

DLE 2083: INTRODUCTION TO SECURITY MANAGEMENT

CHAPTER 12 PHYSICAL SECURITY

Chapter 12: Learning Outcomes

- At the end of the topic, students should be able to:
 - Defines physical security.
 - Explain the objectives of physical security.
 - Identify the threats to physical security.
 - Understand other important controls in physical security.

Physical Security

- Physical security includes:
 - Layered defense model
 - Crime Prevention Through Environmental Design (CPTED)
 - Facility and infrastructure criteria

Physical Security

- Primary goal
 - **Life safety** is the **main goal** in physical security.
 - In emergencies, organization must ensure safety of personnel before safety of the facility or equipment.



Objectives of Physical Security

- Deterrence for crime and disruption
 - Convince threat agent not to attack
 - E.g. fence, security guards, etc.
- Detection of crime or disruption

Develop capability to detect attacks that cannot be delayed forever.

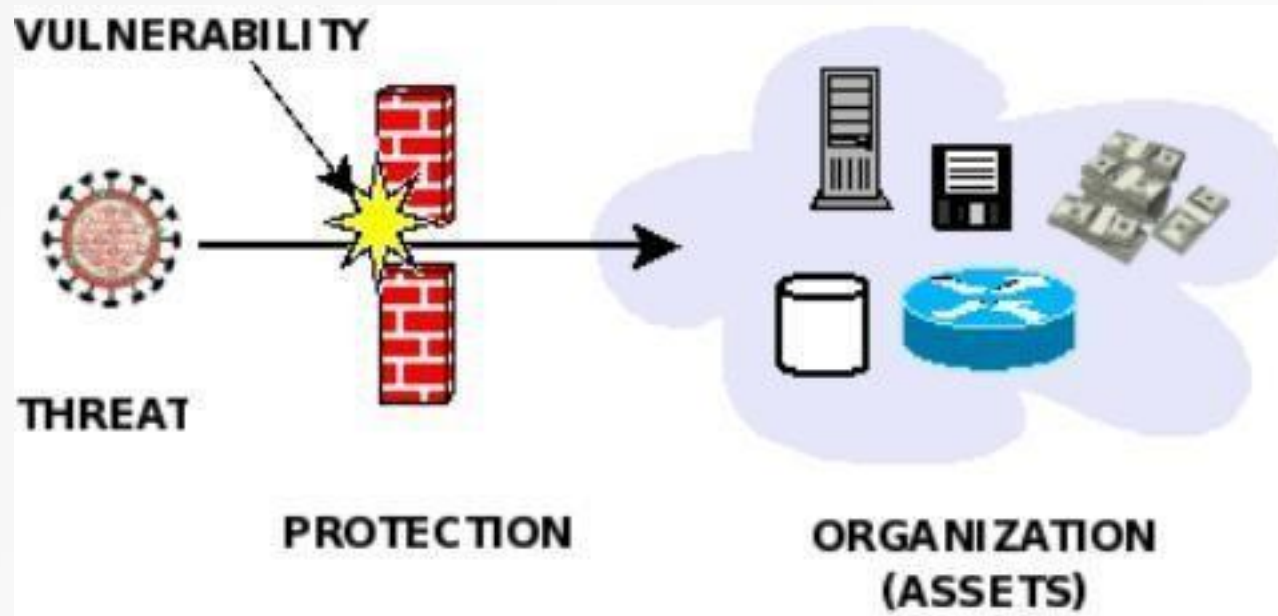
For example install smoke detectors, CCTV, etc.

Objectives of Physical Security

- Delay to reduce damage
 - If attacked, delay long enough to detect and respond.
 - Layers of defense, barriers, etc.
- Assessment
 - Once detected, assess the method of attack, the target, and remediation.
- Respond procedures
 - Take appropriate actions without overreacting (fire suppression, emergency response, etc.)

Site Risk: Threats to Physical Security

- Natural and environmental
- Utility systems
- Human-made or politics events



Site Risk: Threats to Physical Security

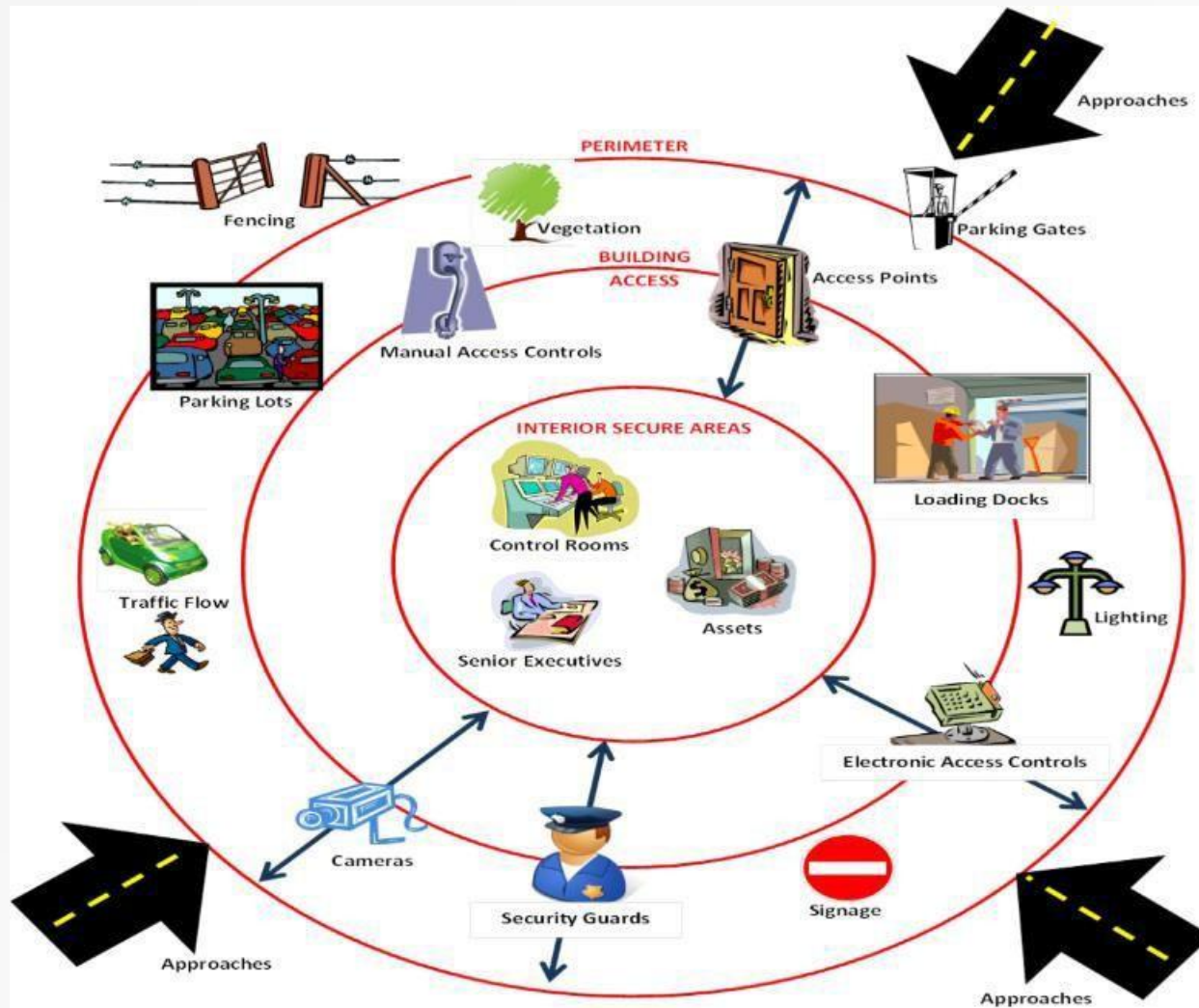
- Malicious threat sources and countermeasure.
 - Theft
 - Countermeasure: strong access controls, IDS, locked doors, etc.
 - Espionage
 - Countermeasure: good hiring process, background checks, etc.
 - Dumpster diving
 - Countermeasure: proper disposal policy and procedure, etc.

Site Risk: Threats to Physical Security

- Malicious threat sources and countermeasure
 - Social engineering and shoulder surfing
 - Countermeasure: employee awareness program, etc.
 - HVAC access (Heat, Ventilation and Aircond)
 - Countermeasure: section lock downs to control access, smoke sensor, etc.

Perimeter and Security Engineering

- Security through multiple layered controls:
- E.g. perimeter, grounds, building entrances, etc.



Perimeter and Security Engineering

- **Perimeter security controls: First line of defense**
- Protective barriers either natural or structural
 - Offer natural barriers, such as terrain.
 - Structural barriers: fences, gates, bollards, and facility walls.
- Landscaping
 - Ponds, hedges can provide a barrier or entry point.
 - Spiny shrubs make it harder for an intruder to enter.

Perimeter and Security Engineering

- Fences
 - Enclose security areas and designate property boundaries.
 - Meet gauge and fabric specifications, etc.
- No parking near fences.
- Gates – minimum number needed.



Perimeter and Security Engineering

- Bollards
 - Variety of sizes and shapes depending on use.
 - Retractable ones are designed for traffic control.
 - Provide security against vehicles ramming into or stopping near buildings.
 - Lighted bollards can be used for lighting controls along parks, paths and sidewalks.



Perimeter and Security Engineering

- Perimeter – Intrusion Detection Systems (IDS).
- Detects unauthorized access into an area or site.



Surveillance and Counter-Surveillance

- CCTV capability requirements:
 - Detection
 - Recognition
 - Identification



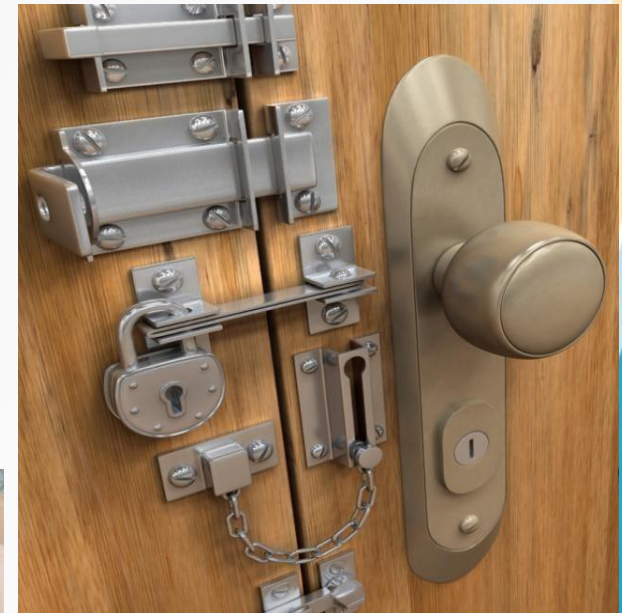
Security Lighting

- Use with other controls
- Support crime prevention
- Types of lighting:
 - Continuous
 - A series of fixed lights arranged to flood a given area during hours of limited visibility.
 - Trip
 - Activated by sensor that detects activity such as movement or heat.
 - Standby
 - Like continuous lighting but lights not always on but are turned on either automatically or manually when suspicious activity suspected.
 - Emergency
 - Is used for power failures or other emergencies that render normal system inoperative.



Building Entry Point Protection

- Locks
 - Considered as delay devices mechanism to unauthorized to entry.
- Lock components
 - Lock body
 - Strike and strike plate
 - Key
 - Cylinder
- Types of locks
 - Combination
 - Deadbolt
 - Keyless
 - Smart



Other Important Controls

- Guards and guard stations
 - Provide a deterrent
- Electronic physical controls
 - Card access
 - Biometric methods
- Compartmentalized areas
 - Extremely sensitive location and most stringent security controls
 - Multi-layered physical access controls



Other Important Controls

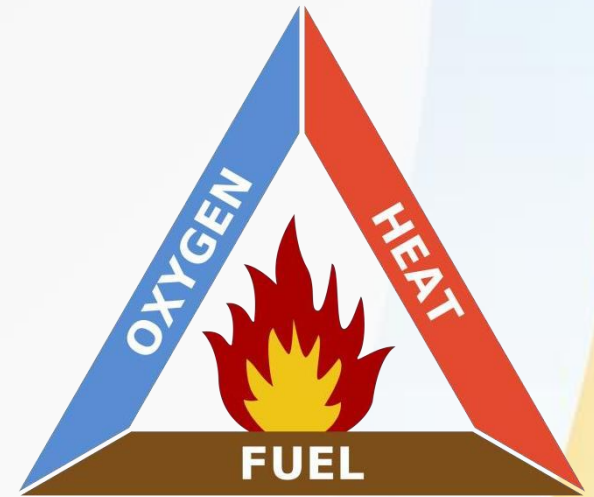
- Data center and server room security
 - Wall solid with fire-proof material and permanent part of floor and ceiling.
 - Multi-factor access controls
- Computer equipment protections
 - Laptop and portable device security
 - Docking stations, tracing software, etc.
 - Computer equipment security
 - Protecting the device, data, etc.
 - Objects placed inside security containers
 - Safes, vaults, etc.

Infrastructure Security

- Infrastructure support systems
 - Electrical power
 - Water/plumbing
 - Network lines, etc
- Key threats to support the system
 - Fire: damage and destruction of facilities
 - Water: flooding or dripping
 - Power loss: disruption or stop operations
 - Gas leakage: explosion
 - HVAC failure: overheating or overcooling, etc.

Fire

- Concerns:
 - Abiding by fire codes
 - Fire containment system
 - Fire extinguishing system
 - Fire prevention training and drills
- Protection:
 - Fire prevention
 - Fire detection
 - Fire suppression

































Fire Protection



Fire Types and Suppression

- Common combustion (fuel + oxygen + heat)
 - Suppression: water, foam, dry chemicals
- Liquid
 - Suppression: gas, CO₂, foam, dry chemicals
- Electrical
 - Gas, CO₂, dry chemicals
- Combustible metals
 - Dry powders
- Cooking Media
 - Wet chemicals



Fire Class Types	Fire Extinguisher Types				
	Water	Foam	Dry Powder	CO2	Wet Chemical
Class A Combustible materials e.g. paper and wood					
Class B Flammable liquids e.g. paint and petrol					
Class C Flammable gases e.g. butane and methane					
Class D Flammable metals e.g. lithium and potassium					
Electrical Electrical equipment e.g. computers and generators					
Class F Deep fat fryers e.g. chip pans					

Thank you