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**Safety Through
Windows and Doors**

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Using Windows and Doors to Provide Safety and Security

Is it possible for schools — specifically window and door elements — to look good and offer protection at the same time?



On one hand, school administrators desire schools that are aesthetically pleasing — attractive, inviting places for students to learn. On the other hand, school administrators desire schools that protect students — that keep students safe from accidents and natural and man-made disasters.

Turns out, in this case at least, that it's possible to have your cake and eat it, too — even when you narrow it down to windows and doors.

“There has to be a deliberate effort during the planning process,” says Joel Sims, REFP, president of Sims Architects, Lancaster, Pa. “If you have meetings to specifically discuss aesthetics and security, you can accomplish your goals.”

Windows

Studies on natural daylighting show that it improves student performance. “Natural daylighting in schools is pretty much the norm,” says Sims. “It’s used to create a warm environment.”

Student performance is important but so, too, is security. How do the two fit together?

“The easiest thing is to say, ‘Let’s provide fixed windows so we don’t have to worry about them being open and somebody coming in through them,’” says Sims. “But I think that’s a bad idea.”

Sims explains that, if there were a problem with the mechanical system, operable windows would allow for natural ventilation. Also, operable windows allow for a means of escape in case of fire or hostile takeover.

If you’re concerned about windows being opened and throwing the mechanical system out of whack, then a key lock system can be employed. In nice weather or when the mechanical system goes down, the windows can be unlocked.

From a psychological perspective, Sims notes, operable windows create less stress as students and adults see a means of egress.

Back to the security issue: operable windows do provide an opportunity for people to access a building, Sims offers. One solution is to be careful where they’re installed. “A cavernous, dark area behind the school gymnasium is not a good place to install operable windows,” he notes.

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This School Learned a Lesson in Door Economics



Photo courtesy of Graham Architectural Products

Windows, operable or fixed, provide a measure of security from the outside in. For example, windows in stairwells can ensure that students will behave while going up and down the stairs because there's a perception that someone could be outside looking in. The same holds true for other areas, like school, auditorium and gymnasium fronts.

One way to increase security in a school with lots of windows is through the use of window film. San Diego-based Bekaert Specialty Films

provides an optically clear barrier film that bonds to the inside of windows, thus reinforcing the glass and helping to hold it safely in place upon impact. The retrofit product provides protection 24/7.

"Mostly we hear administrators say that they want a product that's going to protect students in the event of a violent storm or a ball hitting the windows," says Jim Black, Bekaert's National Panorama sales manager. The film offers that protection without

changing the appearance of the school. Because this specific window film is a clear polyester, when it's applied correctly, you don't even know it's there.

Doors

Doors work to keep some people in and some people out from both a school itself and specific areas inside a school. In this case, there are exterior doors, and there are interior doors.

Regardless of where a door is installed in a school, it's going to see a lot of

use. Sims notes that there are aluminum and hollow metal doors for exteriors, which can rust, be scratched and need to be repainted. Fiberglass is another exterior door choice. "They lack a little aesthetically, but depending on the location, they're good in certain situations," Sims notes.

Decatur, Mich.-based Special-Lite, Inc., produces FRP skinned doors. Daniel Depta, Special-Lite's manager of Marketing, admits that the door's pebble grain is ugly to some architects. However, he counters, "There's nothing uglier than a dented, rusted, graffiti-tagged hollow metal door. Even if it's repainted, it's still dented."

And from a safety perspective, because the doors don't have to be sanded and repainted, there are no sanding particulates in the air. The doors clean easily with a green cleaner that even removes graffiti.

Equally as important as the door is the hardware that's chosen. Says Sims: "Doors are not unlike cars with engine problems in that they're only as good as the hardware that's installed with them.

Depta agrees: "An entrance is a system, and all the components have to work together: the door leaf, hardware, framing and attachment to the structure. You might have a hardware adjustment problem if the door starts to sag and lag."

Also in agreement is Mark Leidlein with Pontiac-Mich.-based Total Door. And he should be in agreement because his firm manufactures an integrated fire door system in either steel or wood. "What's unique about our product," he says, "is that everything is installed on the door before it ships to the school, rather than hardware being installed at the school."

"The biggest part of the door hardware durability issue is what type of key system are you using? There's a lot to be said for card access or FOB access to monitor who comes in and out of the schools," Sims points out.

Leidlein concurs, noting that administrators want doors that provide security and don't conflict with ease of use and function in the event of a fire. "They want a lot more access control devices on doors, like push-button locks or electronic locks. They want the ability to perform a lockdown function from the principal's office."

Additional Resources

For more information on school planning, design and construction issues, contact the following organizations:

- Council of Educational Facility Planners International (CEFPI): 480/391-0840, www.cefpi.org;

- American Institute of Architects (AIA): 202/626-7300, www.aia.org;

- School Building Expo: 973/514-5900, www.schoolbuilding-expo.com;

- International Facility Management Association (IFMA): 713/623-4362, www.worldworkplace.org; and

- National Facility Management and Technology Conference (NFM&T): 414/228-7701, www.nfamt.com.

For more information on school safety and security issues, contact the following organizations:

- American Society for Industrial Security (ASIS): 703/519-6200, www.asisonline.org;

- National School Safety and Security Services: 216/251-3067, www.schoolsecurity.org; and

- U.S. Department of Education: www.ed.gov.



Photo courtesy of Bekhart

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One Design Option

A standard school design for high security uses a combination of

windows, doors and locks. Sims describes the design as passing through a school’s exterior doors into a large vestibule. A second set of doors is then encountered.

In the morning, when the students are entering the building, this second set of doors is unlocked and open.

Once school starts, the second set of doors is closed and locked. A visitor entering the school does not have access through the second set of doors, but enters a separate, single door that leads into the office. This single door is often locked during the day, too. When a visitor comes, an administrative assistant pushes a button that releases the lock on the door and allows the visitor to enter the office. If no one is in the office, the visitor must wait in the vestibule



Photo courtesy of Belkairt

until someone is available to allow entry.

Interior doors can be secured to close off sections of a school. "They can be located at strategic intersections," says Sims. "If you're having an after-school program, visitors can be given access to the library, but because interior doors are closed and locked, visitors aren't roaming the entire building.

"It's a small percentage of people you have to plan for," Sims notes. "But many products are available that are durable and don't look institutional."

Finding the Right Product

Whether you're searching for windows or doors — or both — you'll find yourself swimming in a sea of options. The good news is today's manufacturers — understanding that schools are highly

used facilities that need to look good — work diligently to provide durable, aesthetically pleasing products to the school market.

That means your job is to find the product that provides the function and look that meets your goals. Count on your architect to educate you on the latest design trends while you stress the importance of safety and security.

"We're seeing more and more that architects are not just choosing products based on what they're comfortable with from the past," says Leidlein. "They're talking with facility managers to find out what has worked well in the past and helping to reduce future problems. It may mean looking for a door with a low life-cycle cost, rather than the cheapest door." **SPM**

"Chain restaurants are flourishing. They spend a lot of time figuring out what customers like. In schools, it seems like we're doing the opposite. We've been missing the mark. Now we're starting to catch on."

— Joel Sims