



PART 5 STANDING OFFER BRIEF – REQUIRED SERVICES (RS)

Title: Architectural and Engineering Services for the Royal Canadian Mounted Police

A. Introduction and Background:

The Royal Canadian Mounted Police (RCMP) provides federal policing services to all Canadians and policing services under contract to eight (8) provinces, the three (3) territories, more than 370 municipalities and Indigenous communities, and to three (3) international airports. The RCMP has a broad portfolio of fixed infrastructure that is dispersed in over 800 locations across Canada to discharge its mandate. It manages and funds projects to replace, expand, modify, and maintain its facilities to ensure that they can meet its operational needs.

The RCMP has an ongoing mandate to complete pre-design, design, construction, and other technical services for various RCMP construction and maintenance projects in the Province of Saskatchewan.

B. Purpose and Objective:

The RCMP has a requirement for the provision of various Architectural and Engineering Services that may be necessary to complete pre-design, design, construction, and other technical services for the various construction and maintenance projects in the Province of Saskatchewan. The RCMP will qualify consultants capable of providing these services necessary to support the various assignments within the designated Region.

The RCMP may issue Call-ups against any resulting Standing Offer on an “as and when required basis” to fulfill requirements as they arise. When the services required cannot be described adequately in the Call-Up form, a Call-Up Statement of Work describing the project, services, deliverables, schedule, budget, and other requirements necessary to deliver the Services, will be attached to the Call-Up. This template can be found within Appendix F – Standing Offer Costs Estimate Quote Form.

C. Scope of Work:

The Primary Consultant (an Architect, a Mechanical/Electrical Engineer, or a Civil/Structural Engineer) will be identified at time of Call-up issuance and will be responsible to provide and coordinate personnel, and sub-consultants, qualified in each Discipline, to complete the services specified in the Call-up. The thirteen (13) Disciplines are as follows:

1. Project Management Services;
2. Architectural Services;
3. Civil Engineering Services;
4. Structural Engineering Services;
5. Mechanical Engineering Services;
6. Electrical Engineering Services;
7. Landscape Architectural;
8. Commissioning Services;
9. Cost Estimating;
10. Feasibility Studies;
11. Building Condition Reports;
12. Interior Design (Furniture / Workstation Design)
13. Project Monitoring and Control Services



D. Location of Work: Within the Province of Saskatchewan.

E. General Requirements:

The roles and responsibilities of the stakeholders and participants will be defined as necessary by the Departmental Representative.

1. Scope of the Services:

- a. Prior to proceeding with the services specified in any resulting Call-up, advise the Departmental Representative of any existing problems, additional information, or clarification necessary to deliver the services specified.
- b. Do not proceed with any Service that is outside of the scope specified in the Call-up unless authorized in writing by the Contracting Authority.
- c. Refer to the Departmental Representative for any request for changes to the scope of the services specified or the functionality, schedule or cost of the project. Do not proceed unless authorized to do so in writing by the Contracting Authority.

2. Communications:

- a. All formal and informal communications are to be directed to the Departmental Representative. The Departmental Representative may authorize direct informal communications between the consultants and other stakeholders, as necessary.
- b. All RCMP site visits are to be coordinated with the Departmental Representative at least five (5) working days in advance.
- c. All media inquiries related to the RCMP in general or any matter pursuant to the resulting Call-up or Standing Offer shall be referred to the Departmental Representative without comment.

3. Meetings:

- a. The consultant will prepare and distribute minutes of all meetings. Draft minutes are to be distributed to all participants for comments within five (5) working days and the final version within ten (10) working days of the meeting.

4. Security Requirements:

- a. All consultants and sub-consultants who will require access to sensitive government information and assets will require a security clearance issued by the necessary departmental Personnel Screening Unit (PSU).
- b. The consultant will ensure that all protected and classified information is safeguarded and distributed only to personnel with the appropriate clearances and only as required to perform the services. The consultant and sub-consultants are expected to protect the documents and information in their care and to which they have access through appropriate administrative and physical measures.
- c. Sanitization of Specifications and / or Drawings
Specification and Drawings must not contain the following:
 - Key plans showing the entire complex or site;
 - RCMP logos – the identifiers that can be used are PSPC or Government of Canada;
 - Names of RCMP sites and / or addresses;
 - Rooms must not be identified only by room number. If required a separate coded list of room numbers associated to sensitive information and descriptor must be developed.



5. Reporting:
 - a. Submit a monthly progress report until the completion of the services specified in any resulting Call-up. The report is to be submitted electronically within seven (7) calendar days after the end of the month. A monthly progress report will include, but not be limited to the following:
 - i. A narrative summary of the progress realized during the month;
 - ii. Percentage completion of the various services specified in any resulting Call-up;
 - iii. Estimated budget for the required services specified in any resulting Call-up;
 - iv. Updated schedule of activities and deliverables;
 - v. A list of issues and risks that could have scope, cost, and or schedule impacts; and,
 - vi. A list of key action items for resolution by the RCMP that may have an impact on the Consultant's schedule, and a log of the issues that have been resolved.

6. Deliverables:

The following section describes the various services that may be specified in any resulting Call-Up, their primary objectives, the range of tasks typically required, and most importantly, the deliverables. This section of the SOW must be read in conjunction with the resulting Call-up for project specific direction. These services are as follows:

RS1 Pre-Design Services (Stage 1A), the purpose of this stage is to develop:

- 1.1 Feasibility Studies / Optional Analysis;
- 1.2 Implementation Strategy and Schedule
- 1.3 Detailed Investigation Reports;
- 1.4 Sustainable Development Strategies and Report;
- 1.5 Facility Equipment Evaluation and Recommendations Report;
- 1.6 Telecommunications Requirements Report;
- 1.7 Environmental Clean-up Report;
- 1.8 Decommissioning Report; and / or
- 1.9 Order of Magnitude Cost Report.

1.1 Feasibility Studies / Options Analysis

1.1.1 Intent:

Feasibility Study: A report, which outlines the research and subsequent analysis to determine the viability and practicability of a project. A feasibility study analyzes economic, financial, market, regulatory, environmental/sustainable and technical issues. The purpose at this stage is to: investigate and analyze site conditions, zoning, bylaws, traffic reports, base building support systems, special purpose support systems, site features and restriction (i.e. landscape features, topographical feature, climatic influences, setback requirements, easements, existing buildings, and / or structures), and parking capacity. Review subsurface, geotechnical analysis of soils. Municipal infrastructure, subsurface and above grade services, including capacities and limitations (i.e. storm water drainage, fire protection, domestic water, power, telecommunications). Provide recommendations.

Options Analysis: A design test (in schematic form) for the feasibility study recommendations to determine that the recommendations can be accommodated in a minimum of three (3) distinctly



different options.

Cost Estimate: Complete with class 'D' "Order of Magnitude" costs. (see RS 1.9)

1.1.2 **Scope and Activities**

Feasibility Study is to include, but not be limited to:

- 1.1.2.1 Visit the building/site, investigate and analyze the availability and capacity of building services needed for the project, including renewable energy;
- 1.1.2.2 Investigate the requirements for the particular facility, including existing and new technologies;
- 1.1.2.3 Analyze the project requirements/program;
- 1.1.2.4 Review all available existing material related to the type of facility;
- 1.1.2.5 Investigate and analyze all applicable codes, regulations standards, including (but not limited to): National Building Code, Canada Labour Code, Model National Energy Code, NFPA, Occupational Health and Safety codes for the Province of Saskatchewan, Medical Research Council;
- 1.1.2.6 Evaluate existing facilities including: building envelope, mechanical, electrical and structural systems, functional adaptability, code compliance, hazardous and non-hazardous waste;
- 1.1.2.7 Identify and verify all authorities having jurisdiction over the project;
- 1.1.2.8 Establish 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); and
- 1.1.2.9 Prepare recommendations on the feasibility of the project.

Options Analysis is to include, but not be limited to:

Test the feasibility study recommendations on a minimum of three (3) options, schematic (sketch) only;

- 1.1.2.10 Bubble and flow diagrams;
- 1.1.2.11 Adjacencies and functional relationships;
- 1.1.2.12 Horizontal and vertical stacking relationships;
- 1.1.2.13 Orientation and renewable energy and
- 1.1.2.14 Indication of the preferred option.

Cost Estimate:

- Complete with class 'D' "Order of Magnitude" costs. (see RS 1.9)

1.1.3 **Deliverables:**

- 1.1.3.1 Comprehensive summary of the existing conditions, feasibility and options analysis including:
 - a) Report on existing base building system elements including their condition, deficiencies and life expectancy;
 - b) Report on existing facility systems requirements;
 - c) Report on all applicable codes, regulation, standards and authorities having jurisdiction;
 - d) Report on environmental impact, sustainability, preliminary environmental assessment and CEAA screening report;



- e) Report on recommendations and options analysis.
- f) Written identification of the problems, conflicts or other perceived information/clarifying assumptions for the acknowledgment of the Departmental Representative;
- g) Report on Class 'D' Order of Magnitude Cost for each option.

1.1.3.2 When requested, the consultant shall: develop floor plates which outline rentable areas, mechanical areas and electrical areas, identify volumes of space needed, identify circulation requirements and finally, identify usable m².

1.2 Implementation Strategy and Schedule

1.2.1 Intent:

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

1.2.2 Scope and Activities

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

- 1.2.2.1 Prepare a detailed implementation strategy that documents, in a report, all activities, milestones and deliverables required for the effective delivery of the project including time frames for submissions, reviews and approvals.
- 1.2.2.2 Prepare a project schedule that identifies, in a graphic format such as Critical Path Method (CPM) or Program Evaluation Review Technique (PERT), all activities, milestones including critical deadlines, long lead delivery items and drop dead dates, required for the effective delivery of the project deliverables, including time frames for submissions, reviews and approvals.
- 1.2.2.3 The Implementation Strategy and Schedule described above shall include, but not be limited to the following:
 - i) Space acquisition strategy, building master plan;
 - ii) Decommissioning and environmental clean-up strategy;
 - iii) Move sequencing;
 - iv) Swing space requirements;
 - v) Procurement of facility equipment and furniture strategy; and
 - vi) Construction strategy.
- Advise the Departmental Representative of any changes to the scope that may affect schedule 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.
- Submit the Implementation Strategy and Schedule for review. Revise as required. Resubmit for final approval. The original approved schedule will become the "Baseline" schedule to monitor project progress.
- Throughout the project, monitor critical path and deadlines for submissions, revisions and approvals. Submit weekly Progress Reports identifying completed deliverables, slippage and upcoming activities.

1.2.3 Deliverables

Implementation Strategy
Time Plan (Schedule)



1.3 Detailed Investigation Reports

1.3.1 Intent

The purpose of this stage is to provide a more detailed investigation into aspects of findings and recommendations identified at the Building Condition report (BCR) level.

1.3.2 Scope and Activities may include, but are not limited to:

- Structural analysis and testing;
- Detailed building envelope investigation and testing;
- Detailed air-flow analysis and testing;
- Detailed energy analysis and investigation.

1.3.3 Deliverables

- Submit the findings of the detailed investigations for review, in a report. Revise as required.
- Resubmit for final approval.

1.4 Sustainable Development

1.4.1 Overview

- 1.4.1.1 Sustainable Development objectives must be addressed throughout the evolution of the project. Sustainable Development is defined in broad terms as a strategy that routinely and consistently includes the consideration of the environmental, economic and societal impact of every decision made for the project. RCMP buildings will meet or exceed the [Greening Government Strategy](#) (GGS) commitments and its related guidance, as per the Federal Sustainable Development Act (FSDA), [subsection 11\(1\)](#).
- 1.4.1.2 All new buildings must be constructed to be net-zero carbon unless a GHG LCCA indicates net – zero – carbon – ready construction. Only build to NZCR if NZC is proven not to be not cost effective. The Centre for Greening Government defines a net-zero carbon building as a building that is climate resilient, highly energy efficient and fully powered from on-site and/or off-site clean energy sources. For further information please refer to Appendix L - Real Property GHG Life Cycle Cost Analysis (GHG LCCA) Guidance.
- 1.4.1.3 Disclose to the RCMP, and reduce the embodied carbon of building envelope and structural materials, in compliance with the Standard on Embodied Carbon in Construction.
- 1.4.1.4 The following sustainable areas of focus include but are not limited to;
- 1.4.1.4.1 Energy efficiency and conservation,
 - 1.4.1.4.2 Greenhouse gas emissions reduction,
 - 1.4.1.4.3 Climate change adaptation measures,
 - 1.4.1.4.4 Clean energy sources, on-site and off-site generation,
 - 1.4.1.4.5 Water management and conservation,
 - 1.4.1.4.6 Pollution prevention,
 - 1.4.1.4.7 Product selection and resource conservation,
 - 1.4.1.4.8 Indoor environmental quality (thermal, air, and lighting quality),
 - 1.4.1.4.9 Site conservation (protection and preservation of valued natural site features),



Measurement and Verification to provide an ongoing accountability of energy and building services consumption over time,

1.4.1.4.10 Environmentally friendly maintenance procedures and products.

1.4.1.5 Conduct an energy modelling analysis on energy performance and GHG emissions for projects with a contract value over \$5 million using a software compliant with ASHRAE Standard 140 – Standard Method of Test for the Evaluation of Building Energy Analysis Computer Programs to identify optimal energy conservation measures and guide decisions.

1.4.1.6 For this project, a solid waste management program must be implemented for all construction phases.

1.4.1.7 Energy and Water meters must be installed to track consumption.

1.4.2 Design Guidelines for Sustainable Development

1.4.2.1 The project's sustainable goals can be achieved by incorporating passive and active design strategies. The International Passive House Association (iPHA), Canada Green Building Council (CaGBC), the Green Building Initiative (GBI) and Natural Resources Canada (NRCAN) are internationally recognized organizations who publish standards and quantify the minimum requirements for green building certifications. These organizations certify Passive Houses, LEED buildings, and the Green Globes and ENERGY STAR certifications respectively and serve as guidance to assist in the development of project specific sustainable design strategies.

1.4.2.2 The Consultant shall review and incorporate where applicable the principles of sustainable design.

1.4.2.3 The facility must be designed to exceed the requirements of the National Energy Code for Buildings (NECB) 2020 by a minimum of 25% as a baseline for comparison with Net-zero carbon options. Compliance must be demonstrated utilizing the performance path method as described in Part 8 of the NECB 2017, requiring the use of a computer simulated energy analysis model. Preliminary compliance of the design requirements must be demonstrated at the Design Development stage, and then updated to show continued compliance at both 66% and 99% Contract Document stages. The software utilized for modelling must be compliant with ANSI/ASHRAE 140.

1.4.2.4 Services are to include a comprehensive study, review and recommendation for the implementation of systems to achieve a net-zero carbon design. Further clarification provided in the next section - Building Performance.

1.4.3 Building Performance

1.4.3.1 Provide a building and building systems that will enable long-term efficient and cost effective life cycle performance

1.4.3.2 Achieve:

1.4.3.2.1 A building that embodies sustainable design and application principles and is implemented in an environmentally responsible manner,

1.4.3.2.2 Energy performance that exceeds the NECB 2020 requirements by 25% as baseline for comparison. Design shall utilize the Energy performance compliance path as defined in Part 8 of the NECB 2020 and document compliance.

1.4.3.2.3 Healthy and safe environments that meet or exceed all applicable codes for construction, fire, health, and life safety.

1.4.3.2.4 A building that fully integrates all components and systems (architectural, structural,



mechanical, electrical, IT, multimedia, security, and furniture),

1.4.3.2.5 Building materials and systems that are of a high quality; designed in response to sound building science, life cycle cost effectiveness, general ease of maintenance and constructed with the best workmanship possible, and have reduced embodied carbon content. For further information please refer to Appendix K - TBS Guide for Implementing the Standard on Embodied Carbon in Construction

1.4.3.2.6 Mechanical systems that can be accessed and easily repaired or replaced over the building life cycle as required.

1.4.3.2.7 Sustainable Development objectives throughout the evolution of the project to align with the Government of Canada's Greening Government Strategy.

1.4.4 Net Zero Carbon Options Analysis

1.4.4.1 Intent

1.4.4.1.1 The Consultant must obtain written authorization from the Departmental Representative before proceeding with the Greenhouse Gas Life-Cycle Cost Analysis.

1.4.4.1.2 The Consultant team will explore a minimum of four (4) distinctly different building system design concepts (Baseline costing, Cost Neutral GHG reduction, Maximum GHG reductions, Optimized GHG reduction) that each demonstrate compliance with achieving net zero carbon emissions, as it relates to the building option selected in the Schematic Design phase. See Appendix L Real Property GHG LCCA Guidance from TBS for more information.

1.4.4.1.3 The Consultant team is to determine the overall energy demand of the building (i.e.: heating source, electricity, etc.) and calculate the overall amount of greenhouse gas emitted through the consumption of these sources. Net zero compliance must be demonstrated by analysis of utilizing alternative technologies or clean energy sources to offset the greenhouse gases emitted through the 40-year life-cycle operation of the building. The analysis should be supported by an energy modelling analysis compliant with ASHRAE 140. Achievement of net zero carbon emissions is to be evaluated over an entire 40-year life-cycle of the building's operation and captured in the GHG LCCA.

1.4.4.1.4 Calculate by considering initial capital costs, recapitalization costs, residual value, energy costs, carbon costs, and other applicable costs over a 40-year life cycle. Based on results of the options analysis, the project stakeholders shall choose one option to be further developed (the GHG LCCA will assist decision makers by highlighting the balance of GHG emissions with cost).

1.4.5 Scope and Activities

1.4.5.1 Review chosen schematic building design, based on energy modelling and GHG LCCA analyses, as it relates to achieving net zero carbon emissions compliance.

1.4.5.2 Design baseline for comparison to be 25% greater than NECB 2020 requirements.

1.4.5.3 Prepare a minimum of four (4) Mechanical/Electrical Building System design options for the detachment. Embodied carbon of structural materials should be reduced and disclosed in compliance with the Standard on Embodied Carbon in Construction.

1.4.5.4 Analyze each option over 40-year cycle with regard to the following criteria:

1.4.5.4.1 Building energy demand and costs,

1.4.5.4.2 Capital cost of building systems (overall baseline design),



- 1.4.5.4.3 Annual utility costs,
 - 1.4.5.4.4 Total greenhouse gas emissions from consumption of utility grid sources (over one (1) calendar year),
 - 1.4.5.4.5 Total greenhouse gas emissions saved from proposed design options demonstrating net zero carbon compliance (over one (1) calendar year), and projected costs over a period of 40 years,
 - 1.4.5.4.6 Payback periods (for system over baseline design),
 - 1.4.5.4.7 Total system size (if on-site electrical generation option proposed). Align this with what is in the Real Property GHG LCCA Guidance. For further information please refer to Appendix L - Real Property GHG Life Cycle Cost Analysis (GHG LCCA) Guidance.
- 1.4.5.5 Report is to include executive summary, baseline information, description of each option presented, analysis of data above in a graphical format, including GHG LCCA and energy analyses, and conclusion with a recommendation. Graphics, charts, images, etc. are to be included, as required, to support information presented within report.

1.4.6 Deliverables

- 1.4.6.1 Prepare and submit, for review and approval by the RCMP Departmental Representative, a Greenhouse Gas Life-cycle Cost Analysis including energy modelling and GHG LCCA analysis. Ensure the rationale behind decisions or choices for greening options are clearly demonstrated. Revise as required by the Departmental Representative. Resubmit for acceptance.
- 1.4.6.2 Completed Embodied Carbon Disclosure Template.
- 1.4.6.3 Building RETScreen file.
- 1.4.6.4 Climate Change Risk Assessment.

1.5 Facility Equipment Evaluation & Recommendations Report

1.5.1 Intent

The purpose of this stage is to identify and evaluate existing facility equipment and furniture and to make recommendations for their reuse, recycling, refurbishment and/or replacement. Generally, this will be at a high level and only Special Purpose Space should be identified. All other areas i.e. offices, common areas etc. falls under Fit-up Standards.

1.5.2 Scope and Activities

1. At such time as the Departmental Representative determines, prepare a detailed inventory of existing furniture and equipment found in workstations/work-settings, support space and special purpose facility space. Include drawings identifying existing location, layout, and user's name or employee number, if applicable. Verify with client department. Revise as required. Obtain approval. Note that the Consultant shall refer to the Public Works and Government Services Canada National Project Management System as a guideline. This type of activity should not be undertaken too early in the process as information is quickly "stale dated".
2. Based on parameters developed in conjunction with the Departmental Representative and the client department, prepare a furniture and equipment evaluation report that assesses the condition of existing furniture and equipment. Assess the current inventory against the client department's functional requirements. Include an examination of the following: Reusing/refurbishing existing furniture and equipment; and/or Procuring new furniture and equipment; and Current technologies and innovative solutions for the total office facility environment.
3. Prepare a detailed cost analysis (Class B) that compares the reuse/refurbishment of existing



furniture and equipment, with the purchase of new furniture and equipment. Consideration should be given to cost effectiveness and time frames required for refurbishment of existing furniture and equipment and/or the procurement of new furniture and equipment.

4. Analyze BBC requirement including amendments identified by the RCMP for furniture / equipment.

1.5.3 Deliverables

- Submit (1) inventory, (2) evaluation report, & (3) cost analysis in a report for review.
- Revise as required.
- Resubmit for final approval.

1.6 Telecommunications Requirements Reports

1.6.1 Intent

The purpose of this stage is to research and investigate the telecommunications requirements of the client for the project, keeping in mind future requirements for e- government and government-on-line.

1.6.2 General

Scope and Activities

1. Prepare a report that documents the client's telecommunications requirements. Report should include infrastructure and termination requirements.
2. Document the effect of the client department's functional requirements and proposed planning alternatives on their current and future telecommunication requirements.

1.6.3 Deliverables

- Submit 1.6.2(1) & 1.6.2(2) in a report for review.
- Revise as required.
- Resubmit for final approval.

1.7 Environmental Clean-up Reports

1.7.1 Intent

The purpose of this stage is to research and investigate the environmental requirements of the client for the project.

1.7.2 Scope and Activities

1. Prepare a report that documents the effect of the client department's functional requirements and proposed planning alternatives on their current and future requirements. Identify environmental requirements and make appropriate recommendations.
2. Prepare a Waste Management Plan including all non-contaminated material that is to be reused or recycled whenever possible according to the Public Works and Government Services Canada Construction and Demolition Waste Management Protocol.

1.7.3 Deliverables

- Submit 1.7.2 (1) & (2) in a report for review.
- Revise as required.
- Resubmit for final approval.



1.8 Decommissioning Reports

1.8.1 Intent

The purpose of this stage is to research and investigate the decommissioning requirements of the client's specialized equipment and systems.

1.8.2 General

Scope and Activities

1. Prepare a report that documents the effect of the client department's functional requirements and proposed planning alternatives on their current and future requirements. Identify decommissioning requirements and make appropriate recommendations.
2. Prepare a Decommissioning Plan including all stand-alone facility equipment and systems that is to be reused or recycled whenever possible according to Government of Canada and Treasury Board Standards.

1.8.3 Deliverables

- Submit 1.8.2(1) & (2) in a report for review.
- Revise as required.
- Resubmit for final approval.

1.9 Order of Magnitude "Class D" (Indicative) Cost Reports

1.9.1 Intent

The purpose of this stage is to provide an indication of the total cost of the project, based on the user's functional requirements to the degree known at the time. It is based on historical cost data for similar work, suitably adjusted for such factors as: effect of inflation, location, risk, quality, size and time. All related factors affecting cost are considered to the extent possible. Such an estimate is strictly an indication (rough order of magnitude) of the project total cost and completion date. This estimate is used to establish the indicative estimate required by Treasury Board for Preliminary Project Approval.

1.9.2 General

Scope and Activities

- **Cost Planning**
- Specific tasks may include, but are not limited to:
 - a) Prepare (life-cycle) cost plans from project briefs, preliminary concepts or other preliminary information;
 - b) Prepare cost analysis;
 - c) Prepare option analysis and "what if" scenarios;
 - d) Provide advice and recommendations on project planning in order to achieve the most cost effective project sequence;
 - e) Identify and quantify potential risks and make contingency recommendations in order to minimize negative cost impacts;
 - f) 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.



- **Cost Estimating**
- Develop cost estimates of projects:
 - a) Prepare order of magnitude “class D” cost estimates;
 - b) Quantify design and construction costs, contingencies and risks;
 - c) Prepare and investigate costing alternatives to assist in the identification of the most cost-effective design and/or construction approach;
 - d) Investigate and report on life-cycle costs; or
 - e) Document all unit pricing, analysis, and valuation.

1.9.3 Deliverables

1. Cost Planning

- Cost plans;
- Cost analyses and “what if” scenarios;
- Cash flows; and / or
- Reports on alternative procurement and construction strategies or other project-related issues.

2. Cost Estimating

- Fully detailed cost estimate. Order of magnitude “class D” accuracy;
- Documentation of the methodology of the estimate and any assumptions made;
- Documentation of all pricing and valuation calculations;
- Reports on investigation of costing alternatives; and / or
- Reports on life-cycle costs.

RS 2 Pre-Design Services (Stage 1B) - Verification (when RS 1 has been prepared by others)

- Based on the Project Brief prepared by the RCMP Departmental Representative at the time of call-up, the scope of services will either be based on Section RS 1 “Pre-Design Services (Stage 1A)” or “Pre-Design Services (Stage 1B) - Verification”.
- Analysis of Project Requirements
- Review Pre-Design deliverables (Stage 1A) prepared by others.

2.1 Analysis of Project Requirements

2.1.1 Intent

The purpose of this stage is to ensure the consultant has reviewed and integrated all the project requirements, identified and evaluated conflicts or problems, provide alternative strategies, presented and received approval on a Project scope, delivery process, schedule and estimate required to deliver a cohesive quality project. This approved deliverable will become the Project Scope of Services and will be utilized throughout the project to guide the delivery.

2.1.2 General

- Scope and Activities
- Visit the building/site and verify the availability and capacity of services needed for the project



- Attend project start up meeting
- Analyze the project requirements/program
- Review all available existing material related to the project
- 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
- Identify and verify all authorities having jurisdiction over the project
- Identify the codes, regulations and standards that apply
- Establish a policy for this project to minimize environmental impacts consistent with the project objectives and economic constraints

2.1.3 Deliverables

- Comprehensive summary of the project requirements/program demonstrating understanding of the scope of work including:
 - a) Report on existing base building system elements including their condition, deficiencies and life expectancy.
 - b) Confirmed or adjusted project cost and time plans
 - c) Written identification of the problems, conflicts or other perceived information/clarifying assumptions for the acknowledgement of the Departmental Representative.

RS 3 Review of Pre-Design Deliverables - Stage 1A (prepared by others)

3.1 Intent

The purpose of this stage is to ensure the consultant has reviewed and integrated all the pre-design deliverables prepared by others required to deliver a cohesive quality project. This approved deliverable will become the Project Scope of Services and will be utilized throughout the project to guide the delivery.

3.1.1 General

Scope and Activities

Ensure Pre-Design (Stage 1A) prepared by others include the following deliverables, and that those are still current, up-to-date and are approved:

- Feasibility Studies / Options Analysis;
- Functional Requirements;
- Implementation Strategy and Schedule;
- Detailed Investigation Reports;
- Sustainable Development Strategies and Report;
- Facility Equipment Evaluation and Recommendations Report;
- Telecommunications Requirements Report;
- Environmental Clean-up Report;
- Decommissioning Report; and / or
- Order of Magnitude Cost Report.



For a more detailed description of the content requirements of Pre-Design Services, see Section RS 1 "Pre-Design Services (Stage 1A).

3.1.2 Deliverables

Update the Pre-Design deliverables if required. Submit for review. Revise. Resubmit for final approval.

RS 4 Schematic Design

4.1 Intent

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

4.2 General

Scope and Activities:

- Obtain written approval from Departmental Representative for development of schematic design options based on the analysis of the Project Brief;
- Provide alternative design options exploring possible technical and environmental strategies which are viable and have potential for development;
- 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;
- Produce an environmental assessment and Canadian Environmental Assessment Act (CEAA) Screening Report;
- Minimize the use of hazardous/toxic materials and products made for endangered or rare species (i.e. tropical hardwoods);
- Recommend one option for further development with all supporting background and technical justifications;
- Produce a class 'C' cost estimate for the various options;
- Produce an implementation schedule, including alternative procurement and construction strategies.
- Coordinate services as required with BBC project for furniture.

4.3 Details

4.3.1 Architectural Drawings:

- Site plan relationships showing building outlines, orientation, main accesses, roadways, vehicular and pedestrian patterns and landscape concept;
- Schematic building plans of alternatives showing relative disposition of main accommodation areas, circulation patterns, numbers of floors, etc.;
- Sketch elevations and sections indicating the basic design approach and aesthetic philosophy;
- Sketch perspectives or massing studies;
- Outside gross building areas and summary of main accommodation areas required and proposed;
- Horizontal and Vertical space relationships.



4.3.2 Structural Drawings:

Proposed or alternative structural systems including foundation methods, explanatory sketches, etc. and a copy of the site report on which the design is based; Initial seismic analysis.

4.3.3 Mechanical:

- The schematic design submission shall include a description of specific mechanical requirements and function for each area (room) in the project. Identify any unique or specialized equipment required by the subject facility. Incorporate in the submission a schedule of requirements listing all rooms and identify the mechanical building services to be provided.
- Explain in the concept submission the manner in which the proposed mechanical systems correlate with user requirements.
- Identify the volume of outdoor air to be supplied per person.
- Identify the delivery rate of supply air to occupied spaces.
- Identify whether full time operating staff will be needed for operating any of the mechanical equipment. Differentiate between staff that is needed by code requirements versus that staff which is needed because of the nature and size of the facility.
- Identify location of entry point into the building of all mechanical services into the building.
- Identify in square meters the area to be provided for mechanical rooms, and then identify what percentage of total building area this represents. Identify location of mechanical spaces in the building.
- Analysis of alternative mechanical schemes at the schematic design stage shall reveal energy consumption of building systems, operating and maintenance costs on a month-by-month basis for a time span of one year. Accordingly, the estimated energy, operating and maintenance costs shall be used in life cycle cost analyses in order to determine the most beneficial mechanical systems alternative. Life cycle cost analyses shall be based on a projected building life of 25 years.
- Carry out energy analysis on system alternatives.
- Establish an energy budget for the building and compare it to energy consumption of other similar buildings. Total energy consumed in the building shall be expressed in kWh/m².
- Submit a complete energy analysis.
- Identify the type of boilers to be used (i.e. cast iron sectional, fire tube, etc.) and provide an economic and technical explanation of the reason for the type of boiler to be used.

4.3.4 Electrical:

- Proposed basic electrical systems of significance to the early design.
- Site plan showing location of service entrances.
- Distribution diagram showing single line diagrams to distribution centers.
- Floor plans complete with locations of major electrical equipment and distribution centers.
- Lighting layouts.
- Power outlets.
- Ceiling distribution systems for lighting, power and telecommunications.
- List of standard RCMP details to be utilized.



- Telephone rooms, conduits and telecommunication cable systems requirements and layout.
- Provide an electrical design synopsis, describing the electrical work in sufficient detail for assessment and approval by the Department. Include feasibility and economic studies of proposed systems complete with cost figures and loads.

4.3.5 Commissioning:

Define Commissioning Requirements

Identify in square meters the area to be provided to maintenance personnel, including storage and workshops for mechanical, electrical and housekeeping. Define project verification archives (data storage and retrieval system).

4.3.6 Sustainable Development:

Design and evaluate Schematic Design Options exploring positive environment strategies; Environmental Assessment and the CEA Act Screening Report (to include comment on all the design options).

4.3.7 Specifications

Preliminary outline specification in Unifomat indicating main building components and options for use of “Green” components and systems.

4.3.8 Cost Plan

- Prepare preliminary cost plan from the schematic design;
- Prepare preliminary cost analysis;
- Prepare options analysis and “what if” scenarios;
- Provide advice and recommendations on project planning in order to achieve the most cost effective project sequence;
- Identify and quantify potential risks and make contingency recommendations in order to minimize negative cost impacts;
- 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.

4.3.9 Cost Estimate

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

4.3.10 Time Plan (Schedule)

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



- Advise on alternative procurement and construction strategies to create efficiencies wherever possible.

4.4 Deliverables

- Provide the following:
 - a) Schematic Design Drawings;
 - b) Description of the options with recommendation of preferred solution;
 - c) Waste management report;
 - d) Audit plan and Phase II Waste Division Action Plan;
 - e) Project specification amendment;
 - f) Environmental Design Modification Report;
 - g) Indoor Air Quality Report;
 - h) Environmental Assessment Report and recommendations of decisions for the CEAA;
 - i) Cost Plan, including cost analysis, “what if” scenarios, potential risks, alternative procurement and construction strategies;
 - j) Class ‘C’ Cost Estimate, including methodology of the estimate, assumptions made, costing alternatives and life cycle costs;
 - k) Report on deviation from schedule and recommend corrective measures or updated time line.
 - l) Principles of BBC; Built-in furniture and equipment integration with base building.
 - m) Updated detailed schedule, including deliverable requirements to be provided by the RCMP Consultants for BBC: furniture and equipment to be integrated into base building.
 - n) Prepare a Furniture Recommendation Report based on the Functional Program and on parameters developed in conjunction with the RCMP. Report to include an examination of the following: procurement process and requirements, furniture type and layout, power requirements, and finishes. Become familiar with PSPC documents (i.e. Chair Builder, Client Service Tools, etc.) and procurement process.
 - o) Recommendations are to take into consideration the client’s vision, functional requirements, proposed planning alternatives, space allocation and project budget.
 - p) Prepare a Class C cost estimate for the purchase of new furniture and equipment.
 - q) Document scheduling requirements for the procurement of new furniture and equipment.

RS 5 DESIGN DEVELOPMENT

5.1 Intent

To further develop one of the options presented at the Schematic Design stage. The Design Development documents consist of drawings and other documents to describe the size and character of the entire project as to architectural, structural, mechanical and electrical systems, materials and such other elements as may be appropriate.

5.2 General

Scope and Activities:

- Obtain written approval from Departmental Representative for development of one of the proposed Schematic Design options;
- If any alterations are demanded, document all required changes, analyze the impact on all project components, and resubmit for approval if required;



- Expand and clarify the Schematic Design intent for each design discipline;
- Present the design materials to the client, design review or other committees as indicated by the Departmental Representative;
- Present the design to the government or local authorities where required;
- Ensure coordination of all disciplines' design development;
- Analyze the constructability of the project and advise on the construction process and duration;
- Based on all material available at the time, prepare a milestone schedule for the consideration with special attention to the impact on tenants;
- Continue to review all applicable statutes, regulations, codes and by-laws in relation to the design of the project;
- Provide a list of all National Master Specification (NMS) sections to be used, complete with a full draft specification, catalogue cuts and sustainable development/green choices.

5.3 Details

Scope and Activities:

5.3.1 Architectural Drawings / Interior & Furniture Design:

- Provide Furniture / Equipment plans with optional layouts;
- Prepare a comprehensive list for all rooms and building exterior;
- Preliminary Furniture Plans:
 - i) The Consultant shall discuss with the Departmental Representative, the anticipated method of furniture and equipment procurement to be utilized for this project, in order to more clearly define specific requirements under this section. The Consultant shall prepare preliminary furniture and equipment plans that include, but are not limited to, a generic furniture footprint, and/or specific furniture / equipment including audio/visual systems;
 - ii) The Consultant must coordinate with the Departmental Representative for the definition of the furniture and equipment system(s) to be used or procured for the project in order to coordinate with the appropriate furniture suppliers the systems and component counts for the project;
 - iii) Illustrate preliminary layout of all furniture, furnishings and equipment pertaining to open and enclosed workstations / work settings, support space and special purpose space, including variations based on selection of alternate furniture and equipment systems;
 - iv) Illustrate preliminary location and identification of all major equipment including, but not limited to, network equipment and video displays;
 - v) Identify and illustrate preliminary electrical, telephone, data, voice and video infrastructure in support of selected systems layout / locations;
- Comprehensive interior design services, including layouts, systems furniture coordination, finishes, acoustic treatment / systems design, and built-in furnishings as required;
- Building Components and Connectivity:
 - i) This project includes implementation of the Building Components and Connectivity (BBC) program. The objective of the BBC program is to meet operational requirements of the end users to allow immediate occupancy of the space. Building Components means fixtures, furnishings and equipment. Building connectivity means physical, electronic and other systems



that connect buildings and the workstations in them;

ii) BBC Connectivity includes the following building specific list, but is not limited to:

- Commercially available furniture;
- Purpose built or manufactured furniture and shelving / locker;
- Collaborative area seating;
- Seating and task chairs;
- Task Lighting;

iii) Furniture and Equipment:

- Furniture and Equipment will be contracted as part of the project and therefore is part of the work of this contract. Commercial furniture may be selected from an approved supplier from a National Master Standing Offer. The consultant will be responsible for completion of the systems furniture Client Selection Tool (CST) spreadsheet that will accompany the required systems furniture floor plans. The consultant will complete the RCMP provided CST spreadsheet document to ensure all required components (i.e. Horizontal and vertical surfaces, brackets, electrical components, filing cabinets, tables, etc. but not limited to) of furniture system will be provided by the successful furniture and equipment Standing Offer Supplier. The consultant will also be required to assist with the evaluation of / review of and make recommendation for award of the furniture and equipment Standing Offer Suppliers bids received. The CST spreadsheet document will only be made available to the successful Standing Offer holder (under this A&E SO) after call up has been made;
 - It will be the Consultants responsibility to ensure full coordination to accommodate all BBC implementation with the building construction project and provide the related infrastructure and systems requirements;
 - The Furniture Specialist member of the Consultant team must not have any affiliation with the Government of Canada National Master Standing Offer agreement for systems furniture;
- Floor Plans of each floor showing all accommodation required with room names and calculated areas, including all necessary circulation areas, stairs, elevators, etc., and ancillary spaces anticipated for service use. Indicate building grids, modules, etc., and key dimensions;
 - Cross Sections through the building(s) to show floor levels, room heights, inner corridor or court elevations, etc.;
 - Detail Sections of walls, building envelope design features or other special design features requiring illustration and explanation at this stage, including fireproofing methods; and
 - Demolition plans, partition plans reflected ceiling plans, finish schedules, door/window schedules etc.

5.3.2 Structural Drawings:

- Drawings indicating the proposed structural framing system, structural materials, and other significant or unusual details proposed. Drawings may be separate or incorporated on the Architectural sheets. Include a copy of the site report on which the design is based;
- Update seismic report.

5.3.3 Mechanical:

- Site Plan showing service entrances for water supply, sanitary and storm drains and connections to



public utility services, including all key invert elevations;

- Drawings showing preliminary sizing of ventilation, cooling and heating systems showing locations, and all major equipment layouts in mechanical rooms;
- 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;
- Produce preliminary designs based on the approved schematic design. Update the energy analysis and energy budget established at the schematic design stage;
- 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 and energy budget;
- Analysis of selected equipment and plant 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 what operating staff will be needed to operate the building systems and the expected functions of the operation staff;
- Describe the building systems control architecture. Provide preliminary EMCS network architecture, mechanical control schematics, and sequence of operation;
- Explain what acoustical and sound control measures are to be included in the design.

5.3.4 Electrical drawings:

Provide drawings showing advanced development of the following:

- Single line diagram of the power circuits with their metering and protection, including:
 - i) Complete rating of equipment.
 - ii) Ratios and connections of CT's and PT's.
 - iii) Description of relays when used.
 - iv) Maximum short circuit levels on which design is based.
 - v) Identification and size of services.
 - vi) Connected load and estimated maximum demand on each load center.
- Electrical plans with:
 - i) Floor elevations and room identification.
 - ii) Legend of all symbols used.
 - iii) Circuit numbers at outlets and control switching identified.
 - iv) All conduit and wire sizes except for minimum sizes which should be given in the specification.
 - v) A panel schedule with loadings for each panel.
 - vi) Telephone conduits system layout for ceiling/floor distribution.
- Riser diagrams for lighting, power, telephone and telecommunication cable systems, fire alarm 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.
- Provide the following data:
 - a) Total connected load.
 - b) Maximum demand and diversity factors.
 - c) Sizing of standby load.
 - d) Short-circuit requirements and calculations showing the ratings of equipment used.

5.3.5 Commissioning

- Define operational requirements.
- Define Commissioning Requirements.
- Prepare a commissioning Brief describing major commissioning activities for mechanical, electrical and integrated system testing.
- Define and establish project specific archives

5.3.6 Sustainable Development:

Develop Design and evaluate options exploring positive environment strategies; Environmental Assessment and the CEA Act Screening Report (to include comment on all the design options).

5.3.7 Specifications

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

5.3.8 Cost Plan

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

5.3.9 Cost Estimate

- Provide class “B” (substantive) cost estimate;
- Highlight changes from class “C” (indicative) cost estimate.

5.3.10 Time Plan (Schedule)



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

5.3.11 Furniture / Equipment

Scope and Activities:

- Coordinate services as required for BBC with project for furniture and equipment.

Deliverables:

- Integration of BBC components illustrated by plans and specifications for Furniture / Equipment including all required layout and location plans, supporting infrastructure and connectivity requirements.
- Finishes and color schemes, including furniture / equipment.
- Updated detailed schedule including deliverable requirements to be provided for BBC: Furniture and Equipment.

Details:

- Architectural
 - i) Plans and typical details for built-in furniture
 - ii) Details of integration of furniture / equipment with built-in furniture
- Furniture / Equipment:
 - i) Provide furniture / equipment plans with optional layouts as developed with BBC suppliers for operational system consoles and furniture.
 - ii) Preliminary furniture plans:
 - The Consultant shall prepare preliminary furniture and equipment plans that include but are not limited to a generic furniture footprint, and, or specific furniture / equipment including audio/visual systems.
 - The Consultant must coordinate with the RCMP Departmental Representative for the definition of the furniture and equipment system(s) to be used or procured for the project in order to coordinate with the appropriate furniture suppliers the systems and component counts for the project.
 - Collaborate with selected suppliers as identified by the Departmental Representative to determine impact on base building and fit up requirements of up to a maximum of three (3) options for furniture and equipment systems (each design to be from different manufacturers) and make design adjustments as required to accommodate selected systems.
 - Illustrate preliminary layout of all furniture, furnishings and equipment pertaining to open and enclosed workstations settings, support space and special purpose space, including variations based on selection of alternate furniture and equipment systems.

5.4 Deliverables

- 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;
- Two (2) or three (3) building sections;
- Demolition Plans;



- Architectural, structural, engineering, millwork and finishing details to determine choice of materials and finishes;
- Reflected ceiling plans;
- Elevations;
- Site and building models as required;
- Finished and colour schemes;
- Outline specifications for all systems and principle components or equipment;
- Updated cost plan and cash flow;
- Class 'B' cost estimate;
- Preliminary construction schedule including long term delivery items;
- Fire Protection Engineers Report including requirements, strategies or interventions for protection of the building and its occupants;
- Project dossier detailing the basic assumptions of the project and the justifications for all major decisions;
- Commissioning Plan;
- Updated sustainable development strategy report.

RS 6 CONSTRUCTION DOCUMENTS

6.1 Intent

- To prepare A&E drawings and specifications setting forth in detail the requirements for the construction and final cost estimate of the project.
- 33% indicates technical completeness of all working documents;
- 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;
- Develop project specific Systems Operations Manual (SOM);
- Final Submission incorporates all revisions required in the 99% version and is intended to provide RCMP with complete construction documents for tender call.

6.2 General

Activities are similar at all three stages; completeness of the project development should reflect the stage of a submission.

Scope and Activities:

- Obtain Departmental Representative's approval for Design Development submissions (33%, 66%, 99% and final);
- Confirm format of drawings and specifications;
- Clarify special procedures (i.e. phased construction);
- Submit drawings and specifications at the required stages. (33%, 66%, 99%);
- Provide written response to all review comments and incorporate them into Construction Documents



where required;

- Advise as to the progress of cost estimates and submit updated cost estimates as the project develops;
- Update the project time plan (schedule);
- Prepare a final Class 'A' (substantive) estimate. Review and approve materials and construction processes specifications to meet sustainable development objectives.

6.3 Details

6.3.1 Technical and Production Meetings

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

6.3.2 Progress Review

As work progresses on construction drawings, submit drawings, schedules, details, pertinent design data and updated Cost Plan and Project Schedule as required.

6.3.3 Mechanical:

- Flow diagrams, system layouts, equipment selections and sizes, floor plan layouts showing major equipment.
- All major ductwork sized and shown on drawings including layout of all major mechanical and transformer rooms.
- EMCS network architecture, mechanical control schematics, sequence of operation for each mechanical system, electrical control schematics, DDC input/output point schedules.
- Commissioning Plan.
- Update the building load calculation, energy analysis and energy budget.
- Submit at the stipulated progress submission all calculations for mechanical design and equipment selection. These calculations shall be bound (3-ring binder) and indexed. 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, neat and easily understandable.
- Specifications and an index of specifications. The specifications shall consist of typed and edited sections using the PWGSC amended NMS sections, PWGSC in-house master specifications sections and NMS sections as a guideline.

6.4 Deliverables

- Separate tender packages only applicable to furniture procurement.
- Deliverables are similar at all three stages;



- Completeness of the project development should reflect the stage of a submission.
- Optional Services: Delivery of stamped French versions of the 100% specifications and drawings, and translations of these documents to French is an optional service that must be delivered upon request by the Departmental Representative. If these services are required a call-up amendment will be issued by the Contracting Authority.

6.4.1 99% Submission:

Complete specification and working drawings.

- 99% Commissioning plan and Systems Operations manual
- One copy of the complete colour schedules, including textures, sheens, super-graphics, colour chips and material samples.
- One copy of site information, soil investigating report, borehole logs, etc.
- One copy of support data, studies, calculations, etc., required by RCMP for final checking and record.
- One copy of updated Cost Plan and Project Schedule.

6.4.2 Final Submission:

This submission incorporates all revisions required by the review of the 99% submission. Provide the following:

- Complete set of originals of the working drawings.
- Complete sets of original specifications.
- Class 'A' estimate
- Complete Commissioning Plan
- Complete Systems Operations manual
- Complete set of original Colour Schedule.
- One set of designated substance survey report (provided by RCMP).
- As a safeguard against loss or damage to the originals, retain a complete set of drawings in reproducible form and one copy of specification.
- Inspection Authorities Submission (i.e. Municipal Building Departments)
- Submit and obtain approval on plans and specifications required by Inspection Authorities before tender call (i.e. Consultant is to apply for and obtain Building Permit(s)).

6.5 Supplementary Submission Requirements

6.5.1 Final Furniture and Equipment Plans

- The Consultant shall prepare final furniture and equipment plans and specifications. Plans and information to include but not limited to the following:
 - i) Final partition locations:
 - Final layout of all furniture, furnishings and equipment pertaining to open and enclosed work stations / settings, support space and special purpose space, include critical dimensions as required;
 - Identification of end user positions / functions at each open workstation, enclosed office or workstation setting;



- Review of supplier / manufacturer component counts, fittings, and all accessories;
 - Final location and identification of all equipment, including but not limited to network equipment and video displays;
 - Review plans to confirm compliance with all Code requirements related to life safety, and accessibility;
 - Electrical, telephone, data, voice and video infrastructure including but not limited to cable trays and wire ways in support of selected systems layout / locations.
- ii) Based on approved color scheme presented in Concept Design Stage prepare Final finishes presentation board for all furniture requirements;
- iii) Prepare a report with written and graphic identification of all furniture finishes, including sample and specifications for all panels, work surfaces, seating, filing, and accessories and all freestanding furniture;
- iv) Based on the final equipment and furniture layout plans, coordinate with the mechanical and electrical including telecommunications Sub – Consultants to incorporate M&E space and location requirements on the final equipment and furniture plans as well as to ensure the M&E drawings accurately reflect the furniture and equipment layout. For the Interior Design Sub Consultant these include the following:
- Lighting layout, and zoning;
 - Task lighting systems and controls;
 - Location of light switches;
 - Location of thermostats;
 - Fire hose cabinets location and space requirements;
 - Additional cooling / exhaust location requirements; and
 - Personal environmental control unit locations if applicable (PEC).

6.5.2 Based on final equipment and furniture layout plans, coordinate preparation of telecommunications plans to identify the location and number of telephones, data and video outlets. The telecommunications plans are to clearly indicate position and locations of all occupants of the space.

6.5.3 Furniture / Equipment (BBC)

- Prepare plans and specifications at the 33%, 66%, 99% and Final submissions for all required tender packages.
- Prepare systems furniture and equipment systems tender documents drawings and specifications including the following:
 - i) Location of acoustical screens complete with critical installation dimensions,
 - ii) Location of all panel supported or freestanding work surfaces and related components for all work stations,
 - iii) List of all accessories and lighting components
 - iv) Location of all accessories and lighting components to be supported from the panels, work surfaces or overhead bins; this to be identified on an interior elevation or isometric view of typical workstation types.
 - v) Telephone, electrical and data source locations.
 - vi) List of screens complete with electrical harnesses and outlets,



- vii) Legend indicating type, size, fabric(s) and electrical requirements.
- viii) Location, size, mounting and connectivity requirements for all AV and specialized systems and equipment.

6.5.4 Commissioning Specifications

- Use NMS for commissioning as the basis for the project specifications for commissioning. Prepare additional specifications for systems where NMS specifications do not exist. Complete design information required in the Performance Verification Report Forms.
- Specify detailed Performance Verification Procedures and output, documents, scheduling and reporting requirements.
- Identify and include in specification all tests to be conducted at manufacturers plants, on site during construction, installation, commissioning on site and during the operation phase.
- Develop a training package for Operation and Maintenance personnel and include in specification.
- Use NMS for the identification of equipment and inventory in conjunction with the PMSS / MMS.
- Provide PMSS / MMS coding and system nomenclature on tender documents within equipment schedules and on a single line diagrams.

6.5.5 Commissioning Submission Requirements

- Outline commissioning plans and specifications included with the 33% construction documents should include the following:
 - i) Typical floor plans with general ductwork layouts and duct sizes.
 - ii) Mechanical equipment room layouts and sections with all major systems.
 - iii) Schematics of EMCS, system architecture, sequence of operation, wiring diagrams
 - iv) Riser Diagrams
 - v) System schematics
 - vi) Complete specifications including all sections
 - vii) Commissioning sequence plan
 - viii) Building management manual and training plan
 - ix) Updated O & M budget
 - x) General plumbing and fixtures layouts
- The detailed commissioning specifications are to be submitted with the 66% construction documents stage and updated and resubmitted at each subsequent stage of the construction documents.
- PMSS / MMS system and equipment codes are identified for each piece of mechanical and electrical equipment with the 66% construction documents. Completed PMSS / MMS numbering (with equipment unit counters) for all mechanical and electrical equipment are to be provided at the 99% stage. Submit a comprehensive Commissioning Plan for all systems.
- Submit a comprehensive System Operator Training Plan
- Final submission O & M manual and System Operator Training Plan – documents to be English.



RS 7 TENDER CALL, BID EVALUATION & CONSTRUCTION CONTRACT AWARD

7.1 Intent

RCMP to obtain and evaluate bids from qualified contractors to construct the project as per the Tender Documents. RCMP to award the construction contract according to government regulations.

7.2 General

Scope and Activities:

- If the Contract Authority must re-tender the project, or any specific tender package (i.e. furniture and equipment) for reasons other than cost overruns, provide proposals for additional services as required to the Departmental Representative to revise the scope of work of the tendered work.
- Attend tenderers briefing meeting(s) (i.e. Job Showing)
- Prepare addenda based on questions arising in such meetings for issue by the Contracting Authority
- Provide the Departmental Representative with all information required by tenderers to fully interpret the Construction Documents. RCMP will issue the addenda to all participants.
- Keep full notes of all inquiries during the bidding period and submit same to Departmental Representative at the end, for RCMP records.
- Assist in tender evaluation by providing advice on the following:
 - a) The completeness of tender documents in all respects.
 - b) The technical aspects of the tenders.
 - c) The effect of alternatives and qualifications, which may have been included in the tender.
 - d) If RCMP decides to re-tender the project, provide advice and assistance to the Departmental Representative.
 - e) Revise and amend the construction documents to bring the cost of the work within the limits stipulated.
 - f) Examine and report on any cost and schedule impact created by the issue of tender / contract addendum.

7.3 Deliverables

- Originals of drawings and specifications
- Electronic copies of drawings and specifications.
- Addenda where needed
- Changes to the documents, if re-tendering is necessary
- Updated cost estimate or schedule
- Optional Services: Delivery of stamped French versions of the 100% specifications and drawings, and translations of these documents to French is an optional service that must be delivered upon request by the Departmental Representative. If these services are required a call-up amendment will be issued by the Contracting Authority.

RS 8 CONSTRUCTION & CONTRACT ADMINISTRATION & POST CONSTRUCTION

8.1 Intent

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



8.2 General

Scope and Activities:

- During the implementation of the project, act on RCMP'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 construction Contract Documents, and notify the Departmental Representative of any issues.
- Keep RCMP 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 with the approval of the Departmental Representative.
- Determine the amounts owing to the construction Contractor based on the progress of the work and recommend to the Departmental Representative certification of payments to the contractor.
- Act as interpreter of the requirements of the construction Contract Documents.
- Provide cost advice during construction.
- Advise the Departmental Representative of all potential changes to scope for the duration of the implementation.
- Review the construction Contractor's submittals.
- Prepare and justify change orders for issue by the Departmental Representative.
- Indicate any changes or material/equipment substitutions on Record Documents.
- During the twelve (12) month warranty period investigate all defects and alleged defects and recommend instructions to the Departmental Representative for issue to the construction Contractor.
- Prepare and post Systems Operating Instructions.
- Finalize Systems Operations Manual.
- Conduct a final warranty review.

8.3 Details

Scope and Activities:

8.3.1 Construction Meetings

- Immediately after construction contract award arrange a briefing meeting with the construction Contractor and the Departmental Representative.
- Prepare minutes of the meeting and distribute copies to all participants and to other persons agreed upon with the Departmental Representative.
- Call job meetings every 2 weeks, commencing with the construction briefing meeting.
- The meetings should include the job superintendent, Inspector of Construction, main sub-contractors, affected sub-consultants and GOC representatives as necessary.
- Prepare minutes of the meeting and distribute copies to all participants within 48 hours.
- The Departmental Representative may invite client Departments to attend any of these meetings.

8.3.2 Project Schedule

- Obtain Project Schedule with detailed commissioning component shown separately, as soon as



possible after construction contract award and ensure proper distribution.

- Monitor the approved construction schedule, take necessary steps to ensure that the schedule is maintained and submit a detailed report to the Departmental Representative concerning any delays.
- Keep accurate records of causes of delays.
- Make every effort to assist the construction Contractor to avoid delays.

8.3.3 Time Extensions

Only the RCMP may approve any request for Time Extensions. Approval will be issued in writing by the Contracting Authority.

8.3.4 Cost Breakdown

Obtain from the construction Contractor detailed cost breakdown on standard RCMP form and submit to the Departmental Representative with the first Progress Claim.

8.3.5 Labour Requirements

The construction Contractor is bound by the construction contract to maintain competent and suitable workmen on the project and to comply with the Canada Department of Labour – Labour Conditions. Inform the Departmental Representative of any labour situations that appear to require corrective action by the Departmental Representative.

The Consultant shall ensure that a copy of the Labour Conditions for the construction contract is posted in a conspicuous place on site.

8.3.6 Bylaw Compliance

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

8.3.7 Construction Safety

All construction projects that are occupied by federal employees during construction are subject to the Canada Occupational Safety and Health Act and Regulations as administered by Health and Welfare Canada and/or Provincial Regulations – whichever is more restrictive.

Fire safety provisions during construction must comply with FCC Standards 301 and 302, administered by Fire Protection Engineering Services, Labour Program, Human Resources Development Canada, formerly known as the Fire Commissioner of Canada.

In addition to the above, the construction 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.

Verify that the construction Contractor provides all required coordination, isolation, protection and reinstatement of the fire protection and suppression systems throughout construction. Notify the Departmental Representative each time the fire protection and suppression systems are bypassed and advise of estimated reinstatement time. Verify that the construction Contractor provides Watchman Service as defined in FC 301 and by the Fire Commissioner and notify the Departmental Representative if there are any issues.

8.3.8 Site Visits

- Provide non-resident construction inspection services. Ensure compliance with construction contract documents.
- Provide services of qualified personnel who are fully knowledgeable with technical and



administrative requirements of project.

- Establish a written understanding with construction contractors as to what stages or aspect of the work are to be inspected prior to being covered up.
- Assess quality of work and identify in writing to the Contractor and to the Departmental Representative all defects and deficiencies observed at time of such inspections.
- Inspect materials and prefabricated assemblies and components at their source or assembly plant, as necessary for the progress of the project.
- Any directions, clarifications or deficiency list shall be issued in writing to RCMP.

8.3.9 Clarifications

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

8.3.10 Progress Reports

Report to the Departmental Representative regularly on the progress of the work. Submit weekly reports.

8.3.11 Work Measurement

If work is based on unit prices, measure and record the quantities for verification of monthly progress claims. When Contemplated Change Notice is to be issued based on Unit Prices, keep accurate account of the work. Record dimensions and quantities.

8.3.12 Detail Drawings

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

8.3.13 Shop Drawings

- On completion of project forward three (3) copies of reviewed shop drawings to the Department.
- Ensure that shop drawings include the project number and are recorded in sequence.
- Verify the number of copies of shop drawings required. Consider additional copies for Client's departmental review.
- Shop drawings shall be stamped: "Checked and Certified Correct for Construction" by the Contractor and stamped: "reviewed" by the Consultant before return to the Contractor.
- Expedite the processing of Shop Drawings.

8.3.14 Inspection and Testing

- Prior to tender, provide the Departmental Representative with recommended list of tests to be undertaken, including on site and factory testing.
- Ensure all testing is detailed within commissioning plan.
- When the construction contract is awarded, assist Departmental Representative in briefing testing firm on required services, distribution of reports, communication lines, etc.
- Review all test reports and take necessary action with construction Contractor when work fails to comply with the construction contract.
- Immediately notify the Departmental Representative when tests fail to meet project requirements and when corrective work will affect schedule.
- Assist Departmental Representative in evaluating testing firm's invoices for services performed.



- Testing firm fees to be paid to Consultant as a project disbursement.

8.3.15 Construction Changes

- The Consultant does not have authority to change the work or the price of the construction contract. However, the Consultant will prepare Contemplated Changes Notices (CCNs) and Change Orders (COs).
- Changes which affect cost or design concept must be approved by the Department.
- Upon Departmental approval obtain quotations from the Contractor in detail. Review prices and forward promptly recommendations to the Department.
- The Departmental Representative will issue Consultant-prepared CCNs and Cos to the Contractor, with copy to Consultant.
- All changes, including those not affecting the cost of the project, will be covered by Change Orders.
- The practice of “tradeoffs” is not allowed.

8.3.16 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 where applicable:
 - a) Request for Construction Payment.
 - b) Cost Breakdown for Unit and/or combined Price Contract.
 - c) Cost Breakdown for Fixed Price Contract.
 - d) Statutory Declaration Progress Claim.
- Review and sign designated forms and promptly forward claims to the Department (Departmental Representative) for processing.
- Submit with each progress claim:
 - i) Updated schedule of the progress of the work.
 - ii) Photographs of the progress of the work.

8.3.17 Materials on Site

- The Contractor may claim for payment of material on site but not incorporated in the work.
- Materials must be stored in a secure place designated by the Department.
- A detailed list of materials with supplier’s invoices showing the price of each item must accompany a claim; the Consultant shall check and verify this list (Detail Sheet).
- 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.

8.3.18 Acceptance Board

Inform the Departmental Representative when satisfied that the project is substantially completed. The Consultant shall ensure that his/her representative, his/her sub-consultant representative, Resident On-Site Reviewer, Contractor and major sub-trades representatives shall form part of the Project Acceptance Board and attend all meetings as organized by the Department.



8.3.19 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 and priced.

8.3.20 Interim Certificates

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

- Substantial Certificate of Completion
- Statutory Declaration Interim Certificate of Completion
- Worker's Compensation Board Certificate.
- Verify that all items are correctly stated and ensure that completed documents and any supporting documents are furnished to the Departmental Representative for processing.

8.3.21 Building Occupation

The Departmental Representative or Client Department may occupy the building after the date of acceptance of the building by the Acceptance Board. The 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 the Departmental Representative or Client Department (as the case may be) 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 any landscaping maintenance covered by the construction contract.)

8.3.22 Operation and Maintenance Data Manual

Operation and Maintenance Data Manual: [4] sets of each volume produced by the construction Contractor in accordance with Section [01730][01732] [01007] of project specification and verified for completeness, relevance and format by the Architectural, Mechanical and Electrical Consultants and submitted to the RCMP Departmental Representative prior to interim acceptance or actual start of operation and instruction period, whichever occurs sooner. The construction Contractor shall retain one (1) copy of each volume for his record and use during the instruction period.

8.3.23 Instruction of Operating Personnel

Make arrangements and ensure that Department's operating personnel is 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 Systems operations manual for training sessions.

8.3.24 Keys

Ensure that all keys and safe combinations are delivered to the Departmental Representative and/or the Client Department as applicable.

8.3.25 Final Inspection

Inform the Departmental Representative when satisfied that all work under the construction contract has been completed, including the deficiency items. Inspection and Acceptance as a result of the Interim



Inspection. The Departmental Representative reconvenes the Acceptance Board which makes a final inspection of the project. If everything is satisfactory the Board makes final acceptance of the project from the construction Contractor.

8.3.26 Final Certificate

The final payment requires completion and signing, by the parties concerned, of the following documents:

- Final Certificate of Completion
- Statutory Declaration
- Workmen's Compensation Clearance Certificate
- Hydro Certificate
- Verify that all items are correctly stated and ensure that completed documents and any supporting documents are furnished to the Departmental Representative for processing.

8.3.27 Take-over

- The official take-over of the project, or parts of the project, from the construction Contractor is established by the RCMP Project Team which includes the Consultant and the Client Department. The date of Interim Certificate of Completion and the Final 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 of the construction contract.
- Provide Departmental Representative with original copy of construction 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.

8.3.28 As – Built and Record Drawings and Specifications

Following the take-over, obtain as-built marked-up hard copy from the construction Contractor:

- Show significant deviations in construction from the original construction contract drawings, including changes shown on Post-Contract Drawings, changes resulting from Change Orders or from On Site Instructions.
- Check and verify all as-built records for completeness and accuracy and submit to RCMP.
- Produce Record Drawings by incorporating As-Built information into project drawings.
- Submit Record Drawings and Specifications in number and format required by the Consultant Agreement within eight (8) weeks of final acceptance.
- Provide a complete set of final shop drawings.

8.4 Deliverables

- 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.
- Interim or Final certificates.
- Debrief of Commissioning Activities.



- As-Built records.
- Warranty deficiency list.
- Report on Final Warranty Review.
- Become familiar with PSPC Furniture Design protocols and procedures.
- Create a Furniture Fitment Plan to reflect the requirements from users in PDF.
- Create a Seating Plan to reflect the requirements from users in PDF.
- Create a Furniture Product listing for Furniture in PDF.
- Retain the services of a Furniture Design Consultant / Interior Design Consultant to complete the section of deliverables.

8.5 Details

8.5.1 Furniture / Equipment Delivery and Installation

- Delivery and Installation of Furniture / Equipment to be coordinated by Consultant in consultation with the RCMP representative and suppliers.
- Final Delivery dates to be confirmed with RCMP.
- Consultant to be on site during delivery of Furniture / Equipment identified for each floor of the project to confirm delivery of appropriate product.
- Consultant to oversee installation of Furniture / Equipment by supplier.
- Consultant to provide deficiency list to RCMP Departmental Representative for each floor of Furniture / Equipment delivered.

RS 9 RISK MANAGEMENT (ALL STAGES)

9.1 Intent

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

9.2 General

Scope and Activities

- Risk Management Process:
 - a) Identify risk events based on past experience and using proposed checklist or other available lists;
 - b) Qualify/quantify probability of risk event (Low, Medium, High) and their impact (Low, Medium, High);
 - c) Prioritize risk events (i.e. concentrate efforts on risk events with High probability and Medium to High impact);
 - d) Develop risk response (i.e. evaluate alternatives for mitigation. This is the real added-value of risk management); and,
 - e) Implement risk mitigation.

9.3 Deliverables

- Prepare Risk Management Reports at Design Development, 66% Design Documents, and 100% Design Documents stages.
- Include input from all sub-consultants, and from Client.



- Take steps to implement risk mitigation as required. This may include (but is not limited to) further recommendations, analysis, investigations, site meetings, site supervision, etc.

RS 10 COMMISSIONING

10.1 Commissioning Objectives

10.1.1 The objectives of commissioning are:

- 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.
- Develop a Building Operation and Maintenance (BOM) manual
- To document the operational, maintenance and building management requirements
- 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
- To verify that the selected design solutions and the resultant built works protect the safety, health, welfare and comfort of occupants and O&M personnel.
- To define responsibility areas for meeting these operational requirements in the construction contract documents and include a process to demonstrate compliance.
- To demonstrate that the RCMP's requirements are met 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.
- To ensure that the commissioning process is implemented and documented according to the approved Commissioning Plan and in accordance with the Commissioning Schedule.
- To verify and demonstrate that all systems operate consistently at peak efficiencies, under all normal load conditions, and within the specified energy budget.
- To provide comprehensive documentation of the operational, maintenance and building management
- To implement a comprehensive training program.
- 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.

10.2 General Description of Commissioning

- The RCMP utilizes PSPC commissioning practices. All commissioning shall be in accordance with the PSPC Commissioning Manual (CP.1), current edition, and all associated PSPC Commissioning Guidelines but suited to the specific requirements of the project.
- The PSPC Commissioning Manual (CP.1) and all associated PSPC Commissioning Guidelines are available online.
- Commissioning includes architectural, structural, vertical transportation systems, interior and landscape system, as well as the usual mechanical, electrical and life safety systems.
- The Designer must deliver concise and comprehensive information and reports on commissioning to the RCMP.



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

10.3 Roles & Responsibilities

10.3.1 The Departmental Representative

- Has overall responsibility for managing the project and delivering the project on time and on budget.

10.3.2 The Consultant

- Establishes Design Criteria, functional and operational requirements, if not already established in the RFP or Project Brief.
- Prepares a preliminary Commissioning Plan.
- Prepare commissioning specifications for components, equipment, systems and integrated systems and incorporate same into the construction specifications,
- Prepare complete maintenance management documentation, to be sufficiently complete for use during training, and to include:
 - i) An explanation of the purpose of the facilities,
 - ii) An outline of the design intent of all systems
 - iii) A narrative description of the projects conceptual framework
 - iv) Documentation of all design decisions made throughout the project
 - v) A description of each building system; including architectural, structural, mechanical, electrical, civil, fire protection, acoustical and other building as well as site systems.
 - vi) All other relevant documentation
- Plan the commissioning and performance verification (PV) activities, processes and their input, including development of project specific:
 - i) Installation / Start Up Check Lists
 - ii) Product Information (PI) Report Forms and Performance Verification (PV) Report Forms, and
 - iii) Design data to PI and PV report forms
- Prepare a detailed Training Plan.
- Incorporate PSPC MMS identification codes to all components, equipment, and systems into all working documents.
- Review the construction Contractors detailed commissioning schedule for components, equipment, systems, and integrated systems (PV tests will be performed by the construction Contractor).
- Identify construction Contractor and sub-Contractor commissioning, PV and testing responsibilities.
- Review shop drawings and product data and accompanying Product Information (PI) as completed by the construction Contractor.
- Monitor commissioning activities, provide quality control reports to the Departmental Representative throughout the construction, commissioning and operational phases of the work, including:
 - i) Inspection and verification of as installed components, sub system and systems on a regular



basis during construction.

- ii) Witnessing tests,
 - iii) Reviewing and verifying testing, adjusting and balancing (TAB) reports,
 - iv) Reviewing and verifying Performance Verification (PV) Reports
 - v) Witnessing and certifying systems and integrated systems tests. Any test that cannot be commissioned due to design errors or omissions must to be redesigned and re-commissioned.
- Participate in the Training Plan by providing training on design philosophy, design intent and systems designs.
 - Witness and certify deferred tests, commissioning activities, OV, review and accept reports
 - Identify and verify the rectification of all outstanding deficiencies.
 - Assist in the resolution of all issues related to commissioning.
 - Prepare “As-Built” documentation (plans and specifications) as described elsewhere in the RFP or Project Brief.
 - Recommend acceptance of the completed project.

10.4 Departmental Representative Occupancy Requirements

10.4.1 RCMP occupancy requirements include consideration of the need for / implications of:

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

10.5 Training:

- In consultation with the Departmental Representative, monitor and validate the training plan prepared by the construction Contractor for the training of the Facility Management personnel, user (where deemed necessary) and operations and maintenance staff.
- 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.
- Coordinate the dates of all training sessions with the Departmental Representative. Ensure the training plan is updated by the construction Contractor as required reflecting the project schedule.

10.6 Correction of Deficiencies:

10.6.1 The Consultant, in consultation with the RCMP Representative, shall,

- Instruct the construction Contractor to correct all the deficiencies identified and recorded during the performance verification.
- Provide solutions during the Performance Verification (PV) process with respect to the variances from the design parameters,



- Monitor and validate adjustments or alterations to the systems required to achieve the design parameters,
- Immediately notify the Departmental Representative when tests fail to meet project requirements and when corrective work and re-tests affect construction and completion schedule.
- Report, in writing, to the Departmental Representative 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.

10.7 Acceptance of the Project

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

- Successful completion of all integrated systems tests, life safety support systems tests and after all other requirements of the authority having jurisdiction are satisfied,
- All test certificates; commissioning reports and commissioning documentation have been approved and accepted by the Departmental Representative.

10.8 Commissioning Documentation

10.8.1 General

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

10.8.2 Details:

- Commissioning documentation shall include:
 - i) 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 PSPC Model Commissioning Plan (see CP.3) as a reference model.
 - ii) 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.
- Commissioning specifications.
 - i) For details of requirements, refer to CP.12 – Guide to the Development and Use of Commissioning Specifications
- Commissioning Schedule
 - i) Commissioning Schedule is developed by the construction Contractor, outlining the performance testing program in an orderly sequence acceptable to the Commissioning Manager and the Consultant, 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.
 - ii) Training Plans. Refer to CP.5 – Guide to the Preparation of Training Plans. For more details refer to the relevant paragraph below.



- iii) Installation Check Lists for use during pre-start up and pre commissioning inspections. Refer to CP.9 – Guide to the Development of Installation/Startup Check Lists.
- iv) Product Information (PI) report forms to document all details of equipment, components and systems. Refer to CO.10 – Guide to the Development of Report Forms and Schematics.
- v) Performance Verification (PV) report forms include all design criteria, design intents and other relevant design information. Refer to CP.10 - Guide to the Development of Report Forms and Schematics.
- vi) MMS requirements, Apply to all drawings before Tender call. Refer to CP.13 – Facility Maintenance Policy, Guidelines and Requirements. As-Built drawings and specifications; to be completed prior to, and available for, pre start up inspections and to include
 - 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;
 - Project specifications amended by insertion of addenda, change notices;
 - Flow diagrams and piping schematics as installed at each major item of equipment complete with valves controllers, identified with numbered tags; and
 - As-Built drawings and specifications to be completed prior to, and available for, pre start up inspections.

10.9 Commissioning Deliverables

10.9.1 Conceptual Design Report

First technical submission by the Consultant shall include the following:

- From the commissioning perspective, the Conceptual Design Report shall include:
 - i) 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 RCMP's requirements, corporate and project objectives. To be updated at each stage of project development.
- O & M Report – to include:
 - i) O & M budget including project utility consumption
 - ii) 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)
 - iii) Cleaning requirements (janitor closets, receptacles for vacuum, equipment supply and storage)
 - iv) Other O & M requirements including, but not necessarily limited to:
 - Operating standards and operator requirements,
 - Air Balancing report and performance of HVAC equipment
 - Equipment and system reliability requirements,
 - Delivery, content and form of O & M documentation,
 - Tools, equipment, spare parts and maintenance materials,
 - Emergency procedures,



- Identification and other similar needs,
- Waste management requirements,
- Preventative maintenance tasks.
- Comprehensive documentation, design information / data and comments as to allow the Commissioning Manager to:
 - i) Prepare a list of spare parts, special tools, maintenance materials and other special equipment to be provided by the construction Contractor.
- Capacity of the facility to change in response to program changes over its life expectancy.
- Requirements for operation and maintenance of the project over its life expectancy
- Phased construction program
- Preliminary commissioning plan
- Sample of PI / PV report forms and tracking software
- Preliminary building management manual,
- Define project archives and how these activities will be managed updated, and submitted at the end of the project.

10.9.2 33% Submission

- Extent of commissioning determined.
- Factory and on site test components, sub systems, systems and integrated systems during construction, installation and commissioning determined,
- Outline commissioning specifications using PSPC generic commissioning specifications plus outline project specific commissioning specifications,
- Update Commissioning Plan,
- Updated Building Management Manual,
- Updated Design Intent Document,
- Updated O & M Budget,
- Outline PI and PV forms. Provide for all components, equipment and systems to be tested,
- Maintenance Management System (MMS) codes identified for all equipment shown on the construction documents,
- Preliminary Training Plan

10.9.3 66% Submission

- Factory and on site test components, sub systems, systems and integrated systems during construction, installation and commissioning defined and detailed in commission specs,
- Commissioning activities to be deferred to Operational Phase and Warranty Period identified,
- Detailed commissioning specifications,
- Update Commissioning Plan,
- Detailed Building Management Manual,
- Updated Design Intent Document,



- Updated O & M Budget,
- Updated Training Plan,
- Maintenance Management System (MMS) codes identified for all equipment shown on the construction documents, schematics and line diagrams,
- Complete PI & PV forms. Provide for all components, equipment and systems to be tested.

10.9.4 99% Submission

- Commissioning specifications integrated into project specifications,
- 90% Commissioning Plan
- 90% complete Building Management Manual,
- 90% Design Intent Document detailing each building system, including all engineering calculations,
- Final O&M Budget,
- Maintenance Management System (MMS) codes identifiers shown on the construction documents and indicated on each PI and PV form,
- 100% Training Plan, indicating scope and duration of training,
- Design information added to PI forms.

10.9.5 100% Submission

- This submission incorporates all revisions required by the review of the 99% submission,
- Updated Commissioning Plan, making it approximately 95.5% complete,
- Update the Design Intent Document to reflect any changes from the 99% submission.

10.10 Construction and Commissioning

10.10.1 General

- Upon construction contract award, review and update the PI and PV Forms, installation / startup Check Lists, Commissioning Plan, Training Plan, commissioning specifications, and Commissioning Schedule to ensure relevance to construction changes to the work.
- In consultation with the construction Contractor, review / select the test instruments to be used and instrument calibration,
- Incorporate relevant data from approved shop drawings and installed component date immediately upon approval,
- Review construction Contractors compliance with the construction contract documents,
- Witness and certify tests, including those tests conducted before concealment and start up,
- Verify that each system is completed, safe to operate and ready for startup,
- Review all test reports and in consultation with the Departmental Representative take necessary action with the construction Contractor when work fails to comply with the construction contract,
- Immediately notify Departmental Representative when tests fail to meet project requirements and when corrective work will affect schedule,
- Ensure that all deficiencies are rectified and acknowledge that the installation of components and systems is ready for the commissioning phase,
- Review all maintenance management nomenclature, devices and submissions prepared by the



construction Contractor. Ensure on site implementation and tagging of maintenance management.

10.10.2 Manuals and Reports (Refer to CO.4 – Guide to the Preparation of Building Management Manuals):

- Four (4) weeks before training is due to commence, assemble, review and approve:
- All commissioning documentation; including PV documentation, procedures and expected output.
- In consultation with the construction Contractor, review / select the test instruments to be used and instrument calibration.
- 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).
- Finalize the Operating and Maintenance Manual:
 - i) Verify, and certify, completeness, relevance and accuracy
 - ii) Produce four (4) sets and submit to the Departmental Representative prior to interim acceptance or implementation of Training Plan. The construction Contractor shall retain one (1) 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)
 - iii) Ensure the construction Contractor assembles all certified tests results and incorporates into the Maintenance Manuals.

10.10.3 Training: Implement the Training Plan

- Submit the Training Plan to the Departmental Representative for review and comment at least two (2) weeks prior to the proposed training dates. Update and resubmit as required. Include an agenda and a course outline summarizing the content and duration of training.
- Coordinate the date(s) of the training session(s) with the Departmental Representative.
- 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 Departmental Representative.
- Make necessary arrangement for site O & M staff familiarization during construction / installation.
- The construction Contractor to provide training sessions on the operations and maintenance of components, equipment, sub systems, systems and integrated systems.
- Record the time, date and subject matter of training sessions as they occur. Indicate all those who are present at each training session.

10.10.4 Spare Parts

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

10.10.5 Component, sub systems, systems, and integrated system performance verification (PV)

- Test all the components, sub systems, systems and integrated systems in accordance with the provisions of the construction contract documents. Ensure the work meets the design intent and requirements of ULC and TB Guidelines on Life Safety and Health. Witness, certify and approve all tests.
- Certify and date all PV procedures and test results.
- Report in writing to the Departmental Representative indicating compliance or anomalies regarding witnessed events.



- In consultation with the Departmental Representative, instruct the construction Contractors to rectify all deficiencies identified and recorded during the performance verification. Re-test to verify compliance.
- In consultation with the Departmental Representative, recommend takeover of the facility subject to performance of PV and commissioning which were previously agreed to be deferred until the operational phase.
- Design Intent document and building operational and maintenance manual:
 - i) Update the Design Intent Document and BOM manual. Immediately prior to the issuance of the Interim Certificate of Acceptance develop this document so as to become the “Building Operational and Maintenance 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.

RS11 FEASIBILITY STUDY

11.1 Intent

This required service is intended for the consultant to assist with gathering, assessing and communicating requirements for the potential development of a chosen site or asset. This process is similar to that outlined in RS1; however the level of detail is less and is intended to be used to inform the RCMP internal process for preliminary project approval and funding allocation. This process will culminate with the provision of a report outlining the options for development and any attendant recommendations.

11.2 Scope and Activities

- Analyse the project requirements / program including any amendments.
- Analyse all available base building and site information.
- Through the Departmental Representative, arrange to visit the site to be investigated
 - i) Review of existing site if being redeveloped, with focus on existing operations and the impact of potential redevelopment
 - ii) Assess options to redevelop the site with the existing operation in place. If this is not feasible, provide recommendations for swing space.
- Review all other available existing material related to the project including requirements identified in the Project Brief.
- Undertake a budget and risk analysis and identify any conflicts that will need to be addressed with respect to scope, quality and cost.
- Identify and verify all authorities having jurisdiction over the project and codes, regulations and standards that apply.

11.3 Deliverables

- Prepare and submit a final report, which includes, but is not limited to:
 - i) An analysis of project requirements and assumptions,
 - ii) Presentation of at least two (2) site and/or asset development options,
 - iii) Diagrammatic representation(s) options:
 - Site plan



- Access and egress options
 - Massing of building(s) on site
 - Location and routing of utilities, including, power, telecom, sanitary, water, storm and natural gas (if available)
- iv) Risk analysis and mitigation strategies for each option
- v) Class D estimate
- vi) Summary of local authorities, codes, bylaws and zoning constraints
- vii) Summary of any local First Nations communities and any impact of proposed projects on that community
- viii) Summary of any opportunities to incorporate green technology in any future project with a view to achieving net-zero carbon status
- ix) Recommendations for option best suited for further development

RS12 BUILDING CONDITION REPORT

12.1 Intent

12.1.1 As part of the RCMP's commitment to the principle of life cycle management, we require the assessment of various assets throughout the region. Often, this process is used to support or refute plans to redevelop or upgrade existing assets and related infrastructure (HVAC etc.), and may be used in the development of feasibility studies (RS 11)

12.1.2 The consultant must provide expertise in the following disciplines to adequately assess the condition and serviceability of the asset under investigation:

- Architectural
- Mechanical
- Electrical
- Structural

12.1.3 Typically, the following systems are required to be assessed:

- Roofing
- Building envelope
- Doors (interior and exterior) including hardware
- Windows and skylights
- Flooring
- Paint, trim and mouldings
- Millwork and cabinetry
- Electrical systems
 - i) Service
 - ii) Distribution
 - iii) Capacity
 - iv) Back-up systems (generator, UPS)



- Mechanical systems
 - i) HVAC
 - ii) Domestic water heating, treatment, distribution and fixtures
 - iii) Fire protection systems
 - iv) Sanitary and storm systems
- Structural systems including all roof supports (trusses, rafters, etc.), major structural supports, foundations and slabs
- Exterior paved surfaces including driveways, walkways and patios
- Conveyances

12.1.4 Review of ongoing maintenance issues / concerns

12.1.5 Review of average energy usage

12.2 Scope and Activities

12.2.1 Analyze the project requirements / program including amendments.

12.2.2 Analyze all available base building and site information, including the following (if available):

- As-built drawings
- Site surveys
- Geotechnical reports
- Hazardous materials reports
- Water quality test reports
- Previous Building Condition Reports
- Maintenance and testing logs
- Historical operating costs

12.2.3 Review all other available existing material related to the project including requirements identified in the Project Brief

12.2.4 Through the Departmental Representative, arrange and conduct inspection of the asset to be reviewed.

- All required disciplines outlined in the scope of work are to be available and present for site visit.
- Review of documentation provided must be completed prior to site visit.
- Identify locations requiring destructive inspection as needed.
- Seek approval from Departmental Representative prior to commencing with any destructive inspections (i.e. Opening walls, ceilings etc.)
- All observations and recommendations must be supported with annotated photos
 - i) Seek approval from Departmental Representative before taking any photos of building interiors or exteriors.

12.2.5 Based on review of available documentation and observations made during on site investigation (destructive or non destructive), make recommendations for actions required to correct deficiencies.

- Recommendations should include a description of the issue, timeline for taking action to address the



issue, and high level cost estimate.

12.2.6 For each system investigated and reported on, the following information is to be provided in the final report:

- Description of system reviewed
- List of deficiencies
- Effective remaining life
- Recommendations

12.3 Deliverables

12.3.1 Prepare and submit a Building Condition Report, which includes observations and recommendations from each discipline for review and approval by the Departmental Representative. Revise as required by the Departmental Representative. Resubmit for approval.

12.3.2 At a minimum, the structure of the report shall be as follows:

- Executive Summary:
 - i) Introduction
 - ii) Description
 - iii) Summary of expenditures recommendations
- General Information:
 - i) Project Team
 - ii) Reference Documents
 - iii) Scope
 - iv) Mandate
 - v) Cost Estimate Methodology
 - vi) References
- Asset Summary:
 - i) General overview of asset site, and all systems evaluated, including regulatory testing and compliance confirmation.
- Property / Site
- Architectural / Structural Systems
- Conveyances
- Mechanical Systems
- Electrical Systems
- Appendices (as required)