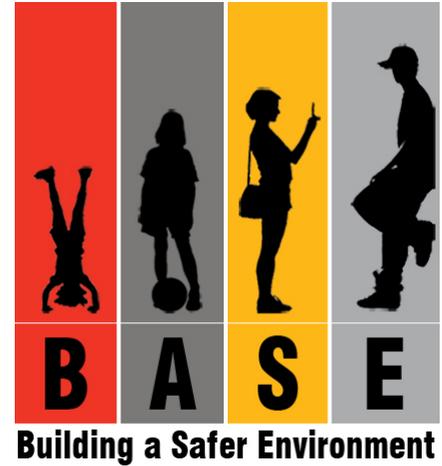


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Bond Architects, Inc.*

EXECUTIVE SUMMARY

Schools are places for children to learn, grow, and thrive. Unfortunately, they have also become targets for acts of violence. Design can play an important role in providing a safer learning environment. While safety and security must be an integral part of every school, there is a balance between adding security without giving the appearance of fortification.

The primary focus of the educational environment should be creating an atmosphere that excites and encourages all levels of learning. Security measures should be integrated in a manner that veils their appearance, supplementing not distracting from the learning environment. Bond Architects has researched and implemented ways to create that balance, providing a unique solution for each school.



“We feel strongly that we have a responsibility to schools, students, faculty and parents to design buildings that are as safe as conceivably possible. An entire industry has cropped up with products designed and training programs to heighten security. We are actively involved and interested in addressing the problem from a design standpoint to shore up vulnerabilities in schools.”

- Art Bond, AIA, Principal and co-founder of Bond Architects, Inc.

SITUATION

Bond Architects has been invested in the Missouri school community for over 26 years. More than 80% of our work is in the field of K-12 Education design, with projects in more than 110 schools in 26 districts. But most importantly, we are parents of children that attend schools throughout the St. Louis metro area.

In 2016, we began a safety initiative called Building a Safer Environment (B.A.S.E.) resulting from years of research surrounding techniques to create a safer learning environment. Our research included reviewing local and national standards, analyzing case studies, lessons learned from previous design experience and teaming with Tier One Tactical Solutions, LLC. Tier One is a firm founded by members of the St. Louis County Tactical Operations Unit who have become the local experts in preparedness training.

We believe we have a responsibility to share our findings with the community. There is fear and uncertainty on how to best protect our schools while remaining open and welcoming to our community. There are ways to prioritize strategies and provide a plan that works best for each school. The design of the building needs to be a part of that plan.

STRATEGY

Slowing down intruders until law enforcement arrives is of utmost importance. The way to do this is by creating layers of protection designed to deter intruders, starting with the site perimeter.

SITE STRATEGIES

Fencing

1. Provide fencing around the entire site with gates at drive lanes allowing regulation of vehicles coming onto the site.
2. Provide fencing between the parking lots / drive lanes and the rest of the school grounds preventing vehicular traffic from breaching the rest of the site.
3. Provide fencing around play areas, preventing intruders from gaining access to students outside.

Building Perimeter

Creating a separation between the entry to the school and the drive lane will slow down an intruder. Providing the proper visual supervision of the front of the school will give staff more time to prepare and alert the authorities to suspicious behavior. Pictured to the right is a rendering of our new and improved site plan to incorporate the following strategies listed below to build a better perimeter. Strategies include:

1. Create a plaza area between the building entry and parking lot/drive lane to allow more opportunity for visitors to be seen approaching the building.
2. Install bollards to keep vehicles off the sidewalk.
3. Provide separate drive lanes for buses and parents dropping off students.
4. Create a bioswale, a recessed vegetated area, to deter visitors from accessing the perimeter windows.
5. Install cameras along the perimeter of the building, aimed at both the building entry and out at the drive lanes/parking lots.
6. Prune/remove shrubbery as necessary to improve visual supervision out of the building and to remove areas for intruders to hide.
7. Keep all exterior doors locked throughout the day. On doors used only for emergency egress, consider removing the hardware on the exterior of the door.

INTERIOR STRATEGIES

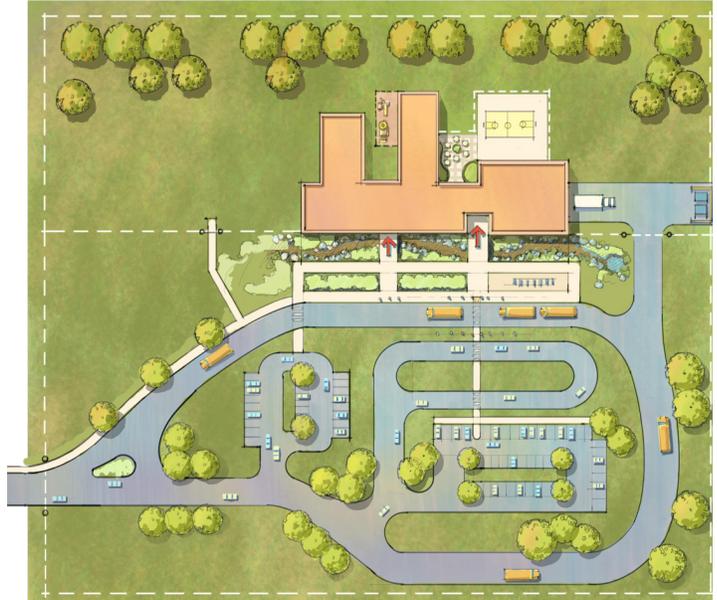
Entry Vestibule

The building entry is the most likely place for visitors to enter the building. Providing a secure building entry is crucial. The two photos to the right of 2017 projects for a local school district show how Bond Architects has been implementing the strategies to provide a secure entry vestibule for regional school districts. Strategies for securing the entry include:

1. Install intruder resistant glass or film to slow down the time it takes to break through the glass.
2. Provide a secure vestibule, requiring visitors to be buzzed through two sets of doors before gaining entry into the rest of the school.
3. Install a bullet resistant transaction window between the vestibule and Administrative Office, requiring visitors to sign-in before being allowed into the rest of the school.

Building Layout

1. Locate all Administration Offices and those spaces not regularly used by students at the front of the



This rendering of a new and improved site plan shows the key strategies implemented for a safer exterior building site, such as separate lanes for bus and parent drop-off, creating a bioswale at the building's edge and adding bollards.



At this Elementary School, Bond Architects replaced the existing vestibule with a larger, ADA compliant, secure vestibule. The solid wood door and sidelites contain intruder resistant glass and are secured to a heavy gauge hollow metal frame. A new bullet resistant transaction window was added that allows the office staff to interact with visitors in a protected manner.



Bond Architects replaced the interior set of glass and wood doors with a new aluminum storefront to create a secure vestibule entryway at this Elementary School. In addition, a new bullet resistant transaction window was added that allows the office staff to interact with visitors safely.

building. Locate all classrooms toward the back of the building.

2. Install double doors in the hallways capable of being closed and locked automatically during a lockdown incident.
3. Provide designated areas for deliveries secured from the rest of the building.
4. Add cameras to hallways and areas within the building that do not have adequate visual supervision.

Classrooms

1. Install intruder resistant glass or film to entry doors and sidelites.
2. Provide a means for locking the classroom door from the classroom side of the door.
3. Keep classroom doors locked during school hours or provide a way for doors to be automatically locked during a lockdown situation.
4. Place room numbers on the exterior windows, visible to first responders approaching the building; above the classroom side of the door, visible to teachers and students contacting first responders; and in the hallways installed perpendicular to the wall so that first responders can view the room number from a distance.
5. Provide a clear, unobstructed, "out of sight" zone for hiding students out of the door's line of sight.
6. Provide a communication system for teachers to alert Administration and police of a safety concern.



This rendering shows a new and improved classroom with safety measures implemented. The sidelite contains intruder resistant glass and is on the opposite side from the door handle to prevent anyone breaking the glass and being able to open the door from the hallway corridor side of the door. There is an area located to the right of the classroom where children and staff can be kept out of sight from the door and sidelite.

Room numbers are located on the exterior windows and along the interior hallway to easily identify the rooms to emergency responders. The lower exterior ground height on the exterior of the building limits the view into the classroom from the outside.

LOOKING AHEAD

Throughout the country, elected officials are passing laws mandating safer schools. While most states limit their school safety measures to establishing a safety plan, executing regular fire and disaster drills and utilizing school resource officers, several states have been establishing budgets for purchasing safety equipment, training, and communications and/or monitoring equipment. In addition, schools are passing bond issues dedicating a portion of the capital budget to security upgrades.

School safety is a difficult subject that should be taken seriously. Creating a comprehensive school safety plan is a team effort. It involves Administration, Faculty, parents, students, law enforcement and design professionals. Each school will have specific challenges and priorities which should be addressed on an individual basis.

Bond Architects works with school districts to identify each school's specific concerns, evaluate existing conditions, identify vulnerabilities and formulate an action plan for creating a safer learning environment while maintaining the school's unique and welcoming characteristics.

IN THE NEWS

Bond Architects has been interviewed for thought leadership expertise regarding school safety best practices and B.A.S.E., which are available on our website at bondarchitectsinc.com/in-the-news. Stories include:

CNN - *How to design a school in the era of mass shootings*

St. Louis Post-Dispatch - *Architecture and simple fixes can help improve school safety*

Guy Phillips Show - *B.A.S.E. & Improving School Safety*

About Bond Architects, Inc.

Bond Architects provides architecture, interior design and planning solutions to a wide range of educational, municipal and commercial clients. Our projects, practice and people have been recognized for their commitment to enhancing communities, advancing education and promoting sustainability. To learn more, visit www.BondArchitectsInc.com or call 314.863.4994.