

US Senate Environment and Public Works Committee Hearing

Green Buildings:

Benefits to Health, the Environment, and the Bottom Line

Washington, DC, May 15, 2007



Panel table: Healthy Schools Network Executive Director Claire Barnett (center), with representatives of the US Green Buildings Council (left) and Green Globes (right).

Healthy Schools Network, Inc.

STATEMENT

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Introduction

Good morning. Thank you Senators Boxer and Inhofe and the other members of the US Senate Environment and Public Works Committee for the opportunity to present information on how the poor conditions of our non-green and very unhealthy school buildings undermine children's health and interfere with learning, waste taxpayers' support, and what we can do to reverse that by promoting healthy and high performance school design and operations.

Our children and grandchildren—yours and mine-- are compelled to be in school today. Yet, every day brings new reports of e-coli in school water; schools sinking into landfills; closures due to mold infestations; evacuations and ER trips prompted by chemical fumes; schools on toxic sites; chemicals in closets from the 1840's; parents told to keep their children away from unhealthy schools. No parent wants that for their child and no one here would visit those threats on anyone's else's child. But we do, despite the knowledge and the ability in the federal agencies to help prevent problems through the siting, design, construction, and operations of our children's workplaces-- schools.

School buildings can be designed and maintained in such a way that the school facility itself promotes the health and well being of children, and promotes and facilitates learning. A Healthy and High Performance School dramatically improves the health and learning of students while saving money for schools. The Healthy and High Performance School combines design features that hard science finds helps promote children's health and achievement and attendance, as well as adult health and productivity. Other features promote resource conservation, energy efficiency, and reduced carbon emissions. All save money for education and for taxpayers and enhance communities.

My name is Claire Barnett. I am the founding Executive Director of Healthy Schools Network, Inc, and the Coordinator of the national Coalition for Healthier Schools. Healthy Schools Network is a not for profit research, information and education, and advocacy organization that seeks to ensure that every child will have an environmentally healthy school that is clean and in good repair. We have successfully shaped and secured new polices, programs, and funds for schools, at home in New York, and nationally, while our Clearinghouse has assisted parents and schools in every state. The national Coalition

provides “the platform and the forum” for healthy school environments, endorsed by over 520 organizations and individuals nationwide.

Lessons Learned: A National Report
32,000,000 children: victims of a public health crisis
(national collaborative report, with 28 contributing groups, April 2006)

Missouri Parent. My daughter had been missing one day of school per week for 3 months because of her extreme bouts with chronic illness. She was sent home several times complaining of severe headaches...., the doctor recommended that she stay home from school for 2 weeks to rebuild her strength. We have to be extremely cautious in managing her asthma because she is allergic to a lot of the medications that help, so we followed doctor’s orders without hesitation. Shortly after her school absence, I discovered that the school had reported me to Social Services for educational neglect! This was a shock because the school is well aware of her health problems as well as the doctor’s order to stay out of school....

New Jersey Parent. When my daughter entered fifth grade, the nightmare began. Construction was taking place and she became very asthmatic, but over the summer, she was fine. As soon as school re-convened, she got extremely ill-headaches, body rashes and sores. She got worse; her skin began peeling, she was losing hair and developed dark spots all over. After staying home, within two hours of re-entering the school, I was called to pick her up because she had completely relapsed! Once I moved her to another school, she never had a problem.

<u>National Summary of Data*</u>	
No. Publ. School Bldgs	96,143
No. Students	48,590,635
No. Minority Students	19,778,912
No. Students in Special Ed. Programs	6,597,187
No. Employees in School System	5,447,541
% Children w/Asthma (under 18)	8.7 %
% Schools with at least one Inadequate Bldg. Feature	57 %
% Schools with at least one Unsatisfactory Bldg. Condition	68 %
Est. No. Students at High Risk	31,067,803
<p><i>* Lessons Learned provides state by state data tables, news clips and reports for parents and teachers on school conditions.</i></p>	

Overview

Children are uniquely vulnerable to environmental contaminants, many of which are found in schools. Children proportionately breathe more air, drink more fluids, and eat more food than adults. Developing systems are more vulnerable to environmental toxins than are fully

developed adults. Yet health standards for children's exposure to indoor environmental contaminants do not exist. Today is a school day and some 54 million children are in our nations' 120,000 schools—over a decade ago the US GAO observed that children are compelled by law to attend school, yet these school facilities may be unsafe or harmful to student health. Last year, working side by side with 28 other organizations nationally, we estimated that 32 million children were at elevated risk of health and learning impairments and secondary disabilities due solely to the conditions of their schools.

To focus on one such hazards, EPA estimates that half of all schools have Indoor Air problems. Indoor air is 5-100 times more polluted than outdoor air. School indoor air is a major contributor to causing and exacerbating asthma, the leading cause of school absenteeism and the leading **occupational disease of teachers**—that means it is caused by their work environment, the school. Other health effects can include: respiratory problems, poor concentration, rashes, headaches, gastrointestinal problems, nervous system disorders, and cancers. Nationally, there has been a dramatic rise in the number of children with learning disabilities, attention deficit hyperactivity disorder, and autism, as well as other children on daily medications for an array of chronic health conditions. Any child can be affected by factors such as heat, noise, light, humidity, bioaerosols, contaminated dusts, chemical spills, and renovation hazards.

The “Green” and the Healthy and High Performance School

One answer to this complex problem is BACK TO BASICS approach to restore fresh air and sunshine to our nation's schools. Clean air, non-toxic building materials, daylighting and full-spectrum lighting, state of the art thermal and acoustical engineering and energy efficiency are incorporated into a holistic design and construction of a school. Demonstrated benefits include improved student performance, improved child health, improved attendance and teacher productivity, and substantial operational savings. High performance schools mitigate poor indoor air quality by using materials that do not off-gas hazardous chemicals, by utilizing properly designed ventilation and air conditioning systems, by keeping materials and buildings dry and mold-resistant, and incorporating other features such as radon-proofing, and pest-proofing, and durable, easy to maintain floors and roofing systems. A healthy and high performance school also saves up to 40% of the building's energy costs over the lifetime of the facility.

Across the country, communities are building Healthy and High Performance (“green”, sustainable) schools. Governors of both California and New Jersey have issued Executive Orders requiring schools to be built “green”. The New York City school district, our nation’s largest district, just adopted a [Green School Guide](#) blending US GBC’s LEED rating system with elements of NY-CHPS, the NY Collaborative for High Performance Schools design guidelines, that is now linked to the City school’s \$13.2 billion five-year capital plan. Indeed the CHPS model that began in CAL and is adopted by Los Angeles and 21 other large districts, has now been adapted for use statewide into Washington, New York, Massachusetts, and New Hampshire. These state and metro-based CHPS protocols are already impacting directing billions of dollars of school construction. More states and cities can and should do the same.

A new National Research Council report “Green Schools: Attributes for Health and Learning” is an excellent review of the hard sciences. Among the findings:

- **Robust body of evidence linking health to IAQ/Indoor Air Quality**
- **Some evidence linking IAQ to productivity and learning**
- **There is an association between excessive moisture, dampness, molds in buildings and adverse health outcomes**
- **Key factors in IAQ: ventilation rate and effectiveness, filter efficiency, temperature and humidity control, control of excess moisture, maintenance**
- **Indoor pollutants and allergens also linked to linked to respiratory and asthma symptoms**
- **Reducing the indoor pollutant load reduces the occurrence of building-associated health symptoms**
- **Work performance decreases with higher room temperatures**
- **Lighting must focus on a work performance priority, then on energy savings**
- **Control glare when encouraging daylighting**
- **Speaking and listening are key to learning**
- **Sufficient evidence for inverse association between excessive noise and student learning**
- **Infection control in densely occupied spaces requires cleaning and ventilation**

Building design, construction, and operations of schools-- typically very large, very densely occupied, and very heavily used indoor environments of 75,000- 100,000 ft² plus associated ‘portables’ and bus garages, are complex systems. How does a parent, teacher, school principal or a local school board member or school head find out how to design and operate a healthy school?

One way to get usable information into local hands quickly and to accelerate the number of schools taking action is to encourage states to become active. Thus my own organization and the participants in the national Coalition are supporting The High Performance Green Buildings Act that would establish a federal office and advisory committee on green buildings and authorize EPA to give grants to qualified state agencies to build information and technical assistance systems that promote health and high performance schools, identify and help resolve environmental problems, and to create model school siting guidelines.

For example, Title II also directs EPA to issue guidelines for the states to develop and implement environmental health programs for schools in research and in children's health protection. Adults and children often have the same exposures in schools; children may outnumber adults in schools by ten to one and are more vulnerable to these hazards. Yet adults can call upon contracts, unions, OSHA, NIOSH, Labor Departments, occupational health clinics and more, while children and families have no such system of environmental health services anywhere. State and local agencies as the federally designated and funded ped env health units can be encouraged to work together in onsite investigations of hazards.

The Bottom Line. There is no downside to healthy and high performance school design and operations. It improves children's health, workers health, improves our environment, saves energy, and saves money for education. As schools across the country are built, rebuilt and renovated, we owe it to our children, their parents, their sponsoring communities and the taxpayers to assure that they are designed and built to specifications representing now proven state-of-the-art healthy and high performance architectural standards.

A healthy school is a back to basics step—and good for children, for environment, for education, for health, and for communities.

Thank you.