

The Design of Safe, Secure & Welcoming Learning Environments

Hosted by the Committee on Architecture for Education



**The American
Institute
of Architects**

Committee on
Architecture for Education

an **AIA** Knowledge Community

On October 19, 2018, the American Institute of Architects (AIA) Committee on Architecture for Education (CAE) summit brought together architects, policymakers, students, educators, school administrators, law enforcement and building code officials, mental health experts, and others to examine violence in schools and explore ways to holistically improve safety and security in our school communities.

At AIA's Washington, D.C., headquarters, participants in three different working groups convened to develop recommendations for school design. The Summit focused on both interventional and curative design implications for schools through three lenses: Crime Prevention Through Environmental Design (CPTED), Mental Health, and Community and Pedagogy.

Crime Prevention Through Environmental Design (CPTED)

Through CPTED, architects aim to create minimally invasive methods of surveillance that don't detract from the primary educational mission of schools.

The biggest challenges included:

- creating an exterior that is warm and welcoming
- establishing open sightlines with glass walls and windows while providing areas of refuge and minimizing distractions
- determining a single entry point with multiple exit points
- working with a limited budget for new buildings and altering existing buildings to comply with CPTED principles

Ideas to address these challenges included:

- incorporating open spaces with more natural light and diverse conditions to create a welcoming atmosphere

- implementing security measures that students won't easily notice
- compartmentalizing the layout to allow specific areas to be closed in an emergency
- realistically evaluating the appropriate size of a school and students' use of the school
- setting a building far back on a property and limiting access, building the natural environment into security similar to Sandy Hook Elementary School

Mental health

With roughly half of all mental health problems setting in by age 14, and 75 percent manifesting by age 24, schools can play a major role in identifying mental health issues early on. While more research is needed, the Mental Health group discussed the ways in which the physical school environment can help students feel safe and connected. While the majority of people living with a mental illness are not violent, mental health is an issue our schools are facing without all the resources they need and which, in some cases, can impact the school's security.

The biggest challenges included:

- fractured relationships between schools and their communities
- inadequate facilities for students with varying levels of educational needs
- a culture of distrust within schools that leads to things like bars on windows and doors
- a lack of private spots for students to deal with mental health issues

Ideas to address these challenges included:

- building entryways that are welcoming to the community, with comfortable seating

- seeing the design of a school through the lens of students with varying levels of educational needs, considering everything from lighting to textures of materials
- organizing schools to facilitate and encourage relationship-building, exploration, and student agency
- creating accessible spaces that allow students privacy, stigma-free

Community and pedagogy

The group considered school safety issues through the lens of design that supports forward-leaning teaching and learning practices, creates a sense of community, and builds a culture of care.

The biggest challenges included:

- thinking of design as having more than physical implications
- creating more environmental choices for students
- fostering a space where students can turn to counselors for help
- allowing students to go outside and enjoy nature while keeping them safe

Ideas to address these challenges included:

- designing holistic and less intrusive safety and security measures
- having flexible spaces where teachers and students can take ownership and adapt the environment to their needs
- taking counseling offices out of the school administration area and integrating them into the student community to encourage relationship-building
- providing intentional transparency between and through spaces to encourage collaboration and connections
- employing biophilic design strategies, including incorporation of the natural environment and places of respite and meditation

Introduction

On October 19, 2018, the American Institute of Architects (AIA) Committee on Architecture for Education (CAE) held a summit on school safety and security at the AIA’s headquarters in Washington, D.C. The #AIACAESafeSchoolsSummit had a simple but important objective: Develop recommendations and guidelines for the design of safe school campuses.

Students, educators, school administrators, law enforcement and building code officials, mental health experts, architects, policymakers, trade groups, and others participated in discussions about how to construct environments where students and educators are physically and emotionally safe—or, as AIA CAE Chair Karina Ruiz, AIA, put it, how to “solve wickedly complex problems in beautiful and intelligent ways.”

In order to create clear, practical guidelines, the AIA CAE believes we need to address both the root causes of school violence and the responses necessary to mitigate its impact. As such, we proposed to focus on both the interventional and curative design implications for schools through three lenses:

- design that promotes Crime Prevention Through Environmental Design (CPTED) principles and complies with fire and life safety codes
- design that supports the mental health and socio-emotional needs of students
- design that supports next generation pedagogies and builds community and culture of care

School safety today

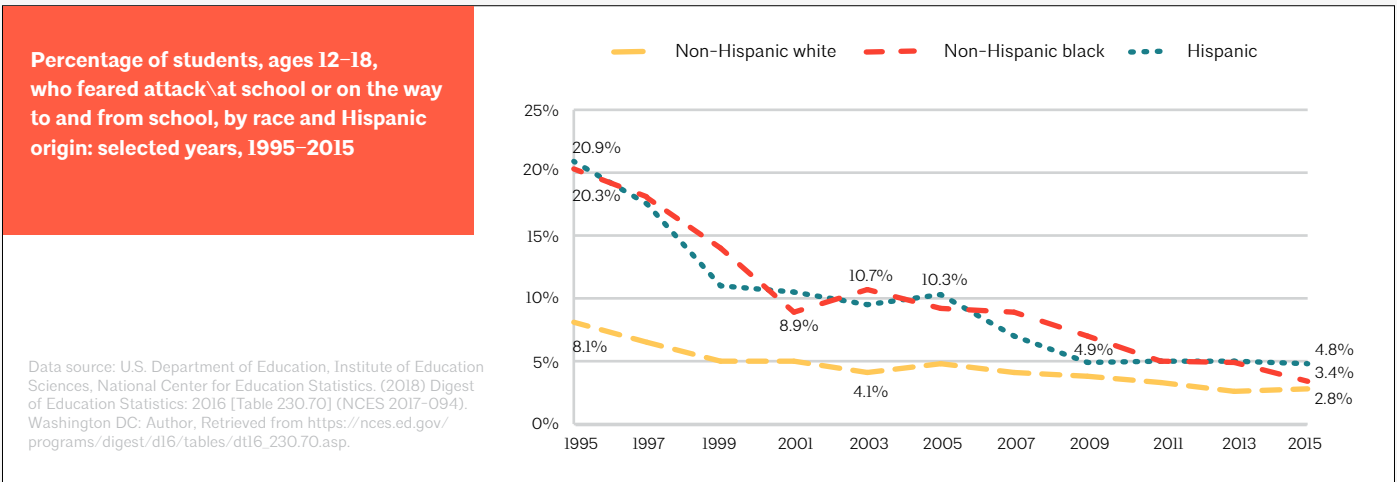
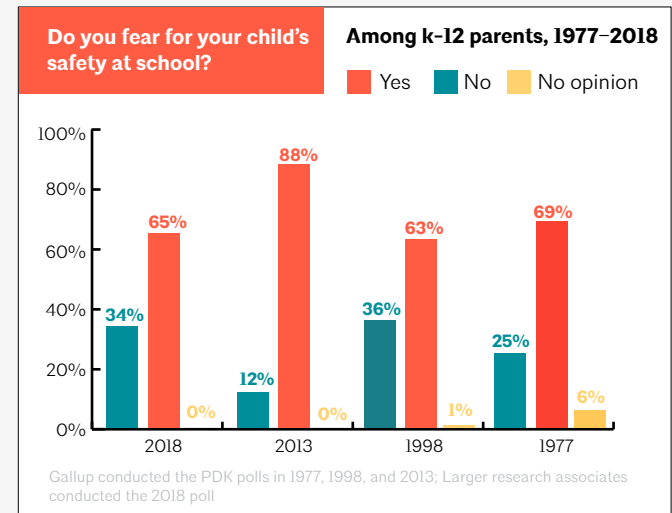
Arguably, the safety of our children in schools is on our minds now more than ever. Mass shootings at schools such as Marjory Stoneman Douglas High School and Sandy Hook Elementary School—followed by the activism of survivors and victims’ families—have focused our attention on the issue of gun violence in our schools.

Across the nation there are calls to build schools with moats and bulletproof walls, arm security personnel and teachers, and install metal detectors and security cameras. When architects consult with a community on school design, they’re asked to do more than envision the best spaces for our children to learn and grow—they’re asked to help keep our kids safe and comfortable.

“Now, when I go to a school, people not only ask, ‘How will your design affect our children’s lives?’” said 2018 AIA President Carl Elefante, FAIA. “But they also ask, ‘What is your plan for an active shooter?’”

Architects should follow this sense of urgency, said Elefante, and move beyond the role of trusted advisors to that of civically engaged designers. He added that architects need to ask how they can make a difference and formulate an action agenda that AIA, with its 94,000 members, can take to lawmakers.

“I hope this will be a tipping point in how we design schools,” said Ruiz.



Using facts as tools

Amid the pressure to implement changes and improvements quickly, it's critical to understand the facts and to respond rationally—backed by evidence-based solutions.

Experts in the room pointed out that perceptions aren't always based on facts. Although reports suggest correlation between access to firearms and deadly shootings, contrary to public perception and the devastating impacts to affected communities, the incidence of school shootings has dropped since the 1990s, Ruiz said. And those who pull the trigger are more often members of the school community—people who are authorized to be in the building—than outsiders.

While middle-class suburban areas like Parkland, Florida; Newtown, Connecticut; and Columbine, Colorado, receive the most attention after a school shooting, the majority of firearm homicides in America occur in non-school urban settings (81 percent in 2015, according to the Centers for Disease Control and Prevention). On average, children are safer in school than they are in their own homes and neighborhoods.

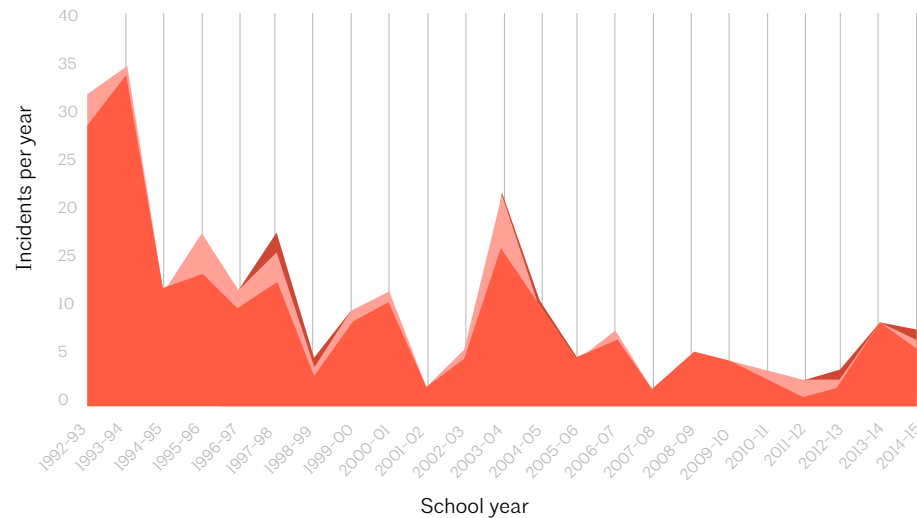
Perhaps the greatest risks children contend with in our society today are traumas psychologists refer to as “adverse childhood experiences” (ACEs). ACEs encompass active abuse of children as well as neglect or failure to meet their basic needs. ACEs impact mental and physical health, and are directly correlated with school dropout rates, suicide, and violence.

Architects need to consider the consequences of structures in which children of all backgrounds are coming to learn and grow.

Although research surrounding the mental and physical safety of our children in schools is limited, designers can turn to Crime Prevention Through Environmental Design (CPTED). CPTED has proven an effective tool in augmenting security without increasing a sense of danger implied by obvious barriers.

But CPTED is not the whole solution. Addressing problems that so often come from within a community requires an approach that combines community and mental health—an approach in which students feel seen, cared for, and known.

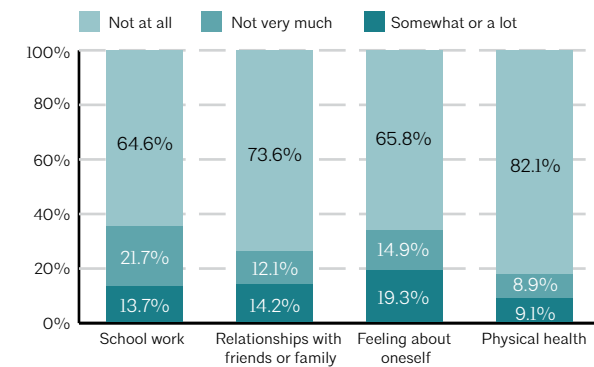
School shootings and mass shootings, 1992/93 through 2014/15



- **Mass school shootings**
4 or more victims killed excluding the assailant, by firearms at a school
- **Multiple-victim school shootings**
4 or more victims and at least 2 killed, excluding the assailant, by firearms at a school
- **Fatal school shootings**
At least 1 individual killed by firearms at a school

Data source: James Alan Fox and Emma E. Fridel, "The Three R's of School Shootings: Risk, Readiness, and Response." in H. Shapiro, ed., *The Wiley Handbook on Violence in Education: Frms, Factors, and Preventions*, New York: Wiley/Blackwell Publishers, June 2018

Among students ages 12–18 who reported being bullied at school during the school year, percentage reporting that bullying had varying degrees of negative effect on various aspects of their life, by aspect of life affected: 2015



NOTE: "At school" includes in the school building, on school property, on a school bus, and going to and from school. Detail may not sum to totals because of rounding.

Data source: U.S. Department of Justice, Bureau of Justice Statistics, School Crime Supplement (SCS) to the National Crime Victimization Survey, 2015

Getting to work

The conference broke up into three working groups to consider school safety through the lenses of CPTED, Mental Health, and Community and Pedagogy, respectively. We began with introductory remarks from student survivors of the Parkland shooting, along with those of mental health experts, architects, and law enforcement officials.

They began by posing questions:

- Beyond gun violence, how can design address student issues like bullying, teen suicide, substance abuse, and mental health challenges?
- How can educational architecture support emotional growth and relationships among students, educators, and school staff?
- How can design that supports CPTED principles address a holistic approach?
- What roles do setting and socioeconomic status play in the way communities interact with their school buildings? For example, some studies have shown inner city communities to be more comfortable with metal detectors.
- The majority of school shootings are perpetrated by students, faculty, and staff. What can designers do to address threats that are internal, not external?
- What sort of environments do you need in place to teach leadership? And how do schools provide a home for students where they feel energized, inspired, seen, heard, and loved?



Welcome!

THANK YOU for COMING!
We have a multi-disciplinary group

THIS IS A CRITICAL MOMENT

THIS CAN BE A TIPPING POINT for how we DESIGN SCHOOLS!

SAFETY & SECURITY SUMMIT

Educators	Mental Health	Law Enforcement	Student
<p>PERSPECTIVE</p> <p>Sharing our stories is how we will affect change</p> <p>WE'VE HAD 2 SHOOTINGS</p> <p>SYSTEMS We talked but didn't make changes UNTIL the 2ND ONE</p> <p>WITHIN 2 HRS evacuated</p> <p>HOW WE CHANGED</p> <ul style="list-style-type: none"> SINGLE POINT OF ENTRY I.D. SYSTEM PRACTICE ARMED INTRUDER TRAINING - RUN, NOT HIDE! FIRST AID TRAINING FOCUS ON MENTAL HEALTH EMOTIONAL HEALTH for ALL STAFF <p>MODERNIZING ARE HARD TO FIND for SAFETY.</p> <p>HEALING TAKES TIME!</p> <p>INVOLVE those who went through it in ongoing DECISIONS!</p> <p>SCHOOL SAFETY IS A DEFINING ISSUE. WE HAVE to ENGAGE! WE HAVE a RESPONSIBILITY! BEYOND ADVISORS to being ENGAGED!</p>	<p>PERSPECTIVE</p> <p>Prepare for the EVERYDAY ISSUES that can build to CRISIS EVENTS.</p> <p>1 out of 10 STUDENTS ARE EXPERIENCING</p> <p>CAN LEAD to DROP-OUTS, even SUICIDES. UNTREATED LESS-SEVERE CONDITIONS can WORSEN.</p> <p>ACES ADVERSE CHILDHOOD EXPERIENCES</p> <p>I feel safe AND engaged</p> <p>Don't turn schools into PRISONS... CONSIDER how SECURITY AFFECTS mental health. STUDENT VOICE</p> <p>MASLOW BUILDING BLOCKS FOR SUCCESS</p> <p>Hear students & staff PERSPECTIVES</p> <p>GPTED Where security cams are PLACED</p> <p>APP for PRINCIPALS</p> <p>MULTI-TIERED APPROACH</p> <ol style="list-style-type: none"> 1. Observe DATA 2. Team Structures 3. Impact SUSTAINABILITY <p>YOUTH CALL to ACTION</p> <p>SAFETY = RELATIONSHIPS</p> <p>emotionally & physically safe</p> <p>WHOLE LEARNER</p>	<p>PERSPECTIVE</p> <p>NASRO Same question in calls "SHOULD SROs be ARMED?"</p> <p>Need to define: SWORN, CERTIFIED OFFICER - SELECTED & TRAINED</p> <p>GOAL: BRIDGE GAP BETWEEN law enforcement and students</p> <p>TARGET HARDENING NEEDS TO INVOLVE TRAINED SROs</p> <p>CRIME TRIANGLE CONVEX MIRRORS helpful</p> <p>WE LOOKED AT TRESPASSING open gates, HIGH RECEPTION DESK, EXTERIOR DOOR ALARM</p> <p>COLLABORATION: WORKING TOGETHER TO MAKE SCHOOLS SAFER</p> <p>Mom, you go run your errands AFTER SCHOOL</p> <p>I'll stay here and you can pick me up</p> <p>ENGAGED STUDENTS</p> <p>INTERPERSONAL COMPETENCIES: LEADERSHIP & LEARNING</p> <p>Example of a student who feels safe</p>	<p>PERSPECTIVE</p> <p>FEB 14 CHANGED MY LIFE I LOST MY FRIENDS</p> <p>#whatif VIDEOS</p> <p>EXTRA SECURITY MADE US FEEL LIKE we were in a PRISON</p> <p>SECURITY COMES FROM THE HEART</p> <p>17 DEATHS... not just a number.</p> <p>SAFE... RESPECTED & CARED FOR</p> <p>STOPPING SCHOOL SHOOTINGS BEGINS WITH GUN VIOLENCE PREVENTION.</p> <p>Not just about School WALLS & GLASS.</p> <p>SCHOOLS FACE Challenges</p> <p>CRIME PREVENTION: BETTER CONTROL & SURVEILLANCE</p> <p>MENTAL HEALTH</p> <p>Make counseling more FRONT & CENTER</p> <p>BOTH HARD & SOFT SUPPORT COMMUNITIES & CULTURES OF CARE</p> <p>CRIME PREVENTION: BETTER CONTROL & SURVEILLANCE</p> <p>MENTAL HEALTH</p> <p>Make counseling more FRONT & CENTER</p> <p>BOTH HARD & SOFT SUPPORT COMMUNITIES & CULTURES OF CARE</p> <p>CRIME PREVENTION: BETTER CONTROL & SURVEILLANCE</p> <p>MENTAL HEALTH</p> <p>Make counseling more FRONT & CENTER</p> <p>BOTH HARD & SOFT SUPPORT COMMUNITIES & CULTURES OF CARE</p>

WHY we're HERE

Architect PERSPECTIVE

WE WANT TO MAKE OUR RECOMMENDATIONS & GUIDELINES for the **PHYSICAL DESIGN OF SCHOOLS** that include:

Design Incorporating

- Mental Health
- Next-Gen Pedagogy & Community
- STUDIES & STATISTICS RURAL vs URBAN differences
- CRIME PREVENTION: BETTER CONTROL & SURVEILLANCE
- MENTAL HEALTH
- Make counseling more FRONT & CENTER
- BOTH HARD & SOFT SUPPORT COMMUNITIES & CULTURES OF CARE**

OPTED Principles

CRIME PREVENTION: BETTER CONTROL & SURVEILLANCE

MENTAL HEALTH

Make counseling more FRONT & CENTER

BOTH HARD & SOFT SUPPORT COMMUNITIES & CULTURES OF CARE

ENGAGED STUDENTS

INTERPERSONAL COMPETENCIES: LEADERSHIP & LEARNING

Working group on CPTED and Code Enforcement

Since the 1970s, architects and designers have addressed safety using Crime Prevention Through Environmental Design (CPTED). The International CPTED Association describes the method as a “multi-disciplinary approach for reducing crime through urban and environmental design and the management and use of built environments.”

Essentially, CPTED reduces victimization, deters decisions that precede criminal acts, and builds and maintains a sense of community. CPTED principles apply to new and existing schools, helping architects and designers seamlessly integrate features that increase safety and security for children across communities.

The working group on CPTED and code enforcement convened to develop a set of recommendations and guidelines for safe school campus design. The guidelines consider a combination of CPTED principles, fire and life safety codes, and law enforcement efforts.

The group discussion started with a review of CPTED principles:

- natural surveillance: keep areas well-lit, eliminate hidden spots, use direct line-of-site supervision
- territorial reinforcement: implement natural perimeter barriers, earth berms, and landscaping
- access control: curb and landscape to direct car and foot traffic into a visible area at a controlled point of entry
- maintenance: create a well-maintained environment, communicating that people care about what happens in the area

The group explored the many considerations beyond safety that architects and designers must contemplate with CPTED. “Visible security methods are important, but we can support these with less invasive solutions,” said Barrera. “It is important to reduce visible reminders that there is something to fear.”

Discussing overall challenges

The group broke into two smaller groups to explore some of the challenges surrounding effective CPTED. They shared their observations and experiences on the following topics:

Transparency versus distraction

The groups extensively discussed and debated transparency and potential distraction. For instance, what are the advantages and disadvantages of “glass walls” and large open spaces in schools? Participants noted that interior glazing allows for passive supervision of hallways where bullying often takes place. The clear lines of sight provided by interior glass can also be seen as a risk to students. This can be balanced by creating areas of refuge inside classrooms, in L-shaped classrooms for example, where students can gather and not be seen.

To prevent distractions around glass walls and open spaces, participants suggested a feasible solution: If only the upper portions of classroom walls are transparent, or glazing is easily obscured, students aren’t distracted when they’re seated.

Some group members who had experience with glass walls in classrooms pointed out that students typically adjust within weeks to being in a new environment—therefore these features aren’t very distracting at all. However, while glass walls contribute to safer environments, the teachers and students aren’t responsible for monitoring or patrolling activity in the halls while they are in the classroom.

Participants made other pertinent points, including:

- Connectiveness is a key philosophical idea behind glass walls, and creating connections is a factor in school climate that plays a role in many instructional models.
- “Treehouses”—or breakout spaces—can help create more intimate, focused learning spaces.
- Jointly owned spaces make sense for learning environments.

- Although schools are primarily designed for students, they often also serve as community or adult learning centers.
- There must be a balance between safety and security, and a school’s primary role is educating and inspiring future generations.

Retrofitting older schools

Because older schools were designed when security from violence wasn’t a priority, renovating existing schools presents a significant challenge. The groups discussed the following points:

- Many older schools have blind spots and a general lack of visibility. Nooks, closets, and small rooms call for more transparency and security.
- There should be a clear line of sight from the front office to the main entryway as well as a transitional space beyond the front entrance.
- Budget considerations will impact efforts to renovate older buildings. Even seemingly simple solutions such as changing out locks can be expensive.

Target hardening and softening

Target hardening is a process by which a building is made into a less attractive target for attack. An extreme example would be an impenetrable bunker, while a more common example is metal detectors.

Target hardening requires extensive consideration in school design. For instance, studies find that metal detectors are negatively correlated with students’ sense of safety in school and do not have a strong correlation with reducing levels of school violence. However, the negative association between metal detectors and urban students’ sense of safety is 13 percent less than that of students attending suburban or rural schools. (Gastic, Billie, Education and Urban Society, 2010) CPTED group members agreed that security measures and features shouldn’t make the school look like a prison. If security measures make students feel insecure—as metal detectors often do, for

example—more harm than benefit may result. Alyssa Goldfarb and Haley Stav shared their perspective on some of the ways in which their community has been affected by the shooting. “Students were afraid to go back ... [When the school re-opened], returning students felt like they were being punished for a crime they didn’t commit. It’s like walking through a prison. How can we be expected to learn when we’re in a setting that is so uncomfortable?”

Schools should be safe but also welcoming—places where students can feel comfortable, relaxed, and have positive experiences. Luckily, many measures that subtly increase security immensely. For example, all doors should be able to be closed and locked from the inside—school faculty shouldn’t have to find or retrieve keys for different doors during an emergency. And, if feasible, each room should also have two exits—even if one of those exits leads to another room.

Participants covered some points often overlooked in target hardening discussions, including:

- It is a good idea to involve students in school design.
- Security isn’t a one-time effort; schools should monitor and change security as needed.
- Because every school is different, it’s important to avoid adopting a checklist mentality. Architects have worked with school communities across the country in response to repeated acts of deadly violence targeting students and educators. It is important that they act as facilitators of these discussions to ensure site-specific strategies are employed.
- The school building should present a welcoming appearance to the community.
- Fire alarm systems can be used against a building’s inhabitants during active shooter events. We need to follow National Fire Prevention Association standards and consider alternatives such as voice alarms, staged evacuations, zoned alarms, and others. (See NFPA codes and standards at www.nfpa.org/Codes-and-Standards.)

Identifying top challenges

After the subgroup and general discussions, facilitators asked the group members to identify their choices for the top CPTED challenges. The issues that received the most “votes” included:

- creating a single point of entry with multiple points of egress
- working within a limited budget for new buildings and retrofitting existing buildings to comply with CPTED principles
- implementing classroom door locks that require a key to open from the outside but not from the inside
- creating an exterior that is a welcoming community asset
- avoiding a checklist mentality
- building a community with natural surveillance
- opening sightlines with glass walls and windows while providing areas of refuge and minimizing distractions
- creating transitional spaces beyond the entry
- avoiding isolated spaces
- establishing community engagement that is meaningful, reasonable, and sustainable
- keeping unauthorized visitors out of the building during high-traffic times when doors are unlocked or someone may hold a door open for them

Identifying key opportunities

After discussing the challenges associated with CPTED, the working group looked for ways to overcome them. Regardless of what security features may be appropriate and necessary, schools must use designs that make students feel welcome and safe—designs that soften, not physically harden, the secure environment. There is not a choice to be made between the interventional strategies of CPTED and the more curative strategies of addressing mental health and communities of care. We can and should have both.

Architects must listen to school faculty and community members alike. Because design expands beyond the buildings, the campus should present a welcoming presence that is harmonious with the surrounding community. For instance, gardens, trees, and shrubs increase security, but they also serve an aesthetic purpose.

Architects and designers should ask practical questions as they brainstorm appropriate security measures: How do students use the school? Will an intruder be able to move quickly throughout the building? Answers to these questions will inform factors like the school’s size as well as which areas should be compartmentalized and closed during emergencies.

Other noteworthy takeaways include:

- Establish counseling offices away from the administration area so students can speak to a counselor without feeling like they’re being watched. Rethink the size and location of waiting areas to maximize safety and minimize visual access to classrooms.
- Support CPTED effectiveness research.
- Design and create open, airy spaces with more natural light.
- Design buildings for a diverse population. Diversity of environmental conditions creates a sense of welcome.

Letting kids be kids

The group stressed how important it is to keep the burden of safety and security off children’s shoulders. Architects can help ensure that students are free to learn, grow, and socialize by designing minimally visible security measures and ensuring that teachers and administrators have the tools to keep the campus safe.

Participants

- Student Marjory Stoneman Douglas High School
- Manager of Government Affairs and Public Policy Illuminating Engineering Society
- Senior Associate Stantec
- Executive Director Secure Schools Alliance
- Government Manager National Electrical Manufacturers Association
- Educator Washington County Public Schools-Northern Middle School
- Executive Director National Association of School Resource Officers
- Senior Fire Protection Specialist National Fire Protection Association
- Former Superintendent of Schools for Newtown Public Schools The School Superintendents Association
- Coordinator, Prevention Services NASP/Louden County Public Schools
- Co-Founder/Executive Director Safe and Sound Schools
- Sandy Hook Principal Sandy Hook Elem. School
- Speaker and Professional Contributor Safe & Secure Schools
- Scribe
- Manager, Federal Relations The American Institute of Architects
- School Psychologist Marana Unified School District
- Educator Sandy Hook Elem. School
- Fire-based EMS Specialist International Association of Fire Fighters
- VP of Media & Community Engagement National Association of Independent Schools
- Project Manager GWWO, Inc.

- Specialist, Federal Relations The American Institute of Architects
- Sr. Director, Codes and Standards Policy The American Institute of Architects
- Chief Technology and Innovation Ablemarle Co Va
- Student Marjory Stoneman Douglas High School
- Program Director National Institute of Building Sciences
- Principal Integrus Architecture CAE Foundation
- Vice President, Government Relations, Planning and Operations International Code Council

Moderators

- Diego Barrera, AIA, ALEP, LEED Green Assoc.; Stantec
- Brian Minnich, AIA, LEED AP BD+C; GWWO Architects

Working group on Mental Health

In their introductory remarks to the symposium, two mental health experts laid the groundwork for our working group’s discussion of mental health in schools.

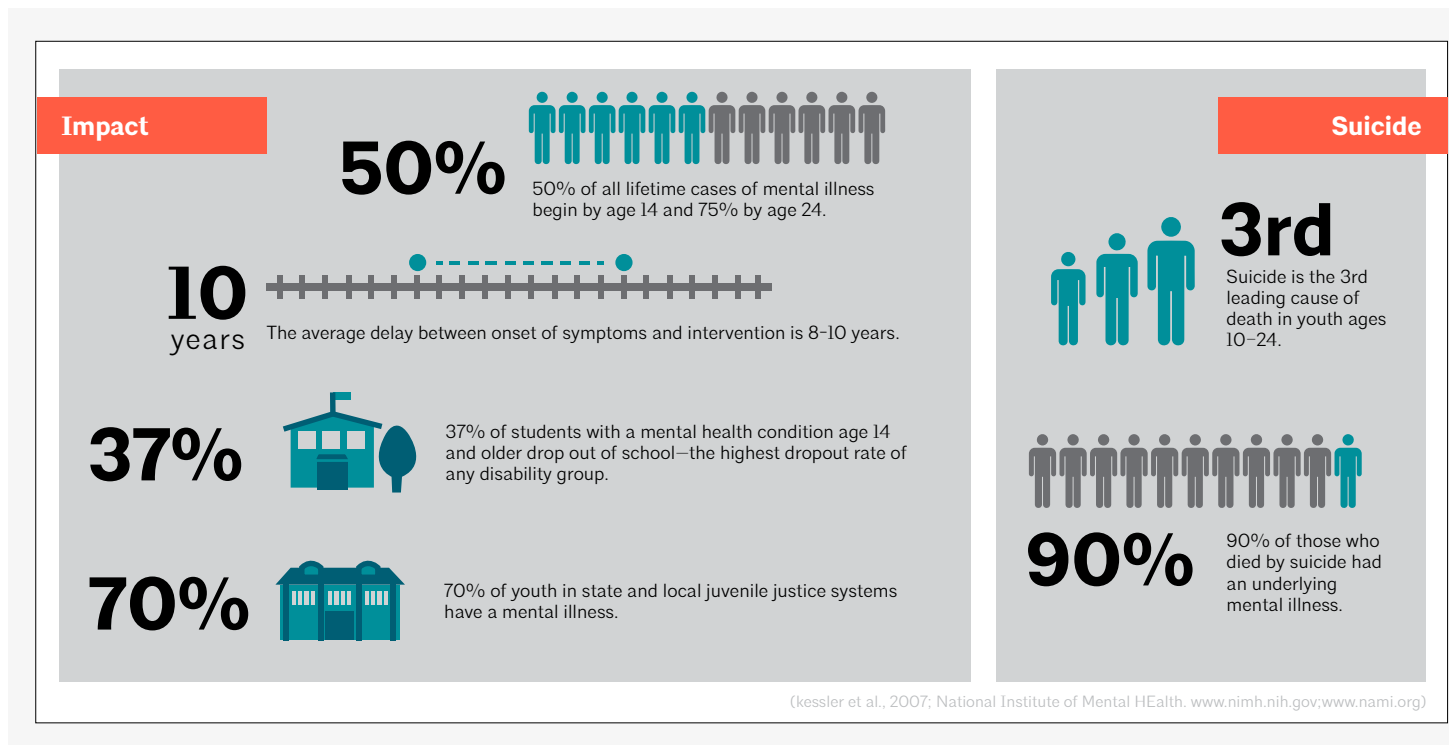
Catherine Bradshaw, Ph.D., M.Ed., professor and associate dean of the Curry School of Education at the University of Virginia, conducts research on mental health and school safety. Bradshaw made the case for seeing social and emotional wellness as part of student safety. Issues of trauma are not unique to school shootings—statistically, students are safer at school than they are in their own homes.

However, vulnerabilities in terms of mental health are pervasive, can impact the ability to learn, and can even lead to school violence. Mental health problems are far more prevalent in schools than most people realize.

The experts presented a range of supporting statistics:

- One in five students ages 13–18 has or will develop a serious mental illness.
- 37 percent of students with mental illness drop out of school.
- 70 percent of youth in the criminal justice system suffer from mental illness.

- Suicide is the third highest cause of death among individuals ages 14–24.
- Most varieties of mental illness set in before age 20.
- Adverse Childhood Experiences (ACEs), which encompass abuse, neglect, and household dysfunction, affect one in five children.
- 67 percent of the US population has suffered at least one ACE, and one in eight people have experienced more than four.
- ACEs impede brain development, impair social and emotional development, and increase vulnerability to disease.
- For those with four or more ACEs in their history, life expectancy can drop by as much as 20 years.
- Trauma affects how students might cope in school, sometimes leading to mood disorders or behavior or conduct problems, manifested in aggressive behavior and anxiety disorders.



Schools are well-placed to identify and mitigate mental health issues. Roughly half of all mental health problems have already set in by the age of 14, and 75 percent manifest by the age of 24. Identifying mental health issues when they begin to emerge is critical to prevention, and schools can play a very important role in recognizing these issues early. Often, mental health disorders don’t get diagnosed until long after symptoms like aggression or depression have emerged.

We can design a school setting that is sensitive to vulnerable children, whether they are on the autism spectrum; suffer from attention-deficit/hyperactivity disorder (ADHD); or are anxious, depressed, or traumatized.

For children with special needs, we need to consider different types of stimuli and lighting that impact mood, sensitivity, and focus. Similarly, children with ADHD who are susceptible to lack of focus may be adversely distracted in a big, open school environment. Additionally, trauma determines how people react to their environment, and emerging research shows that ACEs underline biological reactivity to the environment.

For example, kids with trauma may react to a loud noise violently because they are accustomed to danger in their community and their fight-or-flight response kicks in.

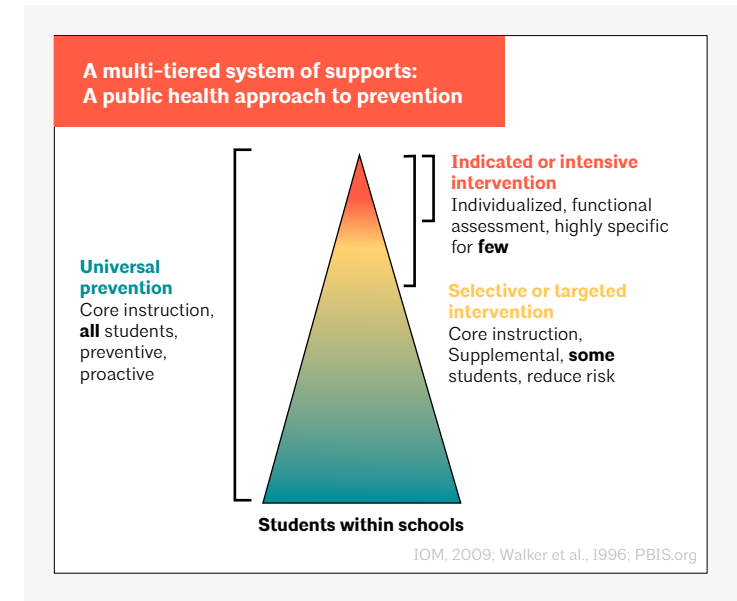
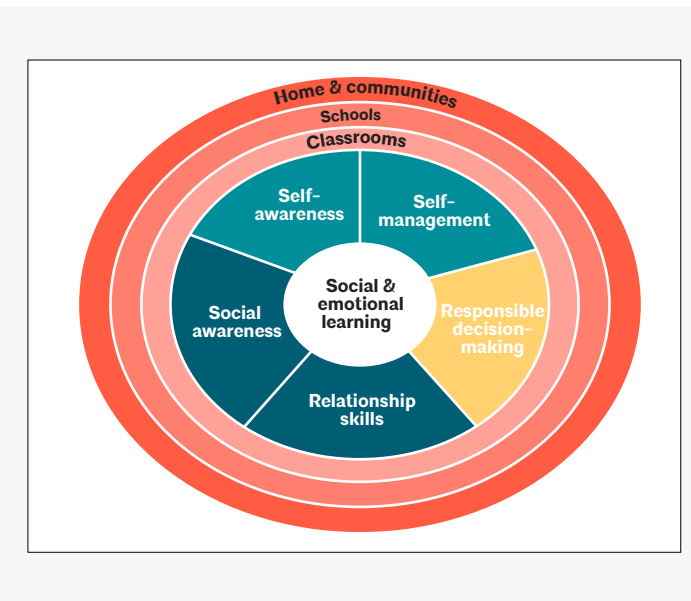
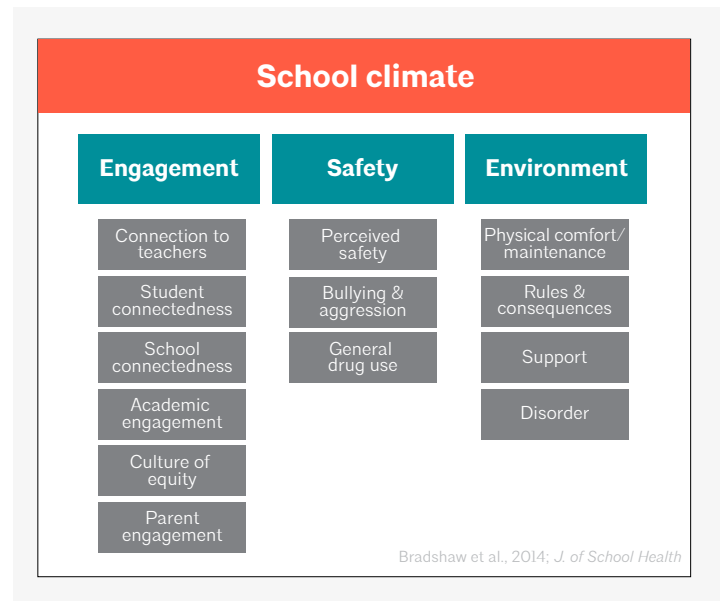
Teachers need to be able to customize classrooms for varied learning needs, and they also need to be able to secure them. These different opportunities within the learning environments can ensure that children are using effective strategies—for example, exercise or self-expression—for stress management instead of maladaptive ones, like drugs or violence.

In building learning spaces, we should consider Maslow’s hierarchy of needs and how safety, support, and belonging form the foundation for self-actualization. In other words, if students are going to thrive as learners and later as citizens, they need to feel engaged, they need to feel safe, and they need to have a supportive environment. Bradshaw suggested several tools for generating evidence-based solutions:

- School Assessment for Environmental Typology (SAfETy) is a tool for independent observers who go into schools with handheld devices to assess different key features that are consistent with Crime Prevention Through Environmental Design (CPTED) and the Neighborhood Inventory for Environmental Typology (NIFTy).
- The Collaborative for Academic, Social, and Emotional Learning (CASEL) is an evidence-based approach to encourage social-emotional learning. Working together, schools and communities support self-awareness, self-management, social awareness, relationship skills, and responsible decision-making.
- Multi-tiered Systems of Supports (MTSS) is a well-tested approach to preventative care in the world of public health, encompassing a strategy of health education for all, targeted interventions for students who are somewhat at risk, and wraparound services for those in the highest risk group.

Jacqueline Jodl, executive director of the Commission on Social, Emotional, and Academic Development at The Aspen Institute, offered an overview of her work with the commission, which comprises educators, scientists, academics, family members, and students. Its preventive, complex, and multifaceted approach is driven by the students in its group.

During the past two years the commission developed a set of recommendations for the research, policy, and practice necessary to create a safe and supportive learning environment. These recommendations have been published as the Youth Call to Action (YCA), which covers the physical dimensions of safety in terms of a school building where people can live and learn but also emphasizes safety in terms of relationships.



Some topics discussed include:

- Learning does not happen in the absence of emotion, as neuroscientist, psychologist, and educator Mary Helen Immordino-Yang has observed. Social and emotional learning and cognitive development operate in tandem.
- When schools embrace and educate the whole child, this approach becomes a preventative measure.
- Children need well-developed social-emotional skills to tackle challenging academic content.
- Students should continue to be the central driver of this work.

What brought us here

The reasons people gave for attending the conference were as diverse as their backgrounds.

The psychologist voiced frustration over how few resources are available to support research on the impact of the built environment on social and emotional health in schools. Without the research, how can we say we are spending our efforts and capital on evidence-based solutions?

Architects initiated the forum out of despair over the mass shooting at Marjory Stoneman Douglas High School (MSD) in Parkland, Florida, and a desire to deploy their design skills to enhance the security and safety of educational institutions.

The lobbyist came in search of a way to reconcile demands for heightened security with a deep concern for the socio-emotional well-being of students.

The editor came with a question about how efforts towards enhancing safety and security might overlap with the need to foster equity and inclusivity in schools.

Students came to tell us how they use and perceive their learning environments, what is most important to their sense of safety, and what is most conducive to their learning. They wanted to learn about solutions that would help prevent what they experienced from happening to other students.

The nonprofit leader was dedicated to the softening of schools through societal engagement. Both the principal and the teacher were acutely worried about an uptick in stress and mental illness among their youngest students as well as among teachers.

The representative from the South Carolina Department of Education looked for ways to focus budgets and policies on solutions to mental health issues in rural and urban settings. Before beginning our discussion, we talked about the implications of the words we use to talk about security:

- The word “safe” already seems to be entering the thought process of not being safe—what about “comfortable”? For a designer, “safe” makes one think of an emergency or a fire.
- We shouldn’t conceptualize the problem in terms of dichotomies like soft versus hard, safe versus welcoming, and open versus closed. Safety can be beautiful and comfortable.
- Can something large and diverse also be flexible, personal, and humane?
- Can old structures function in new ways?

We set out to get a sense of the scope of the problems as well as the types of mental health issues participants were seeing in schools. We looked at how they were coping and the biggest challenges to helping children with problems in their schools.

Discussing challenges

A common denominator among challenges discussed: Counseling is scarce. School counselors and psychologists who participated in the summit reported the national caseload is one counselor for 400

students. “We have guidance counselors, but you can never talk to them because they are always busy,” said MSD junior Kayla Renert, who remembers seeing a student crying in front of the guidance counselor. “And the counselor said, ‘I’m so sorry, but there’s someone behind you.’”

There’s just one counselor for 817 children at the elementary school in rural Maryland, where working group participant Heather Michael is principal. Participants concluded there are not enough counselors in schools. We react to mental health crises instead of treating root causes because we lack resources for prevention and early intervention.

Like counselors, teachers don’t have time to help, Renert added. “Teachers are so stressed about getting through the curriculum that they don’t have time to make that connection with us.”

Why do these problems exist? Red tape is one reason, according to Michael. To access a psychologist or therapist with qualifications to handle severe cases, a child must fail badly. Michael gave the example of a student who hit a teacher more than 200 times before she got outside help.

Stigma around seeking support for mental health care is a problem for everyone. Even wealthy families may balk at taking their child to a mental health professional.

The discussion included additional points on mental health in schools:

- Ryan Kimble, a ninth-grade social studies teacher in Carroll County, Maryland, has observed a dramatic rise in mental health problems among his students.
- One in 30 boys and one in 50 girls is on the autism spectrum, according to Philip Poinelli, Northeast director of the Association for Learning Environments (A4LE).

- Facilities for autistic students and others who need a calm haven are inadequate, verging on inhumane. “Seclusion rooms” made available for overstimulated or violent autistic children at the Frederick County, Maryland, school Michael oversees are “tiny dark closets,” even though her school is designated as equipped to handle severely autistic children. Michael’s distress as she talked about shutting children in these rooms was evident.
- Jenine Kotob, Assoc. AIA, followed up with a story of how after a child had broken a light inside of a de-escalation room her firm had designed, the government went in and made it into “basically a box.”
- Another MSD student noted that low-income children need to find a pro bono attorney to access mental health care.

These stories fell into a common set of themes:

- The relationship between schools and their communities has broken down, alienating schools from social networks and financial support.
- Growing inequality detracts from students’ sense of belonging and identity. And testing students as a means of assessment has come to replace knowing them and understanding who they are.
- High student-teacher ratios mean students don’t feel known.
- Testing takes time away from teaching and focuses what time is left on teaching to the test, a strategy that dampens collaboration, experimentation, and creativity, and disregards unique relationships between students and teachers that are crucial to a sense of safety in the face of challenge, change, and growth.
- A toxic culture of distrust within schools leads to school environments with bars on doors and windows, evoking the school-to-prison pipeline.
- In rural settings, where there are fewer resources for mental health, challenges go as far as opioids, poverty, and firearms.

The solutions our group came up with were all about fostering relationships within the school and how design can support that effort. Notably, we did not address the possibility of lobbying for policies and budgetary support that ensures schools have enough counselors and reasonable de-escalation facilities.

Solutions

Participants proposed ways to solve mental health issues in schools:

- Students mostly rely on each other for support. “When one of us falls down, the others know how to bring us up,” MSD student Renert said. This stresses the importance of transparency to increase relationship-building.
- Empower teachers to help. “Teachers need training to learn to deal with the stressful lives that kids lead today,” Kimble said.
- Good relationships with students pay off. “The students need to be comfortable with me. I try to build good relationships where kids can come to me and discuss issues, relationships, or whatever it is that is going on,” said Kimble.
- Establish a culture that embraces schedule flexibility to allow teachers to respond to needs as they arise.
- Additional thoughts on ways to bring students and teachers together came up throughout the day:
 - Knowing the unknowns: A month into each school year, a school in Washington, D.C., holds a staff development day when pictures of each student are posted on the walls of the school. Teachers write their names under the pictures of the students they know. At the end of the day, three teachers are assigned to each of the students that no one knows.
 - Mentoring hours: Every week a teacher meets with a group of 10 students, gets to know them, interacts with them in different ways, and supports them.
 - Sensitivity to the prevalence of autism in our schools: Consider everything in the school, from the lighting to the textures of materials.

Establishing favorite places

Our breakout session shifted to a discussion about positive learning environments. Participants were asked to describe favorite places to study, learn, and teach, and there was a lot of variation.

An individual might look for different environments according to the task at hand, their mood, and the time of day. People listed cafes, couches, outdoor spaces, indoor spaces, spaces with gentle music or ambient sound, and silent places. Some common themes:

- Most people preferred open spaces and liked to have room to spread out.
- People sought natural light or nice artificial light.
- Some liked to stand up and move around while they were studying or working.
- Libraries and reading rooms, with the presence of books and other readers, heightened a person’s sense of purpose, focus, and determination.
- Even with less emphasis on books and more reliance on digital media in schools today, libraries and reading rooms remain relevant. As with MSD student Amy Luo’s use of Facetime, the sense of being “alone together” helped people focus and feel accountable.

Importantly, MSD students gave personal examples of how they learn. “In school I’ve had to figure out my best way of learning,” Luo said. “If I am still trying to understand a challenging topic, I can’t be with anyone. If it’s a class that’s not too intensive, I’m able to deal with other people.” For Renert, both learning and studying were contingent on imagery. “I’m a very visual person,” Renert said.

Students also noted using virtual spaces to support their work. Luo said she and her friends sometimes Facetime each other while doing their homework and don’t talk or really interact. Just being aware of each other working helps keep them focused and accountable.

What can we draw from this when it comes to building environments that are conducive to education? Poinelli of A4LE, pointed out that the spaces we need are seemingly infinite—unique to each individual and in constant flux according to the activity at hand and the time of day. The solution, according to architect and former AIA CAE Chair John Dale, FAIA, lies in building spaces as adaptable as the people inhabiting them.

“People adapt their environment or adapt themselves,” said Dale. “We need flexibility that is different from the ’70s. We need to be nimble.”

Later in the discussion, teacher Ryan Kimble illustrated this point, bringing up the model of the “flipped classroom” which turns conventional ideas about what’s supposed to happen on their heads. In a class that has been flipped, students take in new material—for example, watching online lectures or reading text posted to a class portal—on their own time. Class time is used for active learning, peer learning, and hands-on opportunities to go deeper and put new knowledge to the test.

Creating safe classrooms

“Safety isn’t just physical,” said Bradshaw, the psychologist. “Safe means that we are emotionally protected as well.”

Comfortable, open relationships are crucial to students’ sense of safety. Throughout our conversations, students who had survived the massacre at MSD placed great emphasis on the importance of being known.

“It all goes back to the students’ connection with the teacher,” Renert said.

The physical attributes of a space play a role in determining the kinds of relationships that students and educators had with each other and among themselves.

Kimble, frustrated with how bored his ninth graders seemed with a conventional approach to his social studies curriculum, decided to use a flipped classroom, transforming it into a space where his students could collaborate and apply material they’d learned on their own time. The classroom furniture—mostly single-armed desks brought in not long after the school was built in 1959—presented a barrier to the kind of work students needed to do. So Kimble removed them.

“I took my mother-in-law’s old kitchen table, a bench, and some chairs, and set them up in my classroom,” he said. “This allowed me the flexibility I needed to do collaborative and innovative learning.”

Ryan and two fellow teachers also set up a larger seminar room to share when they needed a larger space. These changes, initiated by teachers and costing next to nothing, built connections that paid off academically and emotionally.

“When I flipped my classroom, it allowed me to spend less time talking at kids and more time speaking with kids,” Kimble explained. “During check-ins on assignments and projects, kids and I talked more about how they are doing; what was going on with other classes; and how they were doing with band, sports, drama. Now the kids know that I care more about them and not just about what they know. Now they work harder for me because they know I care.”

- Like Kimble, every educator in the room said they were dealing with very limited resources for improvement of their schools.
- Architects experienced in working with tight budgets in old buildings responded again with a call for adaptability and flexibility, whether in existing or new buildings.
- Even a state-of-the-art high school—which currently costs over \$100 million to build in the Washington, D.C., area—would be out of date within few years if it were not built with an inherent adaptability to allow for future change.

- “Ad hoc adaptation should be part of the process,” said AIA President Carl Elefante, FAIA. “Designers should take guerilla activities in schools into account. They should look at what students are doing—if they’re hanging out in that corner by the stairwell, let’s put furniture there.”

Beyond the classroom

There are days though, MSD’s Renert pointed out, when a student is not up for group work. Indeed, past AIA CAE Chair Caroline Lobo, AIA, of suoLL said there are times when students have a very long way to go before they are ready to learn. Children come to school hungry, upset, sleep-deprived, and with untreated mental health problems, addictions, learning differences, and physical disabilities.

We discussed how schools react to these issues and how design could assist in reinforcing a child’s sense of belonging, identity, and comfort. We also learned how some of the issues, with help from thoughtful designers, could become opportunities to connect with and leverage local communities.

Safe havens

JoAnn Bartoletti, executive director of the National Association of Secondary School Principals, spoke of how the nurse’s room could be a sanctuary for sick kids but wondered what sort of space schools should provide for kids who were anxious or stressed.

Sandy Hook head custodian Kevin Anzellotti described how three or four mental health rooms were scattered through different “neighborhoods” of their school. Architect Abby Dacey, AIA, said her firm designed a transparent suite of counseling offices at the center of a school. The design was intended to do away with stigmas around mental health by opening up the counseling process to the school and vice versa. After a suicide at the school, the school’s president wrote a letter to Dacey’s firm thanking the architects for an arrangement that allowed for visual connections between staff and students during a hard time.

Yet others found such transparency around private emotions to be a jarring infringement on privacy. Both the students from MSD spoke of feeling uncomfortable when they saw other students crying at counseling sessions held behind a glass partition at their school. “When kids have a need for one-on-one conversations, they need spaces where they don’t feel singled out,” Lobo of suoLL pointed out. These spaces could be transparent but coupled with more enclosed, private areas for sensitive conversations.

Poinelli has seen schools get around the problem of students feeling singled out by creating small multipurpose rooms that could be used for mental health, academic advising, or college counseling. Sandy Hook’s Anzellotti described how the school makes use of hallways to give children time alone or to interact with them one-on-one. At one end of each Sandy Hook hallway is a treehouse where children can feel cozy and protected; at the other there is seating on a window ledge where students can look out over the landscape while discussing difficult feelings or issues.

Such a space, Michael said, could also be outdoors, given the strong correlation between nature and mental well-being. “Outdoor space is so undervalued,” Michael said. “We need safe, contained outdoor spaces.”

Building identity and belonging within the school

While safe havens are important when a child is in crisis, it is not sustainable or helpful to keep students isolated over time. Participants discussed ways to restore a nurturing community to students and educators struggling with social and emotional issues. Key to this was giving children a sense of identity and belonging, no matter the size of their school or the age range of its students. Design can support this process by providing an appropriate sense of scale.

Recommendations to foster belonging

- Architects can break down schools into self-contained neighborhoods or ecosystems, separated spatially and identified with distinct colors, student murals, or logos.

- Within each neighborhood, there should be spacious hallways with room for students to circulate and interact with each other as well as with adults.
- There should also be private or semiprivate spaces for students to seek counseling or just be alone.
- The whole school should adhere to universal design principles to avoid alienating anyone.
- Students should see themselves in their school. Pictures of students and role models who look like them, inspirational quotes, and student work should be posted on the walls.

Bringing in the community

Students in schools with robust community participation thrive. When communities feel ownership of a school, they are far more likely to care for and protect it. Like close neighbors, they’re also more likely to notice when something is wrong.

Participants discussed ways to leverage needs within the community to bring families into the school building and help students come to class healthy, well-fed, and cared for:

- Build school entryways that are welcoming, with comfortable seating.
- Place windows from hallways into classrooms so that parents can observe their children in class.
- Install laundry rooms for family use in school buildings.
- Build bathing facilities and make basics like shampoo, soap, and toothpaste available to students.
- Give families access to athletic playing fields, gyms, and media centers. And give parents access to counseling and parenting classes.
- Provide internet facilities to families who could use them to do homework, job hunt, view student transcripts, or research opportunities for higher education.

- Allow the community to participate in the beautification of school grounds, helping with cleanup, planting, and possibly even creating vegetable gardens.

Still, there is an important distinction between letting a school community in and letting just anyone in. While some communities may reject a secure perimeter, others will welcome it.

Ryan Brown, chief communications officer of the South Carolina Department of Education, said his state has prioritized hardening school exteriors, employing such features as moats to enforce school perimeters and moving play areas to protected spaces. In Washington, D.C., where gang violence is a problem, communities welcome perimeter security, even metal detectors.

However, in Santa Monica, California, one school community rejected a proposal for a more strictly secured perimeter around its high school, fearing it would undermine the sense of an open campus.

The topic of security continued:

- Technology may offer some alternate solutions for enhancing security. Some schools have gotten around the sense of distrust implied by student access cards by using software that gives students useful, personalized messages each time they swipe, letting them know they have an overdue library book or that someone is looking for them.
- Studies have shown that outdoor surveillance cameras are more acceptable to students than indoor security cameras. While outdoor cameras provide a sense of security, indoor cameras can make kids feel they are being spied on. Bradshaw has found further evidence that students were more comfortable with less obvious surveillance technology within the school. (See: “Assessing the association between observed school disorganization and school violence: Implications for school climate interventions” at psycnet.apa.org/record/2016-16663-001.)

-
- Principal Michael worried about giving parents windows into classrooms because they could take videos on their phones and share them online, infringing on the privacy of other students.
 - Sandy Hook's Anzellotti saw parent presence as an asset, since the intensity of volunteer work at the school strengthens the sense of community.

Participants

- students from Marjory Stoneman Douglas High School
- a teacher, a principal, and the head custodian from Sandy Hook Elementary School
- architects
- the director of a lobbyist organization, the National Association of Secondary Principals
- a representative from the South Carolina Department of Education
- a research psychologist
- the head of a trade organization for educational product-makers, a nonprofit organization that advises on learning environments
- the editor of School Administrator, the magazine of The School Superintendents Association (AASA)

Moderators

- John Dale, FAIA, LEED AP; HED
- Judith Hoskens, REFP, LEED AP; Cuningham Group Architecture, Inc.

Working group on Pedagogy and Community

Group discussion

The group considered school safety issues through the lens of design that supports forward-leaning teaching and learning practices, creates a sense of community, and builds a culture of care in schools. Participants shared their perspectives on school safety regarding community and pedagogy. The discussion focused heavily on community aspects with less emphasis on pedagogical strategies, although they are intertwined.

Participants discussed several key factors involved in developing community to design safer schools:

- community ownership of violence prevention
- addressing mental health and mind-body wellness in schools
- community involvement in the design process
- creating safe, community-focused spaces

Another area that the group touched on was socioeconomic factors at play in school violence and safety. Much of the group conversation was framed within the context of suburban schools, particularly high schools. Participants noted that most of the high-profile incidents of school violence that is driving much of the school violence conversation occur in suburban middle-class communities.

However, the group pointed out that urban communities can't be excluded from the conversation, as they often deal with alarmingly high numbers of violent acts. These communities may have very different needs and wants than those with different socioeconomic statuses.

Community ownership of violence prevention

Preventing school violence is not about metal detectors or security—it's about training students and the community to know what signs to look for. The group recommended the following actions:

- There should be community understanding that students, teachers, and parents who see something that concerns them should feel compelled to speak up about it. This sense of shared accountability is critical. The use of transparency and creation of informal gathering areas to promote relationship building and increased connections will help nurture this sense of shared accountability.
- Commit to prevention training and teaching students they are an empowered part of a community.
- Multiple people should have mental health training: school resource officers, principals, teachers, counselors, and others.
- Person-to-person (student/teacher, student/student) relationships are critical for students because they signal that someone takes an interest in them.
- Strategies to identify students who may feel isolated are critical. For example, a school staff activity where teachers and staff review student names, identify students they know, and focus on students they don't know.
- Involve parents.

Addressing mental health and mind-body wellness in school

There's a need to increase mental health services for students in high school. Their overall stress level is high, and this crisis needs to be addressed through advocacy and increased awareness.

Participants emphasized that we need to build mental health services into the curriculum and legislate for school support for mental health. New York and Virginia are the only states to have mandated this through legislation. Part of this advocacy is a matter of building awareness in the community to destigmatize mental health care in schools. It's not enough to simply provide services. We need to educate the community, make services welcoming, and develop a protocol that encourages use of services.

We must also advocate for funding and policies that bring more mental health resources into communities and schools. Educational curricula focus on physical health objectives, but why isn't there a similar curriculum developed for mental health?

Giving students access to counselors is important, but situate counselors away from the administration's offices, and provide access to mind-body wellness tools. The separation of discipline and providers of care is critical. Keep in mind that "counseling" can mean both academic/guidance counseling as well as mental health and wellness counseling. Be mindful of the perception versus reality and the traditional definition of counseling versus what is needed. Perhaps this dual function can afford students privacy while ensuring that students see counselors as readily available resources.

The location of counselors closer to student gathering spaces also helps those charged with the mental health of students to have more regular interactions with them, particularly when they are not in crisis. Perhaps this dual function can afford students privacy while ensuring that students see counselors as readily available resources. The location of counselors closer to student gathering spaces also helps those charged with the mental health of students to have more regular interactions with them, particularly when they are not in crisis.

Many students feel more comfortable with teachers or coaches, rather than counselors. Students are less likely to share with counselors they don't know than with trusted teachers. Build community so that everyone who crosses the threshold of a school can say, "I'm seen, I'm known, someone here cares about me."

Lastly, there needs to be a conversation about supporting teachers, both mentally and professionally. Professional development around providing emotional care and support of students is as necessary as the training in traumatic wound care.

Community involvement in the design process

Communities need to be partners in design. When discussing design, we need to discuss process. The conversation needs to start not with the design, but with questions such as, “What do we care about? What is the vision for place?” Students and their families should take pride in being co-owners and co-designers of their school.

Familiarity breeds comfort. Engage students and the community in the process—for example, by creating the artwork that is used in the building. Let students help design spaces for students. Students want “an Instagram-worthy classroom, not white walls and a ‘You can do it’ poster,” said MSD student Kayla Goldfarb.

We need to provide students with choices: more collaborative spaces, more breakout spaces, and various settings for different learning styles, activities and group structures. Students should be more in charge of their learning versus the traditional classroom model.

First impressions matter, Goldfarb said. How you set the stage will impact everyone from there on out. Anything that can trigger a wrong impression will stay with students for a while.

In one example, students shared that they didn’t want lockers; they wanted lounges and charging bars and shared spaces. Students didn’t want hushed libraries; they wanted gathering spaces for group work. Students will tell you what they want: Be courageous enough to listen to them.

Architects too often get discouraged from creating rich, comforting spaces. This doesn’t serve occupants well, neither students in education settings or adults in office spaces. Employ principles of biophilia to create rich, colorful, textured spaces.

- Addressing community spaces needs to start before high school—in middle school facilities or earlier, if possible. Create spaces in primary and adjacent environments where students can be seen, as they need to have a visual connection with each other.

Design strategies for safety and community engagement

In this discussion, we looked for concrete measures to engage students and help them feel welcome:

- Create more flexible spaces and spaces designed for project-based learning that can also be used as breakout or community spaces. Flexible spaces allow community members to feel empowered by having choices to address individual learning needs and styles—for example, students who may need a quieter solo workspace versus group learners and collaborators.
- Look at design through the lenses of playfulness and joy and wonder in spaces. To engage the community, shared spaces should convey joy, brightness, and meaning.
- Implement holistic safety not just for the communities that can afford it or advocate for it, but for all communities at all levels. Since the vast majority of schools do not have a budget for constructing new buildings, how can design principles be applied to retrofitting?
- Be mindful of the need to reprogram space and behaviors. It doesn’t matter how securely a building is designed if people can easily enter and exit. We need to change the culture of building access for communities.

Solutions from Sandy Hook

The new Sandy Hook Elementary School in Newtown, Connecticut, was used as an example of purposeful, community-focused design that was built with safety and security at top of mind.

The goal of the new school was to create an impactful learning environment. It was noted that at the school “you have to look for the kids. They’re not front and center.” Yet there is never a feeling of students being hidden away. The school’s central lobby is still an open area for transitions and community building.

One primary design element is a layering of security features. Physical access to the school is limited: The building is set far back on the property, accessed via a long driveway with gates and physical barriers (bollards), etc. It is both protected and secure. While these elements may seem “fortress-like” to outsiders, community members find it “welcoming, secure, and inviting.” Natural elements include a rain garden/bioswale bringing everything together—representing security elements but also community and the environment.

Priorities in design for community and new pedagogies

Participants were asked, “If you could do one thing from the physical design perspective to address these issues, what would it be?” Their responses fell into six areas:

- Thoughtfully designed security elements
 - metal detectors that aren’t intimidating and don’t feel punitive
 - transparency
 - high-visibility entry areas
 - limited points of access
- areas of refuge and autonomy
 - alcoves and secure spaces
 - flexible spaces that grant teachers and students the autonomy to change the environment to suit their needs
 - flexible spaces that provide security; incorporate a studio-type space within a room that can be used for independent work but can also be closed off securely
- furniture, fixtures, and equipment (FF&E)
 - industrial curtains that can quickly block an entire wall, ideally placed by the door
 - bulletproof desks

- secure safe rooms/safety bunkers
- “soft” furnishings to help create a culture of care
- flexible and varied FF&E—for example, different seating arrangements and furniture styles, giving students ownership of their space
- communal spaces
 - seating and benches
 - gathering spaces
 - welcoming façades
 - maker spaces
 - spaces designed for social-emotional learning and accommodating groups, not just solo work
- mental health
 - mental health/wellness center in the flow of student activity
 - daylighting, e.g., allowing sunlight to provide effective internal lighting
 - open spaces for wellness practice
 - space for quiet meditation for students and staff
 - more mindful bathroom design so they are not spaces of isolation/bullying
 - provide biophilic design elements that incorporate nature to help reduce stress in building occupants
- art
 - bright, colorful, inspiring murals throughout learning and community spaces
 - integrated student art to inspire ownership in the community and belonging to their place
 - art ensured to be by, for, and representative of the community

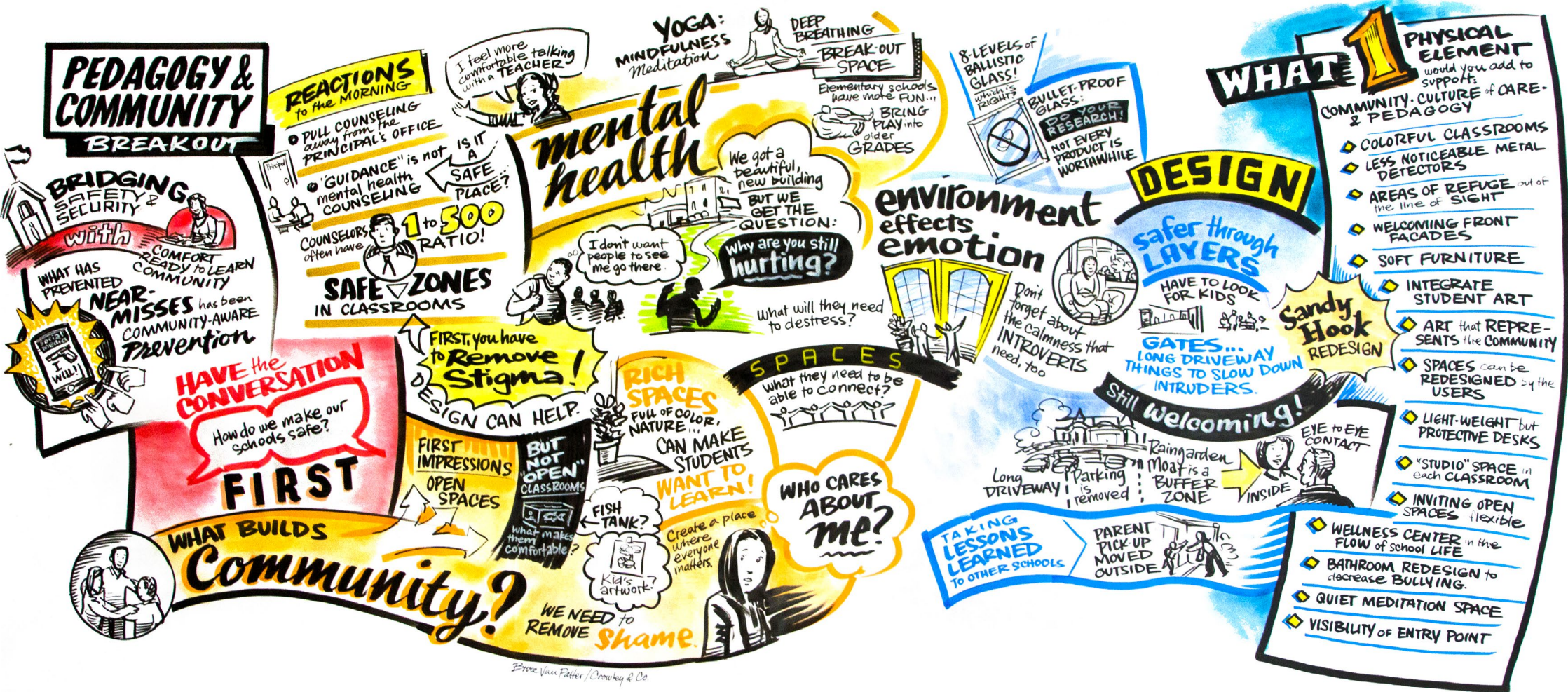
Participants

Session participants represented a variety of disciplines and perspectives, including:

- Marjory Stoneman Douglas (MSD) High School students and teachers
- administrators, teachers, and parents from Newtown, Connecticut, and the Washington, D.C., region
- architects, interior designers, and lighting designers, including the architect who designed the new Sandy Hook Elementary School
- public policy and education researchers and advocates
- a former firefighter representing the fire/sprinkler association and a school safety and security official

Moderators

- Karina Ruiz, AIA, LEED AP BD+C; BRIC Architecture
- Pam Moran, Ed. D.; Virginia School Consortium for Learning



Summit recap

Group takeaways

At the end of the day, the three groups reconvened to share an overview of what they had discussed and learned over the course of the day.

The design of safe, secure and welcoming schools is best achieved by combining the interventional strategies of CPTED with curative strategies that contribute to positive mental health, a sense of community and cultures of care. Safe school design shouldn't negatively impact how students feel about their schools or do anything to enable bullying, fears, anxieties, or isolation.

Participants noted the role that architects can play in empowering school administrators. As one said, "It is our charge as architects to ensure that educators don't go away from conversations [about school security] feeling hopeless. We need to work with them. We can bring research and proven solutions to them."

By offering guidance on safe school design, architects can help prevent schools and communities from wasting money on measures, technology, equipment, and options whose value or effectiveness are questionable.

As in the CPTED group, the full conference participants had different thoughts about transparency and glass walls. There were two general trains of thought:

- We need to consider transparency in the classrooms separately from transparency in connected spaces; they are two different concerns, each with its own benefits and challenges.
- When students are engaged in learning, they are less likely to be distracted by the world around them.

Feedback to the CPTED group included:

- CPTED is not one-size-fits-all; we need to avoid a checklist mentality.
- CPTED is traditionally design that applies from the curb to the front

door of a building but can be applied inside a school building as well.

- We need more research. There's not enough data into how effective these design principles have been.
- Building layout should decrease response time in emergencies.
- It's not enough to have effective CPTED strategies in place if security measures are ignored or misused. For instance, good locks or visibility to the front entrance don't work if the front door is left unsupervised or if the back door is propped open.
- It would be useful to address issues in rural versus urban schools. The relationships between parents and students are different in each setting.

Mental health

Despite the critical role mental health plays in safety, security, and academic achievement among children, mental health resources available in schools are scarce.

Access to counselors and psychologists in schools is very limited, leading to situations in which principals and teachers must resort to systems of triage, reacting to only the most urgent cases. Students lack private places in schools where they can deal with major emotional issues, as in the case of the survivors of the Marjory Stoneman Douglas High School massacre.

Testing culture especially leads to lack of flexibility in space and curriculum, and this rigidity precludes the relationships that are so critical to students' sense of safety, well-being, and ability to take on academic challenges. Educators want to connect with students but feel hindered by lack of time and space. Testing culture also stymies collaborative relationships among adults in schools.

To increase flexibility and connections, physical spaces can be designed to encourage relationships and a sense of security. Adaptability, at all levels, of the way we create our environment is crucial to building a foundation for mental health. Our students have great wisdom. They want to discuss more, absorb more, and take time to explore ideas.



At the same time, their teachers say that they don't have the time and resources to respond. This disconnect must be addressed.

Students yearn for much more varied and personal learning environments. In many cases, our children know the answers. We need to keep listening to them. Here's what they are looking for in the design of their schools:

- Natural light
- Spaces adapted to individual needs, with options to spread out or move around
- Wide hallways that reduce conflict and allow for comfortable interactions
- Universal design to foster inclusion
- Counseling spaces that are easily accessible, private, and stigma-free
- Flexible classroom design with modular furniture and different types of spaces within a room to engage in different types of learning at different times of day
- Different venues in which to explore and discover new strengths like maker spaces, art rooms, technology centers, meditation rooms, and gyms
- Yoga balls and wobble seats to help with focus
- The option to rearrange furniture to form groups during class time, bolstering interactions and giving teachers a chance to make individual connections
- Physical learning neighborhoods within schools to help create smaller communities where students feel like they belong
- Spaces designed for both introverts and extroverts
- Space and time outdoors
- Sightlines from multiple vistas and levels that add to a feeling of openness and connections (crucial for deaf learners)
- Cozy, relaxing spaces for autistic learners and anxious students

- Educators and students who are empowered to be resourceful and change what is not working and have the means to act
- Counselors who are out and around, available, and visible for students
- Varied spaces for engaging in different tasks at different times of the day.

Pedagogy and community

To conclude, the group facilitators presented the outcomes from the individual breakout sessions to the larger group. Takeaways and learnings included:

- Taking mental health and counseling offices out of the school administration suite and designing them into the flow of student community to both decentralize and destigmatize counseling and mental health while still providing the necessary privacy for students in crisis. This also allows counselors to increase their engagement and build stronger relationships with students.
- This also allows counselors to increase their engagement and build stronger relationships with students.
- Use art to build a sense of community and identity and as a bridge to communities beyond the school, including use of color and culturally relevant art.
- Not all learning occurs in the primary instructional space: We need extended learning areas and breakout areas. We also need to consider lockdown protocols for these more open spaces.
- We need to incorporate safe spaces, areas for wellness, and stress relief.
- Connecting school to nature: Transparency is not just about seeing and being seen, but also about bringing nature into school environments. When we talk about kids going outside to play, how do we ensure safety and security?

- When kids have choices, they're more comfortable in their environment, which is critical to creating community. Use flexible furniture choices that are adaptable and rearrangeable to provide options for learners.
- First impressions matter: Design warm, welcoming, inviting entries.
- Often designers are leading conversations that are not inherently/expressly design-related. The design process must reflect students, parents, educators, and community voices if we want to walk away with a feeling that we got it right. Think of architects as partners, bringing value beyond just a physical solution.

Questions to guide communities and designers

The group developed a series of questions that should guide educators, architects, and psychologists as we develop the schools of the future:

- How can we create a culture of being known within a school?
- Do spaces and schedules prioritize empathy?
- How can we be available to assist students who have varying levels of educational needs?
- How can we create spaces where all students feel welcome and not alienated, starting with restroom design?
- How do we give permission to students and teachers to innovate and adapt their spaces to better accommodate their needs? If a student is having an issue, can we allow a teacher or counselor to break away and work separately with the student? What does that look like in terms of scheduling and connecting classrooms?
- How do we combine access to mental health care with confidentiality? Where do we position resources so that students can more easily get help from their advisors without feeling vulnerable and visible?

- How do we make schools into places that allow students to feel nurtured, not just in terms of the built environment but also in terms of the surrounding site and broader natural setting?
- How can we bring our communities back into our schools?
- Can we leverage a national conversation about safety that has tended to focus narrowly on sally ports and beefed up perimeters to focus on more holistic approaches that include mental health and cultures of care?
- How can we meet the unique needs of each community, whether urban, rural, wealthy, or low-income?

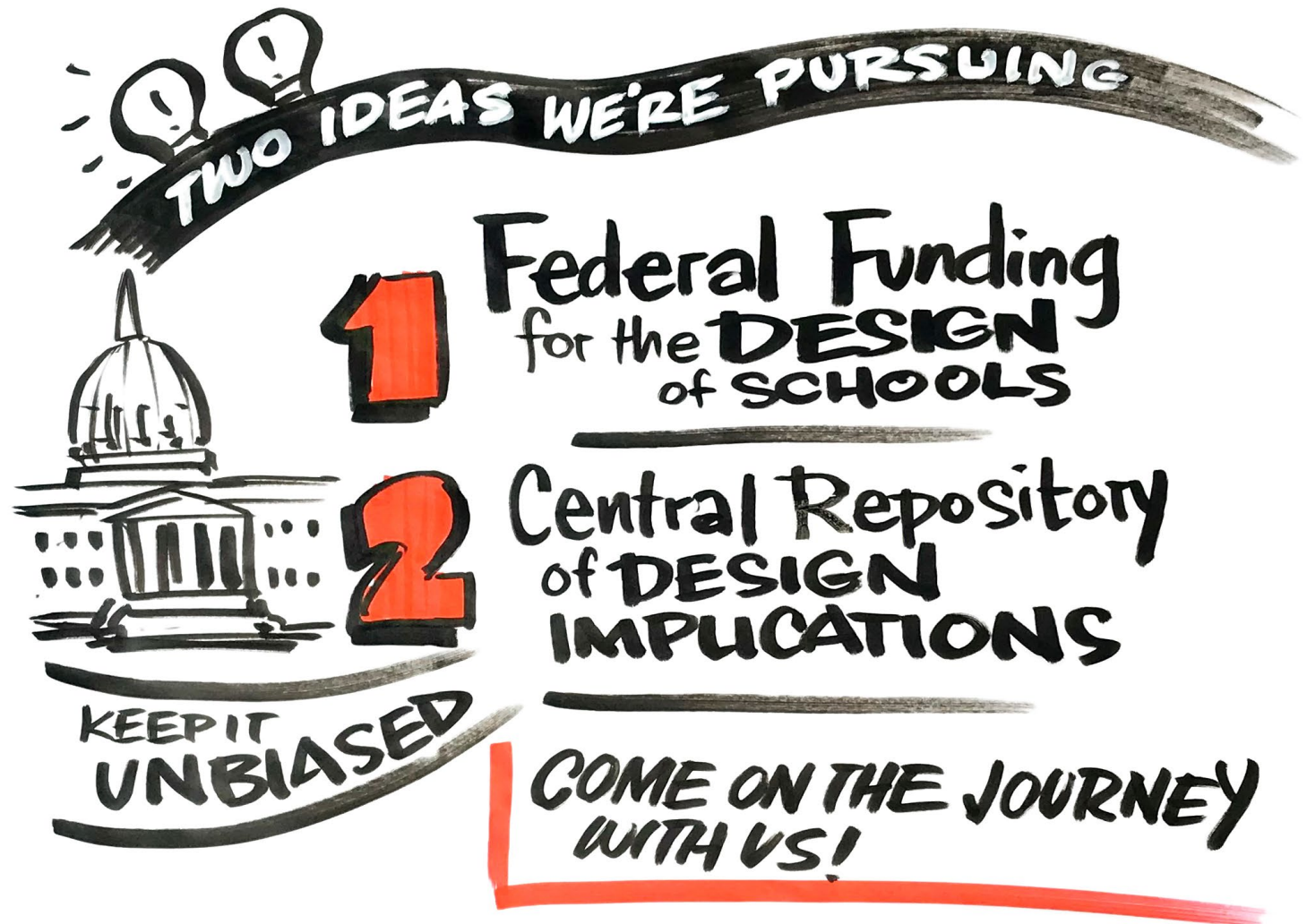
Next steps

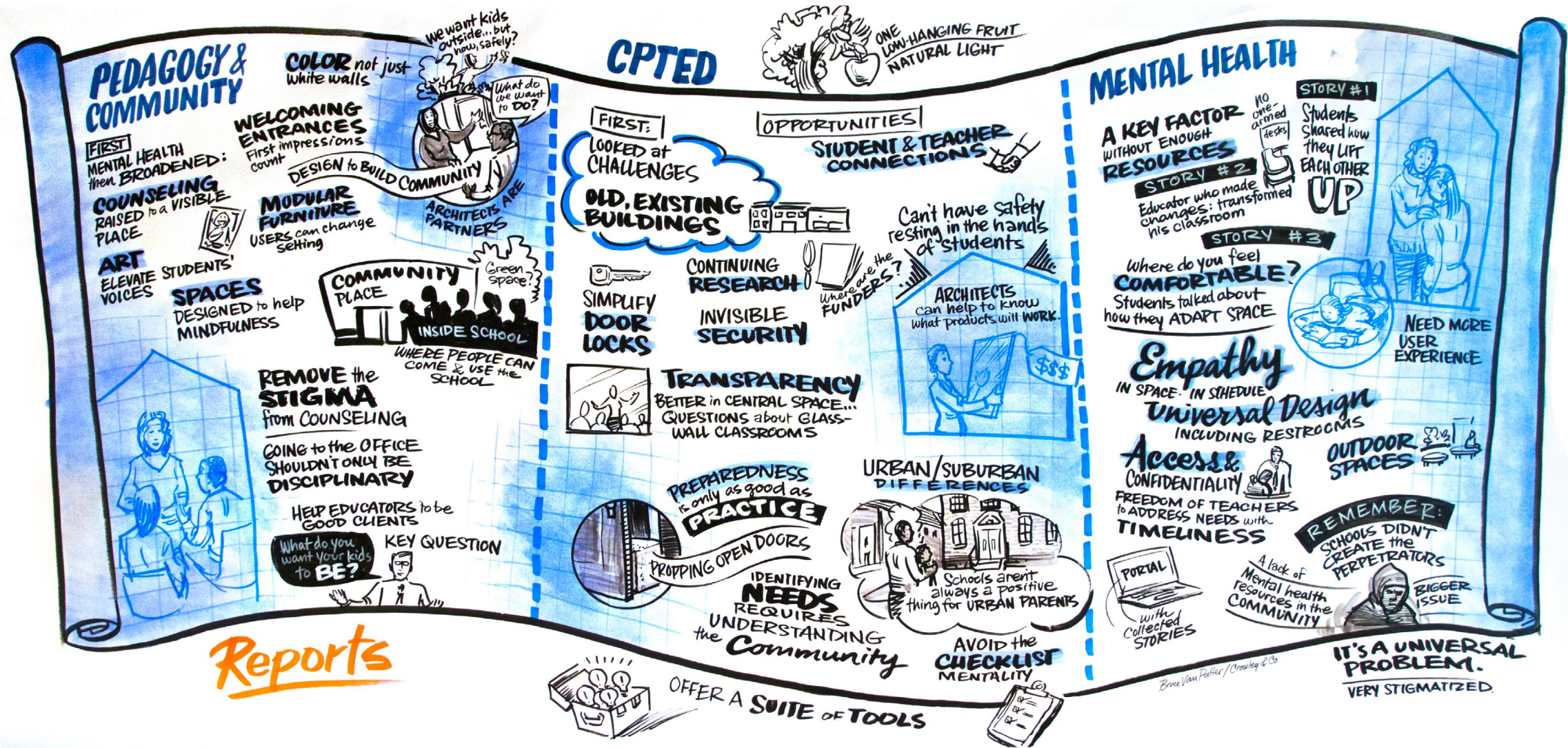
Karina Ruiz closed the discussion by identifying next steps:

- Vote for people who support public education.
- Create an online resource to learn more about designs and how specific schools are doing it. Look at AIA KnowledgeNet as an example.
- Tell your stories and create case studies; it helps to have a real case study and people—students and teachers—to talk to.
- Take this back to your communities. That's where these ideas will take flight.

As diverse as the conference was, a commenter mentioned that we must engage more stakeholders in the conversation. This commenter said that in the past there's been an "us-versus-them" aspect to the discussion, and we need to bring more people into this conversation to seek common ground. Future participants we'd like to add to these discussions include:

- CFOs of school districts and facilities personnel at the state and county level
- funders and foundations that support research





Participants

- Helen Abbott, Student | Marjory Stoneman Douglas High School
- Zoe Alsop, Scribe
- Cristina Alvarez, Ed.D, Chief Executive Officer | Design-Lab Schools LLC
- Kevin Anzellotti, Educator | Sandy Hook Elem. School
- Alex Baker, MSc, LC, Manager of Government Affairs and Public Policy | Illuminating Engineering Society
- Diego Barrera, AIA, LEED GA, Senior Associate | Stantec
- Joann Bartoletti, Executive Director | National Association of Secondary School Principals
- Bruce Bland, Sr. Director, AIA Knowledge Communities | The American Institute of Architects
- Scott Blundell, Supervisor School Security | Frederick County Public Schools
- Robert Boyd, Executive Director | Secure Schools Alliance
- Catherine Bradshaw, Ph.D., M.Ed., Professor and the Associate Dean for Research and Faculty Development at the Curry School of Education | University of Virginia
- Jim Brewer, Managing Director, Government Affairs & Policy | The American Institute of Architects
- Ryan Brown, Chief Communications Officer | South Carolina Department of Education
- Madeleine Bugel, Government Manager | National Electrical Manufacturers Association
- Kristie Callahan, Educator | Washington County Public Schools-Northern Middle School
- Mo Canady, Executive Director | National Association of School Resource Officers
- Jacqueline Carmichael, ASID, CKD, NCIDQ, Assistant Professor, Howard University | American Society of Interior Designers
- Kevin Carr, CDSM, CEM, LEED AP, Senior Fire Protection Specialist | National Fire Protection Association
- Abby Dacey, AIA, LEED AP BD+C, Associate Principal | Mahlum Architects, Inc.
- John Dale, FAIA, LEED AP, Principal | Harley Ellis Devereaux
- Carl Elefante, FAIA, LEED AP, 2018 AIA National President The American Institute of Architects
- Joe Erardi, Jr., Ph.D., Former Superintendent of Schools for Newtown Public Schools | The School Superintendents Association
- Benjamin Fernandez, MS Ed., Coordinator, Prevention Services | NASP/Louden County Public Schools
- Mary Filardo, Executive Director | 21st Century Schools Fund
- Michele Gay, Co-Founder/Executive Director | Safe and Sound Schools
- Alyssa Goldfarb, Student | Marjory Stoneman Douglas High School
- Kayla Goldfarb, Student | Marjory Stoneman Douglas High School
- Kathleen Gombos, Ph.D., Sandy Hook Principal | Sandy Hook Elem. School
- Liz Griffin, Managing Editor | The School Superintendents Association
- Lisa Hamp, Speaker and Professional Contributor | Safe & Secure Schools
- Karyn Holden, Educator | Sandy Hook Elem. School
- Judy Hoskens, REFP, LEED AP, Principal | Cunnigham Group
- Jcaqueline Jodl, Ph.D., MBA, Director | Nat Comm on Social, Emotional and Academic Development Aspen Institute
- Sylvia Johnson, Ph.D, Federal Lobbyist | National Education Association
- Joanne Kaldy, Scribe
- Kara Kempfski, Manager, Federal Relations | The American Institute of Architects
- Anne Kendall, Educator | Washington County Public Schools-Northern Middle School
- Ryan Kimble, Educator | Carroll County Public Schools
- Jenine Kotob, Assoc. AIA, Architectural Designer | Quinn Evans
- Daniel Lamoreaux, Ph.D., School Psychologist | Marana Unified School District
- Dawn Latham, CAE, IOM, Director of Public Policy | International Association of Lighting Designers
- Jennifer Lipner, Scribe
- Jacklyn Lloyd, Educator | Sandy Hook Elem. School
- Caroline Lobo, AIA, Ph. D., Principal | suoLL architects
- Amy Luo, Student | Marjory Stoneman Douglas High School
- Kelly McClaren, Educator | Sandy Hook Elem. School
- Rachel Marshall Esq., Federal Policy Counsel | Campaign for Youth Justice
- Robert McClintock, Fire-based EMS Specialist | International Association of Fire Fighters
- Julia McFadden, AIA, Associate Principal | Svigals + Partners
- Jim McGarry, CEO | EdMarket Association
- Myra McGovern, VP of Media & Community Engagement | National Association of Independent Schools
- Heather Michael, Principal | Frederick County Public Schools-Deer Creek Elem.
- Brian Minnich, AIA, LEED AP BD+C, Project Manager | GWWO, Inc.
- Pam Moran, Ed.D, Executive Director | Virginia School Consortium for Learning
- Pat Morrison, Assistant to the General President For Education, Training and Human Relations | International Association of Fire Fighters
- Blake Nanney, Specialist, Federal Relations | The American Institute of Architects
- Sharon Newport, Director of Operations | DHI-Door Hardware Institute
- Michael Nieminen, FAIA, Partner | Kliment Halsband Architects
- Richard Patrick, Director | U.S. Fire Administration
- John Peavy, Sr. Director, Codes and Standards Policy | The American Institute of Architects
- Stu Pettitt, FAIA, LEED AP, Principal | Straub Pettitt Yaste
- Philip Poinelli, FAIA, A4LE Northeast Director | A4LE Northeast Region
- Vijay Ramnarain, Director, Office of Support Services | Virginia Department of Education

-
- Kayla Renert, Student | Marjory Stoneman Douglas High School
 - Robert Rodriguez, Executive Committee | National Education Association
 - Brandon Rood, Campus Security Coordinator | Jefferson County Public Schools
 - Karina Ruiz, AIA, LEED AP BD+C, Principal | BRIC Architecture
 - Michele Russo, Managing Director, Research & Practice | The American Institute of Architects
 - Ronald Skyles, AIA, Design Manager | Prince Georges County Public Schools
 - Ira Socol, Chief Technology and Innovation | Ablemarle Co Va
 - Dina Sorenson, Assoc. AIA, LEED AP BD+C, K-12 Education Design Leader | DLR Group
 - Haley Stav, Student | Marjory Stoneman Douglas High School
 - Stephanie Stubbs, Assoc. AIA, PMP, Program Director | National Institute of Building Sciences
 - Connie Sullivan, Educator | Sandy Hook Elem. School
 - Amber Taylor, Director of Communications | Project Tomorrow
 - Emma Tucker, Manager, AIA Knowledge Communities | The American Institute of Architects
 - Bruce Van Patter, Graphic Recorder | Crowley & Co.
 - David VanGalen, AIA, Principal | Integrus Architecture
 - John Waters, Field Service Coordinator | National Fire Sprinkler Association
 - John Weekes, FAIA | CAE Foundation
 - Justin Wiley, Vice President, Government Relations, Planning and Operations | International Code Council
 - Michael Winn, Manager, State and Local Policy | The American Institute of Architects
 - John Woestman, Director of Codes and Government Affairs | Builders Hardware Manufacturing Association
 - Diane Wolk-Rogers, Social Studies Teacher | Marjory Stoneman Douglas High School

Additional resources

“For Educators: Relationship Mapping Strategy,” a strategy for finding students in a school who are not known:
mcc.gse.harvard.edu/resources-for-educators/relationship-mapping-strategy

“Where joy hides and how to find it,” a TED Talk by Ingrid Fetell Lee:
ted.com/talks/ingrid_fetell_lee_where_joy_hides_and_how_to_find_it?language=en

“The Tattooed, Skater Principal Making Education Fun Again,” murals that reflect community and inspiration:
youtube.com/watch?v=VKt9CslbVsg

“This I Believe,” a view into school from the students’ point of view:
thisibelieve.org/feature/

Education Week, which covers issues like bullying and mental health, and offers a strong voice for teachers:
edweek.org/ew/index.html

The Hechinger Report, which is creating a searchable website that will provide different points of view:
hechingerreport.org/

The live 911 calls from Columbine High School:
acolumbinesite.com/911/

The Parkland Commission animation, which tracked the shooter’s movements throughout the incident:
youtube.com/watch?v=Laizg39LsuQ

The 9/11 Commission Report, in particular where it addresses the danger of working in silos:
9-11commission.gov/report/911Report.pdf

How can architects balance security and openness in school design after mass shootings?:
archpaper.com/2018/05/how-can-architects-respond-reactionary-hardening-schools/

Soft and Safe School Design:
my.aasa.org/AASA/Resources/SAMag/2019/Apr19/Ruiz.aspx

Making School a Safe Haven, Not a Fortress:
edweek.org/ew/articles/2019/03/13/making-school-a-safe-haven-not-a.html

AIA school design safety resources:
aia.org/resources/206361-school-design-safety-resources

Special thanks to the Committee on Architecture for Education Foundation for their generous financial support.

“On behalf of the AIA Committee on Architecture for Education, I would like to provide a sincere thank you to the varied group of participants who attended this important Summit. Thank you for sharing your stories, your wisdom and perspectives. We look forward to continuing this critical dialogue to help design better, safer and more welcoming communities.” – Karina Ruiz





**The American
Institute
of Architects**

1735 New York Avenue, NW
Washington, DC 20006
aia.org