



Prairie View Elementary and Middle School (Minn.) secure vestibule, designed by Wold Architects and Engineers; the space's visibility, double doors, electronic locks/intercom, and hardened materials allows staff to safely screen visitors before they enter.

## Striking the Balance

### How Modern School Design Prioritizes Both Safety and Collaboration

By Beth Meadows and Paul Aplikowski

The design of educational facilities involves a careful balance of the many functions a school must accommodate. It must be a great educational environment first, but it also must provide a safe environment for children. While districts should take precautions to prepare for threats such as active shooters, the reality is that it is more likely that students will face risks related to fights, mental health issues, bullying, and other all too common threats.

One of our primary priorities when meeting with school districts at a project's outset is understanding their values and prioritizing them in the building design. As educational facility designers, we take the protection of children and their futures very seriously, and we aim to maximize spaces for both safety and learning. Inevitably, there will be some balance and compromise between the two sometimes competing demands.

Unfortunately, some of the best practices for school day use, including student safety, can be at odds with the strategies implemented for active shooter

scenarios. Over the years, we've worked with districts to achieve design results that maximize student safety and modernize learning environments, while providing robust protections in the event of an active shooter. These are a few of the secrets behind striking the right balance to creating safe environments that foster learning and collaboration.

#### Securing the Perimeter

School design should allow for one public entrance with a secure vestibule and a visual connection from the main office. In some locations, a secure perimeter around the school site is also advisable. The entry point should be obvious and directly supervised by a screener. Ideally that screening function happens in a location that allows for the visitor to be assessed outside of the secure line separating the door from the school environment. Some districts prefer to have this screening happen outside of the building or within a secure vestibule, while others prefer to create a more welcoming feeling and prefer that screening to happen in the office. In the latter example, a secure perimeter needs to exist between the office and the

Over the years, we've worked with districts to achieve design results that maximize student safety and modernize learning environments, while providing robust protections in the event of an active shooter.

rest of the school. This secure vestibule location should be outfitted with adequate camera coverage, hardened materials, including security glazing, and a full complement of electronic locks and controls that allow the staff to take appropriate action in the face of a threat.

When designing a new school or an addition, architects and engineers must account for site access and circulation and have a clear understanding of the school's drop off and pick up procedures.

All visitors admitted to the building must be screened and logged. They should also be provided with a tag or sticker so that building occupants know they have been approved to be in the building. Many districts opt for electronic visitor management systems that can provide features such as background checks. The electronic systems also have the added benefit that in the event of a lockdown the visitor list can be accessed by administration outside of the building. These policies provide added peace of mind for teachers and students encountering others inside the school.

When designing a new school or an addition, architects and engineers must account for site access and circulation and have a clear understanding of the school's drop off and pick up procedures. Typically, there are two separate paths of circulation for cars and buses. This usually means that at certain times of day, more entry points are needed. Outside of school hours, doors can be locked, and visitors can be directed to the main entrance. In addition to the main entrance, other exterior doors can be supervised using cameras and

alarm systems, including door positioning monitors, which send an alert if a door is propped open.

### Openness and Flow

Access to daylight is often a primary request by building users. By providing open windows where students can look into nature and integrating natural materials into classrooms, school designers can evoke tranquility while highlighting sustainability. Texture can be an important consideration, too. Instead of cold materials like metal, concrete, and plastic, soft, warm materials can help create more inviting spaces that lend themselves more naturally to collaboration and help students feel more comfortable.

Some safety practices such as eliminating interior and exterior windows can often make schools feel like they're on lockdown before threats even arise. To foster a sense of community and collaboration, require openness and flow rather than separation and confinement. For most threats to safety and security, more visibility and supervision are desirable.

### Larger Zones Offer Transparency

Although it may seem counterintuitive, open spaces can promote safety. Open areas allow teachers and students to see activities taking place and spot unusual behavior or people very quickly. Open lines of sight help staff recognize bullying or other inappropriate behavior. In preparation for potential lockdown events, schools should include a series of security zones. These zones provide layered defenses as called for by organizations such as CEPTED (Crime Prevention Through Environmental Design). These zones provide ample opportunity for occupants to shelter in place and remain out of sight of an intruder, while still allowing transparency and openness within each zone. By creating security zones, it often allows for additional hardening of the zone beyond what is possible in individual classrooms.

Another benefit of security zones is that they allow for multiple exits for evacuating the building while the threat is contained outside of their security zone. Exits can be easily accessible so students and teachers know where to go in an emergency.

### Small Features, Big Differences

Most schools use electronic access control systems for some interior and exterior doors normally used to enter the building. Best practices would suggest that only a handful of authorized administrators have physical keys to the building. All normal access is

provided through card keys. Card readers or key fobs can be individually programmed to allow limited access to certain areas of the school. They can also be deactivated when needed. Using these technologies helps districts move away from needing multiple keys that could get lost or copied over time.

Consider safety features such as drop-boxes that parents and others can use for items a student may forget, such as a backpack, without needing to enter the learning environment. Special treated glass, although not bullet resistant, can also be an important safety feature, especially for doors that lead into school buildings. There is now specialized glass that takes at least 12 minutes to break with a sledgehammer and gives law enforcement and first responders more time to arrive on site.

### Communicate Throughout The Entire Process

Early in the design process, we meet with the school board and school administration to gain a complete understanding of the district's safety policies and the school's emergency plans. It is important to understand how children move through the school and what spaces need to be designed as safe zones when sheltering in place. Our team uses its knowledge of building systems to develop a design that meets the school's functional needs while incorporating architectural elements that provide a safe learning and teaching environment.

When possible, we involve first responders in security planning efforts. It is important to understand their needs during an emergency. A building is only one part of a security strategy when keeping faculty, staff, and students safe. The facility's design should align with operational procedures and support the appropriate safety plans. Follow-up meetings as the design and construction progress provide emergency personnel the opportunity to become familiar with the facility's layout, location of doors, cameras, and dedicated safe zones, which helps them develop strategic tactics for both lockdown situations and evacuation plans.

Communication throughout the design process and construction phase of a new school or renovation project is essential. The school board, administration, faculty, parents and first responders all need to be informed as design changes occur. Building unity, trust and confidence with those involved is imperative.

By taking an approach that balances school districts' safety priorities and desires for modern academic environments that foster learning and collaboration, educational school designers can help protect students – and their futures – for generations to come.

Beth Meadows is an architect with education design expertise at Wold | HFR Design and can be reached at bmeadows@woldhfr.com. Paul Aplikowski is a principal at Wold | HFR Design and contributed to this article.

### follow us on

To get SchoolConstructionNews tweets to your phone, simply text "FOLLOW SchoolBuildNews" to 40404



## ad index

	Page #	Circle #
Association for Learning Environments (A4LE) .....	2	100
EDspaces (formerly NSSEA) .....	20	103
Edwards Fire and Life Safety.....	7	101
School Construction News .....	19	102