

Healthy Schools Network, Inc.

Invited testimony before the US Senate
Committee on Environment and Public Works

Green Buildings:
Benefits to Health,
the Environment, and the Bottom Line

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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 school buildings undermine children's health and interfere with learning and what we can do to reverse that by building and operating healthy and high performance schools.

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 our society does. And the real shocker is that all of those problems are easily avoided through the siting, design, construction, and operations of our children's workplaces—their school buildings.

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. Too often schools are unhealthy places that impede learning, sicken children, teachers and staff and waste public resources. The Healthy and High Performance School combines design features that promote children's environmental health, environmental sustainability, energy efficiency, reduced carbon emissions and save money for education and their communities. Science-based policy and action steps should be taken now to “design out” common problems and ensure that all our children have environmentally healthy schools that are clean and in good repair.

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. My testimony is on behalf of Healthy Schools Network and on behalf of participants in the Coalition.

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.

Ohio Teacher. "Why should we continue to teach in a building that's making everyone ill?!" Our district decided to erect a brand new school building. It went up fast, but we were all happy to relocate. After we moved in, I began feeling ill and having problems with my eyes. ...I informed administration about many teacher's complaints and suggested that it may have something to do with the new building. ...I began tracking the kids. They were ill; symptoms flared during the week and subsided over the weekend. Soon after, ...a few other teachers were diagnosed with new occupational asthma.... Finally we staged a "teach out"; all but 90 students left the building. This is when things started to change: the school was closed for 16 months and cleaned up.

Georgia Environmental Advocate. The Board of Education learned in April 2005 that our Elementary school soils were contaminated-enough to be included on Georgia's list of Hazardous Sites. Starting from scratch in May 2005, school staff began... testing the schoolyard.... Initial estimates were a few hundred cubic yards of soil. ... When clean up levels were not met, more was removed until goals were achieved. The few hundred cubic yards ballooned to 3500 as toxic soils were discovered much deeper than expected. May, June, and July rushed by as the August 10th school- reopening date approached. School opened, cleaned-up, and on time, thanks to the commitment and hard work of the school's Facility Director.

National Summary of Data*

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

*** *Lessons Learned* provides state by state data tables, news clips and reports for parents and teachers on school conditions.**

COALITION FOR HEALTHIER SCHOOLS: Issue Statement

Issue Background. Improving children's health, learning, the environment, and communities.

Each day over 53 million school children and 6 million adults - 20% of the entire U.S. population - enter our nation's 120,000 school buildings to teach and learn. Unfortunately, in too many cases, they enter "unhealthy" school buildings, that undermine learning and health. Many school facilities have been poorly maintained and thousands of our nation's schools remain severely overcrowded. Schools are often sited next to industrial plants or on abandoned landfills; new schools are built beyond safe walking or biking distance for students. In a recent five-state survey, more than 1,100 public schools were built within a half-mile of a toxic waste site. Polluted indoor air, toxic chemical and pesticide use, growing molds, lead in paint and drinking water, and asbestos are also factors that impact the health of our nation's students and school staff. These problems contribute to absenteeism, student medication use, learning difficulties, sick building syndrome, staff turnover, and greater liability for school districts. The US Energy Dept. found schools could save billions of dollars by installing energy efficient heating systems.

32 million children at elevated risk of health problems caused by decayed schools (*Lessons Learned, 2006*). According to US EPA, "Studies show that one-half of our nation's schools have problems linked to indoor air quality. Students, teachers and staff are at greater risk because of the hours spent in school facilities and because children are especially susceptible to pollutants." Schools are also more densely occupied and more intensively used than offices, which contribute to the overall problem. Asthma is the leading cause of school absenteeism and the leading occupational disease among teachers and custodians. The increase in asthma problems is particularly acute in urban areas with large numbers of African-American, Hispanic American and other minority students. Children with preexisting health, learning, or other special needs may be at greater risk.

Federal agencies, states, communities, and education officials must improve school environmental quality. Federal agencies are well aware that "high performance school" design and construction and environmental management of facilities can produce healthier learning environments. Key policy and program reforms include siting, design and construction, and environmental management on issues such as "green cleaning" and least-toxic pest control, as well as preventive repairs that preserve neighborhood infrastructure and center communities on children's needs.

At a time when this nation is committed to raising the academic performance of all children, it is essential that the federal agencies provide the knowledge, leadership and technical assistance that states, cities, and schools need to ensure that every child, every school employee, and every community has environmentally safe and healthy schools that are clean and in good repair.

Statement Sponsors: American Association on Intellectual and Developmental Disabilities, American Federation of State, County, and Municipal Employees, Alliance for Healthy Homes, American Lung Association, American Public Health Association, Beyond Pesticides, Children's Environmental Health Network, Connecticut Foundation for Environmentally Safe Schools, Environmental Defense, Funders Forum on Environment and Education, Healthy Child Healthy World (CHEC), Healthy Kids: The Key to Basics (MA), Healthy Schools Network, Improving Kids Environment (IN), Institute for Children's Environmental Health, Learning Disabilities Association of America, Marin Golden Gate Learning Disabilities Association (CA), Massachusetts Healthy Schools Network, National Center for Environmental Health Strategies, National Education Association, National Education Association/Health Information Network, National PTA, Natural Resources Defense Council, New Jersey Work Environment Council, New Jersey Environmental Federation, Oregon Environmental Council, Physicians for Social Responsibility, Public Education Network, 21st Century Schools Fund, West Harlem Environmental Action, League of Conservation Voters, National Clearinghouse for Educational Facilities, National Association of Pediatric Nurse Practitioners, Apollo Alliance, *and 500 more groups and individuals, as of April 2007.*

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. An often-cited U.S. General Accounting Office report noted that children are compelled by law to attend school, yet these school facilities may be unsafe or harmful to student health.

Children's exposure to environmental hazards at school contributes to multiple health problems. Poor school indoor air is a major contributor to causing and exacerbating asthma, which is well known to be at epidemic proportions among school age children. Hazards in the school environment are linked to a host of other health problems including 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 afflicted with learning disabilities, attention deficit hyperactivity disorder, and autism. These conditions are also linked with environmental toxins that may be found in the school environment.

The poor conditions of America's schools are well documented (and endured by millions of children every day), and these deteriorating school facilities contribute greatly to harmful environmental exposures. As noted above, there is no system of environmental health protection for children at school. The school environment is therefore unique, and tragically, often fails in providing its most basic function, that is providing a healthy and safe learning environment for students, teachers and school staff.

The "Green" or Healthy and High Performance School

One answer to this complex problem is to have schools well designed from the start. Communities across the nation are designing and building healthy and high performance (or "green") schools that create environments that improve learning, promote good health, are easier to maintain, and cost less to operate than traditional school facilities. 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 comprehensive construction of a school. Demonstrated benefits include improved student performance, improved child health, improved student

attendance 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, and focusing on preventative maintenance. In addition to superior indoor air quality, healthy and high performance schools provide improved student performance due to better lighting, acoustics and thermal comfort. A healthy and high performance school also saves up to 40% of the building's energy costs over the lifetime of the facility. In addition, healthy and high performance schools can be built at the same cost as conventional school facilities. These schools then have an added benefit, saving districts substantial funds in decreased energy and maintenance costs over the life of the building.

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 in accordance with High Performance/Green design standards. The New York City Schools, our nation's largest district, just adopted a Green Schools Guide blending US GBC's LEED-NC rating system with elements of NY-CHPS, the NY Collaborative for High Performance Schools design guidelines. Indeed the CHPS design model that began in CAL and is adopted by Los Angeles and other large districts, has now been adapted for use statewide into Washington, New York, Massachusetts, and New Hampshire. These environmentally healthy design protocols will impact billions of dollars of school construction and major renovations. More states can and should do the same.

Indeed, school construction and school purchasing is a \$ 730 billion a year decentralized market taking place in thousands of local communities. Imagine if all 54 million children in our nation's 120,000+ public and private schools had environmentally healthy buildings. What a transformation! And a ready market for green-rated product producers.

The health and learning benefits are known to federal agencies, as well as to high-end real estate developers. But what are the real benefits to our children?

A new National Research Council report “Green Schools: Attributes for Health and Learning” is an excellent review of the hard sciences. Among the findings, that ‘green’ has not been well defined; but that there is a “robust literature” in the impacts of healthy school environments on children, on attendance, on achievement and behavior, and on productivity. Bear in mind the virtual epidemic of children with asthma, autism, auto-immune disorders, visual, auditory, and other learning challenges in school every day, then consider:

- Robust body of evidence linking health to IAQ
- 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, O&M, maintenance
- Indoor pollutants and allergens also linked to respiratory and asthma symptoms (*HSN note-- asthma is the leading occupational disease of teachers and of custodians*)
- Reduced pollutant load (through increased ventilation and filtration) has been shown to reduce occurrence of building-associated symptoms
- Work performance decreases with higher room temperatures
- Green school lighting focuses on energy, not work performance
- 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
- More research will be helpful

Greening school design provides an extraordinarily cost-effective way to enhance student learning, reduce health and operational costs and, ultimately, increase school quality and competitiveness.

Gregory Katz, *Greening America's Schools: Costs and Benefits*, October 2006, Capital-E.

BACK TO BASICS. No one should be surprised that children do better with a little fresh air and sunshine and a quiet place in which to learn.

The federal agencies like EPA and Education and CDC are aware of the impacts of unhealthy schools on children's health, and the National Academy of Sciences has produced a tremendous report summarizing the peer reviewed literature on the health and learning attributes of schools, finding that healthy indoor environments produce benefits.

What should a parent, teacher, school principal or a local school board member or school head do?

One way to get usable information into their 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.

Focusing on Title II, the Healthy and High Performance Schools section, we find that it will address many of the issues raised today. For example,

Grants to the states. An important effort that will protect taxpayers and protect children is to make sure that High Performance Green buildings, once opened, stay green, and that localities don't "lose" any more school facilities due to poor siting, design, construction, operations, or ill-informed maintenance practices. This puts a premium on rapidly disseminating US EPA's best practices for healthy indoor environments, such as *IAQ Tools for Schools* and *Healthy SEAT* into states and cities, thence into local schools, allowing state agencies to mix and match energy, education, health, and construction aid formulas for efficient and effective results.

Title II authorizes EPA to make grants to qualified state agencies to develop comprehensive school environmental quality plans that address critical issues in design, construction, siting, maintenance. It also would allow states to identify problems and develop and disseminate solutions.

Title II also directs EPA to develop model school siting guidelines. Not one parent in the country wants their child to go to school on a toxic waste site or in a swamp. Yet report after report has found too many schools on such sites. Model guidelines for the siting of schools would do much to alleviate the pressure to place schools on compromised sites and would help communities reject proposals to place hazards adjacent to or near existing schools.

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. One feature that is critical to protecting children caught in unhealthy conditions is encouraging the states to collaborate with the federally designated and funded Pediatric Environmental Health Specialty Units in on-site environmental investigations of schools. 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. In the aftermath of September 11th, with local schools contaminated by fumes and debris, not one agency stepped in when schools were re-opened without appropriate, full remediation. This gap in services has a perverse effect, depriving everyone-- schools, agencies, parents and children-- of independent, full and complete assessments of hazards. (*Schools of Ground Zero: Early Lessons Learned in Children's Environmental Health*, © APHA, Healthy Schools Network, Bartlett and Petrarca, 2002).

As advocates for children's environmental health, we have worked diligently to promote Healthy and High Performance school design in the federal government, in the state houses, in local districts and with parents, teachers and school personnel across the country. There is now burgeoning interest across the country in "green" building and design as an essential part of our commitment to protect our environmental heritage.

Yet the additional benefits for our children, their health, and their educational experience from designing in features that are health-protective, in contrast to resource efficient, is at least as great.

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 vote for healthy schools is a vote for children, for environment, for education, for health, and for communities.

Thank you.

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