

Addendum #1

Bid Opportunity: 7263-RW-22

Laurelwood Public School Rooftop Unit Replacement

Closing Date: Monday, April 4, 2022 2:00 PM

The following issued by the Board shall form part of the Bid / Proposal Solicitation document. The revisions and additions noted herein along with any attachments shall be read in conjunction with all other related documents. This Addendum shall, take precedence over the previously issued documents where differences occur. Receipt of this addendum must be acknowledged in the Bidding System, bids&tenders.

If you have already submitted a Bid / Proposal, it will be automatically withdrawn as a result of this addendum. You must resubmit the Bid / Proposal acknowledging all addenda and revising your Bid / Proposal to comply with all addenda.

Section 1 – Vendor Questions

Question 1:

Is it possible for an extension to April 7th?

Answer 1: There will be no tender extensions.

Question 2:

Can you please provide the current model numbers of the roof curbs that will need a curb adapter?

Answer 2: Please refer to attached Mechanical & Electrical Addendum No.1

Question 3:

Is the duct off the ERV units need to be acoustically lined?

Answer 3: Please refer to attached Mechanical & Electrical Addendum No.1

Section 2 - Clarification / Initiated by the Board

The information below, attachments and drawings provide additional clarification and does not change the Scope or intent of the bid document.

ITEM 1

.1 ADD general note to "Construction RCP Notes" on A-A02 to read: "Contractor to remove existing hanging acoustic panels in area of work, and store safely on site away from dust and debris, during construction Contractor to reinstall acoustic hanging panels upon completion of mechanical and electrical work in same place"

ATTACHMENTS

Addendum No.1 – in its entirety consist of the following:

- .1 Two (2) typed pages of instructions
- .2 Structural Addendum one (1) typed page of instructions and one (1) 42x30" sized drawing.
- .3 Mechanical and Electrical Addendum three (3) typed pages on instructions, eight (8) pages of specification, two (2) 42x30" sized drawings and six (6) 8.5x11" sized drawings.

DRAWINGS

Addendum No.1 – in its entirety consist of the following drawings

- S2.1 Overall Existing Roof Framing Plan
- E1.1 Key plan, details, distribution riser demolition and renovation.
- E1.2 First Floor Part Plan 'B' Renovation
- SKM-1
- SKM-2
- SKM-3
- SKM-4
- SKM-5
- SKM-6

- End of Addendum #1 -

This addendum, prepared by MTE Consultants, forms part of the contract documents and modifies the original specifications and drawings as follows.

STRUCTURAL DRAWINGS

AMENDMENT NO.1

- a. Overall Existing Roof Framing Plan
 - i. ERV 1 added to drawings as per mechanical drawings. Two W250x18 roof reinforcing and C150x12 curb support added.
 - ii. ERV 2 added to drawings as per mechanical drawings. C150x12 curb support added.

Enclosures:

Drawing S2.1.

END OF STRUCTURAL ADDENDUM NUMBER TWO

24 March 2022

DRAWING S2.1

		(x-4)		(x-A)	
x.6x	(x-3) [x.T]				x.R
(x-2) (x-1)			HARD CH S		×-
			HVAC 9 6kN		x.1y
				x HSS127x127	
		` <u>`</u> ``````````````````````````````````			2 400 OWSJ Ex 400 OWSJ NEW W250x Ex 400 OWS
				x W410x54	<u>NEW W250x</u> <u>Ex</u> 4 <u>00 OW</u> <u>NEW W250x</u> <u>Ex</u> 4 <u>00 OW</u> <u>Ex</u> 4 <u>00 OW</u>
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			Ex L76x76x6.4 Ex 250 OWSJE X.11X Ex 250 OWSJ Ex 250 OWSJ	×HSS127x127	
		x 200 OWSJ	Ex 259		
	LT6x76x6x6x4x	<u>Ex</u> 1000LSSJ	<u> </u>	Ex 1000LSSJ	<u>Ex</u> 1 <u>000LSSJ</u>
		Ex 250 00000	Ex 250 OWSJ	Ex 250 0WSU	<u>Ex 250 OWSJ</u>



SHAPE	STANDARD	GRADE	MIN. YEILD STRENGTH
CANADIAN WWF & W	CSA G40.21	350W	50ksi
HOLLOW STRUCTURAL SECTION CLASS C	CSA G40.21	350W	50ksi
PLATES, CHANNELS, ANGLES	CSA G40.21	300W	44ksi
WWF & W NOT ROLLED IN CANADA	ASTM A572	50	50ksi





March 28, 2022

Client: Hossack & Associates Architects 2150 Dunwin Drive, Unit #4 Mississauga, Ontario L5L 5M8 RE: Laurelwood P.S., HVAC Upgrades Waterloo, Ontario

Job #: 21449

Attn.: Mr. Jonathan Knight, B.Arch.Sci., M.Arch./Ms. Priscilla Ladouceur, B.E.S., B.Arch., OAA, MRAIC

MECHANICAL AND ELECTRICAL ADDENDUM

MECHANICAL

ltem 1

- 1.0 General Information
 - .1 Existing unit manufacturer and model RTAC-1 Carrier 48TJE014, RTAC-2 Carrier 48TJF016, RTAC-3 Carrier 48TJF016, RTAC-4 Carrier 48EJE024, RTAC-5 Carrier 48EJE024, RTAC-7 Reznor model unknown and RTAC-9 Carrier 48TJF007.
 - .2 Provide acoustically lining on all new HVAC and ERV duct drops.

Item 2

- 2.0 Reference Specification 23 75 23 'Custom Outdoor Heating Air Handling Units'
 - .1 Add attached specification section in its entirely.

Item 3

- 3.0 Reference Drawing M.1 and Attached Sketch SKM-1
 - .1 In 'Heating Ventilation Unit Schedule', add the following in remarks "Fully Modulating Gas Burner With 10:1 Turndown, VFD complete with Filter Bypass, And Thermal Break Outdoor Air Dampers.".
 - .2 Refer to SKM-1 for revised ERV information.
 - .3 In 'Fan Schedule' for EF-2 to EF-4, add speed controller in remarks column.
 - .4 In 'Heating Ventilation Unit Details', provide relief dampers on relief hoods.
 - .5 In 'Heating Ventilation Unit Details', add the following note "Noted 'max' dimensions are the approximate largest dimension permitted to allow for suitable clearance/service space around the unit. If an 'alternate' unit is selected, it is the responsibility of the contractor to confirm that the unit fits in the allocated space and works with the design as shown, the proposed layout abides by the specific service/required clearances of that alternate unit and that the alternate unit does not exceed the noted 'max' dimension."

Item 4

- 4.0 Reference Drawing M2.1 and Attached Sketches SKM-2 to SKM-4
 - .1 On First Floor Part Plan 'B', in general notes, add the following note "Clean outside of exposed ductwork before demolition begins."
 - .2 Refer to SKM-2 to SKM-4 for area existing mechanical services to be removed and reinstalled to facilitate installation of new ductwork.

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Item 5

- 5.0 Reference Drawings M3.1, M3.2, and Attached Sketches SKM_5 and SKM-6
 - .1 In Specific Renovation Notes, add the following note to Note 'B', "Extend control to new electrical heat where provided.".
 - .2 Refer to SKM-5 for revised location of ERV-1 and revised ductwork to suit.
 - .3 On First Floor Part Plan 'B' in general notes, add the following note "Clean outside of exposed ductwork after renovation prior to painting."
 - .4 Refer to SKM-6 for revised 'Rooftop HVAC Unit' detail and new acoustic lining detail
 - .5 Provide acoustically lining on all HVAC and ERV duct drops.
 - .6 In Boys' Washroom, on 350Ø exhaust duct provide new motorized damper.
 - .7 In corridor, on new 250Ø exhaust duct serving EF-4 provide new motorized damper.
 - .8 In corridor, on ERV-2 add backdraft damper on 450Ø return duct and 350Ø exhaust damper.
 - .9 In gym storage room, add opposed blade damper on 600x600 supply ductwork.

Item 6

- 6.0 Reference Drawing M4.1
 - .1 In gym storage room, under HV-1 add the following note "Existing sprinkler system is to be modified to suit new ductwork. Existing locations must be reviewed and surveyed by sprinkler contractor and sprinkler contractor's professional engineer."

Item 7

- 7.0 Reference Drawing M5.2 and attached Sketch SKM-5
 - .1 Refer to SKM-5 for revised location of ERV-1.
 - .2 Revise future capped gas note to "50Ø 5# HPG valved and capped for future addition."
 - .3 On Roof Plan, provide gas pipe supports for all new gas piping as specified.
 - .4 On Roof Plan, provide new isolation valve before all new PRV.

ELECTRICAL

Item 1 - HVAC Unit Revisions

- 1.0 Reference Attached Re-Issued Drawing E1.1
 - .1 HVAC-4 and HVAC-5 are to be 60A-3P breakers (previously 70A-3P).
 - .2 ERV-1 is to be a 30A-3P breaker (previously 60A-3P).
 - .3 ERV-2 is to be a 25A-3P breaker (previously 60A-3P).

Item 2 - Bulb Retrofit

- 2.0 Reference Attached Re-Issued Drawings E1.1 and E1.2
 - .1 Lamp information is as follows:
 - .1 4x4 fixtures are 4 lamp T8.
 - .2 1x4 fixtures are 2 lamp T8.
 - .3 2x4 fixtures are 2 lamp T8.

Item 3 - Panel Types

- 3.0 Reference Attached Re-Issued Drawing E1.2
 - .1 Panel 'A' is incorrectly stated as a FPE NBLP type. Panel 'A' is 400A 120/208V 3P 4W Federal Pioneer Type NHDP.

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Item 4 - Vestibule Heat

- 4.0 Reference Attached Re-Issued Drawing E1.2
 - .1 At vestibule between Sci/Tech. 15 and Kitchen, remove connection to reheat coil. Provide an additional Type 'A' fan forced heater. Extend existing reheat coil circuit to suit.
 - .2 At vestibule between Classroom 6 and Kindergarten 4, remove connection to reheat coil. Provide an additional Type 'A' fan forced heater. Extend existing reheat coil circuit to suit.

Steph prins

Stephen Demaiter, Electrical Designer, Associate 21449 Addendum (M&E - coordination)(reissued dwgs E1.1&E1.2)(SKM-1-SKM-6) Mar 28 22 sd/nf/sad

Part 1 General

1.1 REFERENCES

- .1 All codes, standards, etc. as referenced shall be the latest edition.
- .2 CAN/CGSB 1.181, Ready Mixed Organic Zinc, Rich Coating.
- .3 ANSI/NFPA-90A, Installation of Air Conditioning and Ventilating Systems.

1.2 SHOP DRAWINGS AND PRODUCT DATA

- .1 Submit shop drawings and product data in accordance with Section general requirements.
- .2 Shop drawings shall be submitted to the Consultant within two (2) weeks of Award of Contract.
- .3 Shop drawings shall be reviewed/returned by the Consultant within one (1) week of submission.
- .4 Contractor to order equipment from manufacturer immediately upon returned/approved shop drawings.
- .5 This Contractor shall co-ordinate with the manufacturer to ensure equipment is delivered to site (for installation) by August 15, 2022. Include in tender price for premium costs associated with manufacturer's rush/accelerated delivery.

1.3 MAINTENANCE DATA

.1 Provide maintenance data for incorporation into manual specified in general requirements.

1.4 MAINTENANCE MATERIALS

.1 Provide maintenance materials in accordance with general requirements.

1.5 UNIT ASSEMBLY

- .1 Unless stated otherwise, air handling units are to be shipped to the job in one piece, factory assembled. All equipment shall be factory tested prior to shipment.
- .2 The heat exchanger shall be manufactured by the air-handling manufacturer as an integrated package.

1.6 MANUFACTURED ITEMS

- .1 Catalogued or published ratings shall be those obtained from tests carried out by manufacturer or those ordered by him from independent testing agency signifying adherence to codes and standards in force.
- .2 The air handling units and major components shall be products of manufacturers regularly engaged in the production of such equipment and with a minimum of fifteen continuous years of proven production experience.

.3 Manufacturer shall have a fully implemented and auditable quality assurance program, equal to the ISO-9002 Quality Standard.

Part 2 Products

2.1 GENERAL

- .1 Field Factory assembled components to form units supplying air at design conditions as indicated and specified.
 - Acceptable materials: Engineered Air – DJE Series Aaon Bousquet Eh price Valent Daikin

2.2 UNIT CONSTRUCTION

- .1 Unit casing shall be of minimum 1.3 mm (18 gauge) satin coat galvanized sheet metal. Surfaces shall be cleaned with a degreasing solvent to remove oil and metal oxides and primed with a two-part acid based etching primer. Finish coat shall be an electrostatically applied enamel, to all exposed surfaces. All unprotected metal and welds shall be factory coated.
- .2 All walls, roofs and floors shall be of formed construction, with at least two breaks at each joint. Joints shall be secured by sheet metal screws or pop rivets. Wall and floor joints shall be broken in and roof joints broken out (exposed) for rigidity. All joints shall be caulked with a water resistant sealant.
- .3 Units shall be provided with gasketed access doors to the following components: fans and motors; filters; dampers and operators; and access plenums. Access doors shall be large enough for easy access.
- .4 Casings shall be supported on formed galvanized steel channel or structural channel supports, designed and welded for low deflections. Integral lifting lugs shall be provided for hoisting.
- .5 All units shall be internally insulated with 25 mm (1") thick 24 kg/m³ (1.5 lb./ft³) density, neoprene coated fibre glass thermal insulation.

24 kg/m³ (1.5 lb/ft³) insulation shall be secured to metal panels with a fire retardant adhesive and welded steel pins at 400 mm (16") o/c. All longitudinal insulation joints and butt ends shall be covered by a sheet metal break to prevent erosion of exposed edges. Drain pans and all floor areas shall be insulated on the underside.

- .6 Air handling units shall be weatherproofed and equipped for installation outdoors. This shall include generally for the prevention of infiltration of rain and snow into the unit, and: louvres or hoods on air intakes and exhaust openings with 25 mm (1") galvanized inlet screens; rain gutters over all access doors; all joints caulked with a water resistant sealant; roof joints turned up 50 mm (2") with three break interlocking design; outer wall panels extend a minimum of 6 mm (1/4") below the floor panel; drain trap(s) for field installation.
- .7 Units shall be provided with gasketed access doors to the following components: fans and motors; filters; dampers and operators; access plenums and access doors shall be large enough for easy access. Removal of screwed wall panels will not be acceptable.
- .8 Provide hinged access doors, fully lined, with zinc plated piano hinges and brass pins, with a minimum of two camlock fasteners for all units over 1200 mm (48") high.

Provide hinged access doors, fully lined, with zinc plated piano hinges and brass pins, Ventlock 310 handles, operable from both sides for all units over 1200 mm (48") high. Whenever possible, hinged access doors to areas of negative pressure shall open out, and to areas of positive pressure shall open in. Where space constrictions require the use of outward opening doors to an area of positive pressure, a clear warning label must be affixed.

Hinged access doors shall be provided with tie back clips.

.9 Provide full perimeter roof mounting curb of heavy gauge sheet metal, minimum of 450 mm (18") high, and complete with wood nailer, neoprene sealing strip, and fully welded "Z" bar with 25 mm (1") upturn on inner perimeter, to provide a complete seal against the elements. External insulation of the roof mounting curb shall be provided by the Roofing Subcontractor.

2.3 FANS

- .1 Centrifugal fans shall be rated in accordance with AMCA Standard Test Code, Bulletin 210. Fan manufacturer shall be a member of AMCA. All fans and fan assemblies shall be dynamically balanced during factory test run. Fan shafts shall be selected for stable operation at least 20% below the first critical RPM. Fan shafts shall be provided with a rust inhibiting coating.
- .2 Drives shall be adjustable on fans with motors 3.73 kW (5 hp) or smaller. On fans with larger motors, fixed drives shall be provided. All drives shall be provided with a rust inhibiting coating. The air balancer shall provide for drive changes (if required) during the air balance procedure.
- .3 All single phase belt drive motor applications shall include rubber isolation for motors .19kw (1/4 hp) through 1.1kW (1½ hp). Provide internal spring isolation for single phase motors over 1.1kW (1½ hp).
- .4 Fan motors shall be ODP high efficiency.

2.4 GAS HEAT SECTION (DJ) INDIRECT FIRED

- .1 General
 - .1 Heating units shall have an indirect natural gas fired heating section that is ETL, C-ETL, approved for both sea level and high altitude areas. The entire assembly shall be approved and labelled by a nationally recognized certification agency.
 - .2 Operating natural gas pressure at unit(s) manifold shall be 1750 Pa (7" w.c.)
 - .3 Gas fired units shall be approved for operation in -40°C/-40°F locations.
- .2 Heat Exchanger
 - .1 Heat exchanger shall be a primary drum and multi-tube secondary assembly constructed of titanium stainless steel with multi-plane metal tubulators, and shall be of a floating stress relieved design. Heat exchanger shall be provided with condensate drain connection. The heat exchanger casing shall have 25 mm (1") of insulation between the outer cabinet and inner liner. Blower assemblies close coupled to duct furnace type heat exchangers are not acceptable.
 - .2 Units shall be complete with high efficiency heat exchangers shall be tested and certified to ANSI standards to provide a minimum of 80% efficiency throughout the entire operating range as required by ASHRAE 90.1. The manufacturer shall be routinely engaged in the manufacture of this type of high efficiency equipment.
 - .3 The burner assembly shall be a blow through positive pressure type with a combustion air damper interlocked with main gas valve to provide optimum air/fuel ratios at all inputs with 80% or higher efficiency throughout its operating range. Flame surveillance shall be with a solid state programmed flame relay utilizing a flame rod for gas operation. The burner and gas train shall be in a cabinet enclosure. Insulation in the burner section shall be a heat reflective galvanized steel liner. Burners to be manufacturer by Maxon, Ovenpak or Engineered Air. Atmospheric burners or burners requiring power assisted venting are not acceptable.
 - .4 Modulating burners shall have a 10:1 turndown providing that the minimum input is at least 100 MJ.
 - .5 Controls: An integral control panel shall be completely pre-wired with motor contactors, overloads, control transformer, high limit, combustion air flow switch, terminal block and all necessary relays. The control of the unit shall be provided with electronic control using modulating discharge air sensor by Controls Division.
 - .6 Provide warm weather bypass control for all units utilizing modulating discharge air controls, to allow the supply fan to continue operating during the purge cycle whenever ambient temperature is above the burner ambient set point.
 - .7 All operating controls and functions shall be factory tested prior to shipment.
 - .8 Operating natural gas pressure shall be 7" (1750 Pa) W.C.

.9 Electrical:

- .1 All units to be completely pre-wired including motor starter and overloads. The connection of electrical power supply and all field wiring shall make the unit completely functional.
- .2 Provide control transformer sized and wired to handle the electrical power requirements of the control system.
- .3 Provide a unit mounted fused weatherproof disconnect switch sized and wired to handle switching of electrical power to the entire unit.
- .10 Pre-wired equipment and factory installed controls.
 - .1 Air handling units to be factory wired and tested, and to be certified by a recognized approval agency: C.S.A.; C.E.T.L.
 - .2 Wiring to be in accordance with latest edition of the Canadian Electrical Code, Part 1, and pertinent sections of the Part 2 of the Code pertaining to specific equipment type and purpose. All wiring to be on interior of unit.
 - .3 All electrical circuits conduit to undergo a di-electrical strength test (C.S.A. C22.2-0), and to be factory tested and checked as to proper function.
 - .4 Pre-wired air handling units to bear an approved bilingual label with all the necessary identification marks, electrical data, and any necessary cautions as required b the C.E.C. Part 2.

2.5 FILTERS

- .1 Filter sections shall be provided with adequately sized access doors to allow easy removal of filters. Filter removal shall be from one side as noted on the drawings.
- .2 For units with filter banks 1825 mm (72") high or less, the filter modules shall be designed to slide out of the unit. Side removal filters shall slide into a formed metal track, sealing against metal spacers at each end of the track.
- .3 50 mm (2") Pleated Panel Disposable Filters: Non-woven re-inforced cotton/poly fabric media with a metal support grid and heavy-duty beverage board enclosing frame. The filter media shall have an average efficiency of 30-35%+ on ASHRAE Standard 52.1.
- .4 Filter media shall meet U.L. Class 2 standards.
- .5 Provide filter bank with "Dwyer 2000 magnehelic" air filter gauge, complete with static pressure tips and aluminum tubing, all factory installed. Filter gauge to have a range of 0- 500 Pa (0-2" w.c.). Where two or more filter banks are connected to a single gauge, multiple gauge kit with manual shut-off cocks in the air tubing shall be provided.
- .6 Where the filter gauges are provided on outdoor units they shall be mounted inside of a weatherproof enclosure with viewing window.

2.6 DAMPERS

- .1 Damper frames shall be u-shaped galvanized metal sections securely screwed or welded to the air handling unit chassis. Pivot rods of 15 mm (1/2") aluminium, shall turn in bronze bushings, fabricated from self- oiling bronze. Rods shall be secured to the blade by means of straps and set screws.
- .2 Blades shall be 1.3 mm (18 gauge) galvanized metal with two breaks on each edge and three breaks on centreline for rigidity. The pivot rod shall "nest" in the centreline break. Damper edges shall interlock. Maximum length of damper between supports shall be 1067 mm (42"). Damper linkage brackets shall be constructed of galvanized metal.
- .3 Damper actuators to be supplied by Controls Division controls manufacturer. Damper actuators to be factory installed and wired to unit control panel.

2.7 CONTROLS

- .1 Controls and gas manifolds shall be contained in a control panel that provides easy access to contained components.
- .2 Provide a system of motor control, including all necessary: terminal blocks, motor contactors, motor overload protection, grounding lugs, control transformers, auxiliary contactors, and terminals for the connection of external control devices or relays.
- .3 Provide electronic ignition of pilot through a spark rod and electronically programmed flame supervision controller.
- .4 Automatic controls and gas manifolds to be housed in a control panel mounted on the air handling unit, on the access side, which meet the C.S.A/C.E.T.L. standard.
- .5 Electronic Heating Control:
 - .1 Electronic control complete with solid state analyzer and discharge thermistor to maintain set point discharge air temperature and provide rapid response to small changes in discharge air temperature, incorporating modulating gas valve and proportional combustion air. Electronic heating controller to be Engineered Air DJM-3 or Nexus model NX3100 complete with display model NX550.
 - .2 Burner and unit control shall include the following standard features:
 - Service analyzer.
 - Linear gas and combustion airflow obtained via a built-in solid state linear algorithm.
 - 40°F minimum operating ambient temperature.
 - Four (4) air change pre-purge on units with over 400 MBH input.
 - -Post purge.
 - Interrupted pilot.
 - Self-check on startup to make sure sir proving and discharge air sensors are operating within design tolerances.
 - Controlled burner startup to make sure air proving and discharge air sensors are operating within design tolerances.
 - Low fire stat.
 - Controlled burner startup and shut down.
 - Diagnostic lights for ease of set-up and service.
 - Blower contactor that starts fan after burner pre-purge.

- Damper contact that allows fan to start after damper opens. Damper to close after fan stops and damper to close on flame failure.
- Non-recycling auto bypass low limit that has built-in sensor checking.
- Built-in sensor checking.
- Built-in alternate blower and damper functions and set back temperatures for unoccupied mode operation.

2.8 COMPONENTS

.1 Incorporate the following components to provide a complete system.

<u>HV-1 unit:</u>

- .1 Vertical return, horizontal intake plenum
- .2 Filter section
- .3 Supply blower section
- .4 Indirect gas fired heat exchanger
- .5 Vertical discharge plenum.
- .6 VFD complete with filter bypass

2.9 ACCESSORIES

- .1 Internal wiring to terminal strip in Nema 1 enclosure with space for DDC controller.
- .2 600 mm high roof curb.

2.10 CAPACITY

.1 Provide unit capacity indicated.

Part 3 Execution

3.1 INSTALLATION

- .1 Fabricate to provide smooth air flow through all components. Limit air leakage to 1% of rated air flow at 2.5 kPa (10" w.c.) suction pressure.
- .2 Apply sealer into all seams prior to assembly. Secure toe angles continuous along entire length of assembly.
- .3 Install to manufacturers requirements.

3.2 FANS

- .1 Install flexible connections at fan outlets. Ensure metal bands of connectors are parallel and not touching when fan is running and when fan is stopped. Ensure that fan outlet and duct are aligned when fan is running.
- .2 Provide one (1) additional shieves and belts required for final air balance.

3.3 START-UP

.1 Unit manufacturer shall perform start-up.

3.4 SPARE PARTS

- .1 One (1) complete set of filters.
- .2 One (1) set of spare belts.

3.5 WARRANTY

- .1 One (1) year on parts and labour on all components.
- .2 Ten (10) years on heat exchanger.

END OF SECTION



LIGHTING IS TO BE RETROFIT. REFER TO LIGHT FIXTURE SCHEDULE. REMOVE EXISTING BALLASTS AND RE-WIRE TO SUIT 120V T8 LAMPS.

	DISTRIBUTION RISER NOTES	SPECIFIC DEMOLITION NOTES
1	REFER TO SPECIFICATION FOR INFORMATION REGARDING MOULDED CASE CIRCUIT BREAKERS.	D1 FEDERAL PIONEER PANEL TO BE REPLACED WITH NEW PANEL AS PER THE RENOVATION DRAWINGS. DISCONNECT FEEDER AND BRANCH CIRCUITS BUT MAINTAIN FOR RE-CONNECTION TO NEW PANEL.
3	TO THE ONTARIO ELECTRICAL SAFETY CODE RULE $#2-306(1),(2)$ INSTALL GROUND WIRE TO SUIT THE ELECTRICAL SAFETY CODE IN ALL CONDUIT.	SPECIFIC RENOVATION NOTES
		R1 RECONNECT EXISTING MAIN AND BRANCH CIRCUIT WIRING WHERE APPLICABLE.



<u> RISER DIAGRAM - DEMOLITION</u> DISTRIBUTION RISER DIAGRAM INDICATED REHEAT COIL IS TO BE REMOVED COMPLETE. DISCONNECT AND MAINTAIN WIRING. EXTEND EXISTING 600V 3P WIRING TO SUIT NEW FAN FORCED HEATER.

<u>LE</u>	<u>D LIGHT FIXTURE SCHEDULE</u>			_								
Item	Manufacturer/Catalog Number	Voltage	Lamp	Mounting	Description							
R 3	TUROLIGHT CAT. #VIV-T8BPSP4/10.4W/40/F/DE EARTHRONICS MODEL LT814840BDECT	120V	LED T8	RETROFIT	REPLACEMENT 120VAC T8 LAMP							
all u Sticke Lay—II Compi	ALL UPGRADED FIXTURES MUST HAVE WRDSB SUPPLIED GREEN TYPE 'B' LED IDENTIFICATION STICKER ON SURFACE MOUNTED FIXTURES OR ON THE T-BAR CEILING ADJACENT TO T-BAR LAY-IN FIXTURES (CONTACT CALEB GINGRICH REGEHR). COMPLETE RETROFIT IN COMPLIANCE WITH UL1598C.											
HE	TATER SCHEDULE	RMATION REG	ARDING EQU	AL MANUFACTURE	RS REFER TO SPECIFICATION.							
ltem	Manufacturer/Catalog Number											
A	3000 WATT 600V VOLT THREE PHASE FAN FORCED HEA TO SUIT ARCHITECT. PROVIDE 24V CONTROL RELAY FOR OUELLET CAT. #OAC03036-T-R	TER C/W CONTROL	SURFACE FOR BA	MOUNTING S THERMOST	BOX, STANDARD FACTORY FINISH AT.							



<u>RISER DIAGRAM - RENOVATION</u>

<u>ELE</u>	CTRICAL SYMBOLS	NOT	NOTE: ALL SYMBOLS MAY NOT BE							
	POWER		GENERAL							
	PANEL AS INDICATED	ER	INDICATED EXISTING ITEM TO							
Ъ	FUSED DISCONNECT	D	INDICATES EXISTING ITEM TO DELETED							
Ъ	UNFUSED DISCONNECT	R	INDICATES EXISTING ITEM TO RELOCATED/IN RELOCATED PO							
JB	JUNCTION BOX	GF	GROUND FAULT							
٥	DIRECT CONNECTION	WP	WEATHERPROOF							
	STANDARD CIRCUITING LABELING	\times	NOTE INDICATOR							
POWER	A-1-1 PANEL LABEL/	\bigotimes	MECHANICAL ITEM NO.							
CIRCUIT SWITCH	INDICATION		LIGHTING							
	ELECTRIC HEAT		FLUORESCENT LIGHT FIXTURE TYPE AS INDICATED							
\mathbf{X}	FAN FORCED ELECTRIC HEATER (TYPE AS INDICATED)									



REVIT FILE



E	EQUIPMEN	<u>IT</u>	WI	RIN	<u>10</u>	;	<u>SCF</u>	HE	<u> </u>	<u>LE</u>																						
	Description			Data				Start	er		с	ontro	l Dev	/ice		!	solatiı Devic	ng e				Re	emote	e Ite	ms					Inte	erlock	
Electrical Item	Description	Provided by	Voltage	Size hp/kW/Amps	Phase	Magnetic	Manual	Contactor	Combination	Variable Frequency Drive	Hand/Off/Auto	On/Off Selector	Start/Stop PB.	High/Low/Off	Pilot Light	Disconnect	WP Disconnect	Brkr/Fuse	Starter/Device Wired By	Thermostat	RA Thermostat	Time Clock	Var.Speed Cntrl	Motor Rated Sw. c/w Pilot Light	Dual Voltage Relay	Control Panel	Wired by	Bldg Auto System	Wired by	Interlock To	Interlock By	
1	HVAC-1	м	575	29 MCA	3												E	E	Е								м	м	м			
2	HVAC-2	м	575	29 MCA	3												E	E	Е								м	м	м			Τ
3	HVAC-3	м	575	29 MCA	3												E	E	Е								м	м	м			
4	HVAC-4	м	575	55 MCA	3												E	E	Е								м	м	м			
5	HVAC-5	м	575	55 MCA	3												E	E	E								м	м	м			
6	HV-7	м	575	5HP	3												E	E	E	м							м	м	м			
7	HVAC-9	м	575	18 MCA	3												E	E	Е								м	м	м			
8	ERV-1	м	575	1.5 HP	3	\)				м							E	E	E									м	м			Τ
9	ERV-2	м	575	1 HP	3	{)				м							E	E	E									м	м			
10	EXHAUST FAN EF-2	м	120	17/3 HP	1	Í											E	E	E						м		E/M	м	м			
11	EXHAUST FAN EF-3	м	120	1/3 HP	1												E	E	E						м		E/M	м	м			
12	EXHAUST FAN	м	120	FHP	1												E	E	Е						м		E/M	м	м			





ERV SCHEDULE

		S	Supply A	ir		Exhaust Air						Air Ten	Temp Off Heat Exchanger			Electrical				Unit			
ltem	Type	0.001	ESP	Fan	0.001	ESP	Fan	Sum	mer	Wir	Winter		mer	l Win	Winter			Manufacturer	Model	Weight	Remarks		
	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	CFM	w.g.	hp	CFM	w.g.	hp	DB	WB	DB	WB	DB	WB	DB	WB	MCA	MCA Voltage			lbs			
ERV-1	OUTDOOR ENERGY RECOVERY VENTILATOR	2000	0.375	0.75	3050	0.375	1.5	75.0	63.0	72.0	56.0	80.6	71.9	50	33.6	29.5	575/3/60	ALDES	PH40e	1600±	C/W 24" HIGH ROOF CURB, BOTTOM INLET & DISCHARGE		
ERV-2	OUTDOOR ENERGY RECOVERY VENTILATOR	1470	0.375	0.75	2270	0.375	1.0	75.0	63.0	72.0	56.0	80.5	71.9	50.1	33.7	21.5	575/3/60	ALDES	PH30e	1400±	C/W 24" HIGH ROOF CURB, BOTTOM INLET & DISCHARGE		

GENERAL ERV UNIT NOTES: 1. ACCEPTABLE MANUFACTURERS: ALDES, GREENHECK, RUSKIN, COOK 2. 24'HIGH INSULATED ROOF CURB, DEFROST CYCLE AND CONTROLS, FILTERS (MERV 13), MIXED AIR SECTION, AND PADLOCK LATCHES AND EXHAUST ONLY DEFROST CYCLE. 3. CONTROLS: SYSTEM CONTROLS BY BAS CONTRACTOR, PROVIDE INTEGRAL CONTROLLER MATCHED TO BAS MANUFACTURER.



Consulting Engineers

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LAURELWOOD PS - HVAC AND **CONTROLS UPGRADE -**ADDENDUM (REFERENCE DRAWING M1.1)











