ADDENDUM #1

November 6, 2008

Re: HACC, Central Pennsylvania's Community College
Harrisburg Campus
09-13 Whitaker Hall Air Handler #3 Fan & Coil Replacement

From: Eastern pcm, LLC
Construction Manager – HACC
212 Locust Street, Suite 604
Harrisburg, PA 17110

To: All Planholders

This Addendum is hereby made part of the Request for Proposal dated October 28, 2008, for the above referenced project. The provisions of this Addendum are intended to supplement the provisions of the Bid Documents and/or supersede them where contradictory thereto.

This Addendum contains changes to the requirements of the Request for Proposal. Such changes shall be incorporated into the Request for Proposal and shall apply to work with the same meaning and force as if they had been included in the original Request for Proposal. Where this Addendum modifies a portion of a paragraph or phrase of the Request for Proposal, the remaining unmodified portion of the paragraph or phrase shall remain in force.

The conditions and terms of the Request for Proposal shall govern work described in this Addendum. Whenever the conditions of work, or the quality or quantity of materials or workmanship are not fully described in this Addendum, the conditions of work etc. included in the Request for Proposal for similar items of work shall apply to the work described in this Addendum. If no similar items of work are included in the Request for Proposal, the quality of material and workmanship shall be subject to the written acceptance of the Design Professional.

DRAWINGS

Item 1.1 Plan Sheet M-4: Add the following note under Scope of Work:

- "Demolish the existing AHU-3 fan and replace it with an approved fan system."

SPECIFICATIONS

Item 1.2 DELETE: "Fan Specification", 3 pages, from the Request for Proposal.

ADD: Specifications "Section 15830 – PLENUM FAN ARRAYS", 4 pages, to the Request for Proposal, copy attached.

END OF ADDENDUM

SECTION 15830

PLENUM FAN ARRAYS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Plenum Fan array.

1.2 REFERENCES

A. American Bearing Manufacturers Association:
   1. ABMA 9 - Load Ratings and Fatigue Life for Ball Bearings.
   2. ABMA 11 - Load Ratings and Fatigue Life for Roller Bearings.

B. Air Movement and Control Association International, Inc.:
   1. AMCA 99 - Standards Handbook.
   2. AMCA 204 - Balance Quality and Vibration Levels for Fans.
   3. AMCA 210 - Laboratory Methods of Testing Fans for Aerodynamic Performance Rating.
   4. AMCA 300 - Reverberant Room Method for Sound Testing of Fans.
   5. AMCA 301 - Methods for Calculating Fan Sound Ratings from Laboratory Test Data.

C. American Refrigeration Institute:
   1. ARI 1060 - Air-to-Air Energy Recovery Ventilation Equipment Certification Equipment Program.

D. National Electrical Manufacturers Association:
   1. NEMA MG 1 - Motors and Generators.
   2. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum).

E. Underwriters Laboratories Inc.:
   1. UL 705 - Power Ventilators.

1.3 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that meet the intent of the design and operational/performance specifications. Acceptable manufacturers include the basis of design manufacturer or approved equal.

B. Basis of Design - *Fanwall System,* as manufactured by *Huntair Inc.*(Contact Coward Environmental Systems 717-664-0106).

1.4 SUBMITTALS

A. Refer to Section 01330 - Submittal Procedures for submittal requirements.

B. Shop Drawings: Indicate size and configuration of fan assembly, mountings, weights, ductwork and accessory connections.

C. Product Data: Submit data on each type of fan and include accessories, fan curves with specified operating point plotted, power, RPM, sound power levels for both fan inlet and outlet at rated capacity, electrical characteristics and connection requirements.

D. Manufacturer's Installation Instructions: Submit fan, variable frequency drive, and Control Panel manufacturer’s instructions.

1.5 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: Submit instructions for lubrication, motor and drive replacement, spare parts list, and wiring diagrams.

1.6 FIELD MEASUREMENTS

A. Verify field measurements prior to fabrication.

1.7 WARRANTY

A. Furnish five (5) year manufacturer’s warranty for fans.

1.8 EXTRA MATERIALS

A. Furnish two sets of belts for each fan.

PART 2 PRODUCTS

2.1 Plenum Fan Array

A. The plenum fan array (PFA) shall consist of multiple, direct driven, arrangement 4 plenum fans constructed per AMCA requirements for the duty specified, (Class I, II, or III). All fans shall be selected to deliver the specified airflow quantity at the specified operating Total Static Pressure and specified fan/motor speed. The PFA array shall be selected to operate at a system Total Static Pressure that does not exceed 90% of the specified fan’s peak static pressure producing capability at the specified fan/motor speed. Each fan/motor “cube” shall include an 11 gauge, A60 Galvanized steel intake wall, 14 gauge spun steel inlet funnel, and an 11 gauge G90 Galvanized steel motor support plate and structure. The fan intake wall, inlet funnel, and motor support structure shall be powder coated for superior corrosion resistance. All motors shall be standard pedestal mounted type, ODP, T-frame motors selected at the specified operating voltage, RPM, and efficiency

as specified or as scheduled elsewhere. All motors shall include isolated bearings or shaft grounding. Each fan/motor cartridge shall be dynamically balanced to meet AMCA standard 204-96, category BV-5, to meet or exceed Grade 2.5 residual unbalance.

B. The PFA array shall be provided with acoustical silencers that reduce the bare fan discharge sound power levels by a minimum of 15 db re 10^-12 watts throughout the eight octave bands with center frequencies of 125, 250, 500, 1000, 2000, 4000, and 8000 HZ when compared to the same unit without the silencers. The silencers shall not increase the fan total static pressure, nor shall it increase the airway tunnel length of the Air Handling Unit when compared to the same PFA unit without the silencer array.

C. The fan array shall consist of multiple fan and motor ”cubes”, spaced in the air way tunnel cross section to provide a uniform air flow and velocity profile across the entire air way tunnel cross section and components contained therein. Each fan cube shall be individually wired to a control panel containing a single VFD, as specified elsewhere, for the total connected HP for all fan motors contained in the FWT array. Wire sizing shall be determined, and installed, in accordance with applicable NEC standards.

D. The PFA shall produce a uniform air flow profile and velocity profile within the airway tunnel of the air handling unit not to exceed the specified cooling coil and/or filter bank face velocity when measured at a point 12” from the intake side of the PFA intake plenum wall, and at a distance of 48” from the discharge side of the PFA intake plenum wall.

E. Each fan/motor assembly shall be removable through a 31” wide, free area, access door located on the discharge side of the fan wall array.

2.2 ELECTRICAL

A. Provide a complete electrical and control system required to run the plenum fans including all equipment, material, electrical enclosure, electrical components and electrical labor.

B. Electrical designs shall be in accordance with the NEC, UL 508A, and Local Codes.

2.3 MOTOR CIRCUIT PROTECTION

A. All motors array shall be provided with individual Motor Protection for thermal overload protection. All motor circuit protectors shall be located in main enclosure.

B. Motor circuit protector enclosure must be located and mounted at a minimal distance from motors.

2.4 VARIABLE FREQUENCY DRIVE CONTROL

A. Provide a single Variable Frequency Drive to start and run all motors. The Variable Frequency Drive shall be sized accordingly to start and hold all motors. Provide short circuit protection of motor circuits through means of using fuses with fuse blocks or circuit breakers.

B. The Variable Frequency Drive shall be mounted in a dedicated enclosure for connection to single point power. Variable Frequency Drive enclosure shall be provided with a main disconnecting means. Provide appropriate cooling of enclosure.

C. Motor circuit protectors shall be used for each motor.

D. Provide three phase power distribution wiring and control wiring as required. All three phase power components shall have a rating listed for Short Circuit Current Rating. Provide control wiring and components required for complete operation of fan wall system. System controls, controls components and control wiring shall include but is not limited to Auto mode or manual mode, CFM control mode, or BMS control mode. Controls and control wiring shall include auto start/stop, manual start stop, life safety shutdown, smoke shutdown, system alarms and VFD alarms. All control wiring shall be included in VFD enclosure provided with system.

END OF SECTION