

CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN

Mark Salem used to hate Monday mornings. He'd arrive at work to confront the damage that had been done to his auto repair business over the weekend. Thieves would steal cars, break out windows, rip up dash boards to steal car stereos, take tools, batteries, even a cash register.

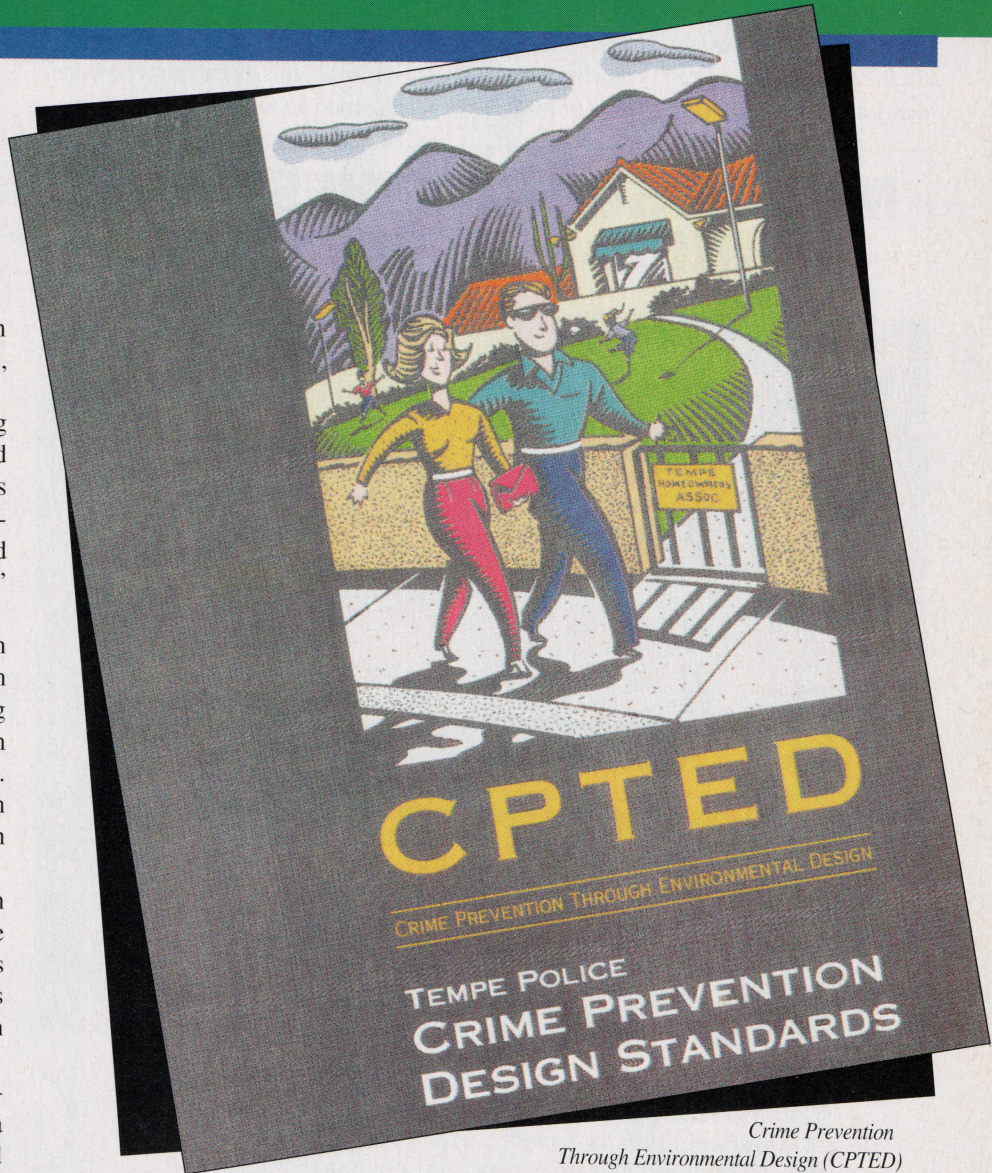
Burglars were literally killing Salem's business. But the theft and destruction came to a halt 18 months ago when Salem moved to a new location and hired architects who applied the concept of "designing out crime" to his building.

Installation included high-tech security systems, cameras, and motion detectors. Razor-sharp metal is strung along the tops of 8- to 11-foot high walls that surround the parking lot. Heavy locked doors require keys on both sides. Windows are half-inch thick and shatterproof.

Salem has yet to suffer a break-in at his new location. But even more interesting, Salem's building design is so attractive with its fluorescent lights and palm trees that it won a design award.

Business owners, architects, designers, and contractors are realizing that a building can be designed or remodeled to increase security and protect its occupants. These professionals know if customers don't feel safe walking or driving down a street, they will avoid the area and the businesses located there.

Police officers realize it too, and the Tempe, AZ, Police Department has taken the realization a step further. They created a program called Crime



Crime Prevention Through Environmental Design (CPTED) is the subject of this booklet, which is used by the Tempe, AZ, police in conjunction with architects, city planners and businesses to incorporate proven safety principles into new and existing projects in a modern and attractive way.

Prevention Through Environmental Design (CPTED) that advises business people, city planners, architects, and contractors of the hazards and risks of their buildings and how they can design in safety and cut out crime.

"Proper design and effective use of a building environment can lead to a reduction in crime and the fear of crime, thus enhancing the quality of life," explained Dick Steely, a 30-year veteran of law enforcement and coor-

dinator of the Tempe Police Department's CPTED program. "That's the premise of crime prevention through environmental design."

Architect Oscar Newman first coined the term "defensive space" in 1969, noting that buildings safely designed with crime prevention in mind would return control of the area back to owners. Defensible space does not mean ugly, fortress-like buildings where occupants are willing prisoners. Rather, buildings that are properly designed lend a feeling of safety and

power to its occupants, making them less afraid and vulnerable. And, as evidenced by Mark Salem's design award, defensible space can be attractive and innovative.

When Steely began his career as a police officer, he dealt with crime prevention, but never thought about it as a design situation. Then he attended a CPTED school, and after that, he was a believer in an environment managing behavior.

It is now his mission to pass on what he has learned so that others may bene-

fit. His aim is to assist in designing or redesigning a building that will be aesthetically pleasing while minimizing the opportunities for rapes, robberies, assaults, burglaries or vandalism.

"We're not being punitive, just helpful, and we try to be early in the markup sessions to make it happen," Steely said. "We sometimes have problems with architects who don't understand the concept, but we see the victims."

Steely added, "Some people ask, 'Does this really work?' Yes it does." He explained our ancestors used every principle CPTED teaches: maximized lighting from the sun and moon, defensive placement of homes on the side of cliff, only one entrance and exit.

Tempe is viewed as the leader in law enforcement's new role in "designing out crime" in planning new buildings and developments. Contractors, planners, and architects can find Steely poring over his blueprints, carefully checking every design that comes across his desk. No building permit is issued in Tempe until Steely has signed-off on it. While it may inconvenient for some, the purpose is to make sure that everyone fully protects themselves.

"Police haven't succeeded at very many crime prevention programs, but this program has a lot to offer the community," Steely said. "If you design a building right in the first place, it will be there forever. If planners don't design a safe environment, then we haven't done our job."

Steely advises architects and planners that proper defensive architecture begins with territory and the belief that we always take better care of something we own. "Ownership fosters the type of behavior that challenges abuse," he said. "You have to create something so that the abnormal user feels challenged in that space. This minimizes the risk of crime and moves it on to someplace more vulnerable."

Steely also makes recommendations for securing territory. These include keeping landscaping and planting materials that will be more than 2 feet tall away from parking islands, inside perimeter or screening walks or within 50 feet of access doors. If landscaping will grow taller, remove it.

Walls around the perimeter of a

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building should be eight feet high instead of six feet to make it more difficult to scale. Decorative wrought iron should not provide a foothold that would help someone jump the fence.

And don't allow river rock next to a parking lot, especially next to a bar. "It's like having Scud missiles on site," Steely said. "People pick them up and use them as a weapon, break windows and locks, and assault people with them. If you have to use river rock, grout it in."

The concept of defensive architecture includes natural surveillance, which can be gained through proper lighting, window placement, or placement of a design that oversees an activity. "When visit a restaurant and leave valuables in our car, we want to park where we can see the car," Steely said. Placing a company's break room where it overlooks the employee parking lot is also a good idea.

Transparent fences are better than walls to monitor activity, but a wall is better than nothing. Landscaping should enhance safety and good surveillance instead of blocking it. And, buildings should have the proper application and distribution of light. "These things make the normal user feel better, and make the abnormal user feel like somebody is watching them," he said.

Steely said that for natural surveillance, parking lots, refuse areas, aisles, walkways and recess areas should be illuminated with a minimum two foot-candle of light between sunset to sunrise. Light should always reach the surface of an area and not get lost above the trees or cast deep shadows.

Entrances should be illuminated with a minimum five foot-candle at ground level and seven foot vertical with a radius of not less than 15 feet from the center point of the entrance. All exterior lighting fixtures should have vandal-resistant and weather-proof covers.

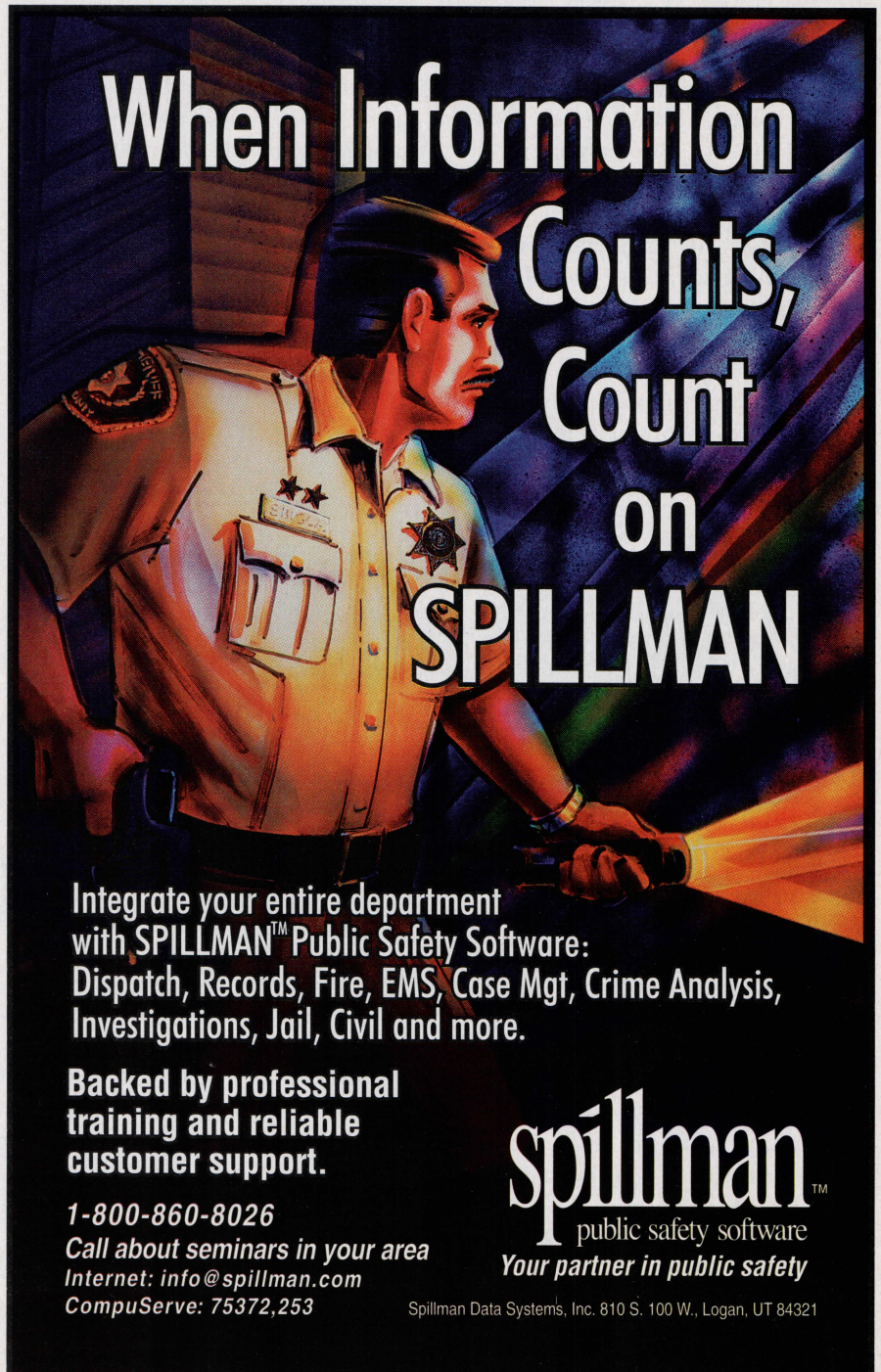
Address numbers should be 12 inches high, illuminated, and not obstructed by landscape or other conflicts.

Light switches in rest rooms should be keyed or remotely controlled to prevent tampering and a possible hiding place for an attacker. Don't put rest rooms at the ends of hallways where they are isolated and secluded.

According to Steely, lighting is one of the most misunderstood concepts in defensive architecture. For instance, traditional lighting in apartment communities has been the "lollipop light," a frosted plastic or glass globe mounted on top of a six-foot tall by two-inch round pole with a 60 to 75 watt incandescent light bulb. These lights are commonly known as "shake-and-break." Criminals shake the pole and put the lamp out of commission. Thieves can darken an entire apartment complex in a matter of minutes.

It's better to install high intensity discharge lamps that are now widely used for security applications. They are a bit more expensive, but the benefits include a long-life lamp, more light output per watt, energy efficiency, and they are not prone to vandals.

Another good idea is transitional lighting, which gradually increases or decreases light as a person moves from one area to another. This light is excellent for laundry and mail rooms, refuse locations, pool and spa areas, tennis courts, breezeways, and especially



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entry areas to apartment units. Transitional lighting allows the eyes to adjust to changes in lighting gradually without squinting.

Steely recommends transitional lighting be used in and around ATM machines as well. ATMs are usually in secluded areas, surrounded by bushes designed for aesthetic reasons. When safety concerns arise, much of the solution is believed to center on adding more light.

"More light isn't necessarily the answer," Steely said. "It's how that lighting is utilized. When you walk up to an ATM, your eyes are adjusted to the bright light. But the bad guy is off to the side waiting for you. When you turn around, you've lost your night vision and your night peripheral. They can see you well. You can't see them at all."

Good defensive architecture design also encompasses access control. This includes "target hardening" through quality deadbolts and other mechanical means.

It also includes proper landscaping. This may mean thorny bushes, which

make it difficult to enter through a window or other area without a struggle. It may also mean the placement of certain landscape that would prevent people from loitering in an area,

"We're not trying to take away from aesthetics, but a burglar would not want to cross over a bunch of prickly stuff to get to your window," Steely said. "No one wants to be stuck. They don't want to be hurt, caught, or seen either."

Steely likens criminal behavior to the cockroach. "If you give a cockroach an opportunity to a morsel of food, they'll be there eventually," he said. "If you don't do anything to prevent that cockroach from coming, they'll multiply. But when you turn the light on, they disappear." He added, "Those who do more, say a monthly spraying, have less of a chance of being victimized by a cockroach."

Steely advises police officers and architects to look carefully at access points. How many entrances into a site? How many opportunities for a criminal to escape? Can a community be gated?

While not fool-proof, gating residential apartment and condo communities increases territorial feelings among neighbors and tends to keep undesirables out. "If a bad guy feels he has only one opportunity to leave by, that's not good for him," Steely said.

Steely stresses to design and planning communities that if police aren't in on the preliminary stages of planning a building, in many cases they will become a part of the building afterward by having to regularly patrol the area and answer 911 calls.

"Police have never been routinely involved in design planning," he said. "But the fire department has kicked butts for 50 years with national fire codes. They've got their act together."

There is a growing trend of businesses being held accountable and sued by people attacked on their premises. Hotels, retail shops, bars, restaurants, apartment buildings, banks, grocery stores, and convenience stores are major targets for such lawsuits.

In an effort to limit such suits, convenience stores, one of the hardest-hit targets, are installing glass around



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their buildings for unobstructed views. They are also positioning cashiers at "command posts" so they can see down store aisles and out into parking lots.

The biggest deterrent to criminal behavior, Steely contends, is for criminals to think they are being watched. If employees have a clear line of vision from their buildings out to parking lots and around those buildings, criminals are less likely to lurk.

A pub close to Arizona State University in Tempe, was aware of the risk of being a bar located in a college community. They listened to Steely and made inexpensive design changes. One change was a well-lit parking lot with light hitting the surface and not lost in trees. Extensive windows along the walls of the bar also look out onto the parking lot. And a surrounding wall is seven feet high and has thorny bushes around to make it difficult for people to climb over.

Architekton, a Scottsdale-based architectural firm, is incorporating many CPTED principles into its projects. Two of note include a \$3.4 mil-

lion police substation and a \$4.4 million Escalante Park Community Center.

"We look at a building's design to see if there are spaces that could easily conceal crime," said Joseph Salvatore of Architekton. "It's unfortunate that it has come to this point. But we live in a very violent society and we have to be responsible."

The firm specializes in designing out things that might entice the criminal element. For instance, two of three buildings at Escalante Park will be razed to eliminate an outdoor courtyard, which became a meeting place for drug addicts. The new design will heighten surveillance of the park by neighbors and visitors.

A transparent fence around the structure will allow people to see in or out. A nearby roadway will be designated one way to slow cars and prevent cruising and loitering. Thorny bushes are being planted along walls to discourage graffiti. Should vandals try anyway, special paint will make graffiti removal easy.

Architectural firms should make sure all crime possibilities are mini-

mized or designed out of plans before Steely sees them. Salvatore and his colleagues see their jobs not only as planners, but as detectives. They ask questions about property and try to find dangerous areas in plans. For instance, if a woman is attending a conference at a hotel in a large city and has to walk across the parking lot at 10 o'clock at night, how safe is the area?

"Are there places where somebody can jump out and grab her?" Salvatore asked. "It's those types of thought processes that now enter into the designer's arsenal of tools."

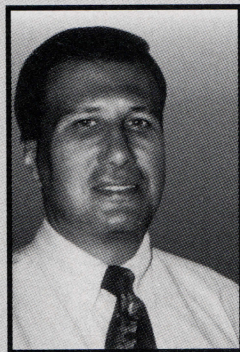
Salvatore has some of the same concerns as Steely when it comes to retail and convenience stores. "The typical old convenience store had glass across the front so you could see the parking lot, but the other three sides of the building were blank," he said. "People inside the building could never see what was going on behind or on either side of the building. Anyone could be waiting for the opportunity to commit a crime."

There are now changes. Smart retailers put glass on the sides of their build-

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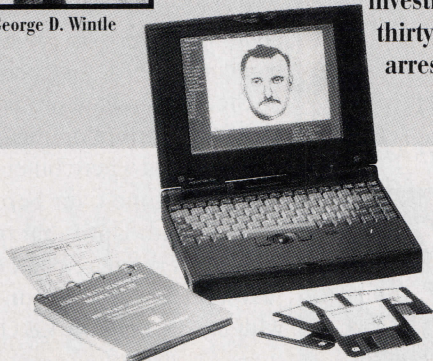


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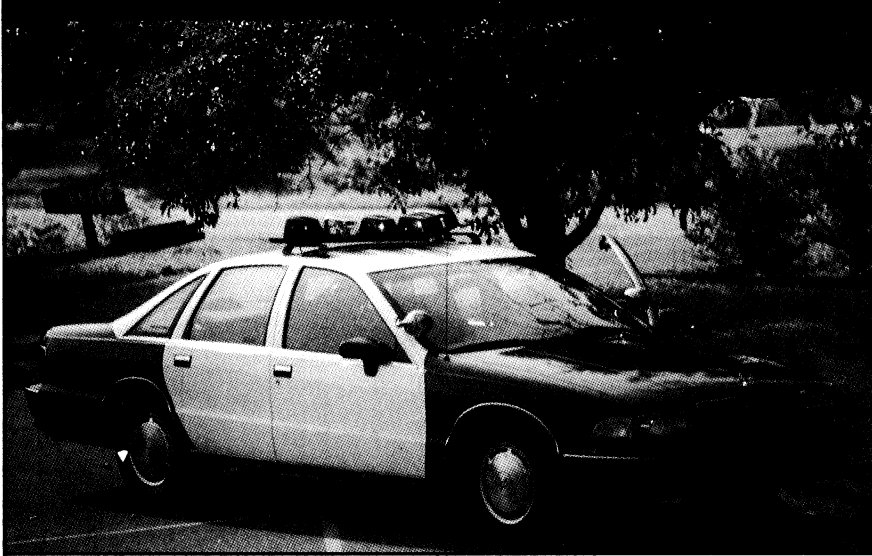
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ings, and use television cameras. Gas stations use "pay-at-the-pump" outlets to limit the number of people coming into the store at night.

"Many convenience stores lock up at night and transact business through a safety window, but they do it in a way that is not offensive," Steely said.

Salvatore added, "One of our clients equips employees with a panic beeper. If they get into a situation, where someone has a gun on them, they hit the button. It sets off an alarm at the security station, and police are sent. Technology helps, but common sense design principles are now being considered in designing these facilities."

Even if a department doesn't have a defensive architecture section, there is still much that can be done to help a community. Ask people, especially those in the business community, to take a walk around their buildings, or to mentally walk around their blueprints, and ask, "If I were to break into this building, how could I do it?"

Ask them to take members of their staff with them, and to take notes. Are the windows easily accessible? Is the perimeter wall easy to climb and without any bushes or other obstructions? Does ornamental iron provide a "helpful foot up?" Is the roof easily accessible? Is the skylight big enough to go through?

Have them take the same test at night. Chances are the building will look much different at night than in the middle of the day. Buildings and parking areas that look safe and attractive during the day can take on a dangerous and menacing contrast at night. But many people don't understand this until they see it first-hand.

How deserted is the area? Are undesirables loitering around—people they never thought about during the day? Are there dark areas that a burglar could, say, work on a window without being noticed for long periods of time?

Steely believe more police departments will adopt defensive architecture sections where blueprints will be carefully gone over before the first brick is laid. Until that time, he said police everywhere can be helpful by just keeping an eye out and talking with the community. L&O

Cynthia Scanlon is a free lance writer in Tempe, AZ.