

# Organizing for Better Indoor Air Quality

An NJEA Guide for Local Association Action



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## An NJEA Guide for Local Association Action

### Acknowledgments

NJEA staff

Written by Eileen Senn, Industrial Hygienist, Work Environment Council

Illustrations by Barbara Pretz

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## PART ONE:

## Indoor Air Quality in Schools

Poor Indoor Air Quality (IAQ) is the most widespread work-related health hazard for NJEA members. Broken ventilation systems, excessive heat and cold, mold, and pollutants like asbestos, lead, solvents and other toxic chemicals are common in New Jersey's schools and have sickened many members. Common symptoms are headache, nausea, fatigue, drowsiness, dizziness, respiratory problems, chest tightness, dry throat, skin rashes, dry and itchy eyes, stuffy nose, runny nose, loss of concentration and general malaise. These symptoms are collectively known as Tight Building Syndrome (TBS).

A well-known IAQ problem is building-related illness (BRI). BRI is associated with a distinct set of symptoms and clinical abnormalities which are recognized as real occupational health conditions. For example, asthma is the leading cause of school absenteeism and a leading occupational disease of custodians and teachers.

Good IAQ is vitally important to school employees because it contributes to a favorable learning environment for students, performance of teachers and other staff, and a sense of comfort, health, and well-being. These all assist school employees in their core mission of educating children.

Organizing is necessary with IAQ because nothing else works, especially relying on school districts or government agencies to do the right thing. Local associations that want better ventilation, more comfortable temperatures, less mold, and better control of indoor pollutants need to organize. NJEA has a 10-step organizing approach for effective local association health and safety programs. Here are the steps applied to IAQ. There are more details on each in Part Two.

1. **Commit:** Make better IAQ a priority. Enlist the assistance of your UniServ field representative.
2. **Organize:** Form a local association health and safety committee. Establish a process to receive and respond to IAQ hazards and health problems.
3. **Research:** See if the district is in compliance with Public Employees Occupational Safety and Health (PEOSH) 2007 IAQ Standard requirements using the PEOSH 2007 IAQ Standard Checklist.
4. **Document:** Survey members. Conduct walk-through evaluations. Take photos or videos. Use checklists.
5. **Educate:** Use the NJEA Health and Safety Manual. Distribute NJEA fact sheets. Hold training sessions. Show videos. Keep the membership informed and involved.
6. **Assist:** Assist workers sick from poor IAQ with obtaining treatment and compensation.
7. **Problem solve:** Prioritize IAQ problems and identify solutions. Pick winnable issues. Ask the district to implement solutions. Follow up to make sure changes are made.
8. **Mobilize:** Enlist the help of parents, students, community groups, elected officials, activist groups, the media, etc.
9. **Negotiate:** Negotiate and enforce contract language on IAQ.
10. **Use PEOSH:** File PEOSH complaints on violations of the IAQ Standard when necessary. Participate in inspections and follow up.



### Good Indoor Air Quality Defined

Good IAQ includes the following elements:

- Control of pollutants
- Cleanliness to reduce dust and dirt
- Dryness to reduce mold
- Comfortable temperature and relative humidity

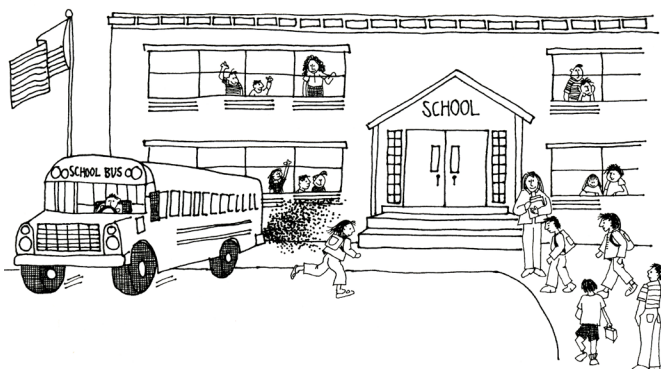
Good ventilation, includes the following:

- Bringing in clean outdoor air
- Mixing it well with indoor air
- Distributing mixed air to all occupied areas
- Exhausting part of the indoor air

The quality of indoor air may deteriorate when one or more of these processes is inadequate. For example, carbon dioxide (a gas that is produced when people breathe), may accumulate in building spaces if sufficient amounts of outdoor air are not brought into and distributed throughout the building. Carbon dioxide is a surrogate for indoor pollutants that may cause occupants to grow drowsy, get headaches, or function at lower activity levels. Levels of CO<sub>2</sub> above 1,000 parts per million (ppm) indicate that not enough fresh air is being provided by the ventilation system and the CO<sub>2</sub> in air exhaled by staff and students is building up. Therefore, 1,000 ppm should be used as a guideline for improving ventilation.

### Indoor Pollutants

There are a whole host of possible indoor air pollutants in school buildings, including asbestos, lead, formaldehyde, fiberglass, radon, mold, bacteria, fungi, carbon monoxide, hydrocarbons, particulates, combustion products, ozone, and pesticides. These come from building materials, cleaning products, vehicle exhaust, pest control products, lab and art materials, and natural sources. Some can be avoided by purchasing of less toxic alternatives. Most exposures to pollutants can be reduced by good ventilation.



### Why Poor IAQ is Common

Over the past several decades, exposure to indoor air pollutants has increased due to a variety of factors, including:

- Construction of more tightly sealed school buildings; some lack any windows that can be opened.
- Reduced ventilation rates to save energy.
- Use of synthetic building materials and furnishings that off gas chemicals.
- Increased use of chemical-based housekeeping supplies.
- Routine application of chemical pesticides.
- Cutbacks in personnel resulting in deferred maintenance and poor performance of ventilation systems.
- Flat roofs prone to standing water and leakage.
- Deferred maintenance of roofs and plumbing, resulting in water damage and mold growth.

### Symptoms of Poor IAQ

Symptoms associated with IAQ problems may include eye, nose, throat, and upper respiratory tract irritation, rashes, headaches, chills, fever, cough, chest tightness, congestion, sneezing, runny nose, muscle aches, and pneumonia.



Typically, employees notice these symptoms appear and worsen in the workplace and become less severe outside of the work environment. Illnesses associated with IAQ problems include asthma, hypersensitivity pneumonitis, multiple chemical sensitivity, and Legionnaires' disease.

### What the 2007 New Jersey Indoor Air Quality Standard Requires

These are the major provisions of the standard. For a complete list of requirements, see the inspection checklist used by PEOSH in Part Nine.

**Designated Person:** The district must identify a designated person who is given responsibility for compliance with this standard and is familiar with its requirements.

**Written Program:** The district must have a written plan to comply with the IAQ standard.

**Fresh Air:** When carbon dioxide levels exceed 1,000 parts per million (ppm), the district must check to make sure the central heating, ventilation, air conditioning (HVAC) system is working properly. Fresh air intakes shall be relocated if contamination of fresh air intakes from cooling towers, sanitary vents, vehicle exhaust from parking garages, loading docks, or street traffic cannot be eliminated.

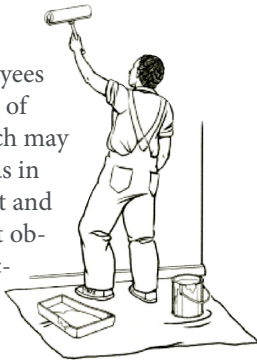
**Windows:** Windows, doors, vents, and other openings used to allow natural ventilation shall be in operable condition in buildings without mechanical ventilation.

**Mold:** The district shall promptly repair water leaks and dry, replace, remove, or clean damp or wet materials within 48 hours of discovery and continue until water intrusion is eliminated. Visible mold, mildew, etc. shall be removed from HVAC components and surfaces such as carpeting and ceiling tiles.

**Temperature:** When temperatures are outside of the range 68 to 79 degrees Fahrenheit, the district must check to make sure the HVAC system is working properly.

**HVAC Maintenance:** The district must replace or repair damaged or inoperable components of the HVAC system. The district must establish and follow a preventive maintenance schedule to check, lubricate, and ensure all HVAC components are in operating order. Maintenance records must be kept for three years and be available on request to employees and their union representatives.

**Renovation and Construction Work:** Employees must be notified at least 24 hours in advance of work to be performed on the buildings, which may introduce air contaminants. Renovation areas in occupied buildings must be isolated and dust and debris confined to the area. The district must obtain information on whether or not construction materials contain chemicals that could be emitted during use. Work areas must be cleaned and aired out prior to re-occupancy.



**Chemical Exposure:** When general ventilation is inadequate to keep air contaminants within legal limits, the district shall implement other control measures such as local source capture exhaust ventilation.

### Sampling for IAQ Can Be Useful

Sampling for IAQ is sometimes useful as noted below. The local association can purchase or ask the district to purchase an IAQ 'toolkit' for about \$1,000 that includes a moisture meter (\$300), a temperature meter (\$100), a carbon dioxide meter (\$500), an air flow meter (\$50), and tracer smoke (\$25). With these five tools, the basic parameters of good IAQ can be assessed. The cost is reasonable considering the great potential benefits.

**Do Measure for Temperature and Humidity:** Measurements of temperature can be taken by staff and should be in the range 68 to 79 degrees Fahrenheit with fluctuations of less than 2 degrees per hour. Humidity should be in the range of 30 to 60 percent. Readings should be recorded morning, noon, and night on a calendar in each occupied area.

**Do Measure for Carbon Dioxide:** Carbon dioxide is a normal constituent of exhaled breath and is commonly measured as a screening tool to evaluate whether adequate volumes of fresh outdoor air are being introduced into indoor air. The outdoor level of carbon dioxide is usually 300-400 parts per million (ppm). The carbon dioxide level is usually greater inside a building than outside, even in buildings with few complaints about indoor air quality. If indoor carbon dioxide levels are more than 1,000 ppm, there is probably inadequate ventilation;

and complaints such as headaches, fatigue, and eye and throat irritation may be prevalent.

Test the air in each occupied area for levels of carbon dioxide gas. Properly ventilated buildings should have carbon dioxide levels between 600-1,000 ppm, with a floor or building average of 800 ppm or less. If average carbon dioxide levels within a building are maintained at less than 800 ppm, with appropriate temperature and humidity levels, complaints about indoor air quality should be minimized. If carbon dioxide levels are greater than 1,000 ppm, complaints may occur. Therefore, 1,000 ppm should be used as a guideline for improving ventilation. Carbon dioxide measurements are valid only if taken after four hours of continuous occupancy. If the district or local association does not have a carbon monoxide meter, contact PEOSH Consultation Services at 609-984-1863 for assistance.

**Do Measure for Moisture:** Sometimes the source of moisture and subsequent mold growth can be hidden and not obvious from visual inspection alone. Moisture meters can be an effective tool to locate these sources quickly and nondestructively. Some meters are placed against the surface to be tested. Others utilize two to four metal probes that are physically inserted into the material being tested.

**Do Measure for Airflow:** An airflow meter, tracer smoke, or light piece of tissue or ribbon can be used to determine if there is air movement in an occupied space coming from air supply vents and/or windows. They can also be used to see if air is moving into a lab hood or other local exhaust ventilation hood.

**Do Not Measure for Chemicals:** Sampling for chemicals is not ordinarily recommended because it is expensive to conduct and standards for interpretation are often not protective of worker health. Sampling for lead and asbestos are two possible exceptions. Wipe and/or bulk sampling for these will often be more useful than air sampling.

**Do Not Measure for Mold:** Mold growth is often visible to the naked eye or evidenced by a musty, moldy odor. If so, the presence of mold is established and there is little point to mold sampling, which is expensive, changeable, and very difficult to interpret. Moisture readings are the best approach to hidden mold, as explained above.



PART TWO:

# Organizing for Better Indoor Air Quality

## Step One: Commit

Poor indoor air quality (IAQ), extreme temperatures, mold, pests and pesticides, diesel exhaust, and chemicals in maintenance, cleaning, art and shop supplies affect most school staff and can be a reason why members are sick or unhappy at work. The local association must become familiar with these issues and ways to address them. The local association must commit to make members' health and safety a priority and, if necessary, organize members and allies to take on the administration. The local association that commits to better IAQ can achieve these outcomes:



**Better working conditions:** Real improvements can be won in IAQ.

**Better performance:** Fewer sick days result in more productivity for staff and students.

**Membership satisfaction:** Improving IAQ will make school staff happier and may even increase staff retention.

**Leadership development:** When individuals work together, speak up, and take successful action, they learn to be leaders.

**Association visibility and credibility:** Members will be able to see that the local association is active, effective, and worth supporting.

## Step Two: Organize

Each local association should form a union-only health and safety committee, appointed by the president, which works with local leadership and the UniServ field representative. Whenever possible, it should include someone from every school and each job classification. It may take time to develop a strong committee. Three or four active people make a great start.

The committee should establish a process for the local association to receive and respond to reports of IAQ issues and health problems. A member survey, with results provided to association officers, members, and district administration, can be one way to do this. Then the committee can start work on a specific problem people are complaining about, for example, "No air in the south wing."



There can be both a union-only committee and a joint labor-management committee in the same district. While a joint committee can prove a useful setting to work with administration, a union-only committee allows members to prepare for joint committee meetings and to freely discuss IAQ problems and strategies for preventing hazards.

## Step Three: Research

Copies of health and safety records that school districts must maintain are available to employees and their local association. These records may identify areas with poor IAQ or individual workers who may need medical care or have a potential workers' compensation claim. These records include:

- Exposure monitoring, such as asbestos, carbon dioxide, and mold sampling.
- Biological monitoring, such as blood lead tests.
- Injury and Illness Records required by PEOSH.
  - Log 300 of Occupational Injuries and Illnesses
  - Form 300A Summary of Work-Related Injuries and Illnesses
  - Form 301 Injury and Illness Incident Report
- Toxic Substance Records.
  - Right to Know Survey, a report of hazardous substances present, including storage amounts, locations, and container types
  - Hazardous Substance Fact Sheet (HSFS) for each hazardous substance
  - Material Safety Data Sheet (MSDS) for each chemical product
  - Asbestos Hazard Emergency Response Act (AHERA) plan required by EPA for managing asbestos and controlling exposure based on inspecting the condition of asbestos in every school



- Written plans required by PEOSH.
  - Hazard Communication program, including a list of all hazardous chemicals used in the workplace and records of staff training
  - Chemical hygiene plan for labs
  - Indoor air quality (IAQ) program
- PEOSH Inspection Records.
  - Summary PEOSH inspection data is available on the OSHA website, [www.osha.gov/oshstats/index.html](http://www.osha.gov/oshstats/index.html)
  - Complete inspection records are available from PEOSH under the New Jersey Open Public Records Act (OPRA).

In addition:

- Review building operations and maintenance procedures to determine when and what type of chemicals are being used during cleaning, floor waxing and stripping, painting, gluing, pesticide spraying, roofing operations, renovation and construction activities, etc.
- Determine when and where deliveries, which may generate vehicle exhaust, occur.
- Request written documentation on the design of the school ventilation systems.
- Check the schedule for changing air filters present in the ventilation system.

#### Step Four: Document

Document what is wrong with the air quality in your school in a way that will convince school management that IAQ hazards and health problems are serious. Survey members in writing, or better, in person. Three sample survey forms are found in *NJEA's Health and Safety Manual: Health and Safety Complaint; Work-Related Health Problems Report; and Indoor Air Quality Occupant Survey*. Summarize the survey results to support the local association's case for needed improvements. Be sure to keep individual medical issues confidential by revealing results only by job title without any personal identifiers such as classroom number.

Keep records of temperature, odors, staff complaints, water leaks and damage, etc. Collect the information through the health and safety committee or the association leadership. Ask to review HVAC maintenance records. Ask for carbon dioxide (CO<sub>2</sub>) measurements in air – an indirect measure of outdoor air supply. Levels above 1,000 ppm indicate too little outdoor air supply.

Walk through problem areas to evaluate health and safety conditions. Inspect under-window ventilation units in classrooms; the central heating, ventilation and air conditioning (HVAC) system; office dehumidifiers, etc. to determine if the systems are in good condition. Look for water entry and moisture, visible mold, and mold risk factors, including roof or plumbing leaks and poor drainage of rainwater runoff or landscape irrigation. Smell for mold – your nose is a useful detection tool! Mold can be hidden under carpet, wallpaper, above ceilings, behind walls. Finding

hidden mold may involve taking up floor tile, removing baseboard, or opening walls.

Use walk-through checklists found in *NJEA's Health and Safety Manual: Comprehensive Walkthrough Checklist; Indoor Air Quality (IAQ) in Schools Walkthrough Checklist; Mold in Schools Walkthrough Checklist*.



Get copies of the evacuation floor plans of the school and mark locations where the committee finds problems. Keep a notebook and take photos or video of hazards whenever possible.

#### Step Five: Educate

Inform members about the health and safety committee and IAQ through the following:

**Your association newsletter:** If your local has a newsletter, talk to the editor about including a regular health and safety column to highlight the committee's work and to offer workplace safety tips. Links to materials are given in Part Seven: Indoor Air Quality Resources.

**Fliers and updates:** If you don't have an association newsletter, put together a flier or short newsletter you can share with members. Distribute at least two a year.

**Your association website:** If you have an association website, create a health and safety page. "Hot link" to the resources in Part Seven: Indoor Air Quality Resources.

**Building visits:** Set aside time for committee members to visit school buildings to listen to members about their health and safety concerns.

**Hold a 10-minute meeting:** Have committee members hold a short meeting before or after school in their buildings to keep members informed.

**Put together a phone chain:** Create an association phone chain and distribute to your members. If an emergency arises when school is not in session, you'll have a quick and efficient method for contacting your members.



## Organizing for Better Indoor Air Quality

**Show a video:** Show the IAQ videos listed in Part Seven: Indoor Air Quality Resources.

### Step Six: Assist

Poor IAQ can cause or worsen allergies and asthma and cause other health issues. Encourage sick workers to see a doctor and describe why they believe their problems are work related. Advise sick workers of their right to file for workers' compensation.

Ensure that members report all work-related illnesses requiring treatment to the district. The district must be given the opportunity to provide medical treatment.



There are strong New Jersey laws to compensate school employees harmed by unsafe and unhealthy working conditions. In addition to the Workers' Compensation Act, school employees are covered by N.J.S.A. 18A:30-2.1 which provides them with full salary

from the day of the incident without the absences being charged to sick leave for one calendar year. Together, these laws may include payment of medical benefits and wages. To ensure injured workers' rights, local associations can:

- Ensure that workers take immediate action to preserve their sick days by contacting the UniServ field representative. Strict timelines apply to preserving sick days.
- Ensure injured workers complete reporting forms promptly to avoid forfeiture of benefits.
- Ensure that workers are not pressed to use their own health insurance, sick time, or vacation time while healing from job-related injuries and illnesses.
- Keep in touch with those who are harmed, especially if they are not back to work. These workers need to see that their co-workers are concerned about their treatment and recovery. Such solidarity often helps with recovery and demonstrates that no worker is "disposable."
- If claims are denied, access NJEA Legal Services through your UniServ field representative.

### Step Seven: Problem Solve

The responsibility for providing a healthy and safe school lies with the school district. It is the role of the local association to bring problems to the district's attention and to ensure that administrators prevent or abate the hazard.

Set goals and prioritize. Start with a problem people are complaining about, have some small successes, then move on to bigger issues. Ideally, each problem the local association chooses to work on will be widely and deeply felt, easy to understand, have solutions that result in a real improvement, and be able to win community support, if necessary.

The best solutions quickly and permanently eliminate or correct hazards at their source. Less desirable are those that require members to use protective equipment or follow cumbersome procedures. Sometimes short-term solutions are required until money is found for long-term repairs. Critical to any plan of action is a commitment from the district to a deadline for each proposed improvement.



Here are examples of some IAQ protective measures to request. Additional protective measures are described in Parts Three to Six.

### Control of pollutants

- Keep potential sources of air contaminants at least 20 feet from outdoor air intake vents. Sources include sewer vents, exhaust air from the school, loading docks, bus and car loading areas, garbage receptacles, boiler or generator exhausts, and mist from cooling towers.
- Enforce a ban on vehicle idling near the school.
- Clean out and properly dispose of dangerous or excessive lab chemicals.
- Utilize least toxic products for cleaning, lab and art supplies, and pest control.
- After renovations, make sure all dust and debris are cleaned up and all chemical odors are gone. If the work is not complete, reschedule last-minute renovations for after-school hours. Ventilate areas where work has been done before staff and students return by opening windows and doors and/or maximizing mechanical ventilation.

### Cleanliness to reduce dust and dirt

- Walk-off mats at all entryways.
- Adequate custodial staff – one full-time person per 15,000 square feet of school.
- Adequate training, equipment, and cleaning products for custodians.
- Cleaning methods that don't raise dust, like damp wiping and mopping, microfiber mopping, and HEPA vacuuming.

### Dryness to reduce mold

- Preventive maintenance on roof, plumbing, exterior walls, and foundation to prevent water entry.
- Clean water damage within 48 hours before mold growth can begin.
- Keep relative humidity below 60 percent by using dehumidifiers and, where possible, air conditioning.



## Comfortable temperature and relative humidity

- Temporary solutions include window and floor fans, opening windows, extra break periods, reduced hours, reduced activities, relocation to cooler or air-conditioned areas of the school, and use of portable, floor-model air conditioners on wheels.
- Shades, blinds, solar film on all glass walls, windows, and skylights to control solar load.
- Staff education on heating and cooling systems and their operation and maintenance.
- Regular monitoring of temperature and humidity.
- Fix broken heating and air conditioning equipment.

## Good ventilation

- Fix broken mechanical ventilation equipment, windows, and doors.
- Adequate staffing, training, and equipment for ventilation system operators.
- Ventilate potential source of air contaminants inside the school. Sources include copiers and printers, art rooms and labs, cafeterias, locker rooms and showers.

Meet with the district and present your IAQ complaints and proposed solutions. Point out violations of the PEOSH IAQ Standard. If appropriate, begin the grievance process as well – preferably a group grievance. Stick with it. Follow up on changes to be sure they are made. File new complaints and grievances, if necessary.

## Step Eight: Mobilize

Local associations can reach out to potential allies and ask them to support their fight against poor IAQ. School conditions that may cause illness are unacceptable to most people. Poor IAQ is also a danger to the students, parents, and visitors.

Members are both part of the workforce and community members. Many potential allies are also their friends, neighbors, and families. These allies are often local, but may also include partners on a regional, statewide, or even national or international level. They can include:

- Parents/PTA/PTO
- Community organizations
- Union and environmental groups
- Religious leaders
- Civil rights leaders
- Local politicians



Newspapers, radio, television, and community blogs can help you publicize your case.

## Step Nine: Negotiate

Under New Jersey law, all issues regarding workplace health and safety are mandatory subjects of bargaining. This means that the board of education must negotiate with the local association on IAQ issues and a failure to discuss these issues would constitute an unfair labor practice.



Solicit proposals for changes concerning IAQ issues from the members, just as you would for changes in wages and benefits. The negotiating committee should research and cost out the proposals and set negotiating priorities. Propose contract language, including:

- Establishment of a joint health and safety committee.
- Training for all committee members by NJEA or an association-approved outside organization.
- Paid release time for committee members to do health and safety work during the regular day.
- The right of the committee to investigate accidents and injuries.
- A general duty clause – It is the obligation of the district to provide a workplace free of recognized health and safety hazards.
- Advanced notice posted on association bulletin boards about pesticide applications, asbestos removal, building renovations, etc.
- Joint decision making concerning hiring of consultants, environmental testing, ventilation equipment purchases, etc.
- Access to all necessary information and statistics such as illness reports, PEOSH and consultants' reports, etc.
- The board of education will bear the cost of all of the above.

Most important, vigorous enforcement is necessary to make sure the board lives up to its obligations and the contract.

## Step Ten: Use PEOSH

New Jersey's IAQ standard (N.J.A.C. 12:100-13) applies to buildings occupied by public employees, including school facilities, and is enforced by the Public Employees Occupational Safety and Health (PEOSH) Program. The standard was updated and improved in 2007 due to efforts of public employee unions. It presents a significant opportunity to improve IAQ in New Jersey's public school buildings for both staff and students. For this to happen, local associations must insist on strong PEOSH enforcement which has been weak in the past. Inspections take place only when complaints are filed by staff or local associations. Parents cannot file complaints. PEOSH conducts no IAQ inspections on its own initiative. The IAQ Standard will be most effective



when used as part of a union plan that includes member education, a health and safety committee, active member involvement, as well as enforcement of the IAQ standard.

Public school employees have the right to file complaints about poor IAQ. Complaint forms must be completed clearly and describe problems in detail since inspections are limited to complaint items. Complaints may result in on-site inspections. The local has the right to participate in all aspects of the inspection. If a PEOSH inspector finds that a school district does not comply with standards, the district can be issued an order to comply and given abatement dates. However, the local should file a PEOSH complaint only when it determines that filing is likely to produce positive results.

Unfortunately, there are no PEOSH standards to cover temperature extremes. In addition, most chemical standards are not protective enough to force the district to make changes except perhaps in shop situations.

Some useful PEOSH standards affecting IAQ in schools are listed as follows.

### Useful PEOSH standards affecting IAQ

- N.J.A.C. 12:100-7 Hazard communication
- N.J.A.C. 12:100-13 Indoor air quality
- 1904: Recording and reporting occupational injuries and illnesses
- 1910.106: Proper storage of chemicals
- 1910.1000: Air contaminants
- 1910.1001: Asbestos
- 1910.1020: Access to medical and monitoring data
- 1910.1025: Lead
- 1910.1450: Occupational exposure to hazardous chemicals in laboratories
- 1926.62: Lead in construction
- 1926.1101: Asbestos in construction

For information on the PEOSH Hazard Communication standard [www.state.nj.us/health/peosh/hazcom.shtml](http://www.state.nj.us/health/peosh/hazcom.shtml)

For information on the PEOSH Indoor Air Quality standard [www.state.nj.us/health/peosh/iaq.shtml](http://www.state.nj.us/health/peosh/iaq.shtml)

Other PEOSH standards listed above are found at [www.osha.gov](http://www.osha.gov). Click on "Regulations" or link to the appropriate OSHA topic page at [www.osha.gov/SLTC/index.html](http://www.osha.gov/SLTC/index.html).

### For more information

See the following sections of the NJEA Health and Safety Manual, Part II, What Your Local Association Can Do

- Health and Safety Committee, page 7
- Training and Education, page 9
- Document Problems, page 11
- Survey Members, page 12
- Involve Allies, page 22
- Take Action, page 23
- Contract Negotiations and Enforcement, page 24
- When to Use PEOSH, page 34
- Use Hazard Communication and Right to Know, page 41
- Workers' Compensation, page 43
- Medical Treatment, page 44

From NJEA website, choose Issues and Political Action, then Health and Safety, then Health and Safety Manual, [www.njea.org/issues/health-safety/health-safety-publications/](http://www.njea.org/issues/health-safety/health-safety-publications/)



## PART THREE:

## Ventilation Systems and Windows

Schools typically ventilate their buildings using windows for natural ventilation, mechanical ventilation, or a combination of both. The type of system your school uses depends on:

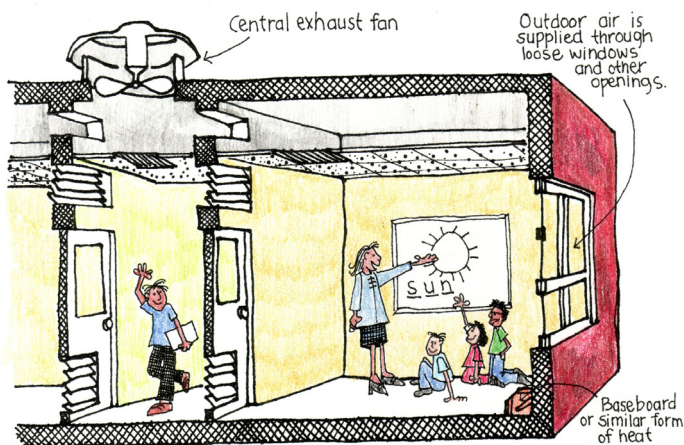
- Age of the building and climate of the area
- Design of the building and budget for the project
- Building codes in effect at the time of construction
- Subsequent modifications made to the building
- Space type and use
- Expected occupancy

All school ventilation systems should have a mechanism to supply and distribute clean outdoor air to the school and exhaust air from the school. Staff should understand where air comes into the building and where air leaves the building. Staff should also know where air is supplied and exhausted from each room or area of the school in which they work.

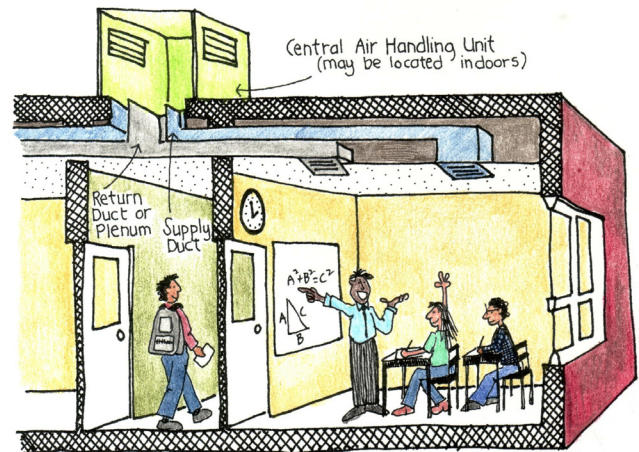
### Natural Ventilation

Natural ventilation is the simplest type of ventilation and is usually found in older schools or used in conjunction with other types of ventilation systems. In a natural ventilation system, there is a natural flow of outdoor air coming into the area through operable windows, doors, leaks, and other openings in the building envelope. Air is exhausted naturally through windows and other openings or through a mechanical exhaust fan on the roof which pulls the air out of the building.

A natural ventilation system heats each room by generating steam or hot water in a boiler and sending it to individual room radiators. While the air in the building is not generally cooled in a systematic way, window air conditioners may be used.



How Outdoor Air is Supplied in an Exhaust-only System



How Outdoor Air is Supplied in a Central Air Handling System

### Mechanical Ventilation Systems

The two most common mechanical systems used in schools are unit ventilators and central heating, ventilation, and air conditioning (HVAC) systems. Both types can perform the same functions, but a unit ventilator serves a single room while a central HVAC system serves multiple rooms or even whole wings of a building. Keep in mind that some schools have a combination of different systems and it is not uncommon to find natural ventilation, unit ventilators, and central HVAC systems in one school.

Properly designed HVAC equipment helps to:

- Distribute adequate amounts of clean outdoor air to meet ventilation needs of school occupants.
- Control temperature and relative humidity to provide thermal comfort
- Isolate and remove odors and other contaminants.

### Local Exhaust Systems

Used in conjunction with the above systems, a local exhaust system is made up of a hood, ductwork, louvers, fans, and exhaust vents to the roof or side of the building. Local exhaust systems remove odors and pull pollutants from the point they are generated directly exhausting them to the outside of the building. Local exhaust ventilation hoods should be located as close to the source as possible and air should flow into, not out of, the hood.

This type of system is needed wherever hazardous materials are used and odors or pollutants are generated such as in-school kitchens, custodian closets, copy rooms, science laboratories, bathrooms, and career and technical shops.

### Filtration

Filtration is another important component of ventilation. Both central HVAC systems and unit ventilators require filters to remove large particles from the air and to protect the HVAC equipment from dirt, dust, and other debris. Air filters must be



How Outdoor Air is Supplied Through a Unit Ventilator

properly selected, installed, and maintained to protect the health of occupants and to protect HVAC system components. They must also be replaced regularly according to manufacturer's recommendations to prevent the restriction of airflow.

The type and design of a filter determines its efficiency at removing particles of a given size and the amount of energy needed to move air through the filter. Manufacturer recommendations should be taken into consideration to ensure that the most protective and efficient filter is used. Filters should have a dust-spot rating between 35 and 80 percent or Minimum Efficiency Reporting Value (MERV) rating between 8 and 13. The best choice for many buildings is a pleated, extended surface area, medium efficiency filter.

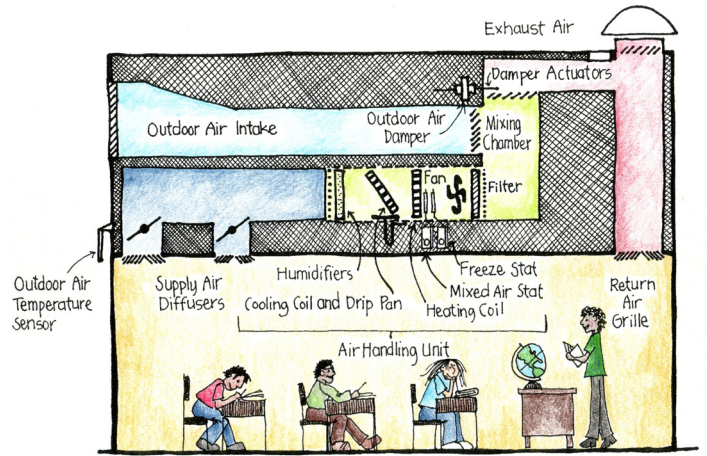
### Ventilation for Occupant Needs

The American Society for Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE) Ventilation for Acceptable Indoor Air Quality Standard is the national consensus standard in the U.S. It specifies the minimum amounts of clean outdoor air that should be provided by natural or mechanical ventilation systems to various areas of the school, including classrooms, gymnasiums, kitchens, and other special use areas. This standard is enforceable when adopted by state or local regulatory bodies, such as local code enforcement offices. Building code requirements are generally only enforceable during construction and renovation of the building. So as building code requirements and standards change over time, buildings are usually not required to modify their structure or conform to the new codes.

### Ventilation Protective Measures to Request

- Written documentation on the design of the school ventilation systems, including air supply and exhaust specifications.
- Occupant education on the ventilation system and its operation and maintenance.
- Repair of broken mechanical ventilation equipment, windows, and doors.

- Written procedures for ventilation-related complaints.
- Adequate staffing, training, and equipment for ventilation system operators.
- Written standard procedures for preventive maintenance of ventilation systems, door, and windows with schedules and records.
- Written standard procedures for operation of ventilation system with schedules and records.
- Ensure that potential sources of air contaminants are at least 20 feet from outdoor air intake vents. Sources include sewer vents, exhaust air from the school, loading docks, bus and car loading areas, garbage receptacles, boiler or generator exhausts, and mist from cooling towers.
- Use high-efficiency filters in the ventilation system and replace them on a regular schedule, at least once a year.
- Regularly monitor air flow or carbon dioxide in all occupied areas and adjust the ventilation accordingly.



### Reasons for Operable Windows in Schools

- Operable windows in schools make sense for many reasons even when a good mechanical ventilation system is present. Windows let air into classrooms and other occupied spaces. When a window and an open door (or a bigger window) are placed in line with each other, unequal pressure is created and air moves from one opening to another. This is called cross ventilation and this ensures outdoor air supply in classrooms.
- Operable windows provide greater staff control over indoor conditions. If the room is too hot or stuffy, a window can be opened. Overheating of classrooms often occurs because of the heat of the sun coming in at some point in the day or deficiencies in the mechanical ventilation system.
- In schools, many occupants are close together with the typical school having approximately four times as many occupants as office buildings for the same amount of floor space. There are many odors for ventilation to dilute, including body odor and fragrances in hair care products,

skin care products, shaving creams, after shaves, fabric softeners, deodorants, etc.

- Operable windows can provide emergency ventilation in case of a spill, pesticide application, or maintenance activities such as floor cleaning and waxing or painting.
- Classrooms may contain a variety of pollutant sources, including art and science supplies, industrial and vocational arts tasks such as welding, home economics cooking odors, etc.
- Windows allow ventilation in case of a breakdown of the mechanical ventilation system and may permit the school to remain open during such breakdowns.
- Operable windows may allow for smaller sized cooling equipment.
- Operable windows can be used as an emergency exit in case hallways are blocked by smoke or fire.
- Operable windows can be used to get immediate access to outdoor air in case of nausea, vomiting, asthma attack, urination, defecation, or other health situations where fresh air may be helpful.

### The PEOSH IAQ Standard and Operable Windows

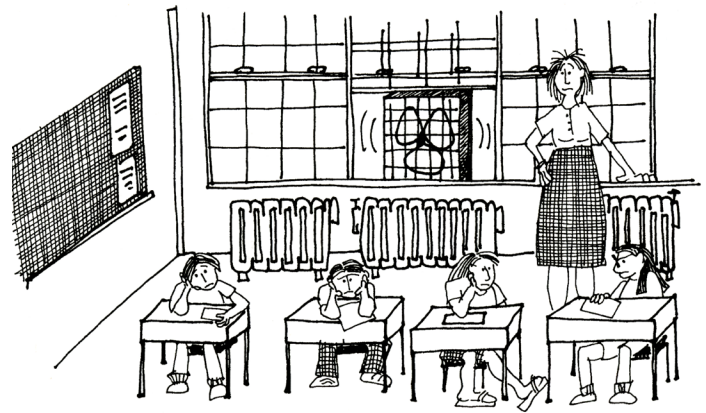
Section 12:100 –13.3 (a) 6. of the standard requires that public employers ensure that buildings without mechanical ventilation are maintained so that windows, doors, vents, stacks, and other portals designed or used for natural ventilation are in operable condition.

### The New Jersey Building Code and Operable Windows

The New Jersey building code N.J.A.C. 5:23-6.18 (l) “Mechanical Requirements” is applicable.

Where there is no mechanical ventilation, the minimum openable area to the outside must be 4 percent of the floor area being ventilated.

This language in the code implies that inoperable windows may replace operable windows in a school only if new or additional mechanical ventilation is provided to make up for what natural ventilation is being lost. If there is no mechanical ventilation already, then a new system must be provided.



**New Jersey Building Code  
Ventilation Requirements**

Air is measured in units called cubic feet per minute (CFM). New Jersey’s building code specifies how many CFM of outdoor air are required in a space based on the number of occupants and

the activities taking place in that space. In September 2015, New Jersey adopted the 2015 International Mechanical Code (IMC). Some outdoor air requirements from Table 403.3 of these codes are given in the table below.

**Required Outdoor Ventilation Air**

<i>Type of Space</i>	<i>Cubic feet per minute (CFM) outdoor air per person</i>		
	2006	2009	2015
<b>Educational Facilities</b>			
Lecture classroom/hall/multi-use assembly	--	7.5	7.5
Music/theater/dance	15	10	10
Classrooms	15	10	10
Computer lab/Media center	15	10	10
Science labs/Art Classrooms	20	10	10
Training shops	20	10	10
Auditoriums	15	5	5
Cooking kitchens	15	--	--
Cafeteria/fast food dining	20	7.5	7.5
Gym	20	--	--

**Offices**

Telephone/data entry	20	5	5
Reception area	15	5	5
Office space	20	5	5
Conference/meeting	20	5	5

<i>Type of Space</i>	<i>Cubic feet per minute (CFM) outdoor air per square foot</i>		
<b>Area Outdoor Air Rates</b>			
Corridors	0.1	0.06	--
Gym, stadium (play area)	--	0.3	--
Swimming pool (pool and deck)	0.5	0.48	--
Locker rooms	0.5	--	--

Beginning in September 2015, minimum exhaust ventilation rates for some types of areas became part of the New Jersey Building Code.

**Minimum Exhaust Rates**

<i>Type of Space</i>	<i>Cubic feet per minute (CFM) ait ( not outdoor air) per square foot</i>
Sports locker room	0.5
Art classroom	0.7
Science labs	1.0
Wood/metal shops	0.5
Locker/ Dressing rooms	0.5
Cooking kitchens	0.7
Ice arenas without combustion engines	0.5
Repair garages; Enclosed parking garages	0.75
Darkrooms	1.0
Copy, printing rooms	0.5

**PART FOUR:****Mold and Moisture****Mold and Health**

Molds are forms of fungi found both indoors and outdoors and people are exposed to them daily in the air we breathe. Mold can be found on wet or damp walls, carpets, and ceilings as well as in heating, ventilation, and air conditioning (HVAC) systems. When any building material or furnishing is damp for more than 48 hours, mold may grow.

Sometimes molds grow excessively inside schools and can cause several types of illnesses to those with mold allergies, including symptoms like hay fever, the common cold, or the flu. Molds can also aggravate asthma. Most health problems are temporary and can be controlled by limiting exposure to molds.

Any or all of the following are symptoms that may be caused by mold allergies:

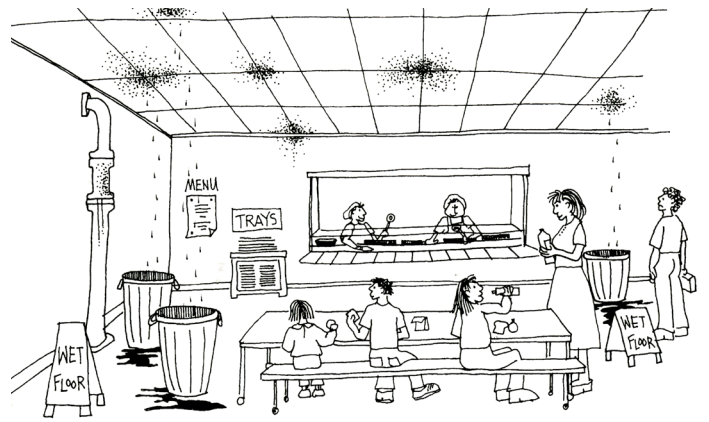
- Nasal or sinus congestion
- Sensitivity to light
- Sneezing
- Sore throat
- Cough
- Skin irritation (rash or itching)
- Shortness of breath
- Headache
- Watery, reddened, or burning eyes
- Fatigue

**Limited PEOSH Protection**

The PEOSH 2007 Indoor Air Quality standard requires school districts to promptly repair water leaks and dry, replace, remove, or clean damp or wet materials within 48 hours of discovery and continue until water intrusion is eliminated. Visible mold, mildew, etc. shall be removed from HVAC components and surfaces such as carpeting and ceiling tiles. The IAQ standard only deals with visible mold, not hidden mold, for example, mold growing behind walls or above ceilings.

**Mold Protective Measures to Request**

- Permanently fix all water entry problems.
- Control humidity between 30 and 60 percent with air conditioning and/or dehumidifiers.
- Preventive maintenance on roof, plumbing, exterior walls, and foundation.
- Clean all water damage within 48 hours before mold growth can begin.
- Inspection inside ventilation systems anytime there is a mold problem to be sure they are not contaminated with mold.



- Remediation should follow guidance from Table 2 in EPA booklet *Mold Remediation in Schools and Commercial Buildings*.
- Personal protective equipment for workers performing mold remediation, for example, an N 95 respirator, as detailed in Table 2 in EPA booklet *Mold Remediation in Schools and Commercial Buildings*.
- If drainage around a school is poor, a civil engineer is needed to evaluate this and make recommendations to improve the drainage.

**Testing Tangle**

Many local associations have asked for mold testing or the district has hired someone to test for mold. Currently there are no standards or nationally recognized guidelines regarding the results of these samples. The current approach to interpretation involves comparing indoor and outdoor mold levels and species.

It is not unusual for a school district to hire a series of consultants to advise them on mold problems. Each consultant is asked to review work from previous consultants, and often each consultant conducts his own – very expensive – mold sampling. Both districts and local associations may find themselves drowning in a sea of conflicting reports, sampling data, and consultant bills. A mold consultant can easily cost a district \$20,000 or more.

Districts and local associations should not rely solely on mold sampling results to tell if there is or is not a mold problem. Remember that other information – background information, onsite observations, and history of the building – is essential to determine the location and extent of a mold problem, as well as identifying what needs to be fixed.

Consultant reports can be highly technical and therefore intimidating. Read the recommendations first – they are the most important part of the report for the local association. If the recommendations call for improvements in the school that make sense, embrace them. The bottom line is that if the consultant thinks something in the school needs to be changed, it probably does. On the other hand, if the consultant says everything is fine, it might be useful for the local association to have its own expert to evaluate the reports.

### Where Is Mold?

- Mold grows where there is water, moisture, or high humidity.
- Damp, musty, mildewy, or earthy smells indicate mold is growing nearby.
- Unless the source of water, moisture, or high humidity is removed or fixed, mold will grow back after removal.

### Getting the Mold Out

- “Clean and dry” is the key to preventing mold.
- Proper mold removal is a complex process aimed not only at removing the mold but also at preventing release of large amounts of mold into the air during removal. More than 100 square feet of removal must be undertaken in a highly regulated manner as in asbestos removal. EPA has guidelines for removal in Mold Remediation in Schools and Commercial Buildings on the web at [www.epa.gov/iaq/molds/](http://www.epa.gov/iaq/molds/).
- Killing mold with biocides or chlorine is not good enough because dead mold is still an allergen. Mold must be physically removed.
- Mold on hard surfaces can be cleaned with detergent and water.
- It is very difficult to remove mold from wood, sheetrock, ceiling tiles, paper products, and other porous materials. They may need to be discarded.

### Health Effects

- Most people will have no reaction at all when exposed to molds.
- Approximately one in 10 people will have an adverse physical reaction to mold. Most at risk are children, the elderly, those with respiratory problems such as allergies or asthma, and those with weakened immune systems.
- People who are diabetic or pregnant are moderately immune compromised. Those who have AIDS or leukemia, are receiving chemotherapy, or are organ transplant recipients are severely immune compromised.
- Symptoms of mold exposure include nasal or sinus congestion, sensitivity to light, sneezing, sore throat, cough, skin irritation (rash or itching), shortness of breath, headache, watery, reddened, or burning eyes, fatigue.
- In rare cases, mold can cause more serious lung disease like aspergillosis, an invasive pulmonary infection, usually with fever, cough, and chest pain. Symptoms include coughing up blood and weight loss.
- Mold allergy tests are available for only a few of the hundreds of molds that can grow indoors. These tests can show if individuals are allergic to some molds but cannot determine where or when they were exposed to the molds.

### Visible mold

Mold growth is often self evident. Molds can grow as long as organic material, air, and moisture are present. Many types of mold exist and mold can be any color – black, brown, red, green, pink, orange, etc.

### Hidden mold

In some cases, indoor mold may not be obvious. It can grow on hidden surfaces such as the backside of drywall, wallpaper or paneling, the top of ceiling tiles, the underside of carpets and pads, and inside ventilation systems. You may suspect hidden mold if an area smells moldy but you cannot see the source or if you know there has been water damage and occupants are reporting health problems.

### Bulk and surface samples

Bulk samples can be collected when materials are porous and surface samples are not practical. Surface samples can be collected from relatively nonporous surfaces.

### Moisture meter

When the source of moisture is hidden, moisture meters can be an essential tool to locate these sources quickly and nondestructively. Some meters are placed against the surface to be tested. Others utilize two to four metal probes that are physically inserted into the material being tested. Generally the meters are programmed for the type of material to be tested (concrete, wood, drywall, roofing, concrete, etc.) or readings are read or adjusted to a scale for the specific material. Some units are very material specific while others give the investigator a wide range of material choices.

### Aluminum foil test

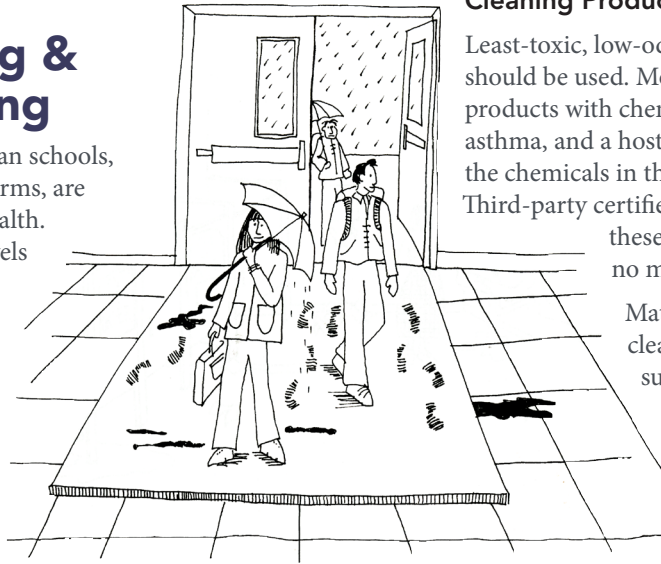
For a quick test to determine if a damp classroom is caused by saturated walls or is a result of condensation, tape a piece of aluminum foil onto a masonry surface and check it after a day or two; if moisture has developed behind the foil, then it is coming from the masonry. If condensation is on the surface of the foil, then moisture is from the air.



## PART FIVE:

## Housekeeping & Green Cleaning

Good housekeeping and clean schools, relatively free of dust and germs, are vital for staff and student health. Buildings with high dust levels have been associated with increased complaints, illnesses, and discomfort. Specifically, dust mites have been found to trigger asthma attacks. A clean school tends to be a healthy school.



### Dust Control

Several simple techniques can be used to maintain a cleaner school with less effort:

- Reduce the amount of dust and dirt that enters the school.
- Reduce the amount of dust released from vacuum cleaners and other cleaning methods.

### Walk-off Mats

It is less expensive to keep dirt out of the school to begin with than to clean it up. Walk-off mats are the best way to do this. They should be located at all entryways, including front and side entrances, between the door area and the rest of the building.

- A rough textured mat should be used outside the building entrance to remove large particles, where feasible.
- A medium textured mat should be used just inside the building and should be long enough so that everyone entering takes a minimum of 12 feet on its surface.
- A fine textured mat should be used as the final mechanism to remove small particles, where feasible.

All mats should receive frequent and thorough cleaning, particularly in heavily used areas, to keep the dirt from migrating into the interior parts of the building as it accumulates.

### Cleaning Methods

Cleaning methods that don't raise dust should be used and those that do raise dust should be banned. High efficiency vacuum bags should be used instead of standard paper or cloth bags which allow fine dust to pass back into the room air. When possible, use micro-filtration bags that retain dust in the three micron size range or even smaller.

A high efficiency particulate arrestor (HEPA) vacuum is a vacuum cleaner designed with a high efficiency filter as the last filtration stage. HEPA vacuums do not put fine dust into the air like ordinary vacuums do. Vacuum cleaners must be properly operated and maintained.

### Cleaning Products

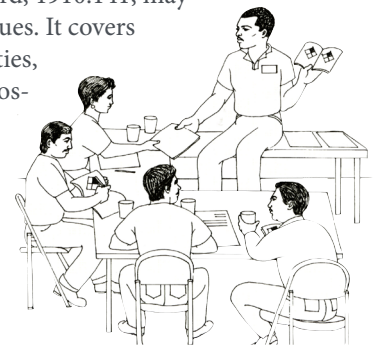
Least-toxic, low-odor cleaning products are available and should be used. Most schools use conventional cleaning products with chemicals that can cause or contribute to cancer, asthma, and a host of other illnesses. In fact, 25 percent of the chemicals in these commonly used cleaners are toxic. Third-party certified green cleaning products do not contain these toxic chemicals, but they work, and they're no more expensive.

Material Safety Data Sheets (MSDS) on all cleaning products must be available to staff. Be sure that custodians are given time to review instructions for cleaning supplies and are able to follow directions for handling, dilution, storage, and disposal. Maintenance schedules should minimize staff and student exposure to cleaning chemicals. See more on green cleaning below.

### Helpful PEOSH Standards

The PEOSH Sanitation standard, 1910.141, may be useful for housekeeping issues. It covers general sanitation, toilet facilities, lunchrooms, pests, waste disposal and food storage.

The PEOSH Hazard Communication standard (N.J.A.C 12:100-7) requires effective training on chemical hazards to be provided to custodians exposed to hazardous cleaning chemicals upon initial assignment or introduction of a new hazard with refresher training every two years.



### What to Look for on Walk-throughs

- Level of cleanliness
- Walk-off mats at entryways
- Inspect vacuum cleaners to see if they are properly maintained
- Cleaning product label information

### How to Document Dirt

Wipe a square foot of a surface with a wet paper towel, place it in a plastic bag, and label with date and location. Use the wipes to illustrate which areas are clean and which are dirty. Places to consider wiping include walls, hard flooring, carpeting, upholstery, drapes, shades, windows sills, windows, bookcases, desks, chairs, tables, and cabinets.

### Take photos of

- Poorly cleaned areas and surfaces
- Dirt that collects on air supply and return vents
- Outdated and dirty cleaning equipment
- Toxic cleaning products
- Walk-off mats or places where they should be

### Information to Request from the Administration

- Number of custodians and their work hours
- Square footage of the school
- If housekeeping is outsourced, a copy of the district's contract with the vendor
- MSDSs on cleaning products
- Operations manuals for vacuum cleaners



### Housekeeping Protective Measures to Request

- Adequate custodial staff – one full-time person per 15,000 square feet of school.
- Adequate training, equipment, and cleaning products for custodians.
- Cleaning methods that don't raise dust, like wet wiping and mopping, microfiber mopping, and HEPA vacuuming.
- Ban on dry sweeping except outdoors; ban on dry dusting, feather-dusting.
- Written standard procedures for housekeeping with schedules and records.
- Exterior and interior walk-off mats at every entryway. The mats should be at least 15 feet long, as wide as the doors, and vacuumed daily.
- Sidewalks swept daily outside the building at all entrances.
- PEOSH Hazard Communication training on cleaning products.
- Least toxic cleaning products purchased and used.
- Train cleaning staff on proper dilution and use of cleaning products.
- Train cleaning staff in proper use and maintenance of cleaning equipment.
- Periodic removal of dirt that collects on air supply and return vents.
- Trashcans and recycling cans large enough and located everywhere they are needed. Trashcans kept clean.
- Liners and lids for trashcans that handle food waste.

### Green Cleaning Is Good For School Occupants

Cleaning itself should not harm custodians or school occupants. Until recently, a wide variety of hazardous products had routinely been used for cleaning schools, including ammonia, chlorine, phenol, acids, caustics, and solvents. Custodial and maintenance staff are most at risk for breathing in toxic ingredients or getting them on their skin or in their eyes. Other staff and students may also be exposed during the school day if cleaning products linger in the air. And exposure via skin contact or ingestion is possible from residues on surfaces like desks, cafeteria tables, chairs, floors, carpets, upholstery, doorknobs, and toilet seats.

The best way for the district to phase in the use of green cleaning products is to invite the school's vendor to give a free demonstration of his/her third-party certified green cleaning products. If the first demonstration does not meet expectations, the district should try another, just as they would with conventional cleaners. The district can then gradually phase in the use of green cleaning products and practices.

Least toxic choices in cleaning products used in schools can dramatically impact staff and student health. Manufacturers of cleaning products have been reformulating their products and label them with terms such as "environmentally safe," "green," and "nontoxic." Some of these claims are valid. Some are not. Different groups use different criteria for what is "green." Therefore buyers need to be informed.

School districts routinely make cleaning product choices. District purchasers typically have established methods for evaluating price and performance. Many have formed buying cooperatives to get better prices and services. Local associations can play a role in educating purchasers and cooperatives in green cleaning principles and practices. They can encourage school districts to choose products that are rated "green" by independent, third party organizations. See the Resources below for more information.

Success of programs for a green cleaning and healthier school environment calls for the entire school community to be a part of the program. Boards of education, administrators, custodial staff, teachers, students and their parents all have a role to play. PTA meetings, school-home activities, and notification to parents about the new greening policy will help meet the goal of a greener cleaner school.

### Resources for Learning More about Green Cleaning

Note that NJEA is not endorsing any of these products, services, or organizations and has not verified information provided by these organizations.

#### Green Cleaning in Schools: A Guide for Advocates

[www.rampasthma.org/wp-content/uploads/2010/02/Green-Cleaning-In-Schools-A-Guide-for-Advocates1.pdf](http://www.rampasthma.org/wp-content/uploads/2010/02/Green-Cleaning-In-Schools-A-Guide-for-Advocates1.pdf)

Regional Asthma Management and Prevention, Oakland, CA, 2010 discusses the importance of "green" cleaning in schools, four steps to initiate change, illustrated with fact sheets on improved environmental health and possible saving with green

cleaning, additional green cleaning resources, and links to sample letters, presentations, and policies.

New Jersey Environmental Federation offers free training and consultation about how to green your school district. Contact NJEF at 732-280-8988.

#### Deirdre Imus Environmental Center for Pediatric Oncology,

[www.dienviro.com](http://www.dienviro.com),

201-336-8071. Through Greening the Cleaning®, experts provide environmentally sound cleaning alternatives and extensive guidance to allow participating facilities to enjoy a seamless transition to a safer, more effective cleaning system.



#### Green Seal,

[www.greenseal.org](http://www.greenseal.org).

Go to “Find a Certified Product.” Green Seal is an independent, nonprofit organization that strives to achieve a healthier and cleaner environment by identifying and promoting products and services that cause less toxic pollution and waste, conserve resources and habitats, and minimize global warming and ozone depletion.

#### Environmental Choice Program,

[www.environmentalchoice.com/](http://www.environmentalchoice.com/)

and choose English. The Environmental Choice™ Program site is one tool you can use to help make these important, green conscious decisions. Browse the list of products and criteria to find EcoLogo™ certified green products you can trust.

#### US Environmental Protection Agency,

[www.epa.gov/epp/tools/index.htm](http://www.epa.gov/epp/tools/index.htm)

Go to Database of Environmental Information for Products and Services. A searchable database of product-specific information (e.g., environmental standards and guidelines or contract language) developed by government programs, both domestic and international, as well as third parties.

#### National Education Association,

[www.neahin.org/ieq/](http://www.neahin.org/ieq/)

Take a Deep Breath and Thank Your Custodian, under Resources. This easy-to-follow document focuses on custodian “tips and tools” for minimizing staff and student exposure to common indoor air hazards. It also outlines steps to get administrators to act on indoor air quality (IAQ) issues, from drafting a detailed action plan to building a local health and safety committee.

## Purchasing Criteria for Green Cleaning Product

### Human health

- Least toxicity
- No carcinogens or teratogens
- Neutral pH
- Low flammability, e.g. flash point greater than 200 degrees F
- Least volatile organic compounds (VOCs)
- Pump sprays rather than aerosols

### Environment

- Biodegradability
- Aquatic toxicity
- Least phosphates and nitrogen
- Least chelating agents
- Efficient, recyclable packaging

### Life-Cycle Costs

- Acquisition costs (not just price)
- Operating costs
- Disposal costs
- Vendor Reliability
- Performance
- Designed for use in cold water in order to conserve energy

PART SIX:

## Temperature and Humidity

Experience has shown that temperatures in New Jersey school facilities are often too hot or too cold. Many buildings, especially older ones, have a chronic lack of ventilation that allows heat to build up from the sun beating on the roof, windows and walls. Internal heat sources like kilns, computers, kitchens, and strenuous activities like sports and physical education also raise indoor temperatures. And many schools lack air conditioning – even for summer school. Locked or broken thermostats and other controls may be at fault. Lack of heat in schools is usually associated with a temporary breakdown of heaters, boilers and radiators, and difficulty getting them fixed in a timely manner. Ironically, overheating of schools is also a problem in the heating season, as is over cooling in the summer. Such conditions are not only unhealthy, they also waste energy.

Inevitably, staff and students will make due: dressing as heavily or lightly as possible, bringing fans from home, yet still freezing or sweating and feeling exhausted by the end of the day. And almost certainly, some administrators will say “nothing can be done” and that temperature is really just a comfort issue.

But the truth is that excessive heat and cold are bona fide health issues for staff and students alike. Temperature extremes are also an educational issue. Teaching, learning, and attendance are likely to suffer when temperatures rise too high or fall too low.

### Legal Relief Needed

There is currently no legal relief from temperature extremes available to school staff and students. In New Jersey, six state and two federal agencies share responsibilities for healthy school facility environments. None of these agencies currently regulates temperature in school facilities. The PEOSH 2007 Indoor Air Quality (IAQ) Standard requires the district to check to make sure the heating, ventilation, air conditioning (HVAC) system is in proper operating order when temperatures within schools are outside the 68 to 79 degrees Fahrenheit range. But if nothing is found wrong with the HVAC system, no further action is required. If staff is getting ill from excessive heat, the PEOSH “General Duty Clause” may apply. NJEA is pursuing legislation to regulate temperature in schools.

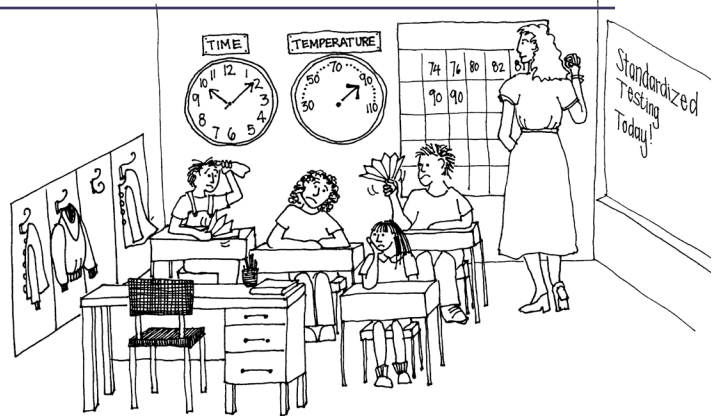
### Heat-Related Health Effects

**Heat rash:** Caused by blockage of sweat glands, appears as a large patch of tiny red blister-like bumps—the same as prickly heat.

**Dehydration:** Occurs when water lost through sweating is not replaced. Symptoms include thirst, loss of appetite, weakness, difficulty swallowing, muscle fatigue and, if untreated, shock.

**Heat cramps:** Also a result of excessive sweating, occurs after lost body salt is not replaced. Symptoms include cramps in legs, arms, and abdomen.

**Heat Fatigue:** Results from prolonged heat exposure and causes a decline in coordination, alertness, and performance. With so



much blood going to the periphery of the body, less is available for muscles. Strength drops and fatigue kicks in sooner than otherwise. Accidents are more likely to happen.

**Heat exhaustion:** Caused by poor blood supply to the brain as a result of blood flowing to the skin’s surface. Symptoms include extreme weakness, headache, nausea, vomiting, moist and clammy skin, pale complexion, and fainting.

**Heat stroke:** A result of a dramatic increase in body temperature. The body’s cooling system breaks down and sweating stops. Symptoms are body temperature of 105 degrees Fahrenheit or greater; hot, dry skin surface with red, matted appearance; confusion, delirium, loss of consciousness and, if untreated, coma.

### Cold-Related Health Effects in a School Situation

**Diseases flare-ups:** Conditions like rheumatism, arthritis, and asthma can be made worse by cold.

**Increase in accidents:** Cold decreases dexterity, mental skills, coordination, and a general decline in performance that affects safety.

**Strains and sprains:** Working in cold conditions increases the risk of injuries to muscles and tendons, for example, back strain.

### Recommended Temperatures

Recommended temperature ranges are based on a consensus standard, ASHRAE\* Standard 55-2004, Thermal Environmental Conditions for Human Occupancy. It specifies that temperatures between 73 -79 degrees Fahrenheit in summer, and 68 -75 degrees Fahrenheit in winter will be acceptable to 80 percent of the population. This temperature range is widely accepted as achievable and desirable. Temperature fluctuations should be less than 2 degrees per hour. Humidity should be in the range of 30 to 60 percent.

\*ASHRAE is the American Society of Heating, Refrigerating, Air-conditioning Engineers, Inc. a widely recognized and respected consensus standard-setting body.

### What the Local Association Can Do

**Walk-through:** Do all occupied areas have a thermostat that can be controlled by the teacher or other staff? Are thermostats locked or broken? Are they cleaned and calibrated regularly? Are they affected by direct sunshine, heat sources, drafts, or other

conditions that might give false results? If present, can radiators be controlled?

**Measure:** Staff should record temperature and humidity morning, noon, and late afternoon on a calendar in each occupied area, using the Taylor Indoor Humidiguide and Thermometer or other temperature and humidity meters available for about \$10 at hardware stores or online. An analysis of the results of temperature measurements can be done to determine when and where temperature extremes are occurring.

**Negotiate contract language for school closings and shortened days:** The best enforcement mechanism is contract language requiring partial or full school closings when temperature levels are more than 10 degrees above or 5 degrees below recommended temperatures which is above 89 or below 63 degrees Fahrenheit.

- Where indoor temperatures register below 63 degrees Fahrenheit or above 89 degrees Fahrenheit, those areas of the school will be closed and staff and students relocated. If more than half of the classrooms are affected, the entire school will be closed. The closing will take place within one hour of the measurement.
- The continuation of a shutdown or shortened schedule will be re-evaluated on a day-to-day basis.
- The district shall adopt a plan for notification of parents and guardians of closings and shortened days.

## Temperature Protective Measures to Request

### Short-term control measures for excessive heat

- Bringing in outdoor air if it is cooler outside than inside, especially at night to cool off the facility by removing heat built up during the day.
- Closing shades, blinds, and curtains to block sunlight.
- Personal-cooling fans to increase air speed and increase sweat evaporation.
- Increasing breaks and reducing activity. Sports and heavy work can be done during cooler times. Sports should be stopped during heat waves and done at a slower pace during hot weather.
- Relocation to cooler or air-conditioned areas of the school.
- Cool-down periods during the school day in a cool area for staff and student breaks.
- Creating air-conditioned cool areas by use of portable, floor-model air conditioners on wheels.
- Cool drinking water near all occupied areas.

### Permanent control measures for excessive heat

- Solar film on windows, skylights, glass walls, etc.
- Reflective window shade, blinds, and curtains.
- Shading windows, skylights, glass walls with trees, awnings, overhangs.

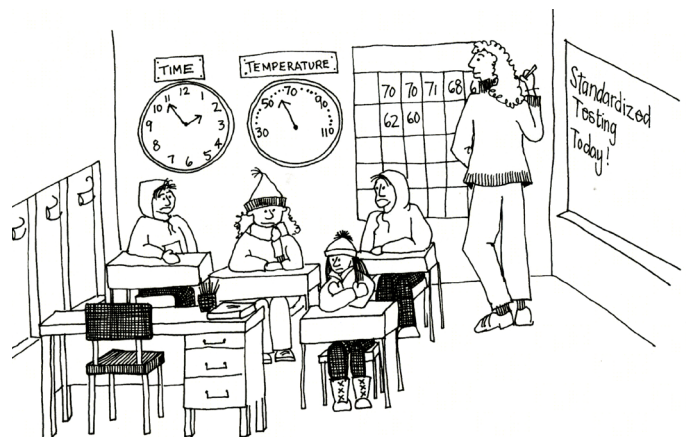
- Window or wall air conditioners.
- Ceiling fans in cooling mode, blowing air down (at least eight feet high and guarded).
- Energy-efficient windows that block the heat.
- Heat-reflective roof.
- Insulated building envelope.
- Caulking and weather-stripping doors and windows.
- Regular scheduled maintenance of air conditioning equipment.
- Better air conditioning control equipment.
- Renovation of the school to provide air conditioning, using either a central forced air system or unit ventilators that provide cooling as well as heat.

### Short-term control measures for excessive cold

- Opening shades, blinds, and curtain to allow in sunlight.
- Portable space heaters (tested to meet safety standards, guarded, and with automatic shut-off features).
- Increasing activity.
- Relocation to warmer areas of the school.
- Get warm periods during the school day in a warm area for staff and student breaks.
- Creating warm areas by use of portable space heaters.

### Permanent control measures for excessive cold

- Permanent, fixed space heaters.
- Ceiling fans in reverse mode to circulate the warm air without blowing air down (at least eight feet high and guarded).
- Energy-efficient windows that block the cold.
- Insulated building envelope.
- Caulking and weather-stripping doors and windows.
- Better maintenance of heating equipment.
- Better controls for heating equipment, such as programmable thermostats.



PART SEVEN:

## Indoor Air Quality Resources

### NJEA Publications

#### Health and Safety Manual

Review Articles on Health and Safety issues

- When School is Out Construction Begins, May 2018
- Extreme Weather and Its Impact on Schools, April 2018
- Control Legacy Asbestos and Ban all Further Use, January 2018
- Temporary Classrooms Should be High Quality and Truly Temporary, December 2018
- Art Hazards: Toxic Materials Abound, October 2017
- Raising the Roof While Keeping the Hazards Down, June 2017
- Identify Floors that Might Emit eMercury, May 2017
- 3D Printers Need Good Ventilation, April 2017
- Common Classroom Health and Safety Hazards Have Solutions, March 2017

From NJEA website, choose Issues and Political Action, then Health and Safety at [njea.org](http://njea.org)

#### PEOSH Educational Materials on Indoor Air Quality

Request these free publications by calling 609-984-1863. Also available online at [www.state.nj.us/health/workplacehealthandsafety/peosh/peosh-health-standards/iaq.shtml](http://www.state.nj.us/health/workplacehealthandsafety/peosh/peosh-health-standards/iaq.shtml)

- Public Employer's Guide and Model Written Program for the 2007 Indoor Air Quality Standard: Comprehensive document containing checklists, worksheets, record-keeping forms – everything an employer needs to begin to address IAQ issues.
- PEOSH Indoor Air Quality Standard: Summary of the provisions of the IAQ standard for public workplaces.
- Indoor Air Quality: Overview of IAQ issues including Sick Building Syndrome and Building Related Illness.
- Mold in the Workplace – Prevention and Control: Information on mold and moisture situations in buildings.
- Indoor Bioaerosols: Discussion of how buildings can become contaminated with mold, mildew, bacteria, etc. and the associated health hazards and controls.
- Renovation and Construction in Schools – Controlling Health and Safety Hazards: Overview of safety and health risks in occupied schools under construction.

#### EPA Indoor Air Quality Problem-Solving Wheel, 2009

The problem-solving wheel is an interactive, user-friendly tool that EPA designed to help school staff identify IAQ emergencies and determine actions to take in an emergency IAQ situation. This resource was designed to help school staff understand various factors related to the indoor environment, such as odors, temperature and humidity problems, illnesses, symptoms of health problems, explanations of and solutions to common problems. The problem-solving wheel is included in the IAQ TfS Action Kit (EPA document number 402-K-07-008) and is available for order separately as EPA 402-K-09-005, 2009. Call 800-490-9198 or fax your request to 513-891-8409. You can also e-mail your request to [nscep@lmsolas.com](mailto:nscep@lmsolas.com).

#### EPA Mold Remediation in Schools and Commercial Buildings

[www.epa.gov/mold/mold\\_remediation.html](http://www.epa.gov/mold/mold_remediation.html)

#### Checklists

##### EPA IAQ Tools for Schools Walkthrough Checklist

[www.epa.gov/iaq/schools/pdfs/kit/checklists/walkthruchklt.pdf](http://www.epa.gov/iaq/schools/pdfs/kit/checklists/walkthruchklt.pdf)

EPA has designed 10 additional checklists to engage teachers, nurses, and other school staff in the process of school inspections. Each checklist is accompanied by a Checklist Background-er, which describes the purpose of the specific checklist. These can be downloaded from [www.epa.gov/iaq/schools/actionkit.html](http://www.epa.gov/iaq/schools/actionkit.html)

#### NJEA Checklists

- IAQ Occupant Survey, page 73
- Mold Walkthrough, page 76
- IAQ Walkthrough, page 78
- Construction and Renovation Walkthrough, page 79

From NJEA website, choose Issues and Political Action, then Health and Safety, then Health and Safety Manual, [www.njea.org/pdfs/HSMannual](http://www.njea.org/pdfs/HSMannual)

## Websites

### Health and safety pages of NJEA's website

[www.njea.org/issues-and-political-action/health-and-safety](http://www.njea.org/issues-and-political-action/health-and-safety)

Links to all NJEA health and safety materials are on the website as well as related links. Also accessible to students, parents, and community members.

### EPA Indoor Air Quality, Tools for Schools

[www.epa.gov/iaq/schools/](http://www.epa.gov/iaq/schools/)

The IAQ Tools for Schools Program is a comprehensive resource to help maintain a healthy environment in school buildings by identifying, correcting, and preventing IAQ problems.

### EPA Indoor Air Quality, Design Tools for Schools

[www.epa.gov/iaq/schooldesign/](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 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, while doing so in the context of tight budgets and limited staff.

### Healthy School Facility Environments

<http://www.state.nj.us/health/healthyschools/>

A gateway to resources to help address environmental health issues in schools such as indoor air quality, mold contamination, hazardous substances, and construction dust and noise. Features links to the resources of six New Jersey state agencies, federal agencies, and many advocacy groups.

### Clearinghouse for Educational Facilities

Information on planning, designing, building, and maintaining safe, healthy, high performance schools. Funded by a grant from the U.S. Department of Education. Over 100 resource lists, including:

Indoor Air Quality, Thermal Comfort, School Cleaning and Maintenance

[www2.ed.gov/programs/edfacclearinghouse/index.html](http://www2.ed.gov/programs/edfacclearinghouse/index.html)

EPA Mold Page [www.epa.gov/mold](http://www.epa.gov/mold)

Mold <http://www.ncef.org/pubs/flooding.pdf>

## Videos

**The Virtual School Walkthrough: Identifying and Solving Common Indoor Air Quality Problems.** Decades of experience helping schools prevent and solve indoor air quality problems have been distilled in this show which features 200 photos of actual school problems and solutions. Download from [mwcleanairwa.gov/projects/indoor-air-quality/](http://mwcleanairwa.gov/projects/indoor-air-quality/) or call Northwest Clean Air Agency at 360-428-1617 for a free DVD.

**The IAQ Tools for Schools Video Collection DVD.** Incorporates three informative films on one convenient DVD. Film one, Taking Action, shows how one school successfully implemented the IAQ Tools for Schools Action Kit. Film two, Ventilation Basics, explains the importance of good indoor quality and shows how to operate and maintain school ventilation systems. Finally, Walkthrough: Four Schools Making a Difference illustrates the school walkthrough, one key component of the IAQ Tools for Schools process that many schools use to kick off their IAQ programs. This DVD illustrates some of the most common IAQ problems found in schools and is ideal for schools that are beginning to implement IAQ Tools for Schools. EPA document number 402-V-08-001

The EPA DVD can be ordered individually or as part of the complete IAQ Tools for Schools Action Kit, EPA document number 402-K-07-008. Call 800-490-9198 or fax your request to 513-891-8409. You can also e-mail your request to [nscep@lmsolas.com](mailto:nscep@lmsolas.com)

## Software

**The Healthy School Environments Assessment Tool (SEAT)** is a free software tool to help school systems manage more effectively their environmental issues. HealthySEAT is designed to be customized by school systems to conduct and manage self-assessments of their school facilities for a wide range of environmental, health, and safety issues. [www.epa.gov/schools/healthyseat/index.html](http://www.epa.gov/schools/healthyseat/index.html)

### School Advanced Ventilation Engineering Software (SAVES)

SAVES is a free software package that architects, engineers, school officials, and others can use to determine what type of ventilation equipment provides the best advantages for their unique applications. SAVES incorporates two software tools for the school design community: 1) the ERV Financial Assessment Software Tool (also referred to as EFAST) assesses the financial characteristics of energy recovery ventilation systems for school applications; and 2) the Indoor Humidity Assessment Tool (also referred to as IHAT) helps school designers assess the moisture control characteristics of ERV systems, along with other building design decisions that can impact indoor moisture levels and indoor air quality. [www.epa.gov/iaq/schooldesign/saves.html](http://www.epa.gov/iaq/schooldesign/saves.html)

PART EIGHT:

## Government Agencies



The following federal, state, and local agencies can offer IAQ information, publications, training, research, onsite consultation, enforcement, advocacy or some combination of these. Here are some tips for making the best use of their resources.

When you reach an agency on the phone, don't launch into a long story or immediately ask for an enforcement inspection. Instead, say, "I'm seeking information and advice on such and such issues. I also want to discuss the possibility of filing a complaint and getting an enforcement inspection." Expect to be transferred a few times. Be patient. Be sure you are talking to the right person before giving the whole story. This will save you time in the long run.

Make notes documenting the call including the date, phone number, agency, with whom you spoke, his/her title, and what they told you. Be sure to get the names, phone numbers, and email addresses of people who have been helpful. You may need to send them follow-up information or contact them again at a later date. Be sure to give them your contact information if they will need to get back to you.

### Public Employees Occupational Safety & Health (PEOSH)

Program is responsible for health and safety enforcement for staff in New Jersey public schools.

Health hazards such as indoor air quality, mold, and chemical hazards  
New Jersey Department of Health and Senior Services  
**Phone:** 609-984-1863

[www.state.nj.us/health/peosh/index.shtml](http://www.state.nj.us/health/peosh/index.shtml)

Safety hazards, discrimination, and record-keeping New Jersey Department of Labor and Workforce Development  
**Phone:** 609-292-7036 or 800-624-1644

[http://lwd.dol.state.nj.us/lsse/employer/Public\\_Employees\\_OSH.html](http://lwd.dol.state.nj.us/lsse/employer/Public_Employees_OSH.html)

Indoor Environments Program in the New Jersey Department of Health and Senior Services can offer information, advice, and sometimes enforcement on issues such as asbestos, lead, mold, and the EPA Indoor Air Quality Tools for Schools Program.  
**Phone:** 609-826-4950

[www.state.nj.us/health/iep/index.shtml](http://www.state.nj.us/health/iep/index.shtml)

Communicable Disease Program in the New Jersey Department of Health and Senior Services can offer information, advice, and sometimes enforcement on issues such as tuberculosis, hepatitis, meningitis, vaccines, etc.  
**Phone:** 609-826-5964

[www.state.nj.us/health/cd/index.shtml](http://www.state.nj.us/health/cd/index.shtml)

Cancer Epidemiology Program in the New Jersey Department of Health and Senior Services can offer information and advice about cancer cluster concerns in the workplace and community.  
**Phone:** 609-588-3500

<http://nj.gov/health/ces/reports.shtml>

New Jersey Department of Environmental Protection can offer information, advice, and enforcement on contamination of school sites, school bus idling, integrated pest management, radon, lead in drinking water, ozone and other air pollutants, and mercury.

- DEP school facilities, 609-777-3373,  
[www.state.nj.us/dep/school/](http://www.state.nj.us/dep/school/)
- Contamination of school sites, 800-253-5647
- School bus idling, 609-292-7953,  
[www.nj.gov/dep/stopthesoot/](http://www.nj.gov/dep/stopthesoot/)
- Integrated pest management, 609-984-6908,  
[www.nj.gov/dep/enforcement/pcp/pcp-ipm.htm](http://www.nj.gov/dep/enforcement/pcp/pcp-ipm.htm)
- Radon, 800-648-0394,  
[www.nj.gov/dep/rpp/radon/index.htm](http://www.nj.gov/dep/rpp/radon/index.htm)
- Ozone and air pollutants, 609-292-0138,  
[www.njaqinow.net](http://www.njaqinow.net)
- Mercury, 609-984-6070,  
[www.nj.gov/dep/dsr/mercury](http://www.nj.gov/dep/dsr/mercury)

Division of Codes and Standards in the New Jersey Department of Community Affairs (DCA) enforces the Uniform Construction Code in at-risk districts, including ventilation requirements and certificates of occupancy. The division enforces elevator safety, the Asbestos Hazard Abatement Subcode also known as Subchapter 8 of the Uniform Construction Code, as well as the Lead Hazard Abatement rules in all buildings and structures undergoing lead hazard abatement. **Phone:** 609-984-7609, [www.state.nj.us/dca/divisions/codes/index.html](http://www.state.nj.us/dca/divisions/codes/index.html)

Local Construction Code Officials enforce the Uniform Construction Code in districts not considered at risk. Find your code official at [www.state.nj.us/dca/divisions/codes/publications/pdf\\_ora/muniroster\\_july22.pdf](http://www.state.nj.us/dca/divisions/codes/publications/pdf_ora/muniroster_july22.pdf)

New Jersey Schools Development Authority (NJSDA) is responsible for monitoring construction-related health and safety problems, including IAQ, in public school projects funded by them. [www.njsda.gov](http://www.njsda.gov)

- Headquarters – 609-943-5955

Occupational Safety and Health Administration (OSHA) is responsible for health and safety enforcement for employees of private contractors working in the public schools, for example, construction and renovation workers and privatized security, food service, and custodial workers. **Phone:** 1-800-321-6742, toll-free, 24 hours a day, seven days a week, [www.osha.gov](http://www.osha.gov)



PART NINE:

# PEOSH IAQ Inspection Checklist

## PEOSH Indoor Air Quality Standard Inspection Checklist

Location: \_\_\_\_\_

Inspection #: \_\_\_\_\_

Inspector: \_\_\_\_\_ Date: \_\_\_\_\_

COMPLIANCE PROGRAM - GENERAL REQUIREMENTS		Y	N	N/A
<b>N.J.A.C. 12:100-13.3(a)</b>	Has a designated person been identified to handle the implementation and documentation of the New Jersey indoor air quality standard? Name/Title/Phone #: _____ _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13.3(a)	Has the employer ensured that the designated person is familiar with all the requirements of the standard?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13.3(a)1	Is there an established, operating and documented preventive maintenance schedule for the heating, ventilation and air conditioning (HVAC) system in accordance with the manufacturer's recommendations or accepted practice for the HVAC system?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13.3(a)1	Does the HVAC preventive maintenance schedule include: checking and/or changing air filters, checking and/or changing belts, lubrication of equipment parts, checking the functioning of motors and confirming that all equipment is in operating order?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13.3(a)1	Are damaged or inoperable components of the HVAC system replaced or repaired as appropriate?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13.3(a)1	Are parts of the HVAC system with standing water checked visually for microbial growth?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13.3(a)2	Is general or local exhaust ventilation used where housekeeping and maintenance activities could reasonably be expected to result in exposure to hazardous substances above applicable exposure limits?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13.3(a)3	When the carbon dioxide level exceeds 1,000 parts per million, is the HVAC system checked and repaired as necessary to ensure the system is operating properly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13.3(a)4	In office buildings/schools, when the temperature is outside of the range of 68 to 79 degrees Fahrenheit, is the HVAC system checked and repaired as necessary to ensure the system is operating properly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13.3(a)5	When a contaminant is identified in the make-up air supply, is the source of the contaminant eliminated or the make-up inlets and/or exhaust air outlets relocated to avoid entry of the contaminant into the air system?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13.3(a)6	If buildings do not have mechanical ventilation, are windows, doors, vents, stacks, and other portals used for natural ventilation operating properly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13.3(a)7	Are complaints promptly investigated that involve signs or symptoms that may be associated with Building-Related Illness or Sick Building Syndrome?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13.3(a)8	Does the employer have a written plan that meets the requirements of the subchapter?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13.3(a)9	Is the written compliance plan reviewed and updated annually to reflect new or updated procedures?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## PEOSH Indoor Air Quality Standard Inspection Checklist (cont.)

CONTROLS OF SPECIFIC CONTAMINANTS		Y	N	N/A
13.4(a)	When point sources generate airborne levels of contaminants above applicable limits, is local exhaust ventilation or substitution used to reduce the exposure levels to below the limits?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13.4(b)	Does the employer control microbial contamination by promptly repairing water intrusion that can promote growth of biologic agents?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13.4(c)	Does the employer remediate damp or wet materials by drying, replacing, removing, or cleaning same within 48 hours of discovery and continue remediation until water intrusion is eliminated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13.4(d)	Are visible microbial contaminants removed from ductwork, humidifiers, dehumidifiers, condensate drip pans, heat exchange components, and other HVAC and building system components, or on building surfaces, such as carpeting and ceiling tiles, when found during regular or emergency maintenance activities or during visual inspection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
RENOVATION/REMODELING		Y	N	N/A
13.5(a)	During renovation work and/or new construction, are local ventilation or other protective devices used to safeguard employees and students from dust, stone and other small particles, toxic gases or other harmful substances in quantities hazardous to health?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13.5(a)	Are renovation areas in occupied buildings isolated so that air contaminants, dust, and debris are confined to the renovation or construction area by use of measures such as physical barriers, pressure differentials, and/or performing work during periods of minimal occupancy?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13.5(a)(1)	Are work areas cleaned and aired out as necessary prior to re-occupancy?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13.5(a)(2)	Is hazard information used to select products and to determine necessary measures to be taken?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13.5(b)	Before selection and use, are product labels and MSDS sheets checked or is information obtained on whether the use of paints, adhesives, sealants, solvents or installation of insulation, particle board, plywood, floor coverings, carpet backing, textiles or other materials contain volatile organic compounds such as solvents, formaldehyde, or Isocyanates that could be emitted during regular use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13.5(c)	Are employees notified at least 24 hours in advance, or promptly in emergency situations, of work to be performed on the building that may introduce air contaminants into their work area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## PEOSH Indoor Air Quality Standard Inspection Checklist (cont.)

<b>RECORDKEEPING</b>		<b>Y</b>	<b>N</b>	<b>N/A</b>
13.6(a)	Is the maintenance schedule updated to show all maintenance performed on the building systems?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13.6(a)	Does the maintenance schedule include the dates that the building systems maintenance was performed and the names of the persons or companies performing the work?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13.6(b)	Are maintenance schedules with the information required by the indoor air quality standard retained for at least three years?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13.6(c)	Are the records required to be maintained by this section available for inspection by PEOSH?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13.6(d)	Are the records required to be maintained by this section available for inspection by employees and employee representatives for examination and copying within 10 working days of request?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>EMPLOYER'S RESPONSE TO A SIGNED COMPLAINT</b>		<b>Y</b>	<b>N</b>	<b>N/A</b>
13.7(a)	If the employer receives a complaint notification from the PEOSH Program about an indoor air quality problem, is a written response sent back to PEOSH within 15 working days?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13.7(a)	Do the employer's written responses to complaint notifications received from the PEOSH Program about an indoor air quality problem include any combination of the following: 1) A statement that the complaint is unfounded; 2) A description of any remedial action already taken; 3) An outline of any remedial measures planned but not yet taken with a timetable for completion; and/or 4) A statement that a study of the problem, with a timetable for completion of the study, has been initiated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13.7(b)	If the employer plans remedial measures or a study initiated in response to a complaint notification received from the PEOSH Program, is a written report describing the remedial measures implemented and/or a copy of a study's report submitted to the PEOSH Program within 15 working days of completion?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13.7(c)	If remedial work is initiated in response to a complaint notification from the PEOSH Program, are permits obtained and work performed as required by N.J.A.C. 5:23 (the New Jersey Uniform Construction Code)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13.8(a)	If available, are the following documents provided to the PEOSH Program when requested in response to an employee complaint: 1) As-built construction documents; 2) HVAC system commissioning reports; 3) HVAC systems testing, adjusting and balancing reports; 4) Operations and maintenance manuals; 5) Water treatment logs; and 6) Operator training materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

# Organizing for Better Indoor Air Quality

An NJEA Guide for Local Association Action



**NEW JERSEY EDUCATION ASSOCIATION**

180 West State Street

PO Box 1211

Trenton, NJ 08607-1211

609-599-4561

[njea.org](http://njea.org)