28 Electronic Safety and Security

NOTE: This is a new section, which includes content from previous sections of the KU Design Standards, along with appropriate revisions and updates. Significant revisions or additions to the previous standards are highlighted in italics.

GENERAL

Designers shall verify that all applicable portions of these standards are incorporated into the project’s design, drawings, specifications and final construction. Requests for variances from these standards shall be submitted in writing to the DCM Project Manager, using the KU Standards Variance Request Form found in Appendix A1.1, for review and written approval or rejection as indicated on the form.

RELATED DOCUMENTS & REQUIREMENTS

Refer to the following for requirements that also apply to work of this section.

- Division 1 - General Requirements: refer to sections regarding construction testing and field quality control requirements.
- Division 8 – Openings: Designers shall coordinate access control provisions with the hardware schedule and other provisions of this Division.
- Division 26 - Electrical
- Division 27 - Communications
- Appendix A28.1 - Fire Alarm Standard of Practice: Designers shall develop each project’s fire alarm system in accordance with these guidelines.
- Appendix A28.2 - Standard Fire Alarm Specification: Designers are required to download and use this as the basis of each project specification, edited as required to reflect each project’s specific needs.
- Appendix A28.3 - Fire Alarm Standard Graphic Symbols: Designers are required to download and use these KU-standard symbols as the basis of their construction document graphics and symbols.

GENERAL

- Engineered System Definitions: The University has established the following distinction between security and access control systems. Security Systems include those non-programmable devices that monitor the occupancy status of a secured area (including motion detectors) as well as those devices that monitor the positions of doors, windows and gates located at the perimeter of a secured area (including magnetic contact switches) or that monitor other security conditions (such as glass break monitors).
Access Control Systems: include equipment that is capable of reading encoded data from personalized ID cards and interrogating programmed databases to determine an individual’s authority to gain access to the secured area.

Scope of Systems: Requirements for security and access control will be determined on a project-by-project basis. The Designer should determine, through discussions with University personnel, if the project programming has included a requirement for either security or access control equipment. All systems shall be based solely on hardware, software, devices and installers, as applicable, identified by the University as approved, standard systems.

Initial Design Review Meeting: The DCM Project Manager will schedule a meeting to review the proposed scope of security/intrusion detection and/or access control systems and/or CCTV surveillance for each KU project, typically during the Design Development phase. Attendees should include representatives from the following:

- University Fire Marshal
- KU Public Safety Office
- KU client group (including departmental facility managers)
- A/E Project Designer (typically architect and electrical engineer)
- KU Card Center
- Vendors (for security and/or access control systems)

System Design and Installation: Security/intrusion detection, access control and CCTV surveillance systems shall be designed and installed as turn-key systems, including the electrical subcontractor’s work within the overall system cost and scope of work. All work provided by KU-approved vendors under KU/state/institutional contracts. Currently approved vendors for KU systems are limited to the following, unless otherwise approved by KU:

- Access Control: CBORD equipment; designed & installed by Capital Electric Construction.
- CCTV Surveillance: Pelco equipment; designed & installed by Capital Electric Construction.

Contracts: The design and construction work to install these systems is typically contracted directly by KU to the approved vendor, through the DCM office, using KU/state/institutional contracts. Initial design and construction costs may be paid using project funds, but departments will be responsible for subsequent additions or modifications to the systems.

Operating & Maintenance Training: The approved vendor shall prepare O&M Manuals, for both FS and the building managers, and shall conduct training of system managers and O&M personnel.

ACCESS CONTROL – 281300

General: Where required, access control systems shall not be part of the fire alarm/security system communications network. Access control system hardware is to be linked to personal computer file servers and/or workstations that are the responsibility of individual
University departments and building users, and which are not monitored by the University Office of Public Safety.

Departments requesting access control systems shall be responsible for managing, updating and maintaining the database list of University faculty, staff and students approved for access through the access control systems.

The KU Card Center is responsible for ensuring that access control system components are compatible with the cards issued by them, and that access control systems are consistently maintained and managed by KU departments.

Project Designers are responsible for coordinating the provision of access control components with related building components, including rough-in or hardware preparation in walls, doors, ceilings and other building elements, so access control systems are integrated and concealed within building construction to the greatest extent possible.

**INTRUSION DETECTION – 281600**

**General:** Systems are to be provided using Simplex-proprietary part and model numbers for appliances, devices and control hardware and software. In this manner, security data may be transmitted to remote monitoring stations by the existing campus-wide fire alarm system communications network.

Security/intrusion detection systems are not permitted except as specifically approved by the Office of Public Safety.

Departments requesting security/intrusion detection systems shall be responsible for providing designated persons who will receive automated alarm notifications from the system, and who will be immediately available to respond to alarms, or to assist the KU Public Safety Office as requested, for each event, on a 24 hour/7 day per week basis.

**ELECTRONIC SURVEILLANCE – 282000**

**General:** The University has a negotiated procurement contract in-place for the provision of closed-circuit television (CCTV) surveillance systems for use campus-wide, in all University buildings and grounds. Provide CCTV surveillance systems as requested by the client department and as requested or approved by the KU Public Safety Office (PSO).

CCTV surveillance may be requested to provide video surveillance of exterior doors and parking areas around buildings. Designers shall cooperate and assist KU personnel with the design and installation of these systems, and shall incorporate rough-in and power requirements to serve systems, as needed. Designers and the CCTV vendor shall consult with DCM, and shall locate CCTV cameras in inconspicuous locations, with minimal visual impact and maximum weathertight capability.

**Retail Area CCTV Systems:** Video surveillance systems that are proposed for monitoring retail operations are typically provided separately by the department which plans to install and monitor them, outside of the scope of a capital improvement project’s work and budgets. Retail CCTV systems are NOT monitored by KU-PSO.
DIGITAL ADDRESSABLE FIRE ALARM SYSTEM – 283111

General: The University has a negotiated procurement contract in-place for the provision of fire alarm systems on all University buildings. SimplexGrinnell shall provide a turnkey installation including the electrical sub-contractor’s work for all projects, unless otherwise approved by the University Fire Marshal. SimplexGrinnell shall provide a bid to the General Contractor or Construction Manager for this work.

Local Fire Dept. Coordination: Although the AHJ for the majority of projects on State-owned land is OFPM (State of Kansas, Office of Facilities and Property Management), the local entity charged with responding to fire and safety emergency situations at the University is the city of Lawrence Fire Department (LDCFM- Lawrence Douglas County Fire Medical). As the designated initial responders, LDCFM should be consulted to determine the appropriate locations for Knox boxes, fire alarm control panels/annunciators, primary and secondary Fire Department Access, fire lanes and fire hydrants.

- It is the Designer’s responsibility to obtain approval through the University Fire Marshal, acting as liaison to the local authorities, for the specific locations and arrangements of devices critical to timely and effective initial response activities.

Design Requirements: All new installations, and all system upgrades should be designed as active multiplexed systems, with addressable appliances and devices. Building control panels should be designed to link by fiber-connection to, and be monitored by, an existing campus-wide fire alarm system communications network.

- Specific design requirements for fire alarm system projects are described Appendix A28.1 - Fire Alarm Systems – Standard of Practice.

Basis for Design: The Designer should use the following documents as basis for design:

- NFPA 72 - National Fire Alarm Code
- NFPA 70 - National Electrical Code
- Current IBC version approved by DFM or local jurisdiction if not on State land
- 1991 ADA Accessibility Guidelines (change anticipated for July 1, 2010)

Responsibilities for Design: The Designer is responsible for development of a code-compliant system design that meets the specific needs of the site and/or building location of the project. The SimplexGrinnell provides and bids to the general contractor and installs the system under that contract.

Coordination with Other Disciplines: The Designer should be aware of the following typical coordination requirements for fully-functioning, code-compliant campus fire alarm systems:

- Designers shall consider including a framed, permanently mounted reduced graphic floor plan directory with room numbers adjacent to the remote annunciator panel, to orient firefighters to the building.

- Specifications for door hardware should require that magnetic door holders are a part of the fire alarm system and furnished by the fire alarm manufacturer in lieu of the door hardware manufacturer.
Designers shall provide magnetic hold-open devices on all doors within corridors, exit stairs and exit passageways in general, where they preserve desirable openness and more convenient accessibility of programs and spaces. Verify with DCM Project Manager and building occupant/user representatives.

Designs in project areas served by the University building automation control system (BACS) should include an interface module.

Designers shall show interface with Mechanical for duct detection locations and Fire Protection for fire sprinkler control and monitoring locations.

Submittals: Refer to Appendix A28.1 for code compliance submittal requirements.

Record “As Built” Documents: Contractor shall provide record documents of the fire alarm installation to the Owner. Refer to A28.1 for requirements.

CLOCK SYSTEMS - 275313

General: The University has a limited master clock system. Determination if the affected project areas are to be added to the existing master clock system will be on a case-by-case basis. The Designer should determine, by discussions with the University, if interface with or maintenance of the existing system is desired.

Design Criteria for Uncontrolled (Departmental) Clock Installations: Wall clock outlets shall be provided in public areas, classrooms seating 21 or more persons, and assembly areas of 100 or more persons. Recessed clock outlets shall be included in the project construction documents.

Purchase of clocks may be specified to be part of the Simplex procurement contract, or may be separately purchased by the department.