

BID # 18-20

**Bookstore & Gateway
HVAC Controls Upgrade**

SECTION "C" TECHNICAL SPECIFICATIONS

OWNER

**Board of Trustees
Middlesex County College
2600 Woodbridge Avenue
P.O. Box 3050
Edison, New Jersey 08818-3050**

PREPARED BY

**Daniel Fuchs
Associate Director of Facilities
(732) 906-4670
(732) 906-4199 Fax**

May 19, 2017

Rev 12-6-16

NOTE: THIS DOCUMENT IS FOR INFORMATIONAL PURPOSES ONLY. THIS IS NOT AN OFFICIAL BID DOCUMENT.

SECTION C - TECHNICAL SPECIFICATIONS

TABLE OF CONTENTS

<u>SECTION</u>	<u>TITLE</u>	<u>PAGE</u>
1.	Scope of Work	C-3
2.	Materials	C-3
3.	Installation/Execution	C-5
4.	Compliance	C-6
5.	Site Clean-up	C-6
6.	Time Constraints	C-7
7.	Work Hours	C-7
8.	Warranty	C-7
9.	Additional Information	C-8

NOTE: THIS DOCUMENT IS FOR INFORMATIONAL PURPOSES ONLY. THIS IS NOT AN OFFICIAL BID DOCUMENT.

1. SCOPE OF WORK

The purpose of these specifications is the completion of a contract to replace and upgrade the existing building HVAC controls in two buildings. The work will be performed at the main Middlesex County College campus in Edison, New Jersey, at the Bookstore building and the Gateway building. Specifications for each building are as follows:

Bookstore

The purpose of these specifications is the upgrade the existing controls. This work will be performed at the Bookstore building. The existing controls were originally manufactured by the Barber Colman company. The former Barber Colman products are now produced by Schneider Electric.

The contractor shall provide all the necessary labor, materials, tools, programming, supervision and equipment required to complete the work described on the drawings and in these specifications as follows:

- a. Furnish and install a new Schneider Electric -Java Application Control Engine (JACE) controller to replace the existing obsolete Barber Colman Network 8000 series GCM controller. The new Jace controller shall be integrated into the existing campus wide Ethernet building management system (BAS). Provide all programming, system graphics required for all systems connected to new JACE controller.
- b. Three air handling units with factory provided controllers and devices have been installed at site. Units shall be integrated into the new Jace controller through a Local Operating Network (LON) interface card and space controllers shall be furnished by the contractor. All points exposed by unit manufacturer's interface shall available and accessible through systems graphics interface.
- c. Furnish and install new LON based controller(s) as required to replace all existing obsolete Network 8000 ASD field level controllers. Provide all necessary programming required to replicate existing control sequence of operations in new LON controllers. All existing field devices (ie. sensors, valves, actuators etc.) to remain and shall be integrated into new controllers.
- d. New JACE controller shall be intergraded into the College's existing enterprise network server. Provide all programing, system graphics, alarms and point histories required for all systems connected to new JACE controller. All system architecture and graphics to match existing.

Gateway Building

The purpose of these specifications is the upgrade the existing controls. This work will be performed at the Gateway building. The existing controls were original manufactured by the Barber Colman company. The former Barber Colman products are now produced by Schneider Electric.

The contractor shall provide all the necessary labor, materials, tools, programming, supervision and equipment required to complete the work described on the drawings and in these specifications as follows:

- a. Furnish and install a new Schneider Electric Jace controller Java Application Control Engine (JACE) to replace the existing obsolete Barber Colman Network 8000 series GCM controller. The new Jace controller shall be integrated into the existing campus wide Ethernet building management system (BAS). Provide all programming, system graphics required for all systems connected to new JACE controller.
- b. Furnish and install new Lon based controller(s) as required to replace all existing obsolete Network 8000 ASD field level controllers. Provide all necessary programming required to replicate existing control sequence of operations in new Local Operating Network (LON) controllers. All existing field devices (ie. sensors, valves, actuators etc.) to remain and shall be integrated into new controllers.
- c. Furnish and install (12) local operating network (Lon) based controllers to replace the existing obsolete Network 8000 Microflo II devices.
- d. Furnish and install (12) new (Sink) temperature sensors with liquid crystal display, set point adjustment for each new VAV controller. All thermostats to match the others in the campus and display room temperature.
- e. The existing VAV's will run in a standalone mode as replacement commences. New VAVs will be added to the Lon trunk as they are converted.
- f. New JACE controller shall be intergraded into the College's existing enterprise network server. Provide all programing, system graphics, alarms and point histories required for all systems connected to new JACE controller. All system architecture and graphics to match existing.

The contractor shall be required to attend a pre-construction meeting on campus at a time to be scheduled after the contract is awarded and other job progress meetings as required by the College and the Engineer.

The following is a list of drawings that are attached and are a part of these specifications and contract:

1. Campus Site Plan
2. Existing HVAC building drawings

2. MATERIALS

The materials used under this contract shall be as specified on the drawings and in the specifications, be of a quality acceptable to the College and meet applicable codes.

The materials to be used are as follows:

- a. (12) Schneider Electric IA-Series MNL-V2RV3 LON VAV Controller or equal
- b. (12) Schneider Electric IA-Series MN-S3 S-link Room Thermostat with LCD Display or equal
- c. Schneider Electric IA-Series LON-Term2 EOL or equal.
- d. (4) Schneider Electric MNL800-101 and ENCL-MZ800-WAL or equal.
- e. (2) Schneider Electric MNL-20RS4 controller or equal.
- f. (2) Schneider Electric JACE controllers capable of interfacing and integration of Lonworks, Bacnet IP, Bacnet MSTP, Modbus protocols or equal.

3. INSTALLATION/EXECUTION

- a. Install software in control units. Implement all features of programs to specified requirements and as appropriate to the sequence of operation.
- b. Connect and configure equipment and software to achieve sequence of operation specified.
- c. Install equipment level and plumb.
- d. Install all control devices as per the manufacturer's installation guidelines.

NOTE: THIS DOCUMENT IS FOR INFORMATIONAL PURPOSES ONLY. THIS IS NOT AN OFFICIAL BID DOCUMENT.

- e. Install, connect, and wire the items included under this section. This work includes providing required conduit, wire, fittings, hangers and related wiring accessories.
- f. All exposed wiring and wiring in mechanical equipment rooms shall be installed in conduit. New conduit shall be installed for all new wiring.
- g. Plenum rated cable (22 Ga. /4 conductor) shall be acceptable in hung ceilings, walls and raised floors.
- h. Conceal cable within interior partitions and ceiling plenum, except in mechanical rooms and areas where other conduit and piping are exposed. Use of Wire mold® is not permitted.

4. COMPLIANCE

The Contractor shall comply with all of the College's safety and work rules when performing work at the college. All the contractor employees, subcontractors, etc. shall sign-in daily at the Facilities Management building upon arrival on campus to be issued a contractors identification badge. It is expected that all contractor employees will conduct themselves in a professional manner.

The buildings will be occupied during this project. The contractor shall provide temporary barriers consisting of caution tape to separate the work area from the occupied space. All work must comply with PEOSHA Indoor Air Quality (IAQ) requirements for construction in an occupied building. Every effort must be made to prevent dust and fumes from entering the occupied space.

Middlesex County College is a smoke-free campus. Smoking is only permitted inside a person's personal vehicle. Smoking is not permitted anywhere else on campus or in any construction equipment. The College Police will issue summonses with fines to anyone found in violation of this policy.

5. SITE CLEANUP

The work area shall be cleaned on a daily basis. Any items remaining shall be secured and surrounded with safety tape and/or barriers. Any damage caused by the contractor shall be repaired at no cost to the college.

The contractor is to remove all trash, excavated materials, and other waste off site and disposed of it in accordance with current regulations. Provide the college with weight

NOTE: THIS DOCUMENT IS FOR INFORMATIONAL PURPOSES ONLY. THIS IS NOT AN OFFICIAL BID DOCUMENT.

tickets for any materials that can be recycled. The cost for the testing of any materials prior to the removal from the campus as required by regulatory agencies is the responsibility of the contractor.

6. TIME CONSTRAINTS

If the Board of Trustees of Middlesex County College has approved an award 10 calendar days prior to July 31, 2017 the contractor shall complete the work between August 1, 2017 and October 1, 2017. If the Board has not approved the award by 10 days prior to July 31, 2017, then the College will advise the contractor of an alternate start date.

The competition of this contract is based upon the contractor accessing the various spaces without disruption to students and staff or affecting the educational process.

7. WORK HOURS

All work is to be performed during normal work hours 8:00 am to 4:30 pm, Monday through Friday. If additional work hours during the weekends or outside of normal business hours are required to meet the schedule and work around classes, they shall be included in the contractor's bid price. Approval of the College shall be requested by the contractor in writing 48 hours prior to the desired work date to work off hours/days.

The work hours in this section take precedent over, and will supersede any conflicting references to hours of work elsewhere in these plans and specifications.

8. WARRANTY

All materials and workmanship shall be replaced at no cost for a period of one year from the date of final payment unless noted otherwise.

NOTE: THIS DOCUMENT IS FOR INFORMATIONAL PURPOSES ONLY. THIS IS NOT AN OFFICIAL BID DOCUMENT.

9. **ADDITIONAL INFORMATION**

Additional information may be obtained from the following individuals:

Facility/specifications:

Daniel Fuchs
Associate Director, Bldgs. & Systems
Facilities Management
732-906-4670
732-906-4199 Fax
Dfuchs@middlesexcc.edu

Proposal:

David Fricke
Director, Purchasing & Inventory
732-906-2519
732-906-4236 Fax
DFricke@MiddlesexCC.edu

NOTE: THIS DOCUMENT IS FOR INFORMATIONAL PURPOSES ONLY. THIS IS NOT AN OFFICIAL BID DOCUMENT.