



**THE CORPORATION OF THE CITY OF WINDSOR
OFFICE OF THE CITY SOLICITOR**

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**ADDENDUM NO. 2
TENDER NO. 81-19
MAKEUP AIR (MUA) UNIT REPLACEMENT – HURON LODGE**

June 10, 2019

This addendum amends and forms part of the Tender Documents. The bidder shall insert the addendum behind the cover page of the Tender Documents.

CLOSING DATE: The closing date is extended to; **MONDAY, JUNE 17, 2019.**

The closing time and location remain unchanged.

QUESTIONS & ANSWERS:

1) What is the model # of the existing MUA unit?

Engineered Air Model #FWB-313/DJ-100-0.

2) What are the structural requirements for this tender?

a. Detail of anchor relocation

b. Structural reinforcement for new ACCU-1

Refer to Item #3 of Clarifications, below.

3) Who is responsible for hiring a balancing company? At the walkthrough it was the responsibility of the contractor, in the tender form it is the City's responsibility. (Section: "Co-Operation with other contractors and work by others" page 32, 1.5.1)

Refer to Item #5 of Clarifications, below.

4) Regarding Section: "Air Distribution Testing and Balancing," Part 3.3.5 and Part 3.4.2 (page 50) are contradicting statements, which is correct?

Refer to Item #5 of Clarifications, below.

5) What are the requirements for duct cleaning?

Refer to Item #4 of Clarifications, below, and, Specification 15700 - "Duct System Cleaning & Refurbishing" (attached).

CLARIFICATIONS:

1. Contractor shall include in his bid provisions to temporarily cool the kitchen facility during operations while the make-up air and exhaust fan replacements are being installed.
2. Contractor to have equipment manufacturers include as an alternate price to provide variable frequency drives (VFD) on new makeup air unit MAU-1 and new kitchen exhaust fan EF-3. New drives to be installed outdoors as close to associated equipment as practical, each within weatherproof rated enclosures.
3. Air Cooled Condensing unit ACCU-1 unit installation orientation shall be rotated 90 degrees and situated to be installed between existing roof anchors so as to avoid demolition/relocation of same. The existing structure has been verified to support the weight of new air cooled condensing unit without the requirements for additional structural reinforcement.
4. Contractor shall include in his bid provisions for duct cleaning for all new and existing H.V.A.C. systems modifications under this scope of work and identified within the project specifications. Duct cleaning services shall be provided in accordance with the attached specification 15700 – “Duct System Cleaning & Refurbishing”.
5. The services of an H.V.A.C. Systems Testing/Balancing Agent shall be provided by the City of Windsor Facilities Dept. as indicated within the project specifications section – “Air Distribution Testing & Balancing”. The contractor shall be responsible for the cost of any changes required to properly balance the H.V.A.C. systems as a result of failure of the contractor’s and balancing agent’s coordination.

ATTACHMENT:

Section 15700 – “Duct System Cleaning & Refurbishing”

Except for the contents of this addendum, all other terms and conditions of this tender remain the same.

END OF ADDENDUM NO. 2

Yours truly,

THE CORPORATION OF THE CITY OF WINDSOR

Elaine Castellan

Elaine Castellan
Purchasing Supervisor

EC/sf

**ADDENDUM NO. 2
TENDER NO. 81-19
MAKEUP AIR (MUA) UNIT REPLACEMENT – HURON LODGE**

June 10, 2019

I hereby acknowledge receipt of Addendum No. 2 to the Tender No. 81-19 (10 pages).

The information contained therein is hereby noted and account of same will be taken in our tender cost.

This information was received on the _____ day of _____, 20_____.

Signature

Name (Printed)

Company Name

***NOTE: You are required to acknowledge this addendum with your TENDER submission.**

**PLEASE FAX BACK TO (519) 255-9891 OR E-MAIL @ purchasing@citywindsor.ca SIGNED
ACKNOWLEDGEMENT SHEET ASAP**

Attn: Purchasing Department

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PART 1: GENERAL

1.1 GENERAL PROVISIONS

- .1 Conform to the requirements of City of Windsor Purchasing Department requirements.

1.3 SUBMITTALS

- .1 Submit duct cleaning plan and procedure prior to commencement of work for review and approval by the Huron Lodge/City of Windsor Facilities Construction Representative.

PART 2: SPECIALITY REQUIREMENTS

2.1 CITY OF WINDSOR/HURON LODGE SITE REQUIREMENTS

- .1 All work on the City of Windsor – Huron Lodge site shall be conducted in compliance with all applicable safety standards and guidelines and governmental regulations.

PART 3: EXECUTION

3.1 EQUIPMENT AND LABOUR

- .1 The Heating, Ventilation and Air Conditioning (H.V.A.C.) system's cleaning subcontractor shall possess and furnish all necessary equipment and labour to adequately perform the specified services.
- .2 The subcontractor shall assure that its' employees have received safety equipment training, individual health protection measures, and manufacturer's product and material safety data sheets (MSDS) as required for the work specified herein.
- .3 The subcontractor shall maintain a copy of all current MSDS documentation pertaining to materials used in the undertaking of this portion of the work, on site, and readily available to all.
- .4 The subcontractor shall submit to the City of Windsor, all MSDS sheets for all chemical products proposed to be used in the cleaning process. The subcontractor shall receive permission from the City of Windsor Representative prior to the use of any cleaning materials.
- .5 The General Contractor shall provide the Heating, Ventilation & Air Conditioning (H.V.A.C.) system cleaning subcontractor with one copy of the following documents:
 - Project drawings and specifications;

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- Approved engineered construction drawings.

3.2 HVAC SYSTEM CLEANING SPECIFICATIONS AND REQUIREMENTS

- .1 This section defines the requirements necessary to render H.V.A.C. components clean, and to verify the cleanliness through visual inspection and/or testing in accordance with items specified herein.
- .2 The cleaning subcontractor shall be responsible for the removal of visible surface contaminants and deposits from within the H.V.A.C. System in strict accordance with this specification. The HVAC system includes any interior surface of the air distribution systems for conditioned spaces and/or occupied zones within the Huron Lodge Kitchen Facility, specifically systems for MAU-1, EF-3, EF-4, EF-32, and EF-33. This includes the entire air moving system from the points where the air enters the system to the point where the air is discharged from the system. The H.V.A.C. system components considered are the return air grilles and supply and return air ducts (except ceiling plenums) to the air handling unit (work to be completed upon completion of construction). The supply and return air ducts will be cleaned prior to the testing and balancing of the modified system.
- .3 This contractors method of cleaning shall employ vacuum, compressed air and direct contact brushing to remove all dust and debris through the system. The cleaning methodology must conform to the Environmental Protection Agency (EPA) recommended duct cleaning methods, as well as all National Air Duct Cleaners Association (N.A.D.C.A.) specifications.
- .4 In general, the subcontractor will employ a cleaning method that connects a powerful vacuum unit to the main duct lines placing them under suction. Once under suction, all ductwork is brushed clean utilizing cleaning robots and direct contact brushes through all duct lines. This is considered the key to thorough cleaning, as duct deposits including dust must be brushed and loosened to ensure for a complete removal.
- .5 Prior to the commencement of any cleaning work, the H.V.A.C. system cleaning subcontractor will perform an inspection to determine appropriate methods, tools, and equipment required to satisfactorily complete the work of this project. Damaged system components found during the inspection shall be documented and brought to the attention of the General Contractor and to the City of Windsor/Huron Lodge Facilities Representative.

3.3 SITE EVALUATION AND PREPARATIONS

- .1 Contractor shall conduct a site evaluation, to establish a specific, coordinated plan which details how each area of the building will be protected during the various phases of the cleaning exercise.

Collins-Frazer Engineering Inc.

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3.4 GENERAL HVAC SYSTEM CLEANING REQUIREMENTS

.1 (A) Containment:

Debris removed during cleaning shall be collected and precautions must be taken to ensure that debris will not otherwise disperse outside the H.V.A.C. system during the cleaning process.

(B) Particulate Collection:

Where the Porta Vac Equipment is exhausting inside the building, HEPA filtration with 99.97% collection efficiency for 0.3-micron size (or greater) particles shall be used.

(C) Controlling Odors:

All reasonable measures shall be taken to control offensive odors and/or mist vapours during the cleaning process.

(D) Component Cleaning:

Cleaning methods shall be employed such that all H.V.A.C. system components must be visibly clean as defined in the previously identified applicable standards.

(E) Air-Volume Control Devices:

Dampers and any air-directional mechanical devices inside the H.V.A.C. system must have their position marked prior to cleaning and, upon completion must be restored to their marked position.

(F) Service Openings:

The cleaning subcontractor shall utilize service openings, as required for proper cleaning, at various points of the HVAC system for physical and mechanical entry, and inspection. The cleaning subcontractor shall utilize the existing service openings already installed in the HVAC system where possible. Any new or additional duct openings must be created so they can be sealed in accordance with the duct construction standards so that the original construction characteristics and integrity of the ductwork is retained. In addition:

- Closures must not significantly hinder, restrict, or alter the airflow within the system.

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- Closures must be properly insulated to prevent heat loss/gain or condensation on surfaces within the system.
- Openings must not compromise the structural integrity of the system.
- Construction techniques used in the creation of openings must conform to and not compromise the existing Buildings fire separation construction.
- Cutting service openings into flex duct is not permitted. Flex duct shall be disconnected at the ends as needed for proper cleaning and inspection.
- Rigid fiberglass duct board duct systems shall be resealed in accordance with S.M.A.C.N.A. recommended practices.
- Where additional access door are required they shall be provided in accordance with Section 15841 of the contract specifications.
- When creating a service opening in externally wrapped sheet-metal ducts, the external insulation will be cut out and removed as required to facilitate the service opening. New external insulation will then be installed and fastened to the duct and service access panel to return the duct insulation to its original condition and to maintain the integrity of the vapour barrier.
- When opening internally lined sheet-metal ducts, the openings will be made in such a manner as to provide straight sheet metal edges free of burrs, bends, or deflections. Discard the removed sheet-metal section, as this will be replaced with a flanged closure panel. The closure panel should measure at least ¼ " greater on each dimension of the flanged service opening to allow an overlap on all sides when installed. The existing internal insulation will be cut on a converging 45-degree angle on three sides of the opening, leaving the upstream side uncut. If the duct is lined with rigid liner board insulation rather than flexible duct liner, the insulation must be cut on all four sides and removed. . When closing the service opening with the new flanged closure panel, first coat both of the cut edges of the duct liner section and the opening with approved duct liner adhesive. The side of the duct liner section not common to the air stream will also be coated for adhesion to the closure panel. Utilizing neoprene gaskets around the new flanged of the opening, mechanically fasten the closure panel to the duct wall with minimum ¼ " stainless steel bolts, washers and nuts.

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(G) Ceiling Section:

The contractor may remove and reinstall ceiling sections to gain access to H.V.A.C. system during the cleaning process. Where ceiling tiles and or components are required to be removed, the General Contractor shall do so in a safe and workmanlike manner. Any ceiling members and or components broken or damaged during the work shall be replaced at no expense to City of Windsor.

(H) Air distribution devices (registers, grilles & diffusers):

The contractor shall clean all air distribution devices so that they are free of all visible contaminants, removing them for cleaning and subsequently re-install them when the cleaning work is completed.

3.5 MECHANICAL CLEANING METHODOLOGY

.1 (A) Source Removal Cleaning Methods:

The H.V.A.C. system shall be cleaned using Source Removal mechanical brush methods designed to extract contaminants from within the H.V.A.C. systems and safely remove contaminants from the Building. It is the cleaning subcontractor's responsibility to select Source Removal methods, which will render the H.V.A.C. systems visibly clean and capable of passing cleaning verification methods, in accordance with the requirements of the specifications contained herein. No cleaning method, or combination of methods, should be used which could potentially damage components of the H.V.A.C. systems or negatively alter the integrity of the systems.

All methods employed shall incorporate the use of vacuum collection devices that are operated continuously during cleaning. A vacuum device shall be connected to the downstream end of the section being cleaned through a predetermined opening. The vacuum collection device must be of sufficient power to render all areas being cleaned under sufficient negative pressure, such that containment of debris and the protection of the indoor environment is assured.

All vacuum devices exhausting air inside the Building shall be equipped with HEPA filters (minimum efficiency 99.97%), including hand-held vacuums and wet-vacuums. All vacuum devices exhausting air outside the Building shall exhaust in a manner that will not allow contaminants to re-enter the Building. Release of debris outdoors must not violate any outdoor environmental standards, codes or regulations.

All cleaning methods require mechanical agitation (brushing) devices, either hand

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held, self propelled, or robotic controlled, to dislodge debris adhered to interior H.V.A.C. system surfaces, such that debris may be safely conveyed to vacuum collection devices. Acceptable methods will include those, which will not potentially damage the integrity of the ductwork, nor damage porous surface materials such as liners inside the ductwork or system components.

(B) Methods of Cleaning Fibrous Glass Insulated Components:

Fibrous glass thermal or acoustical insulation elements present in any equipment or ductwork shall be thoroughly cleaned with HEPA vacuuming equipment, while the H.V.A.C. systems are under constant negative pressure, and not permitted to get wet or moisture laden.

Cleaning methods used shall not cause damage to fibrous glass components and will render the system capable of passing Cleaning Verification Tests.

(C) Damaged Fibrous Glass Material:

If there is any evidence of damage, deterioration, delamination, mould or fungus growth, or moisture such that fibrous glass materials cannot be restored by cleaning or resurfacing with an acceptable insulation repair coating, they shall be identified for replacement to the City of Windsor Representative.

When requested or specified, cleaning subcontractor must be capable of remediating exposed damage insulation in air handlers and/or ductwork requiring replacement. Replacement material, in the event fiberglass materials must be replaced, shall conform to the requirements of Section 15180 of these specifications.

(D) Cleaning of Mechanical Reheat Coils:

The cleaning method used will render the Coil Visibly Clean and capable of passing a Coil Cleaning Verification test. Cleaning methods shall not cause any damage to, displacement of, inhibit heat transfer, or erosion of the coil surface or fins, and shall conform to coil manufacturer's recommendations when available. Coils shall be thoroughly rinsed with clean water to remove any latent residues.

3.6 CLEANLINESS VERIFICATION

- .1 In general, verification of H.V.A.C. system cleanliness will be determined after mechanical cleaning and before the application of any treatment or introduction of any treatment-related substance to the H.V.A.C. system, including biocidal agents and coating.

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- .2 Visual Inspection: The HVAC system will be inspected to ensure that no visible contaminants are present. If no contaminants are evident through visual inspection, the H.V.A.C. systems shall be considered clean; however, the City of Windsor reserves the right to further verify system cleanliness through gravimetric or wipe testing analysis testing. If contaminants are evident through visual inspection, those portions of the system where contaminants are visible shall be re-cleaned and subjected to re-inspection for cleanliness. The surfaces shall be considered clean when foreign material capable of particulating, and visible to the naked eye, have been removed. Further, the aggregate weight of any particulating foreign material shall not exceed the biocide manufacturer's directions, or 50 milligrams per square meter, whichever is less. All cleaned surfaces are to be treated with a sanitizing biocide coating that has been demonstrated to prevent the growth of bacteria and fungi.
- .3 Verification of Coil Cleaning: Coils shall be considered clean only if the coil is free of foreign matter and chemical residue, based on a thorough visual inspection.

3.7 HEALTH AND SAFETY

- .1 Safety Standards: Cleaning subcontractor shall comply with all applicable Federal requirements for the safety of the subcontractors' employees, Building's occupants, and the environment.
- .2 Occupant Safety: No process or materials shall be employed in such that they will introduce additional hazards to the Building.

3.8 POST PROJECT REPORT

- .1 Upon completion, all ducts, outlets, and inlets shall be sealed to prevent dirt from entering. These seals will be removed, prior to start-up and duct openings covered with cheese cloth, to test for any remaining dirt or debris. When the cleaning is complete, the cleaning subcontractor shall provide a report indicating the date of completion for each H.V.A.C. system and associated components, ducting, grilles and diffusers. The report shall certify that all systems and components have been cleaned and inspected. The report shall also contain a photographic summary of cleaned areas and components.

END OF THIS SECTION