



Designing for Children: Healthy and High Performance Schools by Design

Healthy Schools Network, Inc.

**Congressional Briefing: July 20, 2006
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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 health and learning of children

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 text. The hand is resting on a set of architectural blueprints, which are partially visible at the bottom left corner. The blueprints show various lines and shapes, typical of a floor plan or site plan.
- 🍏 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 send in a “sub” when they are sick

School Environmental Issues

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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. The blueprints show various lines and text, including the word 'ROOFING' and some numbers like '101000' and '101000'.
- 🍏 **US Department of Ed. (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 person's hand pointing with their index finger towards a set of architectural blueprints. The blueprints show various lines, shapes, and text, including the word 'FOLLOW' and some numbers. The hand is positioned on the left side of the frame, and the blueprints are spread out on a surface.
- 🍏 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

- 🍏 **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

- 🍏 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

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 and text. The hand is positioned on the left side of the frame, with the finger pointing towards the right.

Issue Detail: Chemical and Physical Agents

- 🍏 **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**

A close-up photograph of a person's hand pointing with their index finger towards architectural blueprints. The blueprints show various lines, circles, and text, including the word 'FLOORING' and some numbers. The background is a light blue gradient.

Issue Detail: Design Recommendations

- 🍏 **Site new facilities for walking/biking to school and in quiet, safe outdoor 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 ceiling design or tiling**
- 🍏 **Don't use building products that contain persistent or bio-accumulative toxins**
- 🍏 **Protect occupant health during renovation; air our space before use**

National Policies and Actions

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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 show various lines, curves, and text, typical of a technical drawing. The hand is positioned on the left side of the frame, with the finger pointing towards the center-left.
- Hold Congressional hearing on role of health agencies in preventing harm to children at school and in daycare; request USD Education report on its mandated study on how school facilities impact children
 - 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 Action 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 schools**
- 🍏 **States can create healthy schools reform coalitions/task forces to study needs, set agenda for new construction and for “greening” existing schools**

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April 26, 2006 Press Release: Coalition for Healthier Schools

*There are an estimated 32,000,000 children (of 54m enrolled) at high risk every day for health and learning problems due solely to the conditions of their schools. This must change. Federal health policy is crucial, as is leadership for an interagency strategy to hasten the deployment of best practices to improve the environmental conditions of schools. (**Lessons Learned**, a 2006 national collaborative report)*

Resources

- **US EPA:** www.epa.gov/schools, the place to find links to dozens of EPA school-targeted programs (energy, IAQ Tools for Schools, Buy Clean, 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, not necessarily reviewed by environment or health experts
- **Healthy Schools/Healthy Kids Clearinghouse:** www.healthyschools.org, for EPA-award-winning Clearinghouse guides and reports, links to other organizations. See "*Healthy and High Performance School*" science and policy report, HSN, 2004.
- **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.

A close-up photograph of a person's hand pointing with their index finger towards a blueprint or technical drawing. The drawing shows various lines, circles, and text, typical of an architectural or engineering plan. The hand is positioned on the left side of the frame, with the finger pointing towards the center.

Healthy Schools Network, Inc.

For research, guides, reports, technical assistance, and coalition-building that empower and encourage parents, schools, and others to improve our children's workplaces.

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