

INDOOR ENVIRONMENTAL QUALITY
IN SCHOOLS TASK FORCE

RECOMMENDATIONS TO
STATE SUPERINTENDENT TONY EVERS
IN RESPONSE TO
2009 WISCONSIN ACT 96

SUBMITTED FEBRUARY 2011

Indoor Environmental Quality in Schools Task Force

The Indoor Environmental Quality in Schools Task Force (IEQ Task Force) began its work in March 2010 to make recommendations to the state superintendent for the development of a model management plan for maintaining indoor environmental quality in public schools and private schools participating in the Milwaukee Parental Choice Program. After the task force completes its work, the Department of Public Instruction (DPI) will create a different work group to take the task force's recommendations and create the actual model management plan. The model management plan is to reflect best management practices, indoor environmental quality training requirements for school district or private employees who are responsible for the operation and maintenance of schools, educational materials relating to indoor environmental quality in schools, and model specifications for the design and construction of school facilities or additions to school facilities.

The IEQ Task Force completed its work in February 2011 with findings and recommendations being submitted to the state superintendent followed by submission to the Governor and the education committees of the Legislature.

Following the timeframe specified in the law, using the DPI's model management plan as a guide, each school board in the state and each private school in the Milwaukee Parental Choice Program will need to implement a plan for maintaining indoor environmental quality in its schools.

Background on the Task Force

2009 Wisconsin Act 96 was signed by Governor Jim Doyle and became law in December 2009. The Act directed the state superintendent to establish a special committee called the Indoor Environmental Quality in Schools Task Force. The 17 members of the task force were prescribed in the law to be:

1. The state superintendent or his or her designee.
2. The secretary of commerce or his or her designee.
3. The secretary of health services or his or her designee.
4. A representative of the Wisconsin Association of School Boards.
5. A representative of the Wisconsin Association of School District Administrators.
6. Three representatives of the Wisconsin Association of School Business Officials who have expertise in indoor environmental quality in schools.
7. A representative of the Wisconsin Council of Religious and Independent Schools.
8. A representative of the Wisconsin Association of School Nurses.
9. A representative of the largest statewide labor organization representing teachers.
10. A representative of the largest statewide organization representing parents of pupils.
11. An occupational health physician or allergist who has expertise in indoor environmental quality in schools.

12. A registered architect who has expertise in school design and construction.
13. A registered professional engineer who has expertise in the design of mechanical systems for schools.
14. Two industrial hygienists certified by the American Board of Industrial Hygiene who have expertise in indoor environmental quality in schools.

The task force was charged with the following:

- Make recommendations to the Department of Public Instruction (DPI) for the development of a model management plan for maintaining indoor environmental quality in public schools and Milwaukee Parental Choice Program private schools that reflects best management practices. The task force shall consider including in its recommendations all of the following components:
 - a. Designating a school district or private school employee as the indoor environmental quality contact for the school district or private school.
 - b. Establishing an indoor environmental quality committee composed of school administrators, teachers, educational support professionals, and custodial and maintenance staff.
 - c. Developing a plan for communicating with school district or private school employees, pupils, and parents and guardians of pupils about indoor environmental quality problems, including test results, and proposed schedules for remediation.
 - d. Identifying procedures for handling complaints about indoor environmental quality.
 - e. Acknowledging that the school district or private school will continue to meet all health and safety laws or codes that apply to the school district or private school.
 - f. Developing a plan for addressing indoor environmental quality issues noted during an evaluation of building systems performed in accordance with department rules on safe and healthful facilities.
 - g. Providing for an annual review of the management plan by the indoor environmental quality contact and the school board or private school governing board.
- Recommend indoor environmental quality training requirements for school district or private employees who are responsible for the operation and maintenance of schools.
- Recommend educational materials relating to indoor environmental quality in schools.
- Recommend model specifications for the design and construction of school facilities and for additions and structural alterations to school facilities that promote indoor environmental quality and ensure that the building's systems are planned, designed, installed, tested, operated, and maintained to perform efficiently and to meet the school district's or private school's needs.

Definition of Indoor Environmental Quality in Schools

For the purposes of making recommendations for a model management plan, the following defines the scope of issues to maintain Indoor Environmental Quality (IEQ) in Schools.

In conjunction with the requirements directed under Wisconsin Statute and Administrative Code, school building officials are to take appropriate steps to provide and maintain safe and healthful facilities. Measures to maintain IEQ in schools may include quality heating, ventilation and air conditioning (HVAC) systems, moisture control, integrated pest management, cleaning and maintenance schedules, appropriate materials selection, routine building inspections by maintenance personnel, appropriate training of staff, and communication. School buildings are to be kept in good repair, suitably equipped and in safe and sanitary conditions. Healthful schools promote a positive learning environment.

Communication Plan Recommendations

Districts and private schools should have a communication plan in place that would best inform staff, students, parents, and the public of their indoor environmental quality (IEQ) status. Districts and schools already have other communication plans in place for crisis situations to keep staff and families informed, so IEQ could simply be added. A communication plan is considered critical to the success of IEQ management, similar to crisis management and ongoing communication. There should already be processes in place for such plans thus adapting them to IEQ is advisable.

- Statement of IEQ program: a notification to students, staff, and the community that the district has an IEQ management plan in place.
- Determine how the notification is to be delivered to staff, students, and other users of facilities and where information on IEQ can be found (safety committee, staff meetings, board policy, website, newsletter, local newspaper, etc.).
- Notification is to be done annually with other required annual notices.
- A contact for IEQ is designated and responsibilities defined.
- If IEQ concerns are raised, an investigative request procedure exists:
 - IEQ concern is submitted in writing to the IEQ contact.
 - Complainant contact information required.
 - IEQ contact assigns someone to investigate.
 - Anticipated timeline developed and shared.
 - Follow-up procedure developed.
 - Results of the investigation are communicated with complainant.
 - Complete record of IEQ concerns and resolutions should be kept on file with the district or private school for a minimum of 7 years.

The IEQ Task Force recommends that examples should be added in the actual model management plan.

Suggested examples for districts or private schools to use:

- IEQ concern form (not a checklist).
- Written procedures on using the work order process to deal with IEQ concerns.
 - Online.
 - Paper.
- Board policies.
- Communication examples such as those found in the EPA *Tools for Schools* Coordinator Kit.

Training Recommendations

The Indoor Environmental Quality (IEQ) In Schools Task Force recognizes that training for staff is a key element for promoting safe and healthy indoor environments in schools. After a brief review of available training materials, the task force feels that sufficient tools are available to address the training needs of most schools and school districts in Wisconsin. However, it is recognized that the time and money for sending staff to training is often scarce. The training discussed is the minimum level that is suggested; however, depending on individual buildings and staff level, additional training may be needed. It would likely be helpful for certain staff to participate in additional training to enhance their understanding of IEQ in schools.

Therefore, the task force makes the following three general recommendations:

1. The Department of Public Instruction should recommend goals and best practices for the type and level of training needed by the various staff who participate in the management of school facilities.
2. Districts and schools are encouraged to review the EPA *Tools For Schools* Program which contains some of the best, most useful, and appropriate training tools and materials. Additional training needs related to the development of an IEQ Plan are available. A variety of other helpful resources are noted throughout this document.
3. The introductory level of training necessary for IEQ management in school facilities should be made available free of charge through web available training modules.

Numerous resources exist to assist districts/schools to meet training recommendations. Some of the topics that could be considered for inclusion in training are:

- IEQ Basics
 - Introduction to IEQ
 - Contaminant Control Strategies as referenced in *Tools for Schools*, Section 6, include but are not limited to: Source Management, Local Exhaust, Ventilation, Exposure Control, Air Cleaning, Education
- Elements of an Effective IEQ Program
 - Coordinator
 - Committee (optional)
 - Key Personnel Interviews/Complaint Handling Process

- Visual Inspections
- Identifying Vulnerable Areas
- Communication
- Record Keeping
- Operations and Maintenance
 - Practices & Procedures
 - Ventilation
 - Flooring
 - Cleaning Activities
 - Pests and Pesticides
 - Chemicals
 - Construction/Renovation
 - Older Buildings
 - Furnishings and Materials
 - Communications
 - Plants and Animals

Further information on training and strategies can be found in *Tools for Schools*.

Recommended Educational Resources

- EPA *Tools for Schools* http://www.epa.gov/iaq/schools/pdfs/kit/coordinators_guide.pdf
- EPA *Building Air Quality: A Guide for Building Owners and Facility Managers* http://www.epa.gov/iaq/largebldgs/baq_page.htm An easy-to-understand path for taking buildings from current conditions and practices to the successful institutionalization of good IAQ management practices. Emphasizes changing *how* you operate and maintain your building, *not increasing the amount of work or cost* of maintaining your building.
- CHPS <http://www.chps.net/dev/Drupal/node/288>
- ASHRAE Best Practices Guideline website link <http://www.ashrae.org/publications/page/1936>
- Some model management plans are available at *Tools for Schools*, page 19. Examples of model management plans could be created to assist schools.

Recommendations for the Design & Construction of School Facilities

Schools must adhere to the state, federal, and municipal building code guidelines and other mandates/rules/regulations. Therefore, the task force does not believe that DPI should recommend further specifications for the design and construction of school facilities that go beyond these building codes.

- **Wisconsin State Building Codes** <http://commerce.wi.gov/SB/SB-DivCodesListing.html>

Districts or schools wishing to go further than code may consider doing so. The goal or best practice in the design and construction of school facilities may be to achieve standards set by the following industry leaders:

- **Environmental Protection Agency's Indoor Air Quality (IAQ) Tools For Schools**
www.epa.gov/iaq/schools/
The *IAQ Tools for Schools* Program is a nationwide initiative to help school officials assess, resolve, and prevent IAQ problems, and to reduce exposure to asthma triggers in school facilities. Use the Framework for Effective School IAQ Management to make green cleaning part of your existing IAQ management program and ensure it becomes part and parcel of your continuing effort to create and maintain healthy environments. For more, visit:
<http://epa.gov/iaq/schools/excellence.html>
- **Environmental Protection Agency's Indoor Air Quality (IAQ) Design Tools For Schools**
<http://www.epa.gov/iaq/schooldesign/>
IAQ Design Tools for Schools provides both detailed guidance as well as links to other information resources to help design new schools as well as repair, renovate, and maintain existing facilities. Though its primary focus is on indoor air quality, it is also intended to encourage school districts to embrace the concept of designing high performance schools, an integrated "whole building" approach to addressing a myriad of important — and sometimes competing — priorities, such as energy efficiency, indoor air quality, day-lighting, materials efficiency, and safety, in the context of tight budgets and limited staff.
- **The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)**
 - ***Indoor Air Quality Guide***
<http://www.ashrae.org/publications/page/1936>
The Indoor Air Quality Guide: Best Practices for Design, Construction and Commissioning is designed for architects, design engineers, contractors, commissioning agents, and all other professionals concerned with IAQ. This comprehensive publication provides guidance on:
 - Best practices for all aspects of IAQ building design, commissioning and construction, including designing for maintainability.
 - Tools and materials for demonstrating the value of IAQ to clients.
 - Forty strategies for achieving eight critical IAQ objectives.
 - **Standard 55, Thermal Environmental Conditions for Human Occupancy**
<http://www.ashrae.org/technology/page/132>
The purpose of this standard is to specify the combinations of indoor thermal environmental factors and personal factors that will produce thermal environmental conditions acceptable to a majority of the occupants within the space.
The environmental factors addressed in this standard are temperature, thermal radiation, humidity, and air speed; the personal factors are those of activity and clothing.
This standard does not address such non-thermal environmental factors as air quality, acoustics, and illumination; or other physical, chemical or biological space contaminants that may affect comfort or health.
 - **Standard 62.1, Ventilation for Acceptable Indoor Air Quality**
<http://www.ashrae.org/technology/page/548>

ASHRAE's standard for indoor air quality for commercial buildings. 2010 revisions add new minimum filtration/air-cleaning requirements, minimum requirements for when ventilation systems must be operated, and a Natural Ventilation Procedure. Other revisions include a more robust IAQ procedure, demand-controlled ventilation system design requirements, requirements for separation of intakes and exhausts, and ventilation rates and occupancy categories.

- **Basil Castaldi, *Educational Facilities, Planning, Modernization and Management (4th Edition)*.**

There is not a link to the contents of this resource. It is, however, available for purchase on various websites.

The text blends current theory and practice and is organized for mutual use as a basic textbook by the student in educational administration and as a sourcebook for the practitioner. This is a comprehensive treatment of the planning, designing, remodeling, and maintenance of educational facilities.

- **Collaborative for High Performance Schools (CHPS)**

<http://www.chps.net/dev/Drupal/node/288>

CHPS has developed a best practices manual to help schools, districts, and practitioners achieve high performance design, construction, and operation. Titles addressing the following topics are available:

- The initial phases of a project.
- A reference guide for design and construction professionals.
- State and region-specific benchmarking systems that help schools, districts and design teams to prioritize and achieve green, healthy school buildings.
- For school operators to operate their schools as their designers intended and provide optimal health, efficiency, and sustainability.
- A guide to the process of commissioning school equipment.
- A guide for relocatable manufacturers, relocatable purchasers, and architects on specifying, building, and acquiring high performance relocatable classrooms.

- **Council of Educational Facility Planners International (CEFPI)**

<http://healthyschools.cefpi.org/>

A healthy school cares for and looks after the overall well-being of its occupants. It is an environment-friendly school, saves energy, and is passionate about the health of its occupants. For the last several years, CEFPI has provided information, resources, and tools for school districts to improve indoor air quality in their schools. This is in line with the United States EPA's goal of having 40,000 schools nationwide implement good indoor air quality practices by 2012.

- **Environmental Law Institute**

http://www.eli.org/Program_Areas/schools.cfm

A review of nine examples suggests four key elements that are important in developing a high performance school building initiative: (1) strong local support, (2) adequate technical resources, (3) a clear framework for decision-making, and (4) effective implementation.

- **EPA – Healthy SEAT**

<http://www.epa.gov/schools/healthyseat/index.html>

EPA has developed a unique software tool to help school districts evaluate and manage their school facilities for key environmental, safety, and health issues. The *Healthy School*

Environments Assessment Tool (HealthySEATv2) is designed to be customized and used by district-level staff to conduct completely voluntary self-assessments of their school (and other) facilities and to track and manage information on environmental conditions school by school. In addition to powerful software that can be used by districts to track any facility issues it chooses, EPA has also included critical elements of all of its regulatory and voluntary programs for schools, as well as web links to more detailed information.

- **Green & Healthy Schools (DPI and Wisconsin DNR)**

<http://dnr.wi.gov/org/caer/ce/greenschools/>

The Wisconsin Green and Healthy Schools program aims to increase the students' knowledge and awareness of Wisconsin's natural resources and the environmental, health, and safety concerns and challenges that face our schools, our communities, and our Earth. The Green and Healthy Schools program will help students develop the necessary skills and expertise to address these challenges, and to foster life-long attitudes, behaviors, and commitments in order to make informed decisions and to encourage students to become active participants in their communities. Furthermore, by completing the steps of the program, schools will discover ways that their individual school can provide a safe, clean, and green school that promotes a productive learning environment and in doing so will help to conserve and protect our valuable natural resources.

- **Leadership in Energy and Environmental Design (LEED)**

<http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1586>

The LEED for Schools Rating System recognizes the unique nature of the design and construction of K-12 schools. Based on the LEED for New Construction rating system, it addresses issues such as classroom acoustics, master planning, mold prevention, and environmental site assessment.

By addressing the uniqueness of school spaces and children's health issues, LEED for Schools provides a unique, comprehensive tool for schools that wish to build green, with measurable results. LEED for Schools is the recognized third-party standard for high-performance schools that are healthy for students, comfortable for teachers, and cost-effective.

- **Washington's High Performance School Buildings Report to the Governor & Legislature – O'Brien Company**

<http://www.k12.wa.us/SchFacilities/Programs/HighPerformanceSchools/High-PerformanceSchoolsReport.pdf>

This report is presented to provide a status report on the implementation of Washington's law on High-Performance Public Buildings for K-12 schools. The law requires that all state assisted K-12 new construction or modernization projects over 5,000 square feet are designed and built to high-performance standards. A high-performance school building is one that achieves a high level of energy and resource efficiency, reduces its impact on the environment, and provides a healthy and comfortable learning space to support education. Schools may choose the Washington Sustainable Schools Protocol (WSSP) or the LEED® Silver standard. The high-performance requirements have been phased in since 2006. As of July 2008, all state funded school construction projects must comply with the high-performance building requirements, using either WSSP or LEED®. This report presents the results and findings of their experience with implementing the WSSP, as well as the environmental and performance impacts and benefits resulting from the high-performance strategies they chose to pursue.

In conclusion, the task force reiterates that it is imperative to meet code and set goals to operate current systems based on how they were designed to be used. The above resources are meant to aid districts and schools in constructing, remodeling, and functioning in high quality facilities.

Final Thoughts from the Task Force

- As DPI develops a model management plan, the Indoor Environmental Quality in Schools Task Force members will be available as a resource to assist as needed.
- The task force members discussed their wish that, as a courtesy, DPI allow them to preview the model management plan prior to its release.
- The task force was cautious in crafting its recommendations to DPI so as not to create additional mandates on school districts or private schools in the Milwaukee Parental Choice Program (MPCP). Members were cognizant of not creating additional monetary burdens for schools. Therefore, the task force, for the most part, discussed what best practices schools might implement to develop a meaningful program to address IEQ in schools. For example, a best practice for training might be to have all maintenance staff attend a formal training session. The task force was careful not to mandate the level of training due to the significant costs involved, allowing districts to choose whether to develop their own training program or send staff, in whatever number is feasible, to an outside training session. The value of training, the size of the district's maintenance staff, budget, time away from the district, local staff expertise, etc., will all be factors in developing a model plan for indoor environmental quality in schools. The task force believes the particulars are best kept at the local level.
- The task force wishes to remind persons that improving indoor environmental quality in schools could be as easy as changing certain practices (i.e.: not idling school buses outside of open windows near a school building); improving indoor environmental quality does not always need to cost more money. Members discussed the lack of access to funds in both public school districts and private MPCP schools. Therefore, instead of recommending new mandates, the task force concentrated on recommending best practices.

Indoor Environmental Quality in Schools Task Force Membership

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