



Los Angeles Community College District Design Standards

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LACCD Facilities Design Standards – Energy Management System (EMS) Campus Facility Standards Cross- Reference Div. 25

GENERAL - ITEMS ARE NUMBERED FOR EASE OF REFERENCE

Energy Management Systems (“EMS “) are sole-sourced by college – No substitutions

- East Los Angeles College – Alerton-Climatec
- Los Angeles City College _ Alerton-Climatec– Niagara
- Los Angeles Harbor College – Alerton-Climatec
- Los Angeles Mission College – Alerton-Climatec
- Pierce College – Alerton-Climatec/Johnson Control
- Los Angeles Southwest College – Alerton-Climatec
- Los Angeles Trade-Technical College – Siemens – change in progress
- Los Angeles Valley College – Automated Logic Control
- West Los Angeles College – Siemens

Basic elements to be included in the design and installation – Items are numbered for ease of reference

1. The contractor shall provide a written Sequence of Operations that describes in detail the Sequence of Operations for each piece of equipment and operation within the whole system. The Sequence of Operations must be a Word document. A flow chart must accompany the Word document. The Sequence of Operations must be easily understood by the M & O staff.
2. The contractor shall provide the following training to the M & O personnel. Tech support shall be provided by telephone and/or on-line for a minimum of five (5) years. Updated software shall be provided for a minimum of five (5) years.
 - a. Initial Sequence of Operation training
 - i. Orientation
 - ii. Central Plant Equipment
 - b. End of Project Training Formal Training
 - i. New Equipment – Operation and maintenance
 - ii. New Sequence of Operations
 - c. Formal Training
 - i. Level 1 – Basic
 - ii. Level 2 – Intermediate
 - iii. Level 3 Programming
3. The system shall provide chilled and hot water temperature readings in and out of each building with the default reading being in Fahrenheit.



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4. The system shall provide sensors indicating the percent (%) of open for each damper.
5. The system shall provide one sensor per data point.
6. The system shall provide simple remote access, including alerts and notifications, via internet Web based protocol. Mobile application for real time access to sensor, controller, and equipment data through use of standard communication or data exchange protocols.
7. The system shall be easily programmable with the ability to program each room.
8. The system shall have capabilities for modernization within the existing system.
9. There shall be provision for system growth. The system shall be scalable.
10. The system shall retain an audit trail of users, alarms and responses. The audit trail shall be easily accessed.
11. All valve and damper actuators shall be digital.
12. Dedicated controllers shall be provided for each piece of major equipment.
13. All control components shall be digital.
14. The control system shall utilize close loop control, full monitoring of components status and incorporate self-diagnostic and fault detection feature to automatically alert M & O Personnel.
15. Graphic and control monitoring and audit trail shall be WEB based.
16. All instructional areas including but not limited to classrooms, labs, gym, auditorium and lecture hall shall be individually zoned.