

# Low-Cost Security Measures for School Facilities

## National Clearinghouse for Educational Facilities

Here is a variety of school safety and security measures that may be implemented at little or no cost and without the use of complex technology.

### General

- **Using incident reporting data, locate trouble spots in the school and consider alternative solutions.**

There are four ways to improve school security: (1) upgrading building or site features, (2) adding electronic security devices, (3) increasing manpower, and (4) improving school climate. The best solution is often a mix of two or more of these measures.

- **Prepare school facilities emergency information for administrators and first responders.** Include, at minimum: (1) a site plan showing surrounding streets, primary and secondary access points, fire hydrants, and power, water, gas, and communications line locations; and (2) reduced-size building floor plans showing room names and numbers, evacuation routes, building entries and exits, designated areas of refuge, roof access points, and the locations of the public address system panel, intrusion alarm panel, fire alarm panel, sprinkler shutoff, main power control panel, main gas or oil shutoff, oil storage tanks, main water shutoff, main HVAC shutoff, emergency generator, and fire hose boxes. For additional information, see the NCEF publication [Emergency Response Information for School Facilities](#).

### Outside the Building

- **Use signs, vegetation, fencing, or other methods to clearly define school property.** Well-defined school boundaries demonstrate respect for and ownership of property, qualities that tend to be reciprocated by students, staff, and the community. In urban settings, sidewalks are often sufficient to define one or more sides, with objects, fences, or buildings defining the others. In rural settings, landscaping may be sufficient if properly designed.

- **Trim shrubbery and trees and relocate other obstacles such as trash containers to eliminate hiding places and provide clear lines of sight throughout school grounds.** Where vegetation obstructs vision, tree branches should be removed below 7 feet and bushes trimmed to 3 feet (18 inches for vegetation bordering walkways). This allows ready surveillance by school staff, neighbors, and passing pedestrians and patrol cars.

- **Prevent access to windows and roofs by trimming trees, relocating objects near the building that can be used as climbing devices, and ensuring that down spouts, covered walkway supports, light posts, and other building or site features are not scalable.** It is surprisingly easy to gain access to windows and roofs in some schools, thereby exposing them to vandalism and robbery and teenagers to temptation and possible injury.

- **Keep trees well trimmed if they are located near building exits, access roads, and utility wires so they don't block site access and building entry and egress in an emergency.**

- **Secure roof hatches, operable skylights, and rooftop equipment doors and access panels.** Where possible, this is best done from the inside the building so locks and latches are not exposed.

- **Ensure that fire hydrants on and near school grounds are visible and unobstructed.**

- **Keep school grounds and buildings policed, and make immediate repairs to damage inside or outside the building.** Well maintained schools promote orderly behavior by demonstrating respect for and ownership of property. This helps prevent the spread of vandalism and ultimately lowers maintenance and repair costs.

- **Routinely inspect exterior lighting for damage and bulb wear, and make immediate repairs.** Vandals often target exterior lighting fixtures and seek areas darkened by inoperable lighting.

National Clearinghouse for Educational Facilities

at the National Institute of Building Sciences [www.ncef.org](http://www.ncef.org)

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- **Fence off or otherwise enclose niches and blind spots in exterior walls that provide hiding places.** Do not, however, impede or obstruct any means of egress. When exterior doors are involved, work with your local fire or building department.
- **Clearly mark and separate visitor parking.** Visitor parking should be easy to locate, within sight of the main entry, if possible, and separated from staff and student parking. Number non-visitor parking spaces and use signs to direct visitors to their parking area.
- **Keep bus and car access separated from school buildings and play areas by curbs, removable bollards, or gates that allow emergency vehicle access but keep other vehicles at a distance.**
- **Place traffic calming devices — stop signs, pavement markings, bumps — in parking lots and driveways.** Seek traffic calming advice from your state or local transportation department, a nearby university, or a private traffic consultant. For online information, see [www.trafficcalming.org](http://www.trafficcalming.org).
- **Give each school building a distinctive marking to help emergency responders, new students, and visitors quickly find their way.** Use names, numbers, icons, colors, or artwork. Reflective markings are ideal.
- **Clearly mark the main entry to the school and post signs on other entries redirecting visitors to the main entry.** Signs should include arrows, maps, or directions, not just the statement “Visitors must report to the office.”
- **Ensure that the fresh air intakes for the school’s mechanical systems are screened and located at least 12 feet off the ground or are otherwise inaccessible.** This reduces the risk of accidental or intentional exposure to irritating, unhealthful, or dangerous substances.
- **Ensure that portable classrooms are adequately identified, lighted, and tied down, and that trailer hitches and tongues have been removed and access beneath them is restricted with fencing, siding, or other materials.** Unsecured spaces beneath portables can be used for hiding people, weapons, contraband, and incendiary devices.

## Inside the Building

- **Limit the use of building entrances to one or as few as possible.** Adjust locking hardware on all other entrances, including portables, classrooms opening to the outside, and kitchen, delivery, and maintenance entries, so they cannot be opened from the outside without a key, proximity card, or other device.
- **Routinely inspect exterior doors for damage and faulty hardware, making immediate repairs.** School doors take a beating. Frames, view lights, hinges, locks, and latches should be examined at least monthly, and lubricated, adjusted, and repaired as needed.
- **Install face plates at exterior door latches to prevent jimmying.** Face plate kits are available from door hardware suppliers and are easy to install.
- **Install fish-eye viewers in exterior doors lacking windows or sidelights to help identify those seeking entry.**
- **Institute strict procedures for key control.** Where keys are used, their careful control enhances building security and reduces spending on re-keying locks and issuing new keys when they are lost or stolen.
- **Ensure that internal access points between the school and joint-use facilities are limited and secure.** Building egress routes cannot be compromised, however, so seek approval of new locking or blocking devices with the local fire or building department. For more information, see [Door Locking Options in Schools](#).
- **Where appropriate, number or renumber doors and rooms in a logical, sequential, floor-by-floor pattern so emergency responders can locate them quickly.** This includes numbering exterior and stairway doors. Consider removing door labels such as ‘Telephone Room,’ ‘Mechanical Room,’ etc., so room use cannot be identified by intruders.
- **Consider displaying room numbers on classroom windows so they are readily visible to first responders from outside the building.**
- **Routinely inspect all windows accessible from the street for damage and faulty hardware, and make**

**immediate repairs.** This helps prevent accidents and injuries and reduces the opportunity for the unauthorized passage of people, weapons, and contraband.

- **Ensure that all classroom windows meant to provide a secondary means of escape are in working order and are not blocked by screens, security grills, louvers, awnings, or other devices.** Escape windows should be easily accessible and readily opened from the inside.

- **Consider an all-lights-off policy for the school when it is not being used.** This policy is based on the assumption that intruders' lights give them away. The policy costs nothing to implement and can significantly reduce energy bills, so discuss it with your local police department.

- **If burglaries have been a problem, install motion detectors inside the school that trigger intrusion alarms and alert the police.** Motion detectors should supplement the above all-lights-off policy.

- **Keep unoccupied rooms and spaces locked when not in use.** This practice requires full cooperation by faculty and staff. See the NCEF publication [Door Locking Options in Schools](#) for limitations on locking devices.

- **Consider keeping door latches in the locked position in occupied classrooms so that in the event of a school lockdown, teachers can simply pull doors shut.** This practice prevents the exposure of teachers as they step outside to lock their classroom doors. An alternative is to install ANSI F88 classroom security hardware; see the NCEF publication [Door Locking Options in Schools](#).

- **Keep egress paths — corridors, stairs, stairwells, and exits — clear of obstructions and flammable materials.** Examples of common fire code violations are (1) obstructions such as empty cardboard boxes, boxes of used fluorescent light tubes, carts, lawnmowers, steel racks, ball racks, stored equipment, and (2) tripping hazards such as electrical cords, tools, lumber, and hoses. Decorative materials, streamers or fabrics on corridor walls or ceilings should be flame resistant.

- **Ensure that no more than 20 percent of wall space in classrooms or hallways is covered with teaching materials and artwork.** Fire codes generally prohibit

coverage greater than 20 percent for reasons of fire safety.

- **Ensure that corridor and restroom lighting controls are protected from unauthorized use.**

Installing keyed switches is the simplest solution to this problem.

- **Ensure that all spaces in the school requiring two exits have, in fact, two functioning exits.** This includes classrooms. Your local fire or building department can help make this determination. School egress requirements are discussed in the NCEF publication [Door Locking Options in Schools](#).

- **Routinely check that exit signs are visible and illuminated.** Keep a supply of bulbs and spare fixture components so replacement and repair can be immediate.

- **Routinely check that fire alarms, fire extinguishers, and other fire safety components are in good working order, and that staff is trained in the use of fire extinguishers.** Your local fire department may make routine inspections and provide training; if not, agree to a reasonable inspection and training schedule.

- **Post clear and precise emergency evacuation maps in classrooms and other major building spaces and at key corridors locations.** Include at least two alternative evacuation routes. Color-code them "red", "blue", etc., for clarity.

- **Ensure that all classrooms, including portables, have two-way communication with the office.** Most schools have a P.A. system but many do not have a two-way intercom system. Providing cell phones (or subsidizing their cost), two-way radios, or portable duress alarms to faculty and staff are one way to address this problem. Cell phones and text messaging are particularly helpful for evacuating or sheltering disabled and special needs students in an emergency.

- **Install a panic or duress alarm at the school reception desk and within the main office area to alert key staff.**

- **Use caller ID on all school phones to help identify and deter threatening callers.**

- **Ensure that medical supplies are locked in an observable part of the school nurse's office or health room.**
- **Ensure that designated areas of refuge have appropriate window and door protection.** This includes strong and lockable doors and windows for protection from high winds and flying debris.
- **If the school's ventilation system has a master control, provide a shut-off switch in the principal's office.** If that is not feasible, make sure administrative school staff know where the master control is located and how to operate it. Conduct regular shut-off drills.
- **Ensure RF (radio frequency) communication is possible throughout the school.** This capability is critical for local emergency responders. Invite them to test all parts of the building. Where there are problems, install repeaters as necessary.
- **Install a battery or portable generator backup power supply for telephones and emergency communications.** Schools without an uninterruptible power supply (UPS) should have a sufficient backup source to maintain voice communications for at least several hours, preferably 24. Routinely test the backup power supply.
- **Restrict access to all rooms and spaces containing building wiring, equipment, and controls.** This is a normal procedure in most schools, but it's wise to routinely check for unlocked or broken doors and access panels, loose or exposed communication wiring, and signs of tampering with suspended ceiling panels .
- **Provide back-up emergency lighting in stairs, hallways, and rooms without windows.** This is probably required by state or local law. If emergency lighting is provided, check its operation regularly.

## Related Information

See the NCEF publication *Mitigating Hazards in School Facilities*, [http://www.ncef.org/pubs/mitigating\\_hazards.pdf](http://www.ncef.org/pubs/mitigating_hazards.pdf), for guidance on making school safety and security assessments and planning, funding, and implementing safety and security improvements.

See the NCEF publication *School Security Technologies*, [http://www.ncef.org/pubs/security\\_technologies.pdf](http://www.ncef.org/pubs/security_technologies.pdf), for current information on access control, surveillance, weapons detection, communications, alarm, and emergency notification system technologies.

See the NCEF publication *Emergency Response Information for School Facilities*, [http://www.ncef.org/pubs/emergency\\_response.pdf](http://www.ncef.org/pubs/emergency_response.pdf), for providing the information needed to manage school buildings, grounds, occupants, and rescue and recovery personnel during and after a crisis.

See the NCEF publication *Door Locking Options in Schools*, [http://www.ncef.org/pubs/door\\_locks.pdf](http://www.ncef.org/pubs/door_locks.pdf), for information about on school door locking options and the limitations imposed by egress requirements.

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This publication is based on selected assessment measures from the *NCEF Assessment Guides*, [http://www.ncef.org/pubs/pubs\\_html.cfm?abstract=mitigating2](http://www.ncef.org/pubs/pubs_html.cfm?abstract=mitigating2). Reviewers were Tod Schneider of Safe School Design; Billy Lassiter of North Carolina's Center for Prevention of School Violence; and Jon Akers of the Kentucky Center for School Safety.

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