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City of Two Rivers

Locations: City Hall

1717 E Park Street

Two Rivers, WI 54241

Re: Control Upgrades to Building HVAC System

As requested, we are pleased to provide pricing to eliminate the pneumatic controls at City Hall and replace with electronic controls. In doing this the building would have a completely new building automation system complete with graphics and remote control of all zoning in the building. Adjustments to the various zones can be adjusted from a central computer and building operations can be monitored from a central location.

After making a few site visits and having one of our technicians spend a day locating and getting a valve count for the building, we now have a good handle on the intentions of the buildings heating and cooling system. Currently the building is heated with hot water heat from the boiler system and piped out to the baseboard radiation, along with a few cabinet heaters and ceiling hung unit heaters. Cooling is provided through individual zone boxes that are fed from the air handlers that your chiller provides cooling to.

We have selected Automated Logic to provide the building automation system. They would provide controls to monitor the boilers, chillers, air handlers, approximately 87 hot water control valves and controllers for approximately 52 vav cooling only VAV box dampers. They would also take control of the existing exhaust fans in the building. A few of Automated Logics local customers they have are Kewaunee County Government Center, Door County Government Center, Two Rivers School District, Manitowoc School District, And Sheboygan School District.

Scope to include:

- Demolition of the existing pneumatic controllers on the cooling only vav boxes and replacement with new electronic damper actuators
- Demolition of the existing pneumatic hot water control valves and replace with the new electronic hot water control valves.
- Drain and fill hot water system as required
- Installation/Breakdown of the following equipment and services below

**VAV with Hot Water Reheat: Quantity of (10)**

- Space temp, digital adjustable style
- Discharge air temperature
- Two-way heating coil valve and modulating actuator.
- DDC Controller
- 24 VAC transformers

**VAV Cooling only: Quantity of (52)**

- Space temp, digital adjustable style
- Discharge air temperature
- DDC Controller
- 24 VAC transformer

**Radiation: Quantity of (47)**

- Two-way heating coil valve and modulating actuator
- Tied to associated VAV DDC Controller

**Convactor/Radiation: Quantity of (14)**

- Space temp, flat stainless style
- Discharge air temperature
- Two-way heating coil valve and modulating actuator
- DDC Controller
- 24 VAC transformers

**Exhaust Fans: Quantity of (7)**

- Fan start, stop & status
- Damper actuator (existing damper to be reused)
- DDC Controller
- 24 VAC transformers

**Unit Heater: Quantity of (10)**

- Space temp, flat stainless style
- Fan start, stop & status
- Two-way heating coil valve and modulating actuator
- DDC Controller
- 24 VAC transformers

**Cabinet Unit Heater: Quantity of (3)**

- Space temp, flat stainless style
- Fan start, stop & status
- Two-way heating coil valve and modulating actuator
- DDC Controller
- 24 VAC transformers

**Hot Water System: Quantity of (1)**

- B-1 start/stop
- B-2 start/stop
- BP-1 start/ stop & status
- BP-2 start/stop & status
- Hot water supply and return temperature monitoring
- System pump 1 start/stop & status
- System pump 2 start/stop & status
- EF start/stop & status
- EF damper actuator
- DDC controller
- 24vac transformer
- Existing conduit and panel to be reused

**Chilled Water system: Quantity of (1)**

- Chiller Start/Stop
- Chiller Alarm
- P-3 start/stop, status & alarm
- P-4 start/stop & status
- Chilled water supply and return temperature monitoring

- DDC controller
- 24vac transformer
- Existing conduit and panel to be reused

#### **Outside Air Monitoring: Quantity of (1)**

- Outside air temperature sensor
- Outside air humidity sensor
- DDC controller
- 24vac transformer
- Note: Temperature and humidity will be networked across to all controlling devices

#### **AHU #1: Quantity of (1)**

- Outside and return air damper actuators
- Discharge, return and mixed air temperature sensors
- Chilled valve 3 way 2"
- Freeze thermostat
- Supply fan VFD start/stop, status, speed and fault monitoring control
- Space static pressure sensor
- 2/3 duct static pressure monitoring
- Return air humidity sensor
- Filter differential pressure switch
- DDC controller
- 24 vac transformers
- Existing control panel to be reused
- Note: All conduit to be reused. New wiring for new sensors and devices

#### **AHU #2 & #3: Quantity of (1)**

- Outside and return air damper actuators
- Relief air damper actuator
- Discharge, return and mixed air temperature sensors
- Chilled valves 3 way 2 and 2 ½"
- Freeze thermostat
- Supply fan VFD start/stop, status, speed and fault monitoring control
- Space static pressure sensor
- 2/3 duct static pressure monitoring
- Return air humidity sensor
- Filter differential pressure switch
- DDC controller

- 24 vac transformers
- Existing control panel to be reused
- Note: All conduit to be reused. New wiring for new sensors and devices

#### Existing Demo:

- Existing pneumatic vav controls
- Existing pneumatic radiation valves
- Existing pneumatic damper actuators
- Note: Most are all pneumatic. Cap and plug air lines

#### Network communication

- 1-G5SC communication module
- Panel kit including 24 vac transformers

#### Front End Software & Network

- Automated Logic WebCTRL Graphical User Interface ( GUI) software. Provide all programming, database configuration, and graphics for the GUI. Verify proper operation of system inputs, outputs and sequences. Computer/server to run software to be provided by owner's IT dept.
- Floorplan graphics to be compatible with new equipment.

Price: \$306,839.00

#### Notes:

- We have not figured replacement of nay existing controls dampers From the ones we were able to access they appeared to be in decent condition. Any found to be in disrepair to be addressed at that time with the City.
- Warranty included is 1 year parts and labor with 2 year on the control valves and actuators
- (2) Four hour training sessions are provided at job completion
- Progress billing are sent by months end and are due within 30 days.

City of Two Rivers

Name: \_\_\_\_\_

Signature: \_\_\_\_\_

Schaus Mechanical

Name: Nick Schaus

Signature: 