Division 28  Electronic Safety and Security

28 10 00. Electronic Access Control and Intrusion Detection

28 11 00. Electronic Access Control

28 11 05. Electronic Access Control for New Construction

1. General Requirements:
   - Refer to UW-Madison Policy UW-404 Building Electronic Access Control, which can be found on the UW Madison website. [https://policy.wisc.edu/library/UW-404](https://policy.wisc.edu/library/UW-404)
   - At a minimum for new construction projects, access control shall be provided on the following doors: exterior points of entry (electronic locks for the purpose of remote lock/unlock on all – card/credential reader doors will be limited to the amount needed for sensible traffic flow dependent upon building size and occupancy), access to animal care areas, high security areas including as mandated by federal and/or state regulations and guidelines, personnel record storage, sensitive and critical mechanical spaces, telecom rooms, server rooms, MDF/IDF rooms and those rooms deemed necessary by the building occupants or UWPD. Electronic access control in required areas shall not be removed from plans without written consent from UWPD.
   - Install access control on building façade and walls whenever possible instead of installing a separate bollard which could be susceptible to damage.
   - It shall be noted that when the ability to alarm an area (door position switch) is absent, and physical security features are lacking (such as latch guards and pinned door hinges), an access control device does not provide a higher level of security than a standard key lock; however, it does provide key control, and access logging, which standard keying does not.
   - Lenel OnGuard product, is the campus standard, implemented in large part by the UWPD and the UW-Madison contracted integrator. All decisions for access control systems within new construction shall be coordinated jointly with the building occupants, UWPD, UW-Madison contracted integrator, and UW Facilities Planning & Management. The design team shall be responsible for engineering the system in cooperation with those listed above.
   - The Electrical Contractor shall provide and install all raceways, end of the line resistors cabling, request to exit devices, door hardware, and other devices such as electric locks and local alarm horns. The Electrical Contractor shall also be responsible for installing Life Safety power enclosures, HID Signo card readers, biometric devices and pin devices, all of which are provided by the UWPD and the UW-Madison contracted
integrator. These items shall be installed according to UW Physical Plant specifications and may be inspected by UW-Madison quality assurance personnel.

- Electrical contractors shall use cat 6 or better for cabling between the head end and the network switch. For standard doors, the electrical contractor shall use shielded access control all-in-one composite cabling for the head end to the door and additional AWG 18 wiring for doors with ADA openers, in/out carding and other doors with additional switches or devices.

- Rack-based head end equipment usually resides in the MDF. Any rooms housing head end equipment shall have electronic access control devices. Net controller panels (by Lenel) shall be located on each floor, in reasonably close proximity to the doors which they serve, preferably in telecom rooms or electrical rooms, consistent floor to floor. The design team shall be responsible for educating themselves on the system in order to determine panel sizes and required and capacity issues.

- UWPD, will provide Life Safety Power Enclosures with tamper switches
- UWPD shall issue appropriate access credentials for contractors. All UW-Madison Affiliates are eligible for a WISCard through the WISCard office at Union South. Access credentials are only issued with approval from the appropriate UW-Madison project manager. Contractors shall be directed to the UWPD access control card office and will be charged accordingly for access credentials.

- UWPD shall work with the building occupants to set up their security groups. A single representative for the new facility or a representative for each department (school) housed within the facility, shall work with UWPD to assign area rights to individual end users and may use a “web client” to modify access for authorized users, after the initial system is set up or may work with the UWPD Access Control Office to modify access for them.

- Latch guards and pinned hinges shall be used on all out-swinging publicly accessible doors that lead into a secured area.

- Any door with electronic access control shall have a UWPD high security keyway core. No other keyway may be used with the exception of classrooms requiring electronic access control due to not being able to use standard campus classroom lock to lock the classroom in an emergency. In this instance only, the standard classroom key core may be used.

- All hardware groups for doors receiving card/credential readers and electric locks shall have door contacts and Request to Exit (REX) devices included. Both doors in a pair and inactive-leaf doors shall also use door contacts. UWPD shall not allow motion detector-type REX’s to be used for unlocking mag-lock doors, as they can easily be defeated. Internal REX devices are required, but when existing conditions do not permit, these locations may be equipped with motion detector-PIR type REX devices. Providing door contacts now, will allow for future reporting back
to UWPD. Doors are not actively monitored at this time by UWPD unless special arrangements have been made.

- The UW utilizes magnetic hold-opens but does not permit magnetic locks unless this is the only way to secure the door.
- UWPD uses a number of configurations to describe attributes they require on doors with access control. Possible sample configurations are as follows:
  - Config 1 – Card reader with Biometric access, REX (Request to Exit), door contacts.
  - Config 2 – Electronic latch retraction (crash bar), card reader, REX device, door contacts. Latch bolt status monitor (optional).
  - Config 3 – Electronic latch retraction (crash bar), door contacts, latch bolt status monitor (optional). Internal REX device. No Card Reader
  - Config 4 – Card reader with keypad, door contacts, electric lock, and REX
  - Config 5 – Card reader (standard), door contacts, electric lock and REX
  - Config 6 – Electric Locks, door contacts, and REX
  - Config 7 – Emergency egress device (crash bar), door contacts, local alarm

- The entire access control system for UW-Madison buildings is funded by the project and designed and installed via a partnership between the design team, UWPD, the UW-Madison contracted integrator, and the Electrical Contractor.
- During the design development phase of the project, once the security requirements for the building are understood, cameras are located, and doors are noted as having or not having access control features, the UWPD shall receive a request for a cost estimate and funding string to bill to begin work with the UW-Madison contracted integrator.
- The UWPD, working with the UW-Madison contracted integrator and Electrical Contractor may provide the following documents and drawings during this phase.
  - Door location drawings
  - Lenel Mercury panel layout
  - Door detail drawing
  - Riser prints
  - Panel take-offs
  - Contractor termination details
  - Related Cut Sheets
  - Resistor pack layout
  - Camera locations

- The UWPD and the UW-Madison contracted integrator shall provide commissioning services for the following equipment.
  - Lenel mercury head end equipment
2. Assistance Alarms:
   - Assistance alarms are discouraged as they are the least reliable and least informative tool for summoning help. 911 by telephone is the best form of assistance communication. If the occupants of the building require, assistance alarms can be installed using an RF system whereby an emergency signal is sent to a location within the building and the UWPD simultaneously. Examples of this include panic alarms at cashiering stations. The current standard is the UL listed Ademco Vista system which is available hard-wired or wireless.

3. Code Blue:
   - A code blue option shall be available for elevator lobbies if it is determined that an override may be needed for emergencies by the occupants of the building. This is not related to the fire department override.
   - A code blue phone shall be available for use in UW parking ramps and other areas where personal safety is a concern. The push button directly connects the person to UWPD 911. The current standard is Code Blue model CB2-A. This is the campus standard for parking ramps. The campus standard for occupied non parking structures shall be the Code Blue model CB 4-S. The campus standard exterior “pedestal” style phone is Code Blue model CB-S, safety red color pedestal. The word ‘Emergency’ shall be stenciled on the side.

4. Security Alarms:
   - Security alarms can be set up for afterhours monitoring/reporting if the building occupants require. These alarms may utilize glass break, motion detection, or door contact hardware, along with Ademco alarm control panels tied in to the Lenel access control system.

5. Announcements/Drills:
   - Overhead paging can be run through the fire alarm system if the building occupants require. Custom voice-over can be included as well as pre-recorded messages. If this is the case, an additional panel is required, and all devices shall be tamper-proof.

6. Stairs and Elevators:
   - There shall be a provision within each passenger elevator for an access control device.
   - All freight elevators shall be prepped for a future access control device unless the building occupants prefer otherwise. Elevator prep shall be determined on a project-by-project basis.
Depending on the needs of the building occupants, stairs can be provided with access control at each floor. All egress doors shall be provided minimally with a door contact (DPS) to alert if a door is opened. If the door is used for normal egress along with emergency egress, the door must also have a REX device. If electronic locking is included in egress doors, these devices will “fail safe and remain latched” in an emergency. For emergency egress, the REX device must be internal to the exit hardware.

1. Only electrified locksets shall be installed on rated assembly doors. Electric strikes are prohibited.
2. Override key switch shall be included whenever egress doors are equipped with access control. The override key switch installation location shall be coordinated with MFD/EH&S.
3. Knox Box 4400 series recessed tamper switch box shall be included whenever access control is added to egress doors.
4. A tamper switch point will need to be created by DDC so UWPD can see whenever a Knox Box door is opened.

Note: As this is a “living” document, the configuration list may change dependent upon any new Federal regulations and changes in available technology.

28 20 00. Electronic Surveillance

28 23 00. Video Surveillance

28 23 23. Video Surveillance Systems Infrastructure

1. All use of security cameras and video equipment shall comply with the UW-402 Security Surveillance Camera and Video Policy.
   https://policy.wisc.edu/library/UW-402

2. Responsibilities

- The UWPD is authorized to oversee and coordinate the use of video surveillance.
- The Associate Vice Chancellor/Chief of Police or designee must authorize all video surveillance.
- The UWPD Director of Security Video Operations is appointed the administrator of the campus surveillance camera and video system.
- DoIT will manage the servers associated with cameras and video surveillance.
- The electrical contractor shall conduct a site visit with Director of Security Video or designee prior to camera rough-ins. Failure for the contractor to do so, will require the contractor to cover the cost of any changes to camera positions or locations.
- The electrical contractor is responsible premise wiring for cameras.
The design team is responsible for ensuring installations are both code compliant and meet Federal, State and University Standards. FP&M and/or DoIT are responsible for inspection of installations.

- The electrical contractor shall coordinate all installations with UWPD and DoIT.
- Requests for repair, maintenance and replacement will be routed through the UWPD to the FP&M Physical Plant Electric Shop.
- Purchasing of cameras will be handled by UWPD with the UW-Madison contracted integrator.

3. Cameras:
   - Cameras, where desired by UWPD, shall be the “fixed” type with wide angle or as required for specific intended purpose. They shall be ceiling mounted and housed in a lexan bubble. They shall record by movement to a Storage array controlled by DoIT in a secure location which is compatible with Milestone Xprotext Corporate 2019 R3 system. The server shall be located in a secure room which shall be accessible by UWPD and the UW Electric shop.
   - Typical camera locations include exterior entrances, loading docks, elevator lobbies, where there are cashiering functions, alarmed locations, elevators, and other locations as determined by the building occupants.
   - In all cases, fixed cameras will be I.P. cameras, with minimum 1.3 megapixel resolution. Hardware shall be determined by the UW police department or designee. In some locations, distance considerations may preclude the use of I.P. cameras. Where I.P. cameras are not feasible, UW Police Department will specify an alternative camera and lens based on site specific needs.
   - Cameras record but are not actively monitored by UWPD unless special arrangements have been made.
   - The Wisconsin Office of the Attorney General provides digital storage recommendations based on Wisconsin State Statutes. These statutes outline the time frame to file a notice of claim against the state. The Attorney General suggests storing video for a minimum of 120 days. UWPD shall determine storage needs on a project–by–project basis.

4. Installation and Issuance
   - UWPD will make assessments for new camera locations not already in existence. The assessments will be made in consultation with building occupants.
   - UWPD’s IS Unit will maintain a current inventory of permanent camera installations.
   - All requests for installing video surveillance on UW-Madison property must be routed to the IS Unit of the UWPD. A representative of the IS Unit will then conduct a security survey (also called a SCOPE report) and
forward to the appropriate entities, i.e., FP&M Physical Plant, DoIT, AIMS, to develop a cost estimate for the requestor.
• All video surveillance equipment must comply with current University standards.

28 30 00. Electronic Detection and Alarm

28 31 00. Fire Detection and Alarm

1. Most campus facilities are considered common use areas and as such, require both audible and visual fire alarms. Visual fire alarms shall be synchronized so each device flashes at the same time and the cycle of the flashes shall be no less than 2 seconds.
2. Shops and docks shall have heat detectors used in place of smoke detectors, if allowed by the code.
3. Care shall be taken to follow building codes with respect to the design of exterior overhangs and soffits. When these are constructed of combustible materials, smoke detection shall be incorporated.
4. Most spaces separated by a door from audible alarms require their own audible alarms to meet minimum dB.