AIA | New Jersey

The New Jersey Society of Architects
A Chapter of the American Institute of Architects

Safe School Design Task Force

OBJECTIVE, RESEARCH, & TRENDS FRAMEWORK

Welfare: MENTAL HEALTH & WELLNESS

A. Objective Statement

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Our AIA NJ Safe School Design Task Force is focusing attention on the timely and important topic of "**Mental Health and Wellness"** and how it relates to the framework of designing safe and secure schools in New Jersey. Our Task Force objective is to share national best practices in K-12 school designs and to show how to apply these practices to local New Jersey communities to help meet our schools' *health, safety, welfare, and wellness* needs. The strategies used by NJ Architects to design and renovate schools shall not only protect building occupants but also shall create highly successful learning environments by applying innovative design solutions to integrate facility management and physical security with spaces supporting mental health and wellness practices.

GOAL: Promoting Mental Health and a Wellness Culture

Safe Schools need Welcoming School Environments: *Welcoming environments reduce levels of stress in students thereby increasing a student's ability to learn.* Architects know how to integrate welcoming elements into their designs by creating approachable entrances with supervisory windows connected to security vestibules and protective canopies. Architects know how to balance areas of high visibility with areas of refuge to create a unified campus. By designing exterior gathering areas with seating, playscapes, discovery trails, and greenery integrated with the placement of cameras, lights, fences, and natural buffers, perimeter safety can be enhanced. By designing learning spaces integrated with student work display areas, affirming graphics, and cultural references, a sense of welcome and belonging can be achieved. By dispersing office areas with clear sightlines to maximize oversight and encourage interactions, trustworthy connections can be fostered. *Design details make a difference, especially when Architects link a focus on transparency and mobility with controlled access points, and when a plan layout bolsters connections between staff and students to reduce the chances of bullying and harassment.*

Safe Schools need a focus on Mental Health and Wellness: *School-based mental health is becoming a vital part of student support systems. Schools need to provide a natural setting in which students can receive much needed support and services.*

Safe Schools mission is to support students in educational achievement, and to reach this goal, children must feel safe, supported, and ready to learn. Students often come to school with complex physical and mental health concerns or social service needs. Up to 1 in 5 children in the USA experience a mental disorder every year. Access to support services helps create a positive school climate, addresses mental health conditions, and leads to better student outcomes. Since at risk children have an increased risk of developing mental health disorders associated with exposure to abuse and neglect, there is a vital need to reduce the levels of stress a child feels during their time spent in schools. Schools can serve as a critical support system for at risk children experiencing trauma. *Both staff and the design of school facilities can help reduce the effects of stress on children by building in areas of respite and rejuvenation, by using the design principles of biophilia in classrooms, by recognizing signs of trauma to help respond to students in need, and by referring children to in-school or outside professionals when necessary.*

Safe Schools need to embrace Whole School, Whole Community, Whole Child (WSCC) approach which focuses on the common goals of education, public health, and school health sectors to establish a unified platform for education. *The WSCC model* (https://www.cdc.gov/healthyschools/wscc/index.htm) *emphasizes the need for nurturing psychosocial and physical learning environments* along with the key roles that families and community agencies play in childhood development and behavioral health. The WSCC says to engage students as active participants in their learning and healthcare since establishing healthy behaviors and habits earlier in childhood is more effective and easier than trying to change adult unhealthy behaviors. The model is student-centered, evidence-based, and best practice-oriented. Among the WSCC's organizing components, its foundational pillars emphasize the importance of "*positive social and emotional climates*" and "*safe physical environments*" in schools along with lessons on nutrition, physical fitness, and lifestyle choices.

Safe Schools need a positive "Social and Emotional Climate" which means supporting the psychosocial aspects of growth, social-emotional development, and educational experiences. Impact of social and emotional climates are known to affect academic performances, engagement in activities, and relationships with others. A positive climate not only supports effective teaching, but also offers a nurturing learning environment promoting the wellbeing of all students. A positive climate is based upon **school connectedness**, which reflects the belief that peers and staff fully support, value, and care about all students' well-being and progress. *Students who feel more connected to school are less likely to engage in risky behaviors (alcohol or drug use), more likely to engage in positive health behaviors (physical activity and healthy eating), and are more likely to have higher test scores, better attendance, and graduate from high school*. Safe schools engage parents and families and encourage them to play powerful roles in supporting a student's mental health and emotional wellness both at home and at school.

Statistics show that when parents and communities are connected to neighborhood schools and engaged in school activities, children get better grades, demonstrate healthier behaviors, and improve social skills. Engaged students are less likely to be distressed and more likely to be appreciated (seen and heard) for their strengths and given the tools and spaces they need to manage stress, learn positive coping skills, and make healthy choices on how they direct their energies and lifestyles.

Safe Schools need physical environmental conditions which promote learning and safeguard the health and wellbeing of students and staff. The physical environment encompasses the school building, its contents, the land where it is located, and the area surrounding it. A healthy school environment must maintain its physical conditions during normal operations and during renovations. It must provide proper air quality, ventilation, temperature, sound levels, natural and artificial lighting, and protect occupants from physical threats such as crime, violence, traffic, biological or chemical agents in the air, water, or soil as well as those entering the school through pollution, mold, pesticides, or cleaning agents.

Safe Schools need to have educational environments which allow students to be active throughout the school day. A comprehensive physical activity program should encourage movement throughout the day, instruction in physical education, and a range of choice activities offered during, before, and after school overseen by staff, families, and communities. Physical education is a core competency need, and its broad curriculum includes developing motor skills, knowledge, and behaviors to ensure healthy living, fitness, sportsmanship, self-determination, and emotional intelligence. Well-designed physical education venues, playfields, playgrounds, discovery trails, common areas, and classrooms should accommodate a range of physical explorations, organized sports, and a myriad of activities associated with healthy lifestyle choices from childhood to adulthood.

Safe Schools need to integrate biophilic design elements and promote strong connections with nature to increase a sense of wellness. Biophilia accommodates the human desire and need to connect with nature in the physical spaces we occupy. *Research shows that using biophilic design not only improves cognitive functions but also reduces stress and improves physical health and psychological well-being* via immersive exposure to naturally-occurring patterns and textures which create a sense of calm and security within a space. *Nature in Space* is the concept of adding natural influences like views, vegetation, and daylight by design to invoke a sense of wellbeing in physical spaces. *Natural Analogs* is the concept of adding indirect nature experiences by using architectural expressions of natural materials, fractal patterns, and biomorphic forms to convey a sense of accessing nature through non-living elements. *Nature of Spaces* is the concept of using spatial experiences via naturally occurring shadows, spatial patterns, perspectives, and edges to create a calming sense of moving through nature or a protective sense of refuge in a space.

B. Design Innovations & Creative Solutions

 "*What does a school environment which supports mental health and wellness culture look like?*" And "*how do schools create one?*" It is instructive to review some of the concepts and best practices advocated by mental health professionals.

Understand How to Support Mental Health and Wellness:
Designing school environments to support mental health and wellness addresses one of the primary concerns of teachers. Architects know how to prioritize features and make mental health support a foundational part of all learning environments. School interiors shall include biophilic design principles to instill a sense of calm and to reduce student stress. Layouts shall dedicate spaces for student services and support staff operations as well as incorporate places for de-stressing, for relaxed and private conversations, and for stillness, calming, refocusing, and counseling assistance. Wellness spaces can include drop-in centers, student lounges, sensory immersion rooms outfitted with biophilic design features, and conveniently located "snack bars" which provide access to healthy snacks and drinks throughout the day.

Understand the Need for Balance in School Design:
There is no "one size fits all" solutions when it comes to addressing school safety, security, and wellness. Architects know how to assess and tackle complex problems and are trained in seeking out and integrating community input and values into the design for safety as well as wellness in schools. Architects understand the need to balance the urge to harden and fortify school campuses with the need to celebrate student learning and support a range of teaching pedagogies. This means coupling high-tech surveillance and monitoring systems with spatial features maximizing social interactions. This also means matching student-centric features in classrooms to encourage movement, choice, and flexibility along with specified safety features offering rapid-response communications, lockdown capabilities, and security gates.

Understand that "Feeling Safe" is Subjective and a Community-Driven Value:
Architects understand the need to incorporate community input and values into the design process because what works for one school or community will not necessarily work for another. Feeling safe is as much of an emotional feeling as it is physical protection. There needs to be an atmosphere of trust attained to support a sense of well-being. Building trust involves input and reflection. To this end, it is important to survey teachers, students, parents, neighbors, and community leaders since many groups have their own perspective with differing views on security, safety, and wellness. Many stakeholders initially advocate for "hardening features" with a cry to fortify schools with fences, gates, metal detectors, and bullet-resistant glass. Research by mental health experts, however, suggests that these strategies alone can do more harm than good since overt fortifications can produce an effect opposite to calmness by increasing levels of fear and stress which hamper learning.

<u>Understand the Delicate Balance between Safety, Security, and Wellbeing:</u>
Surveys of community input garnered during outreach processes may yield a wide range of ideas and opinions on school safety which need to be balanced throughout. Differing perspectives may include teachers who want highly secured perimeters and very straight corridor paths, while students advocate for more social interactive places with peers and a need to feel seen and heard. Solutions may incorporate expressions of cultural identity through student artwork to help increase a sense of welcome and community in gathering areas. For parents' peace of mind, it may necessitate more than a secure entry vestibule, it may require staff greeting students by name at the front door along with highly visible ways to ID staff and visitors.

An example of a balanced safe school design achieved with community input is the design of the **new Sandy Hook Elementary School in Connecticut** which asked for a school to be "*a place for learning and a place for children*" despite its major shooting history. Its architects noted how they are trained to bring together different experts to examine how physical spaces can both protect and inspire. They worked with the Sandy Hook community to design a place that safeguards children without feeling like a fortress. Architects know how to collaborate and are trained to create comprehensive security plans integrating specified physical security measures like cameras, metal detectors, security gates, bullet proof glass and lock-points, while also creating nurturing spaces to promote mental health and hopefully forestall future tragedies from happening. Advocates with the student-led **March for Our Lives** created after the Stoneman Douglas HS shooting equally insisted that schools should be and remain "*playful, joyful places*" and not succumb to being "cold, dark, or impersonal places" due to designing overly hardened or fortress-like schools.

<u>Understand the Impact of Physical Environments to Promote Wellbeing</u>:
Design choices for mental health and well-being should include selecting materials and finishes for their authenticity and beauty, for their ability to convey warmth and dignity, and for their connections with nature. Bringing plant life indoors and using softer materials like wood and cork for interiors increases the sought after **biophilic effect** which helps students refresh and refocus their energies as well as improve the acoustical performance of classrooms and gathering spaces. The goal to improve indoor air quality can integrate filtered ventilation air with the use of non-toxic adhesives, carbon dioxide monitors, and operable classroom windows to bring in abundant natural daylighting, views, and air changes. Schools designed to connect with communities may include flexible outdoor spaces and multipurpose venues to leverage school assets in support of social service activities benefiting residents and families with special needs. This strategy promotes general wellness, prosperity, autonomy, and benefits all community and neighborhood stakeholders. **The effects of biophilic design decisions are quantifiable**. *Studies in educational environments reveal that students learn better, retain more, and enjoy the overall experience of education in spaces with biophilic influences.*

Understand the Powerful Impact inherent in applying Biophilic Design:

In educational settings when children have access to nature during the day, teachers report students return to classrooms in a calmer state of mind and are better able to get into the next task quickly. Research shows that daylight variability improves visual acuity and keeps students and staff in tune with their circadian clock. *Being able to see nature, even through a window, has an impact on the prefrontal cortex which helps to restore attention and allow learners to increase cognitive focus and information retention.* Dappled light or experiencing daylight streaming through a tree canopy has a deeply calming effect on human minds. Researchers measured biophilic interventions in a 6th grade math classroom in Baltimore. There they reduced visual clutter and removed posters on the walls, put down carpet tiles with a wavy grass pattern, added a biomorphic wallpaper frieze with an abstract palm-leaf pattern, and installed fabric window blinds with a statistical fractal pattern based on tree branch shadows. The impact of these biophilic interventions showed test scores improved dramatically – the net gain in math scores was more than 3x as high in the biophilic classroom as in the control classroom. In educational design, there is a need for physical spaces to offer more than mere shelter. To support learners, school spaces need to enhance collaboration, elevate moods, and make students feel calmer, protected, and welcomed. Biophilic design aims to be an immersive, multi-sensory experience of nature in space. *There is more to its design principles than adding plants or views or fresh air. It is about integrating the use of color, light, texture, form, and nature's ability to improve human performance.* These principles can be transmitted to everything from carpet patterns to the angle of a desk or shape of a window. In every way possible, design makes a difference.

As direct forms of nature, such as adding plants (a common feature in biophilic design), may not withstand the day-to-day physical interaction with children, one can opt instead to mimic natural elements by the nature-inspired textures, patterns, and colors used in the design, as well as through large-scale images of nature used on the wall coverings. Research has demonstrated that using nature inspired design in this way can positively impact perceptual and physiological stress responses in children even without having direct access to exterior spaces.

This mental health "respite or recuperative room" shows several features intended to invoke sensory experiences including a window seat offering safe views of the playground, along with an abundance of rejuvenating natural light from wood frame windows. Playful hexagonal cubicles offer refuge spaces for children to relax and restore their mental energy. Textured carpets with varying pile-heights and patterns provide tactile references to nature to help de-stress, refresh, and relax.

Images by Wade Griffith Photography; Redbud Elementary in Round Rock, TX; PBK Architects

C. Resource Reference Links

Association for Learning Environments (A4LE) https://www.a4le.org

A4LE is dedicated to enhancing the educational experience and is an international and interdisciplinary association of members and contributors comprised of educators, facility managers, architects, futurists, and planning professionals working at the cutting-edge intersection where "learning and place drive the evolution of learning" and shape the forms and expressions of responsive and student-centric learning environments.

Research & Reference Information:

2020 Research Paper "Design for Safe and Healthy Children"(A4LE White Paper).

A Study of Best Practices for School Safety, Mental Health, and Wellness by Perkins-Eastman. Authors Robert Bell AIA, ALEP, CPTED Co-Managing Principal Perkins-Eastman and Ann Neeriemer, AIA, LEED AP Senior Associate Perkins-Eastman.

https://acrobat.adobe.com/link/review?uri=urn:aaid:scds:US:7589b329-712e-3233-b43a-b78b07bbd33d

Perkins Eastman is a global architecture firm dedicated to the idea that design has a direct and positive impact on people's lives. For 40 years, school education experts have shared a passion for research and design that focuses specifically on improving the quality of life and level of learning for students in order to create places and spaces putting users at the heart by employing best practices, sustainability, and a thorough understanding of clients' missions and operations. Our teams work with clients globally to deliver next-generation projects suited to users who will live, work, play, learn, age, and heal within the environments we plan and design.

"Design for Safe and Healthy Children"(A4LE White Paper); *04-15-2020 A4LE Webinar Series and AIA Continuing Education Systems Course* – A Study of Best

Practices for School Safety, Mental Health, and Wellness by Perkins-Eastman.

https://acrobat.adobe.com/link/review?uri=urn:aaid:scds:US:1dabc92e-b4b7-35c6-8bf7-01120b70b7e6

Presented by Robert Bell AIA, ALEP, CPTED Principal Perkins-Eastman, Ann Neeriemer, AIA, LEED AP Sr Asso. Perkins-Eastman, & Andria Swiatocha, Deputy Chief of Facilities District of Columbia Public Schools.

CDC's Virtual Healthy School (VHS) *https://www.cdc.gov/healthyschools/vhs.htm*

The Center for Disease Control's *Virtual Healthy School* (VHS) website is an interactive online tool showing schools how to support the health and academic achievement of students through the **Whole School, Whole Community, Whole Child (WSCC) model**.

The WSCC model focuses on the child to align the common goals of education and health sectors to put into action a whole child approach to education. The VHS tool is designed for K-12 school staff, state and local departments of health or education, and agencies who have an interest in meeting the needs of the whole child. Those needs include providing students with opportunities to improve their dietary and physical activity behaviors and manage their chronic health conditions (for example, asthma, diabetes, and epilepsy). Parents and community members can also benefit from the VHS because of their powerful role in supporting children's health and learning and ability to participate on school health teams.

Education Week's Blog "A New Sandy Hook Elementary School Opens".

https://www.edweek.org › leadership › 2016/08

Education Week reporter Evie Blad and Associated Press photographer Mark Lennihan preview the new Sandy Hook Elementary School in Newtown, Connecticut which replaced the school building torn down after the 2012 shooting which left 26 people dead. The new building, created with community input, incorporates children's artwork, upgraded safety features, and tree-themed features like sculptural branches that reach toward high ceilings. The goal was to create a place of community and learning, a place that would honor those lost, and that allows those left behind the chance to move forward with ideals of hope, joy, and trust rather than with fears associated with a fortress-like approach to security.

***Biophilia in Education: Natural Selection;* [Learning by Design's Spring 2022 issue](#)**
Posted November 30, 2022, by Sean O'Keefe; Editor's Note: This piece originally appeared in Learning by Design quarterly magazine as part of a content partnership with the title, "*NaturaSelection*." *Learning By Design magazine* is a forum intended for professionals working in the field to improve education and its built environments. https://www.learningbydesignmagazine.com/.

***Neuroarchitecture: Health, Happiness, & Learning* (A4LE White Paper);**
By Dr. Parul Minhas, Prakash Nair, AIA, and Louis Sirota, AIA.
https://www.a4le.org/A4LE/Resources/Resource_Center/White_Papers/Neuroarchitecture.aspx
Neuroarchitecture is the study of how the built environment impacts the nervous system and it interconnected with other bodily systems, ultimately affecting our overall well-being, including cognitive and emotional health. With the growing awareness about the impact of built environments on our mental and physical health, there has been a rising need to consider neuroarchitecture when designing schools. Designing learning spaces based on insights from neuroscience research for architecture can have a significant positive impact on students' academic performance, emotional well-being, and physical health. Neuroarchitecture is about designing schools that are inclusive, stimulating, and supportive of learning in ways which promote a sense of purpose, belonging, and well-being, leading to more positive and productive experiences for all students.

***Biophilic Design: Learning Spaces Inspired by Nature* (A4LE White Paper);**
By Prakash Nair, AIA, Dr. Parul Minhas, and Karin Nakano.
https://www.a4le.org/A4LE/Resources/Resource_Center/White_Papers/Biophilic_Design.aspx
The rapidly developing and urbanizing world has distanced many people from nature and natural processes which were previously central to human activities. By 2050, it is estimated that 66% of the world will be urbanized, further dissociating humans from nature. This scenario is distressing for all people and is particularly harmful to children during developmental years. Biophilic Design invites urbanized spaces to include natural elements and processes to improve people's well-being inside buildings. It is a design approach aiming to connect humans and nature in our living, learning, and working places. As the world becomes urbanized, more children will lose their connections to nature as they grow up. It is important to recognize how meaningful and beneficial it is for schools to incorporate biophilic designs to ensure that children, no matter their backgrounds or identity, are exposed to nature and can improve their well-being.

Resource – U.S. Federal Campaign to Support School Safety

www.SchoolSafety.Gov *highlights how to support mental health and wellbeing as strategies to contribute to a positive and safe school climate.* Members of the school community can also download this [SchoolSafety.gov infographic](#) to learn more about mental health and to access a sampling of resources. U.S. Department of Homeland Security (DHS), in partnership with the U.S. Departments of Education (ED), Health and Human Services (HHS), and Justice (DOJ), has launched a *2023 public awareness campaign to highlight federal school safety resources and evidence-based practices available through* [SchoolSafety.gov](#). The resources available at this federal website provide sound starting points for learning about bullying and cyberbullying plus a wide range of school-safety topics. The public is encouraged to help implement anti-bullying initiatives.

Additional Resources on Mental Health and Wellness

The federal government identified additional resources that highlight strategies for school safety. Use these resources to learn more about mental health and wellness.

[National School Mental Health Best Practices: Implementation Guidance Modules](#)

Department of Health and Human Services

These resources – which include modules containing trainer and participant manuals, slide decks, and recorded virtual learning sessions – are designed to help states, districts, and schools advance comprehensive school mental health, as well as engage in a planning process around implementation of services.

988 Suicide and Crisis Lifeline

Department of Health and Human Services

This program offers 24/7 call, text and chat access to trained crisis counselors who can help people experiencing suicidal, substance use, and/or mental health crisis, or any other kind of emotional distress. The corresponding webpage provides additional resources and information for strengthening suicide prevention and mental health crisis services.

Supporting Child and Student Social, Emotional, Behavioral, and Mental Health Needs

Department of Education, 2021

This guide provides focused information and resources to enhance the promotion of mental health and social and emotional well-being among students. It highlights seven key challenges to providing school- or program-based mental health support across early childhood, K–12 schools, and higher education settings, and presents seven corresponding recommendations.

Preventing Adverse Childhood Experiences Training: Educator Module

Department of Health and Human Services

This online training is designed to help education professionals and adults who work in schools and learning environments across K-12 levels understand, recognize, and prevent Adverse Childhood Experiences.

Stronger Connections Grant Program: Frequently Asked Questions

Department of Education, 2022

This downloadable document of frequently asked questions is designed to assist state and local education agencies (SEAs and LEAs) in guiding effective use of Stronger Connections funds to create safe, healthy, and supportive learning environments and to respond to inquiries the Department of Education has received from SEAs, LEAs, and students and families, about program implementation. The Stronger Connections Grant Program competitively awards subgrants to high-need LEAs to establish safer and healthier learning environments, and to prevent and respond to acts of bullying, violence, and hate that impact school communities at individual and systemic levels, among other programs and activities.

Project LAUNCH (Linking Actions for Unmet Needs in Children's Health)

Department of Health and Human Services

This program seeks to improve coordination across child-serving systems, build infrastructure, and increase access to high-quality prevention and wellness promotion services for children and their families. Its purpose is to promote the wellness of young children ages birth to 8 by addressing the physical, social, emotional, cognitive, and behavioral aspects of their development.