



01 00 00 Queen's University Specific General Requirements

Queen's University Building Design Standards

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01 00 01 Role of Building Standards

1. Queen's University Building Design Standards are to be followed as part of all design and construction projects.
2. The Queen's Building Standards Agreement form is to be completed and returned as part of the Preconditions of Award of a contract. Form is included as part of RFP documents as Appendix Q.

Queen's Building Standards Agreement

The Prime Consultant hereby agrees to the adoption of the Queen's Building Standards found at: <https://www.queensu.ca/facilities/building-design-standards> by affixing their signature below. They are committed to deploying the Standards, and ensuring adherence by stakeholders, in the start-up, planning, and implementation phases of the project.

Name	Title	Signature	Date
	Prime Consultant		

Queen's Building Standards Highlights (Items Often Overlooked):

- Electrical:
 - Electrical Rooms must not to be located in the lowest point of the building.
 - Electrical rooms to include cooling.
- Mechanical:
 - For new construction and major renovations, geothermal shall be used as the primary source of building heating and cooling unless shown not to be technically feasible.
 - No mechanical services are to run through electrical rooms unless specifically serving the electrical room.
 - Glycol run around loops are to be used for heat recovery where cross contamination of air streams is a concern.
 - Mechanical equipment is to be located in mechanical rooms and not on the roof unless shown not to be technically feasible. Condensers and fume hood exhaust fans are exempt. Equipment requiring maintenance is to be accessible by stairs or elevator, ladders are not permitted.
- Sustainability:

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- New construction and major renovation projects are to be certified LEED Gold or higher.
- Building Thermal Energy Demand Intensity (TEDI) shall not exceed 24 kWh/m².
- Energy Model and embodied carbon of construction report will be required and updated as design evolves.
- Building Automation System:
 - Only one manufacturer per building.
 - Delta and Automated Logic are only approved BAS manufacturers.
 - All Major Equipment to be hard wired to the BAS for critical commands such as start, stop, enable and status.

01 00 02 General Notes:

- All other edits in the Sections (including determination of the appropriate sub-sections) listed below are to be confirmed on a project specific basis with the Queen's Project Manager.
- In all cases, the Prime Consultant is responsible for ensuring that Specifications are aligned with the form of Construction Contract and Queen's Supplemental General Conditions.
- Sustainability related items indicated below are common requirements to all Queen's construction projects. Where a project is targeting LEED Certification, the Prime Consultant is responsible for ensuring the appropriate sections are incorporated and properly cross referenced in the Specifications.
- Designated Substances Reports – Ensure that the report addresses all suspected designated substances, not only asbestos. Advise Queen's Project Manager if additional testing or investigations are required, prior to issuing for Tender.
- Permit Requirements – The Consultant shall confirm with the Queen's Project Manager the assignment of responsibility for applying for, picking up and paying for any required permits.

01 11 00 Summary of Work

- **Contract Documents for Construction Purposes:**
 - Owner will supply contractor with complete set of Contract Documents in electronic format only.
- **Documents At the Site:**
 - A hard copy of the documents listed in this section shall be kept at the Place of Work.
 - Add Contractor's Health and Safety Plan (including and COVID-19 related protocols) to the list of documents.

- **Contractor's Use of Premises:**
 - Except as otherwise specified in section 00 14 00 Work Restrictions, and 01 35 00 Special Procedures, the Contractor has unrestricted use of the Place of Work from the time of Contract award until Ready for Takeover.

Restrictions On Use of Premises:

- The Consultant to incorporate the following items in the contract documents (drawings and/or specifications):
 - A diagram of the area of work, as well as any contractor-use areas. Include consideration of access for deliveries, lay-down, and facilities such as site office, washrooms, etc. (if the Contractor is not responsible to provide them).
 - Confirm if any special provisions are to be made for the project with respect to parking. Cross reference to 01 52 00.

01 20 00 Price and Payment Procedures:

- Prime Consultant to ensure that any requirements in this section are consistent with the form of Construction Contract and the Queen's Supplemental General Conditions.

01 26 00 Contract Modification Procedures:

- Ensure this aligns with Queen's Supplemental Conditions with respect to changes.

01 29 00 Payment Procedures:

- Ensure this aligns with Queen's Supplemental Conditions with respect to changes.

01 31 19 Project Meetings:

- Project Meetings – Minutes to be accompanied with updated tracking tables for Request for Information (RFI), Site Instructions (SI), Contemplated Change Notices (CCN), Contemplated Change Order (CCO), and Change Order (CO). These are to be reviewed and updated at each site meeting.
- If a project website or file sharing software is used, Queen's requires full access and downloading rights.
- Submittals
 - Ensure sustainability reporting requirements are included.
 - Timelines for submittals review are to be consistent with Construction Contract and the Queen's Supplemental General Conditions.

01 32 00 Construction Progress Documentation:

- Project Schedule – Project schedule is to be updated no less than monthly, indicating baseline schedule and current schedule.
- Submittals Schedule – Ensure this section is consistent with Queen's Supplemental General Conditions.

- Recording Actual Site Conditions on As-Built Drawings – Contractor to provide mark-ups of as-built conditions to the Consultant for inclusion in Record Drawings.
- Progress Photographs – Contractor to provide digital progress photographs. Professional photographs are not required.
- Progress Video – not required. If applicable, Queen's will make the necessary arrangements.

01 35 00 Special Procedures:

- Requests to work outside of normal hours should be submitted to Queen's Project Manager (PM) a minimum of 3 business days in advance of work commencing. PM to communicate hours of work, site supervisor name and contact to the Emergency Report Centre (ERC) by email to campus.security@queensu.ca. This correspondence should identify whether Campus Security and Emergency Services is required to assist with site access. Such requests are also to be copied to fixit@queensu.ca and include requests for keys or PPS trades support for the after-hours work. Should an emergency arise during after-hours work that requires the intervention of PPS trades, the Site Supervisor is to contact ERC at 613-533-6080 to initiate a call-in. Any emergencies requiring the intervention of an ambulance, police, or Kingston Fire and Rescue should be reported to 613-533-6111. Do not call 911 from a campus building.
- Hot work protocol: Any hot work required must comply with the Queen's Standard Operating Procedure [Hot or Open Flame Work](#) (Please note: Queen's Project Manager to provide insurance provider's protocol for projects over \$5M)
- Shut down: Shut down of any building services or systems must comply with the Queen's [Request for Shutdown Notice](#) procedures.
- Code of Conduct requirements: The Contractor be required to fully comply with any policies or procedures of the Owner which are relevant to any activity of the Contractor to be performed under the Contract. The Contractor further agrees that it will use reasonable efforts to inquire from the Owner if such policies or procedures exist for any activity of the Contractor to be performed under the Contract. The Owner agrees that it will use reasonable efforts to communicate to the Contractor policies or procedures it may have relevant to such activities. These policies include:
- Queen's Harassment and Discrimination Policy:
 - <https://www.queensu.ca/secretariat/harassment-and-discrimination-prevention-and-response-policy>
- Queen's Health and Safety Policies:
 - <https://safety.queensu.ca/policies-and-standard-operating-procedures>
- Health and Safety policies include:
 - [Health and Safety Management System](#)
 - [Policy Statement on Health & Safety](#)
 - [Policy Statement on Environmental Management](#)
 - [Policy Statement on Student Health and Wellness](#)

- [Policy and Procedures for Reporting and Managing Infectious Diseases](#)
 - [Off-Campus Activity Safety Policy](#)
 - [Smoke-Free University Policy](#)
 - [Workplace Violence and Harassment](#)
- Utility sources: Confirm what utilities will be provided by Queen's and where the connection points are.
 - Hours of Work for all projects must take into consideration quiet periods during examination times. Confirm these with the Queen's Project Manager.
 - Tagging requirements (cross reference to mechanical and electrical sections)

01 35 21 LEED Requirements:

1. All new builds and major renovations are to target LEED Gold certification or higher. As part of certification, the following general principles are to be observed:
 - All enhanced commissioning credits are to be targeted.
 - Grey water systems shall not be installed on campus.
 - Water closets and urinals shall meet LEED prerequisites only, additional water reductions or points shall not be targeted for these fixtures.
 - Electrical metering shall not impact panel layouts. Electrical distribution shall be laid out to promote intuitive troubleshooting.
 - Energy metering shall include electrical, natural gas, condensate (from steam), domestic water, heating water, and chilled water where applicable. Building tenants shall be metered separately.
 - Submit project Waste Management Plan highlighting recycling and salvage requirements.
2. In addition to the required LEED Gold Prerequisites, the following credits shall be selected and implemented, with additional credits to be selected as part of the design process to achieve Gold Certification:
 - **SUSTAINABLE SITES:**
 - Rainwater Management
 - Heat Island Reduction
 - **WATER EFFICIENCY:**
 - Outdoor Water Use Reduction
 - Optimize Process Water Use (where applicable to building / cooling system type).
 - **ENERGY AND ATMOSPHERE:**
 - Enhanced Commissioning
 - Optimize Energy Performance
 - Advanced Energy Metering

- Grid Harmonization (Demand Response)
- Enhanced Refrigerant Management

- **MATERIALS AND RESOURCES (MR):**
 - Environmental Product Declarations
 - Construction and Demolition Waste Management.

- **INDOOR ENVIRONMENTAL QUALITY (EQ):**
 - Enhanced Indoor Air Quality Strategies
 - Low-Emitting Materials
 - Construction IAQ Management Plan
 - Indoor Air Quality Assessment
 - Thermal Comfort
 - Interior Lighting
 - Acoustic performance – Refer to Queen's Acoustic Design Guidelines and any project specific requirements.

- **INNOVATION CREDIT:**
 - Target a total of 4 points in this category including options such as:
 - Green Building Education
 - Purchasing Lamps

01 40 00 Quality Requirements:

- Testing and Inspection Agency Qualifications – (reference to preferred service suppliers for underground services)
- Confirm with Queen's Project Manager any special requirements for working around buried communications infrastructure (eg hand dig within 1 m or locate).

01 47 13 Sustainable Requirements-Concept Design:

- **Site Layout and Green Space:**
 - New builds and renovations should maintain the look-and-feel of Queen's campus heritage landscape through inclusion of natural greenspace in the site plan.
 - Site density of the building footprint shall align with the campus master plan and look to model the historic section of campus in terms of the ratio of greenspace to building footprint.
 - Widespread paving and hardscaping is to be avoided. Hardscaped areas should be limited to functional elements such as walking paths and bicycle lockups.
 - The preference for interstitial space between these elements is natural lawn or garden.

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- Renovations to sites with limited greenspace and new builds with severely constrained sites should include accessible green roofs.
- **Energy & Utilities:**
 - Building Thermal Energy Demand Intensity (TEDI) shall not exceed 24 kWh/m². It is expected that the following design elements will be required to achieve this and should be included in preliminary budget and costing at every stage of development until specific elements are chosen for inclusion/exclusion:
 - Heat recovery using enthalpy wheels with a minimum efficiency of 80%.
 - Triple glazed windows with a maximum window to wall ratio of 35%.
 - R50 Roof system.
 - Slab insulation.
 - Glass curtain walls are not to be used.
 - Primary roof areas shall be built ready for the additional structural load of typical solar system installations.
 - All utilities shall have real-time meters recording into the existing Schneider PME system including natural gas, electricity, steam condensate, and water. As permitted by Utilities Kingston their meters may be used where they exist, and meter outputs are available and compatible with PME (pulse read through a PLC or direct connection to the meter). See the Electrical Division for electricity meter standards, and the Mechanical Division for condensate meter standards.
- **Modelling and Costing:**
 - A full life cycle assessment of greenhouse gas (GHG) emissions and energy costs shall be provided at the schematic design stage for each design option under consideration, to be updated at each phase of design through to as-built construction. The life cycle assessment of GHG emissions shall be performed as per the Canada Green Building Council Zero Carbon Building Design Standard V2 or newer as available for:
 - Embodied emissions of building materials.
 - Annual operational emissions.
 - An energy model shall be provided that as a minimum meets the requirements under the Zero Carbon Building Standard V2 (or newer as available) Energy Modelling Guidelines.
 - Where multiple design options are under consideration costing shall be performed for each alternative to facilitate a clear comparison of construction cost, operational cost, and lifecycle GHG emissions for each option.
- **Transportation:**
 - To promote active transportation the following bike-friendly elements shall be included in new builds and building renewals with program space for more than 20 full-time equivalent (FTE) employees:
 - Bike parking in a minimum ratio of 1 space for every 5 FTE employees, located within 30m of the main entrance.

- A minimum of 1 shower and changing stall per 50 FTE employees.

01 52 00 Construction Facilities:

- Coordinate requirements for temporary construction facilities (field office, first aid and sanitary facilities) with references in 01 11 00 Summary of Work.
- Project signage – Any external project signage is required to comply with the City of Kingston by-law: (<https://www.cityofkingston.ca/documents/10180/16904/Sign%20Bylaw>)
 - Any proposed signage must also be reviewed by Queen's Integration Communication Team to ensure corporate branding and use of appropriate logo.
- Contractor to provide their own phone and/or internet service.

- **01 56 00 Temporary Barriers and Enclosures:**
 - Temporary Facilities: Ensure provision of adequate floor, wall, and ceiling protection during construction.

- **01 57 00 Temporary Controls:**
 - Tree Protection – If there is a requirement for tree protection, reference should be made to the Queen's standard detail, in conjunction with any other regulatory requirements.

- **01 60 00 Product Requirements:**
 - The Consultant must consult the Owner with respect to requirements for extra materials to be handed over to the Owner at the completion of the project. Generally, any specialized flooring and ceiling tiles would be required, but not paint. Quantities required to be verified by the Owner.

- **01 74 00 Cleaning and Waste Management:**
 - The contractor must remove all material remnants and excess dirt. All areas of work are clear of excess dirt and debris. Ensure mechanical, electrical and IT rooms are clean, all garbage and debris has been removed.
 - Contractors are not to use or remove any Queen's existing stock in mechanical rooms without prior authorization from Queen's.
 - Cross reference to LEED specification section regarding Construction and Demolition Waste Management MRc5.

01 77 00 Closeout Procedures**01 78 00 Closeout Submittals****01 70 00 Demonstration and Training**

01 91 00 General Commissioning Requirements:

- Ready for Takeover – specified requisites as set out in General Conditions of the Contract.
- Inspection for Ready for Takeover shall be conducted jointly between Queen's representatives, the Contractor and the Consultants.
- Close out Submittals – Ensure requirements are consistent with the Construction Contract and the Queen's Supplemental General Conditions.
- Ensure cross reference to LEED specification sections regarding commissioning and training.
- Ensure all items in the following checklist have been accounted for.

Ready for Take-over and Close-Out Procedures Checklist (Administrative and Financial)

Project Number:

Project Title:

Project Manager:

		Activity	Completed	Date
1	Stage	Project Documentation received from Consultants		
	RTO	<ul style="list-style-type: none"> • Occupancy Permit 		
	RTO	<ul style="list-style-type: none"> • Regulatory Approvals confirmation (i.e. Ministry of Environment, etc.) 		
	RTO	<ul style="list-style-type: none"> • Written confirmation of Ready for Takeover 		
	CO	<ul style="list-style-type: none"> • Certification of Substantial Performance 		
	CO	<ul style="list-style-type: none"> • Documentation for Release of Holdbacks (Lien and Deficiency) 		
	CO	<ul style="list-style-type: none"> • Documentation for release of Securities (City, etc.) 		
	CO	<ul style="list-style-type: none"> • Reviewed As-Built Drawings 		
	CO	<ul style="list-style-type: none"> • Record Drawings 		
	CO	<ul style="list-style-type: none"> • List of equipment and ID-numbers – labelling/lamacoides (per Queen's design requirement) 		
	CO	<ul style="list-style-type: none"> • Certificate of Total Performance and confirmation all deficiencies have been addressed 		
2		Project Documentation received from Contractors		
	RTO	<ul style="list-style-type: none"> • As-built drawings (to Consultants for review) 		
	RTO	<ul style="list-style-type: none"> • O and M manuals (electronic version) 		
	RTO	<ul style="list-style-type: none"> • Shop Drawings (electronic version) 		
	RTO	<ul style="list-style-type: none"> • List of equipment and ID-numbers (per Queen's design requirement) 		
	RTO	<ul style="list-style-type: none"> • Warranties 		
	RTO	<ul style="list-style-type: none"> • Commissioning Reports and Training Record (as required) including videos/training material 		
	RTO	<ul style="list-style-type: none"> • Signed transmittal for handover Items (keys, extra materials etc.) 		