

Request for Proposal

Engineering Services

HACC, Central Pennsylvania's Community College Harrisburg Campus

Internal Emergency Mass Notification System & Fire Alarm Upgrades #10-37

General Information

The Harrisburg Campus of HACC, Central Pennsylvania's Community College is comprised of 14 buildings on 215 acres. HACC seeks to install a mass notification system (EMNS) and upgrade their fire alarm system adapting and using the existing infrastructure to the maximum extent possible. The Campus requires an electrically supervised internal EMNS and an upgrade to the existing fire alarm to comply with all current and applicable codes.

The services to be provided will be full service engineering for the purpose of designing the Internal EMNS and fire alarm system upgrades for all 14 buildings on the Campus, including repairs to the site if disturbed under the installation of the project.

The engineer will be responsible for designing the system based on the following criteria:

1. Integrating the internal EMNS and fire alarm system
2. Maintaining basic life safety services during construction
3. Designing a multiple zone system for notification and annunciation
4. Anticipating expansion with a fully addressable system
5. Using and adapting existing infrastructure to the maximum extent possible

Additional responsibilities include assisting the owner with permitting and performing periodic inspections of the project including attendance at pre-bid, pre-construction, and periodic construction meetings.

The following criteria are to be considered when preparing a response to this RFP:

- A. The engineering services to be provided are full service. Bidders' proposals must include all services required to produce construction/bid documents that fully addresses every aspect of the work including, but not limited to, civil, architectural, structural, mechanical and electrical work.
- B. The College's Project/Construction Manager, Eastern PCM, LLC, will be contracted by the college to provide construction management services in accordance with the AIA B801 CM/a Agreement Between Owner and Construction Manager.
- C. The Engineering Firm will provide services consistent with the AIA B141 CM/a – Agreement, as modified, Between Owner and Architect – Engineer will be substituted for Architect.
- D. Division 0 and 1 of the project manual/specifications will be provided by HACC through Eastern PCM, LLC. The Engineering Firm will cooperate with Eastern PCM, LLC to insure proper coordination between Divisions 0 and 1 and construction plans.
- E. The Engineer will provide all technical specifications in MS Word format and all plans in AUTO CAD - .dwg format, to Eastern PCM, LLC, electronically, for incorporation into the Project Manual.

- F. Eastern PCM, LLC will distribute plans and specifications and administer the bid process.
- G. Plans and specifications are to be prepared for a “Public Bid, Design-Bid-Build” project delivery.
- H. A report currently being prepared, detailing the conditions of the underground conduit between buildings, will be provided to the successful bidder.

Pre-Bid Meeting

A Pre-Bid meeting and site visit will be held on April 5, 2010 at 8:30am at the Harrisburg Campus. Interested parties should report to the College Service Center located on Industrial Road behind the Harrisburg Campus.

Responses Due

Responses to this Request for Proposal are due no later than 2:00 pm on April 13, 2010 and are to be addressed and delivered to:

Response to RFP – Internal Emergency Mass Notification System
& Fire Alarm Upgrades: Engineering Services, #10-37
Purchasing Department
Harrisburg Area Community College
Whitaker Hall, Rm. 130
Harrisburg, PA 17110
Attn: Mr. Garry Crider

Responses may be faxed or e-mailed. Three (3) original copies must follow within 24 hours.

Questions

All questions regarding this Request for Proposal are to be in writing and directed to:

Mr. Greg Lamay
Eastern PCM, LLC
Phone: (717) 233-3816
Fax: (717) 233-1666
glamay@easternpcm.com

Project Description

The assignment consists of providing all engineering services and approvals required to install an electrically supervised Internal Emergency Mass Notification System and an upgraded fire alarm system in all 14 buildings at the Harrisburg Campus of HACC.

Schedule

- | | |
|-------------------------------------------|------------------------------------|
| 1. Proposals due to HACC Purchasing | April 13, 2010 at 2:00pm |
| 2. Award of Engineering Services contract | May 5, 2010 |
| 3. Completion of Construction Documents | June 20, 2010 |
| 4. Bid Period – Expedited | June 20 – July 9, 2010 |
| 5. Construction | July 20 – February 20, 2011 |
| 6. Project Closeout | February 21, 2011 – April 20, 2011 |

Proposal Requirements

Provide a comprehensive outline of the scope of services that your firm will provide in order to accomplish the tasks as described in this RFP. Your response will at a minimum contain the following:

- A. Detailed description of the scope of services for all phases of your work
- B. Schedule for the completion of the engineering services
- C. Steps and dates for the approvals required by the City of Harrisburg
- D. Lump Sum Fee for the engineering services proposed to complete the assignment
- E. Estimated cost of reimbursable items and a listing of same
- F. Fee schedule for additional services. If needed; include hourly rates and unit prices for reimbursable items.

Evaluation Process

The College will review all responses received and evaluate the responses based upon the criteria set forth in the Request for Proposal.

Exhibits

- | | |
|-------------|----------------------------------------------------------------------------|
| Exhibit 'A' | Specifications for Fire Alarm and Detection System: Electrical Contractors |
| Exhibit 'B' | Site Plan – Harrisburg Campus |
| Exhibit 'C' | Harrisburg Campus Building Data |

EXHIBIT 'A'

SPECIFICATIONS FOR INTERNAL EMERGENCY MASS NOTIFICATION SYSTEM AND UPGRADES ELECTRICAL CONTRACTORS

FIRE ALARM AND DETECTION SYSTEM

PART 1 – GENERAL

1.01 DESCRIPTION OF WORK

- A. Extent of fire alarm and detection system work shall be as described in this specification, as shown on the drawings and as required by code requirements. The contractor and equipment supplier shall review all project plans and specifications completely and be familiar with the requirements of the system. All required components to cause operation of the system as specified shall be supplied and installed.
- B. The system described in this specifications shall use digital transmissions between the CPU/transponder and the peripheral devices. Systems using non-digital technology as the principal means of supervision shall not be considered a meeting the requirements of this specification. Analog supervision of signaling devices and non-digital devices such as tamper switches and flow switches is acceptable.
- C. The system shall conform to all applicable sections of the NFPA including, but not limited to sections 72-A, B, C, D, E, F and the Life Safety Code section 101. The system shall also comply with the National Electric Code (NEC), Standard Building Code, local codes, UL wiring criteria, Americans with Disabilities Act (ADA) and directions of the Fire Marshal.

1.02 QUALITY ASSURANCE

- A. Each and all items of the Fire Alarm System shall be listed as a product of a SINGLE fire alarm system manufacturer under the appropriate category by Underwriters' Laboratories, Inc. (UL), and shall bear the "U.L." label. All control equipment is to be listed under UL category as a single control unit. Partial listing shall NOT be acceptable.
- B. The equipment and installation supervision furnished under this specification is to be provided by a supplier who has been engaged in production of this type (software driven) of equipment for at least ten (10) years, and has a fully equipped service organization within fifty (50) miles of the installation.
- C. All control equipment is to be listed under U.L. category UOJZ as a single control unit. Partial listing shall not be accepted. The system controls shall be UL listed for Power Limited Applications per NEC 760. All circuits must be marked in accordance with NEC article 760-23.

1.03 SYSTEM OPERATION

- A. Each component of the fire alarm system shall be supervised for improper operation including open or short circuits by the fire alarm panel. The fire alarm panel shall also supervise itself for low battery voltage and loss of normal building power. Upon any of the above conditions, the trouble indicator on the fire alarm panel shall indicate the improper status by both an audible and visual signal. The audible indication shall continue until the condition is acknowledged by an operator at the fire alarm panel. Visual indication shall continue until the trouble condition is corrected.
- B. Upon confirmation of an alarm from any initiation device, the following functions shall be performed without delay:
 - 1. All alarm signaling devices shall sound until silenced by an operator at the fire alarm panel or after ten (10) minutes of operation. Silencing signals shall not prevent the signals from sounding on a subsequent alarm.
 - 2. Display an alarm status on the alphanumeric display of the fire alarm panel and sound an audible signal at the panel. Signal shall sound until alarm is acknowledged by an operator.
 - 3. Shut down all required air handling units. All smoke dampers shall be closed and the smoke removal system shall be activated.
 - 4. Transmit a signal to the local fire department having responsibility by the most expedient method acceptable to the local authority having jurisdiction unless directed by a specific method within these specifications or drawings.
 - 5. Cause doors held open electrically to close without time delay.

1.04 POWER REQUIREMENTS

- A. The control panel shall receive 120 VAC power via a dedicated fused disconnect circuit.
- B. The system shall be provided with sufficient battery capacity to operate the entire system upon loss of normal 120 VAC power in a normal supervisory mode for a period of twenty-four (24) hours with five (5) minutes of alarm indication at the end of this period or as required.
- C. Circuits requiring system operating power shall be 24VDC and individually fused at the control panel.

1.05 SUPERVISION AND WIRING

- A. All pull stations, smoke detectors, heat detectors, remote control modules (RCM), and remote monitoring modules (RMM) shall be supervised using digital messages between the Fire Alarm Panel and the device. Each device shall be individually addressed and shall have a parity checksum test that must be passed before any digital message is considered valid. Any loss of correct communications with any device shall be indicated as a trouble condition on the Fire Alarm Panel.

- B. Monitor and signaling devices (speakers, strobes, and tamper switches, flow switches, etc.) shall be supervised by means of a class "B" circuit. This includes circuits from the Fire Alarm Panel, remote control modules and remote monitoring modules. Any faults in this circuit shall be indicated as a trouble condition on the Fire Alarm Panel.
- C. All digital communications wiring shall be as recommend by the manufacturer with a minimum size of #18 shielded AWG. All data wiring shall be shielded will a foil wrap and contain an integral drain wire. The system shall allow for "T" taps in the data wiring. Contractor shall verify that maximum run lengths are not exceeded and shall provide and install repeaters as necessary.
- D. Power, signal and other class "B" circuit wiring shall be sized as recommended by the manufacturer with a minimum size of #14 AWG. Provide end-of-line resistors where necessary and required; Ohmic values as required by the manufacturer.

1.06 PRODUCTS

A. FIRE ALARM CONTROL PANEL

The control panel shall be software programmable via the front panel for input/output functions and shall contain a historical event log. Control panel status and custom labels shall be displayed by an alphanumeric LCD display (80 characters). Front panel switches shall provide control and programming. Displayed information indicates which zones are in alarm, supervisory, or trouble and also indicates additional panel status such as auxiliary output per zone, low battery, ground fault, and other pertinent information. System Walk Test operation that shall allow the system to be tested by a single person.

B. VOICE FIRE ALARM PANEL

1. The system shall incorporate one-way voice communication and tone generating capabilities.
2. A central audio control module shall be provided where required for the necessary alarm message/tone generation, main and remote microphone connections and if needed mixer/pre-amplifier circuits. Continuous supervision shall be provided along with specific information as to the type of failure should a problem occur (eg. main microphone trouble, tone trouble, etc.). Audio outputs shall have individual gain control.
3. A hand-held, push-to-talk microphone shall be provided, recessed within a protective panel-mounted enclosure. The microphone shall be a noise-cancelling communication type with a frequency range of 200 Hz to 4000 Hz and shall be equipped with a self-winding five foot coiled cable. An LED indicator shall be provided to indicate the microphone push-to-talk button has been pressed and speaker circuits are ready for transmission. The microphone shall be supervised for disconnection.
4. An audio control switch module shall be furnished to provide manual access to audio operations for authorized personnel. The module shall include an "ALL Circuits" switch, "Aux Tone 1" switch, "Aux Tone 2" switch, tone generator stop switch, and

"Audio Trouble Reset" switch. These switches and associated LED indicators shall be supervised for disarrangement or failure.

5. Audio power amplifiers shall be furnished with a self-contained filtered 24VDC power supply, transformer, and amplifier monitor circuits. The amplifiers shall provide a 25 Volt RMS output with a frequency response of 120 Hz to 12,000 Hz. Provide sufficient amplification to operate all system speakers simultaneously. The speaker circuits shall be capable of supplying 25 Volt RMS audio power from the system amplifiers. Supervision for open, short, or ground fault conditions shall be provided. Individual and distinct trouble indications shall be provided for each fault. Provide [one circuit for each zone or area of distinct communication] or [the circuits identified in the schedule on the electrical plans].
6. Digitized tones, minimum of [8], for alarm (slow whoop) and auxiliary requirements (wail, horn, chime, etc.) shall be provided. A pre-recorded digitized voice message capability is to be provided for automatic transmission to building occupants during emergency alarm conditions. The automatic message player shall not rely on a tape or other mechanical means of transmitting the evacuation message. A standard evacuation message shall be provided under this contract, however, the message player must be capable of transmitting a custom message of up to five (5) minutes long.
7. A self-contained speaker will provide testing of the message(s) without disturbing the occupants of the facility.
8. A remote microphone/annunciator command location where shown on the electrical plans shall be provided to duplicate the manual voice transmission capability of the main fire alarm control panel.

C. AUTOMATIC VOICE EVACUATION SEQUENCE

1. The audio alarm signal shall consist of an alarm tone for a maximum of 15 seconds followed by automatic pre-selected voice emergency messages. At the end of each voice emergency message, the alarm tone shall resume. The alarm tones shall sound alternately until the alarm silence switch at the fire alarm control panel has been operated.
2. All audio alarm operations (speaker circuit selection and alarm tone/voice message timing variations) shall be activated by the system software so that any required future changes to the evacuation sequence can be facilitated by authorized personnel without any component rewiring.

D. MANUAL VOICE EMERGENCY MESSAGE SEQUENCE

1. The system shall be configured to allow selective voice paging, minimum [1] circuit per floor. Upon activation of any speaker manual control switch, two (2) attention getting beeps shall sound over the speakers indicating an impending emergency voice message will occur.

2. If any speaker manual control switches are activated, the control panel operator shall be able to make announcements via the push-to-talk paging microphone over the preselected speakers.
3. Facility for total building evacuation and paging shall be provided to allow for activation of all speakers. This shall be accomplished by the means of an "All Circuit" switch.

E. REMOTE ANNUNCIATOR(S)

1. Where shown on the electrical plans, provide and install a Annunciator.
2. The annunciator(s) shall provide an alphanumeric, 80 Character Liquid Crystal Display (LCD) that provides clear language information as to the status (alarm, trouble, etc.), type of alarm (smoke detector, pull station, etc.), number of alarms on the system, and a custom location label.
3. The annunciator shall communicate to the control panel over one twisted, shielded pair of wire and operating power shall be 24VDC and be fused at the control panel. Point-wired annunciators will not be considered as equal. Status information of each device may be individually displayed to investigate specific point detail.
4. Four programmable control switches with associated LEDs are available for custom control functions. Manual Control Switches shall function and be the same as those on the annunciator.
5. Addressable pull stations will contain electronics that communicate the station's status (alarm, normal) to the control panel over two wires which also provide power to the pull station. The address will be set on each station. Pull stations shall be single action.

F. ALARM SENSORS AND ADDRESSABLE SENSOR BASES

1. Ceiling, Duct, heat sensors and addressable smoke sensors shall be of the photoelectric type and shall communicate actual smoke chamber values to the system control panel.
2. Each sensor shall contain a magnetically actuated test switch to provide for easy alarm testing at the sensor location.
3. Each sensor shall be scanned by the control panel for its type identification to prevent inadvertent substitution of another sensor type.
4. The control panel shall operate with the installed device but shall initiate a "Wrong Device" trouble condition until the proper type is installed or the programmed sensor type is changed.

G. ADDRESSABLE ALARM HEAT SENSOR

1. Addressable temperature sensors shall sense within a temperature range of 32EF to 158EF.

2. The control panel will be capable of sensing either a set point of 135EF, or a rate-of-rise of [15EF] [20EF] per minute for fire sensing. For utility sensing, a set point may be chosen within the stated range and the control panel programming will be capable of using that information to determine specific response such as warning of failure of local temperature controls.

H. ADDRESSABLE ZONE MODULES

1. Zone Modules shall only be used for monitoring of water flow, valve tamper, and for control HVAC systems.
2. Individual Addressable Module (IAM) shall be used to monitor devices like sprinkler , kitchen hood and Halon Systems. Only (1) contact per Monitor Module shall be permitted.
3. Control Addressable Module (CAM) shall be provided with Form C contacts for interfacing HVAC devices, elevator/sprinkler control to an addressable signaling line circuit for non-supervised control.

I. ADDRESSABLE DUCT HOUSINGS

1. Duct Housing with a programmable relay for HVAC Control. This programmable relay shall be programmed to operate the air handling unit and shall not require [1] of the [CPU] addresses.

J. ADRESSABLE SENSOR BASES

1. Each sensor base shall contain a LED that will flash each time it is scanned by the control panel (once every 4 seconds). When the control panel determines that a sensor is in the alarm or a trouble condition, the control panel shall command the LED on that sensor's base to turn on steady indicating the abnormal condition. Sensors which do not provide a visible indication of an abnormal condition at the sensor location shall not be acceptable.
2. Sensor bases, as shown on the plans, shall be provided with a relay driver output that is to be controlled either automatically or manually from the control panel. This programmable output shall not require [1] of the [CPU] addresses.

K. AUDIO VISUAL XENON STROBE / HORN WALL MOUNT AUDIO VISUAL UNIT.

All strobes shall be synchronized and shall be 15-cd minimum. Horns shall be rated 91-db at 10'-0".

L. VISUAL ONLY XENON STROBE - MODEL 4904-9331 WALL MOUNT.

1. Visual Only Xenon Strobe Unit.
2. Strobes shall be synchronized and shall be 15-cd minimum.

3. Strobe units shall mount to the same backbox as the audio/visual combination unit.

M. WATER FLOW / TAMPER / PIV SWITCH

1. If these devices are in the Mechanical Specifications, the SPRINKLER CONTRACTOR shall furnish and install these devices. The ELECTRICAL CONTRACTOR shall make the electrical connections.

N. DOOR HOLDERS

Wall Mount 24VDC type Door Holders unless the door holders are specified to be furnished under another section. In this case the OTHER CONTRACTOR shall furnish and install the devices. The ELECTRICAL CONTRACTOR shall make the electrical connections.

O. GRAPHICS COMMAND CENTER (CGS) (Located in Security)

1. System should include all system events and automatically and manually display customer specified graphic representations and condition of zone for this project. The system shall be U.L listed to Standard 864 as supplemental equipment to all compatible Fire Alarm Control Panels connected. The system shall include screens which will represent each wing of each floor. Travel keys shall be available to allow selection of further system detail. Travel keys shall be user defined for selection of the next or previous screen as desired. Multiple levels of screen selection shall be available to allow for direct selection of the desired screen without accessing intermediate screens. The CGS shall include user-prompting messages, which minimize operator time, reduce training requirements, and eliminate typing errors where keyboard response is required. From the mouse, the operator shall be able to:
 - a. Silence audible and extinguish visible appliances in the affected area.
 - b. Perform manual operation of system(s) control points.
 - c. View the most detailed level of graphic display and return in one step.
 - d. Request the "HELP" menu.
 - e. Acknowledge all alarm and return-to-normal conditions.
 - f. Select the individual message screens.
 - g. Set system time and date.
 - h. Reset system alarm points.
 - i. Perform editing functions.
 - j. Perform operator log-in/log-off sequence.
 - k. Display list menus.
2. There shall be a remote Graphics command center located in the facilities building.

1.07 EXECUTION AND INSTALLATION

- A. Provide and install the system in accordance with the plans and specifications, all applicable codes and the manufacturer's recommendations. All wiring shall be installed in strict compliance with all the provisions of NEC - Article 760 A and C, Power-Limited Fire Protective Signaling Circuits or if required may be reclassified as non-power limited and wired in accordance with NEC-Article 760 A and B. Upon completion, the contractor shall so certify in writing to the owner and general contractor.

- B. All junction boxes shall be sprayed red and labeled "Fire Alarm". Wiring color code shall be maintained throughout the installation.
- C. Installation of equipment and devices that pertain to other work in the contract shall be closely coordinated with the appropriate subcontractors.
- D. "Wire nut" type connectors shall not be used anywhere in the fire alarm system wiring. All wiring connections will be made with the use of compression type, barrier, terminals, Ideal Industries #89-608 or approved equal and sized to fit the wiring configuration.
- E. The fire alarm panel shall be programmed with a specific description for each device, including device type, room name, and room number using the owner's final room numbering scheme, which may differ from the architectural plans.

1.08 SYSTEM TESTING

- A. The completed system shall be fully tested by the contractor and the manufacturer's CERTIFIED technical representative in the presence of the owner's representative. Upon completion of a successful test, the contractor shall so verify in writing to the owner, architect, and general contractor.
- B. The following test shall be performed by the Fire Alarm Manufacturer's authorized representative. Each and every device shall be tested for its intended function. Verify that each device is located in its appropriate location. Written verification of this test shall be provided to the owner, architect, and general contractor. This test shall be performed in accordance with NFPA 72 National Fire Alarm Code 1993.
- C. The fire alarm supplier shall own and maintain a smoke detector analyzer for on site sensitivity testing of smoke detectors per NFPA. The analyzer shall be made available to the owner for such tests.

1.09 SYSTEM SERVICE SUPPORT

- A. The system's supplier must employ factory trained technicians and maintain a service organization within 50 miles of the job site. This organization must have a minimum of 10 years experience selling and servicing fire alarm systems.

1.10 SYSTEM TRAINING

- A. Personalized instructions to the owner's representative shall be provided by a factory-trained representative of the equipment supplier.

1.11 WARRANTY

- A. The equipment and wiring shall be warranted to be free from electrical and mechanical defects for a period of one (1) year commencing with start-up and owners beneficial use of any portion of the system.

EXHIBIT 'C'

Harrisburg Campus Building Data

	Building Name	Approx . Sq. Ft	# of Floors
1	Whitaker Hall	87,064	3
2	Blocker Hall	90,123	4
3	Childcare Center	12,000	1.5
4	Stabler Hall	9,515	1
5	Cooper Student Center	62,289	2.5
6	McCormick Library	36,892	3
7	Lehrman Arts Center	68,381	2
8	Overholt Bookstore	12,000	1
9	Hall Tech	59,468	3
10	Evans Gym	57,014	1.5
11	Service Center	37,843	1
12	North Hall	59,213	2
13	Mumma Hall	41,841	3
14	Select Medical Pavilion	52,000	2