

ATLAS SAFETY & SECURITY DESIGN, INC.

OKLAHOMA CITY

THE BLAST, THE REPERCUSSIONS, AND A SPECIAL REPORT ON DEFENSIBLE SPACE

As published in **Engineering News Record**, May 1995

By Randall Atlas Ph.D., AIA
Atlas Safety & Security Design, Inc.
Miami, Florida

The world will never know for sure whether any lives would have been spared had defensible space strategies been applied to Oklahoma City's Alfred P. Murrah Federal Building. But the question is a nagging one, especially for criminologists, the police, and protective design experts.



They are the ones who have been going hoarse for years trying to get architects and engineers to pay attention to crime prevention through environmental design (CPTED). And until the April 19th horror, their cries for help too often fell on deaf ears.

With CPTED "we've found it difficult to get architects on board in an organized way," says Jay W. Malcan, a policy analyst in Virginia's Dept. of Criminal Justice Services, Richmond, Virginia,



like many governments, is trying to institutionalize CPTED.

A partnership of criminologists, police, designers, and planners is needed but "architects have not wanted to dance," says Malcan. That's partly because their hands are already tied by other demands of practice. But as more jurisdictions require CPTED, architects will have to perform it. According to a recent survey of more than 300 cities by the U.S. Conference of Mayors, 90 report safety by CPTED design programs in the early development stages, and 66 more say they are considering them.

In its purest sense, CPTED is the passive use of the physical environment to reduce the opportunity for and fear of predatory stranger-to-stranger crime: burglar, robbery, assault, larceny, murder, rape, even bombing. CPTED relies on three main strategies: natural surveillance, natural access control, and territoriality-establishing boundaries and transitional spaces. CPTED looks at siting, landscaping, footprints, window schedules, facades, entrances, lobbies, layouts, lighting, materials, and traffic and circulation patterns. It treats microenvironment, such as restrooms, and macro environments, such as campuses and cities. "You have to analyze what exactly is at risk to develop a strategy," says Ronald J. Massa, president of Lorron Corp., Burlington, Mass. An engineer, Massa's specialty is high-risk protective design which applies CPTED principles and more to sensitive operations.

Threads

CPTED differs according to the space, use, occupancy, and perceived risk but there are some common threads. First, "this kind of planning goes awry when law enforcement tries it by itself," says Oscar Newman, president of Great Neck, N.Y.-based Institute for Community Design Analysis. Newman, the architectural grandfather of CPTED, coined the phrase defensible space more than 20 years ago.

Physically, alcoves and hiding places are bad; concrete planters and hedges are good but only up to 2.5 ft tall walls and fences without cross pieces that serve as ladder rungs can help; windows, which provide "eyes on the street," are preferred over fortressing or blank walls; and beautification, proper lighting, and clear-signage are beneficial. CPTED likes to slow traffic to impede vehicular getaways and reduce noise and fear. People then come out and provide natural surveillance.

Gated communities and street closings top the list of controversial CPTED treatments. Sarasota, Fla.'s chief planner, Sherry Plaster Carter, says: "I'm really disappointed that CPTED is getting national recognition for street closings. That's ludicrous."

Critics say street closings are elitist or that they create ghettos, depending on their

orientation. Closings may also impede emergency vehicles. But others maintain that closings reduce crime and increase Property values.

Curvilinear streets versus the more porous street grid are also hotly debated. "We don't say curvilinear streets are good and a grid is bad. We can work with both," says criminologist Timothy D. Crowe, of TDC Associates, Louisville, and a well-respected CPTED trainer.

Sarasota is a CPTED city without gating and with a street grid. When Carter arrived there four years ago, she was shown the 3-mile-long North Tamiami Trail, gateway to the city and its worst section. She was told: "You can' do anything there; just bomb it."

Fever

But she had already read about CPTED. Six months later, she had a task force that included her department and the police. North Trail, which accounts for 20% of the city's area, now has a CPTED ordinance and CPTED zoning, which will soon become citywide. "People caught the fever," says Carter. Prostitution, crime, and fear are down. And Carter never had a CPTED budget: "It's the cheapest program going."

Key to Sarasota's success is that "we have not created another layer of bureaucracy," says Carter, but rather incorporated CPTED into the existing development review process. A CPTED trained planner and a law enforcement officer make recommendations and must sign off on each review. Though petitioners must respond to concerns, recommendations are not mandatory or prescriptive because each plan is different. Instead of dictating, "we're making the design community part of the process," explains Carter. That fosters a positive relationship.

In Portland, Or., CPTED objectives are all part of community planning, says Gerald Brock, a city planner. "But when it's just presented as CPTED, the builder, developer, architect, planner, and law enforcement people have different points of view, so you have to package it differently." Therefore, the downtown, considered a CPTED success, wasn't designed with CPTED only, Brock says. But an enlivened downtown parallels CPTED. "It's so obvious that people miss it," he adds.

Locks

CPTED is the antithesis of target hardening, which employs mechanical and electronic access control and surveillance systems. That means locks, alarms, cameras, access cards, two-way radios, and security guards. "There's nothing wrong with physical security but we don't like to use it to cover up bad design," says Crowe.

"Security design asks, 'What kind of locks and electronics are required?' CPTED asks, 'Why is there a door needed here?' adds architect criminologist Randall Atlas of Atlas Safety and Security Design Inc., Miami. Most experts agree that CPTED can reduce the extent and cost of target hardening, and therefore the cost of operations.

That's a good argument for doing a CPTED study during conceptual design, when the cost of implementation is minimal. "I like to be called in before the architect starts," says Newman. But if Newman gets on a project early, it's usually at the bidding of a city, a property owner, or a developer. "Architects are often totally hostile because they just don't like their prerogative fooled with," he says. "The more famous they are, the worse they are."

That may be true. Alan Ritchie, a partner in Philip Johnson, Ritchie and Fiore, New York City, says: "Philip is very sensitive to objects that are going to detract, distract, and deter from the design, and I feel the same way." He adds, however, that with safety a higher client priority these days, it's important to "integrate [safety] into the architecture" rather than add it on later. Architect Raul L. Rodriguez of Rodriguez and Quiroga, Coral Gables, Fla., says: "You can't do CPTED; it's a fallacy. Architects should reflect our society, rather than try to change it." But Melody Starr Linger, a project manager with architect Akel, Logan Shafer in Jacksonville, Fla., disagrees. "It's amazing that architects haven't latched on to the concept that we can change criminal behavior," she says. Even if architects are willing to try, most "are ignorant" of CPTED as a process, says Atlas, "though this is not rocket science material."

CPTED experts pick on more than just architects. "All design and engineering professions have historically put CPTED into the category of cops and robbers," says Richard Gardiner of the Amesbury, Mass., planning and design firm that bears his name. Traffic engineers are viewed as the worst offenders because "CPTED challenges their basic hypothesis of getting the most people from point A to B," says Gardiner, a safe-neighborhood specialist. That approach has undermined many urban neighborhoods, he claims. Thomas M. Brahms, executive director of the Institute of Transportation Engineers, Washington, D.C., says that traffic engineers are getting a bum rap. "Mobility is a demand of the public, you can't blame the engineer." With limited resources, engineers have to accommodate competing influences of mobility safety and quality of life. Brahms does say that road standards are changing to reflect society's changing objectives. He is calling for a more systematic approach to integrate disabled-pedestrian crossings with traffic control and drainage.

Resistance

Michael J. Wallwork, a traffic engineer with the Florida Dept. of Transportation in Jacksonville, travels the nation encouraging walkable communities and "traffic-

calming." "My ideas have met with a lot of resistance, first off from traffic engineers." But Wallwork agrees with Brahms that "big changes are coming."

There's also a legal trend driving change. Property owners are getting sued for lack of security. Coral Gables based lawyer Irv J. Lamel knows that. In Lipton v. Home Savings, he represents an elderly woman mugged during the afternoon on the first level of her bank's two-level parking garage. Supposedly, the perpetrators cruised the garage in their vehicle until a victim appeared. They attacked her from behind as she stood by her open trunk, knocking her down. Then, they made their getaway. "The architecture of the garage provided easy means of egress for criminals," says Atlas, whom Lamel engaged as a consultant on the case. With the sides open, the lower level was not secure. Lighting was not sufficient to prevent deep shadows and there are too many entrances. There was no gatekeeper, no patrol, no closed-circuit television, and no natural surveillance. But there were two signs that read "Park at your own risk. Not responsible for theft or accident."

Norman D. Bates, president of Liability Consultants Inc., Framingham, Mass., describes another case. A woman was mugged as she was making a night deposit at a box outside a bank, which was at the entrance to a Massachusetts shopping mall. The mugger hid behind a broad mall entrance canopy column. The victim sued the bank for providing inadequate environmental security. She won. Bates says that studies have shown a five-fold increase in reported suits involving environmental security, from 1958-82, when there were four per year, and 1983-92, where there were 20 per year. And based on his experience, the frequency is still increasing. However, in his 300 cases, not a single architect has been sued, only owners and management companies.

That's partly because states typically have a statute of limitations regarding designer liability - in Massachusetts it is six years - and most of the cases had involved older buildings. But Bates predicts that as plaintiffs' lawyers become sophisticated in handling these cases, they'll look at the designer as a possible defendant. "If they don't sue the architects, the lawyers themselves could be sued for malpractice," says Bates, himself a lawyer. Fort Lauderdale, Fla., police detective Robert Dodder has been doing CPTED plan reviews for years. He says that when architects resist his (no binding) recommendations, he warns them that if a crime victim files suit, he will be subpoenaed to testify to that effect-against the defendant.

Location

National statistics on crimes by location are tough to come by. But according to a Liability Consultants' study of inadequate security claims, based on 267 cases over 10 years, more than 40% of the crimes occurred in apartments and parking lots. Rape

and sexual assault crimes account for 44.50% of the majority of inadequate security claims; assault and battery 24.9%. Combining settlements and verdict awards, nearly 25% ranged between 250,000 and \$100,000, with nearly 80% under \$1 million. Multi unit residential properties and retailers are sued the most. Texas, New York, California, and Florida reported the highest number of inadequate security cases from 1983-92. Though more crimes seem to occur in apartments, women tend to feel more vulnerable in parking facilities. "For a long time, parking was a low- budget item, an afterthought with no esthetics," says Mary S. Smith, a vice president in the Indianapolis office of Walker Parking Consultants/Engineers.

Glass

But Walker took a different tack, with glass-backed elevator cabs in glassed-in cores and glass stair towers. Transparency makes a difference, says Smith. Glass elevators do cost a bit more, she adds, and retrofits are difficult and even more costly. Screens prevent intruders from entering open-sided garages at street level. Metal halide lamps are the lights of choice. And though lighting standards require the same level of illumination at the pavement and 6 ft above it, "nobody's been following that" because it is unachievable, says Smith. The Illuminating Engineering Society is revising standards to correct that, she adds.

At public housing projects, CPTED can often improve conditions, but only if a program engages residents, agree housing officials. There, the goal is to parcel out public space to individual tenants for better care and protection. Low-rise buildings with units that have front doors on the street, and clearly delineated front and back yards, are preferred. Fencing, limited access, and speed bumps to help control drug traffic are also necessary. In high-rise public projects, breeding grounds for the drug trade, there are no easy retrofits. But Secretary of Housing and Urban Development Henry G. Cisneros is trying to help, partly through awareness by distributing a new CPTED booklet.

For commercial centers, windowed storefronts instead of fortressing or the bunker look, angled-in parking, benches, and beautification add up to reduced crime. For transit stations, Virginia's Malcan says the Washington Metro is the model. It was designed with natural visibility and surveillance, not the blind corners and alleys of New York City's much older system. One of the obstacles to CPTED is that it is still "more art than science," says Malcan.

Malcan and Pradeep Dalal, a research associate with the American Institute of Architects, Washington, think more pure research is needed to determine what works and why. They did receive a National Institute of Justice grant for the first national CPTED conference in 20 years, held last December. Another grant went to the

Conference of Mayors for its survey and an upcoming CPTED conference in Miami this June. HUD held three CPTED technical assistance workshops on public housing this year. And the National Crime Prevention Institute in Louisville has long offered CPTED training. But that's not research. Getting the architecture schools interested in CPTED has been as difficult as getting research done, says Malcan. But there is progress.

Blacksburg-based Virginia Tech is creating an interactive CD ROM CPTED tutorial with a \$98,000 grant from Malcan's department. It will be ready by the fall. "No one presents CPTED as a cure-all," says Michael J.. O'Brien, the Virginia Tech associate professor who is developing the tutorial. "If you've got determined predators, you'll never stop them." Perhaps the terrorists who struck in Oklahoma City could not have been deterred. But if the Murrah federal building had been set back from the street on four sides instead of just three, would more of the children in the day care center above ground zero still be alive today?

(from Engineering News Record, May 1, 1995)
