

Section 15010 - Scope of Work
Removal of Air Handlers 32 and 26
Connection of AHU 32 Ductwork to AHU 25 Ductwork
Removal and Replacement of Air Handler 20
Replacement only of Air Handler 23

Bayou Building

The subject air handlers are located in the Bayou building mechanical rooms on the University of Houston-Clear Lake (UHCL) campus. This contract will be for the removal of air handler units designated as 32 and 26, the removal and replacement of Air Handler 20 and the connection of ductwork from demolished air handler 32 to existing air handler 25.. Contractors interested in bidding on this project will be given the opportunity to go with a representative of the UHCL to better understand the scope of work.

Locations of the air handlers as shown on the attached location plans are:

- Air handler 26 – 21 MR Demolish only
- Air handler 32 – 22 MR Demolish. Tie in ductwork and add 2 zone control units (furnished by contractor.)
- Air handler 20 – Central Plant electrical vault. Demolish and replace.
- Air handler 23 – 11 MR. No demolition. Replace only.

Once the contract is awarded, the contractor will be required to give weekly status reports to the UHCL representative.

The air handlers shall be removed during normal work hours. The unit will be removed through a pathway identified by UHCL representative. All demolition shall be done to limit impact on university operations. This may include construction covering to minimize dirt, dust, and debris. The work site shall be cleaned of debris daily, impact on University custodial staff must be kept to an absolute minimum.

Removal of the existing air handlers shall be the responsibility of the contractor. UHCL reserves the option to salvage of any wiring or mechanical equipment. Prior approval will be needed for a dumpster to be located at UHCL shipping and receiving to allow contractor to remove demolition debris.

Contractor shall furnish to the UHCL representative a work schedule as to allow the UHCL representative to coordinate with occupants that will be disrupted by this project. Advance notice of at least 3 days shall be required before any work can be started. UHCL representatives will have the option of stopping work if they feel that the demolition is affecting university occupants, until options can be discussed.

During the installation process, all routes to mechanical rooms are to be approved by UHCL. Air handler lifting or moving throughout the common areas of the university must be approved first by UHCL to make sure there is no impact on operations or safety of the building occupants. The contractor has responsibility for the condition of all equipment once he takes possession of units.

UHCL will not be responsible for damage to units once they have been given to the contractor. The contractor will take possession of these air handlers at staging area, which will be identified by UHCL representative.

Central plant operations will have to be shut down and water systems drained to facilitate removal and installation of block valves. This will be scheduled with the Director of Building Maintenance to limit impact on university operations. Contractor will make every attempt to perform as many valve changes as possible to minimize shutdowns.

The contractor shall furnish Siemens controls and appropriately sized control valves (no substitutions.), ABB Variable Frequency Drives (VFD) , required electrical connections, insulation, ductwork, piping connections and all other accessories required for a complete job.

The University will furnish the specified air handlers only.

Removal of piping shall go back to the first flange on supply lines and the last flange on return lines. Replacement of isolation valves shall be of gate design. All air handlers will have complete isolation capabilities with new, contractor installed, gate valves on supply, and return. These will be in addition to control valves. Gate valves shall be installed to give easy access to valve handles. All piping is to meet specifications. Contractor shall install a minimum of two welded ports $\frac{3}{4}$ inch in size on all lines before and after coils both hot and chill water. One $\frac{3}{4}$ inch welded port on each side of the control valves will be required

Control valves shall be supplied by the contractor and located on the leaving side piping and meet air handler coil flow rates from manufacturer of air handling units. Mount all control valves for easy access. Strainers shall be installed on the supply side of chill as well as hot water side of all coils. All piping shall be tested, verified, and signed off by UHCL representative to hold 100 percent of design pressure. The pressure test must be verified by the UHCL representative prior to reopening the system to the building loop. Prior to opening up air handlers to building loop system flushing of all coils will be verified by UHCL representative to make sure no debris exist in coils prior to opening up to main loop.

Piping insulation will be of the size and type currently used on existing pipe.

All ductwork will be removed back to location identified by UHCL representative. Locations will be clearly marked by UHCL representative. Contractor will be responsible for additional expense if they remove more ductwork than what was indicated by UHCL representatives. Duct size and gauge shall be consistent with gauge used on existing duct. All ducts are to be insulated on the outside of duct with 1-1/2-inch duct board. An allowance will be made for an offset on insulation. Canvas covering with existing paint color will be required. Paint all new ductwork to match existing. Any 90-degree transition shall have turning vanes installed. Static pressure of 7 inches maximum will be required. Contractor to be responsible to set sheave size to meet full motor RPM and amperage ratings. Allowances will be made by UHCL representative on a case-by-case basis.

Contractor shall verify proper conductor sizes from MCC panel to the new air handling unit. Old motor starters are to be removed at the MCC panel and replaced with appropriate sized breaker. Conductor shall be run directly from the MCC to the existing disconnects. These main

disconnects shall feed to VFD installed on wall. Variable frequency drives shall be installed by contractor and shall be of manufacturer acceptable to control contractor to allow for DDC controlling of air handling units through VFD. Drives must meet air handler manufacture specifications for horsepower ratings. Contractor in consultation with UHCL electricians will determine which circuits to use for the 110V lighting. Both UV and utility will be completed by the contractor. UV lighting in air returns will be required as part of this contract and the units offered must provide full coverage and adequate sterilization. Submit for review prior to installation.

Allowable variable frequency drives shall be:

ABB

Equal products by:

Siemens

Honeywell

Toshiba

May be considered as equals with substantiating documentation submitted under the requirements for substitutions at least ten days prior to the bid. Requests for substitutions after the bid date will be considered only if there is substantial benefit in both time, price or quality to the owner.

1. All drives must be compatible with Siemens Apogee Operating systems.
2. Fire alarm will be the responsibility of UHCL.
3. All fire sprinkler systems are the responsibility of UHCL.
4. Control systems will be the responsibility of UHCL.

Time is of the essence of this contract. The owner intends to issue a contract such that work can begin on or before December 13, 2011. It is important to the owner that work be complete and all new air handlers be operational by January 15, 2012. Meeting the time constraints of the owner will be a critical factor in the selection of the contractor.

ZONE CONTROL UNITS: The contractor shall furnish and install where shown Zone Control Units as follows: Acceptable Manufacturer - Siemens

300 SQUARE FOOT STORAGE CLOSET (200cfm and 7500btu approx.)

(1) EIGHT INCH ZCU UNIT ZH30850202-ZB103130

DAMPER ACTUATOR: NSR 3 POINT FLOATING GDE131.1U

CONTROLLER: P1 TEC 540-100

ATC VALVE ACTUATOR: 3 POINT FLOATING 259-020xx

WIRELESS OPTION

DUCT SENSOR: QAM-1035 WITH REHEAT

WIRELESS ROOM SENSOR

1 INCH THERMOPURE ISULATION

8X8 CAM LOCK ACCESS DOOR

HANGER BRACKETS INCLUDED

1100 SQUARE FOOT CLASSROOM (600cfm and 20000btu approx.)

TWELVE INCH ZCU UNIT ZH31250202-103130

DAMPER ACTUATOR: NSR 3 POINT FLOATING GDE131.1U
CONTROLLER: P1 TEC 540-100
ATC VALVE ACTUATOR: 3 POINT FLOATING 259-020xx
WIRELESS OPTION
DUCT SENSOR: QAM-1035 WITH REHEAT
WIRELESS ROOM SENSOR
1 INCH THERMOPURE ISULATION
8X8 CAM LOCK ACCESS DOOR
HANGER BRACKETS INCLUDED

EXECUTION: Perform all work with qualified personnel. Protect University finishes throughout all operations. Coordinate with the Director of Building Maintenance on all shut-downs or power outages. Provide a weekly updated schedule for review.

END OF SECTION