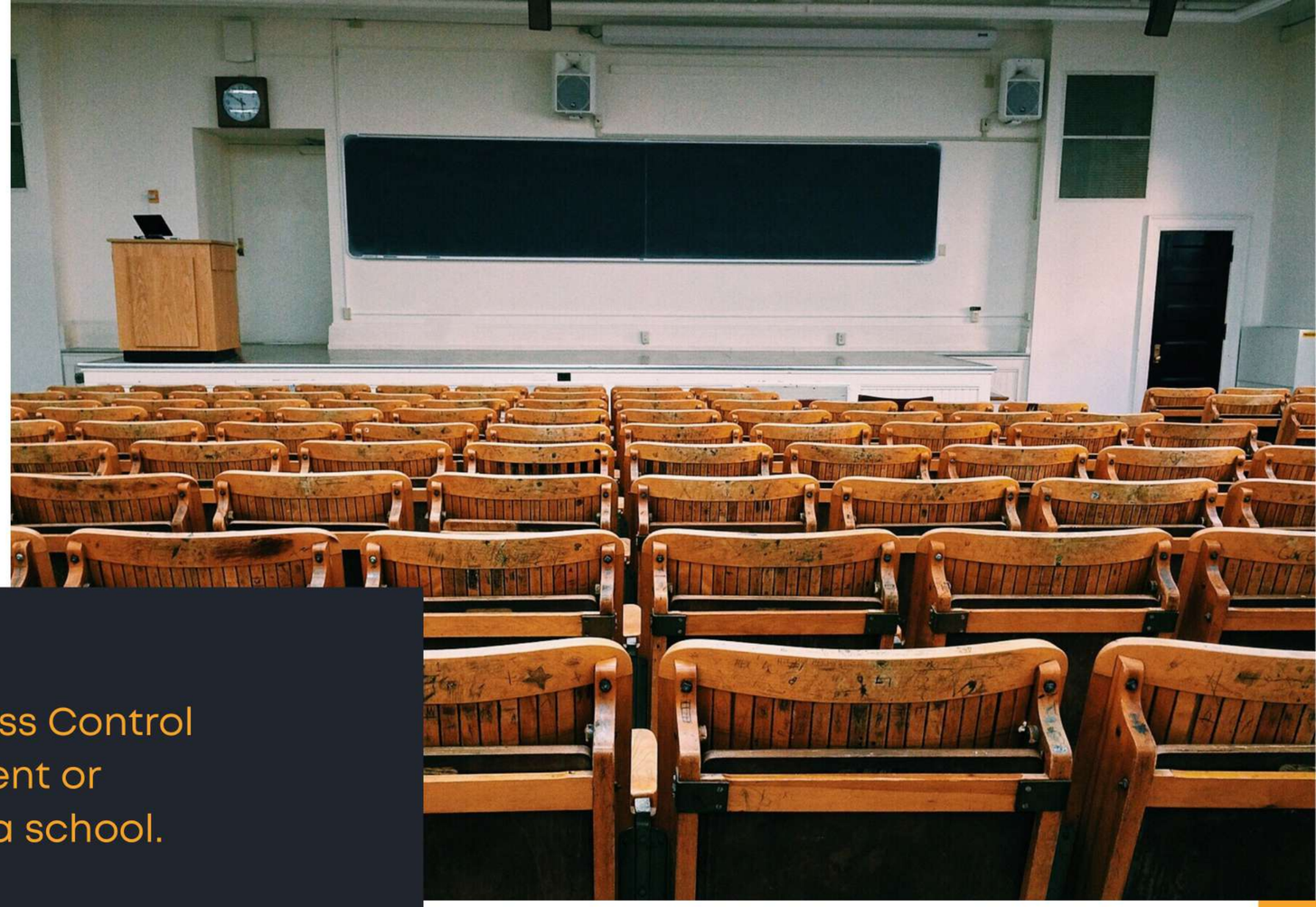
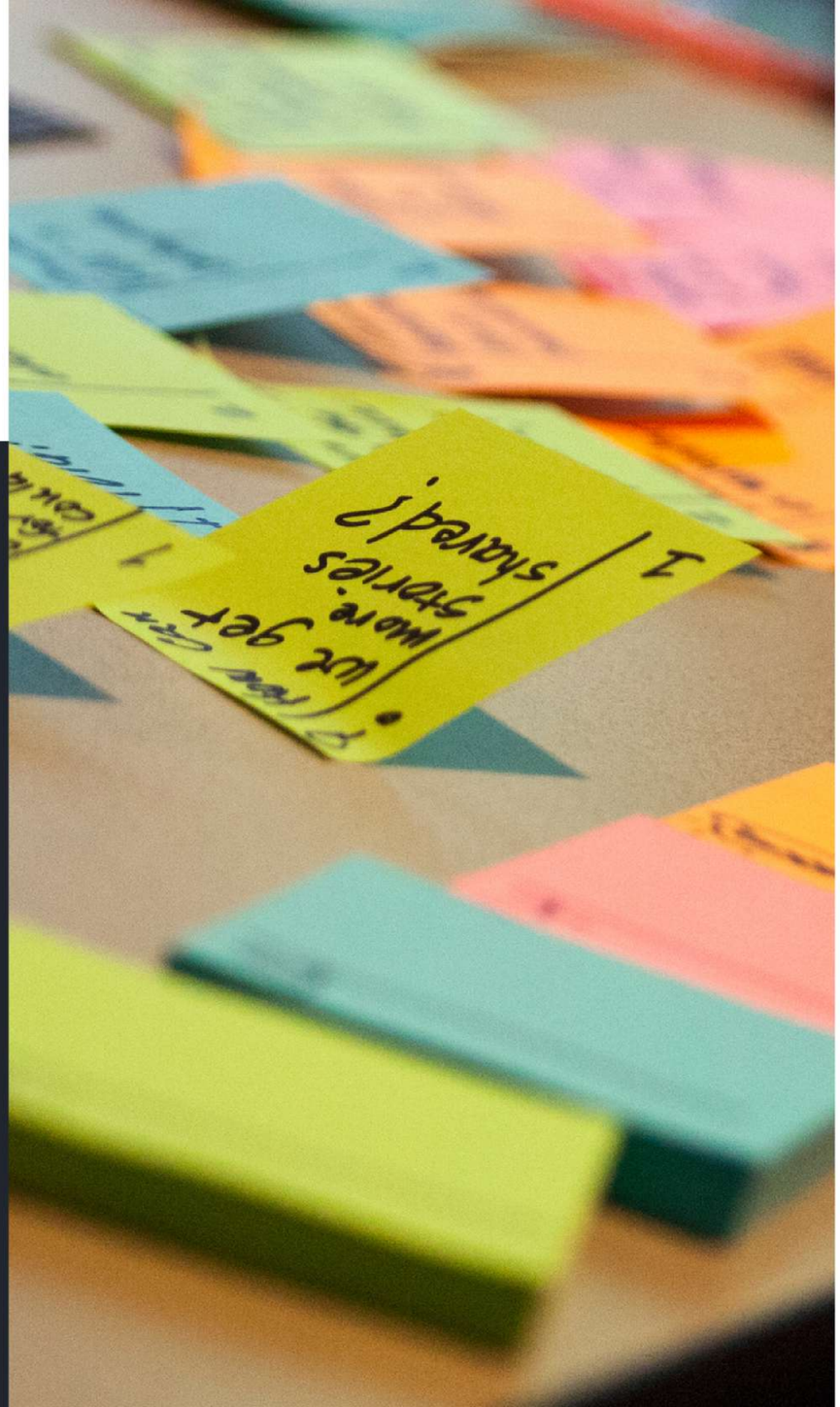
School/Campus/Building Security

OUR GOAL



Our goal is to develop an Integrated Access Control system with procedures designed to prevent or minimize loss in the event of an attack at a school.

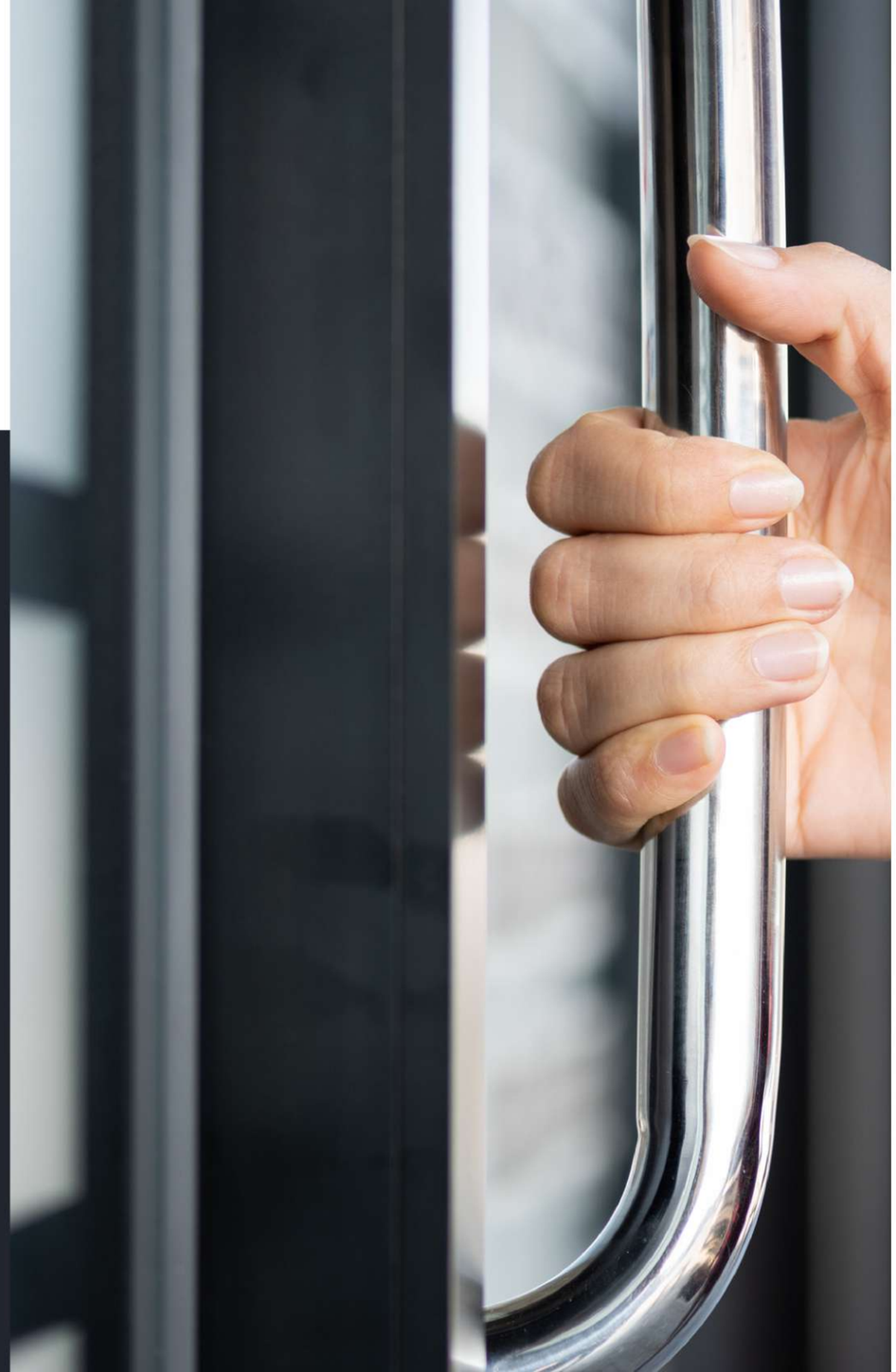
Disclaimer: The purpose of this presentation is to inform people as to what options they have with regard to school security. They have to decide what works for them.



PLANNING

The proper plan should be:

- Practical – fits your current structure
- Scalable – can grow over time
- Affordable – costs do not exceed value



SECURITY OVERVIEW

- Examine the various ways an attacker might exploit areas of the school, based on structure and use.

- Allow you to develop countermeasures to an attack

DETER

Create a community awareness that through leading edge thought, technology and preparedness, a system has been put in place to respond to an attack.

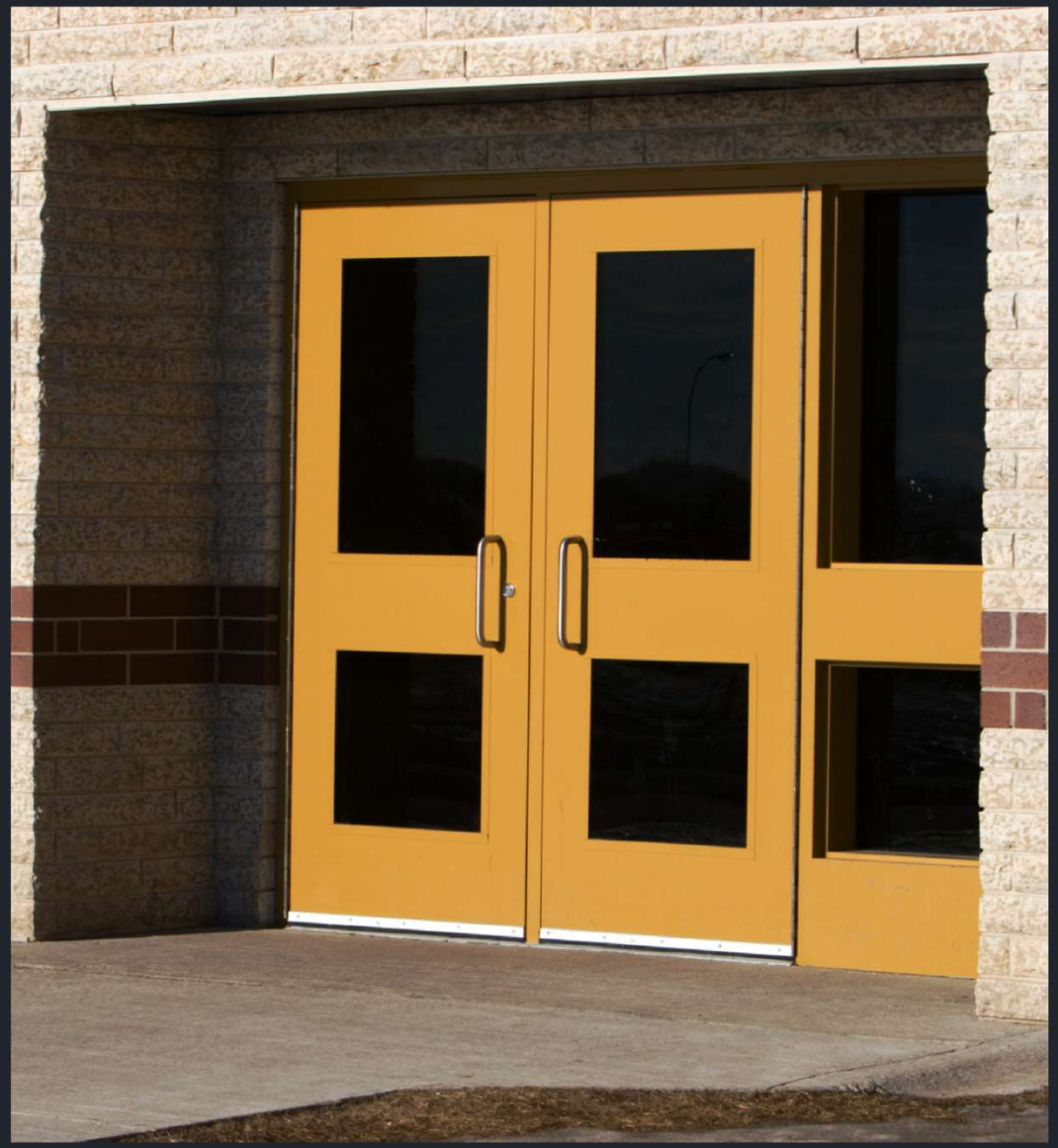
ATTACK TYPE

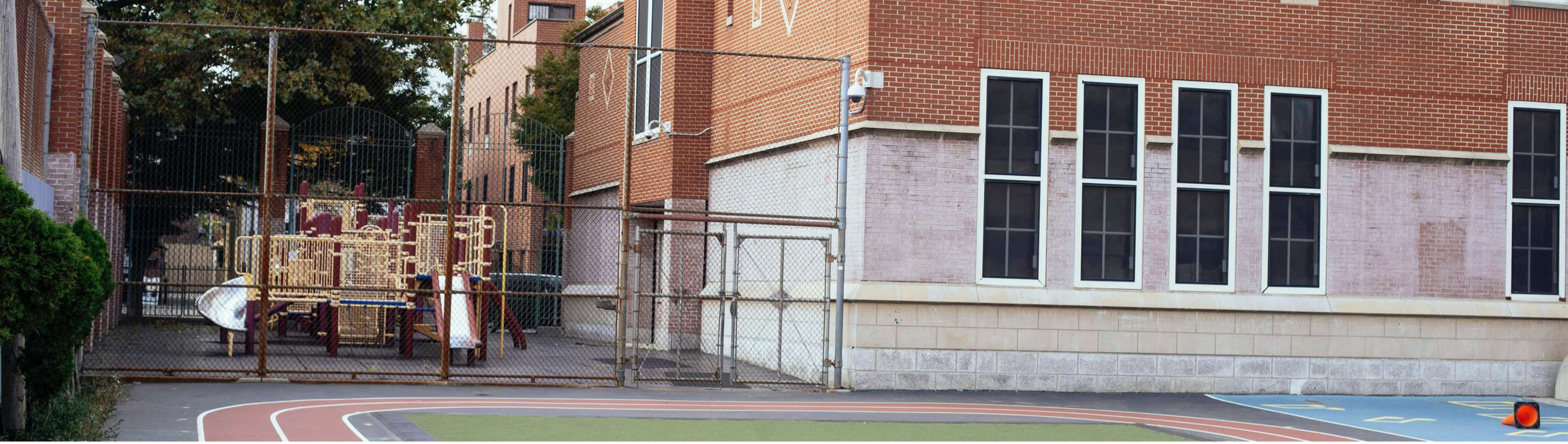
From exterior:

- There is a reasonable chance of preventing loss.

Interior onset of attack:

- Serious injury or worse may be unavoidable. The minimizing of loss may be the only reasonable expectation





WHERE DO WE BEGIN?

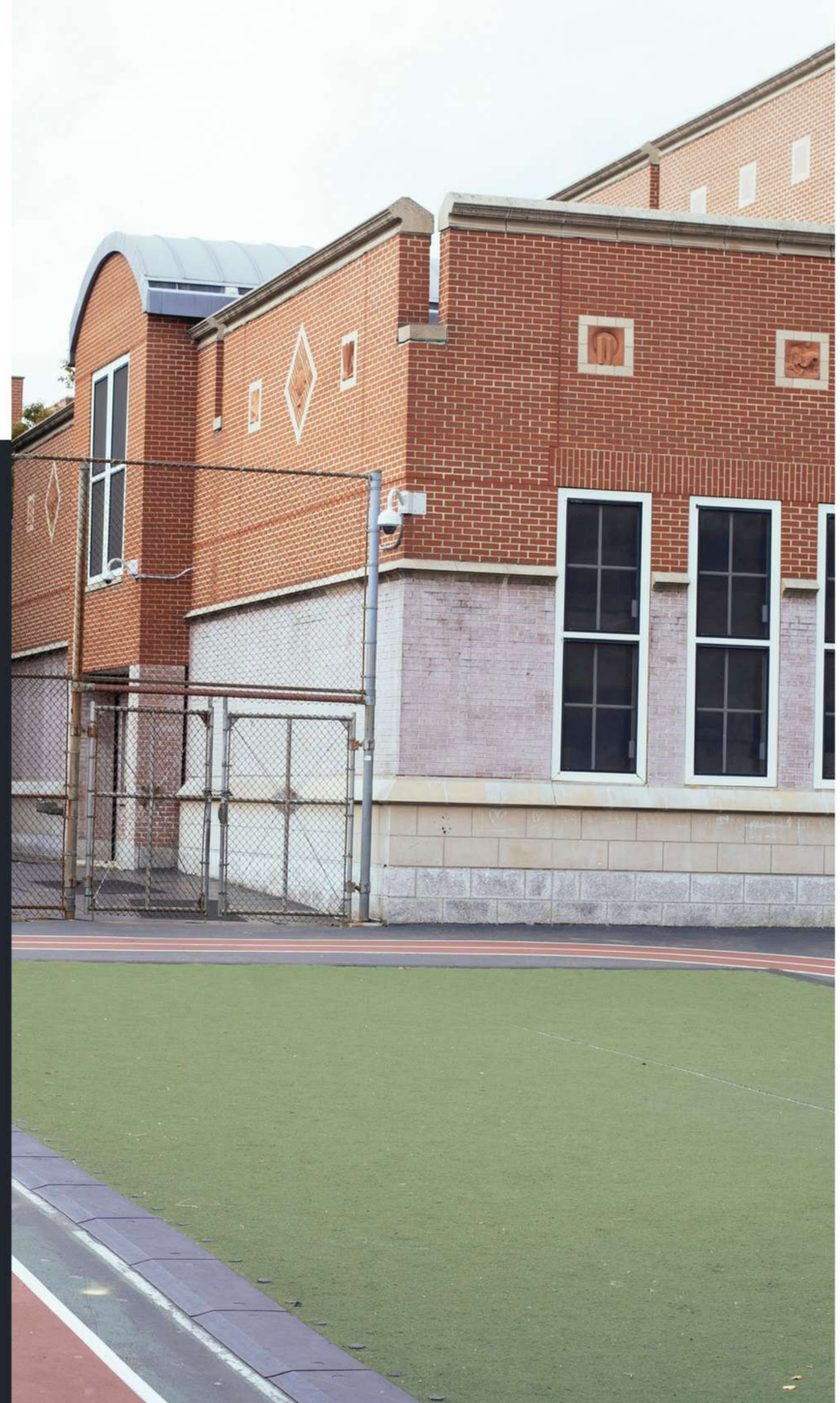
AT THE PERIMETER

SITE DESIGN

Site Design

- Single point of entry onto premises.
- Perimeter of property may have fencing designed for appearance and functionality.
- Terraces may be used to deter attack at various segments of the structure such as areas of **mass gatherings.**
- Evaluate areas that need vehicle accessibility and create a plan to protect.

EXTERIOR PROTECTIONS



PERIMETER CONTROL

Tools to assist:

- Security fencing
- Gate control
- Emergency call systems
- Bollards / hydraulic barriers
- Security planters
- Advanced License Plate Recognition

FEATURES/FUNCTIONS

- Fence Mounted Systems
  - Vibration detection
  - Cut detection
  - Mounting, weight bearing
  - Attack vs. incidental contact

VARIOUS OPTIONS

PERIMETER PROTECTION

Detection products:

- Fence mounted systems
- Infrared barriers
- Microwave barriers

Fence Mounted Systems

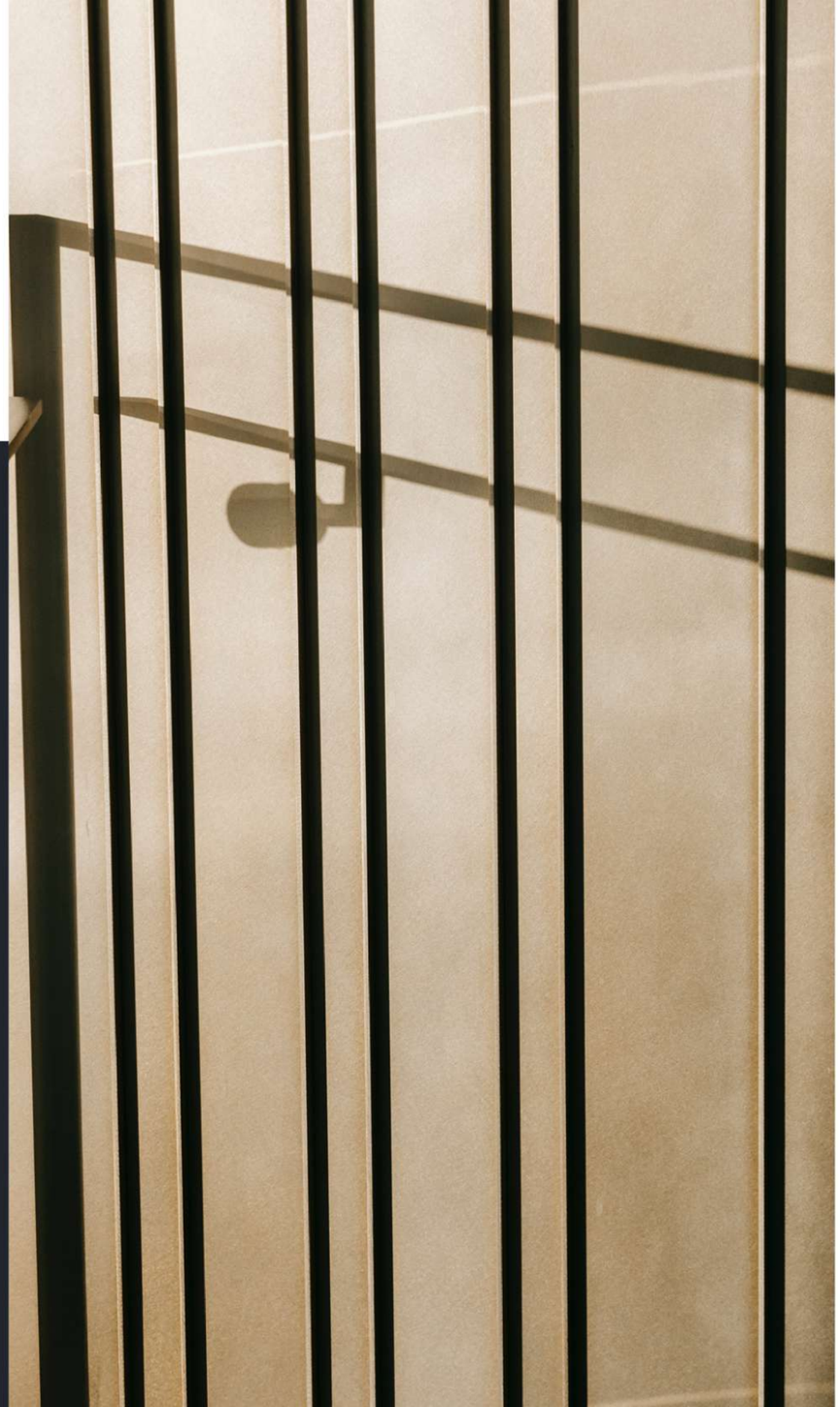
- Vibration detection
- Cut detection
- Mounting, weight bearing
- Attack vs. incidental contact

TECHNOLOGY

- Infrared
- Microwave
- Multi-tech

PERIMETER MAPPING

GATE CONTROL



GATE CONTROL

Entry by:

- Proximity readers
- Transponders
- Long range vehicle ID tags
- Advanced License Plate Recognition

EMERGENCY CALL SYSTEMS

- **Campus Based**
- **Parking Security**
  - Garages
  - Open lots

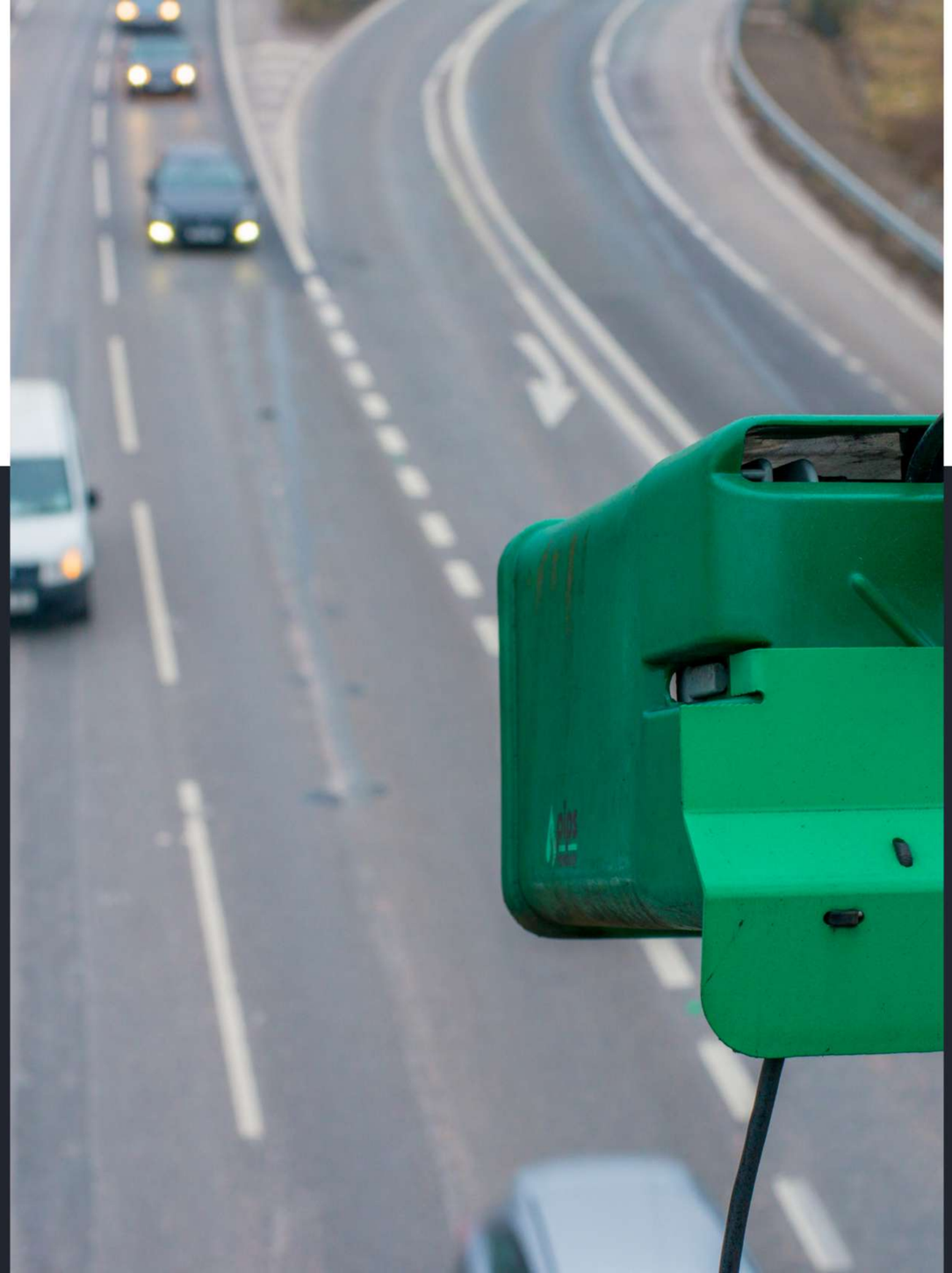
BOLLARDS

1. Removable
2. Fixed
3. Electric
4. Pneumatic
5. High Security

SECURITY PLANTER

Decorative

- Entryway
- Stairs
- Parking areas
- Vehicle direction



ALPR

Advanced License Plate Recognition

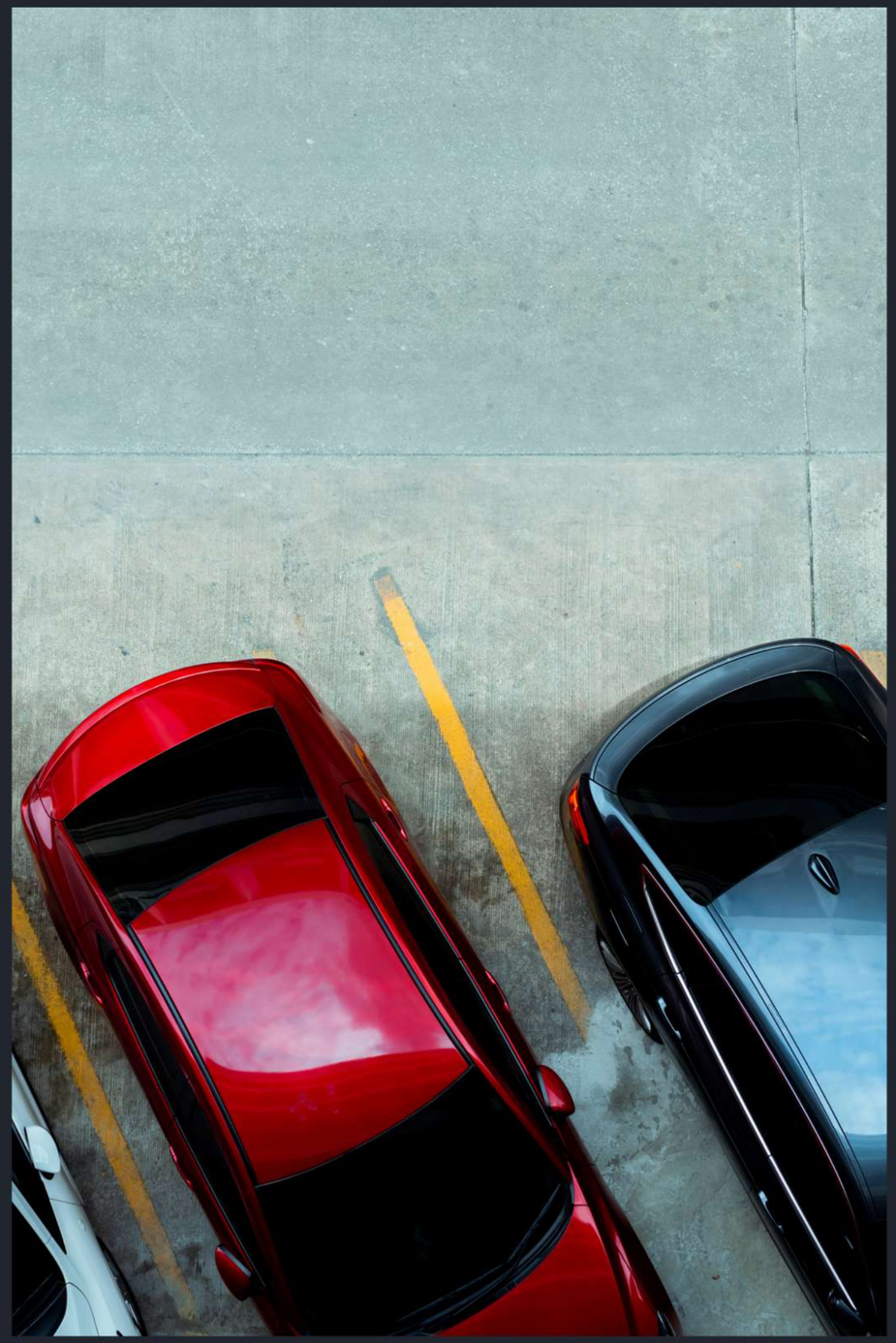
1. Optical Character Reading
   - Not the same as video
2. Database checking
   - Black list recognition
   - Grey list development
3. Access Control for Gated Areas

BUILDING PERIMETER

MEANS OF DETECTION

- Visual
- Video
- Electronics

Discussed on next slides



VISUAL

Single point of entry into building

Parking lots should be situated so as to ensure a common approach for most people when entering the building. A person, such as a secretary, receptionist, or guard should be positioned so as to have full view of the bank of entry doors and approaching visitors.

VIDEO

Camera locations

1. All points of entry onto school grounds
2. Coverage of all parking areas from multiple angles
3. Views of all exterior doors
   - From exterior mounted cameras
   - From interior mounted cameras

VIDEO ANALYTICS

Video tracking

- ✓ Allow authorities to track an event throughout a structure to fully determine extent of the problem
- ✓ Contrary moving traffic

Object recognition

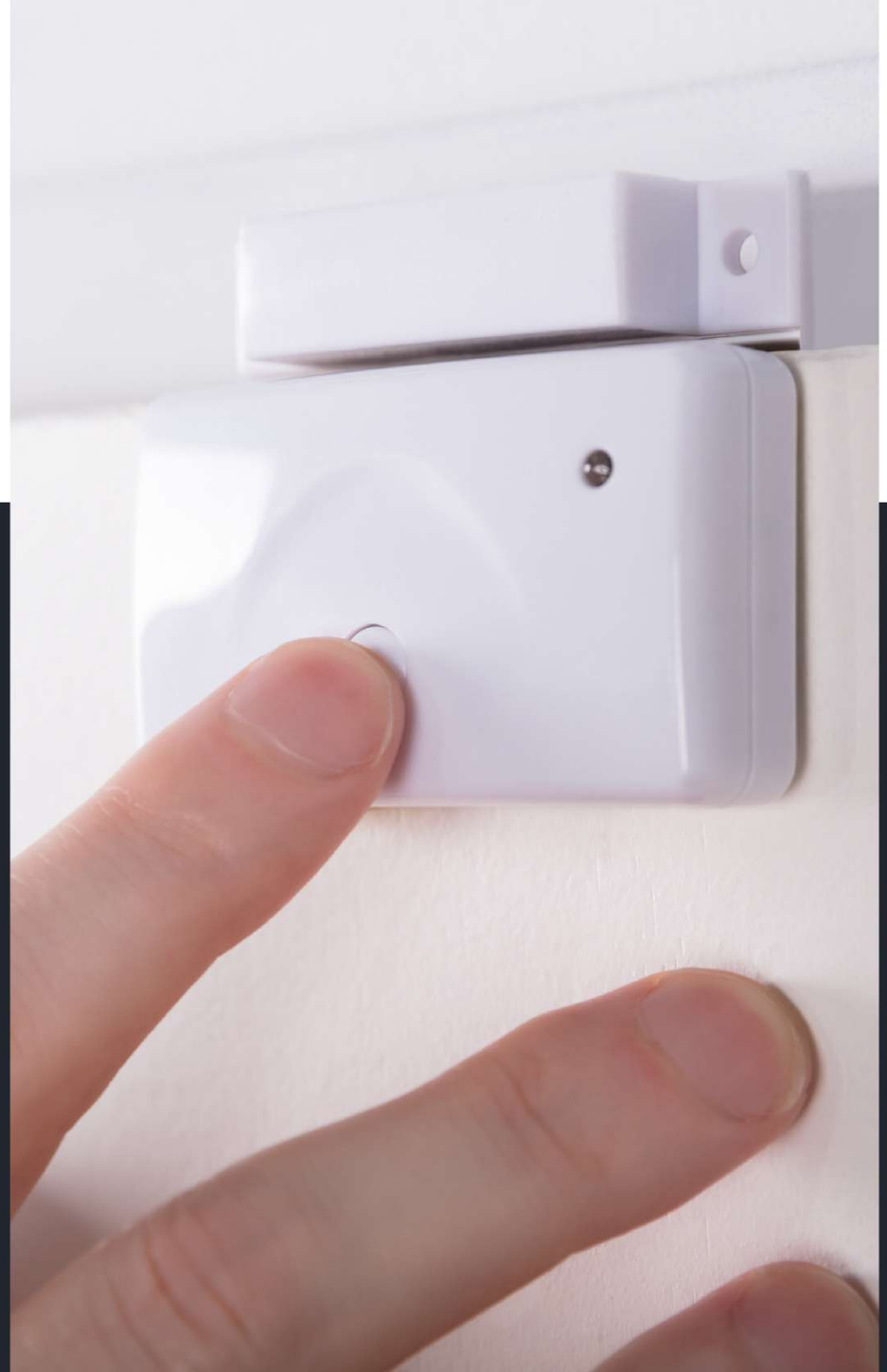
- ✓ Provide information about abnormal objects - allowing response prior to any potential problem
- ✓ A briefcase left unattended

VISITOR MANAGEMENT

① Scan to ensure validity of visitors
- Identities are verified through checks against national, local and proprietary databases

- Insurance in the event of court orders in custody disputes

② Can track visitors throughout the facility
- Ensure that they are going to appropriate areas

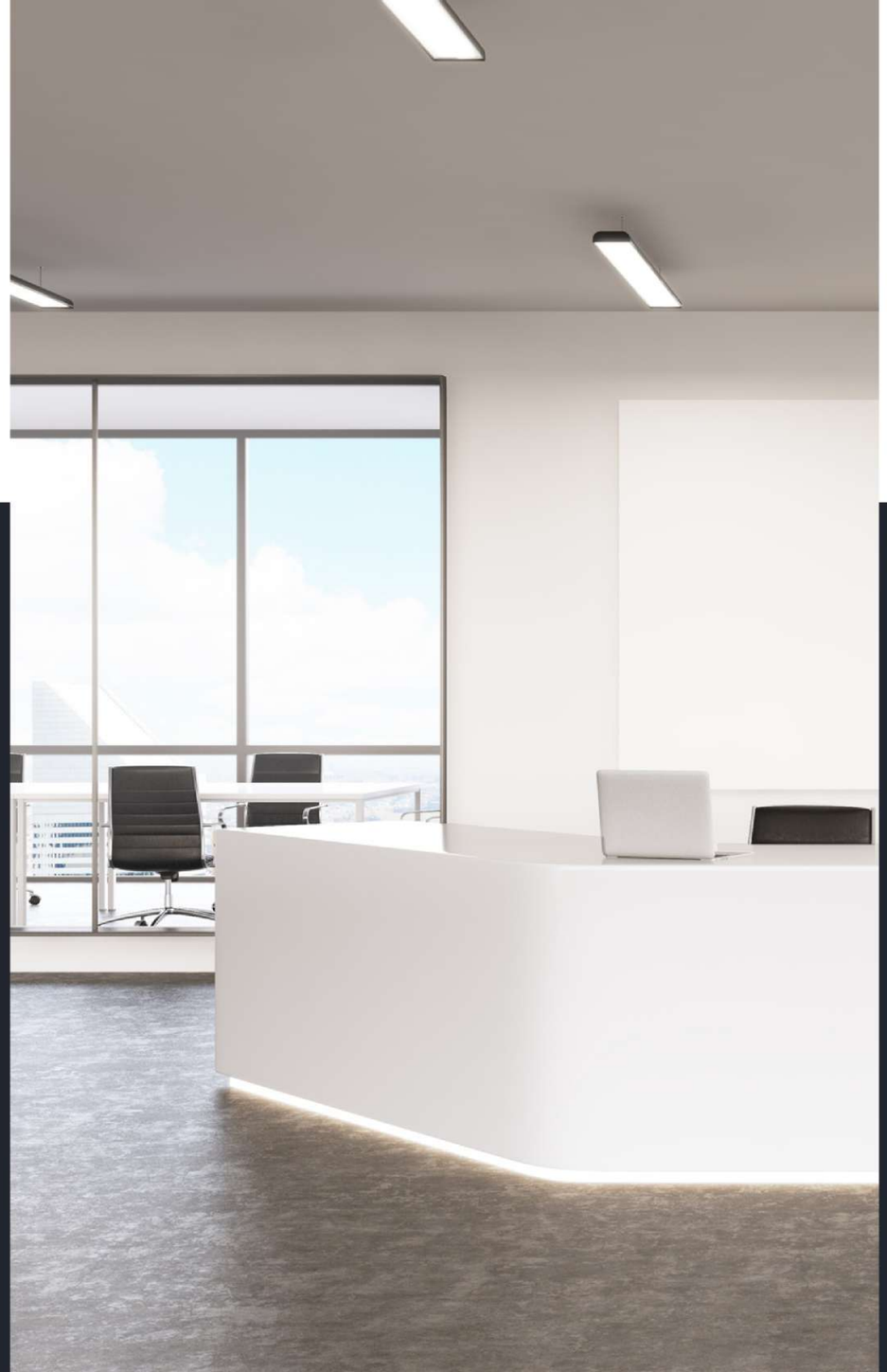


ELECTRONIC SWITCHES

Include but are not limited to:

1. Door position switches
2. Glass break detection
3. Gunshot detection
4. Lock and latch bolt switches

DELAY



DELAY

Proper building structure should sufficiently delay an intruder so that First Responders can reach the scene to minimize loss.

- Areas of entry into building (lobbies)
- Cafeteria openings
- Loading docks or other utility areas

BUILDING ENTRY

Vestibules at all public entries into the building

- Two sets of doors
- Entry into the second set is delayed until the first set is closed and locked.
- Man-trap capable

BUILDING ENTRY

Proximity Access Control

- 125KHz card structure FULLY COMPROMISED
  - Key-Me
  - Amazon $16 Cloning device
- NO Keypad entry
- Skip MIFARE
- DESFire EV2
- OSDP

PERIMETER DOORS

No full glass or two lite doors

- Use multiple narrow lites
- As an example two 8”X40” lites
- Two panes of glass in each door

Two lite door

EXTERIOR GLASS

- No glass from 42” down
- Use aluminum or hollow metal panels
- Above 42”

- Laminated glass
- Bullet resistant film.
- Other products designed to resist shattering

BUILDING PERIMETER

1. Protection for all service entries including overhead doors
   - May include bollards and/or fencing
   - Security planters

2. Exterior doors should be 16 Ga. Hollow metal steel stiffened

3. Hardware should be multi-point locking such as mortise vertical rod devices

4. Use electronic locking hardware with door position and latch bolt switches monitoring all exterior doors
   - No wireless locking mechanisms on exterior

BUILDING PERIMETER

⑥ Hardware should be multi-point locking such as mortise vertical rod exit devices. With LBSM.

⑦ Use electronic locking hardware with lock and latchbolt switches on all exterior doors.
- Electrified door hardware - LBM
- Electric strikes - LBSM

- **No wireless locking mechanisms on exterior.**

INTERIOR

CLASSROOMS

Classroom doors:

- Should be 16 Ga. hollow metal with 3”X33” lite
- Should be outswing, not inswing
- (Create alcove to reverse existing inswing doors)

Classroom equipment:

- Fire extinguisher

CLASSROOMS

Classroom doors have Storeroom function locks either:

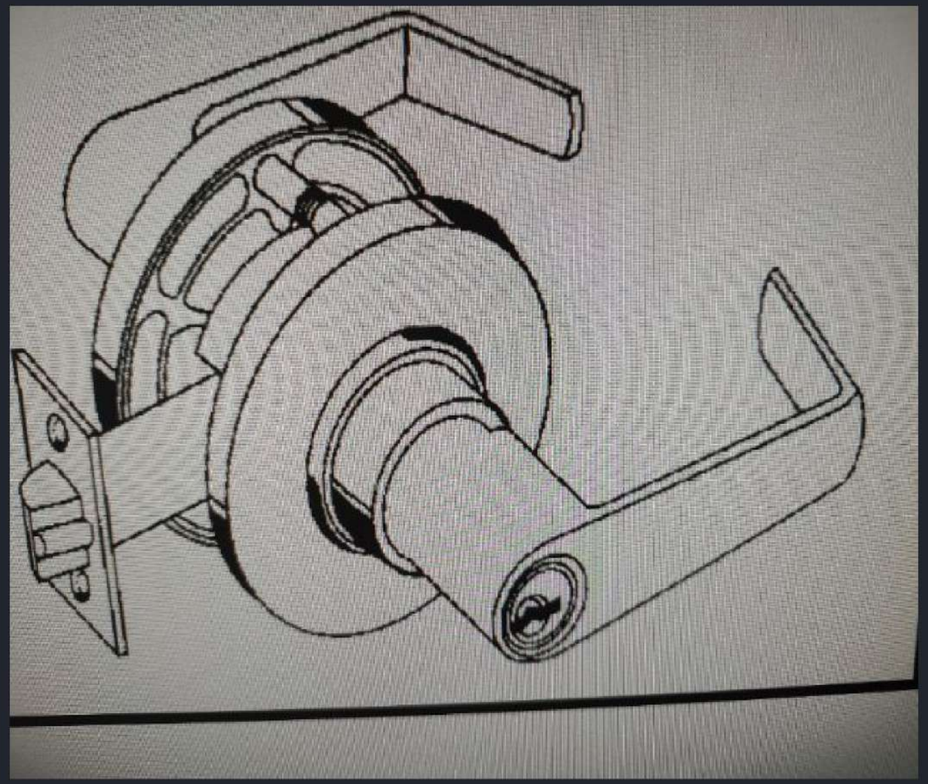
- On line electrified locksets
- Mechanical locksets with electric strikes
- Wi-Fi locksets, entry by credential only

No human locking action allowed:

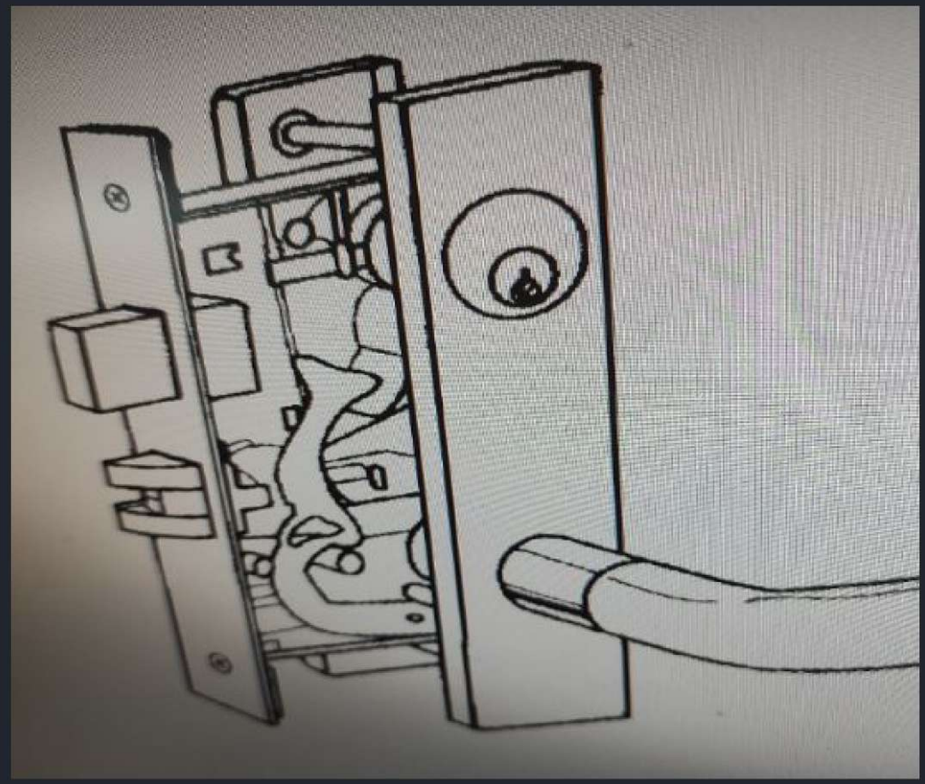
- No corridor exposure
- No need to locate key, insert key and turn key

CLASSROOM LOCKS

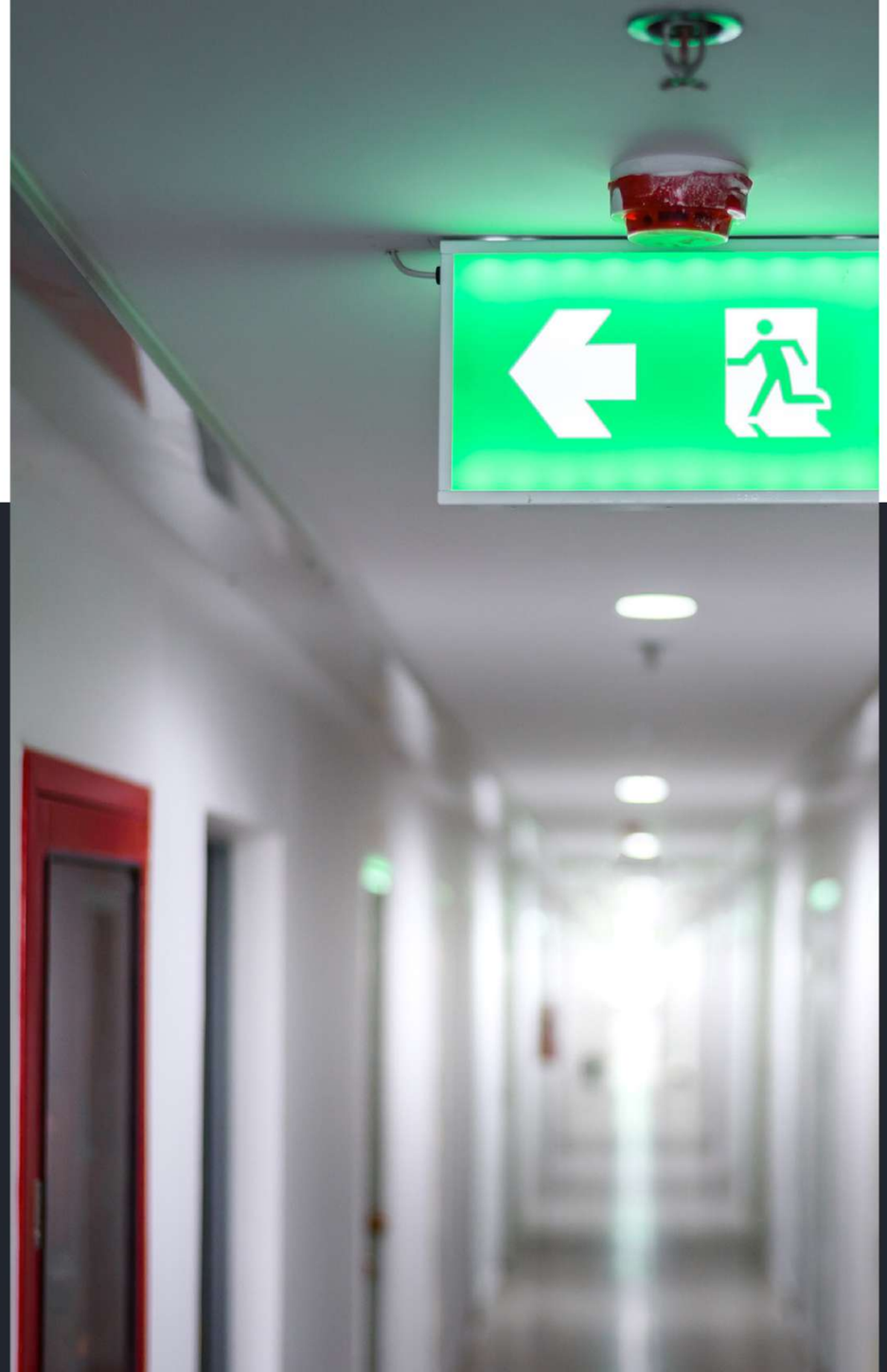
Two options:



Cylindrical lock



Mortise lock



INTERIOR MODIFICATIONS

Create areas of isolation

- Point of attack can be random
- Confine/contain attacker to area entered or interior area where attack has begun.
- Do not allow movement throughout the building so that non-involved areas are safe havens.

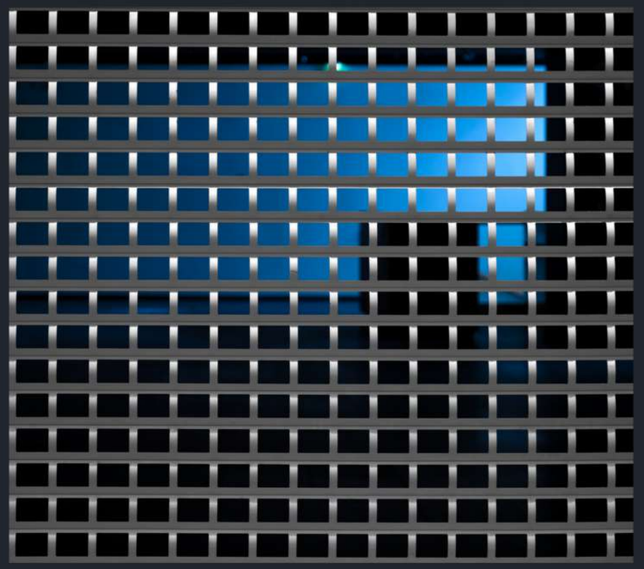
AREAS OF ISOLATION

Cross corridor doors

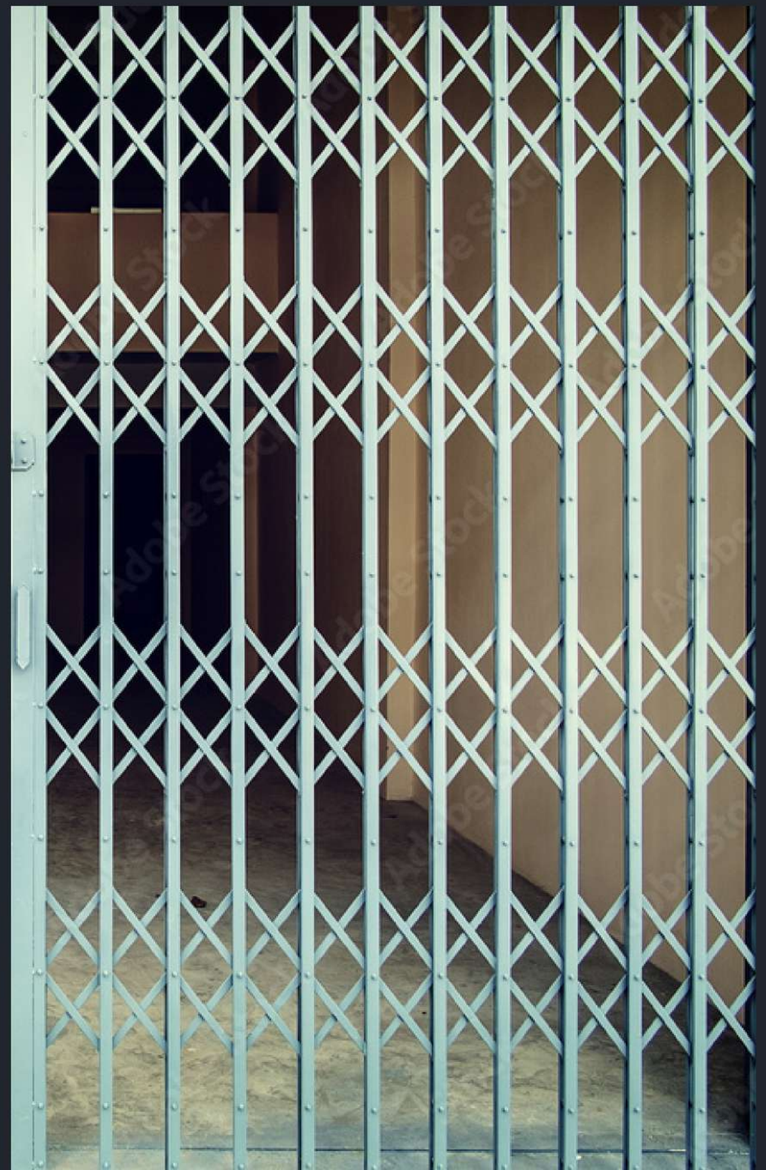
- Segment areas of building

Security grilles

- Installed in ceilings so as not to reduce corridor width



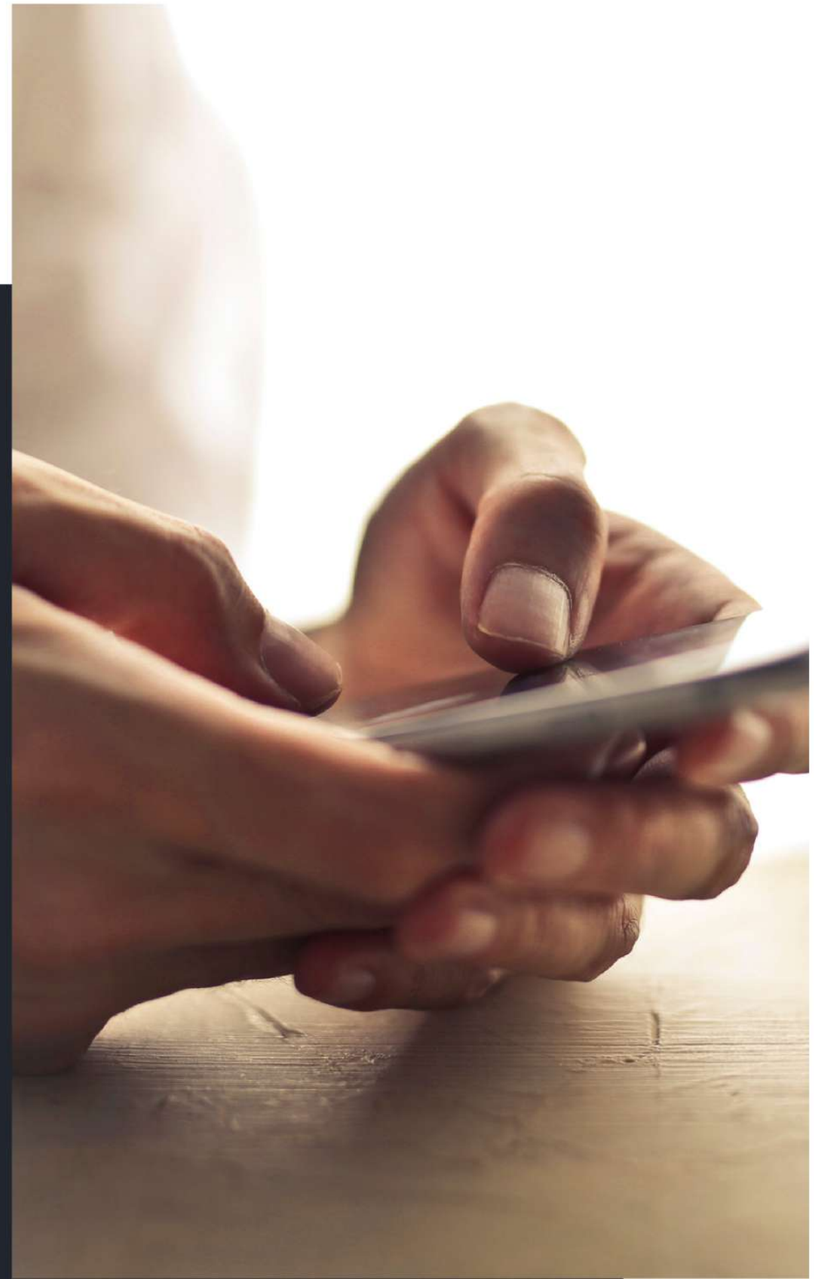
SECURITY GRILLES



RESPOND

MEANS OF RESPONSE

Human actions	Network solutions



RESPONSE TYPE

Human

- ✓ Traditional 911 calls to first responders can have inherent delays that may reach 5 to 7 minutes, it is like the Pony Express and often long, frustrating delays can be experienced

- ✓ Incorrect or incomplete information may be transmitted and most incidents are over in less than 8 minutes

Network response

- ✓ Can be instant through networked products and include valuable information to allow a more rapid response and quicker actions

NETWORKED RESPONSE

Access control system:

- Provide instant notification to first responders
- Include maps of site with activation device type and location
- Include video images of ongoing event
- No wasted effort or delay directing to point of attack.

ALERT MESSAGING

E-Blasts or text messages

- Sent to server for mass distribution
- Campus environments message detail
  - Issues
  - Actions

Audio/video messages

- Devices can be campus based, or mass distribution

SITUATION MANAGER

Multiple levels of alert distribution

- Police
- Fire
- Other official agencies

RESPONSE PROCEDURES

- At the onset of an attack, the staff member will use the most immediate and appropriate notice of activity. The building will immediately go into Lockdown and cell phone communication may be suspended

- Graphic maps will appear at the police station, along with the related video for the area. They may also appear within the school so that school personnel can direct the response

RESPONSE ACTIVATION

- Transponders tied to a specific receiver, located in the affected zone – no bleed over to another zone is allowed.

- Gun shot detectors or other such devices, may be used in conjunction with secondary solutions. One source for activation should not be allowed.

- Proximity readers for emergency notification only.

- AI products in development.

RESPONSE PROCEDURES

- Lockdown commences
- Notification systems announce “school is in lockdown” or other acceptable message
- Students in hallways immediately find shelter (especially if classes are changing)
- Classroom Doors are closed and lights turned off; students sit against the wall common to the corridor

RESPONSE PROCEDURES

- If students are in the area of attack, they are to exit to a safe location. This may be outside the school building and ALICE procedures may be utilized

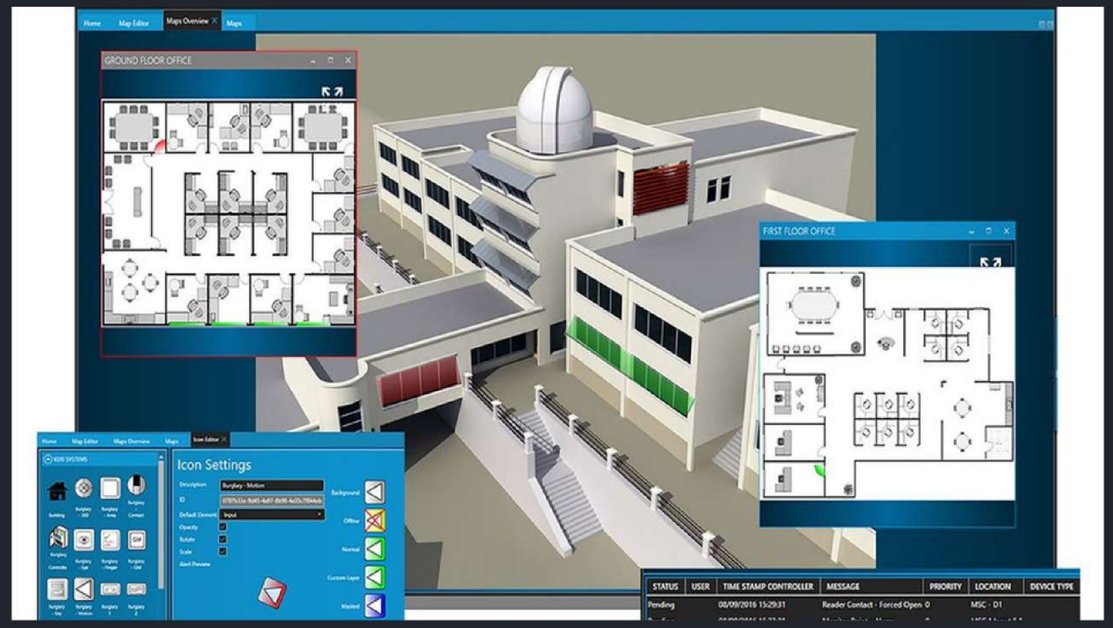
- If students are in an area other than the point of attack, they are to remain in their sheltered area until an all clear is given

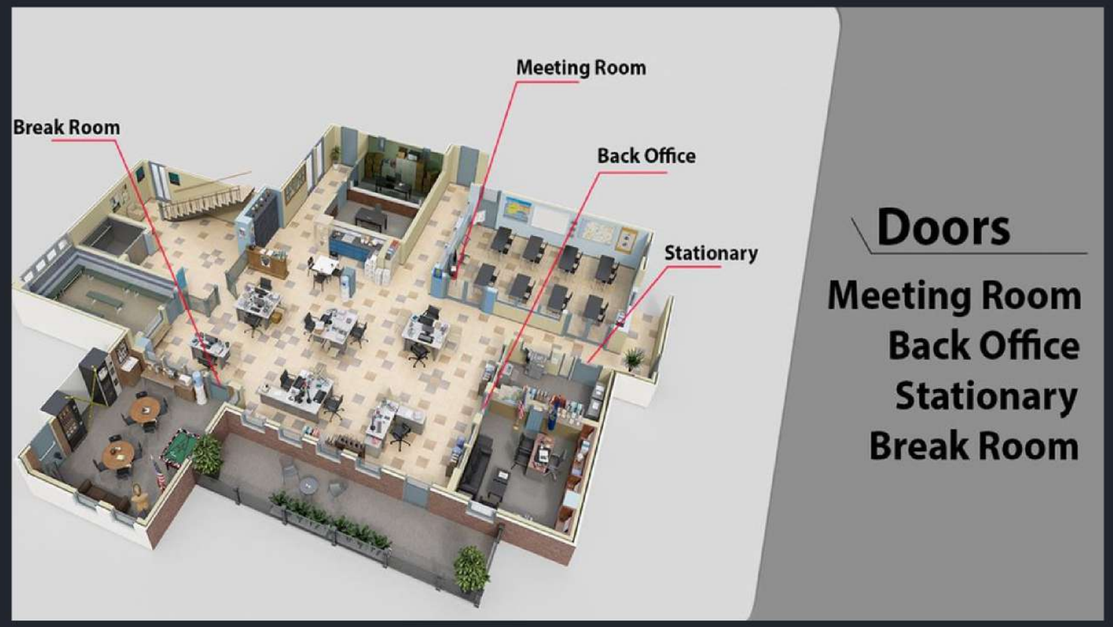
- Lavatories can provide a safe haven. We suggest standing on the toilets so no feet can be seen

GRAPHIC MAPS

When the graphic maps pop up at Police departments a distinguishable audio tone should capture the attention of the duty officer to the map and the related video.

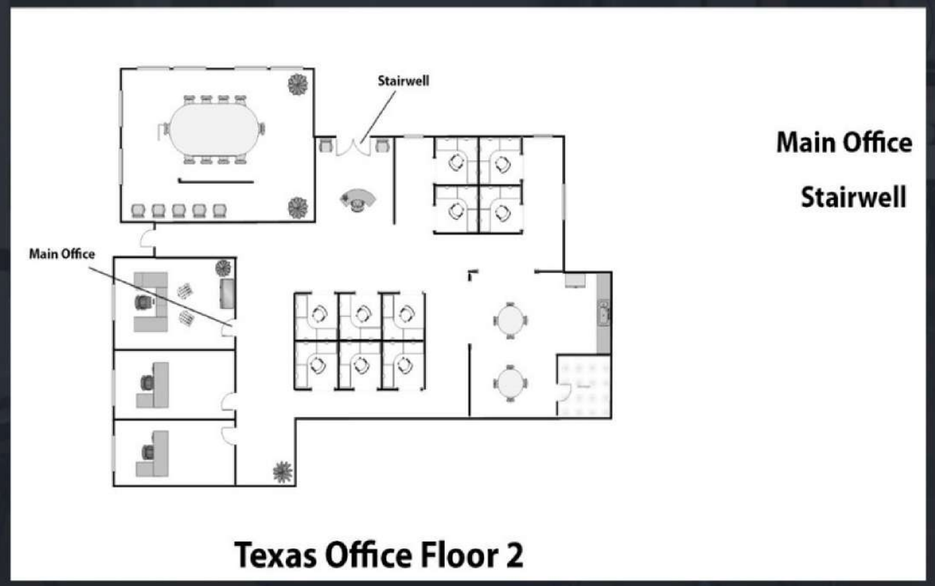
This applies to all first responders, Police, Fire EMT etc. A software feature called Situation Manager will direct the emergency to the proper authority.





GRAPHIC MAPS

The mapping program must be a Federated Command and Control product so that all response actions can be made from the map itself without having to go to any other software product.



ACTIONS

- Police or other first responders have full control over the building and are directing the point of attack.
- First responders are taking orders from a superior officer who has “eyes on” the attacker and are being directed to a quick and efficient solution.
- Full control of the facility is accomplished by the mapping program.

OPTIONS

If the building has a dry sprinkler system (where pipes are filled with pressurized air or nitrogen, rather than water), then it can be “zoned” in conjunction with the segmentation of the building. At the appropriate time, such as when officers are entering the affected space, the sprinklers can be activated to provide a brief but important distraction to the attacker.

COMMUNICATION STRUCTURE

System requirements

- Multiple fiber network feeds between all parties, schools, police, fire, EMT
- Dummy network feeds
- Multiple servers – police, fire, facilities, education
- Fail-over redundancy for all servers

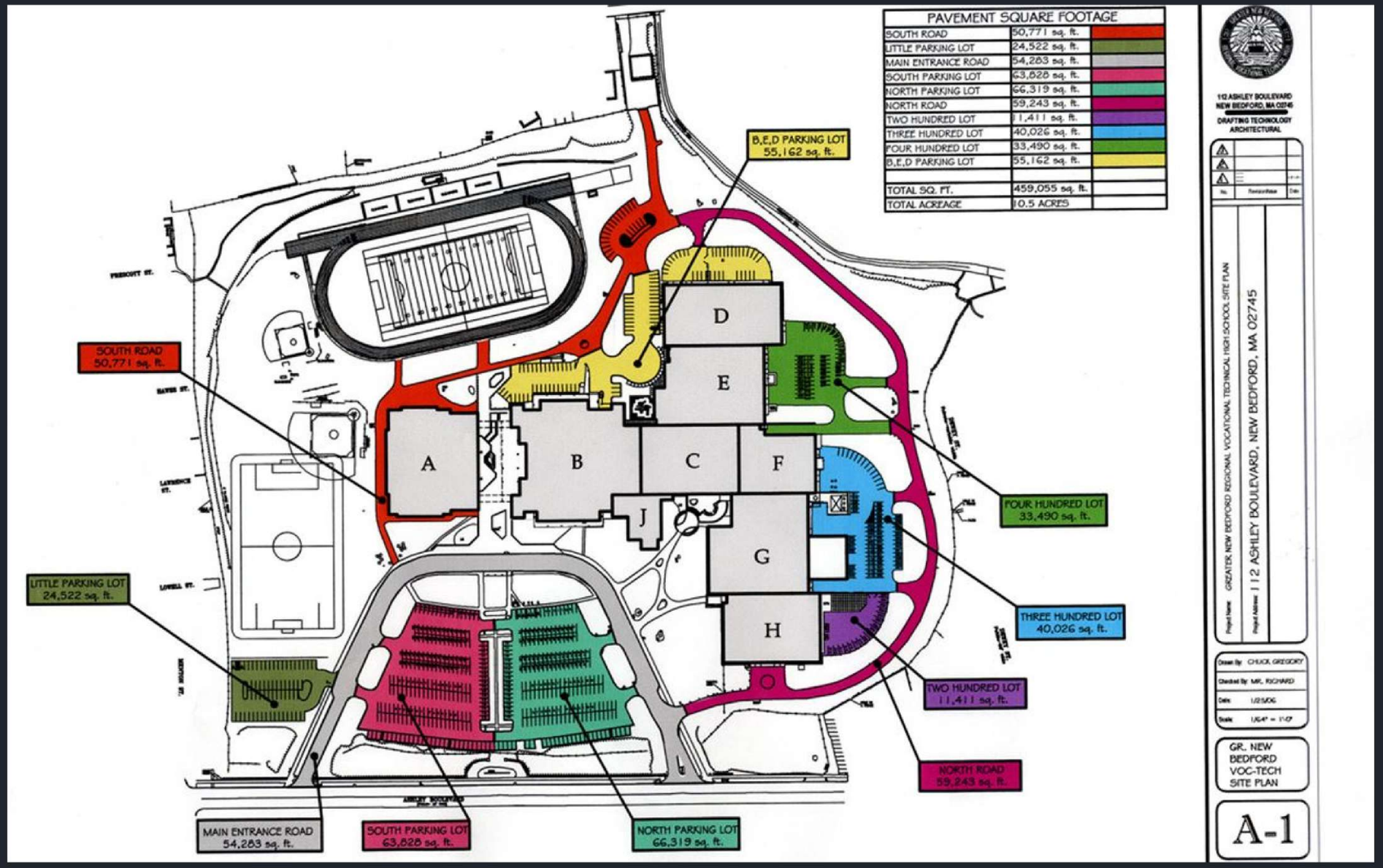
KEY CONTROL

Limited key distribution

- Key bypass defeats Access Control Patent Restricted Key Systems
- Ensures that mechanical keys are not duplicated

  - Keys can only be made by authorized signature
  - Eliminates unauthorized keys, secures site

SAMPLE PROPERTY


PAVEMENT SQUARE FOOTAGE
SOUTH ROAD 50,771 sq. ft.
LITTLE PARKING LOT 24,522 sq. ft.
MAIN ENTRANCE ROAD 54,283 sq. ft.
SOUTH PARKING LOT 63,628 sq. ft.
NORTH PARKING LOT 66,319 sq. ft.
NORTH ROAD 59,243 sq. ft.
TWO HUNDRED LOT 11,411 sq. ft.
THREE HUNDRED LOT 40,026 sq. ft.
FOUR HUNDRED LOT 33,490 sq. ft.
B,E,D PARKING LOT 55,162 sq. ft.
TOTAL SQ. FT. 459,055 sq. ft.
TOTAL ACREAGE 10.5 ACRES
B,E,D PARKING LOT 55,162 sq. ft.
SOUTH ROAD 50,771 sq. ft.
LITTLE PARKING LOT 24,522 sq. ft.
MAIN ENTRANCE ROAD 54,283 sq. ft.
SOUTH PARKING LOT 63,628 sq. ft.
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A
B
C
D
E
F
G
H
J
112 ASHLEY BOULEVARD
NEW BEDFORD, MA 02745
DRAFTING TECHNOLOGY
ARCHITECTURAL
Project Name GREATER NEW BEDFORD REGIONAL VOCATIONAL TECHNICAL HIGH SCHOOL SITE PLAN
Project Address 112 ASHLEY BOULEVARD, NEW BEDFORD, MA 02745
Drawn By: CHUCK GREGORY
Checked By: MR. RICHARD
Date: 1/23/06
Scale: 1/64" = 1'-0"
GR. NEW BEDFORD VOC-TECH SITE PLAN
A-1

ACCESS CONTROL: BEYOND THE BENEFITS OF SAVING LIVES

Secure the facility, students and staff

✓ Expand the usage of existing structures
Space utilization ratios

✓ Expand personal freedoms
Tracking through facility

✓ Channel the flow of people
Defining ingress and egress solutions

✓ Cost saving solutions
Dramatically reduce re-keying expenses

CONCLUSION

The investment in a properly designed and secured educational facility will produce the most comprehensive and cost efficient solution to today's issues with school security and will, to the greatest possible degree, protect students from harm.

DISCLAIMER

The concepts contained within this document should be used as a general guideline to educate the reader regarding basic security practices. Each facility has unique needs depending upon its layout, location and size. It is imperative that you speak with a local physical security expert who can offer concrete advice after conducting a site survey to ensure that the policies and equipment that are proposed and/or implemented to enhance the security of a site, address the unique needs of that specific facility.

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