SAFE PARKING:

What You Should Do to Protect Employees and Guests

Randall I. Atlas, Ph.D., AIA, CPP

REAL-WORLD SCENARIOS

In 2008, 18-year-old Kelsey Smith was forcibly abducted from the public parking lot of an Overland Park, Kan., Target store. Her body was found four days later in a Missouri park about 20 miles away. In August 2008, in Macon, Ga., John Fox was returning to his car in a downtown public parking deck when he was accosted by a robber who used his gun to hit Fox several times on the head, then stole Fox's wallet and keys. And on September 5, 2008 the *EastBay Express* news Web site published an article called "Lots of Trouble" that reviewed the explosion of crime in the parking lots of San Francisco's Bay Area Transit System, reporting that, "In the Bay Fair station's parking lot June 9, 2008, three teens beat a man about the face and fled with his phone and laptop ... At the Coliseum station [on June 17], six men attacked another, hurling him to the ground and demanding his money."

These few examples illustrate the crimes that take place in parking facilities. An ongoing series of studies on premises security liabilities by Norman D. Bates, president of Liability Consultants Inc., estimates that as many as 40 percent of rapes and assaults take place in parking lots. The mind-set that these are merely stables for vehicles and not places where human behavior occurs results in major errors in the design and operation of parking facilities. This shortsighted design approach can result in numerous hiding spaces and poor visibility created by high walls, structural columns and multiple levels. Even worse, subsurface or underground parking facilities often include no outside visibility.

PREVENT CRIME THROUGH ENVIRONMENTAL DESIGN

Using the precepts of crime prevention through environmental design (CPTED) can help eliminate these issues. With CPTED, for example, criminals will realize that parking areas are places where they will be observed and where suspicious behavior will be challenged, making it not worth the risk and effort.

CPTED incorporates three principles:

1. Use natural surveillance so that users can see farther and wider, making it harder for criminals to hide or carry out their activities.
2. Create natural access control, including spatial definition that encourages legitimate site users and discourages illegitimate ones.
3. Manage and maintain the facilities to meet industry standards of care.

CTPED can address poor entrance and exit planning with, for example, signage that does not assist users to quickly or logically move through the facility; pedestrian access points that fail to provide natural surveillance; and perimeter access by persons walking or driving.

Tolerating vandalism, graffiti and general disrepair sends a clear signal to potential criminals and other undesired users that the site is fair game. Conversely, it makes legitimate users feel afraid or wary of patronizing your facility. It is necessary that legitimate users develop a sense of territoriality so that there is active involvement in keeping undesired users away.

ASSESS THE FACILITY'S VULNERABILIY

The first step toward parking lot security through CPTED is to conduct a security vulnerability assessment. Generally, in the United States, the standard of care dictates that the assessment include a criminal history of the site, a review of landscaping, lighting, stairwells, elevators, surveillance capabilities, access control equipment, and signage, as well as an inspection of any facilities for revenue collection, supervision, and rest rooms. The policies and procedures for the operation and staffing of the parking facility should also be scrutinized.

Many questions should be asked, including:

- What type of community does this parking facility serve – shoppers, commuters, students, or employees?
- How many cars frequent the facility and how quickly do spaces turn over?
- Are there clear lines of sight? Are there obstructions by walls, columns, or ramps?
- What are the hours of operation and how do those hours affect the user environment?
- Is the lighting all or mostly natural or is it man-made? Is man-made lighting at ceiling height? If so, then what is the color of ceilings and how are the lights placed?

- Is there CCTV, and if so, what are the details of the system? Is there ground floor protection, such as gates, screens and barriers?

Additional questions should address vehicle and pedestrian entrances, whether there are required paths of mobility for ADA compliance, the condition and maintenance of the elevators, stairwell placement and visibility issues, and whether there is selective closing of lightly used areas.

SECURE THE FACILITY ON THE GROUND

Perimeter definition and access control deters unwanted pedestrian-level access to the lot or garage. It can take the form of fencing, level changes, ground floor protection, and other architectural and environmental barriers that channel people to designated entry points and discourage others from hiding outside and inside the property or buildings.
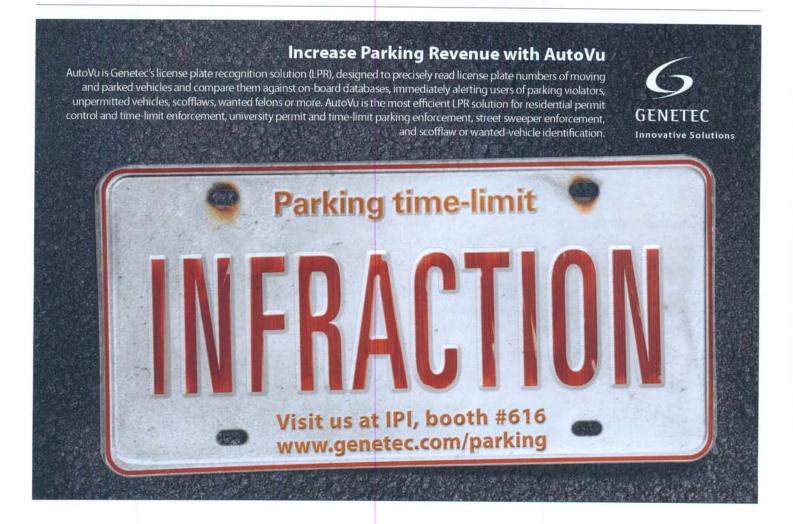
Ground-level metal screening should be used to prevent or deter unauthorized access, while upper floors should be open with cable strung to prevent cars from overshooting the parking spaces and toppling off. Screened,

rather than walled, ground levels and open upper levels allow natural surveillance and make it more likely that calls for assistance will be heard.

Ground-level screening should not be floor to ceiling, however, as that can give a criminal a way to climb to higher floors. It's also a good idea when space permits to place short bushes close to the perimeter wall to discourage persons from climbing or cutting the screen.

Additional landscaping should be intermittent in size and texture. Instead of planting a solid hedge, combine low hedges and high canopy trees. All trees and bushes must be properly maintained to provide a good field of vision and to avoid creating hiding places. Plantings that are higher than three feet should not be placed within 10 to 15 feet of entrances to prevent hiding spots, and mature trees should be pruned to eight feet.

Traffic engineers will often encourage multiple access points to increase circulation patterns. However, the more entrances that there are, the more difficult it is to control the users and uses of the facility. The CPTED-recommended method is to have

one means of entry and exit for all vehicles. If the volume of traffic requires more, then each subsequent access point should also have an attendant booth, access gate arms, roll down shutters for after-hours closure, CCTV, and good lighting.

Pedestrians. Unfortunately, pedestrian access is one of the most commonly overlooked or poorly thought-out design features of parking facilities.

Full handicap accessibility is key and should include dedicated handicap spaces, ramps, railings, floor surfaces, pedestrian crossovers, and dedicated pedestrian paths, as well as stair design and elevator location and design.

A primary rule is to avoid forcing pedestrians to cross the paths of the cars whenever possible. When such encounters are unavoidable, the design should create a safe passage for persons to move along until they come to a marked crosswalk that cautions drivers to take notice. Architects can design the pedestrian paths to intersect with or pass by the parking attendant station to create the

opportunity for surveillance and monitoring.

Approved pedestrian entrances should be clear of obstructions and distractions to encourage use. Unapproved entrances on the ground floor should be securely locked in compliance with building, fire, and life-safety codes.

Toll booths. In 2006 at the City Place Mall in West Palm Beach, Fla., a parking attendant observed two men loitering suspiciously in the parking garage. She locked herself in the booth, but she did not have a radio or telephone to call for assistance. The robbers broke in with a baseball bat, beat the attendant and took the contents of her cash drawer.

Toll attendants are thought of as guardians of the garage, but in reality they are often targets of crime because criminals believe that they hold the money. To protect them, attendant booths need to be situated in an area with a 360-degree field of view, be monitored and recorded by CCTV, and possess security glazing, duress alarms and drop safes with signage advertising that the attendant cannot retrieve money. The booths must also have

Physician Parking

adequate levels of security lighting with placement to support CCTV coverage. Lighting should be dimmable to allow a guard to see outside at night.

The attendant's rest room should be located near the attendant booth in an area open to surveillance opportunities. The bathroom should be locked and have a personal alarm inside in case of attack.

CPTED-minded designers should exclude public restrooms from their designs as they serve as a natural meeting place for victims and predators and are difficult to secure because of privacy issues. If the inclusion of public rest rooms is unavoidable, then they should be placed so that the doors are visible from the attendant's normal working position. The bathrooms should have open maze-type, "lazy S" entrances that allow cries for assistance to be heard. Panic alarms and motion-activated lighting should also be installed.

STRUCTURAL ELEMENTS SHOULD PROMOTE SECURITY

If a facility is being newly built, then structural support elements should be round rather than rectangular. A round column allows for much greater visibility around the corners than a rectangular or square column. Also, the most CPTED-oriented ramp design is an exterior loop that allows floors to be level and to preserve unobstructed lines of sight. Where solid walls are needed, portholes with screening, windows, or openings wherever possible should be incorporated to create an openness that encourages and enables casual observance.

Stairwells and elevators should be located centrally and should be visible from the attendant's position. However, the sides of many parking garages are enclosed to hide the perceived unsightliness of cars. In these structures, where stairways and elevators can exist in blind spots, CCTV should be placed to monitor comings and goings, and panic alarms and door position switches installed to alert the toll booth attendant that someone is in a stairwell.

Stairwells should be visible from grade level and be constructed of clear glazing materials to allow visibility from the street. Stairwell terminations at the lowest level should not offer accessible hiding holes, and those that exit onto the roof should be secured to prevent unauthorized access. Doors to mechanic rooms on the roof level should always be locked. Both basement and rooftop doors should be wired for door-position switches, intercoms, screech alarms and signal transmission to security or police.

Elevators, like stairwells, should incorporate as much glass and high-visibility placement as structurally possible. Glass walled elevators placed along the exterior of the building provide for good natural visibility by persons on the street and within the garage. They should have intercom capability to comply with the ADA Accessibility Guidelines (ADAAG), as well as audible alarms in case of a breakdown.

The stairs and elevators of high-rise or subsurface parking garages that serve offices, residences or other mixed uses should have elevators that empty into a lobby and not go directly to business or residential floors. Those exiting at the lobby must then use another dedicated bank of elevators or stairs that can be subject to screening, access control and surveillance by security staff.

SURVEILLANCE

CCTV cameras should be placed in areas with constant light (daylight or luminaries) to provide proper illumination for the lens. Low-light cameras can be used, but they are more expensive and they represent a tacit admission that lighting conditions might be poor.

Cameras should be placed to achieve an unhindered view. On surface parking lots, cameras should have good lines of sight and cover as much ground as possible. The cameras should be protected within dark polycarbonate domes to resist vandalism and to obscure where the cameras are watching.

CCTV systems in parking facilities need to be monitored in real time and digitally recorded for playback and enhancement. Cameras should be color, rather than black and white, to make it easier to identify specific vehicles and persons, especially in the playback mode, which can make a difference if a crime occurs and the garage operators want to recover important evidence.

Panic button call boxes should be integrated with the video surveillance system allowing a camera to be activated when a call box is pushed. CCTV systems can also be integrated into the access control system so that license plate numbers can be entered into a log when vehicles enter or exit the parking facility.

LIGHTING

Because this topic is extensive and there are a plethora of options and considerations, we will save the information for a future issue of *The Parking Professional*. Realistically, the topic of lighting could fill an entire issue with articles on its importance, current trends, future technology, energy efficiency, and numerous other variables. At the most basic security level, we'll say that without good lighting, CCTV systems become relatively useless and natural surveillance is impaired. Lighting in garages is addressed in detail in the IESNA G-1-03 Guidelines for Security Lighting, which recommends lighting levels for the various sites in the garage.

It is strongly recommended that operators inventory their lighting and adhere to the guidelines regarding placement, size of luminaries, shadow reduction, efficiency, etc.

SIGNAGE

Parking facility signage should be well lit, with letters or symbols that are a minimum of eight inches high. Wall signage for pedestrian and vehicular traffic should be graphic whenever possible to ensure universal understanding and provide a sense of clear direction. Walt Disney World's parking lots offer a classic example of how graphics, signage, and one-way traffic flow can allow effortless parking for several hundred thousand people a day, largely without incident.

Illegitimate signage. Graffiti should not be ignored, but rather should be removed as quickly as possible. The CPTED-minded architect can take steps to discourage graffiti by, for example, wall surfaces coated with graffiti-resistant epoxy paint and increased lighting levels in problem areas to increase natural surveillance. The act of trying to prevent their graffiti tells these individuals that the property is the territory of its rightful owners.

MIXED USES

Many garages are adding retail storefronts, such as copying facilities, fast food eateries, or car washes to provide compatible safe activities that draw legitimate users. Additionally, parking may be reserved during the day for businesses, but at night the lot becomes flat-fee parking for area nightclubs and restaurants.

When a parking facility assesses risks and threats and a holistic CPTED approach to improving security is employed, including ground-floor protection, limited or restricted access, good sight lines and lighting, CCTV, and well-placed and equipped attendants, the risk of committing crime will increase and the opportunity for crime will decrease, undesired elements will search for new ground, and a safe haven will be created for legitimate users. ∎

Randy I. Atlas, Ph.D., AIA, CPP, is a vice president of Atlas Safety and Security Design Inc. He may be reached at *ratlas@ix.netcom.com* or 305.332.6588.