

THE CORPORATION OF THE CITY OF CORNWALL

Request for Proposal 20-P11
Architectural & Engineering Services
for New Fire Station Headquarters & Training Centre

Appendix A – Terms of Reference

The Corporation is soliciting proposals from qualified Architectural and Engineering Consulting firms to provide design and construction services for the new replacement Fire Station Headquarters & Training Center to be located at 735 Tollgate Road (North west corner of Tollgate Road and Brookdale Avenue) in Cornwall, Ontario. The scope of work to be completed by the successful proponent includes: a functional design study and space/needs analysis, schematic and detailed building design, interior design, preparation of tender specifications and contract documents, possible LEED certification, construction supervision and administration, building commissioning and post-construction services. Based on these requirements, the proponent will also be responsible to provide accurate budgetary estimates of the project, and work with the Corporation to identify available provincial and federal grants applicable to the project.

1. BACKGROUND

1.1. Project Background

The current Fire Station Headquarters is located at 10 Fourth Street West in Cornwall and is a one-story, approximately 11,000 sq. ft. structure that was constructed in 1970. There has been minor repairs and upgrades made throughout the years to maintain the appearance of the building. However, the building has insufficient office spaces for the current number of day employees. In addition, the living quarters, apparatus floor, storage and training areas are insufficient in size due to the growth of staff, fleet and training needs. The Corporation's Fire Services department currently has 64 full-time staff members which includes 8 day staff members at the Headquarters Station and anywhere

between 10 to 14 operation members on shift divided in two (2) fire stations (6 to 8 stationed at Headquarters at all time). The Corporation is seeking a new, functional building that will suit our current and future needs. The total budget for the project including land acquisition, design fees, construction, contingencies and professional services has been established to be between \$9,000,000 and \$10,000,000.

1.2. General Project Requirements

Phase 1 - Predesign – The predesign phase involves the completion of a comprehensive functional design study, and reviewing topographic survey and geotechnical investigations. Also involved is the identification of aspects of the site that might impact design and the preparation of a predesign report covering conceptual sketches, a high-level cost estimate, schedule for construction and possible grant and/or funding opportunities.

The proponent should also review applicable statutes, regulations, codes and bylaws to ensure understanding of the requirements of authorities having jurisdiction.

Phase 2- Schematic Design - The schematic design phase involves the preparation of three (3) unique preliminary design concepts for the proposed Fire Station Headquarter & Training Centre, based on the information provided in the functional design study and general requirements specified by the Corporation., including LEED certification. Each design concept shall be accompanied by a report that outlines the benefits/drawbacks of each concept and highlights the functional design considerations within it.

Following the completion of Phase 2, the Corporation will review the preliminary designs, estimates and LEED options. Upon the selection of the preferred preliminary design, the Corporation reserves the right to have up to three (3) unique reviews of the design and provide revisions.

All work associated with LEED in Phases 3 – 7 shall be considered provisional; the decision to proceed with LEED and in particular, what levels of certification is at the sole discretion of the Corporation. In the event that the Corporation elects to remove LEED associated works from the scope of the Request for Proposal, it shall not constitute a basis for claims, damages or anticipated profits for the amount that may be dispensed with in part or in full. *Please note that where an asterisk (*) is indicated beside LEED throughout the Request for Proposal, the Proponent is to be reminded that the work is provisional.*

Phase 3 – Detailed Design – The detailed design phase involves the preparation of a final design for the proposed Fire Station Headquarters & Training Centre based on selected option provided in the schematic design phase and shall include any agreed upon suggested modifications from stakeholders. The detailed design phase shall include, but not be limited to the following design components:

- architectural and structural design;
- associated civil works;
- mechanical & HVAC systems (including individual controls for each space);
- electrical and communications systems;
- fire and life safety;
- suitable cost estimate;
- LEED certification*;
- interior design;
- surrounding landscape design; and
- identification of possible Provincial and Federal grant programs applicable to the project.

Phase 4 – Contract Preparation & Tendering – The tendering phase involves the preparation of construction specifications and drawings (both Issued for Tender and Issued for Construction sets). The Proponent will be responsible for supporting the Corporation during the tendering period, answering any and all questions that arise, preparing addenda as required, reviewing bid submissions and preparing a summary of bid submissions received.

Phase 5 – Construction Administration Phase – The Proponent will be responsible to support the administration of the construction contract, and in particular to inspect the construction to verify compliance with the design documents; for verifying that work is undertaken in accordance with applicable standards and contract documents, attending site meetings, keeping written and photographic records of work, identifying deficient materials and/or workmanship. Additionally, this phase involves the preparation and submission of any required documentation throughout construction – i.e. payment certificates, site instructions, change directives, etc.

Phase 6 – Building Commissioning Phase – The building commissioning phase involves the completion and coordination of all activities related to the commissioning and verification of all systems (mechanical, electrical, HVAC, etc.) and equipment within the newly constructed building.

Phase 7 – Post Construction Phase – The post-construction phase involves a detailed review of the building following the completion of construction, preparing a final deficiency report, maintenance program, collecting as-built drawings and preparing all documentation required for the close-out process, arranging for any training and the third-party building commissioning.

1.3. Preliminary Project Schedule

The Proponent will develop a detailed schedule to identify all project activities, key milestones and deliverables to meet the project schedule below.

Proposed Project Schedule

Item	Date
Issue of RFP	July 17, 2020
Deadline for Questions	July 31, 2020
Deadline for Submission	August 14, 2020
Award of RFP	September 14, 2020
Project Commencement	September 21, 2020

Note: although every attempt will be made to meet dates as listed, the Corporation reserves the right to modify any or all dates at its sole discretion.

2. PROJECT REQUIREMENTS

2.1 Phase 1- Predesign

The successful proponent shall complete, at minimum, the following works:

2.1.1 Complete a Functional Design Study (FDS) which shall include but not be limited to the following:

- Identify the current site and space deficiencies, layout capacity needs, areas for improved service delivery, safety and functionality.
- Review the current office workspace in operation.
- Consult with the Corporation and various stakeholders regarding individual needs and departmental requirements
- Identify the various functional components, adjacency requirements, security needs, circulation, flow of operations and individual area requirements. Review and address adjacency requirements of departments; consider the needs and working relationships of all

internal departments, communication and interaction requirements, acoustics, security and public access needs.

- Determine the demand for common use spaces within the organization – i.e. garage bays, training rooms, reception, lunchrooms, waiting, storage and interactive public education display areas, outdoor sitting areas, etc. Common spaces could be rooms, work areas or other forms of space for all/several units within the organization. Convert the demand into a list of shared spaces with defined user requirements for each.
- Research, identify and recommend appropriate Fire Training facility specifications to be installed on the property.
- Speak with staff and encourage them to raise any issues, requests and suggestions of anything that requires correctional measures.
- Prepare an analysis of the space/needs to determine the optimum size and features of the new building, including consideration of the long-term space needs. Within the space needs analysis, both functional and spatial standards shall be considered. Functional requirements shall include workspace layout, size of personal workspaces/surface area, furniture, workspace storage, shared equipment and social spaces. Spatial standards developed shall consider minimum space allocation for staff and serve to establish guidelines and procedures for equitable distribution of space. Space and design allocations should be based on the functions carried out and the amount of time spent in the space.

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- Preliminary fire service identified needs shall be confirmed by the proponent during the design process. The following is provided for the purposes of determining the level of effort.

Building will have the following:

- A final square footage of 16,000 sq.ft. to 25,000 sq.ft.
- 5 distinct areas of the building to include administration, fire prevention, training, operations and mechanical.
- A new dispatching system.
- Administration will include:
 - A central reception area with two seating areas for reception and administration staff.
 - A secured central file area adequate to store current and future files
 - A central photo copy area and storage area for stationary
 - Offices meeting the appropriate city or national standard for the Fire Chief, and Deputy fire Chief.
 - A board /meeting room to seat 10

To include technological resources for presentation, separate from city network

- Gender neutral Public washrooms
- A public meeting/public education room to seat 50
 - Dividable into 2 smaller rooms
 - Storage room attached for chairs and tables
 - Small servery area for refreshments for events
 - Technology resources for presentations
separate from city network

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- Sound proofing between sides of the room and from the rest of the fire department operation.
 - Interactive public education display area.
 - Fire Prevention office will include adequate office space meeting city or national office design standards for:
 - 4 private workstation offices
 - Storage for public education material
 - An interview or private consultation room
 - Library area adequate to house current physical resource manuals
 - Operations area will include:
 - Kitchen will include appropriate commercial equipment and services areas to accommodate 15 staff and 4 shifts. Pantry storage for 4 separate shifts. Dormitory room to include space for 12 fire officers/fighters with priority location provided for officers in a gender-neutral private environment for resting and the opportunity for quiet study.
 - Day room providing adequate space for seating 12 fire fighters in a theater style for video or presentation training.
 - Operations Officers Office: One office designed to adequate city or national office space standards for two suppression officers. Locker Room Restrooms: Locker rooms and washrooms for 12 staff on 4 shifts providing for a gender-neutral private use area for changing, showering, and washroom use.
 - Storage/Janitorial room: Adequate storage and janitorial facilities for the operation. Fitness Room: A

fitness room adequate to support the current and future needs of the fire service. The room should include:

- ventilation, and open access to outside,
- Shock absorbent flooring.
- Access to multimedia, city and exterior networks
- Display TV
- White board / Apparatus floor: An apparatus floor adequate for the current and future need of the department including:
- Drive through bays adequate to store current and some future apparatus, and equipment
- Proper exhaust system installed in each bay (Neederman)
- Airlines, shore power and water supply provided in each bay from above.
- Proper drainage under each bay running the length of the bay.
- A dirty to clean line established between apparatus floor and clean operations areas of the facility providing a decontamination area for bunker gear and staff.
- A PPE storage room
- An SCBA room
- Area for Mechanic use (Extra bay with higher ceiling?)
- Hose Rack
- Room to dry equipment

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- Hose Tower with stairs
 - Training area will include:
 - Proper water/recuperation system to accommodate extended pumping operations.
 - Area for vehicle extrications
 - Area for aerial evolutions
 - Area for search and rescue /RIT
 - Area for outdoor fires / propane props
 - Burn facility (containers)
 - Mechanical area will include:
 - Easy access for contractors
 - Good sound barrier
 - Air compressor for SCBA
 - Air compressor for other mechanical needs
 - Laundry facilities
 - Consider any equipment items that may influence the overall space and any potential demands generated by equipment. Include any equipment requirements that may affect the building and its systems and consequently workflow and productivity levels within the organization, as well as provisions needed to accommodate the works of these equipment items.
 - Coordinate with the Corporation's Information Technology and Telecommunications (ITT) department to determine network/communication needs for the next ten (10) years.
 - Coordinate with the Corporation's Division Manager of Facilities to determine building automation system requirements, among other building system needs/recommendations.

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- 2.1.2 Prepare Predesign Report that compiles the findings of the Functional Design Study, and any recommendations therein. Additionally, the report should identify any prospective challenges and propose possible solutions for any concerns identified.
- 2.1.3 Coordinate and review the work and findings of the geotechnical report and topographical survey.
- 2.1.4 Review the eligibility requirements for any local, provincial or federal funding opportunities, incentive or energy related programs. The Proponent is responsible for completing and submitting documentation required for applications and providing all required follow-up services and documents needed to obtain funding or program approval.
- 2.1.5 Compile an initial collection of architectural style and interior design options for review and comment prior to presenting the preliminary design concepts. The collection shall include samples of interior/exterior finishes and layouts that have been utilized in other municipal or commercial buildings with success. Additionally, examples of LEED credits should be included.

2.2 Phase 2 – Schematic Design

The schematic design phase shall include the following:

- 2.2.1 Based on the information provided in the functional design study, geotechnical investigation and background information provided, prepare a minimum of three (3) design concepts for review and approval. The design concepts shall illustrate the layout and character of the proposed building and indicate how the functional design requirements are included in the proposal. Additionally, each design concept shall include:

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- Spatial relationship and interior circulation diagrams.
 - Typical building sections.
 - Principal floor plans.
 - Preliminary landscape plan.
 - Primary LEED & Zero Carbon Footprint options.
 - Enhanced accessibility options including wayfinding elements.
 - The design concepts shall be presented in both plan view and three-dimensional (3D) modelling layouts, and in digital and PDF formats. The 3D model presented shall include both 360-degree views of the exterior of the building and surrounding areas, as well as a 3D rendered walkthrough of the interior spaces.

2.2.2 Each of the three (3) design concepts shall be accompanied by a

Design report that includes, at a minimum, the following elements:

- Adaptability Considerations – Illustrate how the proposed building layout can adapt to future needs and/or space requirements.
- Identify any enhanced accessibility features included in the proposed concept.
- A Class 'D' Cost Estimate.
- A Strength Weakness Opportunities Threats (SWOT) analysis of each option that includes an examination of costs, accessibility and adaptability considerations.

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- Foundation options based on geotechnical and structural design recommendations. Include a review of basement vs. slab foundations.
 - Proposed LEED Certification Level – Discuss options that are common to all three design concepts and those that are unique to each specific design; indicate why specific credits are proposed, and the long-term benefits of each (include both economical considerations as well as benefits to the environment and community). Include a summary that illustrates any advantages of LEED options over standard building systems/technologies and proven reliability of the proposed systems.
 - A review of *Zero Carbon Footprint* certification and feasibility of integration for this project.
 - A review of Intelligent Building Management Systems and feasibility of integration for this project.
 - Accessibility Legislation

2.2.2 The proponent shall prepare presentation materials, attend and present information regarding the design options (and final design) at public open houses and council meetings (a maximum of 4 meetings/presentations in total).

2.3 Phase 3 – Detailed Design

2.3.1 The detailed design phase involves the preparation of a final design concept for the proposed Fire Station Headquarters & Training Centre (including hydrant, run off contamination, recovery of water systems) requirements, parking area and surrounding greenspace based on one of the three options provided in the schematic design phase, or a combination thereof. This phase shall include the detailed design of all

facets of the proposed headquarters station, including but not limited to: architectural, structural design, associated civil works, drainage (run off) of building and training facility, mechanical and HVAC systems (including separate controls for each individual space and a non-proprietary building automation system), electrical systems, communications and notification system, fire protection, classroom technology, interior design and landscape architecture. Additionally, the detailed design phase includes the following components:

- Concept submissions at the 30%, 60%, 90% and 100% design phase for review and comment. The 30% and 60% submissions must include physical samples for proposed building finishes (both interior and exterior).
- The preparation and submission of all necessary permits and applications and approvals, including, but not limited to site plan application package and building permits. All permit fees shall be paid by the Corporation.
- Tender specifications shall be provided at the 60% design phase for review and comment by the Corporation. Additional information on tender specification requirements is available in section 2.4.

2.3.3 Prepare a Class 'A' Cost Estimate that incorporates all identifiable components of the Head Quarters station and Training facility construction, including LEED* elements, interior furnishings, exterior elements, etc.

2.3.4 Prepare a Furnishings, Fixtures and Equipment (FFE) brief that outlines all equipment and furnishings to be transported from the existing Headquarter station and reused and a verified list of items to be purchased by the Corporation. A draft of the FFE brief shall be submitted to the Corporation for review and approval. Additionally, the brief shall include the

performance specifications for all new FFE, communications, security and signage. The Proponent shall assist the Corporation with the evaluation and procurement of all equipment and furnishings.

- 2.3.5 Prepare a facility lifecycle cost analysis that evaluates the proposed mechanical, HVAC, electrical, communication systems, proposed LEED* credit recommendations, among others. The analysis must be thorough enough to ensure that the initial vs. maintenance costs are considered and that the comparative merits of alternative options are discussed and evaluated. The analysis must also include a recommendation of preferred options from the Proponent, as well as any value engineering or cost reduction strategies.
- 2.3.6 At the 60% design stage, prepare a proposed LEED* Scorecard for review. The scorecard must identify the credits/points that are being targeted, those which will not be considered and those which should be discussed further prior to finalizing all LEED* considerations. At the 90% design stage, a final proposed LEED* Scorecard shall be submitted for review and approval.
- 2.3.7 Prepare all documentation required for the LEED* registration and certification process, and act as LEED Coordinator during both the design and construction phases of the project.
- 2.3.8 Prepare a final design report that includes all elements of the final design (as per section 2.3.1), a copy of the life cycle cost analysis, LEED* recommendations and requirements, the FFE brief, a final cost estimate and the geotechnical recommendations. Additionally, comment on construction scheduling, phasing and tendering (i.e. separate tenders for specific equipment, etc.).

2.4 Phase 4 – Contract Preparation and Tendering

- 2.4.1 Prepare a complete tender package, including detailed construction specifications, an itemized bid list (Schedule of Unit Prices). Front-end documents used shall be the Corporation' standard and will be provided to the successful Proponent.
- 2.4.2 Prepare a final cost estimate that corresponds with the itemized bid list. For large 'lump sum' items, the Proponent shall provide a corresponding breakdown of costs.
- 2.4.3 Prepare a complete 'Issued for Tender' (IFT) set of drawings. Each drawing shall bear the stamp of the applicable certified/licensed professional that completed the work.
- 2.4.4 Provide support to Corporation staff during tendering period, answer any questions that arise during the tendering period, prepare with Purchasing addenda and clarifications using Corporation's format, and review any requests for equipment substitutions.
- 2.4.5 Prepare a complete 'Issued for Construction' set of drawings that include any changes/updates from the IFT set, following the award of the tender. PDF and CAD versions of all drawings are required and shall reference the NAD83/UTM Zone 18 coordinate system.

2.5 Phase 5 – Construction Administration

- 2.5.1 During construction, the Proponent shall provide full-time contract administration and inspection services. The site inspector must be adequately trained and have a minimum of five (5) years experience in projects of a similar scope. The contract administrator must have a

minimum of ten (10) years progressive experience in projects of a similar scope. Construction administration services shall include the following:

- Serve as the Consultant as per the CCDC 2 Stipulated Price Contract Agreement between the Owner and the Contractor.
- Complete a review of the Contractors proposed construction schedule; the Proponent shall advise the Corporation of any potential concerns or issues with the schedule and coordinate with the Contractor in an effort to remediate any issues.
- Prepare a list of submission requirements required from the Contractor; all submissions (shop drawings, etc.) must meet tender specifications and shall be provided to the Corporation for review and approval.
- Chair all meetings (including the pre-construction and bi-weekly site meetings), act as note taker and prepare minutes for distribution at each meeting.
- Verify that the work is undertaken generally in accordance with tender specifications and drawings.
- Review all enquiries, extra work requests and claims submitted by the Contractor. Prepare change directives and site instructions as necessary. All change directives and extra work must be reviewed and approved by the Corporation. Other enquiries shall be responded to within a maximum of five (5) business days.
- Liaise with various stakeholders and the public throughout the construction phase.

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- Verify quantities and prepare construction progress payments on a monthly basis; the cut-off date for payment is the last Friday of each month. Progress payments must be submitted to the Corporation for review and approval within five (5) business days of the payment cut-off date.
 - Maintain a document management system to track any necessary changes to drawings, revisions to specifications, manage any site instructions, change directives, extra work orders, claims, etc.
 - Coordinate with the Contractor to arrange for any inspections (i.e. permits, LEED*, TSSA, building, Electrical Safety Authority, etc.). The Proponent is to maintain records of all inspections throughout construction.
 - Identify and maintain a list of deficiencies during construction, and dates of identification/correction.
 - Maintain daily written and photographic work records. At minimum, daily records must include detailed descriptions of contract operations, quantity measurements, grading/tie-in information (may be included in a separate field book), calculations, pertinent conversations with the Contractor (or residents, the Corporation or any other stakeholder), site visits, difficulties encountered, on-site staff and production, weather conditions, subsurface conditions, any claims or complaints, verbal and written instructions given to the Contractor, explanatory notes and any work that occurs that falls outside of the scope of the contract.
 - Following the completion of each supply/sub-contracts, verify that all applicable Construction Act forms have been received (i.e. Form 10 -

Certificate of Completion of Subcontract under Subsection 33(1) of the Act).

- Following the completion of the construction, Prepare and issue a Form 9 – *Certificate of Substantial Performance of the Contract under Section 32 of the Act*, in accordance with the standards specified in the Construction Act. Following the 60 day waiting period (should no claims arise), prepare a progress payment for the release of statutory holdback.

2.5.2 Coordinate all geotechnical review/inspections required.

2.5.3 Coordinate materials testing required throughout all phases of construction. Additionally, the Proponent is responsible for reviewing all materials testing reports and coordinating the rectification of the noted deficiencies with the Contractor.

2.5.4 The Proponent shall act as LEED* Coordinator during construction and is responsible for the preparing/obtaining/submitting any documents required for certification during the construction phase. The Proponent shall also assist the Contractor by ensuring that LEED* related features and requirements are being installed and/or implemented correctly.

2.5.5 The Proponent shall base the cost for the services in Section 2.5 – *Construction Administration Phase* on the estimates provided below:

Title	No. of Hours
Contract Administrator	320
Site Inspector	960
Architect	120
Structural Engineer	120

Mechanical Engineer	80
Electrical Engineer	80
Civil Engineer	80
Interior Designer	120
Landscape Architect	80

- All disbursements (travel, mileage, lodging, meals, supplies, etc.) shall be included in the applicable unit rates provided. No additional costs will be considered by the Corporation. Please note that all hours indicated are estimates only and all work under Section 2.5 will be paid based on actual time spent.
- If, at any time the proponent anticipates that the estimated hours will be exceeded, the Corporation must be notified immediately. Detailed justification for additional time required must be provided. The Proponent will not be compensated for additional time spent unless sufficient notification and/or justification is provided to the Corporation.
- Should it be determined that a discipline not listed in the table above is required, the Proponent is responsible for providing a proposal that includes the rate/quantity of hours, roles and responsibilities and an explanatory note that describes why their presence is essential for the success of the project. The addition of any discipline to the Construction Administration team is subject to approval by the Corporation.
- The Proponent is responsible for any overtime, rate premiums, etc. and will not transfer these rate premiums to the Corporation in any manner.
- The Proponent must maintain a log of representatives on site each day, and the number of hours each discipline is on site completing reviews, attending meetings and etc.

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- The Corporation will not be held responsible for any costs related to negligence by the proponent in the design of the work. The Proponent shall be responsible for all costs related to re-design work due to the Proponent's negligence.

2.6 Phase 6 – Building Commissioning

2.6.1 The Consultant shall engage an independent third-party Building Commissioning Consultant to coordinate all activities related to commissioning and verify that all tests performed by the building contractor, sub-contractors, and equipment manufacturers are conducted and documented.

2.6.2 The Commissioning Consultants work shall include but not be limited to the following:

- Prepare a Commissioning Plan to ensure effective commissioning of the facility. The plan must include details of the procedures and processes to be followed and include a building transfer process from the Proponent/building contractor to the Corporation.
- Prepare a schedule of seasonal tasks to be completed during the first year of operation.
- Review the following for each building system: installation procedures, documentation received, design criteria and intent, special features, cleanliness of the system, electrical characteristics of connected equipment and commissioning procedures.
- Review and approve the building contractors commissioning schedule.

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- Prepare performance verification forms or test sheets for each piece of equipment and system specified in the electrical and mechanical tender specifications.
 - Prepare a document package that includes all equipment/building system warranties, operation and maintenance manuals, etc. The package shall include a summary of equipment specific warranties and applicable warranty timeframes as well as any maintenance or other requirements necessary to ensure that warranties remain valid.
 - Arrange for any equipment/building system training indicated in the contract documents.
 - Report any faults and/or defaults affecting commissioning to the Corporation.

2.6.2 The Proponent shall base the costs of the independent Building Commissioning Consultant on the hours estimated below.

Title	No. of Hours
Building Commissioning Consultant	120

- All disbursements (travel, mileage, lodging, meals, supplies, etc.) shall be included in the applicable unit rates provided. No additional costs will be considered by the Corporation. Please note that all hours indicated are estimates only and all work under Section 2.6 will be paid based on actual time spent.
- If, at any time the proponent anticipates that the estimated hours will be exceeded, the Corporation must be notified immediately. Detailed justification for additional time required must be provided. The

Proponent will not be compensated for additional time spent unless sufficient notification and/or justification is provided to the Corporation.

2.7 Phase 7 – Post Construction Phase

2.7.1 The Proponent shall prepare a complete tender close-out package that includes all tender/construction documentation prepared or received throughout the construction phase of the project as well as a complete set of “as-built” drawings provided by the construction contractor. Additionally, the close-out package shall include a final lifecycle cost analysis of the building for asset management purposes, complete with any building maintenance schedules recommended to ensure that the maximum lifespan of the building is achieved.

2.7.2 Provide any follow-up documentation necessary for LEED* certification.

2.7.3 The Proponent shall maintain a comprehensive deficiency list throughout construction and following the completion of construction. Prior to the completion of the two (2) year standard construction warranty, the Proponent shall complete a final general review of the building and provide a final list of deficiencies that require repair.