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**Scott K. Ney**  
Director, Facility Operations

**Community Unit  
School District 304**

TO: Dr. Dean Romano

FROM: Scott Ney

RE: 2019-20 Johnson Controls, Inc. Direct Digital Control (DDC) Upgrade  
for Geneva Middle School South & Mill Creek Elementary School

DATE: April 4, 2019

Requesting project approval from Geneva CUSD #304 School Board to upgrade the existing outdated temperature control system (Metasys LON) to the ASHRAE standard Metasys BACnet control. This would be consistent with the other district buildings. Geneva Middle School North would be the last phase to be updated in 2020-21.

I recommend moving forward with the Johnson Controls, Inc. Metasys BACnet Systems proposals for the following:

Geneva Middle School South:	\$246,455.00
Mill Creek Elementary School:	\$228,029.00
Total:	\$474,484.00

I also recommend including a 5% contingency as recommended by CS2 Engineers. The contingency amount of \$23,724.20 brings the total project cost to \$498,208.20.

# PROPOSAL

**TO:** Scott Ney

**DATE:** March 15, 2019

**PROJECT:** SD 304 Geneva  
Middle School South

## SCOPE OF WORK:

Johnson Controls proposes to upgrade the existing Metasys LON building automation system in Geneva Middle School South to Metasys BACnet. JCI will provide all required labor to install and wire new controllers. JCI will furnish all required hardware and technical labor for programming.

1. Furnish and install (2) network automation engines for support of the new BACnet controllers being installed.
  - a. Re-route existing BACnet trunk to new NAE.
  - b. Existing communication trunk to be abandoned in place.
  - c. Provide new graphics for the systems being upgraded.
2. Provide and install BACnet field equipment controllers for (4) air handling units.
  - a. Pull new wire for all return air, mixed air, and discharge air sensors that are not currently installed in shielded cable.
  - b. Furnish and install new return air, mixed air, and discharge air sensors.
    - i. Existing combination temperature/humidity sensors will be replaced with temperature only sensors.
  - c. All other sensors/end devices are existing to remain.
    - i. JCI recommends changing the M9216 actuators to M9220 actuators.  
This is not included in the proposal.
  - d. AHU-1 hot water coil controllers to be upgraded to IOMs in existing control panel.
    - i. Furnish and install new zone sensors for each hot water coil.
  - e. JCI will furnish and install new carbon dioxide sensors for AHU-1, 5, and 6
  - f. Remove AHU-7,89 W7100 controller for the condensing units. Use the existing wiring for the CU control to provide a 0-10V control signal for CU modulation.
  - g. Provide new sequence of operation to include morning warmup and optimal start.
    - i. JCI to review the SOO with SD 304 prior to implementation.
  - h. VFD wiring to remain.
    - i. VFDs will not be integrated into the automation system
3. Provide and install BACnet VMA controls for (32) VAV boxes.
  - a. Replace discharge air sensors and room temperature sensors.
  - b. Existing valves will be reused.
4. Provide and install (55) BACnet TEC programmable thermostats. Existing TECs control unit heaters, radiant ceiling panels, and heating coils.
5. Provide and install IOMs for miscellaneous equipment on the existing Metasys system (exhaust fans, etc).
6. SD 304 to purchase and install BACnet cards for existing rooftop units. JCI will map the points to Metasys.

Clarifications/Exclusions:

1. This proposal excludes all cutting, patching and painting.
2. This proposal is based upon straight time labor.
3. This proposal excludes new end devices unless stated above.
4. Any additional equipment found during installation not specified above will be an additional cost.

**PRICING**

OUR PRICE FOR THE SCOPE OF WORK ABOVE: \$246,455.00

Sincerely,



Steve Green  
Account Executive  
Johnson Controls, Building Efficiency Group  
(224)325-6210

# PROPOSAL

**TO:** Scott Ney

**DATE:** March 15, 2019

**PROJECT:** SD 304 Geneva  
Mill Creek

## SCOPE OF WORK:

Johnson Controls proposes to upgrade the existing Metasys LON building automation system in Mill Creek to BACnet. JCI will provide all required labor to install and wire new controllers. JCI will furnish all required hardware and technical labor for programming.

1. Furnish (1) network automation engines for support of the new BACnet controllers being installed.
  - a. Existing communication trunk to be abandoned in place.
  - b. Provide new graphics for the systems being upgraded.
2. Provide and install BACnet field equipment controllers for (5) air handling units AHU 1-5 and RTU-2.
  - a. Pull new wire for all return air, mixed air, and discharge air sensors that are not currently installed in shielded cable.
  - b. Furnish and install new return air, mixed air, and discharge air sensors.
    - i. Existing combination temperature/humidity sensors will be replaced with temperature only sensors.
  - c. All other sensors/end devices are existing to remain.
    - i. JCI recommends changing the M9216 actuators to M9220 actuators.  
This is not included in the proposal.
  - d. JCI will furnish and install new carbon dioxide sensors for RTU-2 and AHU-4, 5.
  - e. Remove AHU-1 W7100 controller for the condensing units. Use the existing wiring for the CU control to provide a 0-10V control signal for CU modulation.
  - f. Provide new sequence of operation to include morning warmup and optimal start.
    - i. JCI to review the SOO with SD 304 prior to implementation.
  - g. VFD wiring to remain.
    - i. VFDs will not be integrated into the automation system
3. Boiler – 3 Controls: Provide new BACnet field equipment controller for control of Boiler 3 and associated pumps.
  - a. Reuse existing temperature sensors and wiring.
4. Provide and install BACnet VMA controls for (63) VAV boxes.
  - a. Replace discharge air sensors and room temperature sensors.
  - b. Existing valves will be reused.
5. Provide and install (32) BACnet TEC programmable thermostats. Existing TECs control unit heaters, radiant ceiling panels, and heating coils.
  - a. Existing valves will be reused.
6. Provide and install controls for hydronic systems and upgrade to BACnet field equipment controllers.
  - a. All sensors/end devices to remain.
7. Provide and install IOMs for miscellaneous equipment on the existing Metasys system (exhaust fans, etc).

8. SD 304 to purchase and install BACnet cards for existing rooftop units. JCI will map the points to Metasys.

Clarifications/Exclusions:

1. This proposal excludes all cutting, patching and painting.
2. This proposal is based upon straight time labor.
3. This proposal excludes new end devices unless stated above.
4. Any additional equipment found during installation not specified above will be an additional cost.

**PRICING**

OUR PRICE FOR THE SCOPE OF WORK ABOVE: \$228,029.00

Sincerely,



Steve Green  
Account Executive  
Johnson Controls, Building Efficiency Group  
(224)325-6210