**REQUEST FOR QUOTE**

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Information

***THIS IS NOT AN ORDER***

Name of quote Hooper Science Building

Bid Due on: May 26, 2020 at 2:00 p.m.

Buyer/Phone Purchasing Dept/ 662-329-7126

Please return the quote requested to The Office of Resources Management by mail, fax, or email.

Bill To:

Mississippi University for Women

Office of Resources Management

1100 College Street MUW 1628

Columbus MS 39701

Phone: (662) 329-7126

Email: purchase@muw.edu

Vendor Address:

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| --- | --- | --- |
|  | Materials/ Description | Amount |
|  | Mississippi University for Women    Location: MSMS Hooper Science Building Automation System  Columbus, MS 39701  **SUMMARY**  Provide an upgrade of the existing Building Automation System (BAS) at the Mississippi Schools of Mathematics and Science (MSMS) Hooper Building on the campus of Mississippi University for Women campus in Columbus, MS.  This project includes control equipment and installation for HVAC systems and components, including control components for packaged Rooftop Air Handling Units, terminal units, and a building electric meter.  The BAS control system shall be an extension of the existing Siemens Apogee BAS and shall be directly compatible with no gateways or external links. All controllers and software shall match existing or be latest version of existing. Installation of all points, programs, schedules, and graphics on the existing Siemens workstation software shall be included.  The building electric meter data shall be provided to the Siemens Navigator cloud-based data management application used by the MUW campus for energy reporting and analysis.  Due to the age of the existing automation system, all sensors and actuators shall be replaced.  The building mechanical HVAC systems are assumed to be functional and shall be recommissioned with pricing provided for any deficiencies found.  **SYSTEM DESCRIPTION**  The Building Automation System (BAS) contractor shall furnish and install a networked system of HVAC controls. The contractor shall incorporate direct digital control (DDC) for central plant equipment, building ventilation equipment, supplemental heating and cooling equipment, and terminal units.  Provide networking to new DDC equipment using communication standards. The system shall not be limited to only standard protocols such as BACnet but shall also be able to integrate to a wide variety of third-party devices and application. The MUW campus network shall be used for communication to the Siemens server located in the McDevitt Hall.  **WORK INCLUDED**  The installation of the control system shall be performed under the direct supervision of the controls manufacturer.  Furnish a complete distributed direct digital control system in accordance with this specification section. This includes all system controllers, logic controllers, and all input/output devices. Items of work included are as follows:  Provide installation of all panels and devices unless otherwise stated.  Provide power for panels and control devices.  Provide all low voltage control wiring for the DDC system.  Provide miscellaneous control wiring for HVAC and related systems regardless of voltage.  Provide engineering and technician labor to program and commission software for each system and operator interface. Submit commissioning reports for approval.  Participate in commissioning for all equipment that is integrated into the BAS (Refer to Commissioning sections of the equipment or systems in other parts of this specification.)  Provide testing, demonstration and training as specified below.  Execute the work so as to minimize the disruption to the occupants.  New system must be fully operational and inspected by a MUW representative before project is considered complete.  All work must be complete within 60 calendar days of Contract award.  Contractor to field verify scope of this project with a representative from the W by contacting the MUW Resources Management Department at 662-329-7126 prior to bid preparation. The exact areas to be included in this scope may be obtained from the MUW Resource Management Department.  **SYSTEM PERFORMANCE**  Comply with the following performance requirements:  Object Command: Reaction time of less than 5 seconds between operator command of a binary object and device reaction.  Object Scan: Transmit change of state and change of analog values to control units or workstation within 5 seconds.  Alarm Response Time: Annunciate alarm at workstation within 2 seconds. Multiple workstations must receive alarms within five seconds of each other.  Program Execution Frequency: Programmable controllers shall execute DDC PI control loops, and scan and update process values and outputs at least once per second.  Reporting Accuracy and Stability of Control: Report values and maintain measured variables within tolerances as follows:  Water Temperature: Plus or minus 1 deg F.  Water Flow: Plus or minus 5 percent of full scale.  Water Pressure: Plus or minus 2 percent of full scale.  Space Temperature: Plus or minus 1 deg F.  Ducted Air Temperature: Plus or minus 1 deg F.  Outside Air Temperature: Plus or minus 2 deg F.  Dew Point Temperature: Plus or minus 3 deg F.  Temperature Differential: Plus or minus 0.25 deg F.  Relative Humidity: Plus or minus 2 percent.  Airflow (Pressurized Spaces): Plus or minus 3 percent of full scale.  Airflow (Measuring Stations): Plus or minus 5 percent of full scale.  Airflow (Terminal): Plus or minus 10 percent of full scale.  Air Pressure (Space): Plus or minus 0.01-inch wg.  Air Pressure (Ducts): Plus or minus 0.1-inch wg.  Carbon Monoxide: Plus or minus 5 percent of reading.  Carbon Dioxide: Plus or minus 50 ppm.  Electrical: Plus or minus 5 percent of reading.  **WARRANTY**  Provide a warranty with a minimum of 12 months.  Warranty shall cover all costs for parts, labor, associated travel, and expenses for a period of one year from completion of system demonstration.  This warranty shall apply equally to both hardware and software.  **PRODUCTS**  ACCEPTABLE SYSTEMS  Provide an extension to an existing Siemens APOGEE System as installed by the Siemens Industry branch office.  The vendors and products listed shall comply with these specifications. It shall not be assumed that standard products and methods will be acceptable without prior approval. Exceptions shall be noted during the bid process and documented in the submittal process.  CONTROLLER SOFTWARE (i.e. Building Controller software, , DDC software, Field Panel software)  Reuse existing software. If new controllers need updated versions of the controller software, then provide updated versions, such that at the completion of this project, the Owner has controller software licenses for all of the existing and new generations of controllers.  **BUILDING CONTROLLERS**  Provide all necessary hardware for a complete operating system as required. The Building Controller shall be able to operate as a standalone panel and shall not be dependent upon any higher-level computer or another controller for operation.  Basis of design is Siemens PX Modular and Compact Controllers (PXC).  Computing power and memory minimum:  A 32‑bit, stand‑alone, multi‑tasking, multi‑user, real-time 100MHz digital control microprocessor module.  Inputs shall be 16-bit minimum analog-to-digital resolution  Outputs shall be 10-bit minimum digital-to-analog resolution  Memory module (24 Megabyte, minimum) to accommodate all Primary Control Panel software requirements, including but not limited to, its own operating system and databases (see Controllers Software section), including control processes, energy management applications, alarm management applications, historical/trend data for points specified, maintenance support applications, custom processes, operator I/O, dial‑up communications.  Real time clock and battery  Data collection/ Data Trend module sized for 10,000 data samples.  Flash Memory Firmware: Each Building Level Control Panel shall support firmware upgrades without the need to replace hardware.  Onboard or Modular hardware and connections:  Primary Network communication module, if needed for primary network communications.  Secondary Network communication module, if needed for secondary network communications.  RJ45 port 10/100Mbaud  RS485 ports for subnetworks and point expansion  Man to Machine Interface port (MMI)  USB Port  Input and Output Points Hardware  Input/output point modules as required including spare capacity.  Monitoring of the status of all hand‑off‑auto switches.  Monitoring of all industry standard types of analog and digital inputs and outputs, without the addition of equipment to the primary control panel.  Local status indication for each digital input and output for constant, up‑to‑date verification of all point conditions without the need for an operator I/O device. Each primary control panel shall perform diagnostics on all inputs and outputs and a failure of any input or output shall be indicated both locally and at the operator workstation.  Graduated intensity LEDs or analog indication of value for each analog output.  Code compliance  Approvals and standards: UL916; CE; FCC  Provide UL864-UUKL where called for in the sequences of operations.  Accessories:  Appropriate NEMA rated metal enclosure.  Power supplies as required for all associated modules, sensors, actuators, etc.  Each Building Level Control Panel shall continuously perform self‑diagnostics on all hardware modules and network communications. The System Level Control Panel shall provide both local and remote annunciation of any detected component failures, low battery conditions or repeated failure to establish communication with any system.  Panel setup, point definitions and sequencing diagrams shall be backed up on EEPROM memory.  Power loss. In the event of the loss of power, there shall be an orderly shutdown of all Building Controllers to prevent the loss of database or operating system software. Non-volatile memory shall be incorporated for all critical controller configuration data and battery backup shall be provided to support the real-time clock and all volatile memory for a minimum of 30 days.  Building Level control panels shall provide at least two serial data communication ports for operation of operator I/O devices such as industry standard printers, operator terminals, modems and portable laptop operator's terminals. Primary control panels shall allow temporary use of portable devices without interrupting the normal communications, operation of permanently connected modems, printers or terminals.  Building Level Controllers shall have the capability to serve as a gateway between Modus subnetworks and the BAS. Provide software, drives, and programming.  Environment.  Controller hardware shall be suitable for the anticipated ambient conditions.  Controllers used outdoors and/or in wet ambient conditions shall be mounted within waterproof enclosures and shall be rated for operation at 0°C to 49°C (32°F to 120°F).  Controllers used in conditioned space shall be mounted in dust-proof enclosures and shall be rated for operation at 0°C to 49°C (32°F to 120°F).  Immunity to power and noise.  Controller shall be able to operate at 90% to 110% of nominal voltage rating and shall perform an orderly shutdown below 80% nominal voltage.  Operation shall be protected against electrical noise of 5 to 120 Hz and from keyed radios up to 5 W at 1 m (3 ft).  Isolation shall be provided at all primary network terminations, as well as all field point terminations to suppress induced voltage transients consistent with:  RF-Conducted Immunity (RFCI) per ENV 50141 (IEC 1000-4-6) at 3V.  Electro Static Discharge (ESD) Immunity per EN 61000-4-2 (IEC 1000-4-2) at 8 kV air discharge, 4 kV contact.  Electrical Fast Transient (EFT) per EN 61000-4-4 (IEC 1000-4-4) at 500V signal, 1 kV power.  Output Circuit Transients per UL 864 (2,400V, 10A, 1.2 Joule max).  Isolation shall be provided at all Building Controller’s AC input terminals to suppress induced voltage transients consistent with:  IEEE Standard 587 1980  UL 864 Supply Line Transients  Voltage Sags, Surge, and Dropout per EN 61000-4-11 (EN 1000-4-11)]  BACNET ADVANCED APPLICATION CONTROLLERS (DXR)   * + - * 1. Each Advanced Application Controller shall operate as a stand‑alone controller capable of performing its user selectable control routines independently of any other controller in the system. Each Advanced Application Controller shall provide standard applications and programmability to provide both reliability and flexibility. Each advanced application controller shall be a microprocessor‑based, multi‑tasking, digital control processor.         2. Basis of design is the programmable Siemens DXR controller.         3. Configurable control applications. Each Advanced Application Controller model must have a set of pre-loaded, selectable and field-adjustable control applications appropriate for the secondary HVAC equipment that the controller model is intended to control. Specific applications must be configurable to meet the user's control strategy requirements, allowing for additional system flexibility.         4. Programmability: Advanced Application Controllers shall be programmable. Program language shall be graphical.         5. The Advanced Application Controller shall include all point inputs and outputs necessary to perform the specified HVAC control sequences. The controller shall accept input and provide output signals that comply with industry standards. Controllers only utilizing proprietary control output signals shall not be acceptable. Controllers shall provide outputs utilized either for two-state, modulating floating, or proportional control, allowing for additional system flexibility.   Analog inputs shall be software configurable to accept sensors using 0-10v (such as RH or CO2 sensors), NTC3k, NTC10k, NTC100k, Ni1000, PT1K 385, PT1K 375, and resistance sensors of 1000Ω, 2500 Ω, 10K Ω, and 100k Ω. 24vDC or 24vAC power to drive active sensors shall be an option available from the controller.  Digital input  Analog Outputs shall support 0-10v HVAC control signals.  Digital outputs shall be AC 24V high-side switching triacs, able to switch loads of 250 mA / 6 VA per output.  Every installed Advanced Application Controller shall be prepared for the addition of occupancy, CO2, and humidity sensors which can be connected as needed via a sub-network connection on each Advanced Application Controller.  The Advanced Application Controller shall have the ability to have a combined display with CO2, temperature and humidity sensing in 1 wall device.  The Advanced Application Controller shall have the ability to have a combined display with temperature sensing and configurable switches for lighting, shade and scene control in 1 wall device.   * + - * 1. Each Advanced Application Controller model must have a set of pre-loaded, selectable and field-adjustable control applications for lighting equipment control, independent from or in conjunction with the HVAC control applications, which can be enabled if the appropriate lighting control devices are connected.         2. Each Advanced Application Controller model must have a set of pre-loaded, selectable and field-adjustable control applications for shading equipment control, independent from or in conjunction with the HVAC control applications, which can be enabled if the appropriate shading control devices are connected.         3. Advanced Application Controller communication   Communication over floor level network shall be BACnet over MS/TP or BACnet IP over Ethernet.  A maximum of 96 controllers may be configured on individual BACnet MS/TP networks.  Each controller that uses BACnet IP shall provide at least two Ethernet ports allowing the controllers to be wired in a daisy-chain configuration of up to at least 20 controllers per chain, utilizing standard Ethernet cables of up to 300ft in length between each controller.   * + - * 1. The Advanced Application Controller shall provide for control of each piece of equipment, including, but not limited to the following:   Variable Air volume (VAV)  Constant Air volume (CAV)  Fan Powered Boxes (FPB)  Fan Coil Units (FCU) Unit Conditioners  Fan Coil Units (FCU) Unit Ventilators  Terminal Fans (single-speed, multi-speed and variable-speed control)  Hot water and electric reheat coils  Heating/Cooling coils (2-Pipe and 4-Pipe)  DX cooling and chilled water coils  Baseboard radiator hot water and electric   * + - * 1. Applications for VAV and FPB terminals:   The following VAV terminal box equipment and VAV Fan Powered Box configurations must be supported with pre-loaded, pre-tested applications that can be selected and configured during commissioning:  VAV w/cooling only  VAV w/hot or cool primary air,  VAV w/ HW or electric reheat  VAV w/ chilled water or heating/cooling coils  VAV w/ Series or Parallel fan and HW or electric reheat  VAV w/ Series or Parallel fan and chilled water or heating/cooling coils.  All VAV applications must support the following options (where appropriate):  Minimum ventilation control and flow set points configurable for each application operating mode  Demand Control Ventilation using IAQ or CO2 measurement for each application operating mode  Separate heating and cooling room temperature setpoints for each occupancy mode of operation.  User input for room temperature shift for both heating and cooling setpoints  Separate minimum and maximum flow set points for heating, cooling and ventilation  Supply temperature cascade control with minimum and maximum reset range.  Configuration for Constant Volume control  Supply VAV and Exhaust VAV tracking control  Two or more controllers coordinated by a master temperature and ventilation controller independent of central commands.  2-pipe or 4-pipe HW/CHW coil valve control  Analog or 3-point floating control valve/damper actuation, including 6-way heating/cooling valve via standard BACnet Analog Output objects.  Built in air balancing support.  Occupancy sensor  User initiated temporary occupancy control   * + - * 1. Each Advanced Application Controller shall, at a minimum, be provided with:   Power supplies as required for all associated modules, sensors, actuators, etc.  Approvals and standards: UL916 PAZX; UL864 UUKL; CUL; FCC  Plenum rated per UL94-5VB flammability rating, UL1995   * + - * 1. Each Advanced Application Controller shall continuously perform self‑diagnostics on all hardware and secondary network communications. The Advanced Application Controller shall provide both local and remote annunciation of any detected component failures or repeated failure to establish communication to the system.         2. Power Supply. The Advanced Application controller shall be powered from a 24 VAC, 50/60 Hz source and shall function normally under an operating range of -15% / +20%.         3. All controller configuration settings and programs shall be stored in non‑volatile memory. The controllers shall be able to return to full normal operation without user intervention after a power failure of unlimited duration.   Environment. The controllers shall function normally under ambient conditions of 23 to 122°F (-5 to 50°C) and 5% to 95% RH (non-condensing). Provide each controller with a suitable cover or enclosure to protect the circuit board assembly  CONTROL PANELS  Controllers in mechanical rooms shall be mounted in NEMA 1 enclosures.  Mount on walls at an approved location or provide a free-standing rack.  Panels shall be constructed of 16-gauge, furniture-quality steel, or extruded-aluminum alloy, totally enclosed, with hinged doors and keyed lock and with ANSI 61 gray polyester-powder painted finish, UL listed. Provide common keying for all panels.  Provide power supplies for control voltage power.  Dedicate 1 power supply to the DDC controller. Other devices shall be on a separate power supply, unless the power for the control device is derived from the controller terminations.  Power supplies for controllers shall be a transformer with a fuse or circuit breaker. Power supplies for other devices can be plain transformers.  All power supplies for 24V low voltage wiring shall be class 2 rated and less than 100VA. If low voltage devices require more amps, then provide multiple power supplies. Surge transient protection shall be incorporated in design of system to protect electrical components in all DDC Controllers and operator’s workstations.  **GENERAL SPECIFICATIONS FOR DEVICES**  Provide mounting hardware for all devices, including actuator linkages, wells, installation kits for insertion devices, wall boxes and fudge plates, brackets, etc.  **SENSORS**  Temperature Sensors  All temperature sensors shall meet the following specifications:  Accuracy: Plus or minus 0.2 percent at calibration point.  Wire: Twisted, shielded-pair cable.  Vibration and corrosion resistant  Space temperature sensors shall meet the following specifications:  10k ohm type 2 thermisters  Insertion Elements in Ducts shall meet the following specifications:  Single point 10k ohm thermister  Use where not affected by temperature stratification  The sensor shall reach more that 1/3 the distance from the duct wall  Junction box for wire splices  Averaging Elements in Ducts shall meet the following specifications:  72 inches (183 cm) long  Flexible  Use where prone to temperature stratification, in front of coils, or where ducts are larger than 9 sq. ft.  Junction box for wire splices  Outside-Air Sensors Platinum RTD with 4-20mA transmitter:  Watertight enclosure, shielded from direct sunlight  Circulation fan  Watertight conduit fitting  Humidity Sensors shall meet the following specifications:  Bulk polymer sensor element  Accuracy: 2 percent full range with linear output  Room Sensors: With locking cover matching room thermostats, span of 0 to 100 percent relative humidity  Duct and Outside-Air Sensors: With element guard and mounting plate, range of 0 to 100 percent relative humidity  Air Static Pressure Transmitter shall meet the following specifications:  Non-directional sensor with suitable range for expected input, and temperature compensated.  Accuracy: 2 percent of full scale with repeatability of 0.5 percent.  Output: 4 to 20 mA.  Building Static-Pressure Range: 0 to 0.25 inches wg.  Duct Static-Pressure Range: 0 to 5 inches wg.  Equipment operation sensors as follows:  Status Inputs for direct drive electric motors: Current-sensing relay with current transformers, adjustable and sized for 175 percent of rated motor current.  Status inputs for belt drive electric motors: Current sensing transmitter with linear 4-20mA output  **ELECTRONIC ACTUATOR SPECIFICATION**  ELECTRONIC DAMPER ACTUATORS  Actuator shall be direct coupled (over the shaft), enabling it to be mounted directly to the damper shaft without the need for connecting linkage. The actuator-to-shaft clamp shall use a "V" bolt and "V" shaped, toothed cradle to attach to the damper shaft for maximum holding strength. Single bolt or set screw type fasteners are not acceptable.  Actuator shall have electronic overload or digital rotation sensing circuitry to prevent damage to the actuator throughout the rotation of the actuator. End switches to deactivate the actuator at the end of rotation or magnetic clutch are not acceptable.  For power-failure/safety applications, a mechanical, spring return mechanism shall be used.  Actuators with spring return mechanisms shall be capable of either clockwise or counterclockwise spring return operation by simply changing the mounting orientation.  Proportional actuators shall accept a 2-10VDC, 4-20mA signal, or be of the 2-point floating type and provide a 2-10VDC actuator position feedback signal.  All actuators shall have an external manual gear release (clutch) or manual crank to aid in installation and for allowing manual positioning when the actuator is not powered.  All actuators shall have an external direction of rotation switch to aid in installation and to allow proper control response.  Actuators shall be provided with a factory-mounted 3-foot electrical cable and conduit fitting to provide easy hook-up to an electrical junction box.  Actuators shall be listed under Underwriters Laboratories Standard 873 and Canadian Standards Association. They must be manufactured under ISO 9001.  **EXAMINATION**  The contractor shall inspect the site to field verify the existing mechanical and control equipment.  **INSTALLATION**  Install controls so that adjustments and calibrations can be readily made. Controls are to be installed by the control equipment manufacturer.  Install equipment level and plumb.  Install outdoor sensors in perforated tube and sunshield.  Install damper motors on outside of duct in protected areas, not in locations exposed to outdoor temperatures.  **ELECTRICAL WIRING SCOPE**  This contractor shall be responsible for the power to controls.  This contractor shall be responsible for wiring of any control device that is furnished as part of this section of specification.  Existing network wiring shall be used for integration to the BAS.  **ELECTRICAL WIRING AND CONNECTION INSTALLATION**  All low voltage control wiring shall be class 2. Installation shall meet the following requirements:  Conceal cable and conduit, except in mechanical rooms and areas where other conduit and piping are exposed.  Install exposed cable in raceway or conduit.  Install concealed cable using plenum rated cable.  Bundle and harness multiconductor instrument cable in place of single cables where several cables follow a common path.  Fasten flexible conductors, bridging cabinets and doors, along hinge side; protect against abrasion. Tie and support conductors.  Number-code or color-code conductors for future identification and service of control system, except local individual room control cables.  **COMMUNICATION WIRING**  All cabling shall be installed in a neat and workmanlike manner. Follow manufacturer’s installation recommendations for all communication cabling.  Maximum pulling, tension, and bend radius for cable installation, as specified by the cable manufacturer, shall not be exceeded during installation.  Contractor shall verify the integrity of the entire network following the cable installation. Use appropriate test measures for each particular cable.  Cable bundling:  RS485 cabling run open air in accessible areas can be bundled with other class 2 low voltage cabling.  RS485 cabling run between terminal units in conduits above ceilings or under floors or in inaccessible areas can be bundled with other class 2 low voltage cabling.  RS485 cabling run between floors shall be in a communication only conduit.  RS485 conduit run long distances between utility rooms or between buildings shall be in a communication only conduit.  Ethernet cabling shall be in a communication only conduit.  Ethernet and RS485 can be run together.  FLN Cabling  FLN cabling shall be low capacitance, 20-24 gauge, twisted shielded pair.  The shields shall be tied together at each device.  The shield shall be grounded at one end only and capped at the other end.  Ethernet Cabling  Ethernet shall not be run with any Class 1 or low voltage Class 2 wiring.  CAT6, unshielded twisted pair (UTP) cable shall be used for BAS Ethernet.  Solid wire shall be used for long runs, between mechanical rooms and between floors. Stranded cable can be used for patch cables and between panels in the same mechanical room up to 50 feet away.  When the BAS Ethernet connects to an Owner’s network switch, document the port number.  All runs of communication wiring shall be un-spliced length when that length is commercially available.  All communication wiring shall be labeled to indicate origination and destination data.  **IDENTIFICATION**  Match the existing wiring and conduit identification methods.  **FIELD QUALITY CONTROL**  Manufacturer's Field Service: Engage a factory-authorized service representative to inspect field-assembled components and equipment installation including electrical connections. Report results in writing.  Operational Test: After electrical circuitry has been energized, start units to confirm proper unit operation. Remove malfunctioning units, replace with new units, and retest.  Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment, and retest.  Calibration test controllers by disconnecting input sensors and stimulating operation with compatible signal generator.  Engage a factory-authorized service representative to perform startup service of controls.  Replace damaged or malfunctioning controls and equipment. Start, test, and adjust control systems.  Demonstrate compliance with requirements, including calibration and testing, and control sequences.  Adjust, calibrate, and fine tune circuits and equipment to achieve sequence of operation specified.  **SYSTEM CHECKOUT AND STARTUP**  Inspect each termination in the control panels and devices to make sure all wires are connected according to the wiring diagrams and all termination are tight.  After the controls devices and panels are installed perform a static checkout of all the points, including the following:  Inspect the setup and reading on each temperature sensor against a thermometer to verify its accuracy.  Inspect the setup and reading on each humidity sensor against a hygrometer to verify its accuracy.  Inspect the reading of each status switch to verify the DDC reads the open and close correctly.  Command each relay to open and close to verify its operation.  Command each 2-position damper actuator to open and close to verify operation.  Ramp each modulating actuator to 0%, 25%, 50%, 75% and 100% to verify its operation.  Test each safety device with a real-life simulation, for instance check freezestats with ice water, water detectors with water, etc.  Document that each point was verified and operating correctly. Correct each failed point before proceeding to the dynamic startup.  Verify that each DDC controller communicates on its respective network correctly.  After all of the points are verified, and power is available to the mechanical system, coordinate a startup of each system with the mechanical contractor. Include the following tests:  Start systems from DDC.  Verify that each setpoint can be met by the system.  Change setpoints and verify system response.  Change sensor readings to verify system response.  Test safety shutdowns.  Verify time delays.  Verify mode changes.  Adjust filter switches and current switches for proper reactions.  Adjust proportional bands and integration times to stabilize control loops.  Perform all program changes and debugging of the system for a fully operational system.  Verify that all graphics at the operator workstations correspond to the systems as installed. Verify that the points on the screens appear and react properly. Verify that all adjustable setpoints and manual commands operate from the operator workstations.  After the sequence of operation is verified, setup the trends that are listed in the sequence of operations for logging and archiving for the commissioning procedure.  **SYSTEM COMMISSIONING, DEMONSTRATION AND TURNOVER**  Prior to acceptance of the BAS by the Owner the BAS contractor shall completely test the BAS.  When the system performance is deemed satisfactory in whole or in part by these observers, the system parts will be accepted for beneficial use and placed under warranty.  **TRAINING**  At a time mutually agreed upon, during System commissioning as stated above, the BAS contractor shall give 8-hours of onsite training on the operation of all BAS equipment. Describe its intended use with respect to the programmed functions specified. Operator orientation of the automation system shall include, but not be limited to:  Walk‑through of the job to locate all control components.  Operator workstation and peripherals.  DDC Controller and ASC operation/sequence.  Operator control functions including scheduling, alarming, and trending.  Explanation of adjustment, calibration and replacement procedures.  **END OF SECTION** |  |

**GENERAL INFORMATION TO BIDDERS**

Mississippi University for Women (MUW) employees and Sodexo employees working for MUW may not purchase directly or indirectly any items offered for sale by the Mississippi University for Women.

1. **EXAMINATION OF SITE (IF NECESSARY)**

Vendors should visit the site and shall be responsible for having ascertained pertinent local conditions such as location, accessibility and general character of the building, the character, and extent of existing work within the building, and any other work being performed thereon at the time of the submission of the quote. No allowance will be granted because of lack knowledge of site conditions.

1. **DELIVERY OF QUOTES**
2. The offeror/proposer should mark any and all pages of the proposal considered to be proprietary information which may remain confidential in accordance with Mississippi Code Annotated 25-61-9 and 79-23-1(1972, as amended). Each page of the proposal that the proposer considers trade secrets or confidential commercial or financial information should be on a different color paper than non-confidential pages and be marked in the upper right hand corner with the word “CONFIDENTIAL.” Failure to clearly identify trade secrets or confidential commercial or financial information will result in that information being released subject to a public records request.
3. The vendor should turn in a quote as soon as possible unless specified date on the quote form.
4. **AWARD OF CONTRACT**
5. The contract will be awarded as soon as possible to the lowest and best responsible vendor, provided their quote is reasonable and it is in the best interest of the Owner to accept it.
6. Each vendor shall be prepared, if so requested by the Owner, to present evidence of his experience, qualifications, and financial ability to carry out the terms of the contract.
7. Unless otherwise specified, the University reserves the right to award by individual items. Related items, or total, whichever it deems in its best interest.
8. **ACCEPTANCE OF PROPOSAL**

Only the issuance of a purchase order or a signed acceptance of a proposal constitutes acceptance on the part of the University.

1. **REJECTION OF QUOTES**

The Owner reserves the right to reject any and all quotes when such rejection is in the interest of the owner and to reject the quote of a vendor who is not in a position to perform the contract.

1. **INTERPRETATION OF CONTRACT DOCUMENT**

If any person contemplating submitting a quote for the proposed contract is in doubt as to the true meaning of any part of the specifications or other proposed contract documents, the vendor may submit to the office of Resources Management of Mississippi University for Women, a written request for an interpretation thereof. The person submitting the request for an interpretation thereof will be responsible for its prompt delivery. Any interpretation of the proposed document will be made only by an Addendum duly issued and a copy of such Addendum will be mailed or delivered to each person receiving a set of such documents. The Owner will not be responsible for any other explanations or interpretations of the proposed documents.

1. **EQUAL OR APPROVE EQUAL**
2. Where any article or thing is specified by proprietary name, trade name, and/or name of manufacturer, with or without the addition of such expressions as “Or Equal” or “Approved Equal”, it is to be understood that the article named or the equal thereof; and it is distinctly understood (1) that the Owner is to use his own judgment in determining from time to time whether or not any article or thing proposed to be substituted is the equal of any article or thing so specified; (2) that the decision of the Owner on all such questions shall be final; and (3) that in the event of any adverse decision by the Owner, no claim of any sort shall be make or allowed against the Owner.
3. Where a definite material is specified, it is not the intention to discriminate against an equal product made by another manufacturer. It is rather the intention to set a definite standard. Should the vendor intend to furnish another product as an equal to that specified, he must submit with his proposal for every item for which he intends to furnish another product from that given in the specifications, a complete specification showing name of manufacturer, sizes, quality of wood, finish, upholstering or other materials included and catalog number, if the manufacture lists the product by a catalog or plate number in any of his published literature. After the quotes are opened, all vendors, if requested, may be required to furnish complete samples of any or all items listed before an award is made.
4. A bound brochure should be submitted with the quote. Vendors will prepare this brochure showing pictures or cuts and complete manufacturer’s specifications on each item on which a quote form and must be identified by the item number shown in the quote form. Failure to submit this brochure will be considered sufficient grounds for rejecting the quote. Failure to comply with this procedure may be grounds to disqualify any quote.
5. Should any equal product, however, be accepted by the Owner and should this equal prove defective or otherwise unsatisfactory for the service for which it is intended within the guaranty period, the contractor shall replace the defective material with material on which the specifications require him to base his proposal, without cost to the Owner.
6. **RECYCLED MATERIALS**

If any product listed on this quote is available from recovered (recycled) materials, vendors are requested to submit quotes on recycled materials in addition to the brands mentioned or their equivalent as well as provide an estimated shipping date on both the recycled, specified or equivalent materials.

1. **DELIVERY OF MERCHANDISE**
2. All quotes will be quoted FOB University. No bid will be considered unless FOB terms are as stated. The purchaser has no storage space available; therefore, vendors must deliver as requested.
3. Vendors will state estimated delivery time for each item in bid.
4. **CASH TERMS**

University terms are 2%-10, Net 45 days. These terms shall prevail unless otherwise specified by the bidder.

1. **PAYMENT**

Assuming there is no prompt payment discount provision; payment will be made within 30 days from receipt of products in satisfactory condition, and receipt of the invoice.

1. **ADVANCE PAYMENT**

Mississippi University for Women is prohibited by law from making advance payments to any vendor other than state and federal agencies unless it is subscription or membership.

**THE UNIVERSITY RESERVES THE RIGHT TO REJECT ANY OR ALL QUOTES TO WAIVE INFORMATION**

**Quote**

I, the undersigned, certify that this quote does not violate any federal or state antitrust laws.

In compliance with the invitation, and subject to all conditions thereof, the undersigned offers and agrees, if this quote is accepted within \_\_\_\_\_\_\_\_ days from date of opening, to furnish any or all items quoted on at prices as set forth after the item and make delivery, within \_\_\_\_\_\_\_\_ days after receipt of order, delivered, all transportation costs included and prepaid and unless otherwise stated and accepted herein, I agree to complete this proposed contract in less than \_\_\_ days after issue date of purchase order.

Bidder should place an “X” before one of the following statements:

\_\_\_ This is a quote is for commodities or equipment to be sold to the entity and delivered as set forth herein.

\_\_\_ This is a quote for rental of equipment. I am in substantial agreement with the terms and conditions set forth in the attached Rental Agreement for Use by Mississippi Departments and Vendors, any requested deviations from these terms and conditions are set forth in an attached sheet. (Please note that deviations may cause the quote to be rejected)

\_\_ This is a quote for services. I am in substantial agreement with the terms and conditions set forth in the attached Personal Services Agreement, any requested deviations from these terms and conditions are set forth in an attached sheet. (Please note that deviations may cause the quote to be rejected)

Vendor quote information submitted by:

Printed Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Signature\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Delivery Date ARO\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_