

# SBGD - Part D – Consultant Scopes of Work

## 3. Commissioning Authority

Comprehensive commissioning on City of Calgary buildings, and corresponding systems, helps ensure The City receives the greatest value on its investments. Although not all projects will pursue LEED certification, the LEED rating system provides a holistic approach to commissioning developed using industry recognized standards. The latest LEED commissioning requirements were developed using the standards:

- ASHRAE Guideline 0-2005 The Commissioning Process
- ASHRAE Guideline 1.1-2007 HVAC&R Technical Requirements for the Commissioning Process
- NIBS Guideline 3-2012 Exterior Enclosure Technical Requirements for the Commissioning Process

City of Calgary projects are to follow and comply with the following scope requirements, as described in LEED v4:

1. Fundamental Commissioning and Verification
2. Enhanced Commissioning – Option 1 Path 1: Enhanced Commissioning
3. Enhanced Commissioning – Options 2: Envelope Commissioning

Follow the requirements and steps closely laid out in the three items above and provide all deliverables to The City of Calgary Project Manager and The Policy Steward.

Rarely will a commissioning authority be an expert in both MEP (mechanical, electrical and plumbing) systems and building envelope systems. The commissioning scopes should be managed by two lead commissioning agents, one specializing in MEP commissioning and one in building envelope commissioning. However, one commissioning authority (CxA) must oversee and coordinate all activities and deliverables provided by the commissioning team.

The minimum qualifications for the lead Commissioning Agents are:

1. MEP Commissioning Agent
  - Must be a Professional Engineer registered with APEGA
  - Must demonstrate MEP commissioning experience on a minimum of five projects
  - Meets LEED v4 Commissioning Authority Qualification Requirements, if the Project is pursuing LEED certification
2. Building Envelope Commissioning Agent
  - Must be a Professional Engineer registered with APEGA or an architect registered with The Alberta Association of Architects
  - Must demonstrate BE commissioning experience on a minimum of two projects
  - Meets LEED v4 Building Envelope Commissioning Authority Qualification Requirements, if the Project is pursuing LEED certification

The commissioning authority is responsible for working with the owner to create and update the Owner's Project Requirements (OPR). The OPR will include (but is not limited to) the following items:

- Key Project Requirement; Items that the commissioning process will focus on and that the owner has deemed critical to the project
- Occupant requirements including space functions, number of occupants and schedules for the building

- Indoor environment requirements including temperature, humidity, and ventilation
- Budget considerations and limitations
- Sustainability and energy goals
- Establish criteria for operations and maintenance, as well as personnel training
- Performance criteria
- Procedures for all reviews, evaluations, and testing.

The Commissioning Authority shall use a commissioning log to track any deficiencies, concerns or suggestions identified throughout the commissioning process. This log, commissioning reports and all other documentation shall be submitted directly to The City Project Manager and The Policy Steward.

The Commissioning team will coordinate with the LEED consultant to submit LEED v4 fundamental commissioning pre-requisite and enhanced commissioning credit documentations and respond to CaGBC reviewers' comments as needed.

## Appendix – Sample RFP

### 4.2 Building Commissioning (Including Enhanced Systems Commissioning and Envelope Commissioning)

The Commissioning Authority (CxA) shall complete all commissioning requirements outlined in the LEED v4 prerequisite Fundamental Commissioning and Verification, the Enhanced Commissioning credit Option 1. Path 1. Enhanced Systems Commissioning and Option 2 Envelope Commissioning.

The Consultants commissioning team may be made up of multiple subject matter experts to address all the systems noted below. The Consultant is required to be able to demonstrate that each member of the team has the experience and system expertise to appropriately address each of the systems being reviewed by providing relevant project examples. The Consultants lead energy commissioning agent must be a professional engineer registered with APEGA. The Consultants lead building envelope commissioning agent must be a Professional Engineer registered with APEGA or be a Registered Architect in Alberta.

The CxA shall complete commissioning (Cx) process activities for the following systems as they relate to functionality, energy, water, indoor environmental quality, and durability:

- Mechanical systems (HVAC, DHW, plumbing etc.)
- Electrical systems (lighting, electrical service and distribution etc.)
- Plumbing systems
- Energy generation and renewable energy systems
- Controls including BMS systems
- Building envelope systems
- Any other systems as dictated by the owner over and beyond what may be required to satisfy LEED requirements, such as, arena refrigeration systems, aquatic systems, data centers, power distribution systems, security systems, etc.

The CxA shall complete the commissioning (Cx) process activities in accordance with ASHRAE Guideline 0-2005 The Commissioning Process, ASHRAE Guideline 1.1-2007 HVAC&R Technical Requirements for the Commissioning Process and NIBS Guideline 3-2012 Exterior Enclosure Technical Requirements for the Commissioning Process, as they relate to energy, water, indoor environmental quality, and durability.

The envelope commissioning agent will prepare installation verification and inspection checklists and review schedules to be used to confirm that the envelope related systems have been installed, inspected, tested, and reviewed where applicable.

In close consultation with the Prime Consultant team, the CxA will develop the Owner Project Requirements (OPR). The OPR will include (but is not limited to) the following items:

- Key Project Requirement; Items that the commissioning process will focus on and that the owner has deemed critical to the project
- Occupant requirements including space functions, number of occupants and schedules for the building
- Indoor environment requirements including temperature, humidity, and ventilation
- Budget considerations and limitations
- Sustainability and energy goals
- Establish criteria for operations and maintenance, as well as personnel training
- Performance criteria

- Procedures for all reviews, evaluations, and testing.

The OPR will direct the Basis of Design (BOD). These documents will direct design reviews during Design Development, Contract Documents, Construction and Post-Construction Reviews.

The Cx team will complete reviews of design documents and post construction records, as prescribed in LEED v4, to ensure they reflect the BOD and OPR and that all operations and maintenance documentation contains all necessary information.

The Commissioning Authority shall use a commissioning log to track any deficiencies, concerns or suggestions identified throughout the commissioning process. This log, commissioning reports and all other documentation shall be submitted directly to The City Project Manager and The Policy Steward.