

Designing for Security: New Designs, New Technologies

by

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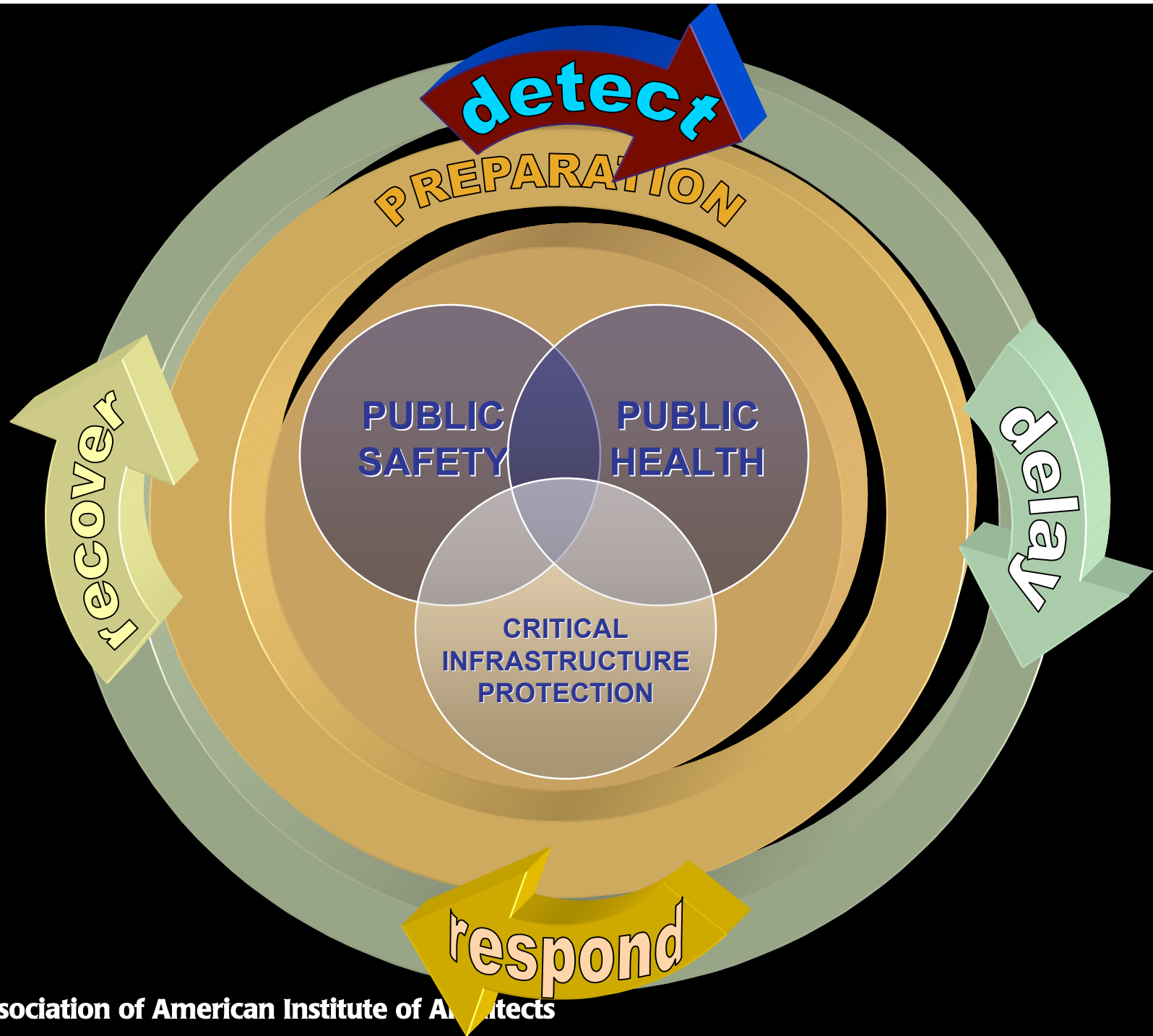
Designing for Security

- **Agenda**
 - Understanding threats & risks
 - Protecting the infrastructure
 - CPTED
 - Security systems technology
 - Class example

Determining Security Requirements



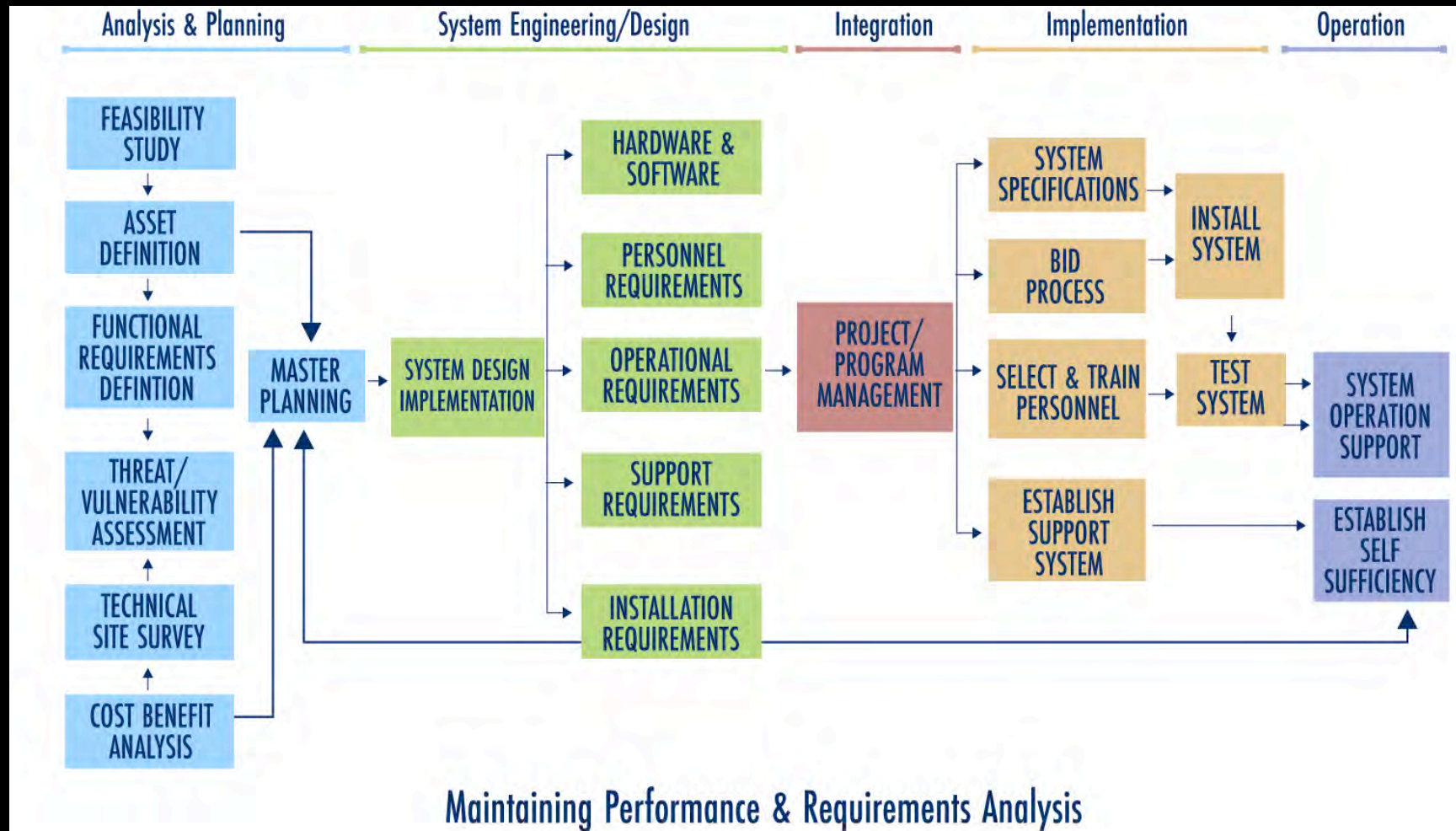
Purpose of Security



Risk, threats, vulnerability analysis

- **Identify assets**
- **Determine criticality**
- **Determine threats**
- **Determine modes of attack**
- **Determine vulnerability**
- **Determine protection required**
- **Threat and vulnerability analysis will determine the weaknesses and potential for attacks**
- **The result is the functional security design criteria**

Integrated Security Program



Identify Assets: What is to be protected

- People
- Information
- Property



How critical is the asset to be protected?

- What is the mission statement of the facility?
- What and whom are the probable targets?
- How easy can the assets be replaced?

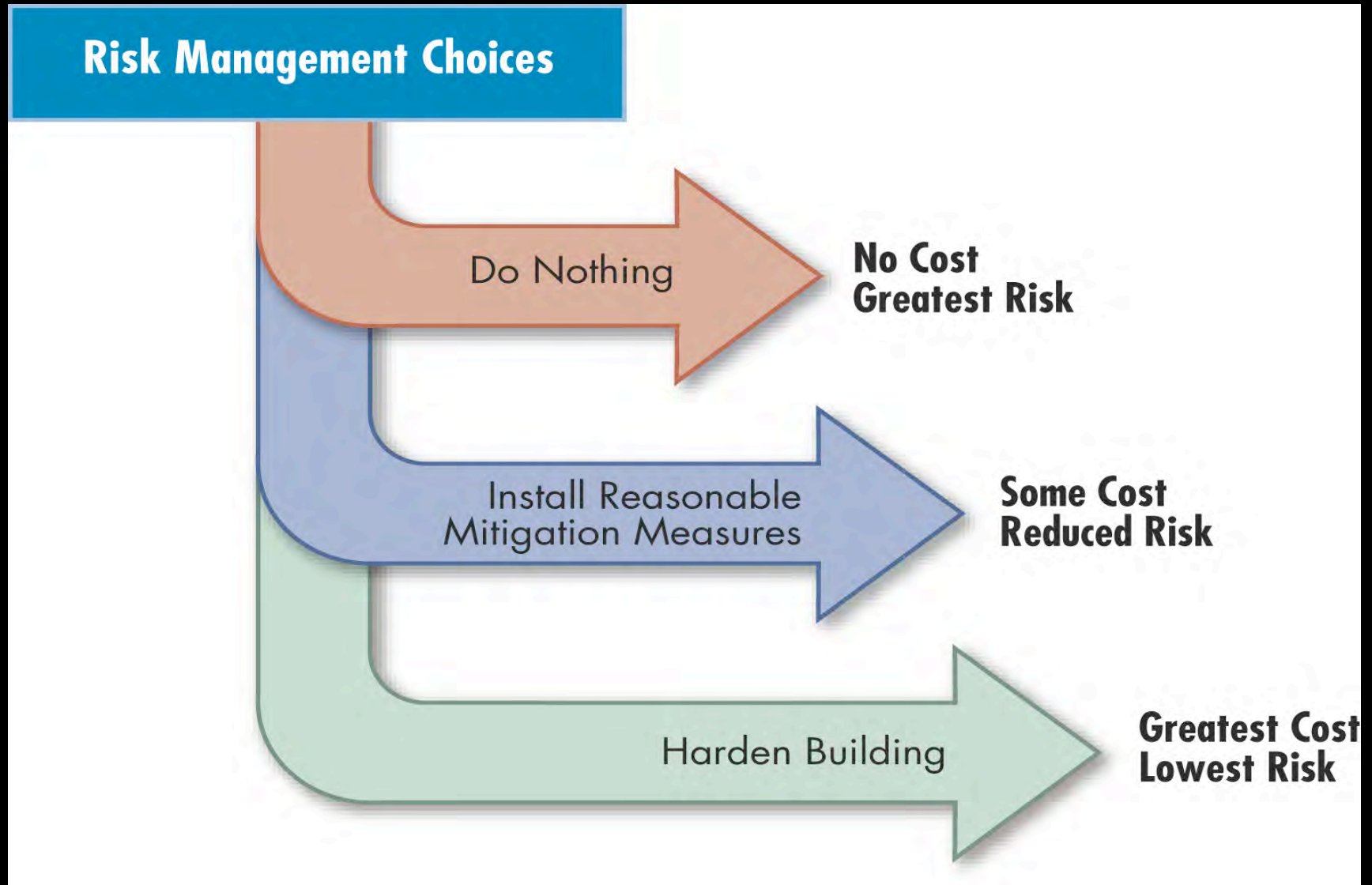


Determine Modes of Attack

- Is the threat from within?
- Or, is the threat from outside?
- How will the perpetrator gain access to the property?
- Is the attack likely or imminent?
- What tools or weapons will they use?
- Bombs? Guns? CBR?
- Who has the answers you seek?
- Does anyone want to hear the truth when you do find the answers?



DHS All Hazards Approach



Examples Mitigation Measures



What are the vulnerabilities?

- **A vulnerability risk assessment is an in-depth analysis of building functions, systems, operations, and site characteristics to identify building weaknesses, and lack of redundancy, and determine the corrective actions that can be designed or implemented to reduce the vulnerabilities.**





Definition of Threat: Street Crime

- What are the challenges to our safety?





Definition of Threat: Workplace Violence

Factory worker kills 5, self in plant shooting

BY SCOTT GOLD
AND LIANNE HART
Los Angeles Times Service

MERIDIAN, Miss. — A man who had spoken openly about his hatred of blacks and his capacity for killing went on a rampage Tuesday at the defense plant where he worked, fatally shooting five and wounding nine before taking his own life with a shotgun, authorities and area residents said.

Investigators identified the man as Doug Williams, 48, a production assemblyman for the past 19 years at a Lockheed Martin Aeronautics Co. plant three miles outside this eastern Mississippi industrial city of about 45,000.

Several theories emerged about the motive for the shootings. More than anything, however, witnesses and victims' relatives cited Williams' declared bigotry.

Four of the five co-workers he killed were black, including Lanette McCall, 47, of nearby Cuba, Ala., an aircraft mechanic at the plant for 15 years and the mother of two daughters. McCall told her family and her supervisors that Williams had threatened to kill blacks for more than a year, her husband, Bobby McCall, said in a telephone interview.

Lockheed Martin had placed Williams in anger-management and threat-assessment counseling but had recently returned him to the assembly floor,

Bobby McCall said.

"She was real concerned about this guy and his threats," McCall said of his wife of 21 years. "He said he was going to do what he did today."

Williams came to work two weeks ago carrying a white Ku Klux Klan hood, said Terri Collier, an area resident whose husband, Alvin Collier, 47, was shot three times but was expected to survive. Williams was sent home after that incident, Terri Collier said.

Alvin Collier told his wife that Williams began his shooting in a trailer where four black employees were taking an ethics class Tuesday morning.

"Oh, good, you're all together," Williams said upon entering the trailer, according to Alvin Collier.

Officials said Williams reported for work Tuesday and attended a meeting with co-workers about 9:30 a.m. During a break, he retrieved a 12-gauge, pump-action shotgun and a semiautomatic rifle from his pickup truck, leaving three more weapons in the truck. Wearing camouflage pants and a black T-shirt, he walked back inside the plant, where 138 people were working, and began shooting.

Witnesses said he walked slowly through the aisles of an assembly floor, leveling, aiming and firing the shotgun repeatedly. Terrified employees dove for cover and ran for their lives. Some were shot sitting at their desks, officials said, and several died with their heads cradled in co-workers' bloody hands.

Hundreds left work early in the area and lined up under a sweltering sun to give blood, for several victims in surgery.



WILLIAMS

Fired worker kills 6 at Chicago job site

CHICAGO — (AP) — A man who had been fired from an auto parts warehouse six months ago came back with a gun Wednesday and killed six people in a rampage through a maze of engine blocks and 55-gallon drums before being shot to death by police.

The dead included two brothers who were part owners of the business, and the son of one of them.

Salvador Tapia died in a gun battle with police inside and outside of the building, hiding behind a container as he fired off rounds from his semiautomatic pistol, authorities said.

"He got up, he had the gun, they ordered him to drop the gun, he refused to drop the gun. That's when the officer shot him," acting Police Superintendent Phil Cline said.

Tapia, 36, lost his job at Windy City Core Supply about six months ago for causing trouble at work and frequently showing up late or not at all, Cline said. He said Tapia had made threatening calls to the owners since being fired.

Tapia had at least one previous conviction for unlawful use of a weapon, officials said.

Cline said when police arrived shortly after 8:30 a.m., they tried to get in the building but were driven back by gunfire.

He said when an assault team entered the building they had trouble maneuvering through all the auto parts.

Cline said four people died



at the scene.

Tapia and two others were taken to hospitals and died there.

Authorities identified the dead as part-owners Alan Weiner, 50, of Wilmette, and his brother Howard Weiner, 59, of Northbrook. Howard's son Daniel Weiner, 30, also was killed.

The other victims were Calvin Ramsey, 44; Robert Taylor, 53; and Juan Valles, 34, all of Chicago.

"From the scene it appears that he went throughout the supply warehouse shooting them," Cline said.

Tapia also tied one man's hands behind his back, but the employee escaped unharmed, Cline said.

He was the only person inside the warehouse who survived the shooting, police said.

32A The Herald THURSDAY, APRIL 25, 2002

NATIONAL NEWS

Engineer is found guilty of slaying seven coworkers

BY DENISE LAVOIE
Associated Press Writer

CAMBRIDGE, Mass. — A man who gunned down seven co-workers at a software company in what he called a divine mission to prevent the Holocaust was convicted of murder Wednesday by a jury that rejected his insanity defense.

Michael McDermott, a hulking 43-year-old with long, shaggy hair and a bushy beard, stood impassively as the verdict was delivered.

The convictions on seven counts of first-degree murder meant an automatic sentence of life in prison without parole. Massachusetts does not have a death penalty.

Prosecutors said McDermott went on his rampage because he was angry about the company's plan to comply with an IRS order to withhold a large portion of his salary to pay back taxes. They said he concocted the Holocaust story after boning up on how to fake mental illness.

The defense claimed the software engineer was insane, suffering from depression and schizophrenia, and didn't know what he was doing at Edgewater Technology Inc. in suburban Wakefield on Dec. 26, 2000.

The trial featured chilling testimony from workers who hid under their desks or ran out of the building after McDermott began shooting. Some said they heard coworkers begging for their lives before McDermott blasted them with an AK-47 and a pump-action shotgun.

The jury deliberated for



JOHN BLANDING/POOL PHOTO

CONVICTED OF MURDER: Michael McDermott, 43, listens as the verdict is delivered Wednesday in a Cambridge, Mass., court.

nearly 16 hours over three days.

McDermott spent two days on the witness stand testifying in his own defense. He matter-of-factly told the jury he was given a mission by St. Michael the Archangel, who told him he could earn a soul and prevent the Holocaust if he killed Adolf Hitler and six German generals.

In vivid detail, McDermott described being transported back in time to 1940 and entering a bunker where he heard Hitler's thoughts and saw men and women wearing swastika armbands. He described killing Nazis, one by one, as horrified family members of the real victims wept and eventually left the courtroom.

McDermott's defense presented medical experts who said he had a long history of depression, obsessive-compulsive disorder and schizophrenia. He testified that he was raped repeatedly by a neighbor as a child and that he tried to commit suicide at least three

times. He also said he heard voices in his head and even "clustered" them into different groups.

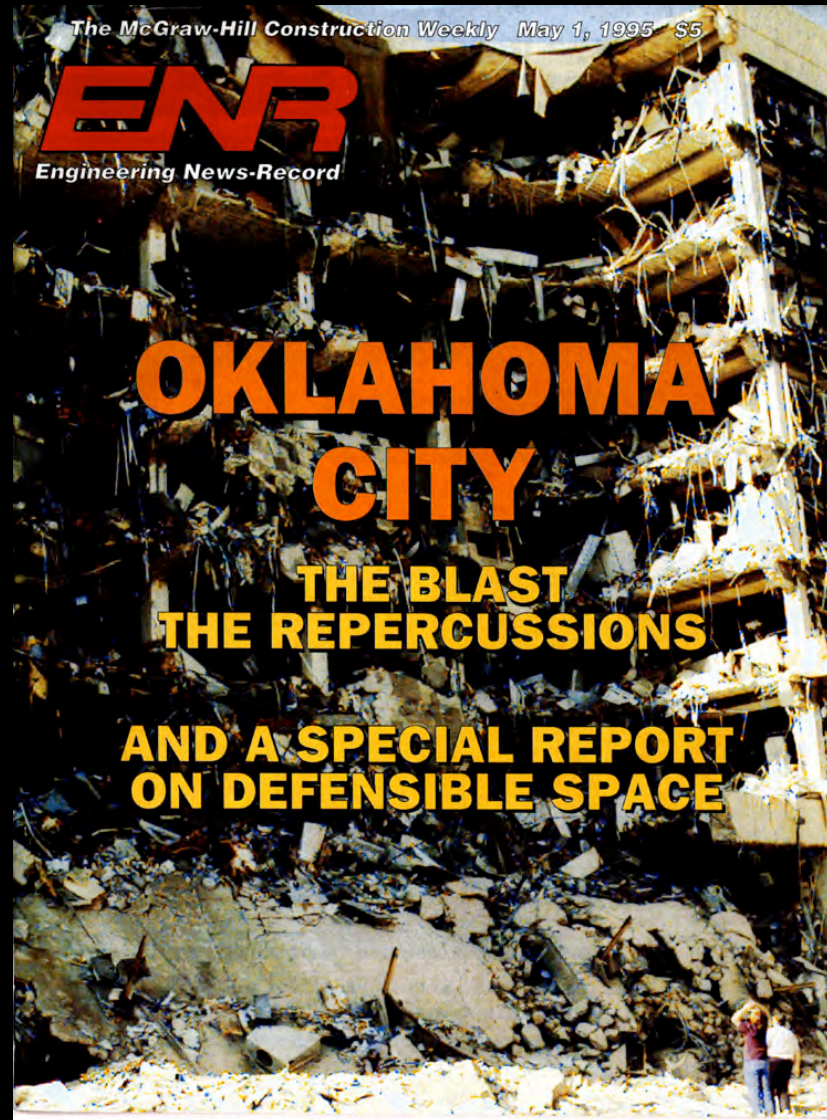
"The major one I call the chorus," he testified. "The chorus continuously tells me what a bad person I am, what a waste of space and skin and air I am."

The day of the killings, McDermott was suffering from hallucinations and delusions and did not know right from wrong, a defense psychologist testified.

Prosecutors, however, said McDermott cooked up the story. McDermott even acknowledged buying a textbook for psychiatrists attempting to detect when criminal defendants are lying or faking mental illness.

McDermott said he researched the subject in order to make himself appear sane and to make sure his doctors prescribed Prozac, the antidepressant he preferred.

Definition of Threat: Terrorism





THE NATION | MORE COVERAGE, 4-12A

HOMELAND SECURITY

Government fears attack by terrorists this summer

■ The U.S. government is concerned about a planned major terrorist attack in coming months, according to security sources.

BY SUSAN SCHMIDT
AND DANA PRIEST
Washington Post Service

WASHINGTON — Federal officials have information suggesting that al Qaeda has people in the United States preparing to mount a large-scale terrorist attack this summer, sources familiar with the information said Tuesday.

Attorney General John Ashcroft and FBI Director Robert Mueller intend to hold a joint news conference today to discuss the threat and to ask Americans to watch for several suspected al Qaeda operatives who may be in the country, officials said.

The concerns are driven by intelligence deemed credible that was obtained about a month ago indicating an attack may be planned between now and Labor Day.

with other intelligence "chatter" suggesting that al Qaeda operatives are pleased with the change in government resulting from the March 11 terrorist bombings in Spain and may want to affect elections in the United States and other countries.

Intelligence and law enforcement officials are trying to strengthen security at the presidential nominating conventions this summer in Boston and New York. They are also concerned about the possible targeting of other prominent events, starting with the World War II Memorial ceremony Saturday in Washington, the G-8 Summit June 8-9 in Sea Island, Ga., and the Olympic Games in August in Athens.

THREAT LEVEL

Federal officials have been discussing raising the national threat level between now and next Jan. 21, the day after the presidential inauguration, although Homeland Security

Tuesday no such announcement is scheduled.

The Justice Department and FBI plan to ask for the public's help today in locating several suspected terror sympathizers. The bureau likely plans another push to find Aafia Siddiqui, a 32-year-old Pakistani woman who has a doctorate in neurological science and has studied at MIT and Brandeis University in the Boston area, and Houston.

TRUCK BOMBS

In April, an FBI bulletin to law enforcement agencies warned of possible truck bombs, and a source familiar with the government's threat discussions said truck bombs are a primary concern.

"I'm more worried than I was at Christmas time," said one senior U.S. intelligence official, comparing the "election threat" to the canceling of specific airline flights around the holidays. He said the U.S. government is convinced there are still as yet unidenti-

■ AL QAEDA AT LARGE: TERROR NETWORK SAID TO BE ALIVE IN 60 COUNTRIES, 24A

United States, waiting for the word to launch plots.

"They are here, and there are indications they are preparing" attacks, said the official, who is barred by government policy from being named.

Within the past three weeks, members of the House and Senate intelligence committees have received briefings from the CIA and FBI on what the CIA counterterrorism center has termed the "election threat." The members have asked the agencies for more specific, follow-up briefings, including an assessment of al Qaeda's presence in the United States, said congressional sources.

One counterterrorism official said al Qaeda still aims to carry off a so-called spectacular attack aimed at modes of transportation such as airlines

Infrastructure protection

- Country's 300 air and seaports
- Oil and chemical Supplies and Storage
- Energy, Water, Sewage treatment
- Communications
- Buildings
- Information/data/records



Infrastructure Security

THE MIAMI HERALD JULY 2, 2003

Tighter security needed for ships, ports, U.S. says

BY LAURENCE ARNOLD

Associated Press

WASHINGTON — Thousands of U.S. ports and ships will have to toughen security against the threat of terrorism under rules issued by the Homeland Security Department on Tuesday.

Much of the cost will be borne by the maritime industry.

Some 10,000 ships and 5,000 coastal facilities will be required to assess their vulnerabilities, hire and train security officers and purchase security equipment. The nation's 361 ports will have to establish security committees, draft security plans and hold training drills and exercises.

Under the rules, people waiting to board large passenger ships, including ferries, could be subject to the types of body and baggage screening now in place at airports. But a

Coast Guard official said that would happen only during times when the nation's terror alert has been raised to "orange," and only on certain ships deemed most vulnerable.

The regulations also will force the owners of 4,121 domestic ships to buy and install transponders so their identity and movements can be continuously tracked.

"These rules are an essential element in the Department of Homeland Security's national strategy," Vice Adm. Thad Allen, the Coast Guard's chief of staff, said at a news conference. "They provide templates to strengthen security measures for our ports and for those who do business in our ports."

Several experts, including Transportation Secretary Norman Mineta, have said America's ports are the most vulnerable segment of the

transportation industry today. Ninety-five percent of international cargo to the United States is carried by ship.

The new rules, which will become final late this year after one more public review, apply security protocols typically associated with international seafaring to many domestic vessels, public ports and other piers, terminals and loading docks.

The Coast Guard estimates the cost to ports, ships, coastal facilities and offshore oil drilling units will exceed \$7.3 billion over the next 10 years.

The Homeland Security Department has distributed \$337 million in grants to ports and facilities and later this year will release an additional \$105 million. Still, Asa Hutchinson, undersecretary for border and transportation security, acknowledged the maritime industry will have to assume

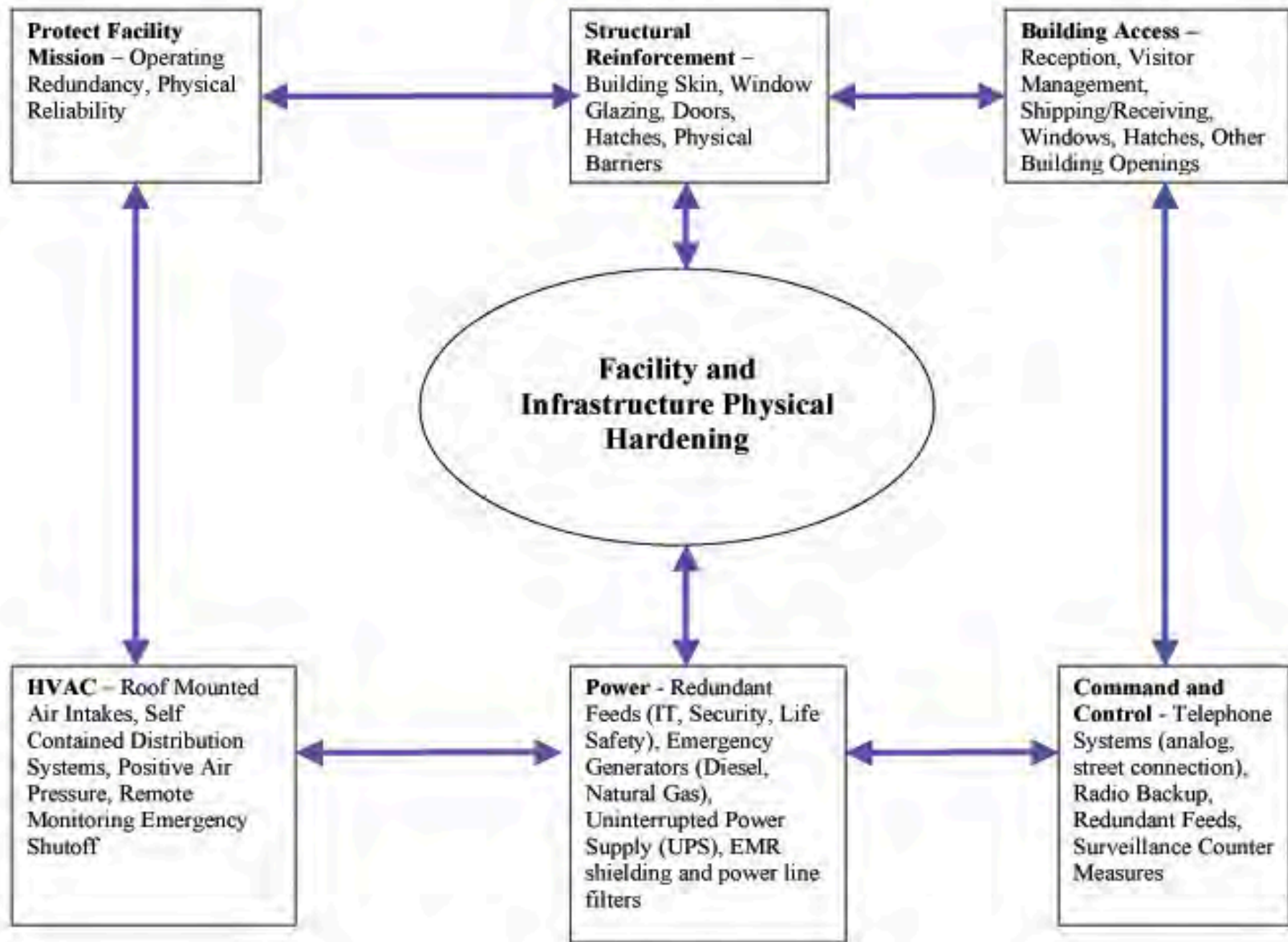
much of the cost.

The rules focus on parts of the maritime industry deemed at greatest risk of a transportation security incident, including tankers, barges, large passenger ships, cargo and towing vessels, offshore oil and gas platforms and port facilities that handle dangerous cargo.

In writing the rules, federal officials resisted spelling out specific steps that all ships or ports must take. They used the term "access control," for example, rather than "fencing."

Allen said the Coast Guard sought maximum flexibility because ports and ships have such varying vulnerabilities and needs.

The Coast Guard is accepting public comments until July 31 and will hold a hearing in Washington on July 23. The final version of the rules will be released in October and take effect 30 days later.



Threats against homeland security

- It is a matter of scale
- Is homeland security only about protecting large infrastructure like water systems, and bridges and dirty bombs?
- Or is it also about protecting our built environment: office buildings, shopping centers, banks, schools.
- And is it about protecting against break-ins, trespassing, theft, assault?

Events of 9-11 changed focus

- Before 9-11 Security= Access Control + Surveillance + response
- After 9-11 Enhanced security = Access control + surveillance + response + building hardening + bio/chem / blast protection

Record News

With lessons learned from 9/11, New York plans building-code changes for high-rises

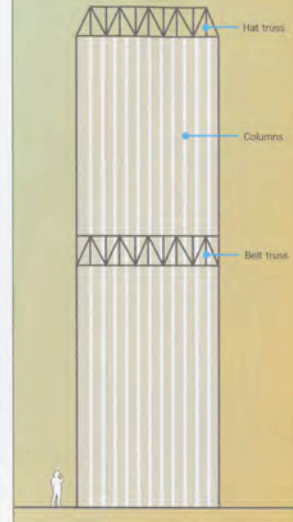
A task force of New York City building, construction, and fire officials, as well as engineers and real estate leaders, is recommending safety improvements to the city's building code based on lessons learned from the collapse of the World Trade Center towers. The World Trade Center Building Code Task Force, led by the city buildings department, will present the guidelines to the New York City Council by year-end, and they may have a nationwide influence, Task Force member James Howie, a senior associate at Perkins Eastman Architects, says, "I'm hopeful that other cities will look at the recommendations as an outline to formulate some of their own."

Many of the findings and recommendations are similar to those released this spring by the Federal

Emergency Management Agency and the American Society of Civil Engineers [RECORD, June 2002, page 28], and to research currently being conducted by the National Institute of Standards and Technology.

The New York City task force, which has been working on this since March, will propose that the building code include new standards for emergency lighting, egress markings, and higher-visibility signage. Another recommendation is to move intakes for air-conditioning and heating systems away from street-level locations. Yet another possible measure is the creation of "safe areas" or "refuges" in elevator lobbies, where people could congregate in case of emergency.

For buildings to stand while sustaining structural damage, one



possible recommendation will call for the implementation of belt trusses and hat trusses (see diagram, above) in new construction. Belt trusses could wrap around a building, transferring loads to undamaged columns and holding

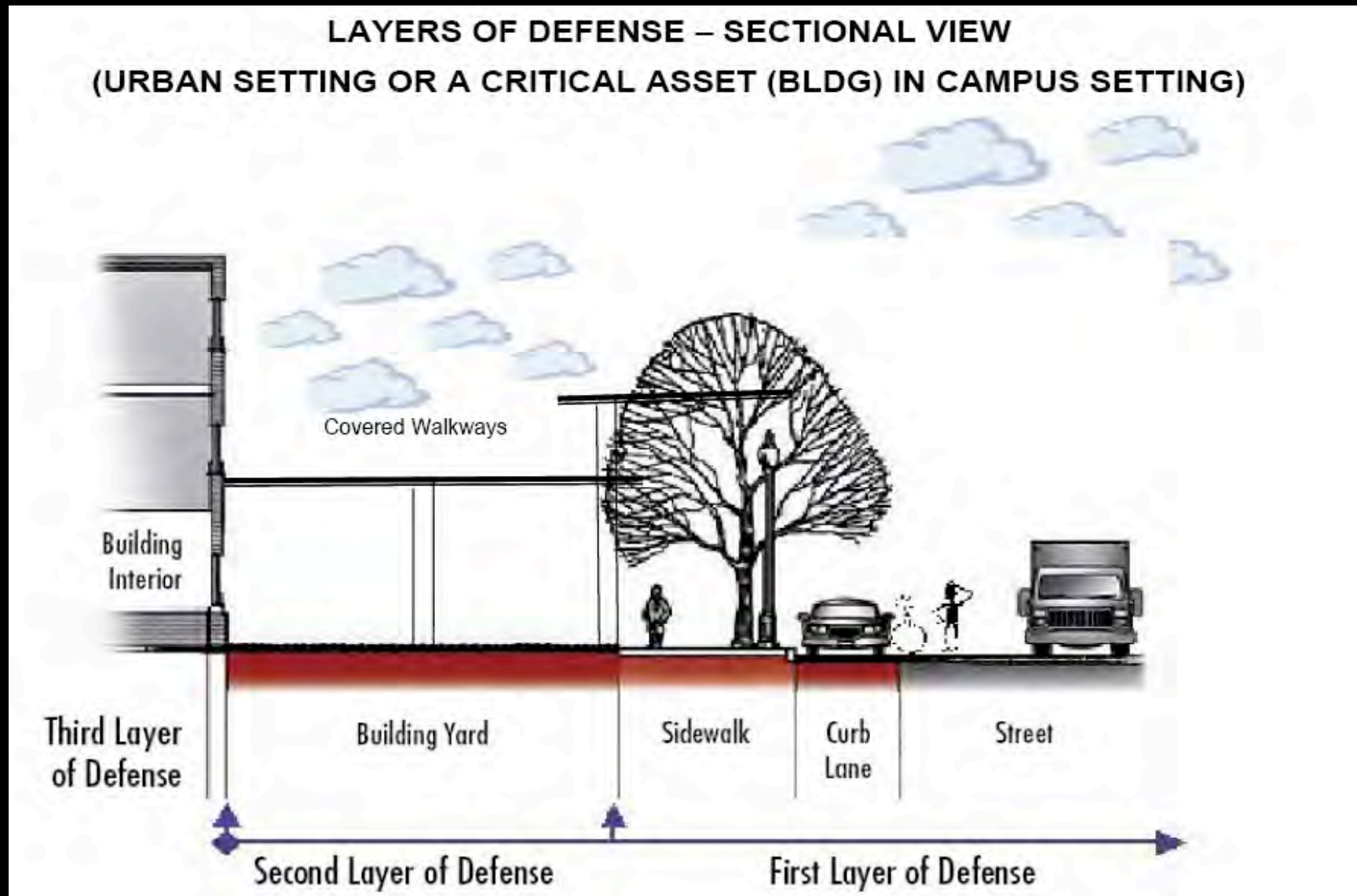
The building-code changes may call for hat and belt trusses to be included in new high-rise construction.

up floors after a collapse. Similarly, hat trusses on top of buildings could transfer loads from damaged to undamaged columns.

In addition to a public hearing held in August, the Task Force is forming its recommendations in collaboration with 9/11 victims' families and the local real estate community in order to strike a balance between protectiveness and economic practicality. Certain recommendations will be phased in over time.

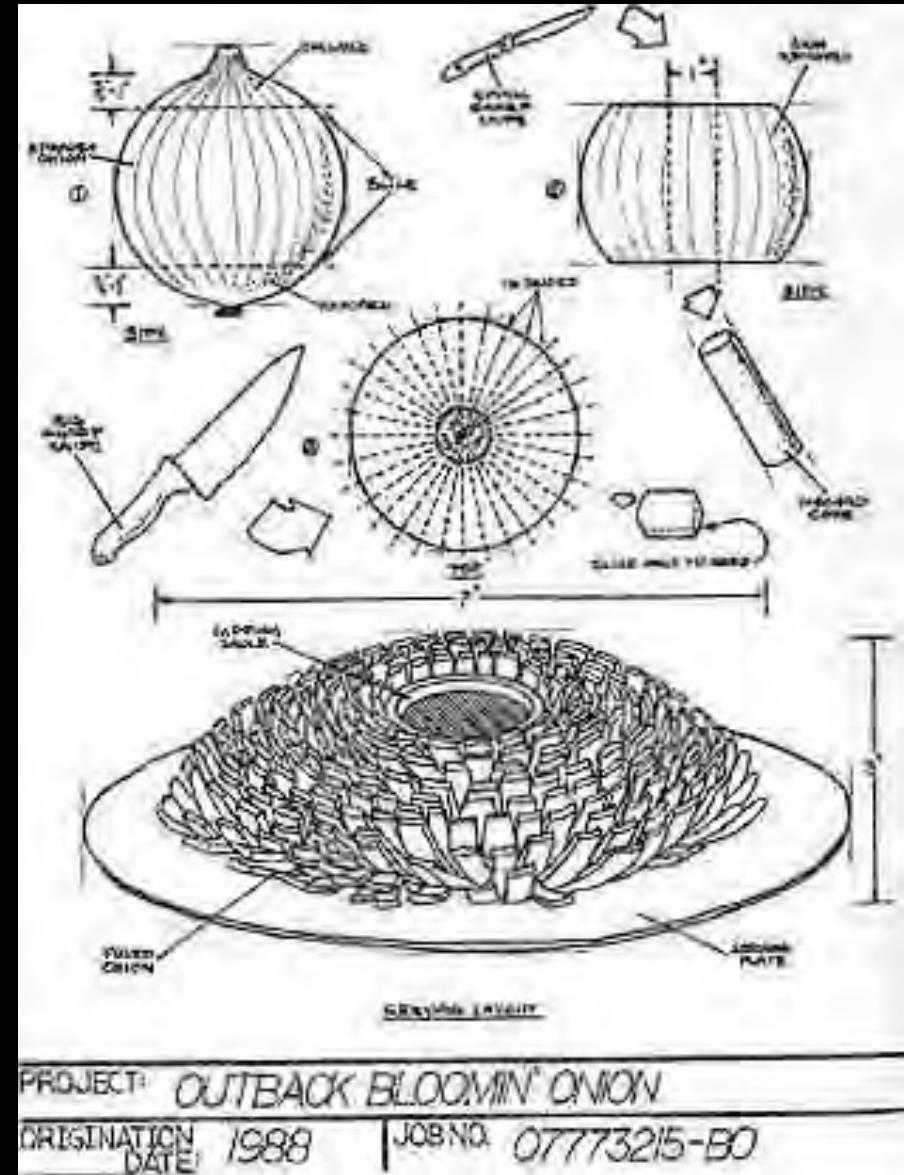
Alterations to the building code must be approved by the city council and Mayor Michael R. Bloomberg. New operations standards, which the group is also now outlining, will be implemented by the New York City Fire Department. D.S.

Existing Security Challenges

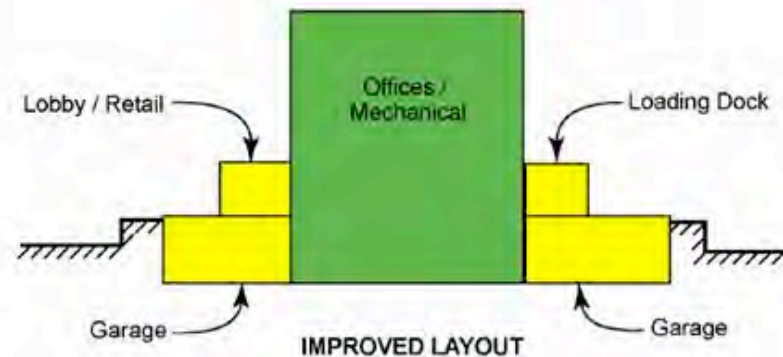
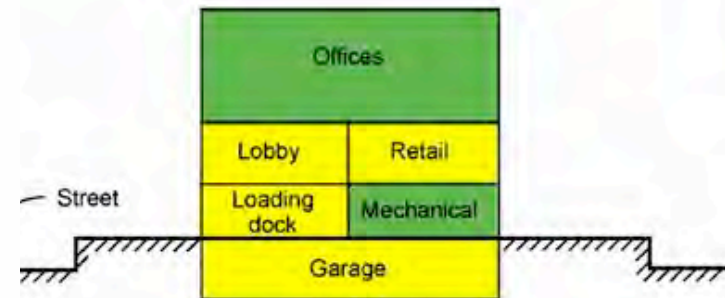
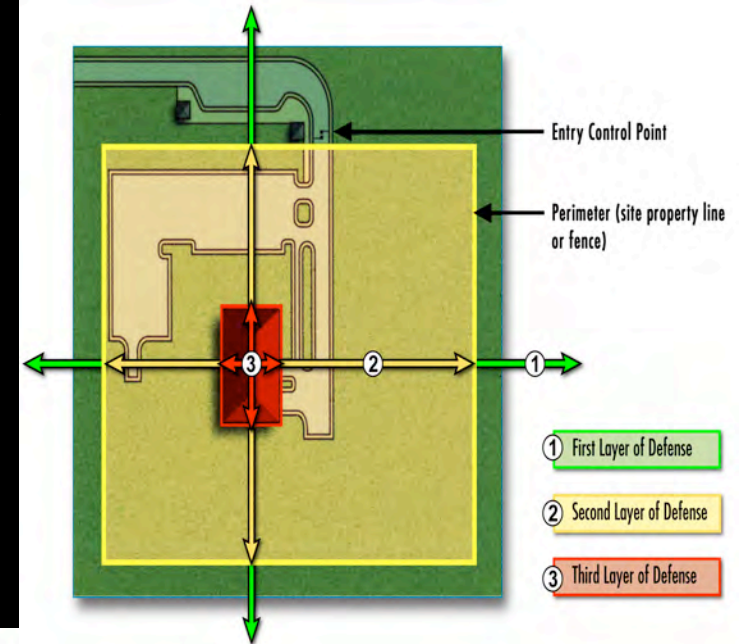
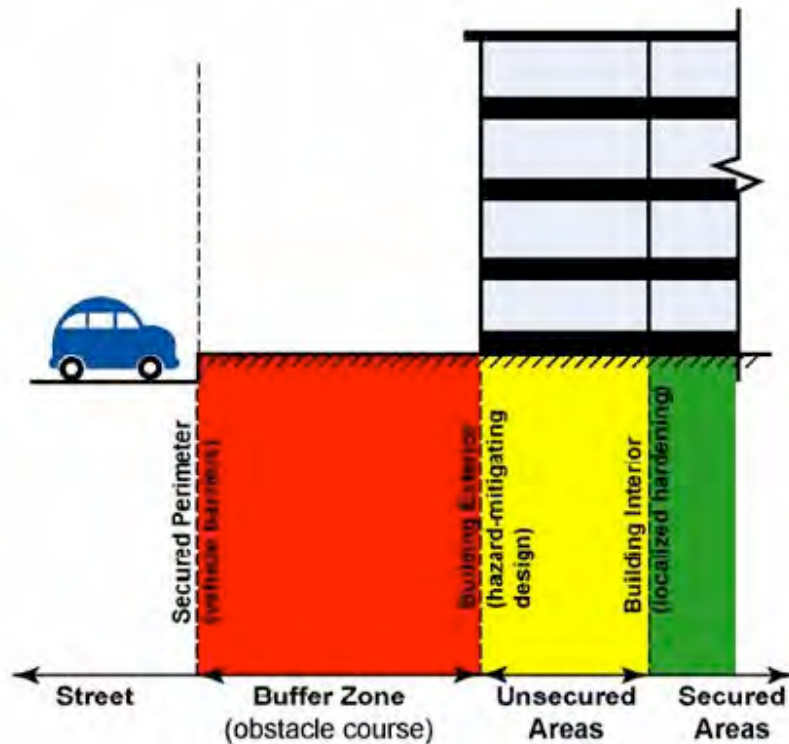


The Onion (layered) Approach

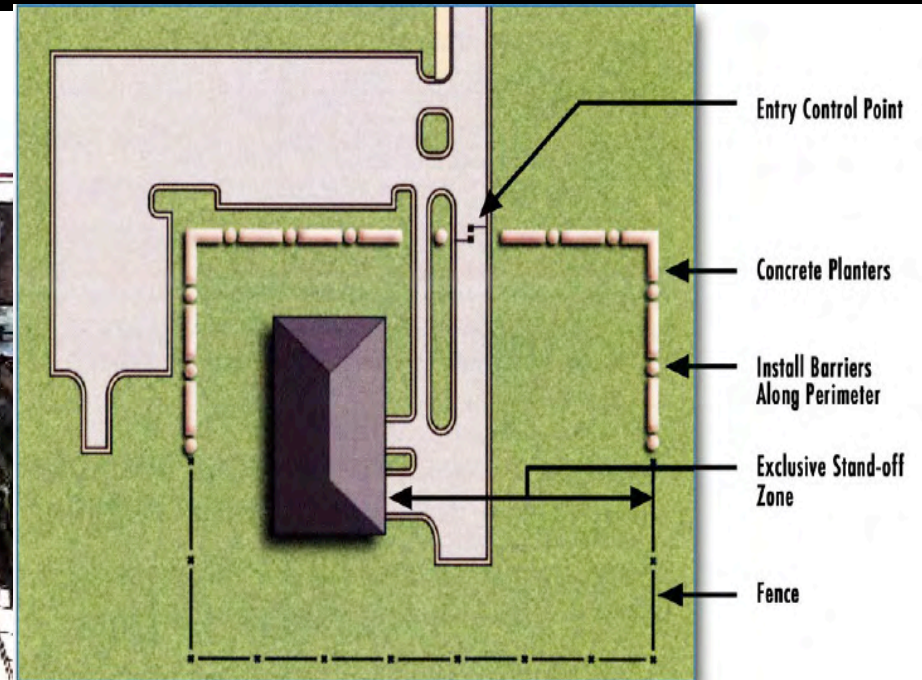
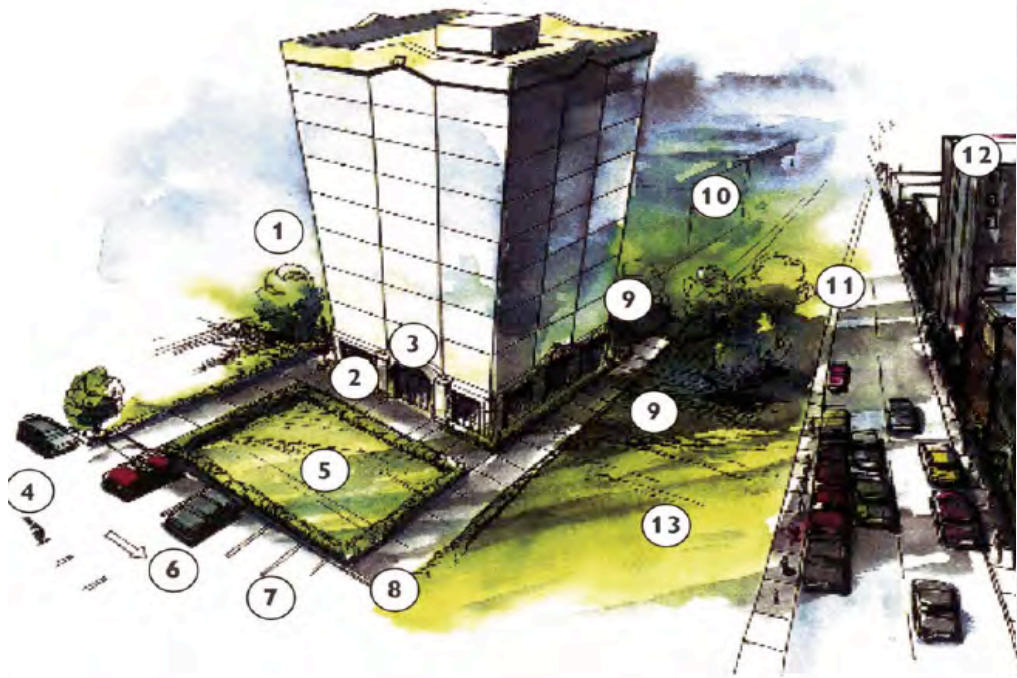
- **1st Level - Outer Perimeter Level**
- **2nd Level - Building Exterior**
- **3rd Level - Interior Control, Point Security**



Site and Building Design



Site Layout and Planning

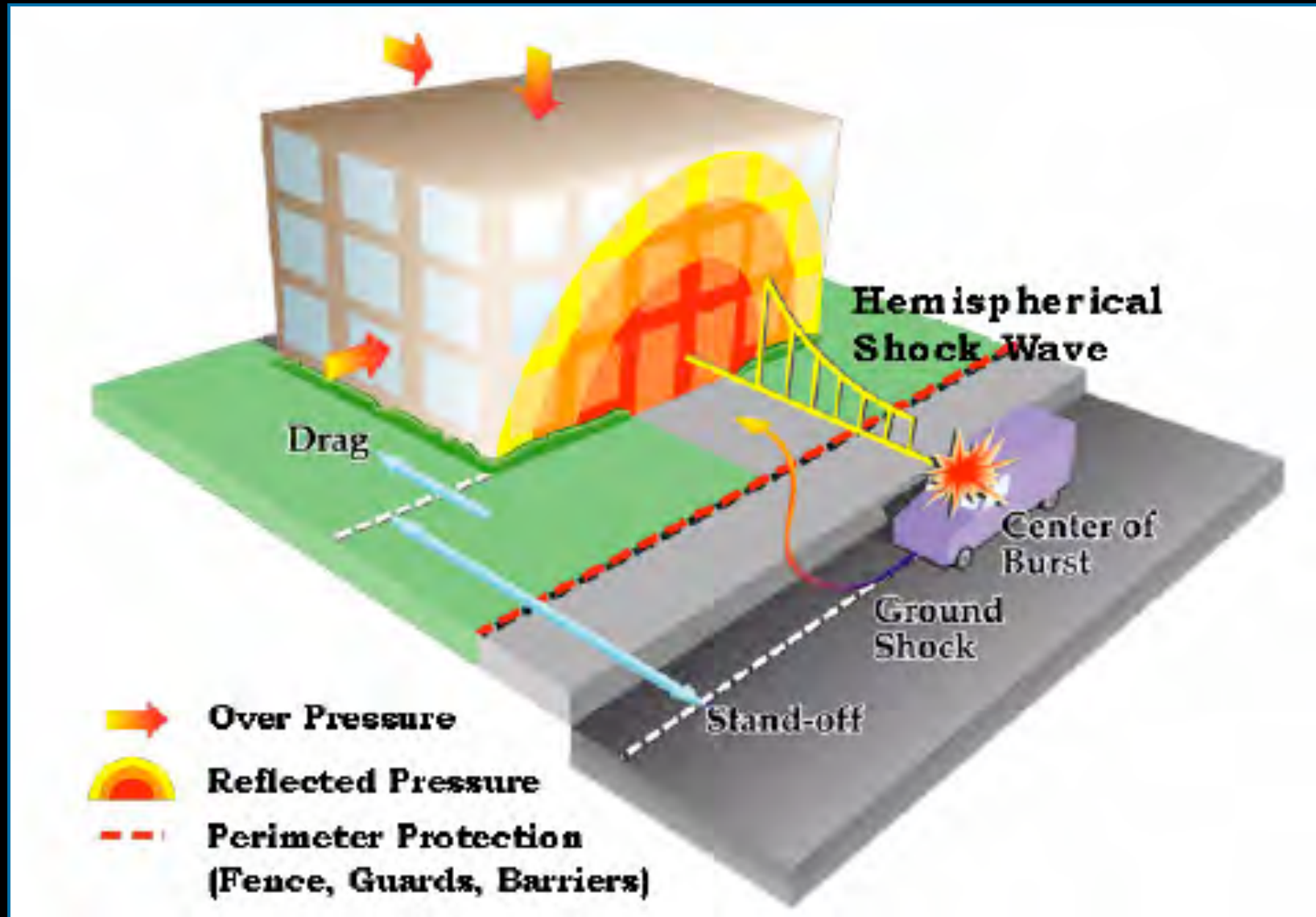


1. Locate assets stored on site, but outside the building within view of occupied rooms in the facility.	8. Minimize vehicle access points.
2. Eliminate parking beneath buildings.	9. Eliminate potential hiding places near the building; provide an unobstructed view around building.
3. Minimize exterior signage or other indications of asset locations.	10. Site building within view of other occupied buildings on the site.
4. Locate trash receptacles as far from the building as possible.	11. Maximize distance from the building to the site boundary.
5. Eliminate lines of approach perpendicular to the building.	12. Locate building away from natural or manmade vantage points.
6. Locate parking to obtain stand-off distance from the building.	13. Secure access to power/heat plants, gas mains, water supplies, and electrical service.
7. Illuminate building exteriors or sites where exposed assets are located.	





Blast Threat: Cars, trucks, suicide attacks





BREAK



Miami Herald 1/24/02

U.S. prepares for attack, plans bioterrorism budget

BY LAURA MECKLER

Associated Press

WASHINGTON — Wary of another bioterrorist attack, federal health officials are proposing a budget plan aimed at building new laboratories, improving hospital readiness and figuring out how to vaccinate the entire population of cities in the middle of a crisis.

Leading the effort is a hero of public health: D.A. Henderson, who directed the campaign to eradicate smallpox from the globe and has returned to government service at age 73.

Henderson, who began working for the Department of Health and Human Services in the days after Sept. 11, expects another bioterrorism attack sooner rather than later.

He is focusing on preparation that went lacking for years, when the possibility of a bioterrorist attack seemed more remote.

"We cannot, in the period of one year with just a dollop of money, suddenly have a good public health system," he said

in an interview. "It isn't a matter of just buying an extra aircraft carrier. You've got to develop this over time."

STOCKPILE ANTIBIOTICS

Congress has set aside \$2.9 billion for bioterrorism preparation, with much of that slated to buy smallpox vaccine and stockpile antibiotics. President Bush plans to ask for hundreds of millions more in his budget plan for next year, and the administration is focusing on the hard work of preparation at the state and local level.

As director of the newly created Office of Public Health Preparedness, Henderson will have a major say in how the bioterrorism money is spent. His office has authority to direct the bioterrorism effort across agencies within the massive department.

THE PLANS

In the interview, Henderson gave an overview of the department's plans, to be detailed in the coming days. Among the priorities:

- ▶ Create a half dozen new regional laboratories. There are now 81 labs around the country that handle identification of commonly seen bacteria, but they are not specialized and don't have much experience working with potential bioterrorist material. Two national labs handle the most dangerous substances, but they are too busy to handle every suspicious threat. So HHS wants to build a half dozen mid-range labs trained to recognize rare but potentially deadly materials.

TREATING PEOPLE

- ▶ Help cities develop plans for vaccinating and distributing antibiotics to large numbers of people. The federal government is buying enough drugs to treat people who may be exposed to hazardous agents. But cities must designate treatment centers and figure out how to transport the supplies from the airport to the centers.

- ▶ Develop round-the-clock reporting systems between hospital emergency rooms and state health departments. Local

doctors must have experts to check with when they see patients with unusual symptoms, which could be the first sign of a bioterrorist attack, but often the health department is staffed only during business hours.

- ▶ Help hospitals better prepare. Already stretched financially, hospitals are woefully unprepared should a bioterrorist attack require a place to isolate a large number of contagious patients, Henderson said. Regional plans should, for instance, designate one hospital to empty its regular patients to other facilities and handle all the victims of bioterrorism.

Part of the challenge, Henderson said, will be prodding states to use the money to actually prepare for bioterrorism, which has to compete for attention with more immediate concerns. It can be done, he said, noting that he had to persuade 50 countries to cooperate with the smallpox eradication effort, which he ran from 1966 to 1977 for the World Health Organization.



Buildings are attractive and vulnerable targets for CBR:

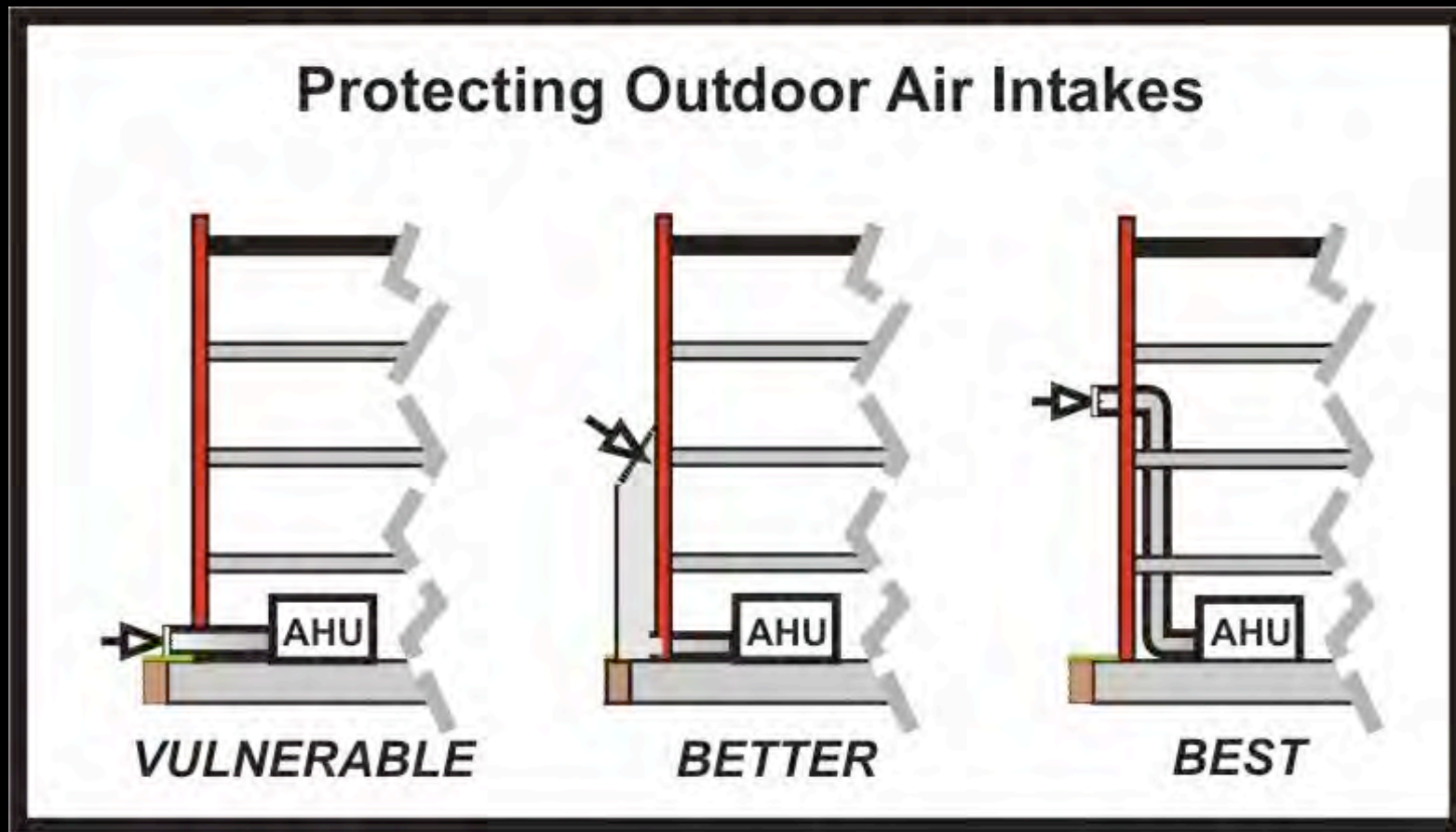
- **CBR agents can remain concentrated for long periods of time;**
- **Mechanical and ventilation systems can effectively distribute CBR agents increasing exposure and intensifying contamination;**
- **CBR agents can be delivered in building covertly through mail or water systems;**
- **Buildings can be difficult to restore after a CBR attack.**

Things Not To Do

- **Do not permanently seal outdoor air intakes.**
- **Do not modify HVAC systems (includes filter upgrades) without understanding the effects on building systems or occupants.**
- **Do not interfere with fire protection and life safety systems.**

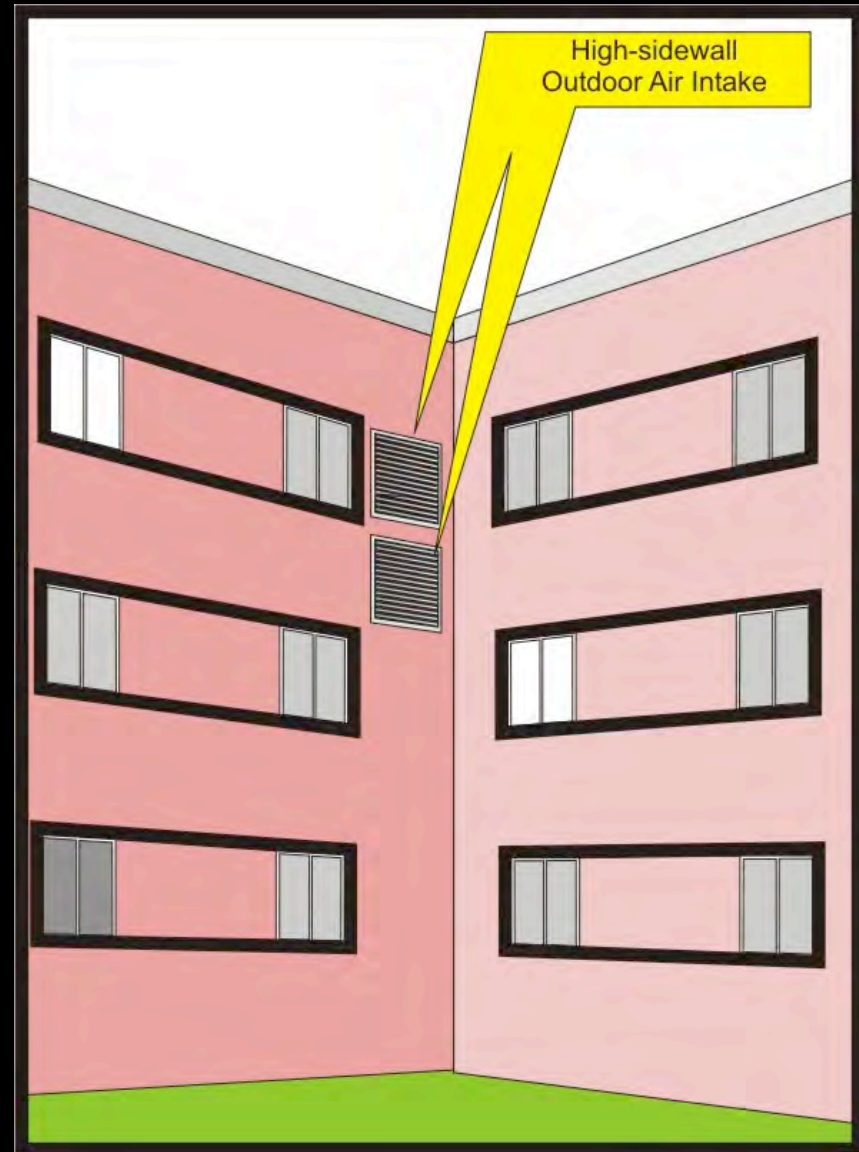
Physical Security

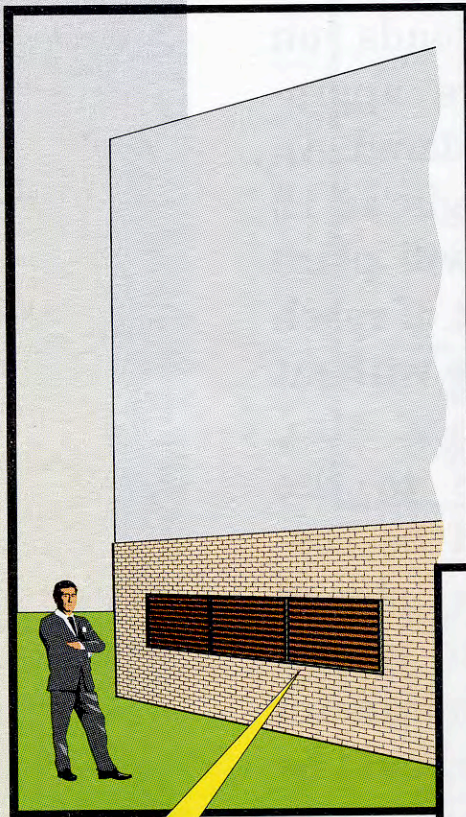
- Prevent Easy Unobstructed Access to Outdoor Air (OA) Intakes.



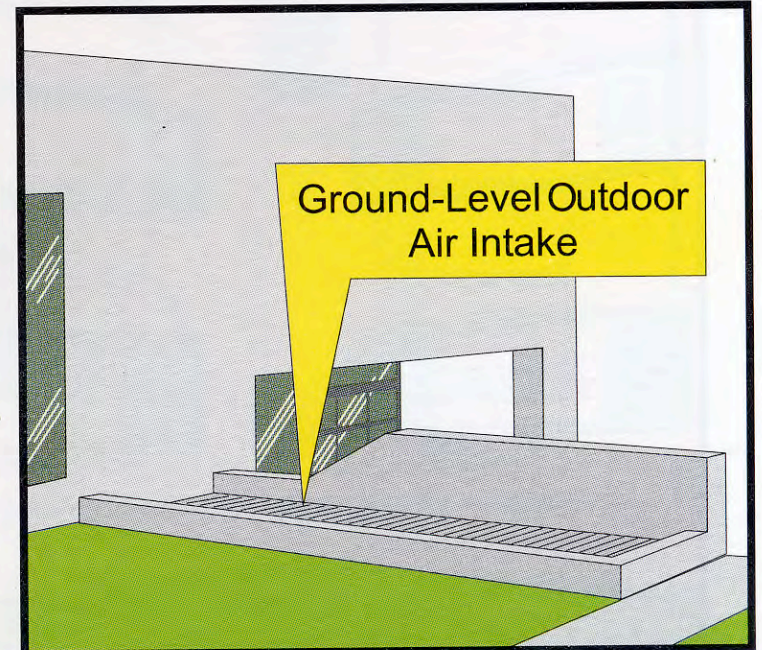
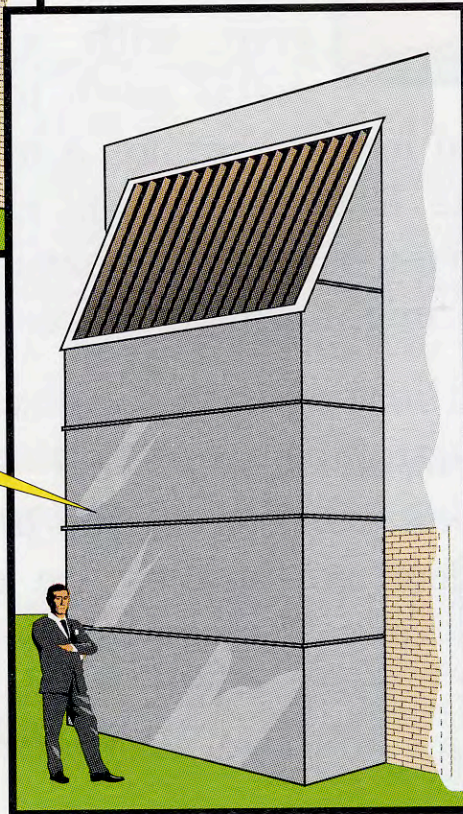
Relocation

**Relocate OA
intake to a high
sidewall or
secure roof**

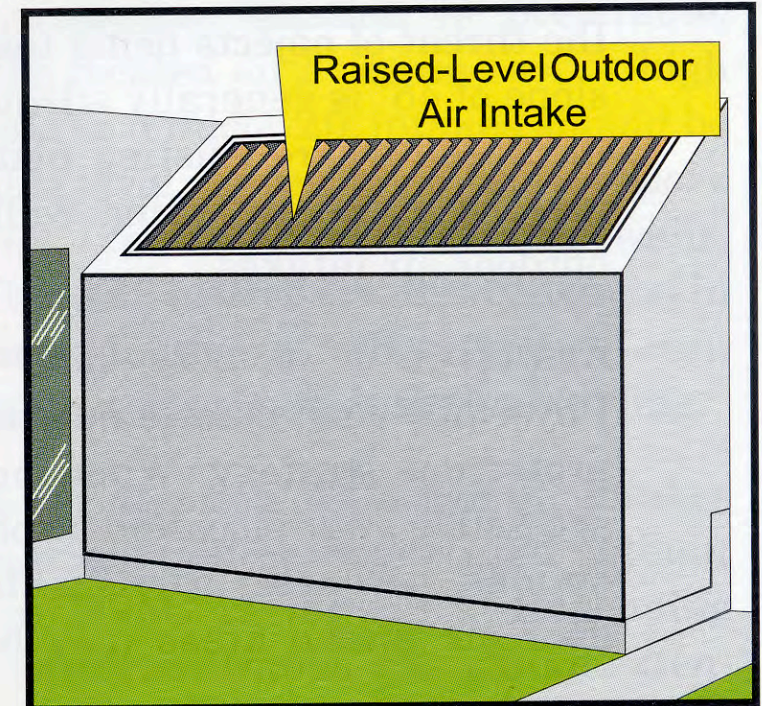




Enclosing a
Vulnerable
Outdoor
Air Intake

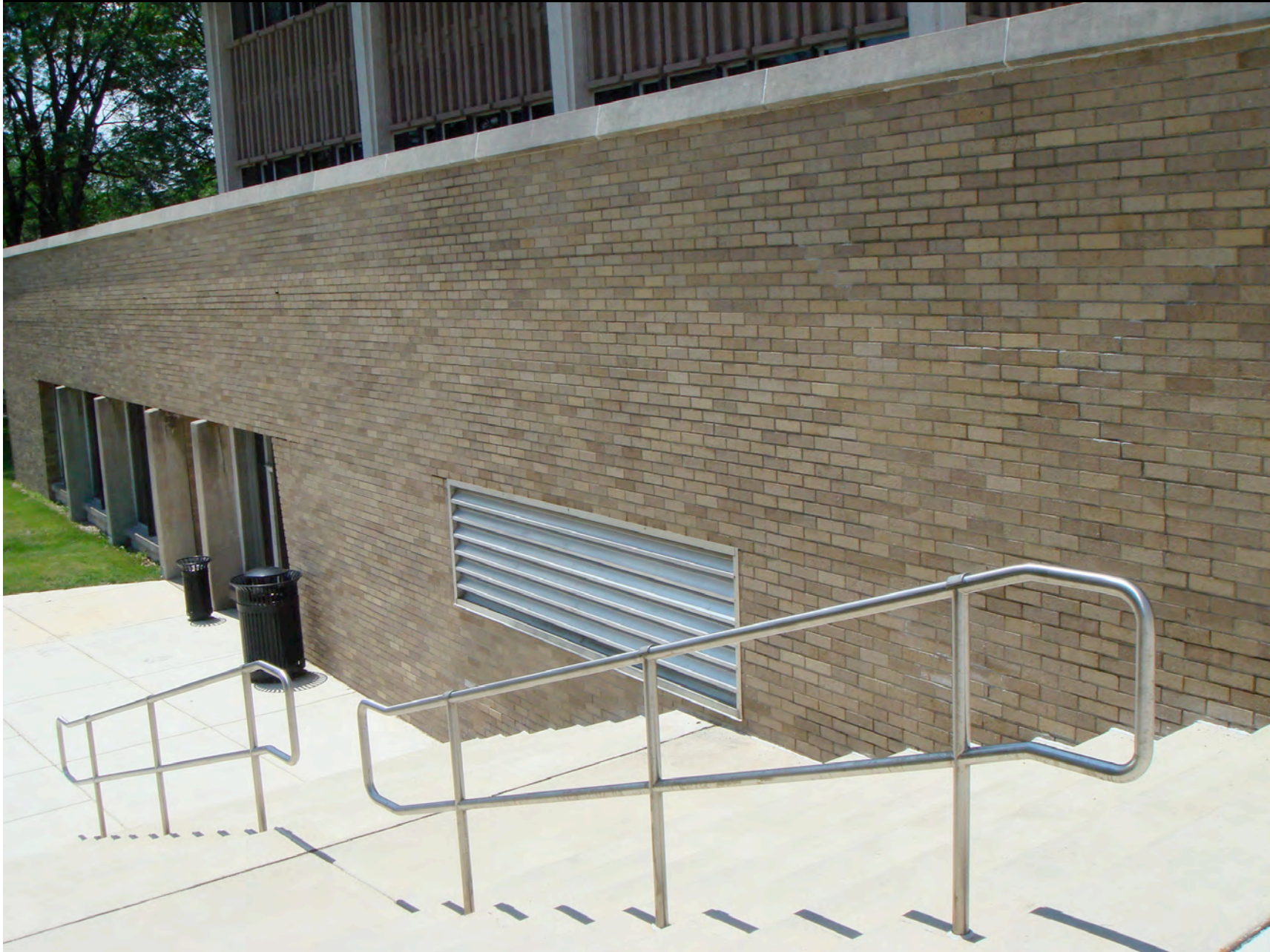


Ground-Level Outdoor
Air Intake



Raised-Level Outdoor
Air Intake

Problem waiting to happen





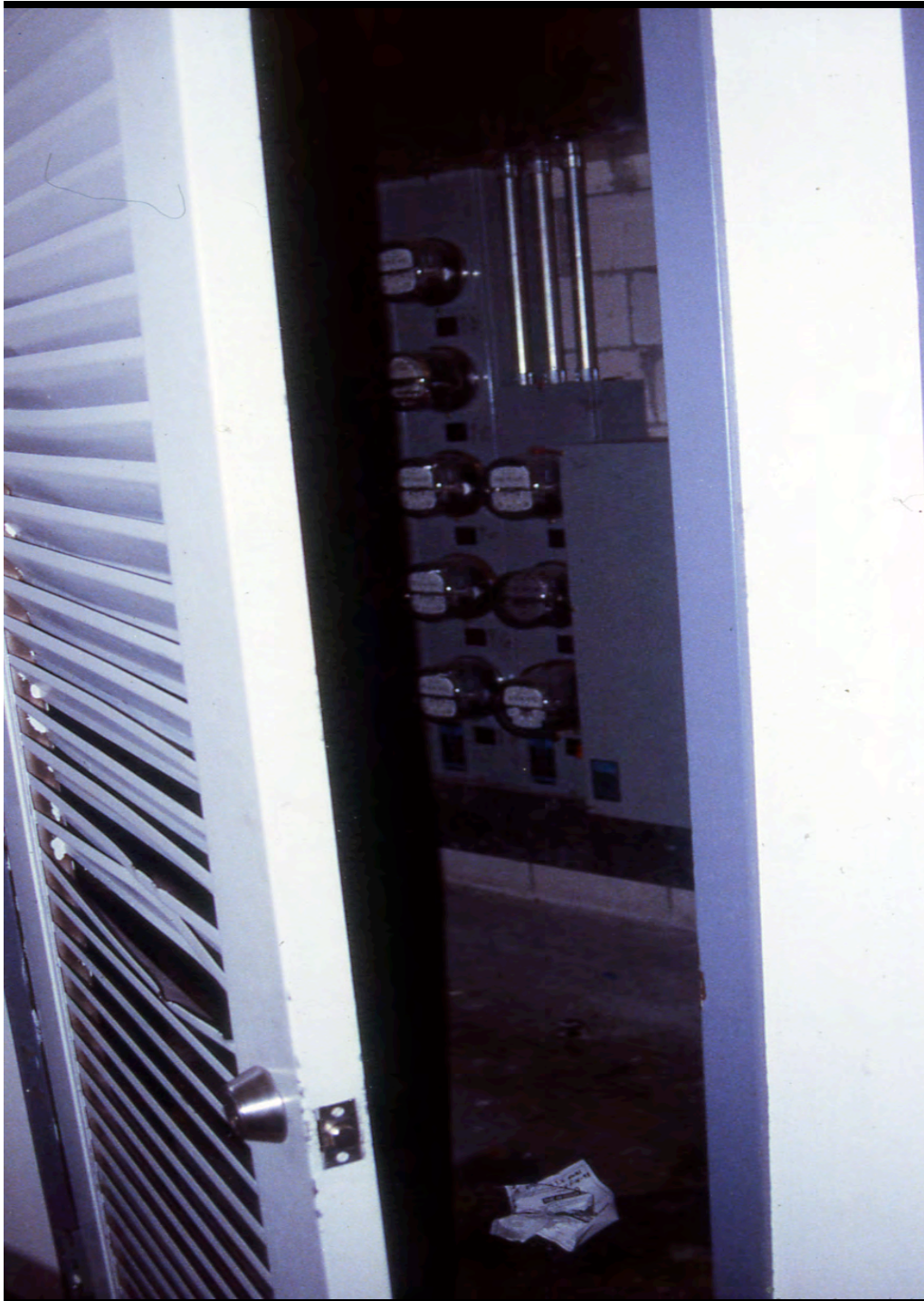
Security Zones

Third choice in recommended security techniques for OA intakes (may be most feasible for some)

- Goal to keep public away from intake
- Iron fencing or similar see-through barriers preferred
- Open buffer zones to help make intrusion more obvious
- Enhance with physical security, CCTV, security lighting, intrusion alarms to increase security

Physical Security

- **Restrict Access to Mechanical Areas and Roofs**
 - Mechanical areas located throughout building
 - Provide access control systems to centralized mechanical systems (HVAC, elevator, water, etc.)
 - Unauthorized roof access can lead to building ingress and/or access to roof-mounted mechanical equipment
 - Mechanical systems are susceptible to tampering & contamination
 - Access should be strictly controlled, maintain log and accountability for keys, key codes, access cards



36
ELECTRICAL
CLOSET
VENT
DOOR 47







Multi-cell Radial Flow Unit

Pre-Filter

HEPA Filter

Heating Coil

Fan

Carbon Filter

Cooling Coil



Know your resources

- **Know who are the key people?**
- **What are the key agencies?**
- **What are their jurisdictions?**
- **Funneling effect - is there any coordinated effort in your community to collect and evaluate community data?**
- **Is that data secure from terrorists???**
- **Are the lines of communication clear with the “powers that be”?**



CPTED looks at Big View



Problem Seeking versus Problem Solving

Definitions: CPTED

- Through the proper use and design of the built environment you can reduce the opportunity and fear of stranger-to-stranger predatory type crime and as a result improve the quality of life.

CPTED Approaches



***ORGANIZED
(people)***

***MECHANICAL
(technology)***

***NATURAL
(design)***

The Promise of CPTED: Deliverables

- **Undesirable features can be avoided at the design stage**
- **Existing buildings can be modified to make them less crime – prone**
- **These improvements need not be expensive**
- **CPTED changes can be architecturally and aesthetically pleasing**

CPTED strategies

- **1) Natural surveillance**
- **2) Natural access control**
- **3) Territoriality and boundary definition**
- **4) Maintenance and Management**
- **5) Legitimate activity support**
- **6) Displacement**
- **7) Avoid conflicts of users and uses**

Who are the users?

- Cast of characters of our buildings
- Normal users: legitimate purpose
- Abnormal users: illegitimate
- Observers: capable guardians
- What are the uses?



Who are the illegitimate users?





Mechanical CPTED: Physical security

- **Closer Look at**
 - **Fencing barriers and gates**
 - **Lighting**
 - **Glazing**
 - **Video, Recording, Video Content Analysis**
 - **Access Control**
 - **Perimeter Intrusion Detection**
 - **Command and Control Centers**

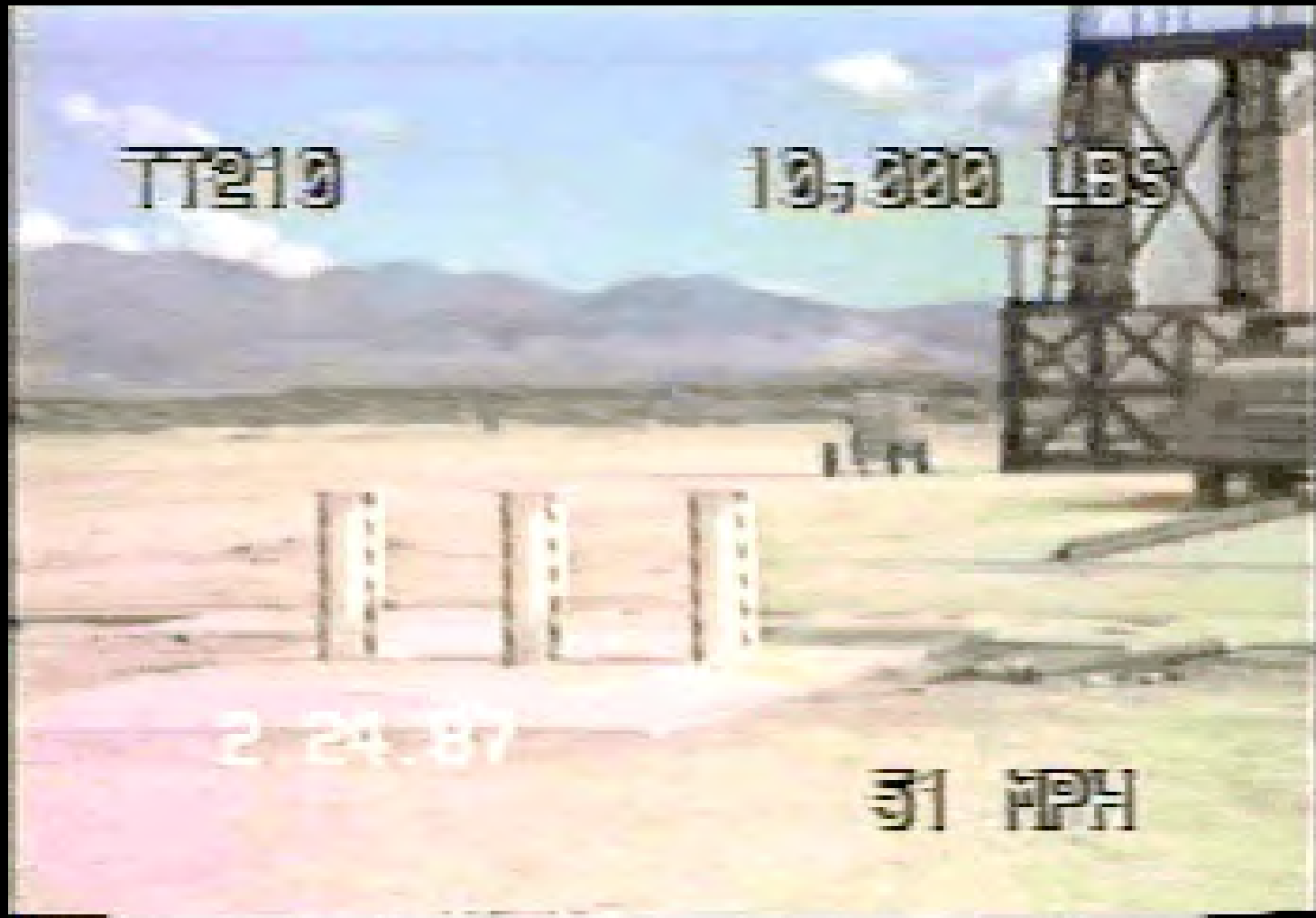
Fencing and barriers











Break



Lighting



Glazing







Florida Association of American Institute of Architects

Closer Look at - Video

- **Digital Cameras**

- Why Encode and Decode – Just go Digital

- Digital Cameras, IP Cameras

- Hit market 7-8 years ago

- Great Strides

- Reasonably priced

- Plug and Play

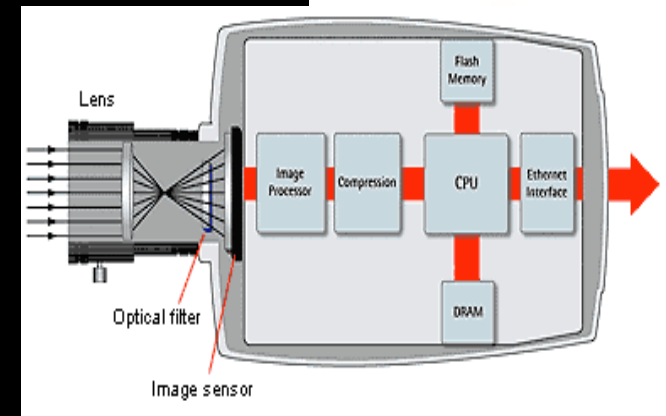
- But:

- Video quality vs analogue

- Ruggedness questionable

- Immature still

- Security market is catching up







Florida Association c

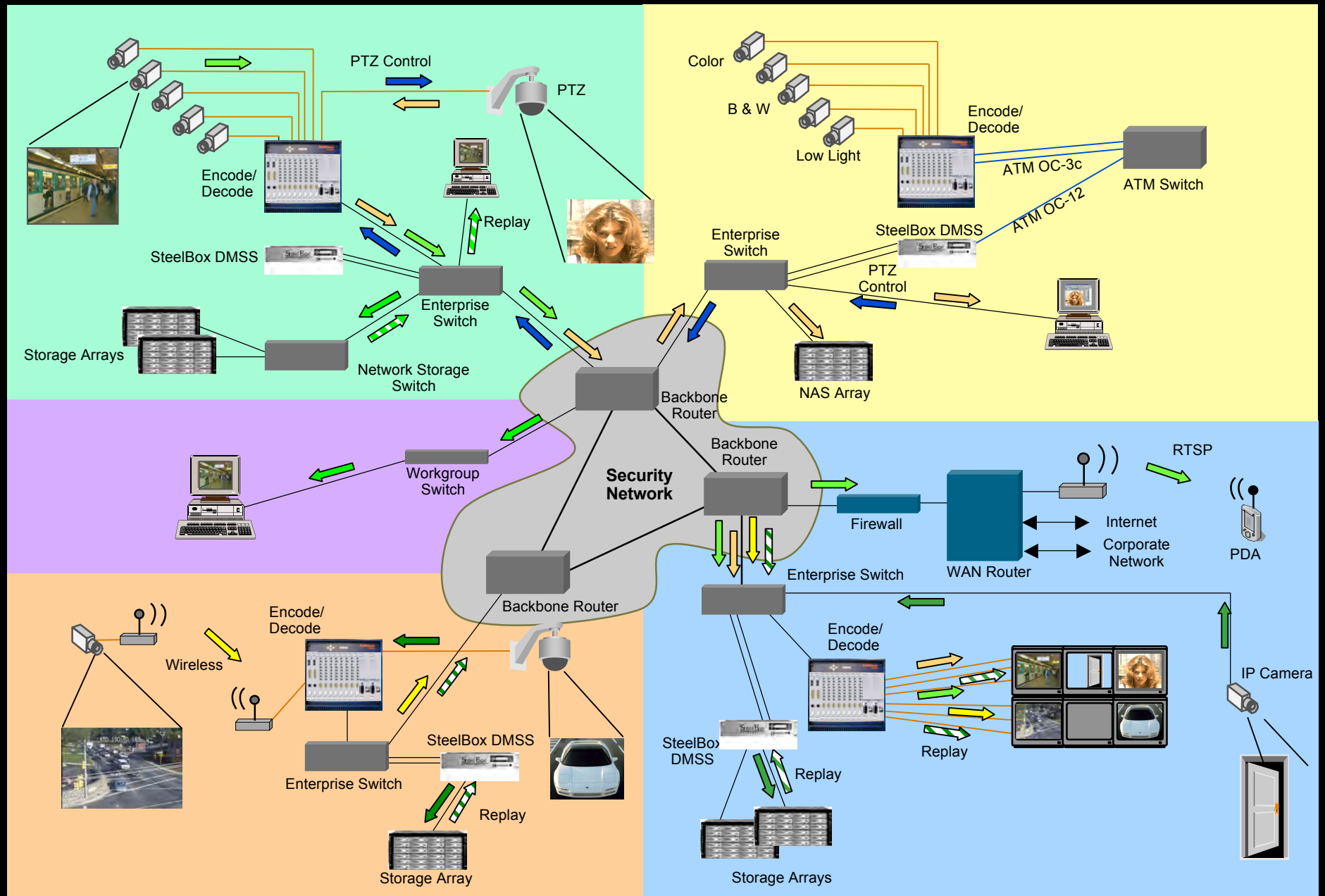
Closer Look at - Recording

- **Recording**

- Ask the questions...

- Do it or not?
 - How much recording do we need?
 - What frame rate and resolution?
 - Do we change parameters upon incident?
 - Is it tamperproof?
 - Where do we do the recording?
 - Do we have/need synchronized audio, too?



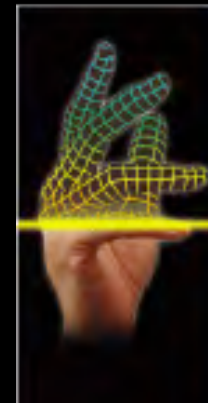


Closer Look at – Access Control

- **Access Control**
 - Many say this is the one element they would NEVER give up!
 - Has it changed much?
 - **Cards**
 - Magnetic stripe
 - Smart Card – Contact and Contactless
 - Optical Card
 - **Card readers**
 - Proximity readers / Swipe readers / etc
 - **Card management**
 - Interface to HR / Interface to hour and pay / etc
 - **Panels**
 - **Software**
 - **CAD – Computer Aided Dispatch**
 - **GIS – Geospatial Information Systems**
 - **Lenel, Software House, AIM by ARINC, Intergraph are some vendors**

Closer Look at - Access Control

- **Biometrics**
 - **Two Most Common**
 - **Fingerprint - Alone or in combo with badge**
 - Digital Fingerprint in the smart card
 - Future may be for POS
 - Bioscrypt and Identix are vendors
 - **Hand Geometry**
 - Alone or in combo with badge
 - ID3D and Recognition Systems Inc are vendors
 - **Not as common**
 - Retinal scan – out to 1 foot now
 - Voice pattern recognition





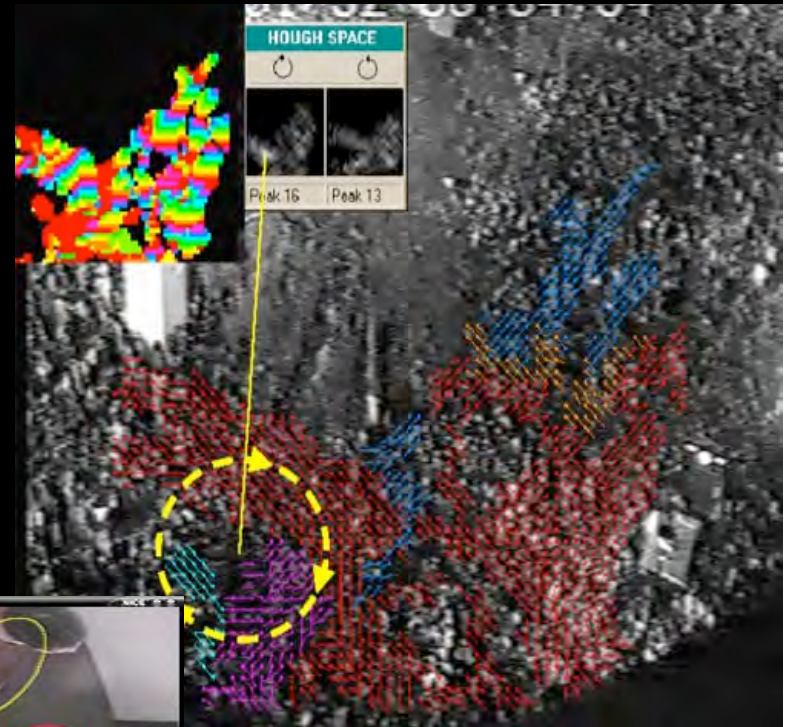
Closer Look at - Intrusion Detection

- **Intrusion Detection Systems**
 - **Motion Detectors**
 - **Microwave Sensors**
 - **Volumetric Sensors**
 - **Infrared Sensors**
- **Less than Lethal Devices**
 - **Bi-axial horns**
 - **Strobing lights**
 - **Issues**
 - **Automatic Responses**
 - **Controlling Authority**
 - **What if lethal? Like Tasers??**



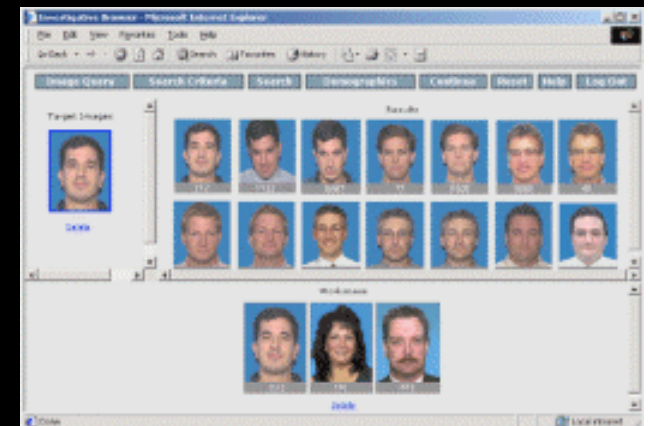
Closer Look at - VCA

- **Video Content Analysis**
 - Sexiest and Fastest Growing Application
 - What is available?
 - VMD – Video motion detection
 - Unattended package/baggage
 - Facial Detection
 - Facial Recognition
 - Object tracking
 - Tailgating
 - People counting
 - People swarming



Closer Look at - VCA

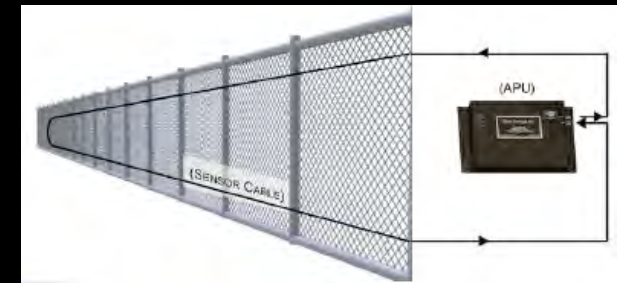
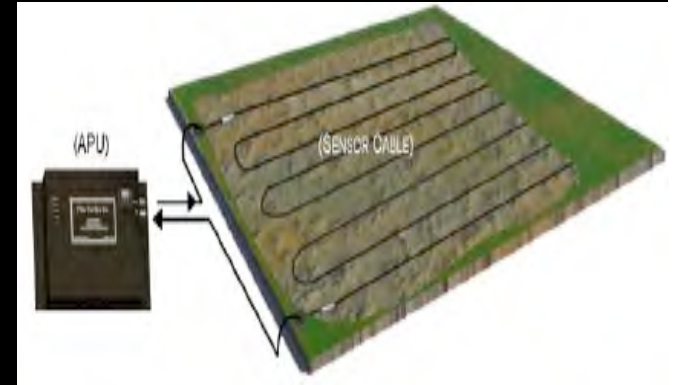
- **Video Content Analysis (cont'd)**
 - What is required to do it?
 - Analog video
 - A lot of information
 - Difficult to get
 - Digital Video
 - Less information
 - Easier to get
 - Centralized or decentralized
 - Similar concerns as with recording
 - Data bases
 - Nice, VistaScape, ObjectVideo, & MATE are vendors





Closer Look at - PIDS

- **Perimeter Intrusion Detection**
 - **Challenges**
 - Which type of product to use?
 - Video Content Analysis
 - Buried Coax / Fiber Optic Cabling
 - Fence Line Fiber Optic Cabling
 - Volumetric Sensing
 - Hardened Fences
 - **Geographical Challenges**
 - How long is the perimeter and what borders it?
 - What type of terrain is there?
 - What is already on the perimeter?

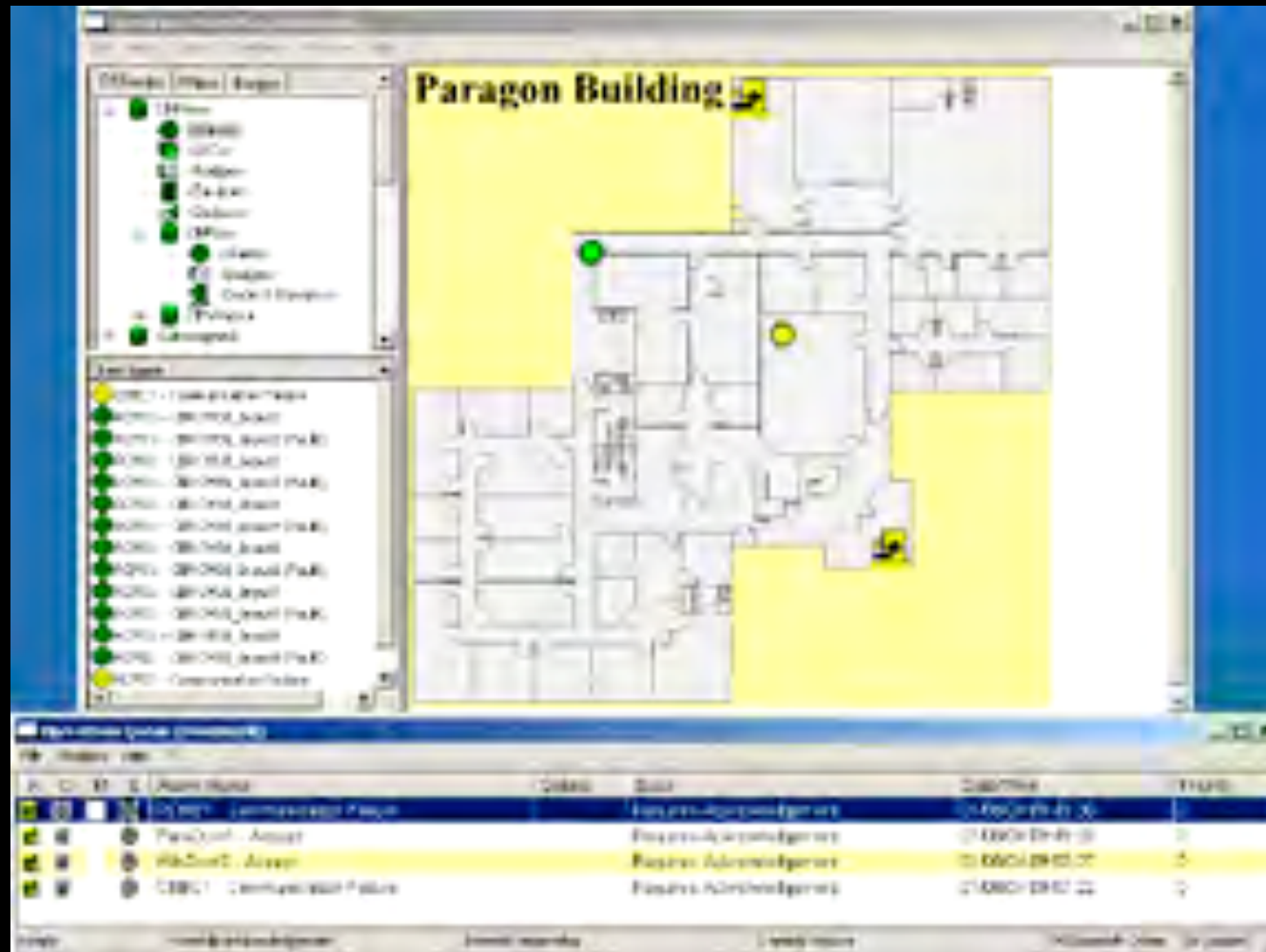


Electronic Security



Closer Look at: Command and Control

- Access Control System



Closer Look at: Command and Control

- Video Management System

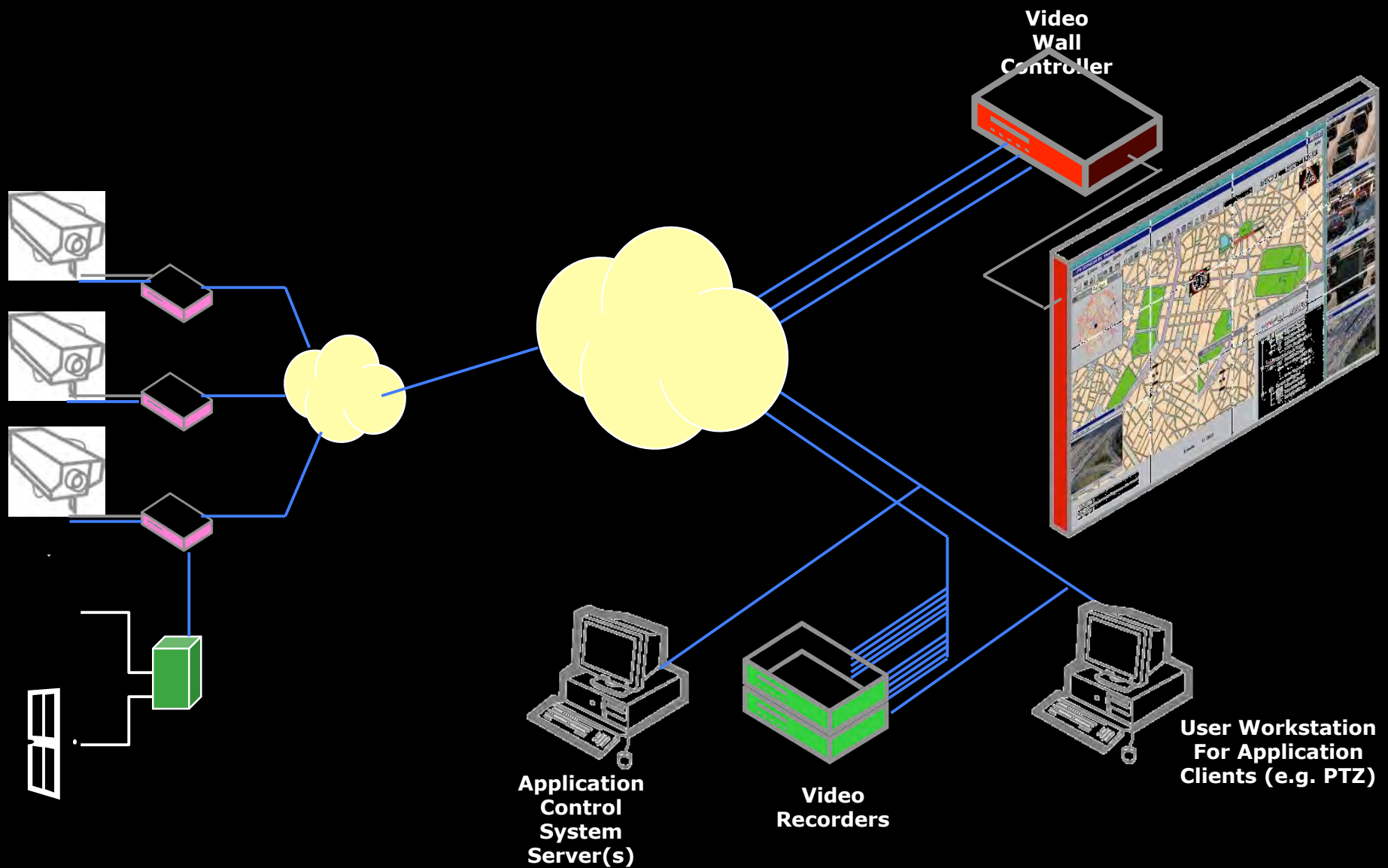


Closer Look at – Command and Control

- **What to put in the Command Center**

- **Consoles**
 - Integrated or stand-alone
- **Video Teleconferencing**
 - Good in adjacent room
- **Display Walls**
 - Do you really need them?
- **Servers and Storage**
 - May be a good place to locate these for ease of maintenance and upgradeability
- **Desires of the command center drive entire system**
 - Numerous consoles = more video
 - Display wall = quality video
 - Integrated audio = more bandwidth





Closer Look at: Getting Started

- **Getting the Team Together**
 - Internal Team
 - Define the High Level requirements
 - Define the High Level budget
 - Consultant
 - Proven and Challenges
 - Interview vendors
 - Ask the hard questions
 - Ask for the reference installations
 - Create the specification
 - What type?
 - Equipment specification
 - Performance specification (design / build)
 - Ensure spec is what you want
 - Ask for the alternatives

If Construction Documents are...

**Clear
Concise
Biddable
Constructible**

Then, You get this...



Not this...



Goal is to be secure, not do fortresses



Break



David Gray / Reuters

H FLORIDA EXTRA

BROWARD COUNTY

'Wheelchair bandit' taped

■ Investigators are on the hunt for a man who uses a wheelchair and his two friends who burglarized a gas station near Fort Lauderdale last week.

BY BRIDGET CAREY
bcarey@herald.com

Investigators say a brazen burglar in a wheelchair almost made a clean getaway Wednesday with several thousand dollars' worth of cigarettes from a BP/Amoco Station.

There was one catch. He was caught on tape.

The Broward Sheriff's Office released video from the heist Monday, hoping someone would recognize the bandit, who appeared to have one arm and both legs in a cast.

The disabled thief didn't act alone. He had two companions — a getaway driver and a helper.

ALL FOR CIGARETTES

The wheelchair bandit and his helper rolled up to the back offices of the gas station at 2099 S. State Road 7, between Davie Boulevard and Interstate 595, broke in and grabbed 158 cigarette cartons, worth more than \$4,700, according to the BSO.

They called the getaway driver from a cellphone. He drove up, and they loaded up the goods and took off.

Investigators believe the man had to be helped into the



COURTESY OF THE BROWARD SHERIFF'S OFFICE

CAUGHT ON TAPE: This surveillance camera image shows the alleged wheelchair bandit and an accomplice as they steal \$4,700 worth of cigarettes from a BP/Amoco station near Fort Lauderdale on Wednesday.

car before they escaped, said BSO spokeswoman Liz Calzadilla-Fiallo.

"It's definitely unusual," Calzadilla-Fiallo said. "It doesn't make any sense."

The burglary occurred around 5:40 p.m. when the store was very busy, according to the BSO, making it easy for the villains to go unnoticed.

It seemed the men knew exactly what they were after, Calzadilla-Fiallo said.

"They had their mind set on those cigarettes," she said.

The owners of the gas station didn't learn of the burglary until they went into the back office.

A HELPFUL PARTNER

The surveillance video showed one of the suspects wheeling the disabled burglar. Both men went into a storage area and used a large butcher knife to pry open a locked

door leading to the manager's office. The two men ransacked the office, stealing dozens of cartons.

The getaway car is described as a dark green, four-door sedan with dark, tinted windows.

The BSO is offering up to \$1,000 for anyone with information about the burglary. Those who can help are encouraged to call Crime Stoppers at 954-493-TIPS.

• PEMBROKE PINES

MCDONALD'S WORKERS FORCED INTO FREEZER

Robbers locked employees of a 24-hour McDonald's restaurant inside a freezer early Friday morning, said Sgt. John Jacob, a spokesman for the Pembroke Pines Police Department.

Pembroke Pines police are investigating the robbery, including the possibility that it may have been an inside job involving employees or former employees.

The thieves forced the restaurant manager to open the safe and took an unknown amount of cash. Officials do not know how the robbers entered the store. Three employees were directed to the freezer temporarily.

"There's no video available and we don't have a whole lot to go on," Jacob said.

Police said the restaurant, 12480 Pines Blvd., was equipped with a surveillance camera, but the robbers removed the videotape.

The employees spent only a few minutes in the freezer, police said. No injuries were reported.

Anyone is vulnerable

TAMPA

Deadly car-wash robbery, shooting captured on camera

TAMPA — (AP) — A car wash surveillance camera captured the fatal shooting of a man during an apparent robbery, police said.

Officers are searching for the man who shot Ronald Preston, 44, in the chest in a bay at Southside Car Wash, where he had stopped to wash his 2002 Chevrolet S-10 pickup truck just before 2 a.m. Tuesday.

Police spokeswoman Laura McElroy said the tape shows a light colored Ford Taurus pull up in the adjacent bay. A pas-

senger got out and confronted Preston by his truck.

"You can tell they are in a heated exchange," McElroy said.

As the two moved to the back of the pickup truck, the man shot Preston in the upper body, she said. Preston ran but collapsed out of view of the surveillance camera. The man jumped into Preston's pickup and appeared to be stealing things from it, she said.

The driver of the Taurus took off, and then the gunman ran off, she said.

Preston's body was found by a customer who stopped at the car wash at 5:30 a.m.

"It was surreal watching that and extremely disturbing," McElroy said of the video.

In February 2004, a camera at a Sarasota car wash recorded the abduction of 11-year-old Charlie Brucia, whose body was found five days later. Former auto mechanic Joseph Smith, charged with first-degree murder and other crimes, is scheduled to stand trial in November.

THE MIAMI HERALD | MiamiHerald.com

METRC

HOLLYWOOD

Mayor robbed at gas station

A thief snatched a purse from the front seat of Hollywood Mayor Mara Giuliani's car as she filled up at a gas station.

BY TODD WRIGHT
twright@miamiherald.com

Hollywood Mayor Mara Giuliani told a roomful of city employees Wednesday that she was a victim of theft at the gas pump.

And she wasn't talking about the \$3.19 per gallon she paid for fuel.

Giulianti's purse was snatched from the front seat of her late model silver Mercedes as she filled up at the Mobil gas station at 2780 Stirling Road. "You don't think something like that could happen when you are right there at the car," she said.

Giulianti is the latest victim of a type of crime that's becoming more common in South Florida as thieves prey on people focused on paying at the pump.

In Hollywood, seven other purse snatchings have occurred at gas stations this year, all involving women. In Miami-Dade, some of the crimes have turned to armed robbery, and men have been among the victims. Some victims have been forced to hand over jewelry and wallets at gunpoint.

"The mayor did what 99 percent of us do. When we are at the pump, we let our guard down," said Capt. Tony Rode, spokesman for the Hollywood Police Department. "We have to be cognizant of our surroundings at all times, even if we are only three feet away from our cars. It doesn't mat-

ter if you are male or female. The bad guys are watching."

Giulianti described the incident — and showed surveillance video of it — at Wednesday's City Commission meeting. Gasps and sighs filled the commission chamber as city department heads, public works employees and police officers watched their mayor getting victimized on a large projection screen.

At around 7:15 p.m. Tuesday, Giuliani pulled up to the pump. A green Dodge Caravan pulled up to the pump on her right. Giuliani walked to the passenger side of her car, and pulled out a credit card to pay at the pump, she said.

Several other cars were also at surrounding gas pumps and a gas station attendant was outside picking up debris.

As Giuliani put in her card and punched in her ZIP code and other information required when paying at the pump, the green van circled around and pulled up alongside her driver's side door. Giuliani said she did not lock the door behind her.

A man hopped out of the van and walked around his vehicle acting like he was checking his tires. Then he quickly crouched down behind the van, sneaked up to Giuliani's door, opened it, and took the purse. He got back in

the van and drove off. The theft took about five seconds.

Giulianti said she didn't realize her purse was stolen until after the gas attendant told her the driver's door was open and that she should close it because of the thefts that had been happening.

"I'm happy nothing else happened to me, but I am definitely not OK. Getting robbed is a pain," she said.

Police Chief James Scarbary said police had few leads and that the green van was more than likely stolen.

The purse, which Giuliani had recently purchased in China, was found in the road about a half mile from the gas station by a Dania Beach resident. Rode said Giuliani had about \$15 in cash in the purse and credit cards.

Rode said he hopes the mayor's experience will draw attention to the growing number of similar thefts.

City employees who saw the video got the point.

"Thieves don't care if you are the mayor or not," said Wade Sanders, the city's assistant director of public works. "Locking the door should be like putting on a seat belt. Nobody wants to get robbed at the pump twice."

Herald staff writer Jennifer Lebovich contributed to this report.



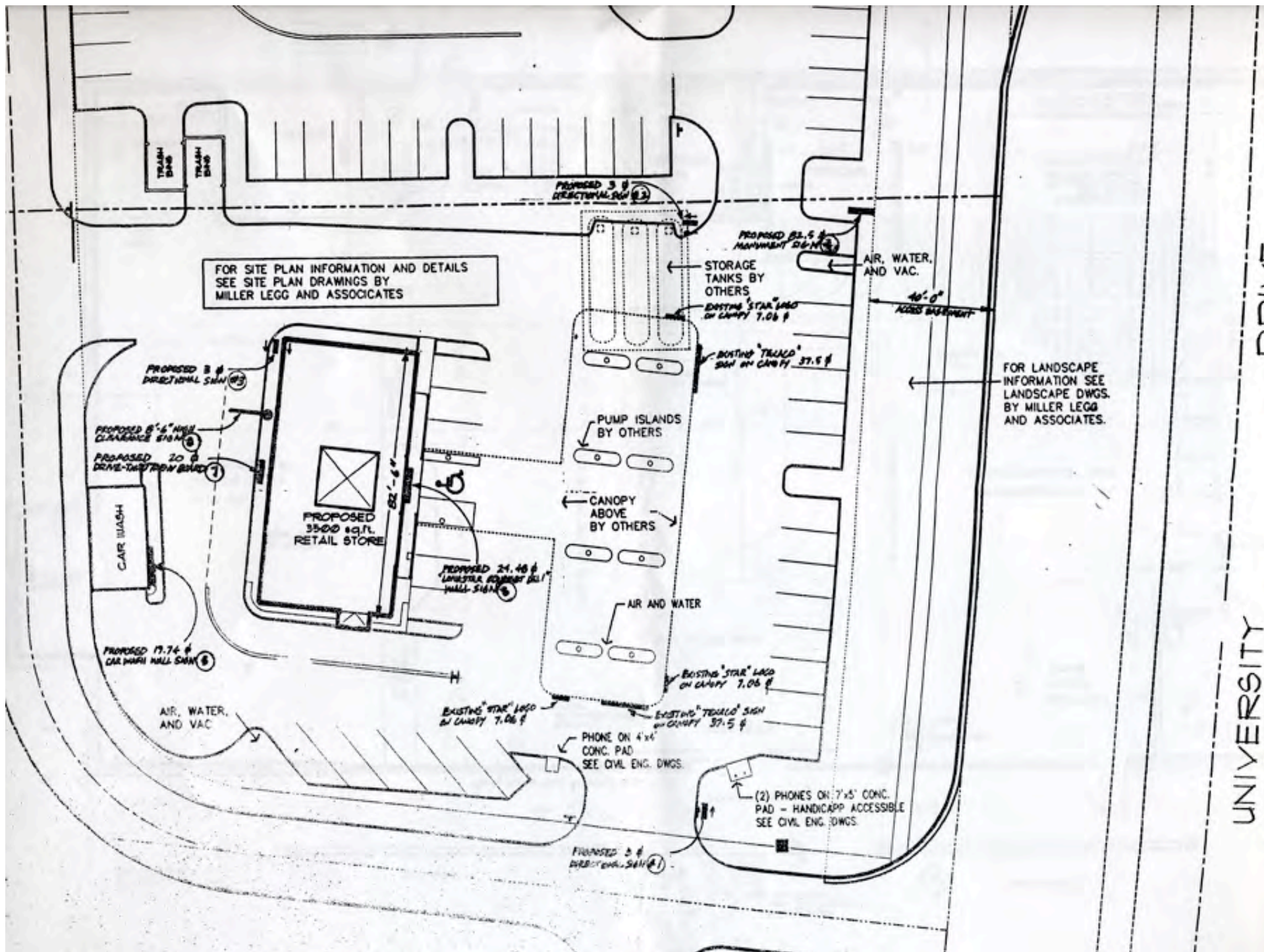
COURTESY OF WFOR-CBS4

ROBBERY: Hollywood Mayor Mara Giuliani described the incident — and showed this surveillance video of it — at Wednesday's City Commission meeting.

Gas Station Class Project 1

Group Exercise #1 Gas Station

- **What are the threats and vulnerabilities?**
- **What are the circulation patterns?**
- **What are the user/use conflicts?**
- **Develop recommendations**
- **Team presentations**



Gas Station: Final Product

Gas Station Example



Adjourn



- For more information Randy Atlas
- <http://www.cpted-security.com>
- 800-749-6029, 305-756-5027