



Designing for Children: Healthy and High Performance Schools



Healthy Schools Network, Inc.

The School Building as the Environment

- 🍏 **54 million children and 6 million adults in 120,000 schools: 20% of American population**
- 🍏 **Indoor pollution affects half of schools**
- 🍏 **Pollutants affect children's health, learning and behavior**
- 🍏 **Building design can improve the environment and affect children's health and learning**


Children: Not Just Little Adults

- 🍏 They breathe, eat and drink proportionately more per pound of body weight than adults
- 🍏 Children have developing organ systems
- 🍏 They cannot identify or protect themselves from hazards
- 🍏 Children have behaviors – such as hand to mouth contact – that cause greater exposure
- 🍏 They have different activity zones


Children's Health and Learning Issues

- 🍏 **300,000 children have been diagnosed with autism (CDC)**
- 🍏 **More than 6 million have been diagnosed with asthma (ALA)**
- 🍏 **150,000 have diabetes (CDC)**
- 🍏 **7 million children in special education (USDEd)**


Schools: Not Just Little Offices

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- A hand is visible on the left side of the slide, pointing towards the list of bullet points. The hand is resting on a document that contains technical drawings or blueprints, which are partially visible at the bottom left corner of the slide.
- 🍏 **Once a school is opened, children are required to attend, regardless of hazards or conditions**
 - 🍏 **There is no tracking or reporting of illnesses or injuries at schools**
 - 🍏 **Facility codes and maintenance are ignored**
 - 🍏 **Children cannot work from home or send in a “sub” when they feel ill**


School Environmental Issues

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- 🍏 **US Dept. of Education (NCES):**
 - 🍏 **43% of schools have one environmental condition problem**
 - 🍏 **2/3 of those schools report more than one problem**
 - 🍏 **26% of schools report ventilation problems**
 - 🍏 **1/5 are not satisfied with heat, IAQ, or noise conditions**
 - 🍏 **12% unsatisfied with lighting**
 - 🍏 **1/3 unsatisfied with energy efficiency**


Healthy and High Performance Schools

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- A close-up photograph of a hand pointing to architectural blueprints. The hand is positioned on the left side of the frame, with the index finger pointing towards the center. The blueprints are spread out on a surface, showing various lines and text. The background is a light blue gradient.
- ✔ **Designed to protect children and staff**
 - ✔ **Designed to foster a learning environment for all with:**
 - ✔ **Acoustic, thermal and visual elements**
 - ✔ **Superior IAQ**
 - ✔ **Use of environmentally preferable building materials, cleaners and school supplies**
 - ✔ **Ventilation to replenish fresh air and to dilute and remove pollutants**
 - ✔ **Durable and easy to clean and maintain**


Benefits of a Healthy and High Performance School

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- A close-up photograph of a person's hand pointing with their index finger towards a set of architectural blueprints. The blueprints are spread out on a surface, showing various lines, circles, and text. The hand is positioned on the left side of the frame, with the finger pointing towards the center.
- ✔ **Better student achievement**
 - ✔ **Increased average daily attendance, fewer suspensions**
 - ✔ **Reduced operating/maintenance costs**
 - ✔ **Positive influence on the community**
 - ✔ **A community asset and a teaching tool**

Issue Detail: Biological Agents

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- 🍏 **Water damaged buildings/materials are breeding grounds for molds and bacteria**
 - 🍏 **Air/surface concentrations higher in problem schools**
 - 🍏 **Leads to respiratory and other problems for occupants**
 - 🍏 **Recommendations:**
 - 🍏 **Keep construction materials dry**
 - 🍏 **Prevent/repair leaks and other sources of moisture**
 - 🍏 **Replace wet or damaged materials**

Issue Detail: Chemical and Physical Agents

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- A hand is visible on the left side of the slide, pointing towards the blueprints. The blueprints are partially visible, showing architectural drawings and text.
- **Materials to construct buildings and furniture off-gas toxic fumes**
 - **Children's respiratory system adversely affected by VOC's**
 - **Carpets, shelving, adhesives and office equipment are sources**
 - **Particulates, allergens, and pesticide residues accumulate**
 - **Other chemical sources: paints, markers, chemistry and art labs can pollute air**



Issue Detail: Design Recommendations

- **Site new facilities for walking/biking to school and with quiet, safe outdoor play areas**
- **Keep site and building materials dry**
- **Use natural daylight, ventilation and operable windows**
- **Design and furnish areas for easy cleaning, maintenance and storage**
- **Avoid carpets**
- **Design to minimize noise and reverberations with room/ceiling design or materials**
- **Don't use building products that contain persistent or bio-accumulative toxins**
- **Protect occupant health during renovation; air our space before use**

Federal Policy Needs

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- A hand is visible on the left side of the slide, pointing towards the text. The hand is resting on a set of architectural blueprints, which are partially visible at the bottom left corner of the image.
- **Hold Congressional hearing on role of health agencies in preventing harm to children at school; request USDEd report mandated study on how school facilities impact children (NCLB)**
 - **Pass S 3591 The High Performance Green Buildings Act of 2006**
 - **Fund the Healthy High Performance Schools provisions of No Child Left Behind**
 - **Increase resources for US EPA children's programs and schools programs**
 - **Support federal funds for urgent health & safety repairs to schools**
 - **Institutionalize funding for the National Clearinghouse for Educational Facilities**
 - **Pass S 1619/HR 10 the School Environmental Protection Act**

State Actions for High Performance Schools

- 🍏 **States: NY, NJ, MA, and NH**
- 🍏 **151 schools in the Northeast use high performance design (NEEP)**
- 🍏 **California, North Carolina and other states active in high performance/green school efforts**
- 🍏 **States/NGO's create healthy schools reform coalitions/task forces to study needs, set reform agenda for new construction and for "greening" existing schools**



Coalition for Healthier Schools

“There are 54 million children at risk every day for health problems caused by their own schools. And children have no health protection. We love our schools, but this must change. Federal health policy is crucial, as is leadership for an interagency strategy and funding to hasten the deployment of best practices to improve the conditions of all schools.”

Claire Barnett, Executive Director
Healthy Schools Network
April 26, 2006

Resources

- **US EPA:** www.epa.gov/schools, the place to find links to dozens of EPA school-targeted programs (energy, IAQ Tools for Schools, drinking water, mercury, asbestos, IPM, and more)
- **National Clearinghouse of Educational Facilities:** www.edfacilities.org/healthy_school_environment, for extensive online library of reports, essays, research, guides
- **Healthy Schools/Healthy Kids Clearinghouse:** www.healthyschools.org, for award-winning guides and reports, links to other not for profit organizations. See especially: *Healthy and High Performance School*, a science and policy report (2004); *Lessons Learned*, a state by state report on children at risk and “voices” of parents and teachers (2006).
- **National Academies Press:** <http://newton.nap.edu/catalog/11574.html>, for Review and Assessment of the Health and Productivity Benefits of Green Schools: An Interim Report, National Academies Press, 2006.

Healthy Schools Network, Inc.

Research, information & education, and
coalition-building
to empower and encourage
parents, schools, and others
to improve our children's workplaces.

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