Physical Security Design Guidelines
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The campus physical plant defines, more than anything else, how spaces are used and operations are managed on a college campus. However, operational efficiency cannot be achieved at the expense of safe campuses and buildings. The design and construction of buildings on campus, and of the campus itself, represents a significant amount of planning and coordination. It is important that security be an integral part of campus master plan design with the goal of providing safe places to live, learn, and work- places where individuals feel safe and secure. The task of securing the college or university campus is much easier when security design is part of the initial process rather than retrofitted after the fact. This proactive process will result in increased safety and a reduction in costs associated with reactive security management.

There are three basic elements of campus security to be considered while designing new or renovating existing campus spaces. The three elements incorporate the principles of what has come to be known as “Crime Prevention Through Environmental Design.” However, on a campus of higher learning, the elements are defined differently in order to enhance, rather than restrict, the learning environment.

The first element of campus security design is to clearly define the boundary of the property. A clearly defined outer boundary establishes an expectation of behavior and responsibility on the part of persons entering the campus. A well defined perimeter will frequently discourage casual entrance onto the campus or into the campus buildings by people who might present a threat to campus facilities or occupants.

The second element includes the ways in which the campus and buildings may be monitored for undesirable or questionable activity. Many operational issues are not addressed herein. For operational issues or lock down procedures, refer to the system office Emergency Preparedness. Active methods of control include security outbuildings, visibility from key building locations which are frequently occupied by responsible individuals, surveillance systems, parking gates and controls, controlled building entries, etc. These methods of security can be used in conjunction with passive security and safety measures that create a “transparent” security environment, allowing persons clear visual access to their environment, thereby both seeing and being seen.

The third element involves casual or natural surveillance, in which each person on the campus participates, to some degree, in monitoring or supervising the activities taking place on campus, keeping the campus secure. This is not an assigned task, but rather a natural result of an aware population, going about their normal activities, while equipped with the tools described above. Students, faculty, administration, and staff can all be responsible for recognizing and reporting questionable activity. Campuses and buildings should be designed to support this type of proactive environment.

These three points are not comprehensive, but provide a basis for evaluating existing facilities and designing new secure environments. The following security guidelines are not intended to cover every point, but rather to generate thought regarding campus and building safety. These guidelines are presented in two general groups, Site Planning and Security (1.1), and Building Design and Planning (1.2). Both provide basic instructions for design which assists in the provision of formal security while also facilitating and encouraging casual or informal security as a means to maintaining safe learning environments.
1.1 Site Planning

Security

a. Perimeter Control

- Identify control point(s). These include security outbuildings, visibility from key buildings commonly occupied by responsible individuals, or surveillance systems, and which should be concentrated on those pathways by which the majority of vehicular and pedestrian traffic enters and exits the campus.

- Maintain visibility

- The desired goal is transparent security (seeing and being seen).
1.1 Site Planning

Security

a. Perimeter Control

• The perimeter should have clearly identifiable points of access to the site. Whether visitor, student or staff, the number of access points should be restricted to as few as possible while still considering the impact on traffic flow. Unused or abandoned access points should be physically closed off. Video surveillance (CCTV) should be considered at key areas of the perimeter.

• Retaining walls and other site enhancements should be designed to discourage loitering, or be located with the control of a visual supervision point.

• Define the perimeter with fences, signs, and changes in landscaping to make it immediately apparent when one has entered the property of the campus.
1.1 Site Planning
Security

b. Parking

- Controlled parking is usually the primary method that campus administration employs to indicate to the entrant that there will be expected levels of conforming behavior on campus.

- Parking should be visually accessible and provided with proper signage clearly indicating levels of parking, e.g. Visitor, student, faculty, van pool, car pool, hybrid cars, etc.

- Conversely, “No Parking” areas throughout the campus should be clearly marked.
### 1.1 Site Planning 
#### Security 

**b. Parking**

- The parking lot is the point at which the driver will become the pedestrian. Pedestrians are much more vulnerable to crime. This should be taken into account in the design and support of parking areas. Parking lots for staff and students should be equipped with emergency call stations at strategic locations. Video surveillance (CCTV) should be considered at key areas of the perimeter.

- When parking lots utilize controlled access, appropriate equipment should be implemented, such as: barrier arm gates, card readers or keypad controls, and video.

- Parking should have clearly identifiable access to pedestrian circulation systems.
1.1 Site Planning
Security
c. Vehicular

- The entry drive should be accessed through control points and should include the ability to direct vehicular access to the campus, i.e. Gate houses, etc.

- Entry drives should be provided with appropriate lighting to establish identifiable entry points at night.
- Single entry/exit points to campus destinations will facilitate safety. Criminals always desire multiple points of escape, restricting those points of escape will result in a safer environment.

- The number of entry points should be minimized while still taking into account adequate traffic flow. Some entry points may only be open during times of peak traffic flow and physically closed at all other times.

Primary Vehicular Circulation Routes

A good example of signage clearly identifying circulation routes.

A good example of a campus building sited to serve as a gateway and control point.
1.1 Site Planning
Security
c. Vehicular Circulation

- Secondary vehicular drive routes should be clearly identifiable from the entry drive.

- Interior drive routes should be clearly visible from campus buildings and entries.

- Interior campus drives should be illuminated at night for safety and visibility.

- Campus drive intersections should not be screened by plants or landscaping.

- CCTV coverage should be used where high-volume vehicular and pedestrian traffic intersect and when security issues exist at these locations.

An example of a campus drive lacking immediately identifiable circulation routes.

A good example of a campus drive with a strong relationship to campus boundaries and circulation.
1.1 Site Planning
Security
c. Vehicular Circulation

- Loading areas should be appropriately posted with restrictive parking signage. This signage should prohibit parking by any vehicle not actively involved in loading or unloading.
- Personnel loading/unloading areas are typically located at the main entrance to a facility. Decorative bollards and/or planters should be installed to provide a stand-off and prevent vehicles from getting too close to the facility.
- Video surveillance (CCTV) should be considered at loading dock areas for shipping and receiving.
1.1 Site Planning
Security
d. Bicycle Circulation

- Bicycle circulation should be considered when planning automotive and pedestrian circulation routes due to its convenience as a mode of transport.

- Bike circulation should be clearly marked to separate it from automotive circulation in heavy traffic areas.

- Bicycle circulation routes should be clearly marked on sidewalks or other places where riders and pedestrians come into contact.

- "Pedestrian Only" areas should be established near areas with heavy pedestrian circulation. These must be clearly marked.

- Riders should have easy access to bike racks at every building to deter the use of campus furniture for bicycle parking. Place bike racks in highly visible areas that do not create circulation bottlenecks.

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A good example of signage intended to separate bike circulation from pedestrians.

A good example of bike racks located at a distance from door entries to provide safe pedestrian circulation zones.
1.1 Site Planning
Security
e. Pedestrian Circulation

- Pedestrian circulation should be clearly separated from vehicular circulation with the use of curbs, boulevard strips, or bollards.

- A buffer zone or "clear" zone should be located between pedestrian circulation pathways and site features which might create blind spots for pedestrians such as plant material or points of concealment for potential perpetrators of crime.

A good example of trees used to enhance the separation between pedestrians and cars.

A good example of a sidewalk with clear sight lines and buffer zones.
1.1 Site Planning
Security
e. Pedestrian Circulation

- Primary pedestrian circulation routes should have clear lines of sight through the campus to create a sense of safety between buildings.

- Primary pedestrian circulation routes should have clear relationship to building entries.

- Primary pedestrian circulation routes should have multiple visual control points, which will result in the maximum amount of natural or casual surveillance.

- Video surveillance (CCTV) should be considered in locations with heavy pedestrian traffic at night.

A good example of a campus with clear and visible pedestrian sight lines.

An example of blind spots created by dense vegetation located too close to a primary circulation route.
1.1 Site Planning
Security
e. Pedestrian Circulation

• Secondary pedestrian circulation routes should have clear relationships to primary routes. Ideally, secondary routes should feed into the primary circulation routes. This applies to informal routes as well.

• Secondary pedestrian circulation routes should have at least one point of visual control and/or supervision.

• Visual access between primary and secondary access points should be maintained. Avoid locating visual obstacles at intersections.

• Potential points of concealment for criminal perpetrators should be carefully considered when evaluating pedestrian routes.

• Pedestrians will not always use the designated pathways but will choose alternate pathways based on convenience, distance, etc. This should be taken into consideration when planning and designing the campus. Emergency call stations should be strategically located throughout pedestrian pathways (sidewalks and otherwise).

A good example of a heavily used secondary route with a strong relationships to campus buildings.
A good example of clear lines of sight to secondary paths intersecting a primary route.
A good example of a emergency station located along an informal pedestrian path.
1.1 Site Planning

Security
e. Pedestrian Circulation

- Tertiary circulation routes should have one clearly identifiable point of control from the adjacent building(s).

- Tertiary routes should have clearly identified connection to primary pedestrian circulation routes.

- Tertiary routes should have at least two clearly identifiable routes of escape.

- Potential points of concealment for criminal perpetrators should be carefully considered when evaluating pedestrian routes. These include retaining and screen walls, sculpture and large coniferous trees.

- Video surveillance (CCTV) and emergency call stations should be considered along circulation routes in remote locations of the campus.

Tertiary Pedestrian Circulation Routes

An example of a parking lot with no provision for pedestrian circulation or safety.
An example of an exterior wall that can serve as a hiding places for criminal perpetrators.
An example of an bollards placed to protect pedestrian safety.
1.1 Site Planning
Security
f. Exterior Furnishings and Art

- Exterior furnishing should be located in areas where it can be actively used by students, staff, and visitors.
- Group exterior furnishings to provide convenience and safety.
- Exterior furnishings should be located in areas where casual observation may be possible.
- Exterior furnishing should be capable of permanently mounted into place.
- Exterior Furnishing should not be long enough for sleeping purposes.

A good example of a group of exterior furnishings including seating, lighting and trash disposal. An example of exterior furnishings that may be partially obscured from circulation. A good example of exterior furnishings that are visible and accessible from buildings.
1.1 Site Planning Security  
f. Exterior Furnishings and Art

- Art objects should not obstruct circulation.

- Art objects should create opportunities for way finding on the campus.

- Small objects should not be placed in locations where they may obstruct vision along circulation routes. When possible the object should be small enough to deter criminal perpetrators from hiding behind them.

- Large objects should be placed in order to minimize visual obstruction to maintain clear lines of sight. When possible, additional measures should be taken to prevent access to the object.

- A good example of art incorporated into a building.
- A good example of a small art object located adjacent to a walkway.
- A good example of large sculpture with clear lines of sight and plantings to improve safety.
1.1 Site Planning
Security
  g. Landscaping

- A clear zone of sight beginning at 30” from the ground and extending to 84” from the ground should be provided.

- Trees should be selected so that the limbs start no lower than 84” above the ground. Existing deciduous plants should be ‘limbed-up’ as required to establish clear lines of sight.

- Trees being considered for installation should be evaluated for the diameter of the tree trunk at breast height, tree height, and the tree crown ten years in the future to reduce the potential for blind spots and hiding areas.

- Tree growth and management should be incorporated into the master plan.
1.1 Site Planning Security

- Landscaping

- Selected shrubs should be those that can be expected to attain no more than 30” in height with only annual or bi-annual pruning.

- Selected shrubs should be evaluated based on the density of the foliage and branches when planted adjacent to buildings and pedestrian circulation routes to eliminate spaces for hiding or obscured signage.

- Low ground cover vegetation is preferred adjacent to pedestrian sidewalks, steps, or pathways to maintain clear lines of sight along the path.

An example of large shrubs that can create an unsafe condition or hiding place.

An example of large shrubs that have not been maintained, obscuring building signage.

A good example of shrubs that are managed to maintain clear lines of sight.
1.1 Site Planning Security
g. Landscaping

- The proper selection and maintenance of landscaping and vegetation gives the perception that the facility has a quality security program and is concerned about activities that might take place at the campus.
- Proper landscape maintenance opens up the area to visual inspection and casual surveillance by campus administrators, faculty, students, security officers, and law enforcement.
- Trees and shrubs should be kept clear of lighting fixtures to maximize light distribution.
- Consideration should be given to security camera locations. Vegetation can deter the effective use of video. Trees and shrubs should be trimmed or otherwise maintained to maintain clear sight lines.
1.1 Site Planning Security  
h. Site Lighting

- As a general rule, even lighting levels will assist persons in identifying potential threats. Site lighting can be separated into two types: surface lighting and task lighting.
- Surface lighting levels are measured at the ground plane, or vertical surfaces such as buildings and retaining walls.
- Task lighting levels are measured above the ground plane, typically at 30°. These levels are recommended to increase safety while performing tasks such as looking at keys or locks.
- External lights should be controlled by photocells measuring exterior light levels rather than timers to ensure that lights are on at appropriate times of the day.
- In parking areas that are not heavily used, motion sensitive switches and "instant-on" such as halogen, or fluorescent of xenon H.I.D. lamped lighting fixtures should be considered for use.

Site Lighting Types and Levels

An example of a well illuminated sidewalk.  
An example of well illuminated parking. Note that the door handles are clearly visible.  
An example of a well illuminated building entry. Note that the perimeter is also illuminated.
1.1 Site Planning
Security
h. Site Lighting

- Care should be taken when selecting and locating lighting fixtures to prevent glare.

- The use of decorative or accent fixtures that provide ambient lighting should be kept to a minimum in favor of lighting fixtures that are designed to direct all the light towards a surface.

- Accent or decorative lighting may be used to provide a visual cue for pedestrians to use routes that are more controlled at night.

- The output of gas discharge lighting changes based on temperature. Lighting should be considered based on their output during the coldest anticipated weather.

- Emergency call stations should be accompanied by lighting.

- Sensitive areas that require CCTV monitoring should be properly illuminated to serve both as a deterrent and to aid monitoring the location.

A good example of a plaza illuminated with bollards.
A good example of a plaza illuminated with indirect down-lights.
An example of accent lighting fixtures that provide low levels of surface lighting and high glare.
### 1.1 Site Planning

#### Security

h. Site Lighting

- General lighting along pedestrian sidewalks, along pedestrian pathways, in courtyards, and in any other area where pedestrians might be normally found during hours of darkness, should be at a uniform .5 foot-candles at a minimum.

- Surface lighting along primary pedestrian circulation routes should be coordinated with visual control points.

- Surface lighting levels on primary pedestrian circulation routes should also illuminate buffer zones.

- Accent or decorative lighting may be used to designate primary routes of circulation at night, but should not replace functional down lights.
1.1 Site Planning
Security
h. Site Lighting

- Task lighting in parking lots should be 10 foot-candles at 30” above the ground plane.

- Overhead lighting in parking lots should be clear of any obstacles, such as trees.

- Lighting at secure entries or control points should have 10 foot-candles at the surface.

- Lighting at secure entries or control points should create a buffer or safety zone at night.

- Surface lighting levels at secondary building entries should be the same as lighting levels at primary entries.

- Avoid “up-lighting” fixtures below the line of sight adjacent to circulation routes. This can create glare.

Secondary Illuminated Routes

A good example of a well illuminated entry that serves as a control point.

A good example of a well illuminated building exit and loading area.
1.1 Site Planning
Security
i. Signage

- Signage at the perimeter should be clearly identifiable.

- Trailblazing signage such as banners mounted on light posts can be used as an means to identify the perimeter of the campus and provide way finding.

- Monument or gateway signage should be used at primary vehicular entries to identify controlled access points.

- Gateway signage should be installed at secondary entrances.

- Small monument or bollard signage should be used to define pedestrian access points separate from vehicular access.

- Service entries should be clearly identified with signage.

A good example of monument signage on a heavily travelled route.
A good example of banner signage used to mark the campus boundary.
A good example of a gateway used to establish the campus perimeter.
1.1 Site Planning
   Security
   i. Signage

- Signage for parking should clearly identify the location of the parking as part of the campus.

- Signage for parking should clearly identify visitor parking and special permit parking in a consistent manner.

- Primary routes to significant buildings on campus should be prominently identified on campus to control vehicular traffic.

- Campus signage is a good opportunity to establish standards and expectations of behavior.

Directional Signage

[A diagram showing directional signage.]

A good example of directional signage.

An example of chaotic signage with no clear hierarchy that adds confusion.

An example of signage used to establish expectations of behavior.
1.1 Site Planning

Security

i. Signage

- Service routes and parking should be clearly identified.

- Signage for buildings should be located at primary and secondary building entrances.

- If buildings have varied levels of access, these varied levels should be clearly designated by signage at entry points. Levels of access may include personnel related levels, as well as time-of-day or day-of-week related levels.
While careful site design is the first step in creating safe environments, security is of equal concern in the design and renovation, or construction of buildings. Areas of transition, such as building entries and doorways into classrooms, or offices present locations of vulnerability and should be designed to reduce any potential threats. Thoughtful design and door hardware specifications to control entry/exit points in a building will facilitate an increased level of security in that building. This can be accomplished in the building by the use of appropriate hardware on required exits or the elimination of exits if not required. Another important part of building design is controlling access into the building, including visual access in areas where privacy is important (e.g. residential halls, bursars offices, etc.).

Visual transparency in public spaces is also important, allowing persons to identify potential threats immediately. One key difference between site and building design is that egress routes play a more prominent role in the process of building design and the location of control points within buildings. This will have an impact on the creation of secure environments.
1.2 Building Design and Planning Security
b. Classrooms and Labs

- Two routes for emergency exit should be provided for classrooms and classroom labs for ease of circulation.
- Avoid placing niches or blind spots in circulation areas to eliminate potential locations for criminal perpetrators to hide.
- Classroom doors should be closed and locked when not in use.
b. Classrooms and Labs

- Classrooms and classroom labs should have clear visual access to corridors, i.e. sidelight and/or viewlight in door to give occupants visual access to the corridor.

- Windows located within classrooms should be designed to limit visual access from outside of the building to protect the occupants. This can be achieved through window height, tinting, blinds, adhesive films, etc.
1.2 Building Design and Planning Security
b. Classrooms and Labs

- Classroom furniture should be arranged to provide a minimum of two means of passage to an exit door from the classroom.
- Lecterns and other instructional furniture should be located to provide clear lines of sight to the exit doors.
- Areas of refuge should be established within classrooms. These should be outside of the line of sight from doorways and windows.

Egress and Circulation in Lab Classrooms and General Classrooms

A good example of a classroom with clear circulation and egress routes.

An example of a classroom with adequate areas of refuge along with windows to the outside.
### 1.2 Building Design and Planning Security c. Toilets and Locker Rooms

- Sinks, urinals, and toilets should be screened from casual observation from hallways and corridors.
- Full height stall partitions should be raised from the floor to enable inspection for occupancy.

**Visual Access at Restrooms**

- $\odot =$ Control Point
- $\leftrightarrow =$Circulation

A good example of a restroom entry with controlled lines of sight.

A good example of a restroom entry with controlled lines of sight.

An example of restrooms with limited control of the lines of sight.
1.2 Building Design and Planning
Security
c. Toilets and Locker Rooms

- Locker rooms should have internal control points such as a coach’s office with visual access to the locker room entry.

- Lockers should be primarily located on the perimeter walls to optimize visual access.

- Freestanding lockers should be no higher than 54” to maintain visual access.

- Locker rooms should be designed with multiple means of exit.

A good example of a locker room with clear lines of sight to showers and toilets from offices.

A good example of freestanding lockers low enough to increase visual access.
1.2 Building Design and Planning Security
d. Administration and Information

- Administrative spaces should have multiple control points to maintain security within offices.
- Doors for administrative space should have a sidelight to allow visual access to the corridor.
- Administrative spaces should have a second means of emergency exit.
- Access control and CCTV should be installed at control points for administrative spaces.
- Installation of dedicated CCTV systems or mirrors can assist in facilitating visual access for the control point.

A good example of an administrative office space with visible entry points that may be controlled.
A good example of CCTV used to increase security at an administrative office.
Circulation and Control Points

A good example of an information desk that is also a control point for the entry.

A good example of an administrative office with a control point and controlled access.

1.2 Building Design and Planning Security
d. Administration and Information

- Reception desks should be designed to provide protection without eliminating visual access to the door or waiting area for surveillance.

- Reception desks should be located between the waiting area and circulation within the office to manage circulation.

- Reception desks at critical or high-risk locations should be equipped with silent duress alarms and CCTV to alert responders of the need for assistance.

- General information desks should be connected to administrative suites for security and cross-training purposes.
1.2 Building Design and Planning Security
d. Administration and Information

- Sidelights in doors in administrative offices should be located to prevent access to door hardware.
- Exterior windows in administrative offices should be positioned to prevent access from the outside.
- Exterior windows in high profile administrator offices should be equipped with technology to reduce visibility from outside such as window film or window blinds.

Visual Access

A good example of an administrative office with windows on a corridor utilizing “borrowed daylight” to limit visual access from the exterior.
1.2 Building Design and Planning Security
e. Common Areas

- Common areas should be provided with multiple routes of emergency exit.
- Common areas should have a control point located adjacent to the primary means of entrance or circulation route.
- Control points in common areas should have visual access of all circulation routes within the space.

Egress and Control Points

A good example of a common area with clear lines of sight and circulation.
A good example of a common area with clear lines of sight to food services and meeting areas.
1.2 Building Design and Planning
Security
e. Common Areas

- Furniture or partitions in common areas should not restrict visual access of the entire space.

- Avoid blind spots especially in common areas such as niches along circulation routes to prevent criminal perpetrators from hiding.

- The use of glass between smaller common areas and circulation routes, or frequently occupied administration areas, facilitates casual or natural surveillance.

Visual Access

A good example of a seating area within a common area with clear visibility and controlled access.

A good example of a seating area within a common area with clear visible access to the exterior.
1.2 Building Design and Planning Security
f. Libraries, Galleries, and Exhibit Spaces

- Libraries are high risk areas for two reasons: students studying alone at odd hours, and high value collections with little real inventory control.

Typically, entry into libraries should be controlled with only one entryway. Emergency exits should be secured with appropriate exit hardware and alarms that will alert staff to unauthorized use.

- Libraries should have control points located at the main entry.

- Emergency exits should be secured with appropriate exit hardware.

- Offices and study rooms within Libraries should be visually accessible, but with limited exposure of individuals within those spaces.

- Refer to section 5.5 of the Space Planning Guidelines for library design considerations.

A good example of a library service desk serving as the security checkpoint. A good example of a locked door with side-lights.
1.2 Building Design and Planning Security
f. Libraries, Galleries, and Exhibit Spaces

- Library furniture should not exceed 54” in height to maintain sight lines.
- Library shelves exceeding 54” in height should allow visibility between aisles or be placed along the walls.
- Library aisles should not have dead ends.

Furniture and Visual Access

A good example of a library reading area with clear lines of sight.

A good example of a library with shelves located on the perimeter to improve lines of sight.
1.2 Building Design and Planning Security

f. Libraries, Galleries, and Exhibit Spaces

- Exhibition spaces should have control points at the entry.
- Emergency door locations should have control hardware.
- Museum galleries should not have operable windows to prevent theft and vandalism.
- Displays or vitrines should not exceed 54" in height to maintain visual access.
- CCTV should be used where high value exhibits are displayed.

Circulation

A good example of an exhibition space with clear lines of sight to circulation.
1.2 Building Design and Planning Security
g. Recreational Spaces

- Gymnasiums should have exits that are clearly identified.
- Bleacher seating should be configured for ease of access and visibility of emergency exits.
- Emergency exits should be locked with appropriate emergency hardware.
- Clerestory windows should not be accessible from bleacher seating.

Visual Access and Egress

A good example of a hall in a gymnasium with easily identified egress close to the gym floor.

A good example of an gymnasium with easily identified egress doors.
1.2 Building Design and Planning Security

h. Residence Halls

- Residence halls should have visual control points to manage the main entry and primary routes of circulation.
- Secondary entries should be locked with appropriate emergency hardware to control access.
- Elevator lobbies should be visually accessible to main routes of circulation.
- Common areas should have multiple means and directions of exit.
1.2 Building Design and Planning Security

h. Residence Halls

- Lounges should be visually accessible from main routes of circulation.
- Furniture in common areas should not exceed 54” in height to maintain lines of sight.
- Common areas should have multiple means and routes of exit.

Circulation and Casual Observation

A good example of a door entry clearly visible from the lounge and controlled access.
1.2 Building Design and Planning Security
h. Residence Halls

- Study lounges should have clear visible access to main circulation routes.
- Furniture in study areas should not limit the line of sight for individuals using the room.
- Common areas where students can be expected to spend time alone, such as laundry rooms, should be located on main circulation routes and should be provided with glass at the corridor wall to enhance visual supervision and control. In addition, hardware on doors for this type space should be key locked only to prevent victims being locked into rooms with attackers. Thumb-turn, or push button locks should not be used.
1.2 Building Design and Planning Security

h. Residence halls

- Avoid placing niches or blind-spots in circulation routes.
- Exterior windows for dwelling units should be high enough off the ground to deter visual and physical access from the outside.
- Dwelling units should have clear access to circulation routes.

Circulation and Rooms

A good example of a residence hall with clear circulation routes and visibility. An example of a residence hall lacking clearly identifiable routes of egress.
1.2 Building Design and Planning Security
i. Parking Structures

- Points of entry and exit should be clearly defined.

- As much as possible, stair towers should have clear visual access to the stairways and landings from both outside and inside the parking deck.

- Parking should be secure and protected from means of entry other than those that are so designated.

- CCTV coverage should be used where high-volume vehicular and pedestrian traffic intersect and when security issues exist at these locations.

- At both current parking structures within the system, and future parking structures, security offices are integral to the structure for increased safety.

A good example of a parking structure with a clear route to vertical circulation.
A good example of a parking structure with “decorative” screening to control ground level access.
A good example of campus security located within a parking structure.
1.2 Building Design and Planning Security

i. Parking Structures

- Parking levels should be illuminated to provide visually secure environments at night.
- The underside of parking level decks should be painted white in order to distribute lighting evenly.
- Entrances to stair towers should be clearly identifiable at night and be the best-lit areas of the parking deck.
- Doors at street level should be illuminated to prove a safe transitional area.
- CCTV should be located at pedestrian entries to increase safety.
- CCTV should be located at vehicular entries for initial monitoring and inspection.

Lighting and Circulation

A good example of a CCTV camera located at a potential hiding place.

A good example of well illuminated parking deck.
1.2 Building Design and Planning Security

j. Utility Buildings

- Receiving areas should have a control point to manage deliveries and departures.
- Man doors should be located adjacent to garage doors to maintain ease of access while maintaining security.
- Receiving area doors should have clear visual access to the exterior.
- Trash collection areas should be monitored visually or by CCTV.
- Shipping/Receiving areas should be monitored using CCTV.

Loading Docks

A good example of windows used in multiple locations to increase visibility.

A good example of a control point with both visual and CCTV access.

A good example of a CCTV camera used to monitor trash and loading areas.
1.2 Building Design and Planning Security
k. Door Hardware

- Doors should be provided with locking hardware. Locking hardware should be appropriate for the function taking place within the secured space and also appropriate for the threat or risk to that space.

- Security hinges, or other hinge hardware designed to prevent removal of hinge pins, should be utilized on all exterior doors as well as on any door accessing a high security area.

- Windows that are accessible from the ground level outside should have vandal-resistant locking hardware.

- Residence hall sleeping room doors should be equipped with wide angle viewers or peepholes for able and disabled persons.

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Door Hardware

A good example of a door with astragal guards to protect door strikes at exterior and sensitive locations.

An example of an exposed door strike located in an area of public circulation which could be compromised.

An example of door hardware that has been tampered with to gain interior access. Exterior doors should be designed to prevent tampering, especially in less trafficked areas.
1.2 Building Design and Planning Security
k. Door Hardware

• Exterior doors requiring electronic door hardware should use electrified mortise locks or panic exit device hardware in lieu of electric strikes.

• Security hardware on doors should be recessed, flush-mounted, or concealed to prevent access to the device or cabling.

• Security wiring should be within conduit and/or walls to prevent tampering with cables.

Door Hardware

A good example of a door equipped with electronic hardware, panic lock and accompanying signage to control use of the door.

A good example of a door equipped with card access hardware and recessed wiring.
1.2 Building Design and Planning Security

I. Signage and Alarms

- Where possible, alarm devices accessible to the general occupant should be located at or above 10 feet from the floor or ground level.

- Exit alarms for high value areas, such as libraries, or sensitive areas such as controlled substance storage, daycare, etc., should report back to the local control point as well as to a staffed central monitoring point.

- Local audible alarms in sensitive areas such as controlled substance storage, daycare, etc., should be loud enough to be heard in commonly frequented areas.

- Signage identifying room numbers and names should be a minimum of 5/8” in height.

- General signage for way finding should be a minimum of 2” in height. This varies based on the intended visualization distance.

Interior Building Signage

A good example of a directional sign in a highly visible location.

A good example of a “family” of signage designed to direct students and expedite service.

An example of impromptu signage put in place after building use patterns were modified and is inconsistent with original signage. Nor does it provide directional (egress) information.
1.2 Building Design and Planning Security
1. Signage and Alarms

- Directional signage should be provided in high occupancy areas such as classrooms and residence halls to aid in emergency exiting.

- Visual alarms should be located clear of obstructions.

- Annunciation panels should be located at building entries in clearly accessible locations.

Way finding and Alarms

A good example of a signage “family” clearly identifying the building location and directions for other adjacent buildings/services.

An example of alarm equipment at a building entry that is accessible to pedestrians putting the equipment at risk for tampering.

A good example of alarm equipment and entry switches at a building entry that is appropriately accessible for use by occupants, and grouped in an manner that increases visibility.
1.2 Building Design and Planning Security

- Safes and money counting areas should be located away from areas of general access and circulation, without visual access.
- Interior walls enclosing safes and money counting areas should be re-enforced to prevent criminal perpetrators from gaining access by cutting openings in the wall.
- High risk areas with the need for a stand-alone safe should be designed to support a concentrated floor load of over 750 pounds. Safes should be built into the structure where appropriate.
- Rooms which are designed to house a safe should also be designed to be protected by an independent alarm system.
- Security management system hardware and alarm system panels should be located within secure rooms, in locked enclosures within the room.
- Elevator equipment rooms should secured with alarmed hardware.
1.2 Building Design and Planning Security

n. Exterior Mechanical Spaces

- Mechanical system intakes should be located in areas inaccessible to general routes of circulation due to potential vandalism and to maintain air quality.

- Mechanical system intakes should be located away from parking or service areas to maintain air quality.

- Openings into a building’s protective outer shell, such as mechanical air intakes, should be protected by tamper-resistant grills.

- Interior rooftop access locations should be secured with alarmed door hardware.

- Exterior rooftop access locations, such as ladders, should not extend to a point accessible to pedestrian traffic.

An example of unsecured building systems equipment that is highly accessible and unmonitored.

An example of unsecured building systems equipment that is highly accessible and along a public route.