



Design Builder Services **TERMS OF REFERENCE**

Storage Building

For:
Environment Canada

Eureka, Nunavut
Project #: R.053799.001

Date: January 24, 2014



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I PROJECT DESCRIPTION

I.1 GENERAL

I.1.1 PURPOSE

- .1 These Terms of Reference have been developed to provide the Design Builder (DB) Proponent with information regarding the project scope, procedures, and services required to deliver the completed project within the agreed to budget and schedule.
- .2 Public Works & Government Services Canada (PWGSC) requires the services of a Design Build building firm, registered to practice in Nunavut, acting in the capacity of General Contractor, together with a multi-disciplinary team of sub-contractors to undertake the design and build services required service required for this project.

I.1.2 THE PWGSC GENERAL PROCEDURES AND STANDARDS DOCUMENT (GP&S)

- .1 The TOR document must be used in conjunction with the GP&S, as the two documents are complimentary.
- .2 The TOR describes project-specific requirements, services and deliverables while the GP&S document outlines with minimum standards and procedures common to all projects.
- .3 In the case of a conflict between the two documents, the requirements of the TOR override the GP&S Document.

I.2 PROJECT INFORMATION

Project Information	
Project Title:	Storage Building
Project Address:	Eureka, Nunavut
Solicitation Number:	ET025-142414/A
Contract Number:	
PWGSC Project Number:	R.053799.001
PWGSC Contracting Officer:	

I.3 BACKGROUND INFORMATION

I.3.1 NEED & GOALS

- .1 Environment Canada (EC) has identified a need for a storage building at Eureka, Nunavut, in order to provide better infrastructure support for the Environment Canada Operations Centre. The operations centre is a meteorological research centre stationed in the high arctic.
 - .1 The goal of the project is to provide a cost effective and functional facility within the budgetary and scheduling requirements.
- .2 Existing storage shacks on site have reached the end of their service life. The new building will replace the existing storage shacks.
- .3 The services of a Design Builder (DB) firm, registered to practice in the Territory of Nunavut, acting in the capacity of General Contractor, together with a multi-disciplinary team of sub-contractors are required to undertake the design and build services.

I.3.2 USER DEPARTMENT

- .1 The User Department referred to throughout the TOR is Environment Canada.
- .2 Environment Canada maintains a meteorological research and development capacity to provide the department with the research necessary to improve weather and environmental



prediction. These improvements should ultimately reduce the impact of weather and related hazards on the public and the economy

I.3.3 EXISTING CONDITIONS

- .1 The proposed site is located on an empty site between the HADACS building (DND) and the incinerator building (Environment Canada), both of which are located to the north of the Operation building. The proposed site is generally rectangular in shape, sloping gently upward from the front of the site to the rear of the site. There is relatively little slope from side to side. There is no vegetation on site. Land cover is granular material.

I.3.4 CONSTRAINTS AND CHALLENGES

- .1 Eureka is a high arctic weather station located on the north shore of Greely Inlet, located on the northern portion of Ellesmere Island, at 79 degrees latitude. Eureka is approximately a 2hr charter flight from Resolute Bay, the nearest community with scheduled commercial air flights. Eureka consists of an Environment Canada Operations Centre and a DND base. There are no 'local residents' or commercial businesses in Eureka. An annual sea-lift takes bulk shipments and materials into Eureka. The Sea-lift typically arrives in Eureka in September, and goods are transported from a DFO Coast Guard icebreaker to shore by a barge. The Design Builder is required to be familiar with the logistical constraints imposed by this very remote location.
- .2 Concrete: There is no batch plant in Eureka, no concrete mixer and no clean aggregate (beach aggregate was used for the concrete floors in the Operations building constructed in 2004; precast floor slabs transported to site were used for the floor in the recently constructed DND vehicle garage) . The consultant shall assess floor construction options and make a recommendation for a functional and cost effective floor.
- .3 Foundation system: The Design Builder shall assess optional foundation systems taking into consideration: building use, size and configuration, the remote location, availability of aggregate, availability of equipment, and soil conditions, including permafrost. The Consultant Design Builder will assess various options and make a recommendation.
- .4 The project scope must be tailored to meet the User Department's budget. Diligent cost estimating and cost control is required.
- .5 Design Builder's key personnel must be available to respond to emergencies within 1 working day

I.4 PROJECT DELIVERY APPROACH

I.4.1 DESIGN BUILD / TURNKEY APPROACH

- .1 This project requires a turnkey approach from start to completion of the design, construction, commissioning, and warranty stages.
- .2 The Design Builder has sole responsibility for the completion of the project at a fixed cost and in accordance with a fixed schedule.
- .3 This project requires the Design Builder provide both:
 - .1 Comprehensive Architectural and Engineering Services from start to completion of the design, construction, commissioning, and warranty work stages.
 - .2 Design Build construction contracting services.

I.4.2 DESIGN QUALITY

- .1 The department expects the design/Build team to maintain a high standard of architectural/engineering design, based upon recognized design principles. All design



elements, planning, architectural and engineering must be fully coordinated and consistent in adherence to good design principles.

I.4.3 FUNCTIONAL PROGRAM

- .1 General Design and Construction Requirements:
Refer to Appendix 'A' for specifics.
- .2 Substructure Requirements:
Refer to Appendix 'B' for specifics.
- .3 Building Envelope Requirements:
Refer to Appendix 'C' for specifics.
- .4 Building Interior Requirements:
Refer to Appendix 'D' for specifics
- .5 Mechanical Requirements:
Refer to Appendix 'E' for specifics.
- .6 Electrical Requirements:
Refer to Appendix 'F' for specifics.
- .7 Site work Requirements:
Refer to Appendix 'G' for specifics.

I.4.4 DESIGN PHASE

- .1 The Design Builder (DB) will be retained by PWGSC Real Property Contracting (RPC). The DB will communicate with the Departmental Representative ("Technical Authority") with regards to contract implementation and technical issues. RPC is the "Contracting Authority", and as such, supports the Departmental Representative by performing contracting functions, including: managing the solicitation process, awarding the contract, issuing contract change orders, monitoring contractual compliance, and providing contractual advice on financial, legal and insurance issues, as well as, dispute resolution.
- .2 All Design and Construction Services required to complete the Project will be engaged directly by the DB who will direct and coordinate the work.
- .3 The DB will obtain and pay for all construction permits.
- .4 The DB will submit all required documents to Authorities Having Jurisdiction (AHJ) both Federal and Territorial.
 - .1 The Federal Authorities having jurisdiction over this project are:
 - .1 Environment Canada for functional review
 - .2 The Territorial authorities having jurisdiction over this project are:
 - .2 Nunavut Impact Review Board (NIRB)
- .5 The DB is responsible for effective communication between all the consultants and with the DB team. The DB will work with the PWGSC representative team at all stages of the work.
- .6 The DB and the DB's consulting team shall prepare and submit detail design and construction documents at identified project stages including schematic design, foundation design, 50% and 99% design stages. PWGSC review and approval will be required for design work to proceed to the next stage.

I.4.5 CONSTRUCTION PHASE

- .1 The Design Builder will deliver the project utilizing industry best practices in conformance with PWGSC standards, respecting the approved scope, quality, budget and schedule.



- .2 The Design Builder will construct the building using modern techniques and equipment, as well as integrated phased construction methodologies in order to meet project objectives.
- .3 Field Review reports from the Design Build Contractor shall be produced on a biweekly basis throughout the duration of the construction work.
- .4 The Design Build Contractor's consultant team will clearly demonstrate in the biweekly reports a "Duty of Care" to Canada to ensure construction is in exact compliance with the work described in the project Terms of Reference, the Contract Documents, the project design documents, working drawings and specifications. A Change Order will be used if there is a requirement to change the design from the approved design.

I.5 SUMMARY OF SERVICES

I.5.1 CONTEXT

- .1 The DB will be required to undertake design, construction and commissioning for the project.
- .2 The DB will ensure the Storage Building is fully operational.
- .3 The DB is responsible for any infrastructure upgrade or new components that will be required to connect the new Storage Building to the existing infrastructure.
- .4 Design and construction will result in a turnkey project achieving / delivering all requirements of this TOR.

I.5.2 DESIGN SERVICES

- .1 The project requires design work to construct a new storage building.
- .2 Provide 330 M² of heated space as follows:
 - .1 Storage space for dry construction materials and equipment vehicles
 - .2 Provide 2 commercial grade automated overhead doors min. 5485mm W x 4270mm H
 - .3 Provide space along rear wall for 3m workbench area c/w HD metal workbench
 - .4 Provide floor trench drain (min. 8m length)/sump with grate, sediment separation, integral pumping system, storage tank, piping, exterior hose connection c/w secure cover and controls/alarms for collection of snow melt water
 - .5 Min. 5.5m clear interior height
 - .6 Second storey / mezzanine (approximately 80 M² of floor area) with commercial grade locked cage storage, 2.44m min. height
 - .7 Provide 2 freezer door type entry man doors 2134mm x 1067mm (Ex: Clark Door)
 - .8 Provide windows for natural light – min. qty= 2 (each approx. 0.4 M²)
 - .9 Provide thermostatically controlled overhead fuel fired unit heaters with chimneys, oil piping, valves, filters, and other components capable of maintaining 22°C space temperature and raising internal space temperature from 10 °C to 22°C in 1 hour based on outside temperature of minus 40 °C. Provide overhead propeller fans to assist with heat distribution.
 - .10 Provide an exterior double-walled storage tank with monitor, double-walled day tank with monitor, oil piping, and controls for 3 month operation between fills. Design the system to use the on-site diesel fuel.
 - .11 Provide an enclosed space to be used as a carpentry/woodworking shop. Provide independent from storage area, thermostatically controlled HVAC system with chimneys, oil piping, valves, filters, and other components capable of maintaining 22°C space temperature and raising internal space temperature from 10 °C to 22°C in 15 minutes based on outside temperature of minus 40 °C. Commercial grade cabinetry (upper and lower cabinets) full length of 7925mm wall.



- .12 Provide vehicle exhaust extraction system c/w flexible tubing with manually control. System to also include a separate gas detection monitor/alarm and space purge fan/relief system. Multi stage alarm with last stage to include purge.
 - .13 Provide all pallet, pipe and storage shelf racking as shown on sketch (min total height 4m; min. 4 shelves per rack). All racking to be heavy duty industrial grade racking.
- .3 Provide 200 M² of unheated space as follows:
- .1 Storage space for bulk materials on skids
 - .2 Provide two (2) vehicle openings (one on each end) c/w 3050mm x 3050mm commercial grade automated overhead door.
 - .3 Provide two (2) openings (one on each end) for access and egress c/w commercial grade steel insulated and steel framed, man doors 2134mm x 1067mm.
 - .4 No windows required.
 - .5 Provide all pallet, pipe and storage shelf racking as shown on sketch (min height 4m). All racking to be heavy duty industrial grade racking.
- .4 Given the functional requirements and remote location, a steel building with insulated metal panels and a steel roof should be considered. The Design Builder will be required to recommend the choice of building system and materials.
- .5 Provide interior and exterior lighting to suit functional requirements. Provide counter height receptacles at workbench (min. 4 outlets) and provide regular height receptacles throughout (Min. 10 outlets). Provide power to overhead doors and heaters. Provide exterior lighting with motion sensors c/w manual override. Provide 220-240V plugs (min. 3) in carpentry shop for power tools. Provide 120V plugs (min. 6) in carpentry shop for small power tools.

1.5.3 CONSTRUCTION SERVICES

- .1 The DB manages and delivers the complete construction associated with the scope for the project in accordance with the terms outlined in the Contract and the TOR document, while complying with all the standards referred to in this document.

1.6 SUMMARY OF WORK

1.6.1 GENERAL

- .1 Provide full architectural and engineering services as required , from award of contract through to project commissioning including: project planning, programming, design, assistance during tending, comprehensive field review services during construction, construction completion, commissioning, and warranty stages including as required:
 - .1 Architectural services
 - .2 Mechanical Engineering
 - .3 Electrical Engineering
 - .4 Geotechnical Engineering
 - .5 Civil Engineering
 - .6 Structural Engineering
 - .7 Cost Estimating Specialist

1.6.2 QUALITY ASSURANCE / VALUE ENGINEERING

- .1 Engage the Design Builder's team including the design builder's architectural and engineering team to provide comprehensive design and construction Quality Assurance and Quality Management services. Implement and demonstrate the implementation of a rigorous



- quality assurance / value analysis process from project initiation, planning, design, construction completion, commissioning, and warranty stages
- .2 Engage PWGSC throughout the project, implementing a rigorous quality assurance / value analysis process from project initiation, planning, design, tendering through to construction, construction completion, commissioning, and warranty stages.
 - .3 Ensure PWGSC approve and formally sign off on planning, design, and construction decisions and actions.
 - .4 Rigorously and systematically document all project correspondence, minutes of meetings, shop drawing approvals.
 - .5 Establish in collaboration with the Departmental Representative a rigorous design and construction document sharing and filing system documenting all submissions, reports, and other project information.
 - .6 Share project documentation with PWGSC continuously as the work progresses, throughout all project stages.
 - .7 Provide rigorous construction field review reports prepared by project architectural and engineering consultants.
 - .1 Field review reports to be produced biweekly throughout the construction phase of the project and delivered to the Departmental Representative within three working days of consultants' site visit.

1.6.3 NEW CONSTRUCTION WORK

- .1 Provide a new turnkey Storage building and all site work as described in the TOR.

1.7 OBJECTIVES

1.7.1 GENERAL GOALS

- .1 Deliver the project in a planned and systematic manner, on-time and meeting or exceeding all specifications, meeting EC site specific project user requirements.
- .2 All construction work is required to be completed to the satisfaction of Departmental Representative and EC.
- .3 The DB is expected to recommend and deliver design features that will add efficiency to the Building and its systems and minimize maintenance.
- .4 Deliver excellence in design, design coordination, provide both design and construction quality assurance and quality management; and coordination of the work, and the provision of fully engaged professional architectural and engineering resources throughout to all stages of the work and including comprehensive "field review" services during construction.
- .5 Provide a quality management system that documents client, PWGSC, consulting team and contractor resources and effectively communicates Quality Assurance issues and project deliverables in a well scheduled and well documented manner throughout all stages of the work and including comprehensive "field review" services during construction.

1.7.2 BUILDING PERFORMANCE

- .1 Provide a building that meets the functional needs of the User Department.
 - .1 Meets or exceeds the requirements of the National Building Code.
 - .2 Will endure and remain serviceable for its unique purpose by:
 - .3 Incorporating suitable high quality materials into the design that are constructed with the best workmanship possible;
 - .4 Employing systems and technologies to support contemporary operating requirements with capacity for growth and change;



- .5 Fully integrating all components and systems, including architectural, structural, mechanical, electrical
- .2 The building must:
 - .1 Utilize materials and systems that are appropriate for a high arctic remote location, including foundation systems proven for perma frost application.
 - .2 Be designed for ease of maintenance, with systems that can be accessed and easily repaired and / or replaced during the building's life cycle;
 - .3 Provide a healthy and safe working environment that meets or exceeds all codes for fire, health, and life safety, including the Canada Labour Code, that fully supports optimum work productivity;
 - .4 Fully integrate and optimize the performance of components and systems;
 - .5 Embody contemporary sustainable design and application principles and is implemented in an environmentally responsible manner;
 - .6 Interior and exterior building components shall be designed for long-term efficient and cost effective performance serving EC for an expected life time of a minimum of thirty five (35) years.

1.7.3 QUALITY CONTROL AND ASSURANCE

- .1 The Design Builder's consultant Team will deliver professional technical services as described within the 2011 "Western Region General Standards And Procedures" Document attached to this TOR as an Appendix.
- .2 The Departmental Representative and PWGSC will reference the 2011 "Western Region General Standards And Procedures" in reviewing Design Builder's consultants' output and in reviewing other consultant professional-technical products.
- .3 The DB will conduct rigorous quality assurance reviews/inspections during the design and construction phases.
- .4 The DB through his consultants will inspect all components of the construction. Inspections will include check for compliance with specifications, drawings, manufacturer's instructions, application tools and techniques of work.
- .5 DB will provide a Quality Assurance plan to the DR within 15 days of contract award and will include a schedule of inspections by prime consulting architect and engineers.
- .6 The Departmental Representative may employ private sector consultants to review the Design and Construction work of the DB. This is a Quality management approach by EC and does not relieve the DB of the responsibility for quality management.
- .7 The DB will provide a one year general construction warranty on all work.
- .8 The DB is responsible for construction quality. The DB will be responsible for ensuring that both the design and construction teams adhere to:
 - .1 The delivery of excellence in construction and design professional conduct through all phases of the project.

1.8 SCHEDULE

1.8.1 PROJECT COMPLETION

- .1 The milestone timeline below identifies the schedule required by EC
- .2 DB is to prepare a detailed Project Schedule within 15 days of Contract award, and the schedule is required to be updated monthly.

1.8.2 ANTICIPATED MILESTONE DATES



Project Phase	Milestone Completion Date
Design Build Contract Award	March 31, 2013
Schematic Design	April 22, 2014
50% Working Drawings	May 15, 2014
99% Working Drawings	May 31, 2014
Substantial Completion of Construction	Oct 30, 2015
Final Completion and Acceptance	Nov 30, 2015
Post Construction Warranty Evaluation	Aug 15, 2016

1.9 COST MANAGEMENT

- 1 The DB will provide a Schedule of Values to the Department Representative within 15 days of contract award. Project costs are to be monitored and updated monthly with respect to design deliverable milestones.
- 2 Costs are to be identified according to Federal Fiscal Year (FY) format (April 01 to March 31 of the following year) and submitted to the Departmental Representative for review and acceptance.

1.10 EXISTING DOCUMENTATION

1.10.1 AVAILABLE FOR THE DESIGN BUILDER (UPON REQUEST - AFTER CONTRACT AWARD)

- 1 Eureka High Arctic Weather Station Former Fuel Storage Area Phase II Environmental Site Assessment Eureka, Nunavut
- 2 "Draft" Water Reservoir-Eureka Station, Eureka, NU – Engineering Report

1.11 CODES, ACTS, STANDARDS, REGULATIONS

1.11.1 GENERAL

- 1 All work will be compliant with the most current version of: applicable federal, provincial, territorial, municipal or regional laws, acts, regulations and codes. All work to meet approval of Authorities Having Jurisdiction: Municipal, Provincial and Federal. In the case of conflict, the most stringent will apply. The Departmental representative is to be notified of all such conflicts.
- 2 A listing of Codes, Acts, Standards and Guidelines potentially applicable to this project are contained in the GP&S Document.
- 3 The Authorities Having Jurisdiction (AHJ) on this project are:
 - 1 The Local AHJ's
 - 2 Treasury Board of Canada
- 4 The Design Builder must identify, analyze and design the project in accordance with the requirements of all AHJs and all applicable Codes, Acts, Standards and Guidelines and Legislation.
 - 1 The applicability of various Codes, Acts, Standards and Guidelines listed in the GP&S document arise out of direct and indirect references in documents which apply to Federal buildings, such as the Canada Labour Code.



- .2 The Design Build team must be fully versed with the legislation and requirements that are unique to Federal Government buildings in Canada.
- .3 The Design Build team must be fully versed with the legislation and requirements that are unique to Federal Government projects tendered through Public Works & Government Services Canada.



2 PROJECT ADMINISTRATION

2.1 GENERAL

2.1.1 AVAILABLE LOCAL RESOURCES

- .1 Accommodations/Equipment: Material and equipment are reserved for the operations of Environment Canada. Accommodation availability must be validated by the contractor before confirmation of their schedule. Energy and other services can be rented at the rate of the attached document.

2.1.2 SITE CLEARANCE

- .1 The Design Builder will comply with the EC Institutional Requirements as outlined in Appendix G. A basic reliability status is required for all contractor staff working on site.

2.2 ROLES AND RESPONSIBILITIES

2.2.1 GENERAL

- .1 The responsibilities identified in this section are in addition to the requirements in the P&S document.

2.2.2 DESIGN BUILDER

- .1 The Design Builder shall:
 - .1 Assign qualified staff or engage the services of Specialist Consultants licensed to practice in the Territory of Nunavut as required to provide the design and commissioning services to meet the General Performance Requirements in Section 3.
 - .2 Complete the Work using the Design Builder's own Forces and the Design Builder's contracted Sub-Trades.
 - .3 Provide and manage all necessary personnel to perform the Services and duties for the Project, either by assignment of Design Builder qualified staff or by engagement of services contracted directly to the Design Builder.
 - .4 Ensure continuity of key personnel and maintain a dedicated working team for the life of this project.
 - .5 Submit in writing, to the Departmental Representative for review and acceptance:

2.2.3 PWGSC

- .1 PWGSC will:
 - .1 Manage the project through managing the contract with the Design Builder.
 - .2 Provide authorizations to the Design Builder for Change Orders.
- .2 The PWGSC Project Manager is the Departmental Representative during the design and construction phase of the project, and
 - .1 Is responsible for conveying all EC requirements to the Design Builder
 - .2 Is the liaison between the Design Builder, Public Works and Government Services Canada and the User Departments.

2.2.4 ENVIRONMENT CANADA TEAM

- .1 The Environment Canada Project Leader:
 - .1 Is accountable for the expenditure of public funds and delivery of the project in accordance with terms accepted by the Treasury Board.
 - .2 Reports to senior EC executive management, and is responsible for coordinating the quality, timing and completeness of information and decisions required on issues related to the functional performance of the facility.



- .3 Is the primary EC contact for all issues arising during the design and construction phases of the project that required input or decisions from the User's perspective.

2.3 COMMUNICATIONS AND MEETINGS

2.3.1 COMMUNICATION

- .1 Unless otherwise directed by the Departmental Representative, the design Builder will conduct all project communication through the Departmental Representative only.
- .2 If any communication with the User Departments results in the need for any change to the Project's scope of work, quality, cost or schedule, the Design Builder shall inform the Departmental Representative, and seek direction, before taking any action.
- .3 The Departmental Representative will arrange for the Design Builder to obtain access to PWGSC's secured shared document management site (Buzzsaw).
- .4 Correspondence:
 - .1 All correspondence from the DB will be distributed as directed by the Departmental Representative.
 - .2 There will be no correspondence between EC representatives and the Design Builder unless directed by the Departmental Representative.
 - .3 All correspondence must carry the Contract name/number, EC Project title, PWGSC Project number, File number and a date (i.e. Month/Day/Year).
 - .4 Direct communication and correspondence between members of the PWGSC Project Team, Design Builder and the User Department on routine matters as may be required to enable the project to proceed in a timely and efficient manner.
 - .5 However, no communication shall alter the terms of the project scope, budget or schedules unless directed in writing by the departmental Representative.
 - .6 Provide meeting agenda, minimum 2 working days, in advance of meetings.

2.3.2 MEETINGS DURING THE DESIGN PHASE

- .1 Meetings with PWGSC and the Design Builder will normally be held at the PWGSC office in Winnipeg.
- .2 Design Builder will arrange monthly teleconferences, or scheduled at a frequency acceptable to the Departmental Representative, through to the completion of the Design including the development of the Commissioning Plan for the project, with representatives from:
 - .1 PWGSC
 - .2 Design Builder team; and
 - .3 EC representatives
- .3 Design Builder will arrange meetings following submissions to PWGSC to address comments forthcoming from review of the submissions with representatives from:
 - .1 PWGSC
 - .2 Design Builder team; and
 - .3 EC representatives
- .4 Design Builder will be responsible for:
 - .1 Preparing minutes of meetings during the design phases, and
 - .2 Forwarding minutes to the Departmental Representative for review and acceptance. PWGSC will forward to EC for review.
 - .3 These meeting minutes are for the accurate exchange of information.
 - .4 All requests and decisions taken must follow the formal lines of communications.

2.3.3 MEETINGS DURING THE CONSTRUCTION PHASE



- .1 Design Builder shall:
- .2 Arrange and coordinate construction meetings via teleconference:
- .3 Regular meetings to be held bi-Monthly, or scheduled at a frequency acceptable to the Departmental Representative, through the duration of the project,
- .4 Commissioning meetings, separate from regular meetings described above, to be held bi-weekly, or scheduled at a frequency acceptable to the Departmental Representative, through the duration of the project.
- .5 Prepare and distribute minutes within two (2) working days of the meeting,
- .6 Establish a list of standing agenda items including (as a minimum) the following standing agenda items:
 - .1 Schedule and progress (include progress since last meeting and expected work to next meeting),
 - .2 Cost issues and changes,
 - .3 Risk and quality issues,
 - .4 Quality,
 - .5 Scope of work,
 - .6 Site safety,
 - .7 Sustainable development, and
 - .8 Commissioning.

2.3.4 SUBMISSIONS TO PWGSC

- .1 Where submissions to PWGSC include summaries, reports, network diagrams, drawings, plans, specifications or finish schedules, submit one (1) original to the Departmental Representative in electronic format, unless otherwise directed in writing.
 - .1 The electronic deliverables shall be provided using Microsoft applications.
 - .2 Alternatively, the Design Builder may submit all work in Adobe Acrobat *.pdf format except for Network Diagrams which must be submitted in their original electronic format.

2.3.5 PROJECT RESPONSE TIME

- .1 It is a requirement of this project that the key personnel of the Design Builder be available to attend meetings and respond promptly to inquiries.
- .2 During the project, the Design Builder's Key Personnel shall be:
 - .1 Available to attend meetings and respond to inquiries within one (1) working day's notice.
 - .2 Able to respond to emergencies within one (1) hour, including those occurring during off-hours and on weekends/holidays.
 - .3 On occasion, there may be urgent, problem-solving meetings (up to 3 meetings).

2.4 DELIVERABLES

2.4.1 ACCEPTANCE OF PROJECT DELIVERABLES

- .1 While PWGSC acknowledges the Design Builder's obligations to meet project requirements, the project delivery process entitles PWGSC to review all work.
 - .1 PWGSC (and EC via PWGSC) reserves the right to reject undesirable or unsatisfactory work.
- .2 The DB must obtain Departmental Representative acceptance of all required project deliverables for the Project.



- .1 Acceptance indicates that, based on a general review of material for specific issues, the material is considered to comply with the performance requirements and that the overall project objectives appear to be satisfied.
- .2 Acceptance does not relieve the Design Builder of responsibility for the work and compliance with the contract.

2.4.2 PROJECT MONITORING AND REPORTING

- .1 The Design Builder shall:
 - .1 Prepare and submit a report structure for documentation and project monitoring and reporting through each stage of project delivery, for review and acceptance by the Departmental Representative.
 - .1 Resubmit, as may be required for approval and acceptance.
 - .2 The structure of the Design Builder Monthly Report shall be used for all subsequent project stages.
- .2 Submit monthly reports, in a format agreed to with the Departmental Representative.
 - .1 The purpose of the report will be to review and monitor progress. The report shall:
 - .1 Identify the progress of the work,
 - .2 Identify all expenditures to date (including all change orders) in a form that compares the original budgets for each trade with the expected costs,
 - .3 Identify all instances where the schedule is not being met,
 - .4 Outline remedial measures being taken, and
 - .5 Identify any anticipated or potential problems to be addressed.
 - .6 Address status and variances with respect to schedule, budget, quality, and scope,
 - .7 Include a description of work which is anticipated over the upcoming 2-4 week period.

2.4.3 CONSTRUCTION DOCUMENT PROGRESS SUBMISSIONS

- .1 Submit to the Departmental Representative for review the foundation design, 50% and 99% stages complete working drawings and specifications.
 - .1 Design Builder shall respond in writing to Departmental Representative's written review comments.

2.4.4 CONSTRUCTION STAGE SUBMISSIONS

- .1 The DB architect shall submit bi-weekly field review reports during the Construction Stage, in a format agreed to with the Departmental Representative.
 - .1 The purpose of the report will be to review conformance with construction documents, and quality of workmanship.
 - .2 The report shall include input as appropriate and required from sub-consultants.

2.4.5 COMMISSIONING

- .1 Commissioning applies to all disciplines.
 - .1 Commissioning shall be performed by the consultant's in-house commissioning resources.
 - .2 The project will be accepted and the Certificate of Substantial Completion will be issued after:
 - .1 Successful completion of system tests, life safety tests, and after meeting all requirements of the AHJ.
 - .2 All test certificates, commissioning reports and commissioning documentation have been approved by the Departmental Representative.



- .3 Commissioning deliverables at various project phases are:
 - .1 Design intent including design criteria
 - .2 O & M report
 - .3 Commissioning Plan
 - .4 Commissioning Specifications
 - .5 PI & PV report forms
 - .6 Training Plan
 - .7 Performance Verification for components and integrated systems
 - .8 Commissioning Schedule
 - .9 As-Builts plans
 - .10 Spare parts & inventory list
 - .11 Commissioning Report

2.4.6 POST CONSTRUCTION

- .1 Project Close-out Services
 - .1 Revise documentation to reflect all changes, revisions and adjustments after completion of commissioning
 - .2 Prepare and submit record drawings and specifications based on Contractor's as-builts (1 pdf copy, 1 Autocad copy and 4 hard copies);
 - .3 Prepare and submit Operations and Maintenance Manuals (4 hard copies and 1 electronic)
- .2 Warranty Services
 - .1 Provide warranty deficiency list
 - .2 Certify rectification of deficiencies before expiry of warranties
 - .3 Participate in warranty inspections as required
 - .4 Provide Final Warranty Review report.

2.5 GENERAL REQUIREMENTS

2.5.1 PWGSC PROCEDURES AND STANDARDS

- .1 In addition to adhering to the general project administration requirements contained in section 2 of the GP&S document, the Design Builder shall comply with the project specific requirements in this section.

2.5.2 LANGUAGE

- .1 No variation

2.5.3 MEDIA

- .1 No variation

2.5.4 PROJECT MANAGEMENT

- .1 No variation

2.5.5 LINES OF COMMUNICATION

- .1 No variation

2.5.6 MEETINGS

- .1 No variation

2.5.7 DESIGN BUILDER RESPONSIBILITIES

- .1 No variation

2.5.8 PWGSC RESPONSIBILITIES



.1 No variation

2.5.9 USER DEPARTMENT RESPONSIBILITIES

.1 No variation

2.5.10 REVIEW AND APPROVAL BY PROVINCIAL AND MUNICIPAL AUTHORITIES:

.1 No variation

2.5.11 BUILDING PERMITS AND OCCUPANCY PERMITS – N/A

2.5.12 TECHNICAL AND FUNCTIONAL REVIEWS

.1 Submit and sign completed Checklist for the submission of construction documents with each construction document submission.



3 APPENDICES