TEMPERATURE CONTROLS OF VERMONT
BUILDING AUTOMATION SERVICES

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TCView
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AUTOMATEDLOGIC CORPORATION

WebCTRL

July 17, 2015 **2 PAGE SCOPE COORDINATION**

Martha Keenan, Capital Improvement Program Manager
Burlington Public Works Department
645 Pine Street
Burlington, VT 05402

Re: City of Burlington City Hall Treasurer's Suite ATC Scope of Work

Martha,

Please see the following scope coordination information for the referenced project. We are in receipt of drawings dated 7/10/2015.

This scope of work has been coordinated with Thermal Environment Sales as provider of the specified Daikin system.

"Furnish" is to source, install and otherwise make a component operable.
"Provide" is to source a component for installation by another contractor.

ATC Base Scope Description:

- Furnish labor and material to wire existing fin tube radiation valve end switches to "Force Off" Daikin terminals for areas as shown on M1.11
  - (3) Existing control valves as shown on M1.11.
- Furnish labor to install the following Daikin devices:
  - (9) Room sensors
  - (1) Wall mounted "local" controller (Spec 23 8129-H-1)
- Furnish all low voltage control cabling for the Daikin system including:
  - Daikin room sensor wiring to indoor FCU's.
  - Communications cabling between Daikin condensing units, branch selector units and indoor FCU's as illustrated on M3.01, Detail 2.
  - Low voltage cabling for indoor FCU's to command existing fin tube radiation control valves (qty = 5) *in series with existing low voltage thermostats* for areas shown on M1.11.
- Furnish interlock wiring between condensate pump overflow switches and the "Force Off" terminals of their respective wall mount Daikin units.
  - NOTE: Ceiling Daikin units have integral overflow shutdown capability.
- Includes shop drawings & as built documentation.
- Includes all low voltage cabling in conduit per M3.01, DDC General note #1.
- Includes labor rates in conformance to the City's livable wage ordinance.
- Includes electrical permit.

ATC Daikin / Automated Logic Alternate Description:

- Furnish an Automated Logic LGR-25 router to connect HVAC equipment in this project to the City's existing Automated Logic WebCTRL server by way of a Bacnet/IP integration to the Daikin system and includes the following for HVAC equipment included in this project:
  - 3D equipment graphics & thermographic summary floor plan
  - Remote, web based monitoring, alarming, trending, etc of points available from the Daikin Bacnet gateway. A screenshot of these control points follows on page 2.
- Furnish labor to install the following Daikin devices:
  - (1) Bacnet gateway (Spec 23 8129-H-2)

Exclusions:

- Demolition of existing control cabling associated with mechanical equipment scheduled for demolition.

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- Core drilling / Cutting / Patching / Paining / Access Panels
- Startup or configuration of all Daikin electronics.
- Provision or wiring of Daikin factory-provided condensate overflow switches.
- Line voltage work including but not limited to provision of 120vac to the Daikin Bacnet gateway (Spec 23 8129-H-2) and (1) 120vac power drop for ATC power.
- CAT5 cabling from City network to (3) IP devices including the Daikin wall mounted local controller, Daikin Bacnet gateway and Automated Logic LGR-25.
- Cutting / Patching / Painting / Access Panels
- Labor to assist third party commissioning agent.
- Tax.

ATC Base Scope Price: **$ xx,xxx**
ATC Daikin / Automated Logic Bacnet Price: **$ xx,xxx**
Add Alternate Price (HP-5): **$ xx,xxx**

Control points available to Automated Logic from the Daikin Bacnet gateway is as follows (screenshot is from page 2 of the cutsheet of the Daikin Bacnet gateway):

	Function	Description
Monitoring points	Start / stop status	Monitors the start / stop status of the air conditioner.
	Alarm	Monitors whether or not the air conditioner is operating normally, and issues an alarm if the air conditioner has a malfunction.
	Malfunction code	Displays a malfunction code specified by the manufacturer if an air conditioner in the system has a malfunction.
	Air-conditioning mode	Monitors if the air conditioner is cooling, heating, or ventilating.
	Room temperature (Note 1)	Monitors and displays the room temperature.
	Filter sign	Checks if the filter is clogged and monitors whether or not it can still be used.
	Thermostat status	Monitors whether or not the air conditioner is properly controlling the temperature.
	Compressor status	Monitors if the compressor of the outdoor unit connected to the indoor unit is properly operating.
	Indoor fan status	Monitors if the indoor unit's fan is properly operating.
	Heater operation status	Monitors if the indoor unit's heater is properly operating.
	Accumulated power	Outputs indoor unit's accumulated power consumption.
Operation, configuration, and monitoring points	Start / stop operation (Note 2)	Starts / stops the air conditioner and monitors the result.
	Air-conditioning mode setting (Note 2)	Sets the cooling / heating / ventilating / auto air-conditioning mode and monitors the result.
	Room temperature setting (Note 2)	Sets the room temperature of the air conditioner and monitors the result.
	Filter sign and reset	Checks if the filter is clogged and resets the status as required.
	Remote controller enable / disable (Note 2)	Enables or disables the remote controller so that it can or cannot be used to control the air conditioner's start / stop / air-conditioning mode / room temperature.
	Lower central device operation enable / disable	Enables or disables operation of a central device connected to the DIII network.
	Air flow rate setting (Note 2)	Sets the air flow rate and monitors the result.
	Air direction setting (Note 2)`	Sets the air direction and monitors the result.
	Forced system stop	In response to the forced stop command, checks whether clearance or setting is required and performs the required action.
	Forced thermostat disable	In response to the forced thermostat disable command, checks whether clearance or setting is required and performs the required action.
	Energy saving	In response to the energy saving command, checks whether clearance or setting is required and performs the required action.

If you have any questions or require additional information, please contact me at 802.872.8000 or email jdalmer@tcofvt.com.

Sincerely,

Joshua Dalmer

Joshua Dalmer
Temperature Controls of Vermont
(802) 922-0139 (cell phone)