



# LEOPAC

Law Enforcement Environmental Planning  
Association of California

October 2001

## President's Message

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### President

Craig Sala  
Santa Clara Police  
Department  
601 El Camino Real  
Santa Clara, CA 95050  
408-615-4877  
csala@ci.santa-clara.ca

### Vice-President

Ron Petrocchi  
1005 Ranier Ave.  
Pacifica, CA 94044  
650-557-0585  
rpet@pacbell.net

### Assistant/ Membership Information

LEOPAC  
c/o Robin Valencia  
4067 Burbank Drive  
Concord, CA 94521-1023  
925.798.9440  
robinval@pacbell.net

<http://www.leopac.20m.com/>

Well, our conference in the beautiful seacoast town of Santa Cruz was a success. I would like to extend our appreciation to Police Chief Steve Belcher for hosting our conference, and to Jim Howes and Julie Blakeley of the Santa Cruz Police Department for their efforts making everyone at the conference comfortable. We had some great networking between security analysts, planners and crime prevention people, plus, we had a great time at the Ideal Bar & Grill and wonderful weather for our Monterey Bay Wine & Cheese cruise.

Listening to planners, architects, and security consultants was very interesting. Especially in regards to how our CPTED requirements can impact developments. We have come a long way and still are challenged with new ideas and requirements that may not necessarily apply to our recommendation. Gaining respect is what its all about and the best way to do that is to be aggressive, factual, and back up your requests with documentation, reminding those powers that be of litigation.

I have put in this newsletter a section on building security that I found in the San Jose Mercury news just after the tragic bombing of the New York Towers. I personally feel that we will be impacted in CPTED because of the fear of terrorist threats. Building and citizen security will play a much more important role in the days, months, and years to come. We all need to reconsider any developments in our ar-

reas and the implementation of conditions that will enhance defensible space keeping our focus on a safe and secure environment. We have several new members and I am looking forward to seeing them at our meetings. The next meeting to be held at the Safety Center Inc. in Sacramento on December 12th, will bring, I'm sure, some discussion on CPTED training (I recommend the American Crime Prevention Institute or [www.aegisprotect.com](http://www.aegisprotect.com), check it out) and what is currently out there. We will also be discussing security measures due to the new terrorist threats and how we can make of our members more active and increase the attendance of our meetings.

If you are stuck on a project or want some opinions as how to go forward, feel free to attend our meetings and get the straight scoop from those who have been there and done that. Hope to see you there, and be safe!

God Bless America

Your President

Officer Craig Sala  
Crime Prevention  
Santa Clara Police Department



# Security By Design

It is unlikely that any ordinary building could be designed to withstand the impact of a fuel-laden, hijacked jetliner like the ones that took down the twin towers of the World Trade Center in New York City last week.

But as forensic engineers comb through the debris of those attacks, the clues they find among the bent steel, cracked welds and broken floor slabs will add to a growing body of knowledge about how to shield people from terrorism.

For now, the structural experts are unable to enter the site because it is considered a crime scene. What is discovered in the eventual autopsy of the site -- a "post-failure analysis" as it is called -- will make tomorrow's buildings safer places to work, eat and live.

In an effort to thwart terrorism, it would be simple enough to erect Stalinesque bombproof bunkers, capable of surviving even a nuclear attack, say experts. But the far greater challenge is to balance security with aesthetics, creating structures that are not just safe and reasonably priced but also elegant, inviting and inspiring tributes to our democratic society.

"The U.S. does not want to have its buildings look like barracks," said David K. Vaughan of Weidlinger Associates, an engineering firm with headquarters in New York City that has designed and improved U.S. embassies in places such as Damascus, Syria; Kuwait; and Baghdad, Iraq.

"But every incident adds to our understanding of the way construc-

## How The United State Is Using Architecture To Help Prevent Future Casualties In Terrorist Strikes Like The World Trade Center Attack And

### 1995 Oklahoma City Bombing By Lisa M. Krieger, Mercury News

tion materials respond. Everything fails at its weakest point. The question is: What is the weakest point?" said Vaughan. "What we learn will be used to create new design codes which reduce the likelihood of loss of life."

To cope with the increased national unease over terrorism, two national committees and several private engineering companies are working to create practical solutions that have been adopted by federal regulators, leading to safety improvements at a number of sites, including 50 U.S. embassies overseas.

A postmortem analysis of the collapse of the World Trade Center's two towers and adjacent Seven World Trade Center is likely to be conducted by a coalition of the American Institute of Steel Construction, the American Society of Civil Engineers and the National Council of Structural Engineers, under the authority of the Federal Emergency Management Agency.

#### Designing for survival

One sad lesson learned from previous incidents is that injuries and deaths could have been avoided, they say. Many casualties were caused not by the initial explosion, but by the building's response to it.

Safety precautions vary from building to building, based on their vulnerability to attack. While the most extreme measures are taken to

protect military installations, specific changes also have been adopted by:

**Airports:** One of the most noted examples of a successful merger of

visual openness and security is the new International Terminal at San Francisco International Airport, designed by a team of architectural firms including Skidmore, Owings & Merrill of San Francisco.

Winglike trusses soar over the entrance to the terminal, creating a welcoming entry to the Bay Area. Inside, warm sunshine falls through arched skylights, creating what has been described as "an airy cathedral of transit." Yet to board an airplane, passengers must pass through tight security, tucked deep inside the structure.

The giant glass curtain on the terminal's front wall is layered. The outer layer is divided into a horizontal grid pattern; the inner layer has vertical grids. Together, they form a visual basket weave that is not only lovely but stronger than a continuous pane of glass.

Besides meeting typical airport demands, such as security, aviation and customs requirements, the project had to be built to survive an earthquake. The solution was to separate the terminal from its foundation. The terminal rests on 267 stainless steel sliders that sit in giant dishes -- so when the ground shakes, the building can roll more than a foot in any direction.

At airports elsewhere in the country, an extra step has been taken to protect air traffic control towers, surrounding them with an "exclusive zone" where cars are

## U.S. architects balance aesthetics, security

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not permitted.

**Embassies:** An investigation by retired Adm. Bobby Ray Inman in the mid-1980s concluded that half of U.S. overseas office buildings failed to reach even minimum-security requirements. That launched a \$4 billion overhaul of embassy security resulting in the construction of 20 so-called "Inman embassies," new structures designed to withstand blasts.

These buildings are constructed with 10-inch thick walls of reinforced concrete, rather than steel columns; while steel is strong, the material between the columns is not. A "standoff zone" 100 feet wide separates the walls of embassy compounds from the buildings themselves, creating a buffer to dilute the impact of an explosion.

Because flying glass and debris contributed to many prior embassy casualties, the State Department specifies that only 15 percent of exterior wall space may be devoted to windows. Embassy windows use laminated glass, sometimes encased in polymer film; in barracks, stronger polycarbonate glass may be used. A strong frame and "catch bar" help keep the windows securely in place, so they won't fall and put pressure on the surrounding wall, further weakening it after a blast.

Above all, it is important not to erect inhospitable concrete designs that project an image of fear and hostility. Some solutions are simple, such as roofs shaped to deflect a blast or interior courtyards that give employees sunshine without exposing them to the street.

**Federal buildings:** The bombing of the Alfred P. Murrah Federal Building in Oklahoma City in 1995 was a wake-up call for the General Services Administration (GSA), the government's landlord, which is responsible for all federal buildings in the nation.

Ed Feiner, chief architect of the GSA, has been a guiding force behind a \$10 billion, decade long plan to build or upgrade 155 federal courthouses and other buildings across the country. He aims to make them secure by imposing strict new standards. Yet he also seeks to avoid the bland, sterile boxes built in the 1960s and return federal courthouses to their former grandeur.

Almost all terrorist attacks are thwarted by the U.S. intelligence community, not by structural engineers, said University of California professor Abolhassan Astaneh.

A small fraction of attempts can be stopped by design barriers, he said. "But if they come with planes or rockets, what can you do?" he asked.

The Las Vegas courthouse, designed by Cannon Dworsky of Los Angeles, was the first federal building to incorporate the GSA's new anti-blast design standards. Nearly \$5 million went into new security measures. Before construction, prototypes of its giant "curtain wall" -- the glass-and-aluminum exterior sheathing of the building -- were subjected to blasts at the government's White Sands Missile Range in New Mexico. Its skylight-topped rotunda entry, although built with granite and concrete for strength, has an airy and open appearance.

A more recently completed federal courthouse in Islip, N.Y., was designed by Richard Meier & Partners of New York City. Meier, who also designed Los Angeles' Getty Center and San Jose's planned downtown City Hall, is famed for his use of light and space to brighten public spaces. Also built to new anti-blast standards, the Islip courthouse features a spectacular atrium that separates judges' offices from public areas. An open facade overlooks the public plaza and ocean; a more closed facade faces the court complex.

In the replacement to Oklahoma City's fallen Murrah building, the public lobby is separated from private offices by a three-story wall of concrete, creating a secure yet open atrium. Floor slabs are more securely fastened to support beams to keep them from falling down -- or being blown upward -- in a blast. Glass windows are glazed and laminated for strength. Window frames, while substantial, are behind the building's facade.

"You can remove major structural members, and the building will still stand," said **architect** Carol Ross Barney of Chicago's Ross Barney & Jankoswki, which designed the building.

### Architecture's role

How large a blast could any of these buildings withstand? Government officials aren't saying, for security reasons.

Even the most sophisticated and secure building can be overcome, experts say. And America's public buildings -- symbols of the nation's influence -- will always be attractive targets for anyone with a grudge.

LEEPAC  
c/o Craig Sala  
Santa Clara Police Department  
601 El Camino Real  
Santa Clara, CA 95050



Visit us online at  
[www.leepac.20m.com](http://www.leepac.20m.com)

## December LEEPAC Meeting

The December LEEPAC meeting is being hosted by Phil Jordan at the Safety Center Incorporated in Sacramento. There will be a tour of the Safety Center and a guest speaker. The meeting will be held:

Wednesday, December 12, 2001

10 am to 1 pm with registration at 9:30 am

Safety Center Incorporated

3909 Bradshaw Road, Sacramento, CA

Menu: To be announced.

Price: \$15.00 (includes lunch)

Directions can be found on the Safety Center website at [www.safetycenter.org](http://www.safetycenter.org).

## Membership Update

LEEPAC continues to grow. We now have 51 dues-paying members including 20 new members. Twenty-six of our members attended the 2001 LEEPAC Training Conference hosted by the Santa Cruz Police Department September 28-29<sup>th</sup>. We still have 15 members on our mailing list who have not renewed their dues for the 2001/2002-year. Members with a paid-through date **prior** to June 2001 have been removed from our mailing list.

Please note that if you **did not** receive an email notification of the October 10<sup>th</sup> meeting than I do not have your email (correct) address. Please send an email to Robin Valencia at [robinval@pacbell.net](mailto:robinval@pacbell.net) so that I can update our records and keep you apprised. Thank you.