

School Safety Working Group

Physical Safety Committee

Site and Building Design

The Physical Safety Committee of the interagency School Safety Working Group met a number of times in 2023 and 2024 in an effort to create a list of guidelines for Colorado schools when designing and/or updating their campuses and building security. The committee recognizes that the recommendations listed here may require added resources for many schools. The committee encourages schools to use this as a guideline when budgeting for new security items and/or applying for grant funding. Please feel free to contact the Colorado Office of School Safety with any comments or questions about this document. CDPS_School_Safety_Center@state.co.us

SITE DESIGN

Site Selection:

- Check Zoning: Some schools built decades ago, now may be next door to less than ideal businesses
- Assess potential threats in the area when reviewing possible school sites
- Consider acoustical factors: factories or roadways or other industrial activities that may generate unwanted noise
- Consider air-quality: proximity to factories, major highways, or other sources of pollution
- Consider highways that might be transporting hazardous materials
- Consult with first responders to be sure fire and all other emergency access is considered
- Consider International Building and Fire Codes: both require safe egress from the building for all occupants
- Plan evacuation sites: Within walking distance
- Consider reasonable set-back from homes

Building Design:

- Consider a single building with limited or no outbuildings
- Create clear site lines with direct visual supervision from the administration areas to the main pedestrian entry. Visibility should include the main parking lot, pedestrian approach to the entrance and, when possible, the main access road leading to the school.
- Create secure vestibules for incoming and outgoing foot traffic at the single point of entry that is continuously monitored

- Color coordinate hallways and HVAC systems to a map
- Design lighting features, including accessing daylight, that do not jeopardize safety
- Provide drop gates to isolate areas of the building
- Design rooms with spaces that block visibility from the door
- Be sure there are severe weather safe interior shelter-in-place areas

External Site Considerations/Adaptations:

Reference Crime Prevention through Environmental Design recommendation (CPTED). Randy Atlas's CPTED recommendations, publications and research cover many site considerations related to school and campus security design approaches.

https://rems.ed.gov/docs/Mobile_docs/CPTED-Guidebook.pdf
<https://cpted-security.com/>

- Design safe routes to schools for students including safe bus stops (<https://www.codot.gov/programs/bikeped/saferoutes>)
- Designate school zones on adjacent roadways
- Define borders: fencing, curbs, gutters, landscaping, and clear marking of the school entrance
- Provide security zones: concentric circles from passive at the site perimeter to more security measures as you go into the building
- Create traffic calming measures around the schools and in parking lots
- Provide well-lit parking lots with cameras
- Plan arrival and dismissal lanes for buses and parents/guardians and safe pedestrian paths for students from cars and buses
- Separate access lanes for emergency vehicles
- Design and maintain safe playgrounds
- Place bollards in front of doors to prevent vehicle impacts
- Consider bullet-resistant film and/or bullet-resistant framing and glazing on doors and first floor windows, particularly at the secure entry
- Be sure building is handicap accessible
- Provide proper signage
- Prevent creation of hidden areas around the school that cannot be visually supervised
- Prevent design features that allow easy access to non-authorized roof access
- Number classroom doors and windows both inside the hallway and inside the classroom
- Number exterior doors and windows in collaboration with your community emergency partners

- Provide to first responders
 - Secure facility boxes with keys, key cards, building plans, door codes, or electronic floor plans
 - Provide alternative access to emergency responders
 - Access and alarm controls' information
 - Utility shutoff information
 - Camera controls
- Provide video/audio door communication systems
- Provide a system for interoperability between school radios and first responder radios
- Design outdoor spaces that allow staff and students quick access to the building

INTERNAL BUILDING CONSIDERATIONS/ADAPTATIONS

- Provide PA system that operates in ALL spaces
- Consider video intercom with recording capabilities
- Consider an automatic emergency locking system
- Consider an automatic alarm system to notify first responders of exact location of incident within a building
- Consider classroom doors with push-button locks
- Consider alarms to notify front office staffers of unsecured doors
- Consider staff with radios for communication throughout the building with some staff able to communicate directly with first responders
- Consider monitored surveillance systems
 - Place cameras for maximum coverage and minimal blind spots
 - Select appropriate cameras (the OSS or CDE can refer you to districts that have purchased cameras for further information)
 - Provide data storage and accessibility of data
- Consider secure visitor check-in/out methods with offender screening
- Consider the installation of a voice evacuation system.
- Abide by all presently adopted codes, including the International Building Code, the International Fire Code, and any other code that may cover carbon monoxide detectors and any other special circumstances.

PHYSICAL ENVIRONMENT TO PROMOTE HEALTH

- Partner with your Local Public Health Agency to ensure the following:
 - Regular monitoring of indoor air quality for carbon monoxide, pollutants, chemicals and other hazards.
 - Water testing requirements and recommendations are met at the federal, state, and local levels.
 - Safe drinking water is accessible throughout the school via clean and maintained water fountains, dispensers and hydration stations.

- Ensure heating and cooling systems are properly maintained to maintain a comfortable temperature inside the building.
- Consult with your local health department for routine health inspections of all school buildings.

<https://cdphe.colorado.gov/colorado-health-and-safety-regulations-for-schools>

TRAINING AND CULTURE

- Secure the collaboration of everyone: administration, teachers, security, maintenance, bus drivers, coaches and other extracurricular leaders, emergency responders, those groups using the building after hours and parents/guardians
- Encourage a culture of security consciousness among all
- Consider staff and student ID badges
- Train all staff:
 - On all emergency procedures
 - On keeping doors closed and locked (no propping)
 - On preventing others from entering without following check-in procedures even if you know them (tailgating)
 - To confront visitors without proper identification
- Appoint and train building safety team
 - Designate the safety team leader and provide additional training (i.e. OSS School Safety Specialist Academy) (District and building leaders)
 - Be sure they have taken the following FEMA courses: IS100.c, IS362.a and IS700
 - Require two members of the safety team to do a daily safety check of the building and grounds including playgrounds and sports fields
- Include safety and security information for parent/guardians in the student handbook and at school-wide events
- Foster compliance with discussions early and often with all staff
- Require safety and emergency response actions are periodically reviewed for all employees and orientation for all new staff
- Conduct drills regularly but with a trauma-informed lens
- Create learning teams following an incident to debrief and make recommendations for improvements
- Confirm protocols for responding to alarms or security breaches
- Test all emergency equipment regularly and be sure safety team knows the end point of alarms, i.e the alarm company or police dispatch
- Check elevators regularly
- Check and verify camera settings at night for infrared or lighting issues
- Check eye wash stations annually and information logged
- Be sure all chemicals and their users have a safe system of disposal

- Be sure shut off valve locations for water and gas are known to enough appropriate staff/responders with instructions clearly labeled
- Maintain the building - i.e. trash removal, painting, carpeting. These are both safety precautions and climate enhancements.
- Be sure there is adequate adult supervision of students at all times
 - Including before and after school, recess, and sporting events
 - Vests and communication devices for those supervisors
- Maintain and update emergency operations plans on at least an annual basis
- Welcome students into the building and at each classroom

ADDITIONAL CONSIDERATION

- Vendors - the Office of School Safety can probably direct you to other schools that have vetted or worked with vendors that contact you.
- Early engagement with all parties as you are designing buildings is best. It's more difficult and often more expensive to retrofit after construction.
- Most safety measures are designed to buy time until emergency responders can arrive.
- Ensure your buildings are code compliant. Reach out to building and fire code officials and law enforcement officials before buying any safety devices or making alterations to buildings. They are happy to help.

ADDITIONAL RESOURCES

- [American Society of Civil Engineers \(ASCE\)](#)
- [Cybersecurity and Infrastructure Security Agency](#)
- [Environmental Protection Agency](#)
- [International Code Council \(ICC\)](#)
- [National Fire Protection Association \(NFPA\)](#)
- [National Institute for Occupational Safety and Health](#)
- [Occupational Safety and Health Administration](#)