systems are to be interconnected to allow for partial supply to all areas if one system should fail. Proposed systems and equipment are to be evaluated by PWGSC for their offerings of advanced technology. However, PWGSC 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 PWGSC.

Heat recovery systems should be used for all air exhausts. Outdoor air should be used for free cooling whenever economically feasible.

Air distribution should be achieved by means resulting in proper air diffusion and mixing, without short-circuiting of supply air into return air openings.

6.3.3.2 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.

PWGSC Guides and Standards

- PWGSC MD 15116 Computer Room Air Conditioning
- PWGSC MD 15116S Supplement to MD 15116
- PWGSC: MD 13800: EMCS Design Guide
- PWGSC Commissioning Manuals and Guidelines
- PWGSC Documentation Submission Standards
- PWGSC: National Master Specifications.
- PWGSC 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

United States Publications

- 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 Particulate Matter.
- ASHRAE: Standard 55: Thermal Environmental Conditions for Human Occupancy.
- ASHRAE: Standard 62: 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 Method of Measuring and Expressing Building Energy Performance.
- ASHRAE: Standard 111: Practices for Measurement, Testing, Adjusting and Balancing of Building HVAC Systems.
- ASHRAE: Standard 114: Energy Management Control Systems I instrumentation.
- ASHRAE: Standard 135: BACnet: A Data Communication Protocol for Building Automation and Control Networks.
- ASHRAE: Guideline #4: Preparation of Operating and Maintenance Documentation for Building Systems.
- 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

6.3.3.3 Commissioning

Refer to RS12 for details on commissioning.

In general, the Consultant should identify and co-ordinate commissioning practices and procedures with the PWGSC Project Manager, and the Commissioning Authority, for the project's performance goals. Co-ordinate with all other disciplines to enable required testing and certifications. The mechanical specifications should include those testing and certification requirements that involve construction contractors.

Examples of performance goals for mechanical systems include:

- Functionality of each mechanical system separately, and, in combination with other systems
- Indoor environmental quality
- Functionality of the EMCS
- Functionality of Fire and Life Safety Systems

6.3.3.4 Design Criteria

6.3.3.4.1 Outside Design Criteria

Outside design criteria shall be based on weather data tabulated in the latest edition of the National Building Code and its supplements.

6.3.3.4.2 Indoor Design Criteria

Table 5.1: Indoor Temperature

Parameter	Occupied	Unoccupied	Measurement Location
Heating mode (winter)	21 deg C	18 deg C	Waist height
Cooling Mode (summer)	24 deg C	No cooling	Waist height
Vertical Temp. Gradient	3 deg C, between 100 - 1700 mm Above finished floor		
Floor temperature	18-29 deg C	18-29 deg C	

Exceptions

Loading Docks	At least 10 deg C
Mechanical Rooms	At least 12 deg C
Locker Rooms, Washrooms	No cooling required in summer/Winter: at least 21^0 C
Vestibules, Storage areas	No cooling required in summer/Winter: at least 18^0 C
Telecommunications Rooms	A maximum temperature of 21^0 C

Table 5.2: Indoor Humidity

Parameter	Relative Humidity
Winter	minimum 30%

Summer Less than 60%
Exceptions: Computer Rooms, Kitchens, Printing Rooms, non air-conditioned rooms

Table 5.3: Other Requirements

Parameter	Ventilation
Ventilation rate	At least 10 l/sec per person
Space Air motion	0.15 - 0.25 m/s
Supply Air Filtration	MERV13 filters with MERV 8 pre-filter
Carbon Dioxide	Less than 800 ppm

Outside Air Intakes and Exhausts

The placement and location of outside air intakes is critical to the health and safety of the occupants inside a building. The intakes should be located at least 5 metres above ground level. These grills must be designed to include security grills and cross talk silencers as per current RCMP design standards. Table 5-4 provides a guide for minimum separation distances between ventilation air intakes and other building features. Care should be taken to avoid the possibility of re-circulating exhaust air with outside air by properly locating intakes and outlets in relation to prevailing wind direction.

Mechanical exhaust systems should be provided to meet the following minimum requirements:

- Washroom: Use the greater of 10L/s per m2 of floor area or 24 L/sec per sanitary fixture.
- Conform to current Labour Code, Part 2
- Adequate exhaust from parking areas, locker rooms, garbage rooms, heat generating mechanical/ electrical rooms, meeting rooms, etc.
- Make-up air for the above exhaust systems may be obtained from the adjacent corridors and offices provided that there is enough make-up air supplied into the building such that the above-noted exhaust systems are not adversely affected.

Table 5-4 Air Intake Minimum Separation Distances

Object	Minimum Distance (m)
Property line	1.0
Garage entry, loading dock	7.0
Driveway, street or public way	3.0
Limited access highway	7.0

Ground level	5.0	
Roof	0.5	
Cooling tower or evaporative condensers		5.0
Exhaust fans and plumbing vents	3.0	
Kitchen supply and exhaust air	7.0	

6.3.3.4.3 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 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.

PWGSC 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.

6.3.3.4.4 Internal Heat Gain

Occupancy Levels

The minimum occupancy should be determined as per the ASHRAE "62 Standard" or from the functional program, whichever is the greater. Sensible and latent loads per person should be based on the latest edition the ASHRAE "Handbook of Fundamentals".

For dining areas and other high occupancy spaces, occupancy loads should represent the number of seats available.

Lighting and other Equipment Loads

Lighting loads should be based on actual design loads. Other Equipment loads should be obtained through the PWGSC Project Manager from the client

Internal heat gain from all appliances-electrical, gas, or steam-should be taken into account. When available, manufacturer-provided heat gain and usage schedules should be utilized to determine the block and peak cooling loads. Typical rate of heat gain from selected office equipment should be based on the latest edition of the ASHRAE "Handbook of Fundamentals".
For exact cooling load calculations, the values provided by the electrical consultant from actual design based on the functional program requirements should be used.

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 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 exposure 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.

6.3.3.5 Mechanical Spaces

Adequate Mechanical Rooms should be provided so that each piece of equipment can be safely maintained.

Mechanical Room Placement

Mechanical rooms should be located such that heat and sound will not be readily transmitted to other parts of the building. No mechanical equipment except for exhaust fans should be installed on the roof of the building unless protected from the weather by provision of a penthouse enclosure. Roof top air handling units are not recommended, unless there are compelling reasons use them. The transmission of noise and vibration from mechanical penthouses to the floors below should be minimized and resulting

Careful attention should be given to the design of the vibration isolation system.

Service Access

Space should be provided around all HVAC system equipment as recommended by the manufacturer and in compliance with local code requirements for routine maintenance. Access doors or panels should be provided in ventilation equipment, ductwork and plenums as required for in-site inspection and cleaning. Equipment access doors or panels should be readily operable and sized to allow full access. Large central equipment should be situated to facilitate its replacement. The necessity of providing for the replacement of major equipment over the life of the building should be recognized, and it should be insured that provisions are made to remove and replace, without damage to the building structure, the largest and heaviest component that cannot be further broken down.

Roof mounted equipment should be readily accessible for maintenance by elevator cab stop or a large stairway. The use of temporary ladders, steep stairwells and ship's ladders should be avoided.

Confined Space

Such type of space should be avoided or made to fall outside such classification where feasible.

Heating and Ventilation of Mechanical Rooms

All mechanical rooms shall be mechanically ventilated to maintain room space conditions as indicated in the National Building Code, and, ASHRAE 15. A minimum of 1 ACH (Air Change per hour) is required.

6.3.3.6 Special Spaces

Special Purpose Areas

Mechanical requirements for special purpose areas should be finalized with Client representatives during design development.

24-Hour Spaces

All areas designated as requiring 24-hour operations should be provided with a dedicated and independent HVAC system.

Elevator Machine Rooms

Space temperature conditions should be maintained room as required by equipment specifications, and in accordance with CAN/CSA B44 Safety Code for Elevators. Consider the use of secondary chilled water for cooling, and the use of elevator machine heat rejection for heating. Ensure that the elevator design minimizes the draw of interior air through stack effect.

Vestibule Pressurization

A dedicated air handling unit will be provided for pressurization of the vestibule areas.

6.3.3.7 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 should 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 should be co-ordinated and integrated where possible with other divisions including architectural, structural, and, electrical.

Psychometric analyses (complete with chart diagrams) should be prepared for each air-handling unit application, characterizing full and part load operating conditions.

Air-handling unit/coil designs should assure that conditioned space temperatures and humidity levels are within an acceptable range, per programmed requirements, and ASHRAE Standards 55 and 62.

Air Filters

Air filtration should be provided in every air-handling system. Air-handling units should have a disposable pre-filter and a final filter. The filter media should be rated in accordance with ASHRAE Standard 52. Pre-filters should be MERV 8 or better. Final filters should be MERV 13 or better. Filter racks should be designed to minimize the bypass of air around the filter media with a maximum bypass leakage of 0.5 percent.

Air Delivery Devices

Ceiling diffusers should be specifically designed for VAV air distribution. "Dumping" action at reduced air volume and sound power levels at maximum air volume should be minimized.

6.3.3.8 Humidification and Water Treatment

Humidifiers and Direct Evaporative Coolers

Make-up water for humidification systems should originate directly from a domestic cold-water source.
For humidification, use natural gas fired steam humidifiers. All associated equipment and piping should be of corrosion resistant material where required.

Hot Water Heating Systems

The existing heating system consists of two natural gas fired hot water boilers located in the penthouse. There are no changes anticipated for the heating system with the exception of the removal of the existing AHU heating coils and piping, possible changes to the perimeter heating zoning and piping to new AHU heating coils.

Freeze Protection

PWGSC 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.

6.3.3.9 Heat Recovery Systems

Heat recovery systems should be utilized in all ventilation units (100 percent fresh air 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.

Chilled Water Systems

The existing chilled water system consists of two liquid chillers locates in the penthouse and a cooling tower mounted outside on the adjacent roof area. There are no changes anticipated for the chilled water system with the exception of the removal of the existing AHU cooling coils and piping and piping to the new AHU cooling coils.

Special Cooling Systems

Computer Room Air-Conditioning Units

The requirements of MD15116 Computer Room Air Conditioning should be met.

6.3.3.10 Hydronic Systems

Constant flow closed loop circuits should be piped in reverse return. 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. Only minor changes to the heating systems on floors 1 to 4 are anticipated.

6.3.3.11 Noise Control, Vibration Control and Seismic Design

For Acoustical criteria for all building spaces refer to "Selection Guide for Vibration Isolation," ASHRAE 99 Application Handbook, Chapter 46.

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 in ASHRAE Applications Handbook, Sound and Vibration Control. 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. The existing fresh air relief air and exhaust air shafts are to be reused

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

System sound levels at maximum flow should be carefully evaluated to ensure acoustic levels requirement 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.

6.3.3.12 Energy Monitoring and Control System (EMCS)

General Requirements

The building has an existing EMCS based on Delta Controls and installed by Control and Equipment in 2008. This system features native BACnet firmware. Unless new work involves expanding the existing system by more than 25%, any new controls work should be kept exclusive to Delta Controls.

In the event that another control system is considered, it should also have native BACnet capabilities and be totally and seamlessly integrates with the existing Delta System.

6.3.3.13 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 and automatic control systems.

Testing and Balancing

Testing, adjusting and balancing of air distribution and hydronic systems performed by the Contractor must be verified and documented. (see RS12) The results of not less than 20% of all reported measurements should be verified and documented. Provide documented design intent and balancing drawing for achieving the intended system flow rates, pressures, and temperature and humidity levels. A report is to be provided at the time of systems commissioning based on design criteria, controls sequence and actual HVAC systems response.

Performance Testing

Specifications should include performance testing of all equipment and systems including air handling and other systems for part load and full load during summer, winter, spring and fall season as per the schedules specified by the designer as per part of the commissioning process.

Pressure and Leak Testing

For low-pressure ducting, leakage testing is not required.

6.3.3.14 Fire Protection

The existing fire protection system is to be modified as required to provide the required coverage in the new penthouse and changes required as a result of work carried out on the floors.

Fire Alarm Systems

Fire alarm systems shall not be integrated with other building systems such as building automation, energy management, security, etc. Fire alarm systems shall be

self-contained, stand alone systems able to function independently of other building systems.

6.3.4 Electrical Objectives

6.3.4.1 General description

This work includes a moderate upgrade of 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. The existing lighting control system shall be replaced or modified to allow for automatic control of lighting loads in the building while allowing for 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 panelboards 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 through out the building. In addition, replacement of the bus duct should be considered.

A complete rebuild of the communications system is also required including new communications rooms, pathways and spaces, wiring, racks and terminations.

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

The upgrading of the fire alarm system is not required beyond code requirements and changes required due to wall and ceiling moves for instance.

The high voltage entrance has been replaced in 2010. All switchboards and panel boards beyond the main breaker shall be replaced. Two digital meters and connections to the PWGSC network are required.

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

Provide a full fault co-ordinating 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

6.3.4.2 Design Basis

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

.1 Safety to personnel during operation and maintenance.
.2 Ease of maintenance of equipment.
.3 Flexibility of electrical services.
.4 Proper co-ordination of all elements of the system as to:
  .1 insulation levels,
  .2 interrupting capacities,
  .3 protective devices,
  .4 mechanical strength, and
  .5 hazardous location classification.
.5 Energy Conservation.
  .1 Meet or exceed Model National Energy Code of Canada for Buildings 1997 for energy efficiency.
  .2 Meet the Enercan proposed amendment to the energy efficiency regulations.
  .3 Submit calculations for review.
.6 Sub-metering capability
  .1 Provide the ability to easily monitor the electrical consumption of various building systems.

6.3.4.3 Codes and Standards

1. Electrical work to conform with the Canadian Electrical Code and application local regulations.

2. Require CSA approval on equipment as applicable. Other approval agencies as applicable.

3. Specify applicable standards for equipment; i.e., EEMAC, CSA, ULC, ASTM, NFPA, ANSI, etc.

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

6.3.4.4 Materials and Equipment

.1 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.

6.3.4.5 Incoming Electrical Services

1. The incoming high voltage electrical service was replaced in 2010. This service originally consisted of two high voltage lines with a high voltage transfer switch and two high voltage transformers located in the basement of the RCMP J division building. The new service entrance replaced the high voltage portion placing it outdoors and reconnecting the existing switchboards / breakers.

2. Replace remaining electrical switchboards / breakers located in the electrical room.

3. 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 PWGSC for approval prior to completion. This single line drawings shall be provided to in PWGSC - CAD format with a paper copy posted in the electrical room.

6.3.4.6 Electrical Room

1. 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.

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

3. 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. Retain transformers in the main electrical room where possible.

6.3.4.7 Office Space Distribution

.1 System to be capable of supplying power to office areas and to be flexible with respect to future changes in office layout. Ensure compatibility / inter operability with other anticipated systems (e.g. furniture, screen systems.) Circuit density

shall be 4 (four) 2 wire circuits for approximately every 40 square meters. Do not share neutrals or grounds.

.2 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 / inter operability with other anticipated systems (e.g. furniture, screen systems).

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

.4 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.

6.3.4.8 Fire Alarm System

.1 General: Upgrade components as required in accordance with:

.1 CAN/ULC-S-524-M91, Installation of Fire Alarm Systems.
.2 ULC-S525-1978, Audible Signal Appliances for Fire Alarm.
.3 CAN/ULC-S526-M87, Visual Signal Appliances, Fire Alarm.
.4 CAN/ULC-S527-M87, Control Units, Fire Alarm.
.5 CAN/ULC-S528-M91, Manual Pull Stations.
.6 CAN/ULC-S529-M87, Smoke Detectors, Fire Alarm.
.7 CAN/ULC-S530-M91, Heat Actuated Fire Detectors, Fire Alarm.
.8 CAN/ULC-S531-M87, Smoke Alarms.
.9 CAN/ULC-S536-M86, Inspection and Testing of Fire Alarm Systems.
.10 CAN/ULC-S537-M86, Verification of Fire Alarm Systems.
.11 CAN/ULC-S541-M87, Speakers for Fire Alarm Systems.
.12 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.
.13 TB OSH Chapter 3-4, 01-02-92, Treasury Board of Canada, Occupational Safety and Health, Chapter 3-4, Standard for Fire Alarm Systems.
.14 NBC-1995, National Building Code of Canada.
.15 CSA B222.0.
.16 Treasury Board Personnel Management Manual - Chapter 7-5.

.2 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.

.3 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)

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

6.3.4.9 Lighting General

1. The existing lighting is to be upgraded / replaced with energy efficient T8 or T5 fluorescent lighting. The 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.

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

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

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

5. Upgrade or replace existing lighting control system with the following options:
   - .1 High resolution colour monitor.
   - .2 Desk top 132 column printer.
   - .3 Manual switch / motion detection and digital telephone override.
   - .4 Submit a life cycle cost analysis with the design synopsis.
   - .5 Motion control sensors
   - .6 Light shedding at window locations

6. .Submit a computer analysis of the lighting for typical spaces. Output to show in tabular format:
   - .1 Explicit light loss factors.
   - .2 Horizontal illuminance.
   - .3 Vertical illuminance where relevant.
   - .4 VCP
   - .5 RVP
   - .6 CRF

7. 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.

8. Co-ordinate the design with the space/unit requirements outlined elsewhere in the Brief (phase 2).

6.3.4.10 Emergency Lighting

.1 Review and provide sufficient additional emergency lighting to permit a safe evacuation. 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.

.2 Emergency lighting units must be performance certified by CSA as meeting CSA Standard C22.2, No. 141.

6.3.4.11 Exit Signs

1. 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.

6.3.4.12 Security Systems

.1 Upgrade components where moved or affected by construction.

6.3.4.13 Card Access and Security Systems

.1 Upgrade components where moved or affected by construction.

6.3.4.14 Mechanical connections

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

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

.3 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 where feasible.

.4 Upgrade / replace MCCs to meet the requirements of the mechanical requirements identified in this request.

6.3.4.15 Standby Power

1. No major upgrades to the emergency power systems is requested. Verify the generator room and surrounding space and 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.

6.3.4.16 U.P.S. and Power Conditioner

1. No upgrades to the UPS is required under this proposal. The power feed may be affected in panel board replacement as listed above. Provide an 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 time the existing unit.

6.3.5 Communications

6.3.5.1 Design Basis

1. 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. This design assumes a compete replacement including backbone and vertical runs, trays and pathway.

6.3.5.2 Codes and Standards

.1 Design a telecommunications system in accordance with the following guidelines and standards. Provide justification and recommendations whenever following guidelines is not recommended.
.2 CAN/CSA-T527 - Grounding and Bonding for telecommunications in Commercial Buildings
.3 CAN/CSA-T528 - Design guidelines for Administration of telecommunications Infrastructure in Commercial Buildings
.4 CAN/CSA-T529 - Design Guidelines for Telecommunications Wiring Systems in Commercial Buildings
.5 CAN/CSA-T530 - Building Facilities, Design Guidelines for Telecommunications
.6 TBITS 6.9 COSAC - Canadian Open Systems Application Criteria (COSAC), Telecommunications wiring system in Government-Owned and leased buildings - Technical Specifications
.7 CEC - 22.1 - 98 - Canadian Electrical Code

6.3.5.3 Spaces

1. 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 .

2. 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.

6.3.5.4 Pathways

1. Update communications pathway for this building. Provide a horizontal and vertical pathway system compatible with usable floor space. This may include

tray above the ceiling, tray below the floor, zoned conduit systems, etc. Consider flexibility that will allow economic churn of workstations without recabling of the space.

2. Verify early in the process the pathway requirements for the RCMP. There will be areas that will be unacceptable to use for pathways due to adjacent spaces or the floor above.

6.3.5.5 Wiring

1. Provide recommendations with respect to the wiring system using flexibility, reduced future churn costs and sustainability as part of the design criteria. 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.

2. 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.

3. During the Pre-Design stage of the project, RCMP needs analysis will be required to determine the extent of wired structure to be utilized within each area. Wireless communications may not be used unless written permission is provided per system by the RCMP. RCMP security directorate will provide final direction on wiring and pathways.

4. 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. RCMP will have final say on any design proposal.

6.3.5.6 Voice Communications System and backbone cabling

1. 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.

6.3.6 Vertical Transportation

1. Update elevators to the requirements of the National Building Code, National Fire Code, and CAN/CSA-B44, Safety Code for Elevators. (Most Recent Versions) and Public Works and Government Services Canada Design Standard AES/SAG 101:92-2 entitled "Elevators, Dumbwaiters, Escalators and Moving Walks," March, 2010.

2. Designs shall be non-proprietary in nature. Direction shall come form PWGSC Electrical Department.

6.3.6.1 Passenger Elevators

1. Perform detailed traffic analysis for pedestrian planning and design. Submit at Concept and update at Design Development.
   - Include ease of handicapped access,
   - Handling capacity for peak, and off peak periods, population flow.
   - Minimum waiting times
2. Equipment to be totally universally maintainable, non-proprietary.
3. Motor Controls and Motor Drive System to be VVVF type.
4. Supervisory System to be Intelligent Motion Control type.
5. Operating and Dispatching to be microprocessor type system, capable of dispatching multi-car groups.
6. System to be equipped with Central/Remote Monitoring feature.
   - Real time system monitoring,
   - Immediate fault notification,
   - Comprehensive system performance reporting,
   - Multiple connectivity options.
   - Be capable of interfacing with all makes and types or elevators/escalator control systems.
7. System to be 100% supported by Emergency Back-Up Power
8. Electric elevators required.

6.3.6.2 Freight Elevators

1. Perform detailed traffic analysis for freight planning and design. Submit at Concept Stage and update at Design Development.

- Handling capacity for peak, and off peak periods, freight flow.
- Minimum waiting times

2. Equipment to be totally universally maintainable, non-proprietary.
3. Motor Controls and Motor Drive System to be VVVF type.
4. Supervisory System to be Intelligent Motion Control type.
5. Operating and Dispatching to be microprocessor type system, capable of dispatching multi-car groups.
6. System to be equipped with Central/Remote Monitoring feature.
   - Real time system monitoring,
   - Immediate fault notification,
   - Comprehensive system performance reporting,
   - Multiple connectivity options.
   - Be capable of interfacing with all makes and types or elevators/escalator control systems.
7. Car to service all floors, including machine room penthouse floor.
8. System to be 100% supported by Emergency Back-Up Power
9. Electric elevators required.

6.4 Security requirements for building design

The RCMP 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.

6.5 Construction Phasing

The building will remain occupied during construction.

A portion of the building population 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.

Approximately 80% of the building population will be relocated in 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 the construction phasing plan.

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.

6.5.1 Suggested Mechanical Construction Sequence

The following sequence is provided to the consultant as a possible starting point for the phasing of the mechanical work. The consultant is expected to review and modify / change the sequence to simplify construction while maintaining comfort and operational capacity of the building during the phasing of construction.

1. Pressure test existing SA duct shafts to 1000 kPa.
2. Pressure test existing RA and EA duct shafts to negative 500 kPa.
3. Clean existing duct shafts.
4. Install a new FA intake hood on the roof of the existing penthouse.
5. Reduct existing FA fan 16-5 to the new intake hood (6750 l/s).
6. Carry out necessary structural work on the 4th floor to strengthen the roof for the new penthouse extension.
7. Construct the new penthouse addition.
8. Install the 2 new AHUs in the penthouse. Fans to have VFDs. Install crossover ductwork and damper to allow one AHU to supply the entire building.
9. Install the 2 new RA fans in the penthouse. Install crossover ductwork and dampers to allow one RA fan to serve entire building. Fans to have VFDs.
10. Install the 2 new ERVs in the penthouse. New ERVs to have separate supply air fans and exhaust air fans. ERVs to operate as exhaust only when AHUs are in the free cooling mode and as ERVs when minimum FA is required ERVs to hot water heating coils to temper the FA. Fans to have VFDs.
11. New AHUs and RA fans and ERVs to be ducted to OA and EA louvers, all piping completed, all electrical requirements completed, and all controls completed.
12. Disconnect East FA shaft from SF 16-5 and make connection to new AHU 1.
13. Disconnect East RA shaft from EFs 16-3A and 16-3B and connect to new RF1.
14. Disconnect West FA shaft from SF 16-5 and make connection to new AHU 2.

15. Disconnect West RA shaft from EFs 16-4A and 16-4B and connect to new RF2.
16. Remove existing exhaust fans EF 16-1 and EF 16-2. Connect existing exhaust duct shafts to the new ERVs.
17. Compartmental units can be removed to satisfy the phasing plan. Upon removal, the floor distribution ductwork will be connected directly to the SA duct shafts.

PD 7 CONSULTANT SERVICES

It is recognized that the Consultant may not possess in-house expertise for all of the requisite or proposed disciplines and specialities. The Request for Proposal permits the Consultant to contract required Sub-consultants and Specialists to its team.

PWGSC will have no direct contractual relationship with Sub-consultants engaged through third party contracts. The Consultant will be solely responsible to PWGSC under the terms of the Agreement.

The combined list of firms and key personnel included as Consultants, Sub-consultants and Specialists comprise the Integrated Consultant Design Team (Consultant Team). The Consultant Team will be required to maintain its expertise for the duration of the project.

The Consultant will be responsible for co-ordination and direction of all Consultant Team activities.

The Consultant Team must be comprised of qualified professional and technical expertise with extensive relevant experience capable of providing, at minimum, the services identified below. All members of the Consultant Team must be eligible to work in New Brunswick. Members of the Consultant Team may have the necessary qualifications and expertise to provide services in more than one discipline or speciality.

The consultant team members must work and communicate closely with their corresponding members in the PWGSC AES Resource team. PWGSC resource team is responsible to ensure the consultant applies the proper design process as part of their quality assurance mandate. The consultant is fully responsible and liable for all their work and services including their own quality control.

The consultant must provide all substantiation document for their services to PWGSC team when requested at each submission such as life cycle cost analysis, feasibility reports etc. for options, recommendations, and considered features.

The following list identifies the various types of expertise that will likely be required for this project:

- Architecture
- Commissioning
- Communications design
- Construction safety
- Cost control
- Electrical engineering
- Resident site personnel
- Registered interior design
- lighting design
- mechanical engineering
- security

- structural engineering
- Elevator engineer
- Construction contract administration

The Consultant shall:

1. Throughout all phases of the project, assume responsibility for co-ordinating the work of any Sub-consultants and specialists retained by the Consultant.

2. Ensure clear, accurate and ongoing communication of concept, budget, and scheduling issues (including changes) as they relate to the responsibilities of all Sub-consultants and specialists from pre-design analysis to post construction reports. Co-ordinate input for the Project Manager's Risk Management Plan. Co-ordinate the Quality Control process ensuring all submissions are complete and signed-off by the designated Senior Reviewer as detailed in RS 11.

PWGSC shall perform the following functions:

- material testing
- acoustic testing
- thermographic testing
- project management
- claims analysis
- media relations
- contract administration
- contracting
- Architectural and Engineering Services quality oversight.
- Risk management
- Communication with the tenant

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RS 13 Bilingual Construction Documents

ADDITIONAL SERVICES

AS 1 Resident Construction Services

PA 1 PROJECT ADMINISTRATION

INTENT

The following administrative requirements apply during all phases of project delivery.

1.1 PWGSC PROJECT MANAGEMENT

The Project Manager assigned to the project is the PWGSC Departmental Representative as defined in General Conditions of the Contract.

The Project Manager is the Departmental officer directly concerned with the project and responsible for its progress. The Project Manager is the liaison between the Consultant, Public Works and Government Services Canada, the RCMP, the Commissioning Manager, Building Management and the Contractor.

Public Works and Government Services Canada administers the project and exercises continuing control over the Consultant's work during all phases of development. Unless directed otherwise by the Project Manager, the Consultant obtains all Federal requirements and approvals necessary for the work. The consultant shall:

1. Carry out services in accordance with approved documents and directions given by the Departmental Representative.
2. Ensure all communications carry the PWGSC's Project Title, Project Number and File Number.
3. Advise the Departmental Representative of any changes, that may affect schedule or budget or are inconsistent with instructions or written approvals previously given. The consultant shall detail the extent and reasons for the changes and obtain written approval before proceeding.

1.2 GENERAL 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 unless otherwise specified.

1.3 LINES OF COMMUNICATION

Unless otherwise arranged with Project Manager, the Consultant shall communicate with the Project Manager only. The Project Manager will arrange for direct communication with the various stakeholders at the appropriate stages of the project. Should these discussions result in potential impact on consultant fees, scope of work or

project scope, the consultant is to advise the Project Manager and await authorization before proceeding with work in question.

During construction tender call, Public Works and Government Services Canada conducts all correspondence with bidders and makes the contract award.

1.4 MEDIA

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

1.5 MEETINGS

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

- Client Department
- Consultants
- Public Works and Government Services Canada

The Consultant shall attend the meetings, record the issues and decisions and prepare and distribute minutes within 72 hours of the meeting.

1.6 PROJECT RESPONSE TIME

It is necessary that key personnel, or their designated substitutes, of the successful proponent, sub consultants or specialist firms be available to attend meetings or teleconferences and respond to inquiries within a reasonable length of time. For example, during construction, the qualifiers listed below will require the associated response time:

Urgent - warrants a response within two (2) hours because to leave it outstanding any longer would, for example, adversely affect the continuance of work on site if not resolved immediately
High Priority - requires a response within one (1) day to avoid delays
All other items - to be addressed within three (3) days

Where firms are not in close proximity to "the Project", they shall ensure that they have local representation (identified in submission) with the capabilities to meet the required project response times.

1.7 ISO 9001 CERTIFICATION

Certain sections of PWGSC Atlantic Region (including Project Management), are ISO 9001 certified at the time of publication of this document. Compliance with the most current PWGSC work procedures and documentation practices will be required throughout all phases of this project. The Project Manager will advise in advance of any requirements that exceed those detailed herein. Contact the Project Manager whenever clarification is required regarding compliance with PWGSC quality assurance and quality control practices.

1.8 QUALITY ASSURANCE/QUALITY CONTROL MEASUREMENTS FOR CADD DATA

The Consultant, in provision of CADD data files, shall adhere to the most current version of “Doing Business with A&ES, Atlantic Region” as attached as Appendix "D" and with the Atlantic Region document "PWGSC, Atlantic Region, CADD Data Specification" . The latest version of this document is available at

http://www.tpsgc-pwgsc.gc.ca/cdao-cadd/atlantique-atlantic/atl-cdao-cadd-intro-eng.html

PWGSC, RPS shall ensure Quality Assurance (QA) of the delivered CADD data files and printed drawing plans by conducting a CADD drafting review using a checklist form entitled "PWGSC, Real Property Services Quality Assurance (QA) Checklist for CAD Drafting" that is included in the Appendices of the "PWGSC, RPS CADD Data Specification". The QA Checklist has approximately 20 QA items that are assessed; passmark is 80%. Additionally, there are several QA items that a zero tolerance for non-conformance has been established. **The Consultant is required to use the QA Checklist form to perform a Quality Assurance self-assessment of the CADD data files to be delivered.**

In circumstances where, PWGSC receive CADD data files from the Consultant that do not meet the 80 percentile passmark established in the "PWGSC, Real Property Services Quality Assurance Checklist for CAD Drafting", PWGSC will deem the work unacceptable and thereby require the Consultant to correct the problem(s) at the Consultant's cost. Furthermore, PWGSC reserves the right to make use of the printed drawing plans resulting from the CADD data files with no obligation to the Consultant for payment of the work until the CADD data files are corrected. In addition the full cost(s) of subsequent reviews will be borne by, and back charged to, the Consultant.

CADD data files will be reviewed for adherence to the "PWGSC, RPS CADD Data Specification" at **each scheduled drawing submission**. PWGSC reserves the right to request CADD data files at any point of the scheduled work to conduct a CADD drafting review.

1.9 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 fire fighting 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 PWGSC and Facility Management contacts.

.4 On-site Communication Plan:

.1 Procedures for sharing of work related safety information to subconsultants, 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 subconsultants.

.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 subconsultant 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.

1.10 SECURITY CLEARANCES

The following Security Instruction applies to Consultants working on RCMP projects. This Instruction is intended to explain the process to be followed by the Prime Consultant who needs to have personnel security cleared to work on RCMP sites.

1.10.1 Definitions

RCMP Sites - All locations currently occupied by RCMP staff or equipment, including private leased space, PWGSC or other Federal Government space, and RCMP owned space.

PWGSC Project Manager - PWGSC staff acting as the contracting authority, responsible for carrying out project work at RCMP sites.

Authorized Departmental Official - The PWGSC Project Manager is considered to be the Authorized Departmental Official.

Reliability Status Clearance - RCMP Facility Site Access that allows an individual to enter an RCMP site or have access to information about the RCMP site (i.e. Project drawings).

Site Access Clearance - RCMP Clearance level that allows an individual access to an RCMP site when escorted by an RCMP Member, PWGSC Project Manager with appropriate clearance level, RCMP Property Management Representative or authorized Member of the Canadian Corps of Commissionaires. It should only be requested as an exception when the individual needs immediate access to the site.

Controlled Documents - Documents, either in hard copy or electronic medium, containing any information that is identified as TOP SECRET, SECRET, CONFIDENTIAL, or PROTECTED by Canada, confidential or proprietary to third parties, and all information conceived, developed or produced by the Consultant or Contractor as part of the Work where copyright or any other intellectual property rights in such information (except a license) vests in Canada under the Contract.

1.10.2 Security Clearance Requirements

The following staff must have security clearance levels as specified:

1. All Consultant staff working on the project must have RCMP Facility Site Access as a minimum level of security clearance. This will only include staff having

access to drawings or other RCMP project related documents, but will not those involved in other functions such as administration.

2. All Sub-Consultant staff working on the project must have RCMP Facility Site Access as a minimum level of security clearance. This will only include staff having access to drawings or other RCMP project related documents, but not those involved in other functions such as administration.

3. All specialists employed by the Consultant or Sub-Consultant who are required to work with the project drawings/documents or visit the site are required to have RCMP Facility Site Access as a minimum level of security clearance.

4. All inspectors who require access to the site or review of the project drawings/documents must have RCMP Facility Site Access as a minimum level of security clearance.

All individuals requiring access to an RCMP site for a project must complete the application for Reliability Status Clearance, even if they already possess a PWGSC / RCMP clearance. If an individual has already applied for and received Reliability Status for another project, they may resubmit their original form (or prepare a new form with updated information) and note that all the information still applies. This will allow for a cross-reference to their data base, updating the detail as necessary, and allowing the application to be processed..

1.10.3 Security Clearance RCMP Reliability Status

To obtain RCMP Reliability Status Clearance, the following information is required as an individual's application for clearance; as a minimum:

- Completed Form TBS/SCT 330-23E (Rev.2002/02)
- Completed PWGSC Security Form "A"
- Proof of Identity (picture ID)
- Minimum of two sets of finger prints (some applicants may be asked to provide additional sets of finger prints if requested by RCMP.)
- Proof of Canadian Citizenship (if a Canadian Citizenship Certificate is provided, copy both sides of the certificate.

1.10.4 Application Procedure and Responsibilities

The Prime Consultant is responsible for ensuring the PWGSC/RCMP security requirements are met by all personnel working on the project. This includes all individuals listed in Section 1.10.2 above. The Prime Consultant is responsible to:

- Distribute the form TBS/SCT 330-23E (Rev.2002/02) to all individuals requiring clearances with appropriate instruction and sample forms.

- Distribute copies of PWGSC Security Form "A" to all companies involved and instruct their management to complete one form for each employee requiring security clearance.

- Collect and assemble the completed forms by company with Form "A" attached to the TBS/SCT 330-23E for each applicant.

- Verify that all forms have been completed correctly with all signatures, initials and information supplied as specified.

- Ensure all applications include copies of a picture ID, two sets of finger prints and Proof of Canadian Citizenship.

- Ensure that all security documents when completed are treated as private and confidential. Completed documents must be kept in a locked cabinet.

- Establish a record of the status of all security clearance requests, listing by company, the individual's name, when the forms were requested, when the completed forms and documentation was received from the individual, when the application was sent to RCMP, when notification was received that the individual had received security clearance.

- Maintain a current, up-to-date record of all individuals with security clearances in the Resident Construction Services Representative's office on the construction site.
- Make security list available to the Project Manager at any point on demand.

- After the appropriate information has been collected for each individual, forward the applications to the RCMP in envelopes clearly marked as "Private & Confidential". Ideally, all applicants from a particular company should be sent to RCMP at one time, however, the clearance process for a company should not be delayed due to individual's missing data.

It may take several weeks for the Enhanced Reliability Status to be processed and returned to the applicant. If more immediate access is required to the RCMP site, *RCMP Site Access* should be requested as noted on the Sample Screening form attached. This process can normally be completed within a week and will permit the individual to have access to the RCMP site under escort. In some cases, the applicant may be asked for additional information (fingerprints, etc.) if the clearance process encounters duplicates or irregularities in the application. This request will delay the approval process and must be completed prior to the individual being granted access to the location. There will be no charge for fingerprinting if taken at an RCMP Detachment provided it is identified for this project.

1.10.5 Application - Security Rejections

If a member of the Consultant's or Sub-Consultant's staff does not pass the security check by the RCMP, the individual involved will not be permitted to work on or be involved with the project team. Rejection of an individual is not intended to reflect on the individual's character or reliability but rather a statement that the RCMP have not been able to establish a clear record that permits that individual to have access to confidential RCMP documentation.

If a member of the Contractor's or Sub-Contractor's staff or any other individuals requiring security clearance does not pass the security check by the RCMP, the individual involved will not be permitted to work on or be involved with the project team.
Any individuals who have been rejected shall be replaced by another team member of equal or better qualifications by the Consultant or Contractor at no additional cost to the RCMP/PWGSC. PWGSC reserves the right to ask for verification of security clearance for any Consultant/Sub-Consultant staff member found working on the project.

1.11 SECURITY REQUIREMENTS - ELECTRONIC AND PHYSICAL DOCUMENTATION

Due to the secure nature of this project, all documents, including drawings, correspondence and photographs, must be considered to be "controlled documents." As such, surplus copies of all drawings and documentation must be shredded when no longer required. Project documentation must not be left exposed in unsecured areas in design offices or on the construction sites. PWGSC/RCMP reserve the right to carry out spot checks at any point during the design or construction phases of the project to verify that project documents are being handled appropriately.

RCMP have specific requirements as to labelling/identification of rooms in construction contract documents. These requirements will be provided to the successful consultant.

1.12 THE PROJECT TEAM

1.12.1 PROJECT TEAM ORGANIZATION AND REPORTING RELATIONSHIPS

This project is jointly funded and delivered in a partnership between the two government departments of Public Works and Government Services Canada and the RCMP. The Project Delivery Team is comprised of all main proponents involved in co-ordinating and delivering this project. While respecting the reporting relationship and

lines of communication identified in section PA 1.3, it is expected that the Consultant will work closely with all PWGSC and its client team members, with the goal of achieving a thoroughly complete design. The following identifies the organizational and reporting relationships of the PWGSC/RCMP in-house Project Team and its supporting committees.

PROJECT DELIVERY TEAM

Mandate:

- Define the project, its operating principles and goals, method of project delivery and quality assurance from a crown perspective
- Implement the project

Core Team

- Project Leader (PWGSC)
- Project Leader (RCMP)
- Project Manager
- Resource Team Leader
- Assets and Facilities Management Advisor
- Real Property Contracting

Additional Team Members/Resources

- In-house A&E Resources (e.g.: architectural, structural, mechanical, electrical, elevator, interior design, geotechnical, civil, etc.)
- Senior Project Manager
- In-house OA/RE Resources
- Telecommunications Informatics Service Representative
- Communications Representative
- Environmental Services Representative
- Outside Parties/Stakeholders
- PWGSC/Owner Investor

PA 2 SUBMISSIONS, REVIEWS & APPROVALS

2.1 AUTHORITIES HAVING JURISDICTION

Codes, regulations, by laws and decisions of “authorities having jurisdiction” will be observed. In cases of overlap, the most stringent will apply. The Consultant shall identify other jurisdictions appropriate to the project.

Work in progress is to be reviewed by the Project Manager as well as the various authorities.

Formal presentations are required for design and project approvals in accordance with the various project stages (See Required Services). Ad hoc presentations will be required to various committees and senior officials. Below is a list of federal committees that will require presentations and submissions for approval.

The frequency of meetings indicated are estimates. It will be affected by the project stage, issues and requirements for decisions and approvals. The Consultant will be required to attend all other meetings as needed and to make presentations to satisfy authorities having jurisdiction as previously identified.

PWGSC In-House Professional Services (Architectural, Engineering, Cost Planning, Interior Design)

- Submission Format: reports, estimates, drawings and specifications
  - Submission Schedule: Submissions are reviewed when completed work has been forwarded to the Project Manager
  - Expected Turnaround Time: 2 weeks
  - Number of Submissions: At end of Design Development - RS-4, 66% (RS-5), 99% (RS-5) ,100% (RS-5) (any of these may be repeated until approval has been received)

PWGSC Design Review Committee

- Submission Format: reports, estimates, schedules, drawings and specifications
- Oral presentations at PWGSC's Bedford Row office, Halifax NS
- Submission Schedule: Submissions are reviewed when completed work has been forwarded to the Project Manager based on project schedule
- Expected Turnaround Time: 1 week
- Number of Oral Presentations & Submissions: Design Development (RS-4), & 99%(RS-5) Submission until approval has been received

HRSDC Labour Canada - Fire Protection

- Submission Format: report, drawings and specifications
  - Submission Schedule: Submissions are reviewed when completed work has been forwarded to the Project Manager

- Expected Turnaround Time: 2 weeks
- Number of Submissions: As noted below, until approval has been received

Provincial, Municipal Authorities & Utility Companies

- Submission Format and Schedule, Expected Turnaround Time, and Number of Submissions: Consultant to advise on these requirements.

Chart of Reviews and Approvals

The Chart of Reviews and Approvals that appear on the following pages are intended to highlight the deliverables expected from the Consultant Team at the various stages of the project. This list does not attempt to describe the day-to-day activities that the Consultant must carry out during the progress of the work or any reports or functions that are required as a result of specific conditions that have occurred in the field that require reporting on.

In the Chart

"R" indicates that a Review is required
"A" indicates that Approval is required

Chart of Reviews and Approvals	PWGSC		HRSDC		Client	
	R	A	R	A	R	A
RS 1 Analysis of Project Requirements						
Comprehensive Summary of Project Requirements, cost estimates, (RS 9) schedule (RS 8.6)	X					X
Report on Codes, Regulations, etc., and Authorities	X					
Report on Environmental Impacts etc.	X					
Risk Management Assessment & Alternative Strategies	X					
Project Work Breakdown Structure (PWBS), showing One (1) Implementation Strategy, Cash Flow Projection - (RS 8.5)		X				
Cost Specialist's Report (RS 9)	X					
RS 2 Pre-Design Services						
Final Functional Program		X				
Implementation Strategy and Schedule - reference RS 8:	X					
Project Master Plans, schedule, cash flow, bar chart, network diagram, etc. (RS 8.5, 8.6, RS 9)	X					
Bi-weekly Progress Reports	X					
Telecommunications and Connectivity Requirements		X			X	

Security Requirements Report		X			x	
Operations and Maintenance Report (OS2)	X					
Cost Specialist's Milestone Report (RS 9)	X					
RS 3 Concept Design						
Outputs as per Section 3.2, 3.3, and 3.4:						
2 - 3 Conceptual Designs: Drawings, Sketches, & Analysis: (Architectural, Structural, Mechanical, & Electrical)		X		X		
Description of Options and Recommendations		X		X		
Project Specification Outlines and "Green" Options	X					
Class "C" Cost Estimates and Life Cycle Costs etc. (RS 9)	X					X
Concept Design Project Objectives (PD-6) Reports	X					
Hazardous Waste Disposal Strategy (s)	X					
Detailed Project Schedules (RS 8.6)	X				X	
Commissioning Report and schedules (OS 2)	X					
Cost Specialist's Milestone Reports (RS 9)	X					
Cost Specialist's Exception Reports (RS 9)	X					
RS 4 Design Development						
Design Development Documents as per RS 4.2 and RS 4.3		X		X		
Bilingual Plans and Drawings i.e. all disciplines		X		X	X	
Building Sections (minimum 3)	X		X			
Engineering Designs, Systems, and Information, (Arch., Mech., Elec. etc.)		X		X	X	
Furniture and Equipment Plans and Lists	X					
Updated Elevations and Sections		X				
Colour Graphic Renderings with digital photos	X					
Colour Schematics of interior	X		X			
Lists and outline (draft) Specifications	X		X			
Systems Operations Manuals (SOM) format and organization (RS 12)	X					
Class "B" Cost estimates (RS 9)	X					X
Time plan (Schedule) updates (RS 8)	X					
Preliminary Construction Schedules	X					
Design Synopsis (see sample format)		X		X		
Completed Design Development Reports PD-6	X					X
Operation and Maintenance Reports (OS 2.2)	X					
Cost Specialist's Milestone Reports (RS 9)	X					X
Cost Specialist's Exception Reports (RS 9)	X					X
RS 5 Construction Documents						
Deliverables as per RS 5.1, 5.2, 5.3, and 5.4:	X					
- 66 % SUBMISSION: as per RS 5.4.1. 5.4.2 and 5.4.4:					X	

Written response to questions/requests and to all technical review comments/narrative, etc.	X		X			
Updated Class "B" Cost Estimates & Analysis (RS 9)	X					X
Updated Project Schedules and Monthly Narrative Reports (RS 8.6)	X					
Updated Design Development Report (PD-6)	X					
Technical and Production Meeting Minutes	X		X			
Lists of Working Drawings	X		X			
Updated bilingual Specification Index, General Requirement Sections and Updated Draft Sections	X		X		X	
66% Bilingual Construction (Working) Drawings i.e. Architectural, Structural, Mechanical, & Electrical: plans, elevations, cross sections, layouts, wall sections, typical details, schedules, dimensions, notes, instructions, size, diagrams, calculations, & data	X		X		X	
Furniture Report	X				X	
Systems Operations Manuals (SOM) (OS 2.2)	X					
Updated Commissioning Plans (OS 2.2)	X					
Updated Commissioning Specifications (OS 2.2)	X					
Cost Specialist's Milestone Report (RS 9)	X					
Cost Specialist's Exception Report (RS 9)	X					
- 99 % SUBMISSION: as per RS 5.4.1. 5.4.2 and 5.4.5:						X
Written response to questions/requests and to all technical review comments/narrative, etc.	X		X			
Class "A" Cost Estimates	X					X
Updated Project Schedules and Monthly Narrative Reports (RS 8.6)	X					
Final Design Development Reports (PD-6)	X					
Technical and Production Meeting Minutes	X		X			
Lists of Working Drawings	X		X			
Completed Bilingual Specification Sections and Index with standard details etc.	X		X			X
99% Bilingual Construction (Working) Drawings i.e. Architectural, Structural, Mechanical, & Electrical: plans, elevations, cross sections, layouts, wall sections, typical details, schedules, dimensions, notes, instructions, size, diagrams, calculations, & data	X		X			X
Support data, studies, calculations etc.	X		X			
Final Project Descriptions		X				
Colour Schedule/Schemes (4 copies/project)	X					
Final Environmental Plans	X					

Updated Commissioning Plans (OS 2.2)	X					
Updated Commissioning Specifications (OS 2.2)	X					
Updated Systems Operations Manuals (AS-2.2)	X					
Updated Security Drawings	X					X
Cost Specialist's Milestone Reports (RS 9)	X					
Cost Specialist's Exception Reports (RS 9)	X					
- FINAL SUBMISSION: as per RS 5.4.1. 5.4.2 and 5.4.6:						
Written response to questions/requests and to all technical review comments/narrative, etc.	X		X			
Final, Class "A" Cost Estimates, Elemental Analysis, trade breakdown (RS 9)		X				X
Updated Project Schedules and Monthly Narrative Report (RS 8.6)	X					
Final Design Development Reports (PD-6)		X				
Technical and Production Meeting Minutes	X		X			
Originals of the final bilingual Specification Sections and Index and electronic (CD) copies, with standard details etc.; 2 sets per project, one retained by Consultant		X		X		X
Originals of the completed bilingual Construction (Working) Drawings & CADD files on CD i.e. Architectural, Structural, Mechanical, & Electrical: plans, elevations, cross sections, layouts, wall sections, typical details, schedules, dimensions, notes, instructions, size, diagrams, calculations, & data; 2 sets /project, 1 retained by Consultant		X		X		X
Colour Schedule/Schemes (4 copies/ project)	X					
Designated Substance Survey Reports	X					
Inspection Authorities Submissions	X					
Federal Fire Commissioner's Reports	X					
Inspection Authorities Approvals	X					
Updated Commissioning Plans (OS 2)	X					
Updated Commissioning Specifications (OS 2)	X					
Updated Systems Operations Manuals (RS 12)	X					
Cost Specialist's Milestone Reports (RS 9)	X					
RS 6 Tender Call, Bid Evaluation and Construction Contract Award						
Log and notes of clarifications of contractors inquires	X					
Addenda and associated drawings and specifications & costs (RS 8.6, RS 9)		X			X	
Changes to documents i.e. for retendering		X				
Updated Schedules (RS 8)	X				X	
Listings of shop drawings, Material Samples, Mock-ups, etc.		X				

Listing of Extended Warranties, Maintenance Materials, Spare Parts		X				
Listings of Site work Testing and Material Testing and Detailed Testing Budget	X					
Bid Evaluation Reports and Recommendations	X					
RS 7 Construction and Contract Administration						
Minutes of Start-up Meetings	X					
Minutes of bi-weekly Job (Construction) Meetings & Bi-weekly Progress Reports	X					
Project Schedules (incl. Commissioning) Reviews (RS 8.7)	X					
Detailed Report on Delays (RS 8.7)	X					
Review of Contractors Cost Breakdowns and schedules (RS 8.6, 8.7, RS 9)	X					
Review of the Contractor's Safety Plan	X					
Site Visit Reports i.e. progress, defects/deficiencies, and as-built changes (bi-weekly)	X					
Shop Drawing Logs & reviewed Shop Drawings	X					
Report on failed tests	X					
Lists of Training	X					
Colour Boards based on Contractor’s submittals		X				
Lists of Changes	X					
Contemplated Change Notices (CCN's) with estimates (RS 9)_		X	X			
Change Orders (CO's) (RS 9)		X			X	
Cost advice and Monthly Reports on Project Cost (RS 9)	X					
Review of Contractor's monthly Progress Claims (RS 8.7, RS 9)	X					
Lists of Interim Inspection unacceptable and incomplete work and related cost estimates (RS 9)	X		X			
Verified Interim Inspection Certificates		X	X			
Operation and Maintenance Data Manuals (4 sets per project)		X				
Training Sessions (OS 2.2)		X				
Systems Operating Instructions		X				
Revised Systems Operating Manuals		X				
Verified Final Inspection Certificates		X	X			
Post Contract Drawings		X	X			
As-built Drawings		X	X			
Record Drawings and Specifications		X	X			
RS 8 Project Time Planning, Scheduling and Control						
Variance Analysis Report (RS 8.7.1)	X					
RS 9 Estimating and Cost Planning						

Listed under RS 1-7						
Project Cost Performance Reports (RS 9)	X					
RS 10 Post Occupancy Services						
Debrief of Commissioning Activities Reports		X				
Reports on non-contractor related issues	X					
Reports on System adjustments	X					
Ten (10) Month Warranty Reports		X				
Final Warranty Reviews		X				
Consultants Feedback Report	X					
Post Occupancy Evaluation	X					
RS 11 Integrated Consultant Team Quality Assurance						
All Deliverables to be reviewed as per RS 11	X					
AS 1 Resident Construction Services						
Records of Construction Work	X					
Daily Records	X					
Time Sheets		X				
Daily Log of Inspections	X					
Weekly Reports	X					
Other Reports as per Project Manager request	X					
Site Records	X					
Updated Progress Schedules	X					
Marked up sets of Original Contract Drawings	X					
Memorandum on Deficiencies / Deviations	X					
Deficiency reports: Interim, Final etc.		X	X			
Daily Logs of Tests and Test Results	X					
Notices to contractor of Safety issues	X		X			
RS 12 Commissioning the Facilities						
Commissioning Report	X					
Performance Verification (PV) Reports	X					
List of technical staff for testing	X					
Report on adjustments to system operation and revisions to documentation	X					

2.2 OTHER SUBMISSIONS, REVIEWS AND APPROVALS

Although the Federal Government does not formally recognize jurisdiction at other levels of government, voluntary compliance with the requirement of these other Authorities is required unless otherwise directed by the Project Manager. In areas of conflict concerning Provincial requirements, the more stringent will apply.

The Consultant will identify any other Authorities Having Jurisdiction and endeavour to ensure that all design work meets or exceeds all codes, regulations and standards of these other authorities having jurisdiction.

All drawing and specification submissions shall include the following checklist. The consultant is responsible to follow and to update the check list to the most current version of the code, regulation or standard listed.

CHECKLIST FOR THE SUBMISSION OF CONSTRUCTION DOCUMENTS

Title Block

Project Title:	**Date:**
Project Location:	**Project Number:**
Consultant's Name:	**Contract Number:**

PWGSC PM:	**Review Stage:**
	66% **99%** **100%**

Standards & Guidelines

Item	**Checked by:**	**Comments:**
General The design meets the requirements of;		
National Building Code - 2010		
National Fire Code - 2005		
National Plumbing Code - 2005		
Canada Labour Code		
NFPA 10 - Standard for Portable Fire Extinguishers - 2002		

NFPA 13 - Standard for the Installation of Sprinkler Systems - 2007		
NFPA 14 – Standard for the Installation of Standpipe and Hose Systems - 2003		
Treasury Board The design meets the requirements of;		
Chapter 3-6: Fire Protection Standard for Correctional Institutions. http://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=13580		
Chapter 3-2: Fire Protection Standard for Design & Construction. http://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=13581		
Fire Protection Standard for Electronic Data Processing Equipment. http://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=13582		
HRSDC Fire Protection Engineer Standards The design meets the requirements of;		
Federal Fire Protection Standards. http://www.hrsdc.gc.ca/eng/labour/fire_protection/policies_standards/index.shtml		
FC-403 Standard for Sprinkler Systems. http://www.hrsdc.gc.ca/eng/labour/fire_protection/policies_standards/commissioner/403/page00.shtml		
FC-311-M Standard for Record Storage. http://www.hrsdc.gc.ca/eng/labour/fire_protection/policies_standards/commissioner/311/page00.shtml		
Labour Canada Standards The design meets the requirements of;		
Canada Labour Code. http://laws.justice.gc.ca/en/L-2/		
Canada Occupational Health and Safety Regulations. http://laws.justice.gc.ca/eng/SOR-86-304/index.html		
Movable Storage Units Standard. http://www.hrsdc.gc.ca/eng/labour/fire_protection/policies_standards/guidelines/mobile.shtml		
ASHRAE Standards The design meets the requirements of;		
ANSI/ASHRAE 55 – 2004 Thermal Environmental Conditions for Human Occupancy		
ASHRAE 62.1 – 2007 – Ventilation for Acceptable Indoor Air Quality		
ASHRAE Applications Handbook		
ASHRAE Fundamentals Handbook		
MD 15116 – Computer Room Air Conditioning Systems - 2006		
MD 15161 – Guidelines for the control of Legionalla in mechanical systems		
MD 250005 – Energy Monitoring and Control Systems Design Guidelines - 2009		

Specifications – All Disciplines

Item	Checked by:	Comments:
General The Specifications meet the requirements of;		
The NMS Users Guide. .		
Masterformat 2004		
The current edition of the NMS database		
Deletion of "Related Sections" and "Section Includes" throughout.		
PWGSC GCs for projects tendered through PWGSC		
Consistent use of CCDC or other for privately tendered projects.		
Non-proprietary Specifications.		
Being completely edited with removal of all square choice brackets and Spec Notes.		
Including all relevant Sections as evident by the by the scope of work indicated by the drawings.		
Not referring to the Tender Submission (Contract B)		
Use of command imperative style of language.		
Formatting in either the NMS 1/3 - 2/3 page format or the Construction Specifications Canada full page format.		
Each Section starting on a new page and the Project Number, Section Title, Section Number and Page Number show on the header of each page only.		
Specification headers not including date or consultant's name.		
Departmental Representative being used throughout instead of Engineer, PWGSC, Owner, Consultant or Architect. (That is; the contractual entity)		
Non use of notations such as: "verify on site", "as instructed", "to match existing", "example", "equal to", "equivalent to" and "to be determined on site by".		
Dimensions being provided in metric only.		
Indicating the latest edition of all references noted in Part 1 of each Section and that un-used reference Standards are deleted.		
No bolding of text.		
Use of Western Regions standard payments procedures clause.		

Drawings General – All Disciplines

Item	Checked by:	Comments:
General The Drawings meet the requirements of;		
PWGSC Western Region AutoCAD drafting standards.		

Using the “toolkit” and the “drawing checker”.		
All dimensions in SI. No dual dimensioning has been used.		
Providing a north arrow.		
Providing a legend on all relevant sheets.		
Indicating grid lines on all sheets.		
Using standard scales. (1:50, 1:100 etc.)		
Cross referencing and detailing is consistent.		
No Specifications on drawings.		
All notes being written in the command imperative style of speech.		
Not naming the “Contractor” or “sub trades” in the notes.		
Numbering all rooms on all floor plans.		
Using appropriate line weights to differentiate new versus existing versus demolition.		
Using font sizes and types following PWGSC drafting standards.		
Providing separate drawings for demolition and new work.		
Drawing acceptance by the FPE of HRSDC.		

Drawings - Discipline Specific (Top 10 for each)

Item	**Checked by:**	**Comments:**
Architectural The Drawings meet the requirements of;		
Providing a Building Code Analysis.		
Indicating fire separations and firewalls and rating.		
Providing a complete site plan with all related details.		
Providing a fully detailed reflected ceiling plan showing lighting, diffusers, sprinkler heads, etc.		
Wall sections being coordinated with the structural and other disciplines drawings.		
Building elevations showing all mechanical and electrical ancillaries.		
Sub surface drainage being shown on the foundation plans and coordinated with all other disciplines.		
Accessibility conforming to CAN/CSA 651-04.		
Coordination of door, finish, hardware schedules in conjunction with fire separations and other disciplines.		
All conflict points identified by BIM have been resolved.		
Structural The Drawings meet the requirements of;		
Ensuring that General Notes provide additional information that is NOT covered in Specifications.		
Remove all information that is or should be covered by		

the Specifications.		
Note loads used for design.		
PWGSC policy of using general product descriptions, not proprietary product names followed.		
Table of Abbreviations used provided.		
Section bubbles properly cross referenced.		
Coordination with all other disciplines.		
Mechanical The Drawings meet the requirements of;		
Separate drawings for Plumbing, HVAC, Fire Suppression, etc.		
Provision for humidification with a clean source of water and no standing water		
Provision of separate HVAC zoning for each unique thermal zone.		
Providing Ventilation to ASHRAE 62.1.		
The building and systems and equipment meeting all requirements of Section 5 of ASHRAE 62.1.		
Conformance to ASHRAE 55 for; Operative temperature Air motion Radiant Temperature Asymmetry Draft Vertical Temperature Difference Floor Surface Temperature Temperature Variations with Time Cyclic Variations Drifts and Ramps		
Providing building cross-sections at all key locations showing clearances for the mechanical installation and access for maintenance.		
Providing sufficient access to mechanical equipment for maintenance.		
Providing mechanical schematics showing design pressure and temperatures as well as all instrumentation and control points labels.		
Coordination with all other disciplines.		
Electrical The Drawings meet the requirements of;		
Separate drawings for Lighting, Power, Fire Alarm System, Communication and Data, Security & CCTV etc.		
Verification and acceptance of the Grounding condition for this project.		
The Overcurrent and Short Circuit Study and confirming all components are fully coordinated.		
The Arch-Flash Study and confirming all components are fully coordinated.		

Providing Arch protection warning signs and labeling.		
Providing lighting Levels in accordance with the National Building Code and IESNA recommendations.		
Not using Armored Cable. Using Armored Cable will be allowed only for jumping from one light fixture to the other in a distance up to 3m.		
Providing identification for each circuit including: Name Voltage, Phase, Amps, Circuit-s Fed from Panel, Destination.		
The Voltage Drop Calculation for each circuit and conformance to CEC requirements.		
Providing phase load and total load for each panel and ensuring proper balance of the Electrical System.		
Coordination with all other disciplines.		
Civil The Drawings meet the requirements of;		
The design criteria. (e.g. deign vehicle for surface structures, design period and other data for WM.WW, SW and other systems including data and calculations showing design requirements and provided capacities)		
The reference standards. (e.g. minimum service connection pipe or minimum WM size, etc have been used for municipal works, name the local authority whose standards are used.)		
Indicating existing sub-grade soil properties and strength that has been used for the design is indicated on drawings or in a report.		
Indicating Bench Marks used for the Topographic Survey are shown with Northing, Easting and elevation data.		
Indicating the Final Geometric layout for existing and new infrastructures and facilities including centerline of all access roads and pipes. The data provided includes Northing and Easting of all points including start and end point and for all other points wherever there is change in direction, and all horizontal curve data		
Providing typical X-sections for all structures, including type, thickness of various materials for pavement structures, and pipe diameter, material types and thickness and SDR values.		
Providing design grades and slopes.		
Providing details for all infrastructures and facilities indicating all works and type of materials and all geometrics and dimensions..		
Coordination with all other disciplines.		

Consultant’s Declaration

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 certifying that all items noted above have been addressed, should it be found during the tendering of these documents or implementation of the project, that the items above were not properly addressed, my firm will be responsible to resolve all related issues at my firm’s expense and may receive an unsatisfactory consultant performance evaluation which could have an impact on my firm's ability to obtain work from PWGSC in the future.

Consultant’s Representative:	
Firm name:	
Signature:	
Date:	

REQUIRED SERVICES

This Description of Services covers the requirements for the; 1.) Definition, 2.) Implementation, 3.) Commissioning, and 4.) Evaluation, of a renovated Royal Canadian Mounted Police "J" Division Headquarters Facility. These four stages represent the primary delivery stages of the PWGSC "Project Delivery System," and shall be implemented, in part, by the Consultant in a systematic and chronological order through the execution of RS 1 through to RS13. Specific deliverables will be required at the completion of each stage.

By responding to this RFP, the Consultant agrees to provide all services requested within these documents.

RS 1 ANALYSIS OF PROJECT REQUIREMENTS

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.

1.2 SCOPE AND ACTIVITIES

- Visit the site
- Study and document any aspects of existing furniture and/or equipment which will require housing in the facility that could potentially affect building design. (While touring existing site, the Consultant will be accompanied by RCMP and PWGSC 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

- Review all available existing materials related to the project
- Identify any missing components or areas of concern and work with PWGSC Project Manager 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 whit existing occupancy

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 Project Manager will convene the Project Start-up meeting. The meeting will provide a venue 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 PWGSC Project Manager.

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:

Provide reports on the following:

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

Technical Requirements:

- The Consultant is required to review and report on the Technical Requirements outlined in PD6. Revise as required and resubmit for final acceptance. In part, the Consultant shall report on the requirements as they relate to various facility occupancies, design challenge, risks and project objectives.

Not withstanding these requirements, the Consultant shall recognize that this is not an all-inclusive list. The Consultant 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 Project Manager.

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

Cost Specialist Report as per RS 9

Commissioning as per RS 12

RS 2 PRE-DESIGN SERVICES

2.1 GENERAL

The purpose of this stage is to develop:

1. The final functional program with adjustments as required;
2. Functional Adjacencies relative to program requirements.
3. Implementation strategy and schedule;
4. Telecommunications and Connectivity requirements report (Develop in conjunction with RCMP);
5. Security requirements report (Develop in conjunction with RCMP).
6. In-House (PWGSC) Interior Designer will provide direction and guidance to finalize goals.
7. Commissioning interface between renovations wand new whit phasing.

2.2 FUNCTIONAL PROGRAM

2.2.1 Intent

The preliminary functional program has been developed by PWGSC and RCMP. It is the intent to use the existing program as developed and build upon the information and direction provided. The Consultant will refine and complete the building program including functional adjacencies. This final program will form the basis of the concept design to follow. The consultant is reminded that this project will be a modification within the existing building floor plate and that the building will be mostly occupied during construction.

Functional Program
A preliminary document which describes various criteria and data for the building project will be provided by PWGSC in the form of Space Requirements (Group and Unit Spaces) to the successful proponent.

The programming process used by PWGSC has attempted to answer the following questions:

- What is the nature and scope of the design problem?
- What information is required to develop a proper holistic design solution to the problem?
- How much and what type of space is needed?

The Consultant will work to determine the proximity relationships required between the spaces.

2.2.2 Scope and Activities

In refining the preliminary functional programs, the Consultant's main task is to examine RCMP's world in detail to confirm their needs and objectives. These requirements will establish criteria for evaluating potential design solutions and other strategic alternatives. This will require consultation with the RCMP representative. These Final program requirements will become the basis for the conceptual designs.

The Consultant must understand:

- The impacts of RCMP 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 PWGSC on alternatives, such as the schedule and financial implications of various renovation options. The functional programs developed are future oriented - based on medium growth projections. The Consultant shall assist PWGSC in assessing; the advantages / benefits; or the disadvantages / costs of each alternative.

2.2.3 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;
  - Preliminary lift/elevator traffic analysis using calculation and simulation software to find an initial solution that suits the magnitude and nature of the revised and updated people and goods traffic requirements in the building.

- Other requirements including:
  - Regulatory issues such as building code requirements;
  - Other requirements from Authorities having Jurisdiction;
  - Ecological and environmental concerns;

2.3 IMPLEMENTATION STRATEGY AND SCHEDULE

2.3.1 Intent

The purpose of this stage is to detail an implementation strategy to meet the project goals and objectives.

2.3.2 Scope and Activities

As outlined in section 8.6 Scheduling, the Consultant will prepare a Project Master Plan and dependent Cash Flow Projection that accounts for all major project activities and costs. Significant phases of project development include; Programming, Concept Design, Design Development, Working Drawings and Specifications, Tender, Contract Award and Phasing of Construction.

The original Master Plan will be "frozen" to provide an original Target or Baseline Schedule. This Target Plan may be revised on instruction from the Project Manager as conditions dictate. All revised Target Plans and Cash Flow Projections will be reconciled with previous targets to provide a continuous audit trail.

2.3.3 Deliverables

- The Consultant will provide the initial and subsequent Project Master Plan in the following form:
  1. CD containing all schedule and cash flow information,
  2. bar chart identifying activity durations, early/late dates, total float, percent complete and budget amounts,
  3. network diagram showing all activity sequencing, and
  4. annual and monthly actual/projected monthly cash flow in both graphical and numerical form.
  5. Biweekly progress reports
  6.

RS 3 CONCEPT DESIGN

3.1 INTENT

- To prepare the schematic design using the program objectives previously identified and refined in the Pre-Design Phase.
- To develop the pre-design submission into completed Concept.

3.2 SCOPE AND ACTIVITIES

- 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 PD-6. Produce an environmental assessment ,
- Recommend one option for further development with all supporting background and technical justifications;
- Produce a class 'C' cost estimate for each of the various options;
- Ensure that all disciplines have contributed effectively to the integrated design approach and that the energy analysis provided reflects the effects of their contributions.
- Prepare a Detail Project Schedule as per RS 8.6.1 for the project.

3.3 DETAILS

3.3.1 Architectural

- 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.

3.3.2 Structural

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.

3.3.3 Mechanical

- Several Investment Analysis have been carried out. The conclusion of each IAR is that the existing 17 air handling units be replaced by two (2) AHUs locates in a new penthouse. The concept submission shall be based on this approach.
- The concept submission shall include the removal of 55 existing exhaust fans to be replaced by no more than two HRV's.
- The concept submission shall include a description of specific mechanical requirements and function for each area or room 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 RCMP 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 metres 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.

3.3.4 Electrical

- Proposed basic electrical systems of significance to the early design.
- Distribution diagram showing single line diagrams to distribution centers.
- Floor plan(s) complete with locations of major electrical equipment and distribution centers.
- Lighting layout(s) for typical spaces.
- Distribution systems for lighting, power and telecommunications.
- List of standard PWGSC details to be utilized.
- Telephone rooms, conduits and telecommunication cable systems requirements and layout.

- Provide an electrical design synopsis, describing the electrical and communications work in sufficient detail for assessment and approval by PWGSC. Include feasibility and economic studies of proposed systems complete with cost figures and loads.

3.3.5 Elevators

Provide the following:

- Results of lift/elevator traffic analysis: Elevator Traffic Study, based on building layout as proposed, anticipated building population, traffic patterns and use. Recommendations re.: elevator, type, number, size, capacity.
- Concept drawings showing architectural, structural details associated with proposed new type of green energy elevating devices.
- Building system interconnecting requirement details.
- Floor plans showing location of elevators and control rooms.
- Elevator pit drainage system.

3.3.6 Hazardous Waste Disposal

Identify hazardous waste disposal issues and recommend strategies for mitigation.

- Develop a hazardous waste reduction and management plan. Make recommendations, verify with PWGSC. Revise as required. Obtain approval.
- Waste plan should address hazardous waste from the construction process as well as the plan for the ultimate disposal of materials used in the construction.

3.3.7 Commissioning (see RS 12)

- Define Commissioning Requirements.
- Define the operational and performance requirements of the project
- Identify responsibilities for meeting the performance requirements
- Identify life cycle operating and maintenance costs
- Identify in square meters the area to be provided to maintenance personnel, including storage for mechanical, electrical and housekeeping.
-

3.3.8 Specifications

Preliminary outline specification in PWGSC NMS format indicating main building components and options for use of "Green" components and systems.

3.3.9 Cost Estimate

- Prepare "Class C" cost estimates based on phasing;
- 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;
- Document all unit pricing, analysis, and valuation.
  - Advise on alternative procurement and construction strategies to create efficiencies wherever possible; and/or
  - Identify, forecast and analyze project-related issues including possible market shortages and potential price fluctuations.

3.3.10 Detail Project Schedule

- Prepare as per RS 8.6.1;
- Identify potential risks to schedule;
- Advise on alternative procurement and construction strategies to create efficiencies wherever possible.

3.5 DELIVERABLES

Provide the following for the project:

- All outputs described in sections 3.2 Scope and Activities, 3.3 Details
- Conceptual 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 comes with discipline sign-off;
- Report on deviation from schedule and recommend corrective measures or updated time line.
- Submit the Hazardous Waste Disposal Strategy for review, in a report
- Detail Project Schedule as per 8.6.1.
- Presentation to the PWGSC Design Review Committee for approval of the Concept Design, and any subsequent revisions and/or responses necessary to satisfy the concerns of the Committee.
- Description of sustainable design aspects of the design
- Commissioning (RS12).
-

RS 4 DESIGN DEVELOPMENT

4.1 INTENT

To further develop the approved Concept to the level of a preliminary design package. The Design Development documents consist of drawings and other documents to describe the size and character the Project as to architectural, structural, mechanical and electrical systems, materials and such other elements as may be appropriate.

4.2 SCOPE AND ACTIVITIES

- Obtain written approval from Project Manager for development of the agreed upon concept to the preliminary level
- If any alterations are demanded, document all required changes, analyze the impact on all project components, and resubmit for approval if and as required/requested
- Expand and clarify the Concept Design intent for each design discipline
- Present the design materials to the PWGSC Project Team, RCMP representatives, the Design Review Committee and any other committees, as indicated by the Project Manager
- Identify jurisdictional authorities and planned schedule of submissions prior to start of RS 4. Present design to the jurisdictions having authority where required and as per PA 2.
- Ensure full integration and co-ordination of all disciplines' design development;
- Analyze the constructability of the project and advise on the projected construction process and duration
- Continue to review all applicable statutes, regulations, codes and by-laws in relation to the design of the project
- Visit the existing site and confirm/update the inventory of all existing furniture and prepare an inventory of all existing equipment that will be reused.
- Establish draft furniture/equipment requirement lists showing all furniture, new and existing, that will be required.
- 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 principle equipment and system components proposed for use in this project.
- Develop phasing of the project .
-

4.3 DETAILS

4.3.1 **Architectural** - (for areas of change)

- Floor Plans of each floor showing all accommodation required, including all necessary circulation areas, stairs, elevators, etc., and ancillary spaces anticipated for service use. Indicate building grids, modules, etc., and key dimensions.
- Detail Sections of walls or special design features requiring illustration and explanation of this stage, including fireproofing methods.
- Full cross section views of elevator hoist ways, and pits for confirmation against the elevator modifications.

4.3.2 Schematic Drawings

- The Consultant will provide colour schematics showing the interior layout with the following features:
  - Floor plans showing the space layout for all levels
  - Floor layout showing functional areas by colour coding
  - Four (4) coloured copies of the schematics to be supplied
  - Phasing drawings clearly showing impact of phasing

4.3.3 **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

4.3.4 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.

4.3.5 Electrical Drawings

- Provide drawings showing advanced development of the following:
  - Site plan showing service entrances.
  - Single line diagram of the power circuits with their metering and protection, including:
    1. Complete rating of equipment in preparation for fault co-ordinating 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.

4.3.7 Elevators

- Drawings showing preliminary locations of elevator equipment in the hoistway enclosure, machinery location, rail locations, car cab size.
- Drawings of the integrated electrical, mechanical, systems,
- Update the schedule of requirements.
- Provide information of energy loads in sufficient detail to determine the compatibility of the proposal with existing services and approved concept.
- Explain the level of involvement that will be required by maintenance service provider and PWGSC staff to operate the elevator systems and interconnected systems and the expected functions of the operation staff.
- Describe the building remote monitoring systems. System to be used must be non-proprietary.

4.3.8 Commissioning (see RS 12)

- Refine operational and performance requirements as required from the design development.
- Define commissioning requirements.
- Prepare a Commissioning Brief describing major commissioning activities for architectural, mechanical, electrical, security and integrated system testing.
- Define and establish project specific archives
- Refer to Commissioning Manual for additional details of required activities and deliverables.

4.3.9 Specifications

- Provide a list and draft specification sections of all NMS sections to be used. Separate lists are to be provided for each project;
- Submit outline specifications for all systems and principle components and equipment;
- Provide in the outline specifications manufacturers literature about principle equipment and system components proposed for use in this project;
- Highlight proposed “Green” materials, components and systems.
- Specifications are to be customized for these projects. Any information or directions not related or applicable to these projects shall be edited.

4.3.10 Cost Estimate

- Provide class “B” cost estimate, c/w sign off from all disciplines involved.
- Highlight changes from class “C” cost estimate.

4.3.11 Time Plan (Schedule)

- Update time plan (Schedule);
- Highlight changes to the time plan.
- Refer to section RS 8 for additional requirements/deliverables

4.4 DELIVERABLES

- All outputs described in sections 4.2 Scope and Activities and 4.3 Details.
- Floor plans including all disciplines showing all floor elements and services to detail necessary to make all design decisions and to substantially estimate the cost of the project
- Building sections, as required to demonstrate design
- Architectural and Interior Design, Structural, Mechanical and Electrical Engineering designs, millwork and finishing details to show choice of materials and finishes
- Furniture and equipment plans and detail lists
- Reflected ceiling plans fully coordinated between, mechanical, electrical and other services as necessary.
- Finish and colour schemes
- Colour schematics as described in section 4.3.2.
- Outline specifications for all systems and principle components or equipment
- Format and organization of the Systems Operations Manuals
- Class ‘B’ cost estimates c/w discipline sign off.
- Preliminary construction schedules including long term delivery items
- Design Synopsis detailing the basic assumptions and the justifications for all major decisions including an explanation of how the recommended choices respond to the project’s key initiatives
- Commissioning Plans (RS 12)
- Presentation to the PWGSC Design Review Committee for approval of the Preliminary Design, and any subsequent revisions and/or responses necessary to satisfy the concerns of the Committee.
- Presentation of the colour schematics to the PWGSC Design Review Committee, the Client Representatives and other stakeholders as necessary.
- Description of sustainable design aspects of the design.

RS 5 CONSTRUCTION DOCUMENTS

5.1 INTENT

To prepare working drawings and specifications setting forth in detail the requirements for the construction and final cost estimate for each of the projects.

- 66% indicates substantial technical development of the project - well advanced 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 pre-permit purposes
- Final Submission incorporates all revisions required in the 99% version and is intended to provide PWGSC with complete construction documents for tender call.

5.2 SCOPE AND ACTIVITIES

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 PWGSC review team. Any submission not meeting the requirements of the intended level will be returned for completion before the review process is started.

- Obtain Project Manager's approval for Construction Document submissions (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. (66%, 99% & Final Submission)
- Drawings and specifications are to be in bilingual format (see RS 13)
- 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.

5.3 DETAILS

5.3.1 Technical and Production Meetings

- Progress of construction documents will be reviewed during the meetings arranged by Project Manager and Consultant.
- Representatives from PWGSC and possibly RCMP will be present as arranged by the Project Manager.
- Consultant shall ensure that his staff and the sub-consultant representatives attend the technical and production meetings as required.
- Consultant shall ensure that all documents are coordinated with all sub-consultants and disciplines and represent a thoroughly integrated design solution.
- Consultant shall arrange for all necessary data, progress prints, etc.
- Consultant shall prepare minutes of the meetings and distribute copies to all participants.
- These meetings will be held at the Consultant's offices.

5.3.2 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 as detailed further in RS 11.** One set of the documents must be initialed by the reviewer prior to submission to PWGSC. This review time is to be indicated and allowed for within the Detail Project Schedule identified in RS 8.6.1.
- Formal Technical Reviews will be conducted by PWGSC at each of the 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 PWGSC amended NMS sections, PWGSC in-house master specs sections and NMS sections.

5.4 DELIVERABLES

Deliverables shall be submitted as described in sections 5.4.1, 5.4.3, 5.4.4, 5.4.5 & 5.4.6.

5.4.1 Submissions

.1 Submit Working Documents for review and record purposes.
.2 Submit working drawings and specification material when the working documents and current CADD files are as follows:

Status	Designation	Paper Copies	CADD Files
2/3 Complete	66% Submission	Ten (10)	One (1)
Complete	99% Submission	Ten (10)	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.

5.4.2 Reviews

.1 PWGSC 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.
.2 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.
.3 PWGSC must not be considered as the Consultant's quality review team. If a review of the submission by the PWGSC Project Manager 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 PWGSC for additional review for this reason will be attributed to and shall be borne by, the Consultant.
.4 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.
.5 CADD submission will be reviewed for compliance with PWGSC Standards as described in the PWGSC Atlantic Region CADD Data Specification, latest version.

5.4.4 66% Submission

This 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, floor and roof 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 open and enclosed workstations / work settings, support space and special purpose space;
   - Identification of end-user/staff names (or position function) at each location;
   - Review of supplier/manufacturer component counts and accessories;
   - Confirmation of electrical, telephone, data, radio and voice/video requirements;

4. **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.

5. **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 specialities 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 Elevator drawings with:
- Hoistway equipment locations.
- Pit equipment and associated systems.

- Control room power requirements.
- Fire alarm, communications, security, emergency power interconnections
- Remote monitoring schematic diagram
- Floor plans showing location of elevator cars and control room.
- Car dimensions.
- Mechanical requirements: Heating and cooling.

.4 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).

8. **66% Review**

The 66% submission is reviewed by the Project Manager and support staff in PWGSC for general content and adherence to the project brief / RFP. This review verifies that all changes required by the previous review have been made.

The Consultant shall forward the submission to the Fire Commissioner of Canada and other jurisdictions having authority for comments and approval.

5.4.5 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 PWGSC 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 PWGSC incorporated into the working drawings and/or specification.
.5 Support data, studies, calculations, etc., required by PWGSC 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 Project Manager and support staff in PWGSC 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.

The Consultant shall forward the documents to PWGSC, the Federal Fire Commissioner 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 PWGSC 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.

5.4.6 Final Submission

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

.1 One complete set of signed and sealed bilingual originals of the working drawings with CADD files on CD.
.2 One typed original of final bilingual specifications with electronic (CD) copies.
.3 One complete set of bilingual drawings and bilingual specifications on CD in pdf format in accordance with the requirements in Appendices I and J.
.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 12.
.6 Systems Operations Manual to level specified in RS 12.
.7 Four complete sets of original Colour Schedules.
.8 One set of designated substance survey report.
.9 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 PWGSC relative to items .1 and .2 above).
.10 Inspection Authorities Submission
.11 Federal Fire Commissioner’s report on the project documents
.12 Submit and obtain approval on plans and specifications required by Inspection Authorities before tender call.
Phasing plan for the project.

.1

RS 6 TENDER CALL, BID EVALUATION & CONSTRUCTION CONTRACT AWARD

6.1 INTENT

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.

6.2 SCOPE AND ACTIVITIES

- Direct all inquiries during the tender period to the PWGSC 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 issued by the Project Manager
- 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 Project Manager 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 Project Manager at the end, for PWGSC 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 PWGSC is required to re-tender the project due to cost overruns, provide advice and assistance to the Project Manager
- Revise and amend, at your cost, and as approved by the Project manager, 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.
- Examine and report on any cost and schedule impact created by the issue of tender / contract addenda. This is to be submitted to the PWGSC Project Manager concurrently with the issue of any addenda.

6.3 DELIVERABLES

- Clairification of all questions raised by contractors or PWGSC 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.
- List of all required shop drawings, material samples, mock-ups, etc..
- 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 7 CONSTRUCTION AND CONTRACT ADMINISTRATION

7.1 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.

7.2 SCOPE AND ACTIVITIES

- During the implementation of the project, act on PWGSC'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 (Civil, Structural, Mechanical and Electrical). 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 Project Manager'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 Project Manager at time of Final Inspection and Acceptance.
- Maintain a Resident Construction Services Representative on site as described in AS 1.
- Keep PWGSC 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
- Determine the amounts owing to the Contractor based on the progress of the work and certify payments to the contractor
- Act as interpreter of the requirements of the Contract Documents
- Provide cost advice during construction
- Advise the Project Manager of all potential changes to scope for the duration of the implementation
- Review the Contractor's submittals with recommendations of acceptance or suggested changes to the submitted documents within 14 calendar days.
- Prepare and justify contemplated change notices c/w estimates and subsequent change orders for issue by the Project Manager.
- Maintain a list of all 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.

- Prepare and post Systems Operating Instructions
- Finalize Systems Operations Manual

7.3 DETAILS

7.3.1 Construction Meetings

- Immediately after contract award assist the Project Manager 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 in electronic typed format. Copies shall be distributed to all participants and to other persons agreed upon with the Project Manager. Minutes shall be sent electronically in Word Perfect format (or faxed format to those who cannot receive documents by e-mail) .
- 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-subcontractors 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 PWGSC Project Manager plus additional representatives from PWGSC as appropriate. Prepare minutes of the meeting and distribute copies to all participants. The Project Manager may invite representatives from RCMP to attend any of these meetings.

7.3.2 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 Project Manager 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.

7.3.3 Time Extensions for Construction Contract

- Only PWGSC may approve any request for Time Extensions. Any approval will be issued in writing by the Project Manager.

7.3.4 Cost Breakdown

- Within ten (10) days of the contract award, obtain from the Contractor the detailed cost breakdown on the standard PWGSC form. The Consultant shall review and comment on the appropriateness of the breakdown and submit to PWGSC.

7.3.5 Sub-Contractor Changes

- The Contractor is required to use the sub-contractors listed on the tender form unless a change is authorized by the PWGSC Project Manager. Changes are only considered when they involve no increase in cost. Review all requests for changes of sub-contractors, and submit recommendations to the Project Manager.
- When sub-contractors have not been listed on the Tender Form, obtain the list from the General Contractor not later than 10 working days after date of award.

7.3.6 Labour Requirements

- The Contractor is bound by the Contract to maintain competent and suitable workers on the project and to comply with the Canada Department of Labour - Labour Conditions. Inform the PWGSC of any labour situations that appear to require corrective action by the Department.
- The Consultant shall ensure that a copy of the Labour Conditions for the Contract is posted in a conspicuous place on site.

7.3.7 Bylaw Compliance

- Ensure that construction complies with applicable bylaws and regulations.
- Matters pertaining to the Department of Labour shall be referred to the Project Manager.

7.3.8 Construction Safety

- Project safety shall be an important feature in the design and construction of these projects. The Consultant will ensure that the requirements of the New Brunswick Occupational Health and Safety Regulations and the Canada Labour Code Part II are followed throughout the design and construction phases of this project.
- The Consultant will ensure that an appropriate safety plan is requested from the General Contractor identifying all safety hazards for the project and how these hazards are to be dealt with. The Consultant will review the Safety Plan provided by the General Contractor and provide written comments on the plan to PWGSC.
- Fire safety provisions during construction must comply with FCC Standards 301 and 302, administered by the Federal Fire Commissioner.
- In addition to the above, the Contractor must comply with the provincial and municipal safety laws and regulations, and with any instructions issued by the officers of these authorities having jurisdiction relating to construction safety.

- Ensure the Contractor is mandated to provide all required co-ordination, isolation, protection and reinstatement of the fire protection and suppression systems throughout construction.

7.3.9 Clarifications

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

7.3.10 Progress Reports

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

7.3.11 Detail Drawings

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

7.3.12 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 - PWGSC Project Manager for distribution to PWGSC Resources
- All shop drawings shall be stamped: "Checked and Certified Correct for Construction" by the Contractor
- 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 14 calendar days of Contractor's submission.

7.3.13 Materials Testing and Inspection

- Prior to tender, provide PWGSC with recommended list of site work related tests to be undertaken

- When contract is awarded, brief materials testing firm on required services, distribution of reports, communication lines, etc.
- Co-ordinate all testing times with the appropriate testing firm and the Contractor
- Manage all testing charges to stay within the approved budget.
- PWGSC 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 Project Manager when tests fail to meet project requirements. Provide a detailed report of the failure when necessary corrective work will affect schedule.
- Assist the Project Manager in evaluating testing firm's invoices for services performed.

7.3.14 Training

- Within twelve (12) weeks of award, provide the PWGSC Project Manager with recommended list of any training that is to be undertaken by PWGSC or their representatives to ensure proper control of the building operations.
- Ensure all training is detailed within the commissioning plan as described in OS 2.

7.3.15 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).
- All Contemplated Changes must be approved by the PWGSC Project Manager.
- Upon PWGSC approval obtain quotations from the Contractor in detail. Review prices and forward promptly within one (1) day, recommendations to the PWGSC Project Manager.
- The PWGSC Project Manager 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.

7.3.16 Contractor's Progress Claims

- Each month the Contractor submits a progress claim for work and materials as required in the Construction Contract.
- The claims are made by completing the following forms as provided by PWGSC where applicable:
  - Request for Construction Payment

- Cost Breakdown for Fixed Price Contract
- Statutory Declaration Progress Claim

- Review and sign designated forms and promptly forward claims to the Department for processing. Any discrepancies in the claim must be resolved before it is forwarded to PWGSC for payment.
- The Contractor shall submit with each progress claim:
  - Updated schedule of the progress of the work.
  - Photographs of the progress of the work.

7.3.17 Materials On Site

- The Contractor may claim for payment of material on site but not incorporated in work.
- Material must be stored in a secure place designated by the Department. Detailed list of materials with supplier's invoice showing price of each item must accompany claim; Consultant shall check and verify the list.
- Items shall be listed separately on the Detail Sheet after the break-down list and total.
- As material is incorporated in the work the cost must be added to the appropriate Detail item and removed from the material list.

7.3.18 Acceptance Board

- Inform the PWGSC Project Manager when satisfied that the project is substantially completed as defined by the PWGSC Major Construction Contract General Conditions.
- In addition to the PWGSC Project Manager, other representatives from PWGSC may be asked to sit on the Acceptance Board along with RCMP Representatives.
- The Consultant shall ensure that his representative, his sub- consultants, the Resident Construction Services Representative, Contractor and major sub-trades representatives shall form part of the Project Acceptance Board and attend all meetings as organized by the Department. These meetings/site visits are in addition to those specified in Section 7.2.

7.3.19 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.

7.3.20 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
    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 PWGSC for processing.

7.3.21 Building Occupation

- The official take-over of the project, or parts of the project, from the Contractor is established by the PWGSC 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.
- Provide the PWGSC Project Manager with an original copy of Contractor's warranties for all materials and work covered by an extended warranty or guarantee, according to the conditions of the specifications. Verify their completeness and extent of coverage.
- RCMP may occupy the Facility (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 PWGSC 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)

7.3.22 Operation and Maintenance Data Manual

- Operation and Maintenance Data Manual: 4 sets of each volume produced by the Consultant in accordance with RS 12. Manuals to be verified for completeness, relevance and format by the Review Team and submitted to PWGSC Project Manager prior to Interim Acceptance or actual start of operation and instruction period, whichever occurs sooner. The Contractor shall be given one copy of each volume for his record and use during the instruction and warranty period. Operation and maintenance data manuals are to be bilingual.

7.3.23 Instruction of Operating Personnel

- Make arrangements and ensure that AFD personnel are properly instructed on the operation of all services and systems using the final manuals as reference.
- Consultant to provide training sessions, as required, on the subject of design intent and systems operations. Utilize the Systems Operations Manual for training sessions.

7.3.24 Keys

- The Contractor will be required to turn over all temporary keys to the Project Manager at the time of Final Inspection.

7.3.25 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.

7.3.26 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.

7.3.27 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, 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 PWGSC.

- Consultant to produce electronic bilingual Record Drawings by incorporating As-Built information into project drawings and specifications.
- Submit Record Drawings and Specifications (four paper copies plus one electronic copy) within four 4 weeks of final acceptance.

7.4 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
- Debrief of Commissioning Activities
- As built records

RS 8 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 PROPOSAL

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 briefing, 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.

8.5 PLANNING

8.5.1 Project Work Breakdown Structure

Within five (5) working days after finalizing the consultant agreement, prepare a Project Work Breakdown Structure (PWBS). A PWBS is a project oriented family tree subdivision of services and other work tasks which organizes, defines and graphically displays a project. This PWBS should be developed through at least five levels: project, stage, element, sub-element and work package.

8.5.2 Project Master Plan/Cash Flow Projection

Within ten (10) working days after finalizing the consultant agreement, prepare a Project Master Plan and dependent Cash Flow Projection that accounts for all major project activities and costs. This will involve confirming the validity or alternates to the identified milestones in the Proposed Major Milestone Schedule. Significant phases of project development include Programming, Concept Design, Design Development, Working Drawings and Specifications, Tender, Contract Award and Construction.

Unless specified otherwise in this Section, quantified days duration refers to working days, which is based on a 5 day work week and discounts all statutory holidays (approximately 250 days/year).

The original Master Plan will be "frozen" to provide an original Target or Baseline Schedule. This Target Plan may be revised on instruction from the Project Manager as conditions dictate. All revised Target Plans and Cash Flow Projections will be reconciled with previous targets to provide a continuous audit trail.

The Consultant will provide the initial and subsequent Master Plans in the following form:

1. diskette/CD containing all schedule and cash flow information,
2. bar chart identifying activity durations, early/late dates, total float, percent complete and budget amounts,
3. network diagram showing all activity sequencing, and
4. annual and monthly actual/projected monthly cash flow in both graphical and numerical form.

8.5.3 After five (5) working days of PWGSC review the Planning and Scheduling Consultant shall meet with the Project Team to finalize a mutually acceptable Project Master Plan and Cash Flow Projection.

8.6 SCHEDULING

8.6.1 Detail Project Schedules - Design, Drawings, Tender and Award

Preparation of the Detail Schedule

The Consultant shall within twenty (20) working days from finalizing the consultant agreement provide a Detail Project Schedule. Activities must be shown for all phases of Concept & Preliminary Design. All necessary review and approvals must be included. Activities must also be shown for Working Drawings and Specifications leading through the key milestones of 66%, 99% Approvals. This will be followed by the co-ordination and review activities leading to 100% Tender Documents, and then by the Tender Process leading to Award.

Prior to the completion of the Tender Documents, the initial Construction and Commissioning activities shown on the approved Detail Project Schedule will be further broken down in order to confirm the validity of our approaches to construction and commissioning. The level of detail for project activities will be such that the sequence and interdependency of all contract tasks will be demonstrated and will make possible the co-ordination and control of all project activities.

In order to provide a reasonable basis for progress monitoring and control, the schedule shall be in sufficient detail to ensure adequate planning and control. It is also recommended that activity durations should not exceed fifteen days. The Detail Activities must relate at all times to the Milestones developed and approved in the Detail Project Schedule.

The activities with no float (start and finish on their early calculated dates) which form the "Critical Path" must be calculated and clearly indicated on the logical network as being wherever possible a continuous series of activities through the project. No more than 25 percent of the activities shall be critical, or near critical. Near critical is defined as float in the range of 1 to 5 working days.

Review and Approval of the Detail Schedule

The Consultant shall allow one week (calendar) period for the review by the PWGSC Project Manager of the proposed Detail Project Schedule.

Following the review, any necessary revision to the schedule must be submitted to the Project Manager within one week (calendar) after his request.

The Consultant shall, at the Project Manager’s request and without additional charges, provide all additional information required by the Project Manager to validate the practicality of the Consultant's work schedule.

Compliance with the Detail Project Schedule

The Consultant must comply with the approved Detail Project Schedule, direct and assist his sub-consultants in the planning and co-ordinating of their work with respect to this schedule.

8.6.2 Progress Monitoring and Reporting

On a Monthly basis with status dated on the last working day of the month, the Consultant working with all responsible parties shall perform a Detail Schedule update. The Detail Project Schedule shall reflect the following:

1. progress of each activity to the date of the report;
2. any logic changes, both historic and planned;
3. projections of progress and completion;
4. the actual start and finish dates of all activities being monitored in the network shall be recorded and submitted; and
5. any potential delays, outstanding issues and concerns from the design teams point of view, and options for dealing with any serious planning and scheduling issues.

Within five (5) days of the date of the Schedule Update, the Consultant will provide the initial and subsequent Detail Project Schedule in the following form:

1. Diskette containing all detail schedule and cash flow information.
2. Detail Schedule Bar Chart identifying status to date.
3. Detail Network Diagram identifying status to date.
4. A listing of all project activities including milestones and dummies (if applicable), in all networks (and sub-networks) from basic project start to project end. Sort activities by activity identification number with accompanying descriptions. List early and late start and finish dates together with durations, codes and float.
5. A Criticality Report listing 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. List early and late start and finish dates, together with durations, codes and float for the critical activities printed.
6. A Progress Report in early start sequence, listing for each trade, all activities due to start, to be underway, or finish within one month from the monthly update date. List the activity identification number, description, and duration. Provide columns for entry of the actual start and finish dates, duration remaining, and remarks concerning action to be taken.

The Consultant must also submit a written monthly Narrative Report based on the Detail Project Schedule, 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 with respect to the Detail Schedule, and Critical Paths.

8.6.3 Tender & Construction Schedule Requirements

Construction and Commissioning Periods

As design progresses and the scope of construction work becomes more clearly defined, the Consultant will develop more detailed schedules and cash flows to illustrate the sequencing of work as it relates to activities and/or constraints in other contracts. This must be done in order to:

1. confirm or raise question of previously established construction durations and phasing;
2. develop more accurate cash flow projections for construction;
3. identify any interfaces and/or sources of potential conflicts; and
4. review and evaluate successful Contractor's cash loaded CPM schedule.

Before the project is tendered (at approximately the 90% drawing stage), the Consultant shall develop and present the specification section of the Contract Documents dealing with Construction Planning and Scheduling for review and discussion with the Project Manager in order to develop a comprehensive section that is consistent with other relevant areas of Contract Administration.

8.7 PROJECT CONTROL DURING CONSTRUCTION

8.7.1 Consultant's Responsibility

- Ensure provision of proper Planning and Scheduling as per spec.
- Incorporate Contractors information on Detail Project Schedule.
- Monitor Contractors submissions; review for completeness, accuracy and progress.
- Assist in the development of the Commissioning Schedule.
- Advise and prepare variance analysis reports as required.

The Contractor will be developing the required Construction Planning and Scheduling documentation in accordance with the specification section of the Contract Documents dealing with Construction Planning and Scheduling.

Within five (5) working days of Contract Award, the Consultant, Project Manager and RCMP shall meet with the Contractor to review the scope of work and the Contractor’s approach to construction operations. This meeting will provide an opportunity to emphasize the importance of compliance with the Planning and Scheduling requirements as set out in the Contract Documents.

Within five (5) working days of receipt of the Proposed Construction Schedule and Cash Flow from the Contractor, the Consultant shall review the information for adequacy and accuracy by comparing it to the Detail Project Schedule developed by the Consultant prior to Contract Award. The Consultant will formally report his findings and recommendations to the Project Manager for further discussion with the Contractor.

Once accepted by the Project Manager, this Proposed Construction Schedule will be saved and used as the Construction Baseline Schedule.

Within ten (10) working days of receiving the Contractor's Proposed Construction Schedule and Cash Flow, the Consultant will investigate whether the timing and costs of the activities shown are consistent with the accepted Detail Project Schedule. The Consultant shall review and formally report to the Project Manager on his findings and recommendations.

Upon receipt of the Contractor's progress claim and diskette/CD of complete project schedule, the Consultant will review the information by:

1. evaluating, on a general basis, actual progress achieved to date; and
2. comparing current status of Detail Project Schedule and Cash Flow status with previously submitted Detailed Schedules and Cash flows.
3.

RS 9 ESTIMATING AND COST PLANNING

9.1 COST SPECIALIST

Delivering this project on budget is the highest priority. A fully qualified cost planning, cost estimating and cost control resource (or team of resources including mechanical and electrical cost specialists), referred to herein as the Cost Specialist, with a demonstrated record of successful cost management on construction projects is required. The Cost Specialist(s) 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 Cost Specialist(s) shall be a Professional Quantity Surveyor or Construction Estimator, Certified as designated certified by the Canadian Institute of Quantity Surveyors or a Gold Seal Estimator as designated certified by the Canadian Construction Association.

The Cost Specialist(s) must be proficient in all disciplines/sub disciplines/trades offer the project and therefore, may be an individual or group. These specialists shall be expected to work in a **team environment** along with the Consultant, Project Manager, PWGSC Senior Cost Planner and contractor and sub contractors, where **co-ordination and understanding** of all cost information is considered paramount.

The purpose of cost planning and cost control is to assist in the accomplishment of project objectives. It is a continuous and interactive process involving team work, co-ordination, planning, action, measurement, evaluation and revision and the Cost Specialist(s) will be expected to possess a comprehensive understanding of the full spectrum of project objectives.

9.2 SCOPE OF SERVICES

The Cost Specialist(s) shall provide an interactive and continuous cost consulting service from the commencement of project design through to construction completion and subsequent evaluation, including the preparation of complete estimates for all risks, construction trades, escalation, inflation and contingency costs. Major cost issues are to identified in conjunction with Consultant's Risk Analysis.

The Cost Specialist(s) shall provide to PWGSC and the Consultant, a cost advising, and cost monitoring/reporting service.

The Cost Specialist(s) shall attend all project and production meetings throughout the design phases and be prepared to present and defend the estimates directly to the Project Manager.

9.3 SERVICES - BASIC ACTIVITIES

The Cost Specialist(s) **shall work concurrently with** and be an integral part of the Consultant Team. She/he shall advise the Consultant team and PWGSC of the costs of individual building components and costs of various design systems. Estimates should be prepared in detail and summarized using an Elemental Analysis format.

9.3.1 Reporting

Milestone Reporting At each of the Milestones (for and within each RS Section) specified in this document, provide a complete submission including the required Elemental Summaries, supported by all backup work sheets clearly detailing the process used in preparing the estimate. The detailed work sheets will be the prime basis on which estimates will be reviewed by PWGSC. Cost comparisons and cost reports identifying and explaining the differences between each succeeding cost estimate and their cost effect are also required.

In addition, the Cost Specialist(s) shall fully coordinate all estimates with schedules provided by others.

- A typical Milestone Report will contain:
  1. Project Estimate Summary;
  2. Elemental Estimate Summary;
  3. Estimate Back-up Detail:
  4. Basis for escalation, inflation and contingency calculations;
  5. Detailed measurement and pricing;
  6. Narrative:
     - Outline description of estimate basis;
     - Description of information obtained and used in the estimate including the date received;
  7. Listing of notable inclusions;
  8. Listing of notable exclusions; listing of items/issues carrying significant risk;
  9. Notes on past and forecast Cost Specialist(s) activity;
  10. Estimate Reconciliation:
     - With last submission;
     - With Construction Cost Plan;
     - Any other relevant information.

Exception Report The Cost Specialist(s) is to provide continuous 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 falls short of or exceeds the Construction Cost Limit due to such changes, the Cost Specialist(s) with the Consultant team shall fully advise the Project Manager. The Cost Specialist(s) with the Consultant team shall submit to PWGSC 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 Under runs: 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.

9.3.2 Submission Standards

The Class "C" and Class "B" cost estimates shall be submitted in elemental cost analysis format. The standard of acceptance for this format is the current issue of the elemental cost analysis format issued by the Canadian Institute of Quantity Surveyors.

The Class “A” cost estimate shall be submitted in elemental cost analysis format as well as a trade cost breakdown format. Cost estimates shall have a summary plus full back-up showing items of work, quantities, unit prices and amounts. **All estimates shall coincide with submissions as indicated and described in this RS.**

Summary Format

1. Elemental Analysis: All estimates shall be summarized in an agreed and consistent Elemental format. the current Elemental Analysis Format as issued by the Canadian Institute of Quantity Surveyors. Several variations in format may be acceptable to PWGSC (by discussion) but those following the ASTM (USA), CIQS (CDN), CSI Uniformat II (USA) or BCIS (UK) formats are preferred.
2. Trade Summary: Where a trade summary is required, those following the Master format are preferred, except where local practice provides a more suitable alternative.
3. Project Cost Subdivision: The estimate shall isolate and show separately the cost of individual building blocks and/or the accommodation sections listed here:

    - **Base Building**
    - **Fit-Up**

    A PWGSC Best Practice Guide exists to provide direction for the consistent application of definitions of Base Building versus Fit-Up for PWGSC Crown Owned, General Purpose Office Facilities. The following definitions are intended to clarify how those definitions may be applied to the Project, and to highlight aspects of this project which may be viewed as deviations from our traditional application of these principles. The purpose is **NOT** to identify separate design packages, but to identify base building and fit-up components required for quantifying tenant and landlord areas of "ownership"/financial responsibility.

Definitions
(From Regional Best Practice: Accommodation Branch: Base Building versus Fit-Up General Purpose Office Facilities)

Base Building is the standard to which a general purpose building is constructed or renovated while making no provision for the specific needs of a tenant or tenants.

“Base Building” means finished floors and bearing, demising and enclosing walls and ceilings and building systems consistent with the designed function and planned general use of the building including window coverings and primary identification signage.

Fit-Up is the alterations and improvements that must be made to the Base Building and to the Building systems so as to meet the specific occupancy needs of a tenant. The appropriate charges are funded from the Real Property Program appropriation and do not include “tenant enhancements.” However, it is worthy to note that the fit-up guidelines related to costs force the tenant to make choices between items that are vital to their operation versus those items that are additional amenities. Fit-up items include the provision of equipment, systems, fit-up partition materials and finishes; the removal, relocation, and provision of power and communication outlets, doors, windows, and partitions, screens, and plants; and related changes to building systems in order to accommodate the tenant in the space.

These Fundamental definitions will continue to apply in general to this project, and the consultant’s scope will include quantifying these two elements through the concept, design and working drawing process.

In order to appropriately designate all items as either Base Building or Fit-Up, a separation of the space has been made including:

1. Building Service Areas and Accessory Areas
2. Usable Space - Office Space and Support Spaces

Building Services Area and Accessory Areas	Base Building	Fit-Up
Floor Finishes	X	
Column and Wall Finishes	X	
Ceiling Finishes or Treatment	X	
Window Coverings (including tinting)	X	
Finished Elevator/Stairwell Cores	X	
Complete Lighting Installation	X	
Fire Protection Systems (smoke/heat detectors, alarms, sprinklers)	X	

Complete Mechanical Systems	X	
All Other Services Required for Normal Building including Operations:	X	
Elevators	X	
Finished Lobbies	X	
Washrooms	X	
Electrical and Communication Distribution Systems to All Floors	X	
Cleaning Closets	X	
Slab-to-Slab, Finished Demising Walls (including associated doors and hardware)	X	
Accessibility	X	
Primary Identification Signage	X	
Service Entrance - Loading Dock	X	

Usable Areas - Office and Support Space	Base Building	Fit-Up
Finished Subfloor	X	
All Area Floor Finishes[1]	X	
Gypsum Wall Board Columns/Walls or other Wall Surfaces	X	
All Column and Demising Wall Finishes	X	
Ceiling Finish or Treatment	X	
All Smoke/Heat Detectors, Sprinklers, Ductwork, Diffusers, Lighting Fixtures	X	
All Changes to Detectors, Sprinklers, etc. Above		X
Walls Demising Usable Areas from Accessory Exterior Areas, Including Appropriate Entrance and Exit Doors	X	
Changes Required to Entrance and Exit Door Locations		X
Finished Interior Leasehold Partitions (customized for tenant)		X
Changes to Electrical Distribution to Suit Tenant's Needs[2]		X
Acoustical Screens		X
Signage - Primary Identification Signage	X	
Specific Tenant Signage		X
Power Distribution Grid (ceiling, floor or wall)	X	
Communication System (i.e. conduit) and Communication Service Rooms	X	
Accessibility	X	
Washrooms for Specific Tenant Requirements		X

[1] This will include pedestal flooring if a pedestal flooring system is utilized for the cable management and/or air distribution system.

[2] In the context of this project, the approach taken to Electrical Distribution should provide sufficient flexibility to largely eliminate this need.

Time Lag

Recognizing that estimates must follow the design decisions they represent, it is the Consultant's responsibility to ensure there is no lag. (I.e. Estimates are due with the balance of the submission they represent on the specified date.) This is to be built into the Time Planning/Schedule Section (RS-9).

The only exception is that the trade breakdown of the Class "A" estimate may follow the elemental submission by one week.

Use of all available information

The Cost Specialist is responsible for providing a complete cost estimate even though the information provided during the concept, design development and early working drawing stages is incomplete. Where requirements are not firmly defined, the Cost Specialist shall make assumptions, confirm them with the various disciplines and either list them as assumptions, or have them incorporated in an outline specification modified by the Consultant.

9.3.3 Techniques

The Cost Specialist is required to be familiar with and make use of a broad range of cost techniques, especially the following:

1. **Risk Analysis** All construction estimates (except the final pretender estimate) shall include and identify design, estimating, inflation escalation and currency exchange allowances as are deemed necessary in light of the current information available. The Cost Specialist shall provide a satisfactory explanation of the level and/or amount of all such sums included within any estimate.

2. **Scheduling** The Cost Specialist shall assist the Planning and Scheduling Specialist by providing building quantities, building systems information, and other quantifiable parameters deemed appropriate to the calculation of a reasoned project time schedule. The Planning and Scheduling Specialist shall assist the Cost Specialist by maintaining an up-to-date schedule of all design activities along with an agreed bidding and Construction Schedule that will be incorporated by the Cost Specialist within the estimates on a timely basis.

3. **Life Cycle Costing** In advising the Consultant of the cost information for alternative materials, methods and systems, it is necessary that the Cost Specialist uses all available information to ensure that a complete cost picture is made available, upon which design and construction decisions will be made.

4. **Continuing Estimate Process** A process of continual adjustment of previous estimates may be used in place of total re-measurement at each milestone reporting point. This is acceptable, provided that at each reporting point a full and up-to-date Elemental Cost Summary is provided and that at each milestone reporting point this Elemental Cost Summary is supported by complete, detailed, stand alone back-up/support documentation, as previously described.

5. **Project Research** The Cost Specialist shall visit the proposed construction site to become familiar with site conditions, site access, etc.., analyze local labour and material supply conditions, local bidding practices and competition to establish pricing levels. In addition, the Cost Specialist will take an active role in researching

High Performance Supportive Work Environment and Sustainable Development related construction materials, processes, etc.

9.4 SERVICES - SPECIFIC ACTIVITIES

Project Analysis Stage

Review, report on, and propose revisions to the existing class "D" estimate. Do not proceed until the Cost Specialist, the Consultant and PWGSC have accepted the revised class "D" estimate.

The revised Class "D" estimate shall not exceed the Construction Cost Limit specified in PD 2 including a minimum 5% contingency for the construction period.

Concept Design

A Class "C" estimate will be prepared at the highest level of detail commensurate with the available information using elemental and additional detailed costs. **All design disciplines (i.e. Prime and Sub-Consultants) shall sign off on this and all subsequent estimates.**

Design Development

Upon completion of design development prepare a Class "B" estimate representing the increased level of design detail available. The report shall be prepared using detailed (elemental) costs i.e. measured quantities with a minimum number of allowances or lump sums.

The Class "B" estimate shall not exceed the construction Cost Limit specified in PD 2 including a minimum 5% contingency for Construction and Post Occupancy periods.

Contract Documents

During the production of the contract documents a process of continuing cost control progressively more detailed is required. At each review of contract documents, an up-to-date estimate shall demonstrate compliance with the Construction Cost Limit. Non-compliance with the Construction Cost Limit will require revisions to the contract documents at the Consultant’s expense.

Pre-Tender

Upon completion of the contract documents a pretender Class "A" cost estimate will be prepared using 100% measured quantities.

This estimate shall be summarized in elemental format.

A trade breakdown of the pre-tender estimate, as well as in elemental format, shall also be provided for use in reviewing the submitted bids and the successful Contractor's bid breakdown.

Tender Stage

1. **Tender Award** During the tender period, examine and report on any cost impact created by the issue of tender/contract addenda. Incorporate the results of such addenda review into the Class 'A' estimate (both elemental and trade versions) prior to receipt of bids.

2. **Bid Review and Analysis** Assist the Project Manager, as required, by analyzing and reconciling any differences between the pretender estimate and the submitted bids.

3. **Negotiation** Should it be necessary to negotiate with any bidder prior to awarding the Contract, the Cost Specialist shall provide cost information as needed and enter into the negotiations if requested.

4. **Reconciliation** Upon the signing of a contract with the successful Contractor, the Cost Specialist(s) will reconcile both the elemental and trade estimates, in detail, with the agreed contract sum. These reconciled estimates will be used by the Project Manager during the construction phase of the project.

Cost Specialist Services through Construction

During construction, the Cost Specialist shall assist the Project Manager with cost advice in:

- Evaluation of change orders;
- Evaluation of claims;
- Evaluation of work completed;
- Evaluation of cash flows.

Post Contract
The Cost Specialist is required to assist with the provision of details needed for an evaluation of the project, regarding the Project's cost performance.

9.5 RESPONSIBILITIES OF PWGSC

- PWGSC 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 PWGSC 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.

No Action Abrogates Consultant's Responsibilities

- No acceptance or approval by PWGSC, 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 PWGSC in any way abrogate the Consultant'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 from the agreed Construction Cost Plan, unless and until the Project Manager indicates otherwise in writing.

RS 10 POST OCCUPANCY SERVICES

10.1 EVALUATION AND CONFIRMATION OF ENERGY CONSUMPTION

Once the Facility is reoccupied, the Consultant shall monitor the building systems under operation. A report is to be compiled and submitted to PWGSC, 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 tender documents. Refer to energy analysis report description and ensure the various elements are satisfied.

10.2 POST CONSTRUCTION COMMISSIONING

- During the twelve (12) month warranty period investigate all defects and alleged defects identified by RCMP or PWGSC 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 Manager 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 Manager 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.

10.3 WARRANTY INSPECTIONS

- 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 PWGSC and or RCMP 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

10.4 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 PWGSC and RCMP goals.

10.4.1 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.

10.4.2 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.. PWGSC

and RCMP will assist in preparation of the questions to be used in the questionnaire.

- Carry out interviews with select internal stakeholders, namely RCMP Staff (15-20% sampling), PWGSC Project Manager, 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
- At the completion of the Consultant's Contract, (i.e. end of the warranty period), the Consultant will provide feedback to PWGSC in regard to the effectiveness of the Contract Administration process followed by PWGSC. 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 PWGSC. 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.

10.5 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 11 INTEGRATED CONSULTANT TEAM QUALITY ASSURANCE

Prior to submitting any deliverable to the PWGSC Project Manager for review, the Consultant and all Sub-consultants shall utilize an Internal Senior Review and Approval Process. To document this step, the deliverable(s) must be clearly signed and dated "Reviewed and Accepted" by the appropriate Senior Reviewer(s). Senior Reviewers will not be regular members/participants of the Design Team.

Deliverables not clearly signed and dated by the Senior Reviewer(s) will not be accepted by the PWGSC Project Manager.

Senior Reviewers will be responsible to ensure:

- Completeness of document/deliverable relative to RFP/ Brief requirements.
- Complete co-ordination between disciplines.
- Level of quality commensurate with professional standards.
- Accuracy of all designs/solutions/calculations.
- Compliance with all codes, standards and/or authorities having jurisdiction.
- All deliverables required by the RFP/ Brief or required in the performance of the services are delivered on time without prompting by PWGSC.

The PWGSC Project Manager will have access to any correspondence, marked up drawings, etc. between Senior Reviewers and the Design Team.

Disciplines Requiring Senior Reviewer(s)

- Architectural
- Structural
- Civil
- Mechanical
- Electrical
- Commissioning
- Estimating/Cost Control
- Specification Writing (Architectural, Structural, Civil, Mechanical & Electrical)
- Time Control/Scheduling
- Interior Design
-

RS 12 COMMISSIONING THE FACILITIES

1.1 Commissioning Objectives

The objectives of commissioning are:

1.1.1 To document the design intent of the overall project and the proposed building systems and components and to verify and demonstrate that all functional and operational requirements have been correctly interpreted in the Design solution.

1.1.2 To document the operational, maintenance and building management requirements.

1.1.3 To minimize O&M costs through the careful selection of design solutions (for economy, reliability, durability, accessibility, maintainability), construction materials, installation practices, performance verification procedures.

1.1.4 To verify that selected design solutions and the resultant built works protect the safety, health, welfare and comfort of occupants and O&M personnel.

1.1.5 To define responsibility areas for meeting these operational requirements in the contract documents and include a process to demonstrate compliance.

1.1.6 To demonstrate that the Client's and the Department's requirements are meet during the project implementation and commissioning phases of the project and to support quality management of construction and installation through verification of building components, systems and environments.

1.1.7 To ensure that the commissioning process is implemented and documented according to the approved Commissioning Plan and in accordance with the Commissioning Schedule.

1.1.8 To verify and demonstrate that all systems operate consistently at peak efficiencies, under all normal load conditions, and within the specified energy budget.

1.1.9 To provide comprehensive documentation of the operational, maintenance and building management

1.1.10 To implement a comprehensive training program.

1.1.11 To transfer the completed works to qualified facility operators verifying that the building systems operate consistently at peak efficiencies, under all normal load conditions, and within the specified energy budget.

1.2 General description of commissioning

1.2.1 Commissioning shall be in accordance with the "PWGSC Commissioning Manual (CP.1)", current edition, and all associated PWGSC

Commissioning Guidelines but suited to the specific requirements of the project. These documents consist of:

PWGSC Commissioning Manual (CP.1)
- CP.2: Commissioning Glossary (forms Appendix B of CP.1)
- CP.3: Guide to development of the Commissioning Plan
- CP.4: Guide to the development of Building Management Manuals
- CP.5: Guide to preparation of Training Plans
- CP.7: Commissioning for Facilities Management and Operation
- CP.8: Guide to the preparation of Commissioning Reports
- CP.9: Guide to the development and use of Installation/Start-up Check Lists
- CP.10: Guide to the development and use of Report Forms and Schematics
- CP.12: Guide to the development and use of Commissioning Specifications
- CP.13: Facility Maintenance Policy, Guidelines and Requirements

1.2.2 The PWGSC Commissioning Manual (CP.1) and all associated PWGSC Commissioning Guidelines are included as appendices to this document.

1.2.3 Commissioning includes architectural, structural, vertical transportation systems, interior and landscape systems, as well as the usual mechanical, electrical and life safety systems.

1.2.4 The Designer must deliver concise and comprehensive information and reports on commissioning to PWGSC.

1.2.5 A enhanced commissioning program is required and will apply to all construction phases , base building and fit up work.

1.3 **Roles and Responsibilities:**

1.3.1 **PWGSC Project Manager**: Has overall responsibility for managing the project and delivering the project to the Project Leader on time and on budget. Upon completion, the Project Manager hands the facility over to the Project Leader.

1.3.2 **PWGSC Commissioning Manager**: As a member of the PWGSC Technical Advisory Team, the Commissioning Manager:

.1 represents the Project Manager, manages and implements the commissioning process,

.2 reviews the commissioning plan,

.3 maintains overall responsibility for representing the Client's interests in the implementation of commissioning, including:

.1 assuring that all program issues have been addressed,

.2 reviewing all documentation at all stages of project development and delivery,

.3 monitoring of all commissioning activities,

.4 verification of the accuracy of all reported results,

.4 ensures that all O&M aspects are addressed to the satisfaction of the Department,

.5 reviews Designer's submissions

.6 monitors the Designer's commissioning services during the commissioning process,

.7 witnesses and certifies with the developer's designer all integrated systems test results,

.8 in consultation with the Designer, review staffing, service contracts and requirements for supply and storage of spare parts, special tools and maintenance materials,

.9 witnesses the construction stage installations,

.10 reviews shop drawings for O & M,

.11 manages and co-ordinates the PI and PV forms and other documentation,

.12 reviews the Training Plan and ensures delivery of training,

.13 co-ordinates and reviews with the Designer and Contractor the completion and delivery of the Building Management Manual,

.14 reviews and comments on the Contractor's Commissioning Schedule for the sequencing of commissioning performance testing of equipment, systems and integrated systems,

.15 reviews the commissioning and performance verification (PV) activities, processes and their output, including development of project-specific:

.1 installation / start-up Check Lists

.2 Product Information (PI) Report Forms

.3 Performance Verification (PV) Report Forms

.16 ensures that PWGSC's MMS identification codes for all components, equipment and systems is applied to working documents;

.17 recommends "Interim Acceptance" of the installed works to the Project Manager,

.18 ensures the completion of all commissioning activities not completed before Interim Acceptance,

.19 provides support and direction in addressing operational deficiencies before Final Acceptance,

1.3.3 **Designer (Consultant):** The Consultant shall:

.1 establish Design Criteria, functional and operational requirements, if not already established in the RFP or Project Brief,

.2 establish a Design Energy Budget and, if necessary, revise and update with each submission,

.3 prepare a preliminary O&M budget and revise and update with each submission, containing detailed breakdowns of various items such as estimated electrical, mechanical, or speciality equipment annual energy consumption and systems maintenance, operation and/or service contract costs.

.4 prepare a preliminary Commissioning Budget and revise and update with each submission.

.5 prepare a preliminary Commissioning Plan

.6 prepare commissioning specifications for components, equipment, systems and integrated systems and incorporate same into the construction specifications,

.7 prepare a complete maintenance management documentation ,to be sufficiently complete for use during training, and to include:

.1 explanation of the purpose of the facilities,

.2 outline of the design intent of all systems

.3 provide a narrative description of the project's conceptual framework,

.4 document all design decisions made throughout the project,

.5 description of each building system; including architectural, structural, mechanical, electrical, civil, fire protection, acoustic and other building as well as site systems.

.6 Include all relevant documentation

.8 plan the commissioning and performance verification (PV) activities, processes and their output, including development of project-specific:

.1 installation / Start-up Check Lists

.2 Product Information (PI) Report Forms and PerformanceVerification (PV) Report Forms,

.3 Add all design data to PI and PV report forms

.9 prepare a detailed Training plan

.10 incorporate PWGSC MMS identification codes to all components, equipment and systems into all working documents;

.11 review the CONTRACTOR'S detailed commissioning schedule for components, equipment, systems, and integrated systems. (PV tests will be performed by the Contractor.

.12 identify Contractor and subcontractor commissioning, PV and testing responsibilities,

.13 review shop drawings and product data and accompanying Product Information (PI) as completed by the Contractor,

.14 monitor commissioning activities, provide quality control reports to the PWGSC commissioning Manager throughout the construction,

commissioning and operational phases of the work, including but not necessarily limited to:

.1 Inspection and verification of as installed components, sub system and systems on a regular basis during construction

.2 witnessing tests, as required by PWGSC.,

.3 reviewing and verifying testing, adjusting and balancing (TAB) reports,

.4 reviewing and verifying Performance Verification (PV) Reports

.5 witnessing and certifying systems and integrated systems tests.

.6 Any test which cannot be commissioned due to design errors or omission has to be redesigned and recommissioned.

.15 participate in the Training Plan by providing training on design philosophy, design intent and systems designs,

.16 witness and certify deferred tests, commissioning activities, PV, review and accept reports,

.17 identify and verify the rectification of all outstanding deficiencies,

.18 assist in the resolution of all issues relating to commissioning,

.19 prepare "as-built" documentation (plans and specifications) as described elsewhere in the RFP or Project Brief,

.20 assist in fine-tuning of systems and equipment as required during the warranty period,

.21 coordinate with the PWGSC Commissioning Manager to ensure that O&M requirements are addressed,

.22 assist in systems checks and environmental checks during the warranty period,

.23 participation in warranty inspections and production of warranty inspection reports and address all warranty issues that may arise,

.24 ensure that the final product meets the Design Criteria, functional and operational requirements, the project objectives and all requirements of the RFP and Project Brief,

.25 recommend acceptance of the completed project,

.26 assist the PWGSC project manager in the preparation of a debriefing (Evaluation) report. To include, but not necessarily be limited to:

.1 a building evaluation summary with recommendations,

.2 lessons learned from the project.

1.3.4 **Designer's commissioning coordinator:**

To assist in fulfilling a fully integrated and comprehensive commissioning program, the Designer shall appoint a full-time commissioning coordinator with

proven expertise in implementing commissioning programs, and who shall be responsible for detailed coordination of commissioning and provide direction for all matter relating to commissioning as described herein. The name of this coordinator shall be provided to the PWGSC Project Manager and PWGSC Commissioning Manager.

1.3.5 **Contractor:** In accordance with the commissioning requirements specified in the Construction Documents, the Contractor:

.1 develops a critical path commissioning activities schedule for review and approval of the Designer, PWGSC Commissioning Manager and Project Manager,

.2 executes all commissioning activities in accordance with the Contract Documents, such as:

.1 input data from drawings on to Product Information (PI) Report Forms,

.2 assemble maintenance sections of the Building Management Manual

.3 assist in assembly of section of the Building Management Manual relating to operation of components, equipment, sub-systems, systems and integrated systems

.4 utilize Installation/Start-up Check Lists when conducting pre-start-up inspections,

.5 coordinate all commissioning activities,

.6 perform testing, adjusting and balancing (TAB), prepare TAB reports,

.7 conduct performance verification (PV) tests of components, equipment, sub-systems, systems and integrated systems, complete PV Report Forms, prepare PV Reports,

.8 coordinate and implement training

.9 address all issues relating to commissioning,

.10 assist the Designer in the preparation of commissioning documentation,

.11 assist the Designer in the preparation of accurate "as-built" documentation,

.12 fine-tune components, equipment, sub-systems, systems and integrated systems during the warranty period,

.13 perform systems and environmental checks during warranty period and prepare reports,

.14 address all warranty issues,

.15 provide input to the Designer in the preparation of a debriefing (Evaluation) report.

1.3.6 **Contractor's commissioning coordinator**, assigned by the Contractor, qualified and experienced in the implementation of all commissioning, to coordinate, direct and verify all commissioning activities and procedures.

1.4 Occupancy requirements

Identify facility management requirements, including move-in procedures; security systems; staffing; signage; and safety and accessibility for persons with disabilities.

User occupancy requirements include consideration of the need for and implications of:

.1 early, late and/or phased completion, take-over, acceptance and occupancy, including the effects upon the User's present accommodation (such as early de-commissioning, need for extension etc),

.2 requirements for initial, interim and substantial occupancy including, for reasons of health and safety, full commissioning of all life safety systems. It may also include some form of "interim commissioning" of all non-life safety systems,

.3 overlapping of construction, commissioning and initial occupancy. This requires consideration of the effects of partial commissioning, delay of commissioning activities, the effects on insurance, warranties, certification, repetition of commissioning activities after full occupancy, and/or completion of fit-up contracts,

.4 post-occupancy commissioning activities during Operation which will often be necessary for certain systems and equipment under these circumstances.

1.5 Operational criteria

1.5.1 This building will be mostly occupied during the demolition, construction and fit-up process. Phasing of work to be defined by Designer. The Contractor will bear responsibility for the continuous operation of all safety and other building systems as deemed necessary or for functional requirements of the Tenant.

1.5.2 The contractor may use certain base building systems (to be defined) and utilities during the renovation stages. The cost for energy used will be borne by PWGSC, however, designer is to verify that building operational needs and construction needs can be supported. Connections to existing systems and all temporary systems to be borne by the Contractor.

1.5.3 Start-up, PV and acceptance will include phased activities. Testing, PV, commissioning and training must be developed bearing these variables in mind. Hours of commissioning activities to be scheduled to meet tenant requirements,

noise and system requirements and must be coordinated so as to not interfere with the continued operation of the building. This could result in off hours and weekends. Once the renovated building has been occupied, further testing activities will be subject to User's approval and may be refused during normal working hours.

1.6 Life cycle costing criteria

If not prescribed within the RFP or Project Brief, when developing life cycle cost analyses for each option, use the following criteria:

.1 25 years to next re-fit,

.2 25 year investment horizon,

.3 costs of utilities.

.4 reliability, durability, operability, maintainability, accessibility and serviceability,

.5 systems selection and staffing in response to annual operating cost criteria

1.7 Cooperation and coordination

Throughout the Commissioning Process, the Project Design Team, the Project Construction Team, the Project Commissioning Team, and the Property Management Team, all as defined in The PWGSC Commissioning Manual (CP.1), will work closely with PWGSC to implement all commissioning activities. The PWGSC Commissioning Manager has the prime role to ensure the success of the commissioning process and the related activities and deliverables with the Project Team.

1.8 Training

1.8.1 In consultation with the PWGSC Commissioning Manager, prepare a comprehensive training plan for the training of the Facility Management personnel, User (where deemed necessary) and operations and maintenance staff.

1.8.2 If required by the RFP or the Project Brief, training shall be in English and French.

1.8.3 The training plan which will enable O&M personnel to identify repair and maintenance needs that might otherwise go undetected for long periods with possibly serious consequences.

1.8.4 Training shall enhance monitoring and diagnostic capabilities and result in more efficient, cost- effective operation of the facility.

1.8.5 The training plan shall be in accordance with the requirements of CP.5 Guide to preparation of TRAINING PLANS. Training plans shall be reviewed, revised, updated and resubmitted as required.

1.8.6 The names of all trainees (obtained from the Project Manager) and all training personnel shall be submitted to the Project Manager for review, comment and approval at least two (2) weeks prior to the proposed training dates.

1.8.7 Training must clearly relay:

.1 A clear understanding of the intent of the design,

.2 All limitations of the systems,

.3 Reasons for the choice of systems.

1.8.8 Coordinate the dates of all training sessions with the Project Manager. Update the training plan as required to reflect the project schedule. The Project Manager will organize the location.

1.8.9 The training plan shall recognize both short-term and long-term requirements.

1.8.10 Upon completion, prepare a summary of the training sessions, indicating dates, subject matter, all training personnel and all trainees present and submit to the Project Manager.

1.9 Correction of deficiencies

The Designer, in consultation with the PWGSC Commissioning Manager, shall:

.1 instruct the contractor to correct all the deficiencies identified and recorded during the performance verification,

.2 provide solutions during the PV process with respect to the variances from the design parameters,

.3 adjust or alter the systems to achieve the design parameters. This shall include re-testing,

.4 immediately notify the Project Manager when tests fail to meet project requirements and when corrective work and re-tests affect construction and completion schedule,

.5 report in writing to the Project Manager and Commissioning Manager indicating compliance or anomalies regarding witnessed events. The consultant is to investigate and recommend in writing any corrective actions to be taken to facilitate compliance with design intent and design criteria.

1.10 Facility maintenance policy, guidelines and requirements

For full details, the Designer shall refer to CP.13: Facility Maintenance Policy, Guidelines and Requirements.

1.11 Acceptance of the project

The project will be accepted and the Interim Certificate of Completion will be issued only after:

.1 successful completion of all integrated systems tests, life safety support systems tests and after all other requirements of the authority having jurisdiction are satisfied,

.2 all test certificates, commissioning reports and commissioning documentation have been approved and accepted by the Project Manager.

1.12 **Commissioning documentation**

Commissioning documentation is a complete set of data and information fully describing the completed project as a built, finished, functional and operational facility and presented in a form that can be maintained, updated and used over the life of the building.

In preparing project-specific commissioning documentation, use all existing generic commissioning documentation to the maximum extent possible. However, the Designer retains over-riding responsibility for the content of all project-specific commissioning documentation and for editing, amending and supplementing as required and as is appropriate for the project.

Produce in accordance with the requirements of the PWGSC Commissioning Manual (CP.1) in consultation with PWGSC centre of expertise and the PWGSC Commissioning Manager as appropriate.

Comply with all requirements contained in the RFP relating to electronic production of commissioning documentation.

Commissioning documentation shall include:

.1 **The Commissioning Plan**, the master planning document for all commissioning activities and deliverables, revised, refined, updated and reviewed at each stage of design development and re-submitted for review by the Commissioning Manager. Use the PWGSC Model Commissioning Plan (see CP.3) as a reference model.

.2 **The Building Management Manual**, containing all documentation for the project and providing a complete "paper trail" relating to project delivery. Responsibilities for development and timing of delivery are described in CP.4: Guide to the development of Building Management Manuals.

.3 **Commissioning specifications**. For details of requirements, refer to CP.12 - Guide to the development and Use of Commissioning Specifications

.4 **Commissioning Schedule**, the Commissioning Schedule is developed by the Contractor, outlining the performance testing program in an orderly sequence acceptable to the Commissioning Manager and the Designer, the planned dates for submission of commissioning documentation. The Commissioning Schedule is a sub element to the construction schedule and is to be updated as required.

.5 **Training Plans**. Refer to CP.5 Guide to the preparation of Training Plans. For more details refer to relevant paragraph below.

.6 **Installation Check Lists** for use during pre-start-up and pre-commissioning inspections. Refer to CP.9 Guide to the development of Installation/Start-up Check Lists.

.7 **Product Information (PI) report forms** to document all details of equipment, components and systems, Refer to CP.10 Guide to the development of Report Forms and Schematics,.

.8 **Performance Verification (PV) report forms** and include thereon all design criteria, design intents and other relevant design information. Refer to CP.10 Guide to the development of Report Forms and Schematics.

.9 **MMS requirements**, Apply to all drawings before Tender call . Refer to CP.13 Facility Maintenance Policy, Guidelines and Requirements.

.10 **"As-built" drawings and specifications**: to be completed prior to, and available for, pre-start-up inspections and to include:

.1 amendments to show all measured and approved results of PV procedures, settings of all controls, systems and equipment as finally set upon completion of commissioning,

.2 project specifications amended by insertion of addenda, change notices, etc.

.3 Flow diagrams and piping schematics as installed at each major item of equipment complete with valves controllers, etc., identified with numbered tags.

"As-built" drawings and specifications to be completed prior to, and available for, pre-start-up inspections

.11 **Occupants' comments/complaints audit system:** use during the Warranty Period.

.12 **TAB and commissioning reports** in accordance with CP.8: Guide to the preparation of COMMISSIONING REPORTS

.13 **Final evaluation report,.** in accordance with CP.8: Guide to the preparation of COMMISSIONING REPORTS.

.14 **Any other documents and reports**

1.13 **Commissioning deliverables:**

1.13.1 **Conceptual Design Report:** From the commissioning perspective, the Conceptual Design Report shall include:

.1 **Description of the design** describing the Design Criteria, Design Intent, the design philosophy, the rationale for system selection based on life cycle cost analysis, the functional and operational requirements and the conceptual framework for the operation and use of the proposed building, its components and systems, how the proposed design meets the Client's requirements, corporate and project objectives. To be updated at each stage of project development.

.2 **Design criteria, Design intents,**

.3 **O&M Report.** To include:

.1 O&M budget including projected utility consumption

.2 spatial requirements for O&M staff (office, lockers, kitchen, showers, washrooms, flow of people and supplies, storage for special tools, spare parts, and maintenance materials),

.3 cleaning requirements (janitor closets, receptacle for vacuum, equipment supply and storage),

.4 Other O&M requirements including These shall include all requirements associated with O&M aspects including, but not necessarily limited to:

.1 Operating standards and operator requirements,

.2 Equipment and system reliability requirements,

.3 Delivery, content and form of O&M documentation,

.4 Tools, equipment, spare parts and maintenance materials,

.5 Emergency procedures,

.6 Identification and other similar needs,

.7 Waste management requirements,

.8 Preventive maintenance tasks.

Further information may be obtained from CP.7: "Commissioning for Facility Management and Operation".

.4 **Comprehensive documentation, design information/data** and comments so as to allow the Commissioning Manager to:

.1 prepare service and staffing contracts,

.2 prepare a list of spare parts, special tools, maintenance materials and other special equipment to be provided by the Contractor,

.5 capacity of the facility to change in response to program changes over its life expectancy,

.6 requirements for operation and maintenance of the project over its life expectancy,

.7 occupancy during construction,
.8 "phased" construction program,
.9 assessment of staffing and skill requirements to operate and maintain the project,
.10 Preliminary commissioning plan
.11 Sample of PI/PV report forms and tracking software,
.12 Preliminary building management manual,
.13 Define project archives and how these archives will be managed, updated, and submitted at the end of the project.

1.13.2 **33% submission:**

.1 Extent of commissioning determined,
.2 Factory and on-site tests of components, sub-systems, systems and integrated systems during construction, installation and commissioning determined,
.3 Outline commissioning specifications using PWGSC generic commissioning specifications PLUS outline project-specific commissioning specifications,
.4 Updated Commissioning Plan,
.5 Updated Building management manual,
.6 Updated Design Intent Document,
.7 Updated O&M Budget,
.8 Outline PI and PV forms. Provide for all components, equipment and systems to be tested,
.9 Maintenance management system (MMS) codes identified for all equipment shown on the construction documents,
.10 Preliminary Training Plan

1.13.3 **66% submission:**

.1 Factory and on-site tests of components, sub-systems, systems and integrated systems during construction, installation and commissioning defined and detailed in commissioning specs,
.2 Commissioning activities to be deferred to Operational Phase and Warranty Period identified,
.3 Detailed commissioning specifications,
.4 Updated Commissioning Plan, etc.,
.5 Detailed Building management manual,
.6 Updated Design Intent Document,
.7 Updated O&M Budget,
.8 Updated Training Plan,
.9 Maintenance management system (MMS) codes identified for all equipment shown on the construction documents, schematics and line diagrams,

.10 Complete PI and PV forms. Provide for all components, equipment and systems to be tested.

1.13.4 **99% submission:**

.1 Commissioning specifications integrated into project specifications,

.2 90% Commissioning plan,

.3 90% complete Building management manual,

.4 90% Design Intent Document detailing each building system, including all engineering calculations,

.5 Final O&M Budget,

.6 Maintenance management System (MMS) codes identifiers shown on the construction documents and indicated on each PI and PV form,

.7 100% Training Plan, indicating scope and duration of training,

.8 Design information added to PI forms

1.13.5 **100% submission:**

.1 This submission incorporates all revisions required by the review of the 99% submission,

.2 Updated Commissioning Plan, making it approx. 95% complete.

.3 Update the Design Intent Document to reflect any changes from the 99% submission.

1.14 **Construction and commissioning:**

1.14.1 **General:**

.1 Upon Contract award, review and Update the PI and PV Forms, installation/start-up Check Lists, Commissioning Plan, Training Plan, commissioning specifications, and Commissioning Schedule to ensure relevance to construction changes to the work. Refer to CP.9 - Guide to the development of Installation/Star-up Check Lists, and CP.10 - Guide to the development of Report Forms and Schematics,

.2 In consultation with the Contractor, review/select the test instruments to be used and instrument calibration,

.3 Incorporate relevant data from approved shop drawings and installed component data immediately upon approval,

.4 Review contractors compliance with the contract documents,

.5 Witness and certify tests, including those tests conducted before concealment and start up,

.6 Verify that each system is completed, safe to operate and ready for start-up,

.7 Review all test reports and take necessary action with Contractor when work fails to comply with contract,

.8 Immediately notify Project Manager when tests fail to meet project requirements and when corrective work will affect schedule,

.9 Ensure that all deficiencies are rectified and acknowledge that the installation of components and systems is ready for the commissioning phase,

.10 Assist Departmental Representative in evaluating testing firm's invoices for services performed,

.11 Review all maintenance management nomenclature, devices and submissions prepared by the contractor. Ensure on site implementation and tagging of maintenance management.

1.14.2 **Manuals and reports -** Refer to CP.4 - Guide to the preparation of Building Management Manuals:

.1 4 weeks before training is due to commence, assemble, review and approve:

.1 All commissioning documentation, including PV documentation, procedures and expected output. In consultation with the Contractor, review/select the test instruments to be used and instrument calibration.

.2 Revise the Building management manual Document as construction progresses, ensuring that it reflects the installed systems (refer to CP.4 Guide to development of Building management manuals).

.3 Finalize the Operating and Maintenance (O&M) Manual: Verify, and certify, completeness, relevance and accuracy. Produce [4] sets and submit to the Project Manager prior to implementation of Training Plan. The Contractor shall retain one copy of each volume for his record and for use during the implementation of the Training Plan (refer to CP.4 - Guide to the preparation of Building Management Manuals). Submit [4] sets to the Project Manager in accordance with Section [01730] [01732] [01007] of project specification prior to interim acceptance or implementation of Training Plan. Ensure Contractor assembles all certified tests results and incorporates into the Maintenance manuals.

1.14.3 **Training:** Implement the Training Plan.

.1 Submit the Training Plan to the Project Manager for review and comment at least two weeks prior to the proposed training dates. Update and resubmit as required. Include an agenda and a course outline summarizing the content and duration of training. The training provided must clearly relay:

.1 An understanding of the intent of the design.

.2 Limitations of the systems.

.3 Reasons for the choice of systems.

.2 Coordinate the date(s) of the training session(s) with the Project Manager. Project Manager to organize the location and provide the lists of participants.

.3 Prepare a summary of the training sessions. Indicate dates, subject matter, and all personnel present for training. After training, submit the training summary to the Project Manager.

.4 Make necessary arrangement for site O&M staff familiarization during construction/ installation.

.5 Consultant to provide training sessions on design intent and operational philosophy of each building system, including architectural systems, and the integrated building systems (all together). Utilize Operating Manuals, Maintenance Manuals and Design Intent Document for training sessions.

.6 Contractor to provide training sessions on the operations and maintenance of components, equipment, sub-systems, systems and integrated systems.

.7 Record the time, date and subject matter of training sessions as they occur. Indicate all those who are present at each training session.

1.14.4 **Spare parts:**

.1 Finalize the delivery, inventory and storage of all specified spare parts, special tools, maintenance materials.

1.14.5 **Component, sub-systems, systems, and integrated system performance verification (PV)**

.1 Test all the components, subsystems, systems and integrated systems in accordance with the provisions of the contract documents, Ensure the work meets the design intent and requirements of ULC and TB Guidelines on Life Safety and Health. The Consultant shall witness, certify and approve all tests.

.2 Certify and date all PV procedures and test results.

.3 Report in writing to the Project Manager and Commissioning Manager indicating compliance or anomalies regarding witnessed events. The consultant is to investigate and recommend in writing any corrective actions to be taken to facilitate compliance with design intent and design criteria.

.4 Provide solutions during the PV process with respect to the variances from the design parameters.

.5 In consultation with the Commissioning Manager, instruct the contractor to rectify all deficiencies identified and recorded during the performance verification and adjust or alter the systems to achieve the design parameters. Re-test to verify compliance.

.6 In consultation with the Commissioning Manager, and Project Manager, recommend take over of the facility subject to performance of PV and commissioning which were previously agreed to be deferred until the operational phase.

.7 Prior to Interim Inspection, debrief the Project Manager and Commissioning Manager on the commissioning process including training; problems; required changes to systems (with costs) which are outside the contractor's responsibility, but which are deemed necessary to meet project requirements; commissioning procedures and other information, experiences and suggestions for future projects. Submit a report to the Commissioning Manager. Repeat this process when 80% occupancy is achieved.

1.14.6 **Design Intent document and building management manual:**

.1 Update the Design Intent Document and Building management manual. Immediately prior to the issuance of the Interim Certificate of Acceptance develop this document so as to become the complete "Building Management Manual. to reflect the final as-built works. Reflect all changes, modifications, revisions and adjustments. This may include the incorporation of reports such as the Area Measurement and Space Usage Report, Fire protection Manual, etc.

RS 13 BILINGUAL CONSTRUCTION DOCUMENTS

The Consultant shall prepare all construction contract documents in Canada's two official languages.

The languages are considered equal in status; neither is considered to be a translation of the other.

The Consultant shall be responsible for the accuracy and completeness of translations and the consistency of documents.

It is standard practice to produce a single set of drawings on which written text information is shown in both languages and separate specification documents for each language.

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 and 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 identified in PD 2.3. For the purposes of this contract the time period of those services for the Project shall therefore be **4000 Working hours** 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 briefing, 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, as stated in 8.1 above 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 PWGSC 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 PWGSC 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.

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 New Brunswick (NB), or eligible for registration in the province of NB, or other provincial equivalent with a minimum three years experience or;
  - a Certified Engineering/Architectural Technologist registered in the province of NB, or eligible for registration in the province of NB, or other provincial equivalent with a minimum five years experience or;
  - a Certified Engineering/Architectural Technician registered in the province of NB, or eligible for registration in the province of NB, or other provincial equivalent with a minimum seven years experience.

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 Works And Government Services 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 PWGSC Project Manager, 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.

- become thoroughly familiar with the Contract documents, the National Building code and all Fire Commissioner of Canada 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 Brief 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 PWGSC Project Manager 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 PWGSC Project Manager, the Consultant and Contractor.

The Consultant shall ensure that the Resident Construction Services representative maintains, records and submits time sheets. The Consultant shall forward time sheets of the Resident Construction Services representative's to PWGSC after verifying accuracy and approving. The Consultant shall submit reviewed and approved time sheets to the Project Manager, within two weeks after completion of 40 hours of service by the Resident Construction Services representative, for PWGSC review.

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 PWGSC Project Manager, 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 (Project Manager). 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 Project Manager 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 PWGSC Project Manager.

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 PWGSC 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.
5. Accompany PWGSC representatives on inspections and report to the Consultant requirements, comments or instructions of PWGSC'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 PWGSC 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 PWGSC 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 PWGSC;
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 PWGSC, Consultant and himself as follows:

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 PWGSC Project Manager 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 PWGSC 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.

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 PWGSC, 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 PWGSC Project Manager.
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 PWGSC Project Manager.

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

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

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 PWGSC Project Manager 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.

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:

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.....
.....

II. Key Sub Consultants / Specialists:

Interior Design
Firm Name: .....
.....
.....

Key Individuals and provincial professional licensing status:

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.....

Key Sub Consultants / Specialists:

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

Key Individuals and provincial professional licensing status:

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Key Sub Consultants / Specialists:

Electrical
Firm Name: .....
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Key Individuals and provincial professional licensing status:

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Key Sub Consultants / Specialists:

Structrual
Firm Name: .....
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Key Individuals and provincial professional licensing status:

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Key Sub Consultants / Specialists:

Elevator
Firm Name: .....
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Key Individuals and provincial professional licensing status:

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Key Sub Consultants / Specialists:

Cost Specialist
Firm Name: .....
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Key Individuals and provincial professional licensing status:

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Key Sub Consultants / Specialists:

Commissioning Resource
Firm Name: .....
.....
.....
Key Individuals and provincial professional licensing status:

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.....

APPENDIX B - DECLARATION/CERTIFICATIONS FORM

Project Title:

Name of Proponent:

Street Address:

Mailing Address
(if different than street address)

City:

Prov./Terr./State:

Postal/ZIP Code:

City:

Prov./Terr./State:

Postal/ZIP Code:

Telephone Number:( )

Fax Number: ( )

E-Mail:

Procurement Business Number:

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

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

Federal Contractors Program (FCP) - Certification

Pursuant to GI 12, The Proponent must complete the following certification.

1. The Proponent, or, if the Proponent is a joint venture the member of the joint venture, certifies its status with FCP, as follows:

The Proponent or the member of the joint venture

(a) ( ) is not subject to the FCP, having a workforce of less than 100 full-time or part-time permanent employees, and/or temporary employees having worked 12 weeks or more in Canada,

(b) ( ) is not subject to the FCP, being a regulated employer under the Employment Equity Act, S.C. 1995, c.44;

(c) ( ) is subject to the requirements of the FCP, having a workforce of 100 or more full time or part-time permanent employees, or temporary employees having worked 12 weeks or more in Canada, but has not previously obtained a certificate number from HRSDC, (having not bid on requirements of $200,000 or more), in which case a duly signed certificate of commitment is attached;

(d) ( ) is subject to the FCP, and has a valid certificate number as follows: _____ (e.g. has not been declared an ineligible contractor by HRSDC).

Please check the appropriate item above. Further information on the FCP is available on the HRSDC Web site.

2. If the Proponent does not fall within the exceptions enumerated in 1. (a) or (b), or does not have a valid certificate number confirming its adherence to the FCP, the Proponent must fax (819-953-8768) a copy of the signed form LAB 1168, Certificate of Commitment to Implement Employment Equity, to the Labour Branch of HRSDC.

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

Former Public Servant (FPS) - Certification

Contracts with 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 with FPS, proponents must provide the information required below.

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, in the context of the fee abatement formula, 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 to the *Canada Pension Plan Act*, R.S., 1985, c. C-8.

Former Public Servant in Receipt of a Pension

Is the Proponent a FPS in receipt of a pension as defined above?
YES ( ) NO ( )

If so, the Proponent must provide the following information:

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

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

Work Force Reduction Program

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 reduction 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 the Goods and Services Tax or Harmonized Sales Tax.

Certification

By submitting a proposal, the Proponent certifies that the information submitted by the Proponent in response to the above requirements is accurate and complete.

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

Name of Proponent:

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

☐

....
name signature

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

....
name signature

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

....
name signature

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

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

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

E-mail: _____

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

APPENDIX C - PRICE PROPOSAL FORM

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

PROPONENTS SHALL NOT ALTER THIS FORM

Project Title:

Name of Proponent:

The following will form part of the evaluation process:

REQUIRED SERVICES

Fixed Fee (R1230D (2011-05-16), GC 5 - Terms of Payment)

Required Services	Fixed Fee
RS 1 Analysis of Project Requirements	$.....
RS 2 Pre-Design Services	$.....
RS 3 Concept Design	$.....
RS 4 Design Development	$.....
RS 5 Construction Documents	$.....
RS 6 Tender Call, Bid Evaluation and Contstruction Contract Award	$.....
RS 7 Construction and Contract Administration	$.....
RS 8 Project Time Planning, Scheduling and Control	$.....
RS 9 Estimating and Cost Planning	$.....
RS 10 Post Occupancy Services	$.....
RS 11 Integrated Consultant Team Quality Assurance	$.....
RS 12 Commissioning the Facility	$.....
RS 13 Bilingual Construction Documents	$.....
Total Fee for Required Services	$.....

APPENDIX C - PRICE PROPOSAL FORM (CONT'D)

ADDITIONAL SERVICES

- **Fixed Fee** (R1230D (2011-05-16), GC 5 - Terms of Payment)

AS1 Resident Services During Construction

# of Units	SERVICES	COST/UNIT		FIXED FEE
4000 hrs.	Resident Site Services During Construction	@$.....	=	
MAXIMUM FIXED FEES _ UNIT PRICE				———
TOTAL FEE FOR ADDITIONAL SERVICE				

*Payment will be based on actual hours spent. Travel time and/or expenses will not be reimbursed separately.
** All inclusive hourly rate is applicable to both normal working hours and any other shift work as required.

DISBURSEMENTS

Maximum amount payable for Disbursements (excluding HST) $50,000.00

TOTAL COST OF SERVICES FOR PROPOSAL EVALUATION PURPOSES

Total Fee for Required Services		$.....
Total Fee for Additional Services	+	$.....
Maximum Payable for Disbursements	+	$50,000.00
Total Evaluated Fee		$.....

END OF PRICE PROPOSAL FORM

Appendix “D”
Doing Business

Doing Business

TABLE OF CONTENTS

SECTION 1 INTRODUCTION

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

SECTION 2 PWGSC NATIONAL CADD STANDARD

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

Refer to:
http://www.tpsgc-pwgsc.gc.ca/cadd-standards/text/index-e.html

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

SECTION 3 GUIDE TO PREPARATION OF CONSTRUCTION DOCUMENTS FOR PWGSC

1 Purpose

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

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

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

2 Principles of PWGSC Contract Documents

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

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

3 Quality Assurance

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

SPECIFICATIONS

1 National Master Specification

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

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

2 Specification Organization

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

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

3 Terminology

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

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

4 Dimensions

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

5 Standards

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

- CSA standards: http://www.csa.ca
- CGSB standards: http://www.pwgsc.gc.ca/cgsb

- ANSI standards: http://www.ansi.org
- ASTM Standards: http://www.astm.org
- ULC standards: http://www.ulc.ca
- General reference of standards: http://www.cssinfo.com

The NMS website (www.pwgsc.gc.ca/nms) also links to other documents references in the NMS under its "Links" feature.

6 Specifying Materials

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

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

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

Acceptable Materials: set up the paragraph format as follows:

Acceptable Materials:

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

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

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

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

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

"Designated Contractor

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

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

"Designated Contractor

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

and in Part 2 as "Materials

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

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

"Acceptable materials

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

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

7 Unit Prices

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

Use the following wording:

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

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

Sample of Unit Price Table:

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

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

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

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

8 Cash Allowances

Construction contract documents should be complete and contain all of the requirements for the

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

9 Warranties

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

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

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

Delete all references to manufacturers' guarantees.

10 Scope of Work

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

11 Summary and Section Includes in Part -1 General of Section

Do not use "Summary" and "Section Includes."

12 Related Sections

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

13 Index

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

14 Regional Guide

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

15 Health and Safety

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

16 Designated Substances Report

Include “Section 01 14 25 - Designated Substances Report”

17 Subsurface Investigation Reports

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

Subsurface investigation report(s)

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

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

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

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

18 Experience and Qualifications

Remove experience and qualification requirements from specification sections.

19 Prequalification and Pre-award submissions

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

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

20 Contracting Issues

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

Remove all references within the specifications, to the following:

- General Instructions to Bidders
- General Conditions
- CCDC documents
- Priority of documents
- Security clauses
- Terms of payment or holdback
- Tendering process
- Bonding requirements
- Insurance requirements

- Alternative and separate pricing
- Site visit (Mandatory or Optional)
- Release of Lien and deficiency holdbacks

DRAWINGS

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

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

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

4 Specification Notes
No specification type notes are to appear on any drawing.

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

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

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

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

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

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

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

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

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

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

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

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

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

ADDENDA

1 Format

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

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

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

2 Content

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

DOCUMENTATION

Translation

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

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

Consultant shall provide:

- Per construction document submission, a completed and signed Checklist for the Submission of Construction Documents. See Appendix 'A'.
- Specification: originals printed one side on 216 mm x 280 mm white bond paper.
- Index: as per Appendix 'C'
- Addenda (if required): as per Appendix 'B' (to be issued by PWGSC).
- Drawings: reproducible originals, sealed and signed by the design authority.
- Tender information:
  - Including a description of all units and estimated quantities to be included in unit price table.
  - Including a list of significant trades including costs. PWGSC will then determine which trades, if any, will be tendered through the Bid Depository.
  - Government Electronic Tendering System (MERX): Consultants to provide an electronic true copy of the final documents (specifications and drawings) on one or multiple CD-ROM in Portable Document Format (PDF) without password protection and printing restrictions. The electronic copy of drawings and

specifications is for bidding purposes only and do not require to be signed and sealed. See Appendix ‘D’ and Appendix ‘E’.

PWGSC shall provide:

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

SECTION 4 CLASSES OF CONSTRUCTION COST ESTIMATES USED BY PWGSC

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

Class 'D' (Indicative) Estimate:

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

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

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

Class 'C' Estimate:

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

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

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

Class 'B' (Substantive) Estimate:

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

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

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

Class 'A' (Pre-Tender) Estimate:

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

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

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

SECTION 5 TIME MANAGEMENT

1 Time Management, Planning, and Control

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

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

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

1.1 Schedule Design

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

When building a Control System you must consider:

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

1.2 Schedule Development

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

Work Breakdown Structure

When developing the schedule the consultant needs to use PWGSC standards and practices. Two basic requirements are the National Project Management System (NPMS) and a Work Breakdown Structure (WBS), structured supporting the NPMS (Levels 1-4).

The WBS is as follows:

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

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

Major and Minor Milestones

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

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

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

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

Activities

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

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

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

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

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

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

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

Project Logic

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

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

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

Activity Duration

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

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

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

Activity List

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

Milestone List

A Milestone List identifies all project Major and Minor milestones.

Master Schedule

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

Detailed Project Schedule

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

1.3 Schedule Review and Approval

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

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

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

1.4 Schedule Monitoring and Control

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

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

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

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

Progress Reports

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

The Progress Report includes:

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

Narrative reporting begins with a statement on the general status of the project followed by a summarization of delays, potential problems and project status criticality, any potential delays, outstanding issues and concerns and options for dealing with any serious planning and scheduling issues.

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

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

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

Exception Report

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

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

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

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

1.5 Standard Submissions

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

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

1.6 Schedule Outputs and Reporting Formats

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

Progress Reports

Paper Size: Letter

Paper Format: Portrait

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

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

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

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

Exception Reports

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

Paper Size: Letter
Paper Format: Landscape
Title Format: Project Title; Report Type; Print Date; Data Date; Revision
Columns: Activity ID, Activity Name, Duration, Remaining Duration, Start, Finish, Total Float.

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 April 22, 2008

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.			
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 Identify if non-restrictive, non-trade name “prescription” or “performance” specifications are used.			
6c Indicate if a list of acceptable materials have been used.			
6d The term “Acceptable Manufacturers” is not used.			
6e Indicate if sole sourcing has been used.			
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 The project quantity and configuration, dimensions and construction details are included.			
6b 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 certifying that all items noted above have been addressed, should it be found during the tendering of these documents or implementation of the project, that the items above were not properly addressed, my firm will be responsible to resolve all related issues at my firm's expense and may receive an unsatisfactory consultant performance evaluation which could have an impact on my firm's ability to obtain work from PWGSC in the future.

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: _____

DRAWINGS AND SPECIFICATIONS

DRAWINGS:

SPEC NOTE: List all Drawings by number and title.

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

SPECIFICATIONS:

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

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

APPENDIX 'D'

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

Issued by:

Real Property Contracting Directorate

PWGSC

May 2005

Last Updated: June 3, 2008

Version 1.0

PREFACE

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

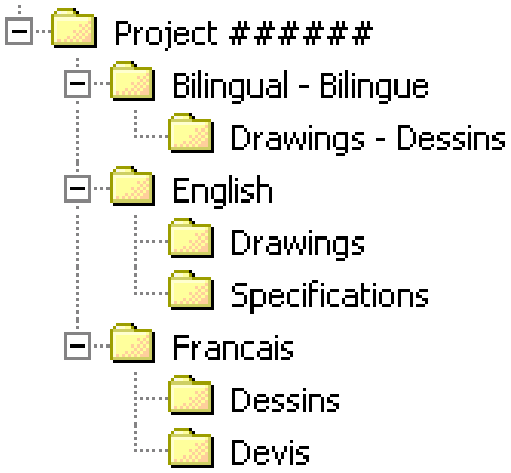
There is therefore a need to adopt a common directory structure and file-naming convention to ensure that the information made available to contractors electronically and in hard (printed) copy is in accordance with the sequence adopted in the real property industries, both for design and construction.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

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

1. DIRECTORY STRUCTURE

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

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



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

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

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

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

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

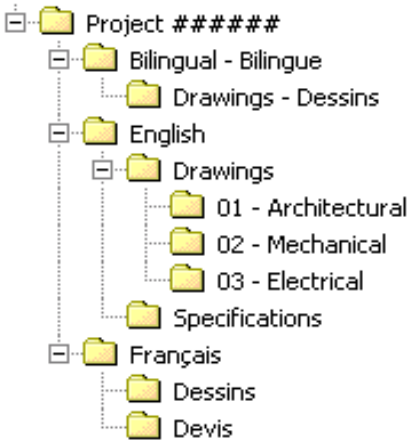
1.2 4th Tier Sub-Folders for Drawings

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

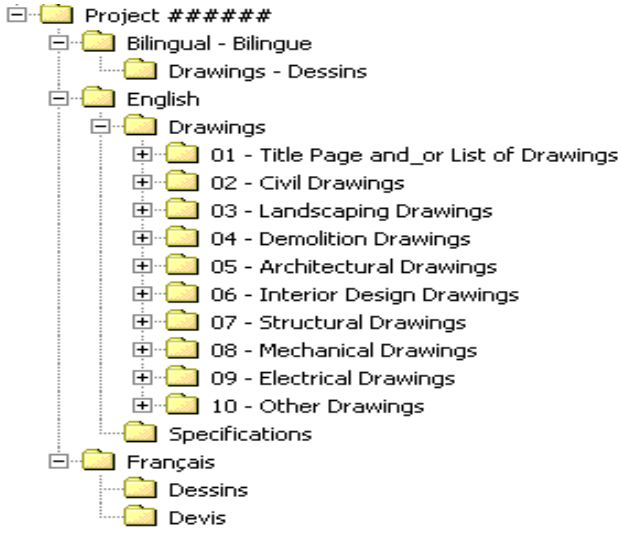
Because the order of appearance of the sub-folders on the screen will also determine the order of printing, it is necessary to start with a number the identification name of the sub-folders in the "*Drawings – Dessins*", "*Drawings*" and "*Dessins*" folders.

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

Examples of 4th Tier sub-folders for drawings:



or



1.2.1 Naming Convention

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

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

- Y

Where:

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

Example: 03 – Mechanical

For the "*Drawings - Dessins*" folder:

- Y - Z

Where:

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

Example: 04 - Electrical - Électricité

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

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

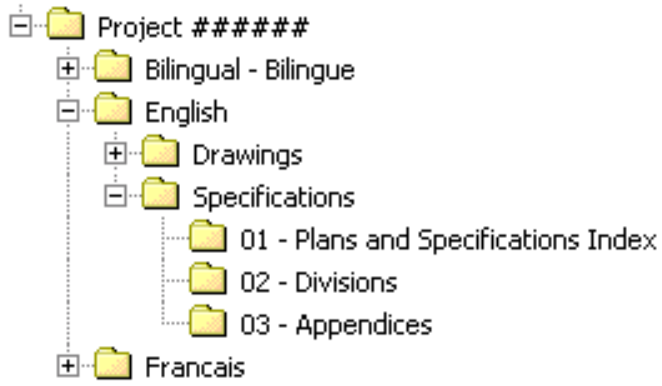
- The alphanumerical sorting is done on an ascending order;
- The alphanumerical order of the sub-folders determines the order of appearance on the screen as well as the order of printing (as an example: all the drawing PDF files in the 01 sub-folder will be printed in alphanumerical order before the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

1.3 4th Tier Sub-Folders for Specifications

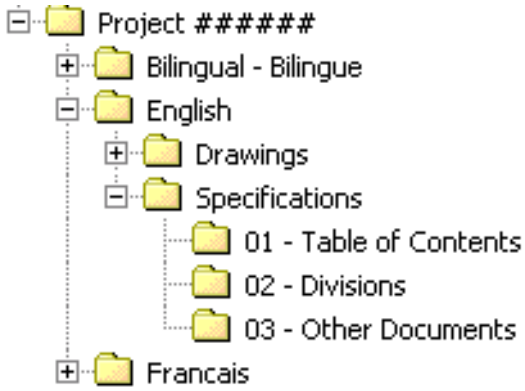
The "*Specifications*" and "*Devis*" folders must have 4th Tier sub-folders created to reflect the various elements of the specifications.

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

Examples of 4th Tier sub-folders for specifications:



or



1.3.1 Naming Convention

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

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

- Y

Where:

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

Example: 02 – Divisions

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

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

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

2. NAMING CONVENTION FOR PDF FILES

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

2.1 Drawings

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

X### - Y

Where:

X =	The letter or letters from the drawing title block ("*A*" for Architectural or "*ID*" for Interior Design for example) associated with the discipline
### =	The drawing number from the drawing title block (one to three digits)

Y = **The drawing name from the drawing title block (for bilingual drawings, the name in both English and French is to appear)**

Example: A001 - First Floor Details

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

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

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

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

  ## - Y

  Where:

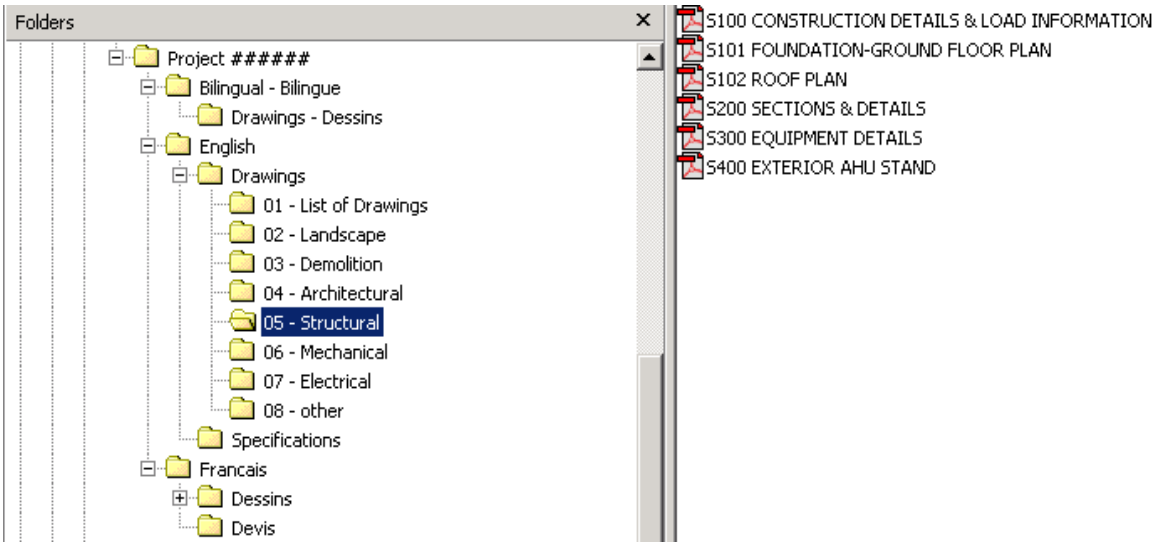
  ## = A two digit number ranging from 01 to 99 (leading zeros must be included)

  Y = The name of the drawing

  Example: 01 - Title Page
  02 - List of Drawings

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

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



2.2. Specifications

Each Specifications Division must be a separate PDF file and all pages contained in each PDF file must have the same physical size (height, width). The Plans and Specifications Index must also be a separate PDF file. If there are other documents that are part of the Specifications (e.g. Appendix or other) these are to be separate PDF files as well.

2.2.1 Documents other than Specifications Divisions

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

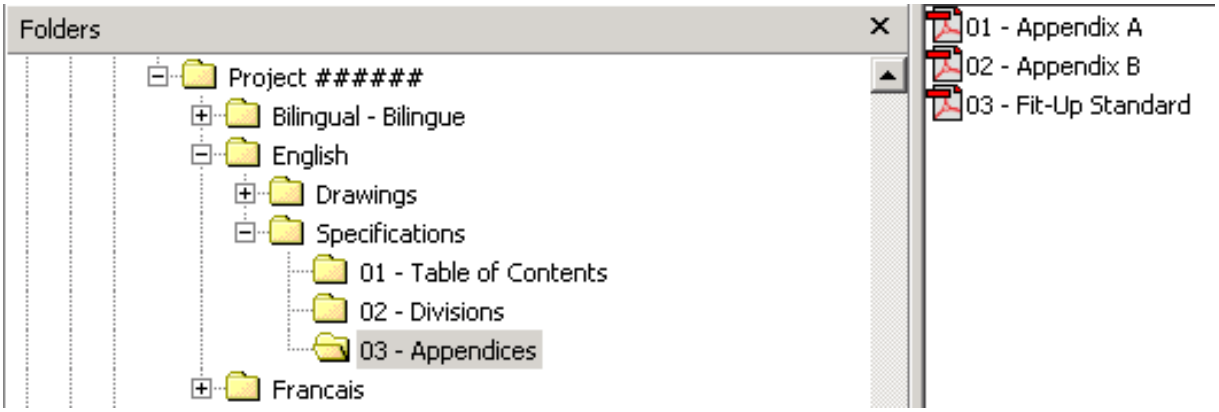
- Y

Where:

## =	Two digit number ranging from 01 to 99 with leading zeros required
Y =	Name of the document

Example: 01 - Plans and Specifications Index

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



2.2.2 Specifications Divisions

The Specifications Divisions must be named as follows:

Division ## - Y

Where:

Division ## = The actual word "*Division*" followed by a space and a two digit number ranging from 01 to 99 (with leading zeros required)

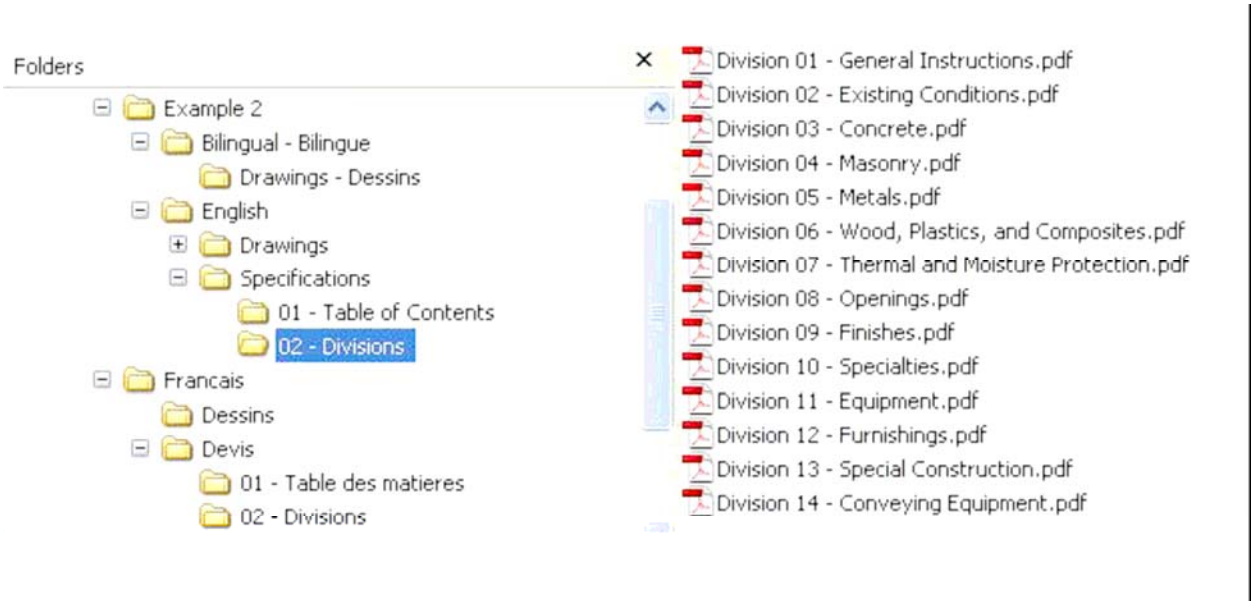
Y = Name of the Specifications Division as per **CSC/CSI MasterFormat™**

Example: Division 05 – Metals

The following important point about specifications is to be noted:

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

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



3. CD-ROM LABEL

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

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

Example:

Project 123456 / Projet 123456
Repair Alexandra Bridge / Réparation du pont Alexandra
Documents for Tender / Documents pour appel d'offres
CD 1 of/de 1

APPENDIX 'E'

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

Issued by:

Real Property Contracting Directorate

PWGSC

May 2005Last Updated: May 3, 2005

Version 1.0

PREFACE

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

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

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

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

1. PRINTER DRIVERS

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

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

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

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

2. PRINTER CONFIGURATION

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

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

3. CREATING PDF FILES

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

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

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

4. PDF FILES SETTINGS

4.1 Security

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

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

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

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

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

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

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

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

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

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