



ST. CATHARINES PUBLIC LIBRARY

54 CHURCH STREET, ST. CATHARINES, ONTARIO L2R 7K2

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ADDENDUM #2 **REQUEST FOR TENDER** Central Library HVAC Equipment RFT #21-06

This addendum shall form an integral part of the specifications and plans for the above project and shall be read in conjunction therewith. This addendum shall, however, take precedence over all requirements of the previously issued specifications and plans with which it may prove to be at variance, unless otherwise clarified by the Business Administrator.

This addendum should be signed by the bidder in the appropriate space and should be attached to the Form of Quotation for submission at the time of tendering.

Quotations not including this Addendum, signed as required, may be rejected as informal. There are twelve (12) pages in Addendum #2 (including this page).

The questions that have been formally received, and the Library's subsequent answers/clarifications to those questions, are contained herein.

Authorized Signature: _____

Company Name: _____

Date: _____

December 15, 2021

St. Catharines Public Library – Central Branch
54 Church Street
St. Catharines, Ontario
L2R 7K2

Attention: Karen Smith Curtis

**RE: HVAC Equipment Replacment
Library RFT #21-06 / ARC #21-219-010
Addendum M-002**

ADD M-002

The following are to be included in the tender for this project and are to be completed in accordance with the specifications and all terms and conditions of the tender documents.

#	Reference	Item
1	Request for Tender, Page 15 (attached)	Specifications <ul style="list-style-type: none"> - Added Section 15040 Commissioning
2	Specification Section 15001 (attached)	Specification Table of Contents <ul style="list-style-type: none"> - Added Section 15040 Commissioning Rooftop Multizone Zones <ul style="list-style-type: none"> - Corrected schedule title (previously "Air Handling Units") - Revised remarks for RT-1, RT-2, RT-3, RT-4 to reflect Specification Section 15006 revision
3	Specification Section 15040 (attached)	Commissioning <ul style="list-style-type: none"> - Added Commissioning Section

End of Addendum M-002

- The 1st and 2nd floors level are public library space housing the library collection, offices for staff, meeting rooms and public space.
- The 3rd floor houses the Library Administration area.
- The Atrium has two levels and is a glass and steel structure that faces James Street.
- There are five (5) rooftop multizone units, two (2) air handling units located in the basement with condensing units located on the roof, and a packaged AC unit located on the roof that serve the building.

SPECIFICATIONS

15001	Specification Table of Contents
15005	Bid Form
15006	Separate Prices
15007	Alternate Equipment and Suppliers
15010	Mechanical General Provisions
15040	Commissioning
15050	Basic Mechanical Materials and Methods
15060	Mechanical Demolition
15240	Sound and Vibration Control
15255	Insulation
15484	Natural Gas Piping
15530	Refrigeration Piping
15670	Refrigeration Condensing Units
15775	Rooftop Heating and Cooling Equipment
15790	Air Coils
15885	Air Filters
15890	Sheet Metal
15965	Electronic Controls & Monitoring System
15993	ECMS Inspection and Acceptance
15995	Testing and Balancing
16001	Electrical Requirements
Appendix A	Mechanical Drawings
Appendix B	Rooftop Multizone Unit Prepurchase Shop Drawings
Appendix C	Air Audit Report, dated August 2021
Appendix D	SCPL Vaccination Policy for Contractors

SCHEDULE DESCRIPTION

DATE

RFT Publish Date	November 26, 2021
Mandatory Site Visit	December 2, 2021 10:00 AM
Deadline for Questions	December 9, 2021 end of business day
Answers / Addendum Deadline	December 15, 2021 end of business day
RFT Closing Date	December 20, 2021, 10:00 AM

Tender Format

Tender should include the following sections:

General

Provide a list of subcontractors (if any).

Bid Form

The respondent should complete and submit the Bid Form as provided in this document.

SECTION	TITLE	ISSUE DATE
	DIVISION 15 MECHANICAL	
15000	Mechanical General Requirements	
15001	Specification Table of Contents	
15005	Bid Form	
15006	Separate Prices	
15007	Alternative Equipment and Suppliers	
15010	Mechanical General Provisions	
15040	Commissioning	
15050	Basic Mechanical Materials and Methods	
15060	Mechanical Demolition	
15200	Sound, Vibration and Seismic Control	
15240	Sound and Vibration Control	
15250	Mechanical Insulation	
15255	Insulation	
15400	Plumbing	
15484	Natural Gas Piping System	
15500	Heating, Ventilation and Air Conditioning	
15530	Refrigeration Piping	
15650	Refrigeration	
15670	Refrigeration Condensing Units	
15750	Heat Transfer	
15775	Rooftop Heating and Cooling Equipment	
15790	Air Coils	
15880	Air Distribution	
15885	Air Filters	
15890	Sheet Metal	
15950	Controls	
15965	Electronic Controls & Monitoring	
15990	Testing, Adjusting and Balancing	
15993	ECMS Inspection and Acceptance Testing	

SECTION	TITLE	ISSUE DATE
	DIVISION 15 MECHANICAL	
15995	Testing and Balancing (TAB)	
	DIVISION 16 ELECTRICAL	
16000	Electrical Requirements	
16001	Electrical Requirements	

END OF SECTION

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PART 1 - GENERAL

1.1. WORK INCLUDED

- .1 Comply with the Agreement between the Contractor and Owner and all other documents referred to therein.
- .2 Provide all services, materials and labour required to fully commission the mechanical systems in accordance with this Section of the Specification.

1.2. COORDINATION

- .1 Meet the requirements of the General Instructions.
- .2 Coordinate the work of this Section to ensure complete and operational mechanical systems at completion of this work.
- .3 Appoint a single person as Commissioning Coordinator who shall be responsible for progressing the commissioning activities. The Commissioning Coordinator shall report to the Owner and Consultant.
- .4 Review the design intent of the project and the intended operation of systems with the Consultant before proceeding with commissioning.

1.3. QUALITY ASSURANCE

- .1 The commissioning process shall meet the requirements of CAN/CSA Z31 series, the Code of Practice for Commissioning Mechanical Systems in Buildings. Meet ASHRAE Standard 1-1989 Guideline for Commissioning of HVAC Systems and the Commissioning Guideline published by PEO.
- .2 The contractor may elect to source startup and handover by a specialist commissioning company. Supply to the Consultant, the following details regarding the proposed firm:
 - .1 Principle representative and qualifications
 - .2 Proposed personnel and relevant project experience
 - .3 Previous similar assignments and references
 - .4 Scope of work to be undertaken
 - .5 Company resources and equipment
- .3 Use of a commissioning specialist shall not relieve the contractor of the obligation to name one of his own employees as the person responsible for progressing commissioning, i.e. the Commissioning Coordinator.
- .4 Supply the name, qualifications and experience of the proposed Commissioning Coordinator. Selection shall be subject to review and the approval of the Consultant. Supply alternative person(s) when requested by Consultant.
- .5 The Consultant may, at his discretion, attend and advise in the commissioning process. Meet Consultant requirements.

- .6 Hold and attend meetings during the commissioning process. Prepare detailed progress reports to coincide with regular commissioning meetings. Coordinate with the Consultant, the preparation and issue of minutes for each meeting to be circulated to each involved trade, the Consultant and the Construction Manager representative(s). Minutes shall highlight action items.

PART 2 - PRODUCTS

2.1. SCHEDULES AND COMPLETION OF INSTALLATION OF SYSTEMS

- .1 Submit to the Consultant, 30 days prior to the scheduled Substantial Performance, a detailed and comprehensive installation completion/startup/testing schedule, identifying all trades and suppliers to be involved. Update the schedule and resubmit for review, during the course of commissioning. If found to be unacceptable, revise the schedule and the construction forces to suit the reviewed schedule. This schedule shall include, but is not limited to the following items:
 - .1 Control system wiring
 - .2 Unit & zone air balancing (excluding individual diffusers)
 - .3 Electrical service connections
 - .4 Equipment suppliers prestart checkout of the equipment installations, including controls
 - .5 Start up of five (5) rooftop multizone units, one (1) packaged rooftop unit, and two (2) condensing units with matching coils.
 - .6 Operational testing of system components
 - .7 Performance testing of equipment and systems. Allow for summer and winter testing.
 - .8 Troubleshooting
 - .9 Calibration of controls and point checkout, completed with itemized verification sheet
 - .10 Control software setup and checkout including seasonal and response checkout of operating sequences
 - .11 Submittal of completed equipment and system checkout sheets
 - .12 Demonstration of systems and equipment (allow for summer and winter)
 - .13 Maintenance manual preparation and submittal
 - .14 Operator training program. Allow for four (4) hours, summer and winter.
 - .15 Record documentation submittal

2.2. RECORD DOCUMENTATION

- .1 Prepare record documentation for each equipment installation covering:
 - .1 Equipment identification and supplier

- .2 Shop Drawing submittal, review, production release, and delivery dates with periodic updates.
 - .3 Dates for completion of all work required to prepare for equipment installation
 - .4 Dates for equipment installation, supplier prestart checkout and system availability for startup
 - .5 Dates for equipment startup, performance testing, proposal for temporary use, acceptance testing, demonstration, turnover and warranty start/finish
- .2 Submit proposed record sheets and procedures to Consultant for review, when requested by the Owner.
 - .3 List all specialist personnel and equipment required for the test and ensure that these are available by the test date.
 - .4 Provide documentation of the commissioning process for inclusion into the maintenance manuals. These are to include checkout sheets, equipment data sheets, startup certificates from suppliers involved in startup, documentation concerning demonstration to the Owner. Include all records and result sheets from commissioning tests.
 - .5 Maintain a log of key operating parameters, problems encountered, solutions employed and verification of effectiveness of solutions. Include log in maintenance manuals.

2.3. STARTUP

- .1 Coordinate and supervise the startup of the various pieces of equipment and systems. Utilize the startup services of the manufacturer's representative. Ensure that the equipment is operating in a satisfactory manner. Check the following items:
 - .1 Direction of rotation
 - .2 Grease and lubricants
 - .3 Noise, if deemed to be a problem
 - .4 Seals
 - .5 Electrical amp draw, starting inrush current and trip/heater settings
- .2 Meet Section 15010 requirements for Temporary Services and Temporary and Trial Use.

2.4. TROUBLESHOOTING

- .1 Where problems become apparent during the commissioning process, identify and resolve these problems. The basic functions in troubleshooting are:
 - .1 What - identification and definition of the problem
 - .2 Why - determination and evaluation of the causes
 - .3 When - determine the time available to resolve the problem
 - .4 Involve the designing authority in the review of the problem and proposed resolution

- .5 Coordinate remedial action with the appropriate parties
- .6 Evaluate the effectiveness of the remedial action
- .7 Record the problem, cause, remedial action and result

2.5. OPERATION AND TESTING

- .1 Meet Section 15010 requirements for Inspection, Testing and Certificates.
- .2 Test the operation of the individual components and systems. Go through each step of the sequence of operation and verify that each component operates correctly. Direct and ensure that all trades involved make the required changes and adjustments to effect the proper operation of all components and systems.
- .3 Document operation and testing.
- .4 Carry out operational tests for the current season and simulate operation of summer, winter and intermediate seasons.

2.6. DEMONSTRATION

- .1 Demonstrate to the Consultant the proper operation of all equipment and systems supplied under this contract. Demonstrations shall occur only after the operation and testing has been successfully completed. Ensure that Trade Contractor and equipment suppliers participate in the demonstration as required.
- .2 Meet Section 15010 requirements for Instruction to Owners.

2.7. OPERATING AND MAINTENANCE MANUALS

- .1 Meet Section 15010 requirements.
- .2 Coordinate the manual provision with Consultant prepared Operation and Maintenance Manual, if available.

2.8. RECORD DRAWINGS

- .1 Meet Section 15010 requirements.

2.9. COMPLETION

- .1 Meet Section 15010 requirements.

2.10. SPARE PARTS

- .1 Provide a list of spare parts, special tools, lubricants, etc. for each item of equipment which has been purchased as part of the Contract.
- .2 Provide a listing of recommended spare parts for all equipment installed under Division 20, to cover a period from Substantial Completion to Warranty end.
- .3 Provide at minimum, the following information for recommended spare parts:
 - .1 Manufacturer's name, address, phone and email addresses

- .2 Manufacturer's part name, part number, unit price, lead time, shelf life
- .3 Quantity recommended for 1 year
- .4 Alternative suppliers of compatible parts, including local supplier name, address, phone and email addresses
- .4 Submit preliminary list of spare parts and tools to Owner at least 30 days prior to intended system handover to Owner. The Owner reserves the right to add to, reduce or omit entirely, the recommendations contained on these lists.

PART 3 - EXECUTION

3.1. COMMISSIONING TESTS

- .1 Arrange for Consultant to review documentation and witness verification testing after equipment start-up and air balancing is complete. Provide start-up and balancing reports to consultant prior to verification testing.
- .2 Verify readings, calibration and setup of sensors and equipment, including:
 - .1 Temperature sensors
 - .2 Freeze protection and high limit devices
 - .3 Flow switches
 - .4 Status switches
 - .5 Temperature and pressure gauges and gauge connection utilization
 - .6 Control damper positioning, including tightness when closed and full open/balance position
 - .7 Alarm contacts
- .3 Verify correct sensors are reporting accurately to the distributed field panels and operator workstation.
- .4 Operate each air handling unit. Verify and correct the following if required:
 - .1 Start/stop from the terminal
 - .2 Correct open/close and modulation procedures with valves and dampers
 - .3 Stable operation of controls under normal conditions and with changes in air/water/on/off conditions
 - .4 Trend logs operation indication
 - .5 Temperature and pressure sensors
 - .6 Drain pan operation and trap priming
- .5 Verify unit and zone air balancing (excluding individual diffusers).

- .6 Verify that all cooling DX coil drain pans and condensate piping operate.
- .7 Verify operation of unit shutdown when existing duct mounted smoke detectors trip.
- .8 Demonstrate access to all valves, equipment and components for servicing.
- .9 Verify the operation of all other equipment provided by in this contract.
- .10 Verify that interfacing of the work satisfies the control sequences and results in complete and operational systems.

3.2. POST SUBSTANTIAL PERFORMANCE VISITS

- .1 Visit the site and the Owner's representative each month after Substantial Performance for a minimum period of two days until the end of the project warranty period.
- .2 Review the operation of the system.
- .3 Correct any operating problems if problem is related to warranty issues.
- .4 Prepare a report for the Consultant for inclusion in the Operating Manuals of the problems and issues that have arisen and the corrective action(s) recommended and implemented.

END OF SECTION