

**GIS and Commercial Off the Shelf (COTS)  
Applications to Support  
Threat and Vulnerability Assessments of  
Critical Infrastructure**



**UTD INCORPORATED  
10242 BATTLEVIEW PARKWAY  
MANASSAS, VIRGINIA 20109  
(703) 393-0800  
FAX (703) 330-1459**

## **Use of Geographic Information Systems, Facility Condition Assessment, Risk Analysis applications and standard models to support Threat, Vulnerability, and Facility Condition Assessments**

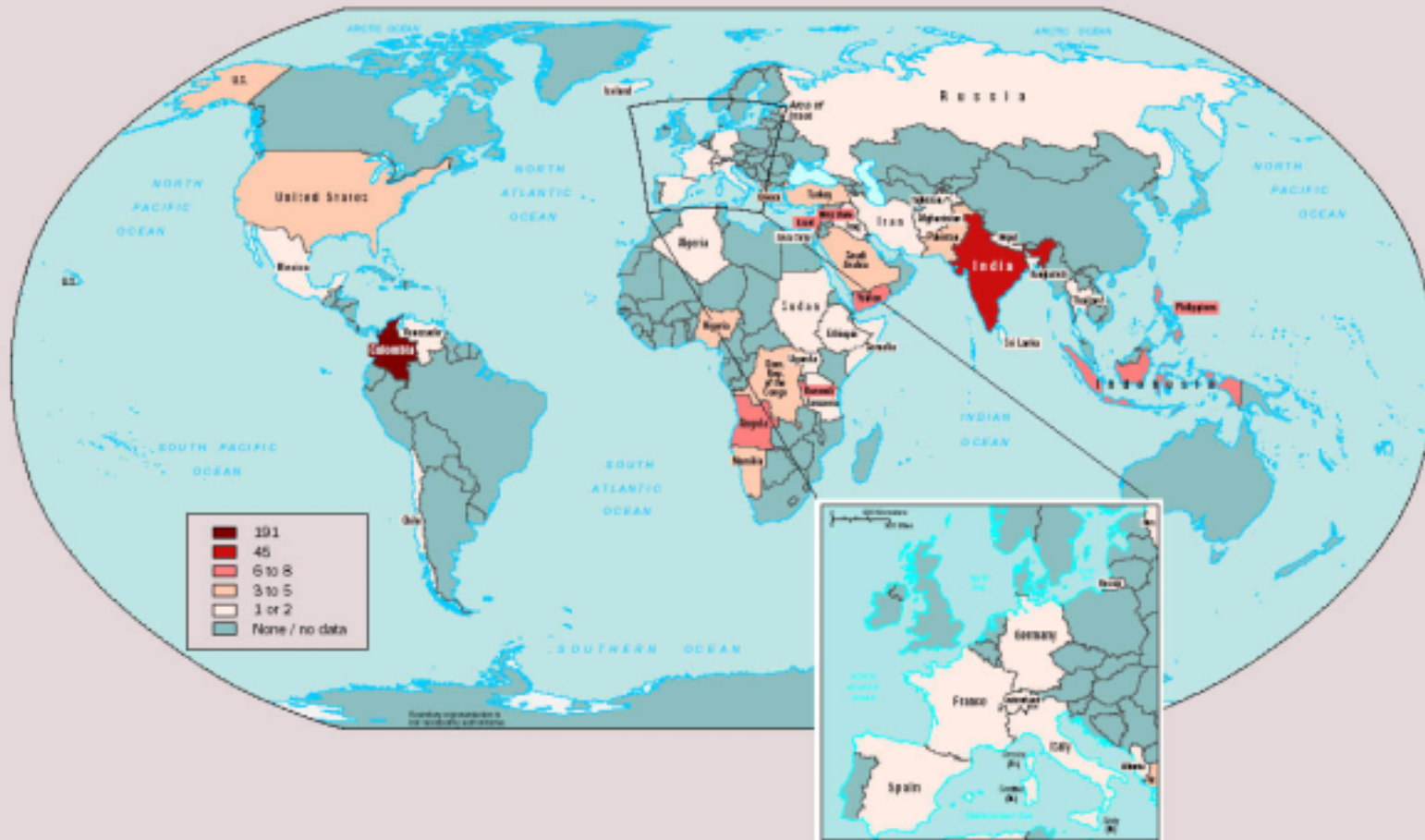
- **Nature of the Threat**
- **Legislative/Executive Drivers**
- **Systems and Infrastructure Assessment Objectives**
- **Geographic Information Systems, CBR and Blast Models**
- **Facility Condition and Vulnerability Assessment Applications**
- **Risk Analysis**

# NATURE OF THE THREAT



- **Government, business, and the general public have experienced first hand the disruption in mission, service, and business continuity due to large scale events/threats (hurricanes, terrorism, etc.)**
- **A threat can be a natural disaster, act of war, act of terrorism, or accident that impacts mission capability or business continuity**
- **Recovery and reconstitution can be in hazardous conditions for extended periods of time**

# NATURE OF THE THREAT



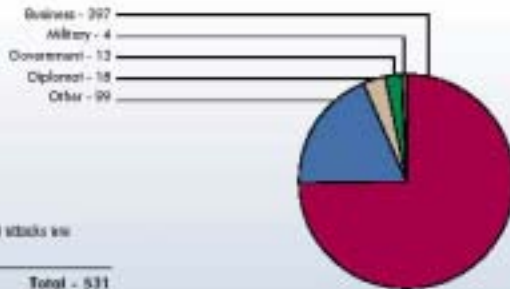
From **Patterns of Global Terrorism – 2001** Released by the Office of the Coordinator for Counterterrorism May 21, 2002

# NATURE OF THE THREAT



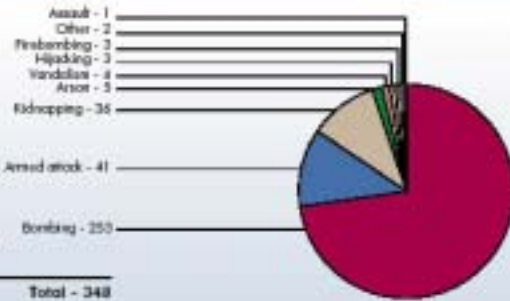
## Total International Attacks, 2001

### Total Facilities Struck<sup>a</sup>



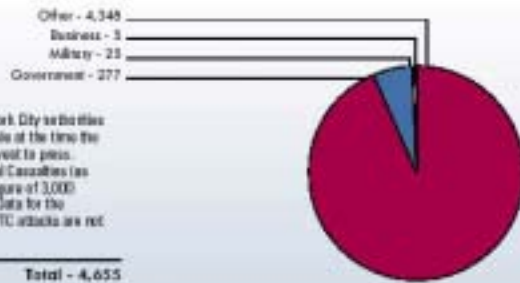
<sup>a</sup> The two World Trade Center (WTC) attacks are included under business.

### Type of Event<sup>b</sup>



<sup>b</sup> The two WTC attacks are included under bombings.

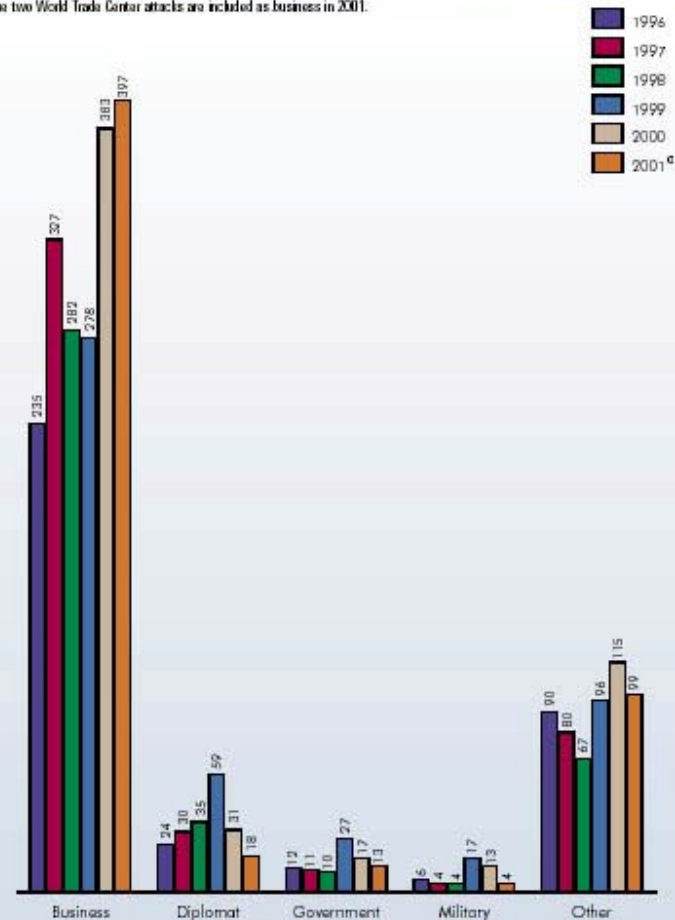
### Total Casualties<sup>c</sup>



<sup>c</sup> Official casualty data from New York City authorities on the WTC attacks were unavailable at the time the Reporters of Global Terrorism 2001 went to press. Included in the statistical chart Total Casualties (as other) is an estimated (and inflated) figure of 3,000 persons killed in the WTC attacks. Data for the number of persons injured in the WTC attacks are not available.

## Total Facilities Struck by International Attacks, 1996-2001<sup>a</sup>

<sup>a</sup> The two World Trade Center attacks are included as business in 2001.



# PUBLICATONS/GUIDANCE



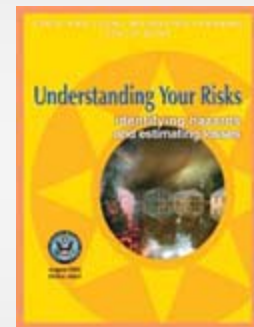
- **National Security Presidential Directive 1 (G.W. Bush) and Presidential Decision Directive 63 (Clinton) – Federal government to identify and protect infrastructure**
- **DOD**
  - **TM 5-853-1/AFMAN 32-1071 Vol 1 Security Engineering**
  - **DOD CIP Plan**
  - **DOD Minimum Antiterrorism Standards 2002**
  - **Draft Army COE Protecting Buildings and Their Occupants From Airborne Hazards**
- **DOC/CIAO**
  - **Vulnerability Assessment Framework 1.1 Oct 1998**



# PUBLICATONS/GUIDANCE



- **FEMA**
  - **DMA 2000**
  - **386-2 Understanding Your Risks**
  - **386-7 Integrating Human-Caused Hazards Into Mitigation Planning**
  - **FPC 66 Test, Training and Exercise Program and COOP**
  - **FPC 67 Acquisition of Alternate Facilities for COOP**
  - **HAZUS**



# PUBLICATONS/GUIDANCE



- **CDC/NIOSH**
  - **Protecting Building Environments from Airborne Chemical, Biological, or Radiological Attacks**
  - **Draft Filtration & Air-cleaning Systems to Protect Building Environments**
- **Naval Criminal Investigative Service Crisis and Consequence Exercise Handbook**
- **FEMA Building Security Engineering Manual (due in summer 2003)**



# PUBLICATONS/GUIDANCE



- **The Partnership for Critical Infrastructure (PCIS)**
  - <http://www.pcis.org/>
- **The Infrastructure Security Partnership (TISP)**
  - <http://www.tisp.org/>



# THREAT VS VULNERABILITY



- **A threat assessment is usually conducted by intelligence and law enforcement**
  - **General Threat Scenarios/Spectrum**
  - **Specific Threat**
- **A vulnerability assessment is typically conducted by A&E, Physical Security, specialty expertise firms/agencies (UTD, Gage Babcock, DTRA, Army COE, Sandia, etc.)**
- **Objective is to evaluate systems and interdependencies in some quantifiable form:**
  - **Risk**
  - **Criticality**
  - **Recoverability**

# THREAT EVALUATION



THREATS	TOOLS	SYSTEM ELEMENTS
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Accidents

Criminal Activity

Espionage

Cyber Attack

Terrorism

Civil Unrest

Natural Disaster

Technological Failure

Conventional Warfare

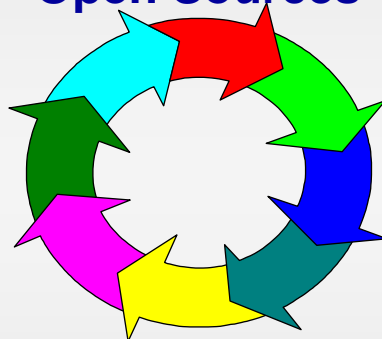
WMD

Models

Observation

Interviews

Open Sources



Population Dynamics

Red Teams

SPV Analysis

Lessons Learned

Structural Protection

Physical Security

Communications

Emergency

Preparedness

Fire Protection

Utilities

Information Assurance

Damage Control/Recovery

Key Positions

EM/Lightning Protection

## ASSET VULNERABILITIES

# INFRASTRUCTURE ASSESSMENT



- **Objectives**
  - **Ensure The Continuity Of The Mission/Operation**
  - **Protect People, Infrastructure and Resources**
- **Understand Which Locations, Nodes, Networks, And Elements Are Critical To The Mission**
  - **Identify Single Point Vulnerabilities (SPV)**
  - **Not Everything Is Critical**
- **Look At The Critical Elements For Vulnerabilities And Recommend Solutions**

# FACILITY SYSTEM INTERACTIONS



Damage Mechanisms:

**WEAPONS & ATTACKS**

Facility Systems:

Delivery

**PROTECTION FUNCTION**  
• EMP  
• Structure  
• Security  
• NBC

Penetration

**CRITICAL COMPONENTS**  
• **Support Function**  
• Operation Function  
• Personnel

System Defeat

**PROTECTION FUNCTION**  
• Damage Control & Recovery (Int & Ext)

Functional Defeat:

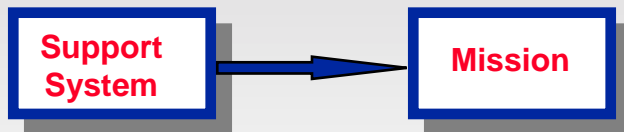
**DAMAGE EFFECTS**  
• Mission Defeat  
• Downtime  
• % Degradation

Critical Function Failure

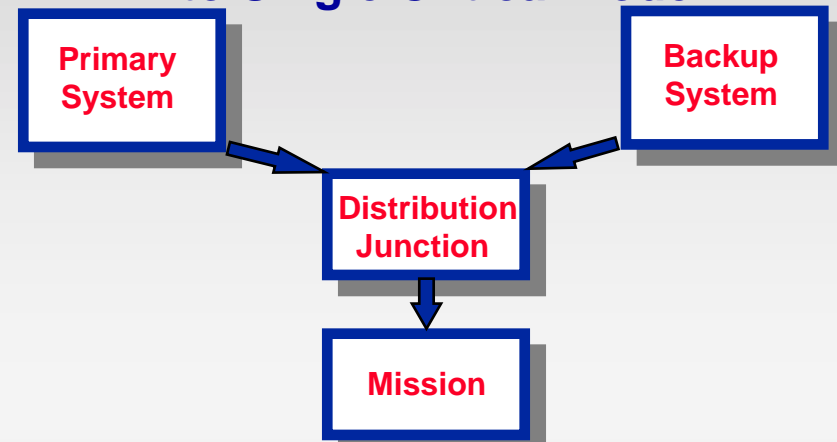
# COMMON SYSTEM VULNERABILITIES



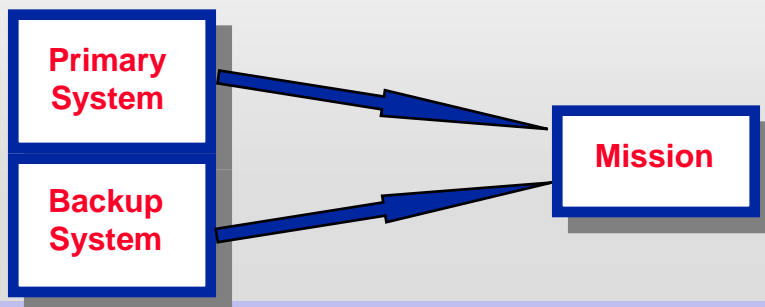
## No Redundancy



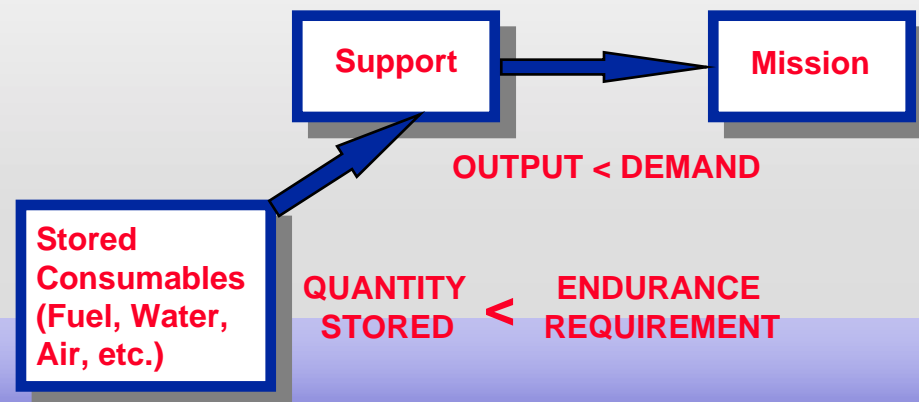
## Redundant Systems Feed Into Single Critical Node



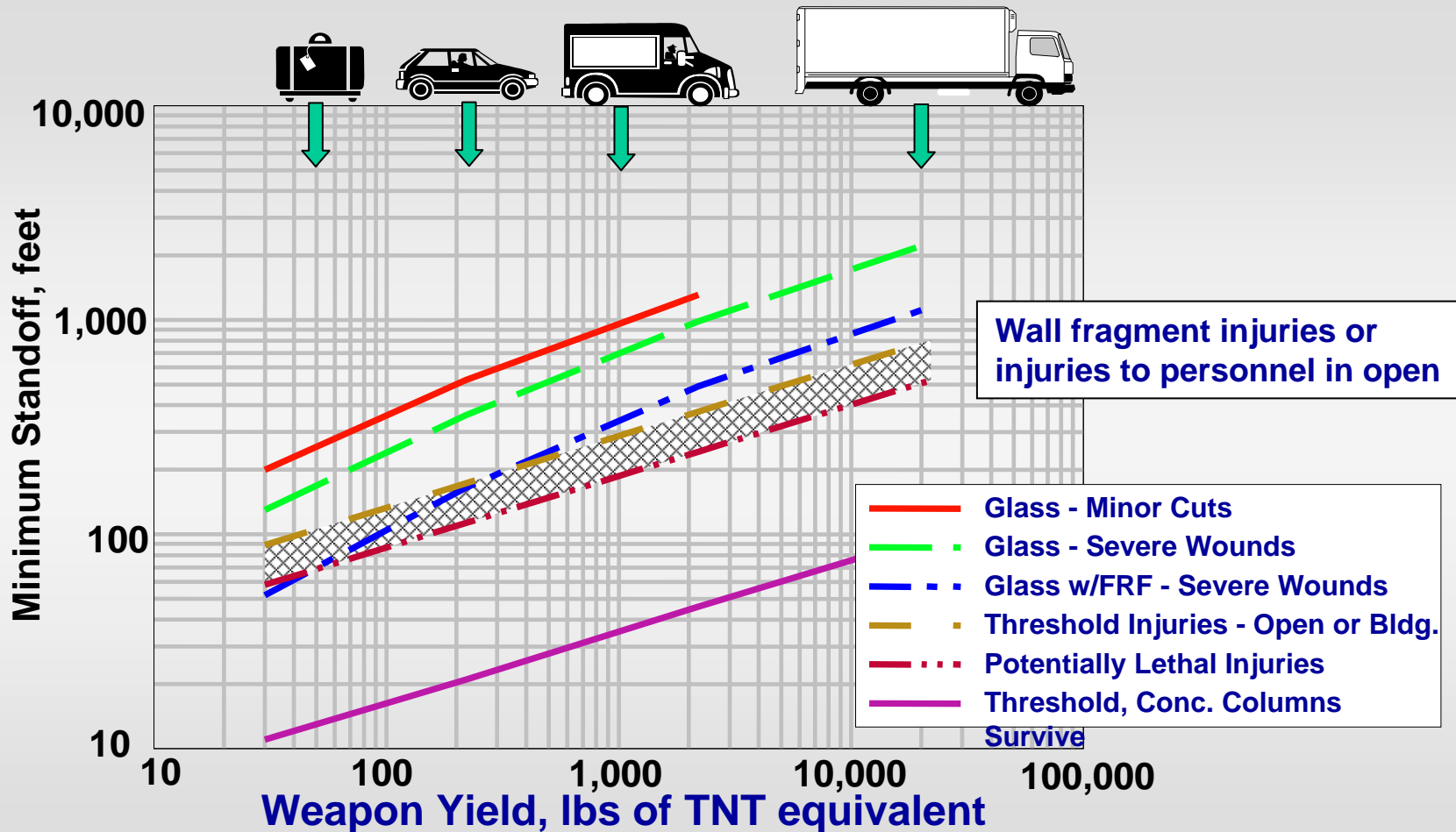
## Critical Components of Redundant Systems Collocated



## Inadequate Capacity or Endurance in Post-Attack Environment

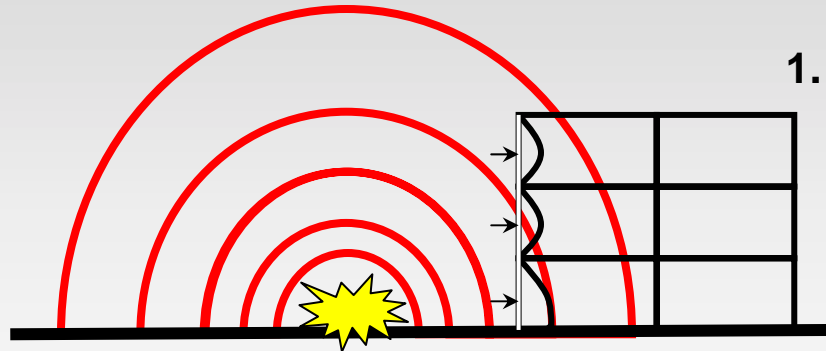


# EXPLOSIVES ENVIRONMENTS

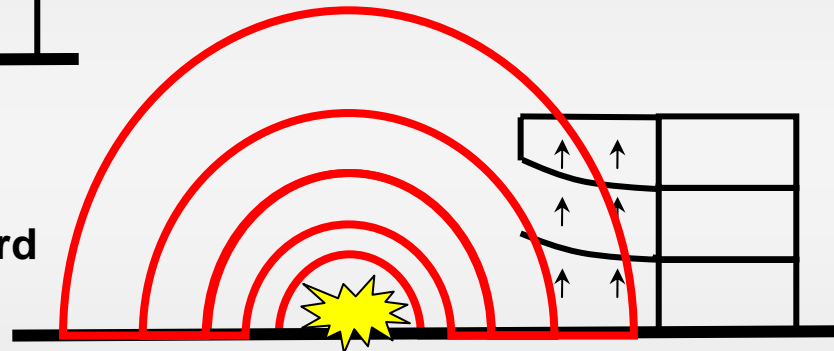


**Key concerns are glass shards and structural collapse**

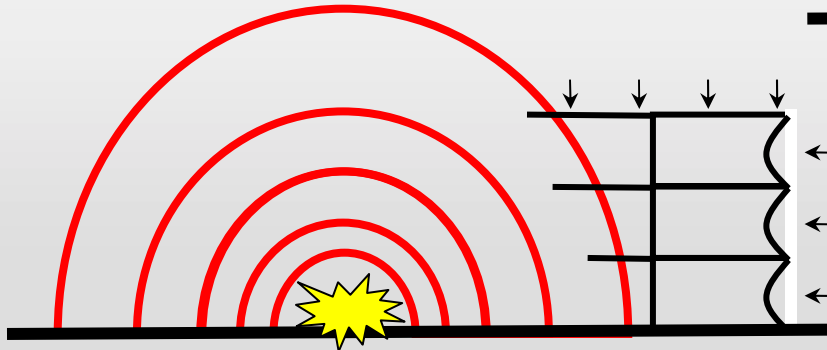
# BLAST EFFECTS



1. Windows broken  
Exterior wall columns blown in



2. Blast wave forces floors upward

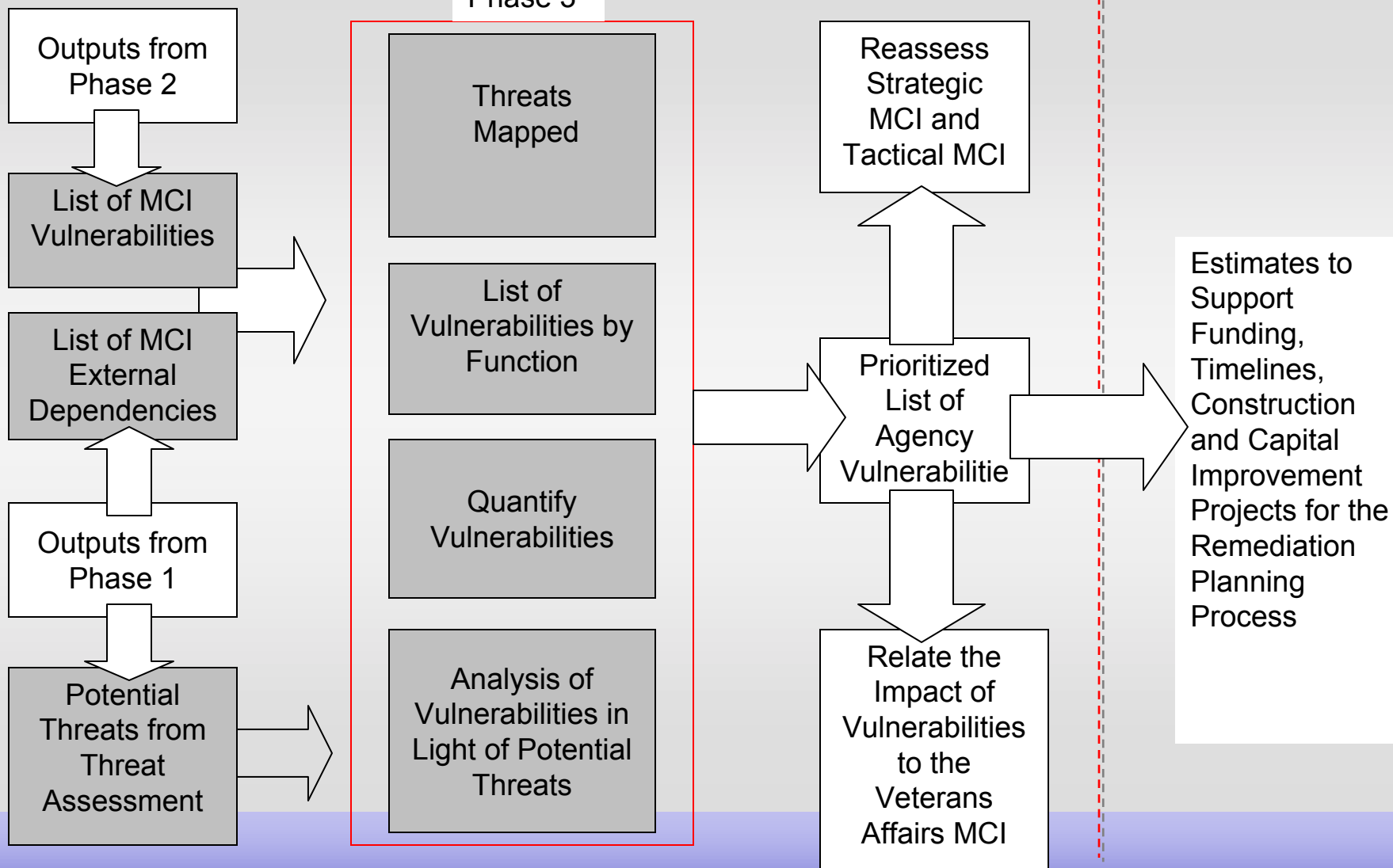


3. Blast wave surrounds structure  
Downward pressure on roof  
Inward pressure on all sides

# FRAMEWORK FOR ASSESSMENT



## Phase 3





# CRITICAL FUNCTIONS



Department of Veterans Affairs

# CRITICAL INFRASTRUCTURE



Microsoft Excel - Baltimore Vulnerability Assessment HTC 8-28-02

File Edit View Insert Format Tools Data Window Help

Type a question for help

Arial 10

J36 =J37+J38+J39

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
2	<b>Risk Factors definitions</b>	<b>Low</b>	<b>Med</b>	<b>High</b>	<b>Risk Quantification</b>										
3															
4	Likelihood/probability of event	1	2	3	Low Risk	Med Risk	High Risk								
5	Impact/consequence of event	1	2	3	Severe										
6	Mitigation/Redundancy	Multiple		Minimal											
7															
8															
9															
10															
11	<b>Facility</b>	<b>Baltimore YAMC</b>													
12															
13			<b>MCI</b>	<b>Accidents</b>	<b>Contamination</b>	<b>Natural Disaster</b>	<b>Power/Telecom Out</b>	<b>Systems Failure</b>	<b>Terrorist Act</b>	<b>Collocated Dam</b>	<b>Narrative Text</b>				
14	<b>Critical Infrastructure</b>		(Spills, floods)	(Food, drug, water)	(Hurricane, Tornado, Flood)		(Construction, surge)	(Chem, Bio, Radiological)	(PIS, DD, Port, etc)						
15	<b>Site</b>		3	3	3	3	3	3	3	3					
16	Likelihood		3	3	3	3	3	3	3	3					
17	Impact		3	3	3	3	3	3	3	3					
18	Mitigation		3	3	3	3	3	3	3	3					
19															
20	<b>Architectural</b>		3	3	3	3	3	3	3	3					
21	Likelihood		3	3	3	3	3	3	3	3					
22	Impact		3	3	3	3	3	3	3	3					
23	Mitigation		3	3	3	3	3	3	3	3					
24	<b>Structural Systems</b>	Y	3	3	3	3	3	3	3	3					
25	Likelihood		3	3	3	3	3	3	3	3					
26	Impact		3	3	3	3	3	3	3	3					
27	Mitigation		3	3	3	3	3	3	3	3					
28	<b>Envelope Systems</b>		3	3	3	3	3	3	3	3					
29	Likelihood		3	3	3	3	3	3	3	3					
30	Impact		3	3	3	3	3	3	3	3					
31	Mitigation		3	3	3	3	3	3	3	3					
32	<b>Utility Systems</b>		3	3	3	3	3	3	3	3					
33	Likelihood		3	3	3	3	3	3	3	3					
34	Impact		3	3	3	3	3	3	3	3					
35	Mitigation		3	3	3	3	3	3	3	3					
36	<b>Mechanical Systems</b>	Y	3	3	3	3	3	3	3	3					
37	Likelihood		3	3	3	3	3	3	3	3					
38	Impact		3	3	3	3	3	3	3	3					
39	Mitigation		3	3	3	3	3	3	3	3					
40	<b>Plumbing and Medical Gas Systems</b>	N	3	3	3	3	3	3	3	3					
41	Likelihood		3	3	3	3	3	3	3	3					
42	Impact		3	3	3	3	3	3	3	3					
43	Mitigation		3	3	3	3	3	3	3	3					
44	<b>Electrical Systems</b>		3	3	3	3	3	3	3	3					
45	Likelihood		3	3	3	3	3	3	3	3					
46	Impact		3	3	3	3	3	3	3	3					
47	Mitigation		3	3	3	3	3	3	3	3					
48	<b>Fire Alarm Systems</b>		3	3	3	3	3	3	3	3					
49	Likelihood		3	3	3	3	3	3	3	3					
50	Impact		3	3	3	3	3	3	3	3					

Function Vulnerability Infrastructure Vulnerability

Ready

Department of Veterans Affairs

Feb 2003

# INFRASTRUCTURE SPVS



**Air Intakes**



**Drive Through**



**Electrical Service**



**Telecom Service**

**Department of Veterans Affairs**

## **Combined GIS and COTS Incorporates:**

- **Regional transportation (road, rail, water, air)**
- **Regional Police, Fire, Hospital**
- **Site and building floor plans (CCTV, lighting, etc)**
- **Facility O&M checklists**
- **Equipment maintenance manuals**
- **Guidance documents (CDC, DOD, etc)**
- **All building codes (NFPC, NEC, ADA, etc)**

**In one place and through one interface data for multiple applications can be seen:**

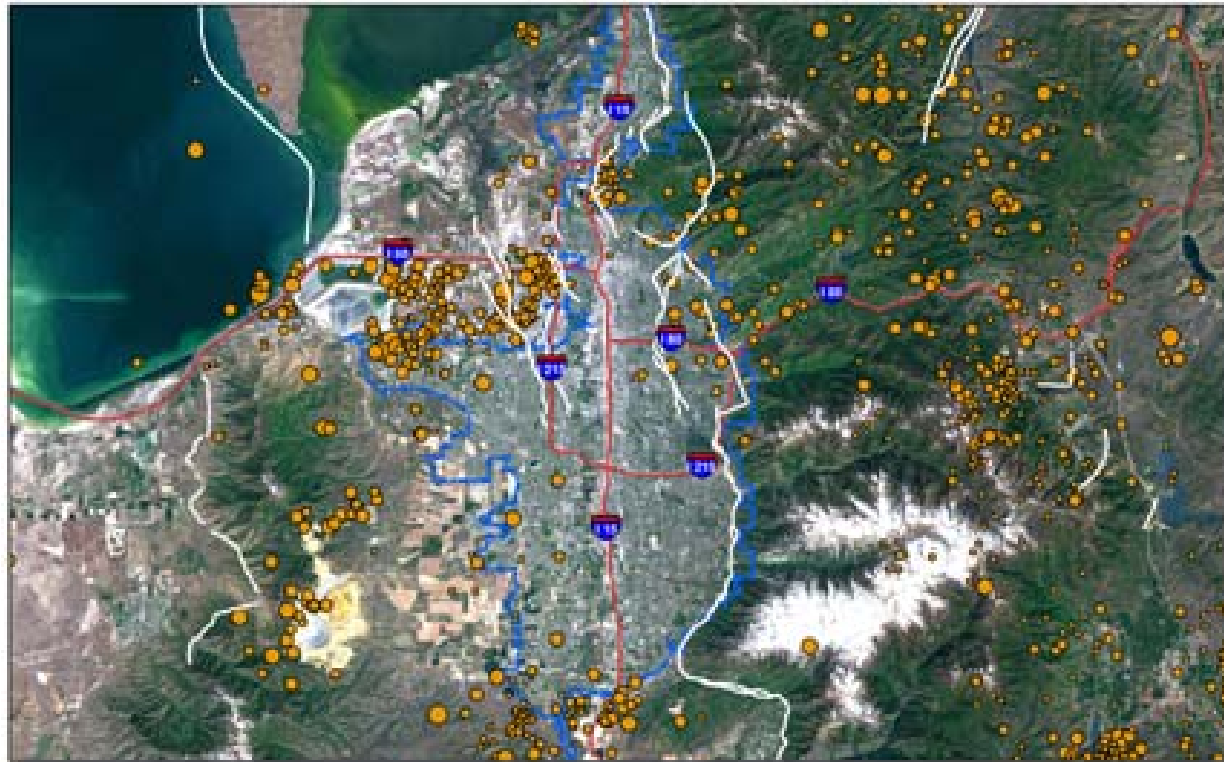
- **Threat and Vulnerability Assessment**
- **Facility Condition Assessment**
- **Blast and CBR model results**
- **Energy Management**
- **Other applications (risk, networks, evacuation, etc)**

# ASSESSMENT TOOLS



A screenshot of a software application window titled "UTD\_Demo - ArcMap - ArcView". The interface is divided into several sections. On the left, there is a vertical sidebar with the UTD INC. logo at the top and a list of regional buttons: "US", "East", "Central", "West", and "Regional". The main central area displays a map of the Eastern United States, with state boundaries and major cities like Detroit, Cleveland, Columbus, Washington, and Charlotte marked. To the right of the map is a vertical toolbar with buttons for "North", "South", "East", "West", "Front Entrance", "Deck", "Telecom", "CAD Drawing", "Energy Management", "Interior Fly Through", and "Video". At the bottom of this toolbar is a "Close Form" button. On the far right, there are two image panels. The top panel shows four small photographs of a brick building's exterior from different angles. The bottom panel shows a detailed architectural floor plan of a building with various rooms and corridors.

# REGIONAL INFORMATION



# REGIONAL INFORMATION

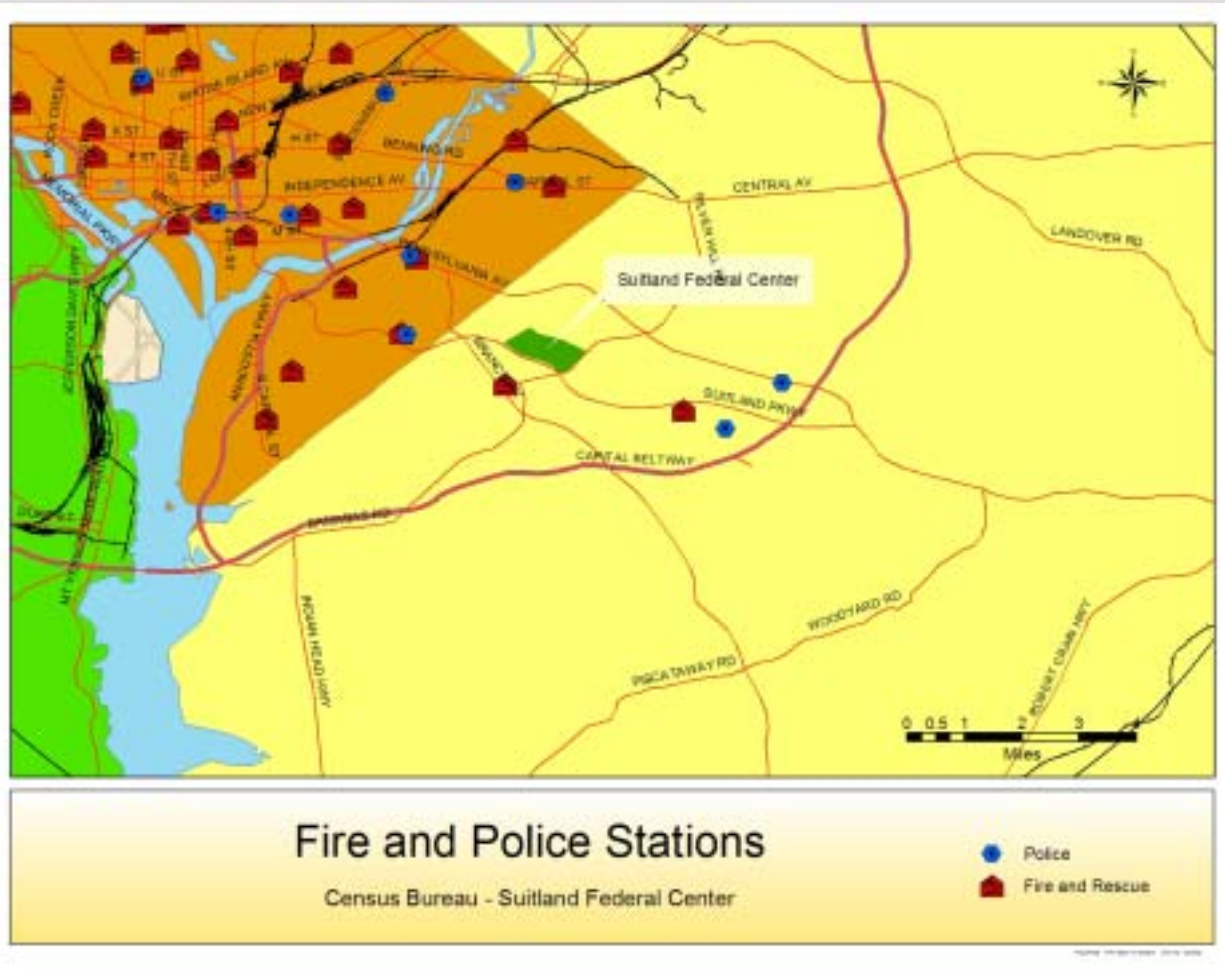


10 Mile Campus Buffer

Census Bureau - Suitland Federal Center



# REGIONAL INFORMATION

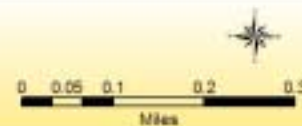


# SITE INFORMATION



## Suitland Federal Center Imagery

Census Bureau - Suitland Federal Center



# PERIMETER AND ACCESS CONTROL



Census Bureau Imagery

Census Bureau - Suitland Federal Center

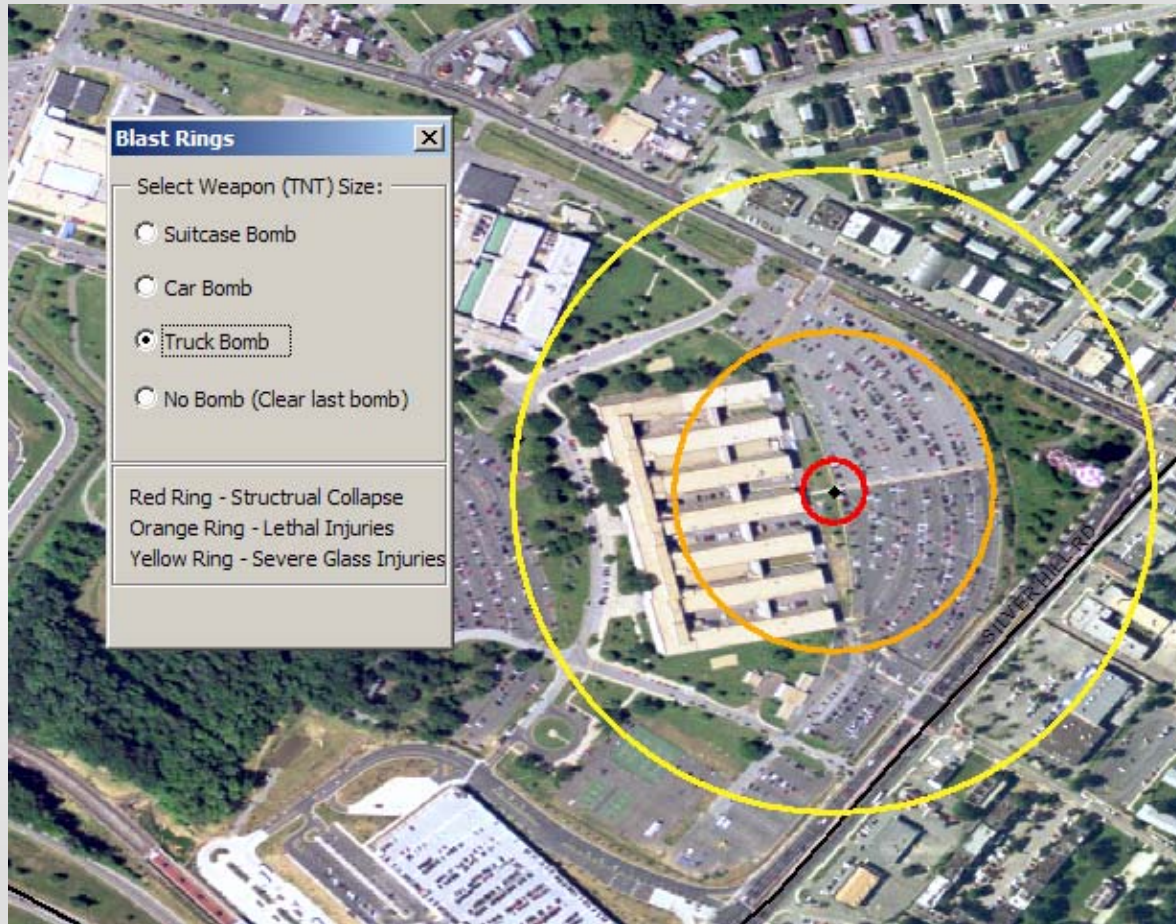
Perimeter

Entry\_Points

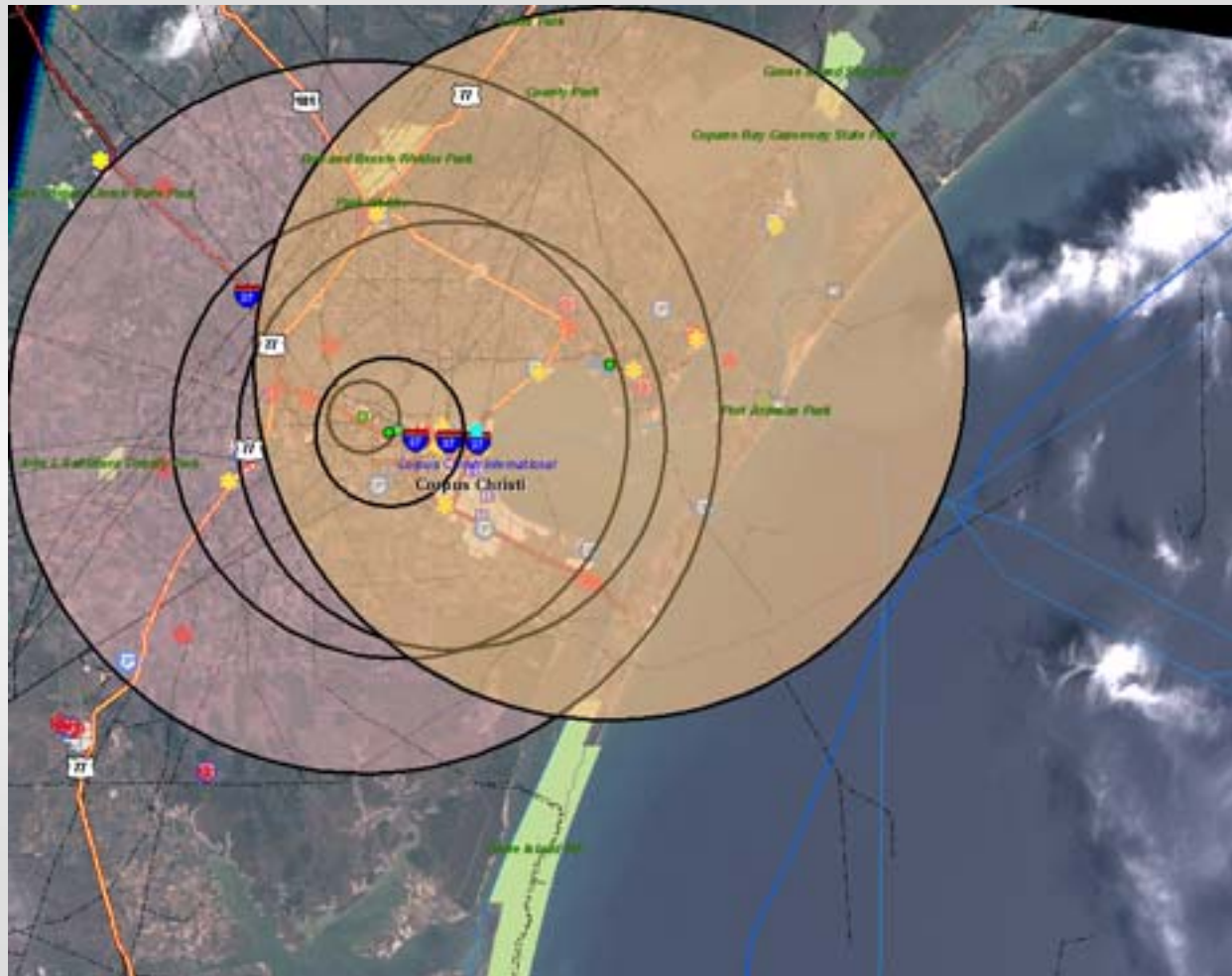


0 0.02 0.04 0.08 0.12 0.16  
Miles

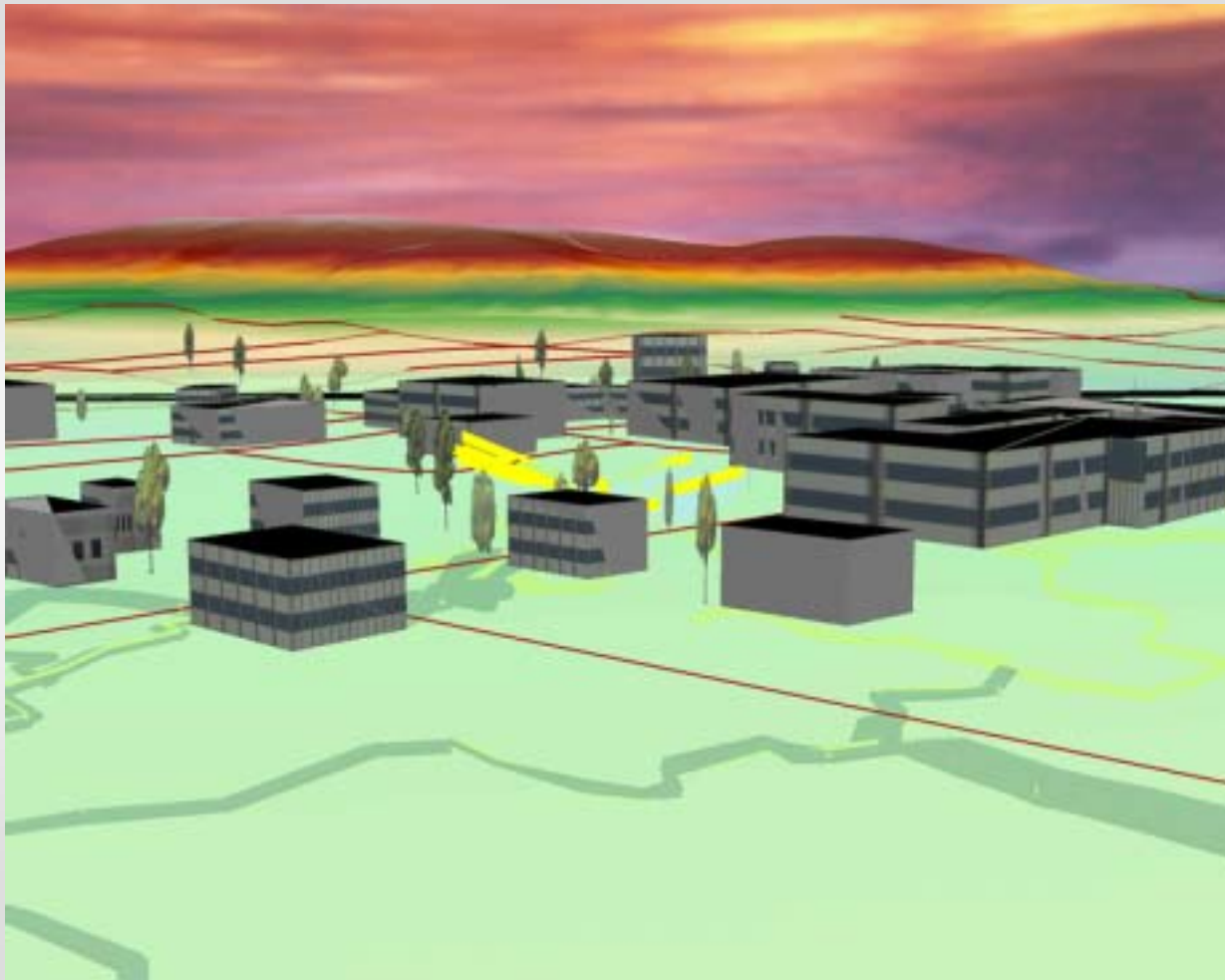
# BLAST STANDOFF



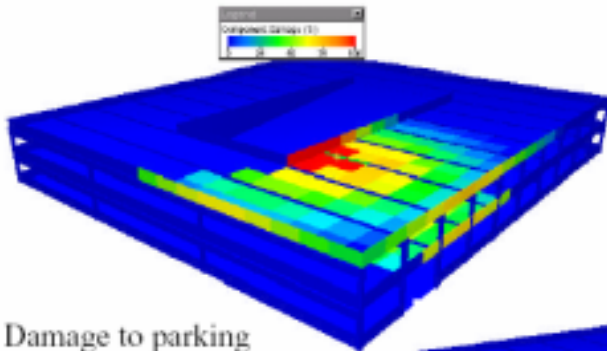
# PLUME ANALYSIS



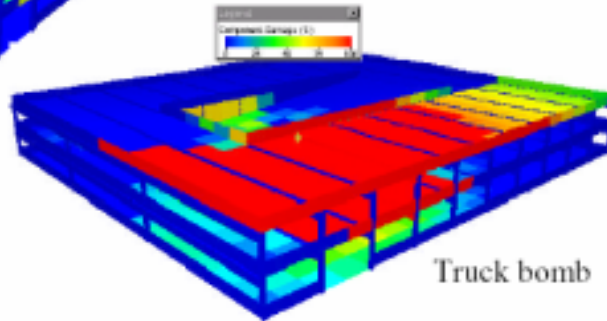
# 3D MODELING



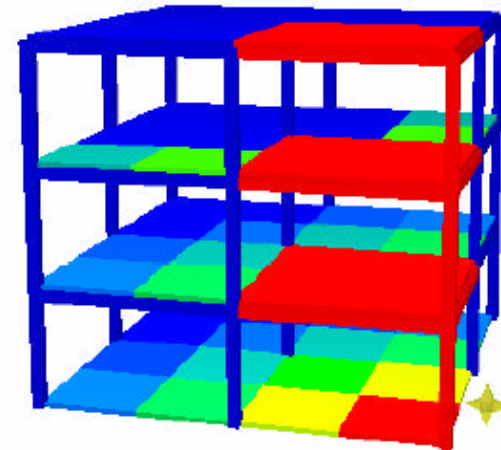
# BLAST EFFECTS



Damage to parking garage from a car bomb on the upper deck.



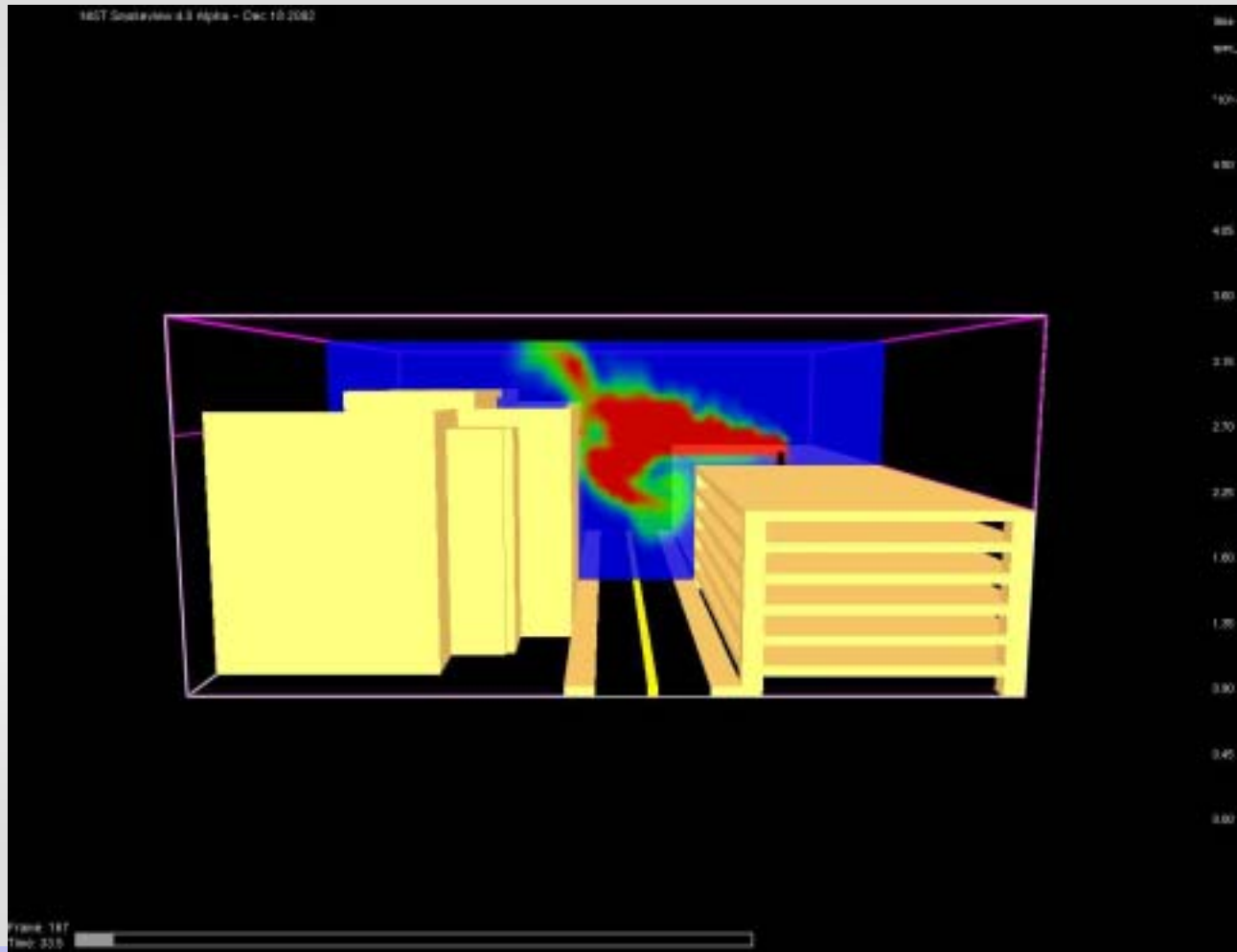
Truck bomb



Weapon destroys exposed column, upper-level beams, columns, floor slabs collapse.

## BLAST FX

# CBR BUILDING ANALYSIS



**NIST SMOKEVIEW**



# COTS FACILITY SOFTWARE



All programs are very similar (Capital or O&M basis)

- VFA
  - CAFM2000
  - ACTS
  - 3D International COMET
  - Facilities Space Management
  - Peregrine
  - Maximo
  - HCI Systems
  - ISES
  - FIS
  - Archibus
  - ATG
  - Primavera
- 
- Can be web based or server based
  - Typically use CSI format
  - Usually have RS Means or ad hoc cost estimating
  - Backends are typically Oracle, MS SQL, MS Access
  - Costing of infrastructure includes numerous models

# COTS SOFTWARE



# COTS SOFTWARE



**CAFM**  
Computer Automated Facilities Management, Inc.

**Manage projects, facilities, & collect conditions data!**  
**Anytime - 24/7 via Your Network or the Internet!**  
**Anywhere - Field Site, Remote Office, Home!**

**Products & Services**  
Customization, Implementation, Schedule

**Integrated Software Applications**  
Project Management  
Conditions Assessment  
Maintenance Management  
Reports

**Data Collection**  
Mobile Data Collection

**Services**  
Condition Surveys  
BIM/BIM Conversion  
Custom Applications

**Questions**  
Q&A

**Pricing**

Contact Profile

**Home**

**Mobile Data Collection**

**Project Management**      **Conditions Assessment**      **Maintenance Management**

Local / Enterprise Lan / Internet

Done      Internet

The screenshot shows a Microsoft Internet Explorer browser window displaying the CAFM website. The browser's address bar shows "http://www.cafm.com/". The website has a blue header with the CAFM logo and name. Below the header, there are three main columns of content. The left column is a blue sidebar with white text listing various services and products. The middle and right columns feature images and text describing the software's capabilities, including "Mobile Data Collection" and "Project Management". At the bottom, there is a diagram showing a network of devices (laptop, PDA, server, and desktop) connected to a central green line labeled "Local / Enterprise Lan / Internet". The browser's status bar at the bottom shows "Done" and "Internet".

# COTS SOFTWARE



The screenshot shows a Microsoft Internet Explorer browser window displaying the website for 3DInternational. The address bar shows the URL <http://www.3d.com/assessments/>. The page title is "Facility Assessments at 3D/International". The main heading is "FACILITY ASSESSMENTS" in bold black text on a yellow background. Below the heading is a navigation menu with links: "Direct Assessment Services", "Toolbox Series", "FCI Calculator", "Articles and Reports", "Assessment Home Page", and "Contact". A horizontal banner of six small images shows various facility exteriors and interiors. The main content area is titled "Keeping the Doors Open . . ." and contains a paragraph about facility condition assessments. To the right, there are two sections: "TOOLBOX SERIES" with a wrench icon and "FCI CALCULATOR" with a percentage icon. At the bottom, a red button says "Go to Case Studies:" followed by five icons representing different facility types: a red house, a blue building, a green classical building, a red and white star, and a green dollar sign.

3DInternational [www.3d.com](http://www.3d.com)

## FACILITY ASSESSMENTS

[Direct Assessment Services](#) | [Toolbox Series](#) | [FCI Calculator](#) | [Articles and Reports](#) | [Assessment Home Page](#) | [Contact](#)

*Keeping the Doors Open . . .*

A facility condition assessment provides an inventory of what is new, old, good, bad, broken, nearing the end of its life, missing or inadequate in a facility. It enables an analytical approach to managing facility needs and master planning. The goal of an assessment is to optimize how you plan your projects and expenses. Read more:

[The Facility Condition Assessment: Determining what you have](#)

**Go to Case Studies:**

**TOOLBOX SERIES**

Toolbox series provides information on facility planning and management topics. Click the toolbox icon to find the best toolbox for your needs.

**FCI CALCULATOR**

This calculator will help you estimate replacement and deferred maintenance costs. Click on the icon to FCI home page.

# COTS SOFTWARE



The screenshot shows a Microsoft Internet Explorer browser window displaying the website for ISES Corporation. The browser's address bar shows the URL <http://www.isecorp.com/FCAWEB.htm>. The website header includes the ISES logo and the text "FACILITY ENGINEERING & MANAGEMENT SERVICES". Below the header is a navigation menu with four tabs: "CORPORATE INFORMATION", "SERVICES AND SOFTWARE", "CLIENTS AND CASE STUDIES", and "NEWS AND EVENTS". The main content area is titled "FACILITY CONDITION ANALYSIS SOFTWARE PROGRAM DESCRIPTION" and contains the following text:

All building and executive summary reports are generated in house using the ISES FCA Software System. This system is a user friendly menu driven system that will efficiently manage all the Facility Condition Analysis information.

The client will receive the ISES FCA Software System in its executable format and the associated database.

The FCA System is the industry standard for maintaining and managing Capital Renewal/Deferred Maintenance databases. The system accommodates ongoing management and utilization of Facility Condition Analysis information in an efficient, productive manner, allowing facilities professionals to manage their portfolio instead of being managed themselves by deteriorating facilities conditions.

ISES Corporation's FCA Software System is a user friendly menu driven system created using Microsoft Visual Basic or for WEB, Java, JSP, and Servlet technology for the efficient management and organization of Facility Condition Analysis information. FCA utilizes a relational database eliminating the storing of redundant data, therefore minimizing the size of the database.

On the left side of the page, there is a quote: "Keep your continued FCA efficient and productive with FCAWEB." Below the quote are two bullet points:

- [Try our FCAWEB software demo](#)
- [View a more detailed software description in PDF](#)

The browser's status bar at the bottom shows "Done" and "Internet".

# COTS SOFTWARE



ARCHIBUS, Inc. - Total Infrastructure and Facilities Management Software - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address http://www.archibus.com/

Links Customise Links Free Hotmail Windows Media Windows

**ARCHIBUS, Inc.**  
Welcome to ARCHIBUS, Inc., the number one provider of software and services for real estate, facility and infrastructure management.

**ARCHIBUS/FM**  
The #1 Solution in the World for Total Infrastructure and Facilities Management

- HOME
- COMPANY
- IN THE NEWS
- PRODUCTS
- COMMUNITY
- CASE STUDIES
- SUPPORT
- SEARCH
- SITE MAP
- PRODUCT TRANSLATIONS
- BUSINESS PARTNERS

In its sixteenth generation, the **ARCHIBUS/FM product line** includes tightly integrated products for managing the costs, forecasts, and workflows associated with your properties, leases, space, fixed assets, telecommunications, maintenance, and moves.

**A proven company ...** For nearly two decades, ARCHIBUS, Inc. has been helping **organizations just like yours** achieve strategic improvements through effective knowledge and control of their real estate portfolio and operations.

**An active user community ...** A deeply knowledgeable user community is what makes ARCHIBUS truly unique. Our 100,000+ users manage 1.4 million buildings containing 16 billion square feet. They continually help us improve our benchmarking, best practices, and usability. They also generously lend their time in the **efbE Forums**, the **ARCHIBUS/FM Users' Groups**, and our yearly **International ARCHIBUS/FM Users' Conference**.

**Global deployment partners ...** ARCHIBUS/FM is sold and supported by a global network of 1,600+ **business partners** who have adopted ARCHIBUS/FM as the only truly open solution on the market. These highly experienced resources, who operate in 100 countries, will help you define standards, install, train, and adapt the software to your business needs.

**... Make ARCHIBUS/FM the world leader.**

ARCHIBUS, Inc. 18 Tremont Street Boston, MA 02108  
Tel: (617) 227-2508  
E-mail: 26473@archibus.com

**Top 15 Myths of FM Automation**

**HOME**

**GSA**  
Purchasing Information for ARCHIBUS/FM

**ARCHIBUS/FM**  
Your TIFM Foundation discover why  
[\[Resources Flash & Motion\]](#)

**ARCHIBUS/FM**  
Version 12.2

**2003 International ARCHIBUS/FM Users' Conference**

**The Test Drive**  
ARCHIBUS/FM Web Central  
English  
Français

Date Internet

# COTS SOFTWARE



**CAFM**  
Computer Automated Facilities Management, Inc.

**Manage projects, facilities, & collect conditions data!**  
**Anytime - 24/7 via Your Network or the Internet!**  
**Anywhere - Field Site, Remote Office, Home!**

**Mobile Data Collection**

**Project Management**      **Conditions Assessment**      **Maintenance Management**

Local / Enterprise Lan / Internet

Coast Guard Ports Vulnerability

Feb 2003

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## Criticality Assessment

- Identify Critical Assets & Structures to Protect from Attack

## Threat Assessment

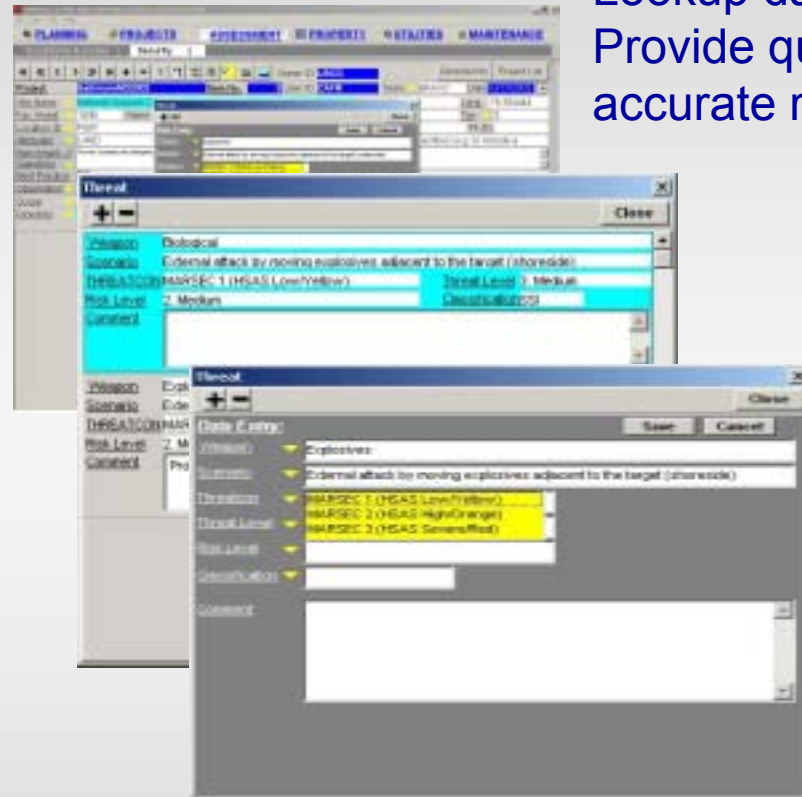
- Identify each Threat & Scenarios, including likelihood of attack & capability

## Consequence Assessment

- Evaluate outcome, negative impact of attack, e.g. deaths, injuries, economic, recovery. Rank each scenario

## Vulnerability Assessment

- Identify weaknesses in operations, personnel, security, technical.
- Score by availability, accessibility, organic security, & target hardness



Lookup databases  
Provide quick &  
accurate recording

**Coast Guard Ports Vulnerability**

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The screenshot displays a web-based application interface for managing facility data. The browser title is "VFA Facility - practice - Microsoft Internet Explorer". The application header includes the "vfa Asset Data" logo and a navigation menu with options: "Asset Data", "Import", "Funding Analysis", "Custom Links", "Project Planning", "Help", "Reports", "My Account", and "Logout".

The main content area is titled "UTD Region / A University / Buildings" and features a toolbar with "New", "List", "Save", "Delete", and "Print" icons. A left-hand navigation pane lists "Regions", "Campuses", "Buildings" (selected), "Assemblies", "Rooms", "Deficiencies", "Links", "CAD Drawings", "Photos", and "Cost Models".

The central form contains the following fields:

- Campus: A University
- Name: Firehouse
- Bldg No.: 101a
- St Address: Canal St
- Cost Model: Fire Station Single Story
- Stories: 1
- Gross Area: 120,000
- Replacement Value: \$16,995,000
- FCI: 0.00
- Use: A3. Fire
- Construction Type: D Business and Personal Services
- Date Constructed: 1945
- Date Renovated: (empty)
- Architect: (empty)
- Historical Category: (none selected)
- Facility Type: Building
- Campus Map Coord: (empty)
- Estimation: R.S. Means State: (none selected)
- Description: (empty text area)

At the bottom, there is a "System Lifecycles" table with the following header:

Uniformat Category	% Used	% Deficient	Valid as of
--------------------	--------	-------------	-------------

The status bar at the bottom of the browser window shows "Building: Firehouse." and "Internet".

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WVA Facility - utd - Microsoft Internet Explorer

**Asset Data**    **Funding Analysis**    **Project Planning**    **Reports**    [My Account](#)  
**Import**    **Custom Links**    **Help**    [Logout](#)

VGSN 5 / BaltimoreLoch Raven / Buildings

New    Detail    Delete    Out    Copy    Paste    Print    Filter

Name	Building	Floor	GrossArea	Replacement	Blidg Cost Model	Building Use	Construction	FCI	CCI
Building 14 - Loch Raven	14	1	2,512	\$251,200	Default	Administration	UBC - Type II 1-1r	0.00	
Building 2-Loch Raven	2	1	2,670	\$267,000	Default	Healthcare	UBC - Type IV HT	0.00	
Building 4-Loch Raven	4	2	16,197	\$1,619,700	Default	Healthcare	UBC - Type IV HT	0.00	
Imaging	6	1	3,027	\$302,700	Default	Medical	UBC - Type IV HT	0.00	
Medical Center	1	10	705,360	\$70,536,000	Default	Healthcare	UBC - Type IV HT	0.00	
Nursing Home	1LR	3	78,625	\$7,862,500	Default	Medical	UBC - Type I FR	0.00	
Outpatient Clinic	5	1	9,658	\$965,800	Default	Clinic	UBC - Type II FR	0.00	

7 Buildings.

Internet

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VFA Facility - utd - Microsoft Internet Explorer

**Asset Data**    **Asset Data**    **Funding Analysis**    **Project Planning**    **Reports**    [My Account](#)

**Import**    **Custom Links**    **Help**    [Logout](#)

Recal    Store    Delete

VISA 5 / Baltimore, Loch Raven / Medical Center / Deficiencies

New    Detail    Delete    Cut    Copy    Paste    Print    Filter    Template

Name	Deficiency Category	Prime System	Priority	Cost	Photo
Air Handling Systems	DoD Antiterrorism	Air Distribution Systems	2		<input type="checkbox"/>
Chill Water System	DoD Antiterrorism	Chilled Water Systems	3		<input type="checkbox"/>
Data Center	DoD Antiterrorism	Site Communications And Security	3		<input type="checkbox"/>
Domestic and Fire Service Water Supply	DoD Antiterrorism	Site Mechanical Utilities	2		<input type="checkbox"/>
Drive-Through Structure	DoD Antiterrorism	Superstructure	1		<input type="checkbox"/>
Electrical Service	DoD Antiterrorism	Electrical	1		<input type="checkbox"/>
External Lighting	DoD Antiterrorism	Site Improvements	3		<input type="checkbox"/>
External Lighting	DoD Antiterrorism	Site Improvements	3		<input type="checkbox"/>
Loading Dock	DoD Antiterrorism	Superstructure	1		<input type="checkbox"/>
LOK	DoD Antiterrorism	Other Site Mechanical Utilities	4		<input type="checkbox"/>
Mail Room	DoD Antiterrorism	Special Construction	2		<input type="checkbox"/>
Main Electrical Vault Door Locks	DoD Antiterrorism	Electrical	2		<input type="checkbox"/>
Medical Media - Picture ID	DoD Antiterrorism	Special Security Systems	2		<input type="checkbox"/>
Operable Windows	DoD Antiterrorism	Upper Floors Construction	2		<input type="checkbox"/>
Parking Garage	DoD Antiterrorism	SUBSTRUCTURE	1		<input type="checkbox"/>
Security Camera Systems	DoD Antiterrorism	Security and Detection Systems	1		<input type="checkbox"/>
Security Operations Center	DoD Antiterrorism	Security and Detection Systems	1		<input type="checkbox"/>
Security Operations Center Entry Access	DoD Antiterrorism	Special Security Systems	1		<input type="checkbox"/>
Security Operations Center Operating En	DoD Antiterrorism	Distribution Systems	3		<input type="checkbox"/>
Skylights in Atrium	DoD Antiterrorism	Special Construction	2		<input type="checkbox"/>
Storefront in lobby area	DoD Antiterrorism	Exterior Wall Construction	2		<input type="checkbox"/>
Vehicle Entry Control	DoD Antiterrorism	Parking Control Equipment	1		<input type="checkbox"/>

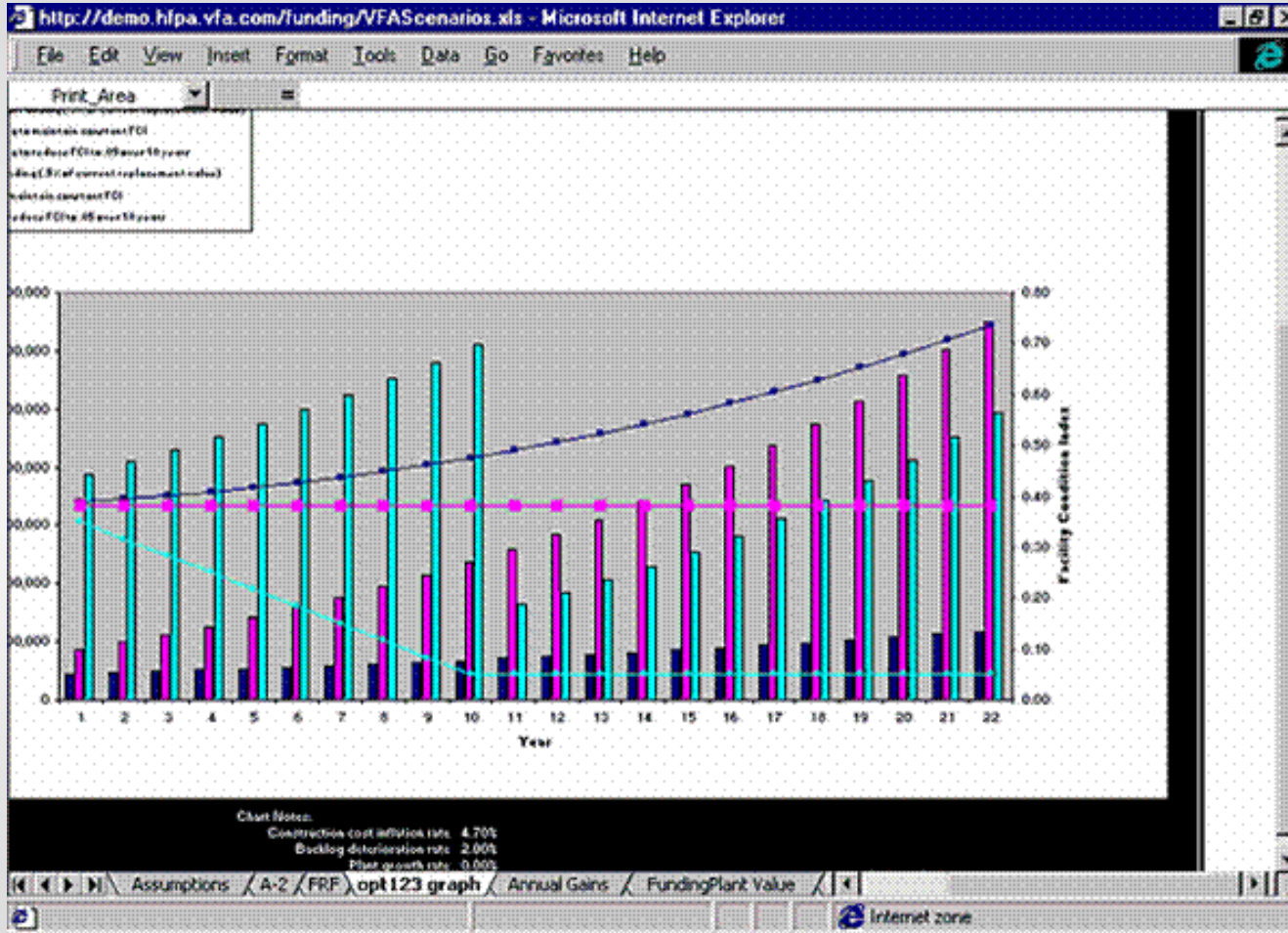
22 Deficiencies

Internet

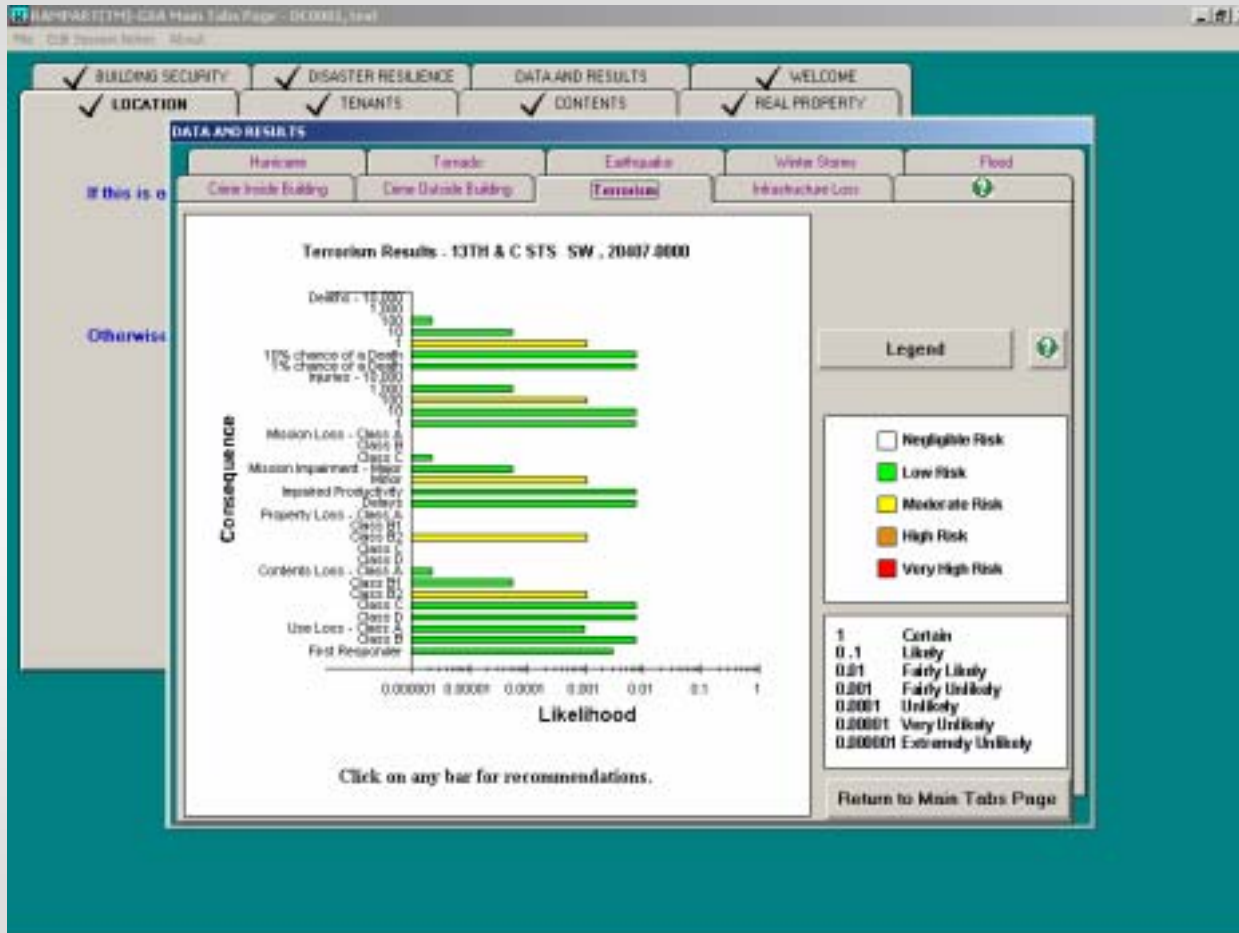
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# COTS SOFTWARE



Rampart

# COTS SOFTWARE



RAMPART (MS-DOS) Main Tabs Page - DC0001.html

FILE EDIT SYSTEMS HELP

LOCATION TENANTS CONTENTS REAL PROPERTY

BUILDING SECURITY DISASTER RESILIENCE DATA AND RESULTS WELCOME

Building Security

Building Subsystems Access Control Emergency Response

Personal Access

	HVAC	Loading Dock	Daycare	Mailroom	Water Utilities	Basement	Elevator	Food Prep. Areas	Communications	Electric Utilities	Vault
4. General Public	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Employees and Authorized Visitors	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. All Employees	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1. Authorized Employees	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Not Applicable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

HVAC System

Location of external air intake:

Street Level

20 ft. or more above street level

Access to the external air intake:

Controlled  Uncontrolled

Makeup of the HVAC system:

Air circulates once

Air circulates multiple times

Loading Dock

Location of the loading dock:

Inside the building

Outside the building

Vehicle access to loading dock:

Controlled access

Uncontrolled access

Parking

4. Uninspected underground parking, same building

3. Street parking or uninspected parking lot or parking structure within 20 feet of building

2. Street parking or uninspected parking lot or parking structure located between 20 and 50 feet from building

1. No uninspected vehicle access of any type within 50 feet

Parking area is lighted after dark

Parking attendant is present

Suspicious Packages

Elapsed time before suspicious packages are investigated:

< 1 Hour  < 8 Hours  > 8 Hours

Submit Clear Form

Return to Main Tabs Page

Rampart

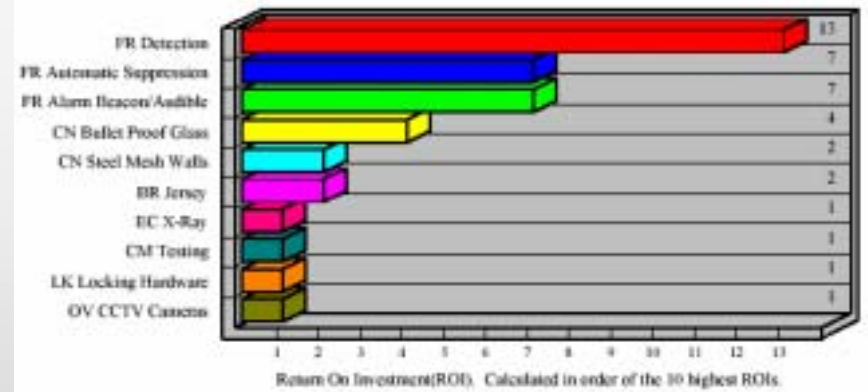
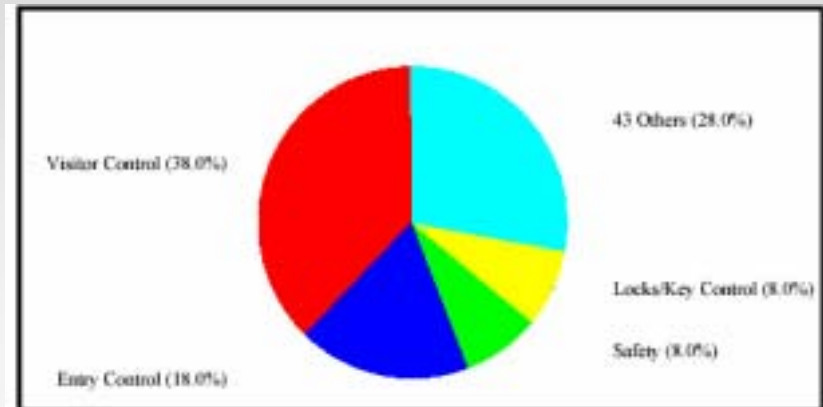
# COTS SOFTWARE



**Contains hundreds of questions** or you can write your own in minutes. It does electronic surveys, provides threat data, and does the analysis work in less than 3minutes.

**Analyzes possible safeguards and recommends controls**, by their Return On Investment. Tells you what controls give you the most 'bang for the buck'.

**RiskWatch writes the report for you.** Develops a complete report, including colorful bar and pie charts, an Executive Summary, and Recommended Actions.



**RiskWatch**

# SUMMARY



## **Threat and Vulnerability Assessment**

- Identify critical personnel, infrastructure, systems, functions

## **Mitigation and Risk Reduction**

- Plans, policies, procedures
- Infrastructure (capital investment, O&M life cycle costs)
- Equipment (surveillance, protective)

## **Leverage existing COTS products and applications**

- GIS to visualize information (site, first responders, effects)
- FCA to track infrastructure and equipment projects
- Other Risk Analysis applications (plans, policies, procedures)