

Is Your Building Making You Sick?

A Training Workbook for Working People



Produced by
Service Employees International Union, AFL-CIO, CLC

Second Edition

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What Is the Small-Group Activity Method?

Workers need to take the initiative and educate themselves and their co-workers about sick buildings. Then they need to act, pressuring employers and building owners to make indoor work environments safe and healthful. The goal of this workbook is to provide SEIU members with the basic tools to carry out that strategy. This workbook employs the Small-Group Activity Method (SGAM) to teach members how to solve sick building syndrome problems and how to educate others to help in the struggle.

The Small-Group Activity Method is a participatory, non-lecture training method that teaches workers to be trainers. The SGAM involves learning by doing. Participants in workshops solve real-life problems, building upon their own skills and experiences.

The method is based on activities which take from 30 minutes to one hour to complete. Each activity has the same structure: small-group discussion, report-back, and summary.

¥ **Small Group Discussion:** Participants work together in small groups of four to eight people to discuss indoor air quality problems. Factsheets are included to help the group develop solutions to the problems.

¥ **Report-Back:** For each activity, the group selects a reporter whose job it is to take notes on the small-group discussion and report back to the larger group. The worker-trainer records the small-group discussion on large pads of flipchart paper so all participants may refer to them. After the report-back, the workshop is thrown open for general discussion.

¥ **Summary:** The trainer highlights the key points discussed on the summary page and brings up problems and issues that might have been overlooked in the report-back.

Tips for Trainers

Here are some suggestions to help you conduct the sick building syndrome workshop.

Preparation: To prepare yourself and the participants for the workshop, the following tips are helpful:

¥ Before the workshop, you may want to copy and mail articles about sick building syndrome to participants, or send the entire agenda and activity materials in advance (if you know who will be attending).

¥ Place participants in small groups of 5 to 8 people which are far enough apart so they can work undisturbed. Remember to bring: (1) a large pad of flipchart paper to write responses on, (2) large marker pens, and (3) tape for displaying flipchart pages on the wall.

¥ Some trainer suggestions: (1) Spend a few hours in preparation the day before the workshop (it is best to conduct training with a co-worker). (2) Review in detail the sections you are going to discuss, and decide who is going to do what in each section (for example, one individual can record responses while another leads the discussion). (3) Finally, review the factsheets, so you know which to emphasize in the summary.

Introductions: Introduce yourself; ask the participants to introduce themselves; briefly explain the SGAM method. Ask participants to describe what they hope to

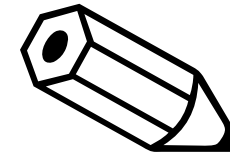
learn during the training. Move people into small groups as soon as possible; introduce the activity; explain the role of the reporter; and, rotate the roles of facilitator and recorder with each activity.

Report-Back: In the report-back phase (following the small-group discussions), the workshop trainer asks each small group to report on their group discussion. The trainer can record the responses on the flipchart paper, writing exactly what people say (this can help build people's confidence). Be careful to act as a moderator, not as a lecturer. End the discussion before it drags on too long.

Summary: Remind the group of their responsibility to arrive at answers and strategies on their own. Highlight any main points participants might have missed. Avoid reciting the entire summary list.

What Is Sick Building Syndrome?

Purpose: To understand what sick building syndrome is and what health effects it causes for building occupants.



Task 1.1 Please read the case example below and answer the questions that follow. Use your own experience and the fact sheets in this section of the workbook to answer the questions. Choose someone in your group to write down the group's answers. That person will report the group's answers to the whole class.

Case example:

Your group has just been to a training program on sick building syndrome. You go back to work and a co-worker asks you what you learned. You tell her about health problems caused by sick building syndrome. This is what she says:

“I don't think there really exists anything like sick building syndrome. After all, it's not like we work in a chemical plant where we might be exposed to chemicals that could make us sick. It's all in their heads!”

1. What is your group's response to this worker?

Sick Buildings, Sick People

Some office workers may feel relieved to step into their air-conditioned offices and stop breathing the fumes of the urban outdoors. However, the air they breathe inside their offices may be even more hazardous to their health. Buildings designed to be “energy-efficient” are especially prone to sick building syndrome or building-related illness, the two major categories of indoor air pollution.

From 800,000 to 1.2 million commercial buildings in the United States have indoor air pollution problems that can cause symptoms of sick building syndrome or building-related illness in the people who occupy them. This means that some 30 to 70 million persons are being exposed to potential building-related health hazards. Furthermore, the World Health Organization has estimated that as many as 30 percent of newly constructed and remodeled buildings may have problems involving sick building syndrome, and that 10 to 30 percent of the occupants may be affected.

In its 1989 “Report to Congress on Indoor Air Quality,” the Environmental Protection Agency (EPA) estimated the economic costs of poor indoor air for white-collar workers due to losses in productivity at more than \$60 billion. Increased employee sick days and medical costs exceeded \$460 billion. The EPA ranked indoor air as the number two health risk in the United States following radon.

Unions have responded by filing complaints with federal and state government agencies and demanding that employers improve ventilation system operation. More needs to be done, however. Much more.

What is indoor air pollution?

There are two forms of indoor air pollution: sick building syndrome (SBS) and building-related illness (BRI).^{1,2}

Sick building syndrome (SBS)

Sick building syndrome occurs when workers suffer from short-term (acute) health and comfort effects that are linked to the

amount of time spent in the building. Complaints may originate from one particular room or area of the building, or they may occur throughout the whole building. Most people suffering from SBS have one or more of the following symptoms:

- Headache
- Eye, nose or throat irritation
- Dry cough
- Dry or itchy skin
- Dizziness and nausea
- Fatigue
- Sensitivity to odors

Most occupants experiencing SBS symptoms feel better after leaving the building.

Building-related illness

Building-related illness is a term used to describe situations when symptoms of a specific illness can be linked directly to

¹Environmental Protection Agency, “Sick Building Syndrome,” *Indoor Air Facts* (revised), Washington, D.C.: EPA, April 1991.

²American Society of Heating, Refrigeration, and Air-Conditioning Engineers, *Indoor Air Quality position paper*, February 2, 1989 and August 11, 1987.

problems with the air in a building. BRI sufferers may need a long time to recover from the illness after leaving the building. Symptoms of BRI include:

- Cough
- Chest tightness
- Fever and chills
- Muscle aches

What is the difference?

Sick building syndrome is the term used to describe acute (short-term) health and comfort effects that disappear when the worker leaves the building. Building-related illness is the term used to describe infections, allergic responses, or poisoning due to organisms or chemicals that grow or collect in buildings. The symptoms do not go away when you leave the building.

Building-related illness can include hypersensitivity pneumonitis, asthma, and other infections such as “Legionnaire’s disease” and tuberculosis. These illnesses are frequently related to the humidification system or other parts of the HVAC (heating, ventilation, air conditioning) system. BRI complaints occur in buildings where there are also many SBS complaints.

³This data is from a 1988 NIOSH guidance document, *Hazard Evaluations and Technical Assistance Branch*, NIOSH, Cincinnati, Ohio 45226.

SBS may be a precursor of BRI. This means that if SBS symptoms are not taken care of, the problems may get worse until BRI occurs.

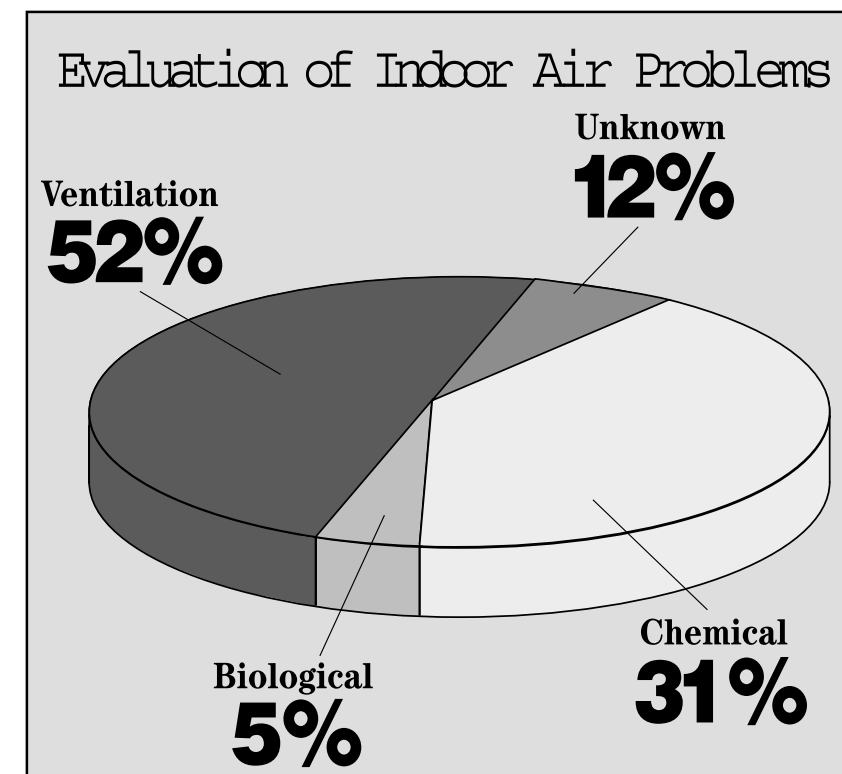
The Sources of Air Pollution

The National Institute for Occupational Safety and Health (NIOSH) conducts studies of workplace health and safety hazards and recommends standards to the federal Occupational Safety and Health Administration (OSHA). NIOSH has conducted about 450 field studies of indoor air quality problems in

many types of buildings. The chart below shows the results of the studies.³

Too little fresh air

NIOSH found that most (52 percent) indoor air pollution complaints are due to a lack of fresh air. Air can become “stuffy” or “stagnant” when there is not enough fresh air entering a building. This lack of fresh air can also cause contaminants to build up inside the building. When too little fresh air enters the building, chemicals, molds, and other organisms are more likely to spread. Poor temperature or humidity control can make workers feel more uncomfortable.



Common ventilation problems include: poor distribution and mixing of fresh and recirculated air which causes draftiness and pressure differences between office spaces; temperature and humidity extremes and changes; and air filtration problems which allow chemicals and germs to be recirculated throughout a building because of improper maintenance to the ventilation system. Ventilation problems can cause headaches, fatigue or drowsiness, nausea, dizziness, and other symptoms.

Lack of fresh air often results from an economic decision by management or a building owner to save money on heating and cooling costs. In some cases, renovating the workspace and the ventilation system is the only way to ensure an adequate supply of fresh air.

Chemical contamination

NIOSH also found that almost a third (31 percent) of the indoor air quality problems studied were due to chemical contamination. Sometimes health problems can be linked directly to a chemical in the workplace. For example, exposure to carbon monoxide may cause headaches; fiberglass fibers can produce skin irritation; and formaldehyde can cause respiratory problems.

Chemical hazards in buildings may come from four sources:

- **Activities** within the building, such as photocopying, cigarette smoking, or printing that uses strong solvents.
- **Fumes** from furnishings and building materials.
- **Contaminated air** brought in from outside and recirculated throughout the building.
- **Spills** from chemicals used in the building (for example, cleaning chemicals and glues from renovation work).

Chemicals, even in small amounts, can make people sick. Some sources of chemical contamination are:

- **Office equipment** such as photocopiers may give off ozone, which irritates the eyes and the respiratory tract, causes headaches, and has been shown to cause genetic damage. Also, ink toner in photocopiers may contain cancer-causing chemicals.
- **Renovations and new furnishings** release chemicals into the air. Many different solvents are used in roofing, painting and renovation work. These chemicals can cause dry skin, respiratory irritation, headaches, fatigue, and (with greater exposure) dizziness and nausea. Long-term exposure to some solvents can cause cancer.

- **Formaldehyde** is one of the most common chemicals used in buildings. It can be found in furniture, new carpets, particleboard, and plywood.

Formaldehyde can cause irritation of the eyes and respiratory system. High doses may cause cancer.

- **Custodial and maintenance work** involves the use of strong, often hazardous chemicals such as ammonia, solvents, paint strippers, and cleansers. Without proper ventilation, these chemicals can cause respiratory problems, lung disease, and eye irritation. They can easily spread through the ventilation system, putting everyone in the building at risk.

- **Pesticides** can linger in the air long after being sprayed. Many are known to cause cancer and birth defects; irritate the skin, eyes, and lungs; and harm the nervous system, causing headaches, dizziness, nausea, and muscle and nerve damage.

- **Gasoline and exhaust fumes**, which contain carbon monoxide and cancer-causing substances, can enter buildings through air intake vents improperly located in the same area as loading docks. Carbon monoxide causes headaches, dizziness and nausea,

Major Indoor Air Quality Hazards⁴

Contaminants	Health effects	Sources
Combustion Carbon monoxide Nitrogen oxide Particulates	Eye, throat, and respiratory problems Fatigue Shortness of breath	Cigarette smoke Gas ranges Auto, truck, bus exhaust (operating in loading docks or near buildings)
Chemicals (more than 1,000 known toxic chemicals) Methylene chloride Benzene and chloroform (most common) may be carcinogenic Glycol ethers Ethyl and methyl alcohol	Eye, nose and throat irritation, respiratory infections Cancer Reproductive health effects Dermatitis Headaches Dizziness, nausea Coughing	Building materials Solvents (cleaners, glues, copiers, correction fluid, rubber cement) Printed documents Vinyl Caulking, paints, adhesives Felt-tip pens Flooding (waterlogged carpets, furniture)
Dusts, molds, and germs Airborne particles including viruses, bacteria, fungal spores, algae, pollen, mold, and dust mites	Infections (viral and bacterial diseases such as Legionnaire's disease) Allergic rhinitis Asthma Humidifier fever Pneumonitis Skin reactions	Humidifiers Flush toilets Ice machines Air conditioners Water towers Mildewed papers Infected persons Carpets Ventilation systems
Formaldehyde A very prevalent chemical	Low-level exposure: Eye, nose, and throat irritation Dermatitis Long-term exposure: Headaches Dizziness Nausea Coughing Menstrual changes Recurring upper respiratory infections	Pressed wood Insulation Textiles Furnishings Floor coverings Fabrics (permanent press)
Radon A naturally occurring, odorless, tasteless, radioactive gas	Lung cancer No short-term health effects	Rocks, soil, building foundations and materials Enters a building through cracks in sewer pipes and in concrete, wall or floor joints, concrete blocks
Asbestos A naturally occurring rock made up of microscopic fibers	Lung disease Lung cancer Mesothelioma No short-term health effects	Asbestos insulation and fireproofing materials Floor and ceiling tiles

⁴ Environmental Protection Agency, *Building Air Quality: A Guide for Building Owners and Facility Managers*, Dec. 1991, p. 56.

and can be traced to many sources, including boiler gases and cigarette smoke.

- **Cigarette** smoke contains chemicals that can cause lung cancer in smokers and non-smokers. It can also cause asthmatic attacks and other allergic reactions including migraine headaches.

Microbial contamination

In the NIOSH studies, the fewest number of indoor air quality complaints (5 percent), but not the least serious, were due to molds, bacteria, and germs in the building. Certain illnesses—for example, Legionnaire’s disease—are directly linked to specific organisms (bacteria, fungi, molds, etc.) which are found indoors. Such hazards usually originate in areas where dirt or water has collected or where there is high humidity. These problems cause respiratory symptoms: cough, wheezing, runny nose, and headaches.

Examples of such hazard areas include:

- **Humidifiers**, ventilation system drip pans, ventilation ducts, filters, insulation linings, or air ducts that are improperly maintained, operated, or cleaned. For example, “humidifier fever” or hypersensitivity pneumonitis are terms used to describe recurring outbreaks of flu-

like respiratory illness caused by microorganisms. These microbes enter the air and spread throughout the building and the ventilation system.

- **Dampness** forms a good breeding ground for molds and germs. It builds up in ducts, carpets, within walls, and on the roof.

Summary

1. Sick building syndrome (SBS) occurs when health and comfort effects are linked to time spent in a particular building. Symptoms include: headaches; eye, nose and throat irritation; fatigue; dry cough, dizziness and nausea; and sensitivity to odors. In general, symptoms disappear when occupants leave the building.

2. Building-related illness (BRI) occurs when symptoms of a specific illness can be identified and directly linked to contaminants in the building. Short-term symptoms may include coughing, tightness in the chest, fever and chills, and muscle aches. Long-term effects can include cancer, asthma, TB, and Legionnaire’s disease. Short-term symptoms may persist after occupants leave the building.

3. Sources of indoor air pollution are: office equipment (photocopiers); renovation (paints, particleboard); new furnishings (carpets, furniture); custodial and maintenance work (ammonia, solvents, cleansers, insecticides/pesticides); dusts, bacteria, molds, and fungi which grow in damp and wet areas; combustion exhaust (from trucks, cars, and other sources); and cigarette smoke.

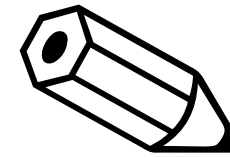
4. Chemicals such as benzene, chloroform, methyl alcohol, methylene chloride, and formaldehyde may irritate the eyes, nose and throat. Chemicals can cause headaches, dizziness, and nausea. Long-term exposure may cause cancer or produce harmful reproductive effects.

5. Airborne germs, dusts and molds may cause infections such as viral and bacterial disease, allergic reactions, asthma, humidifier fever, hypersensitivity, pneumonitis and skin rashes.

6. Asbestos and radon exposure can cause lung disease. For more information on these hazards, please consult other SEIU publications.

Identifying and Treating Indoor Air Pollution Problems

Purpose: To understand how to investigate indoor air quality problems and to learn what steps can be taken to reduce indoor air pollution.



Task 2.1

In your small group, read the story below and discuss the questions that follow. Use your experiences and the factsheets in this section to help you answer the questions. Choose someone in your group to take notes on what you discuss in your group and to report back to the entire group.

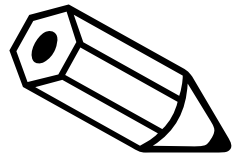
Story:

Your group is the health and safety committee at your worksite. Many of your co-workers have been complaining of headaches, frequent colds, coughs, and drowsiness. There are also complaints of “a gas smell” that begins around ten o’clock in the morning.

Your group brings up your co-workers’ complaints at the monthly health and safety committee meeting and you ask management to figure out what is going on. Management says that there can’t be air quality problems because the building is only one year old and the building has the latest building system technology. They conclude that it must be “in their heads.”

1. How will your group prove that there is an indoor air pollution problem in the building?

2. How will you get most of your co-workers involved?



Task 2.2

In your small group, read the story below and discuss the questions that follow. Use your experiences and the factsheets in this section to help you answer the questions. Choose someone to take notes and to report back to the entire group.

Story:

Your group is the health and safety committee at your worksite. You conducted a survey of your co-workers' indoor air complaints and listed the results below. Your group is ready for a meeting with management to discuss what can be done. Previously, management brought in a consultant to test the air for contaminants. The test showed that no "levels" were exceeded.

Results of indoor air quality survey

Symptoms:

Your co-workers complain of the following health problems while at work:

Headaches	77 percent
Drowsiness	69 percent
Eye irritation	64 percent
Sore throat	59 percent
Dizziness	38 percent

These health problems caused workers to miss on average five days per year.

Air quality problems:

Bothered most of the time by air that's too dry	49 percent
Bothered by stuffy air or the lack of enough air	46 percent
Complain that the temperature is too hot most of the time	44 percent
Complain that dust gathers on furniture	90 percent
Report dirt stains around air conditioning vents and air ducts	49 percent
Believe the heating and air conditioning system is not properly inspected or maintained	72 percent
Complain that pesticides have been applied inside the building while they were working	25 percent

1. Which of the survey results would you highlight when you make a presentation to management about the air quality problems?

2. Given the survey results, what are you going to ask management to do to fix the problems? Please be specific.

3. What would you do if management says "no" to your group's demands?

Studying Indoor Air Pollution Problems

To figure out if indoor air pollution is a problem where you work, it is important to collect information in many different ways.

Talk with members and building occupants

• **Worksite meetings.** Talk to your co-workers and find out if they are concerned about the air quality where you work. You can pull together a worksite meeting of co-workers (at lunchtime, for example) to discuss the problem. You can then decide on the next steps you, as a group, want to take in studying the problem. Holding worksite meetings helps to get others involved.

• **Surveys.** Workers know best what the indoor air quality problems are where they work. Having co-workers complete a symptom survey is the first step in figuring out what the air pollution problems are. Surveys can help prove to the employer and the building owner or manager that there is a problem. And surveys involve members directly in identifying and eliminating indoor air quality problems. Look for patterns in the symptoms of sick building

syndrome or building-related illness, and check to see if those symptoms are linked to the job or the building. Note the time of day or particular weeks or seasons when workers are most affected, as well as particular areas or locations where more complaints originate. A sample survey appears in Appendix 1 and a sample symptom log in Appendix 2.

• **Hazard complaint forms.** A union hazard form that members can fill out to report indoor air pollution problems is a good way to gather information. Documenting air quality problems also helps in cases of workers' compensation. Members should be encouraged to file a hazard complaint form every time an air quality hazard is noticed. A sample hazard form appears in Appendix 3.

Review building documents and workplace records

• **OSHA 200 Logs.** Most employers are required by federal or state OSHA to keep records of all job-related injuries and illnesses. These records are called the OSHA Form 200 (also known as the OSHA 200 Log). Public employees in states where there is no state OSHA plan are not covered by this requirement. Workers and union representatives have a right to see and photocopy the entire OSHA 200 Log, according to OSHA Standard 1904.7.

Every February, the complete log for the previous year must be posted where you work. It is important to check the log and make sure all job-related injuries and illnesses are recorded because employers may fail to include sick building syndrome illnesses.

• **Workers compensation/health insurance records.** Workers' compensation claims and health insurance records can show the employer or building owner how seriously the health symptoms are affecting your co-workers. It is important to get information on how members use the health-care plan. It might indicate that there are illnesses caused by indoor air hazards for which members have not filed for workers' compensation.

• **Employer monitoring results.** The results of any air monitoring that the employer has conducted must be provided to the union. You should ask for reports of any air quality testing, including carbon dioxide, carbon monoxide, and organic compounds, as well as all available airflow readings. See Appendix 6 for a sample information request.

Another option is to bring in an independent industrial hygienist to check the air for contaminants or inadequate ventilation. You can also

determine the effectiveness of the ventilation system by holding a tissue paper near the vents to see if they are working.

CAUTION: Air sampling alone is seldom sufficient to identify most indoor air pollution problems. Most air sampling results do not indicate whether there are problems even though workers may be experiencing health symptoms. A symptom survey and thorough worksite inspection can identify most SBS/BRI problems.

- **Material Safety Data Sheets (MSDSs).** Federal OSHA law requires employers to keep copies of Material Safety Data Sheets (MSDSs) which give workers information about the health effects of the chemicals being used in the building. These sheets can help you decide if health effects are related to the chemicals being used. Employers are required to keep MSDSs at the worksite and make them available to workers.

- **Heating, ventilation, and air conditioning (HVAC) records.** The HVAC records are important indicators of how the ventilation system is being operated and maintained. You should ask your employer or the building owner/facility manager for the following records: (1) ventilation system use specifications; (2)

dates when HVAC filters were changed; (3) any information about how the HVAC system is balanced to ensure adequate airflow throughout all parts of the building; and (4) readings taken on the amount of fresh air intake (cubic feet per minute).

Conduct a building inspection

The purpose of a worksite inspection is to give you more specific information about the sources of indoor air pollution. Once you have used the survey results to figure out where the problem is located and what sort of problem it is (chemical, microbial, or ventilation), you should conduct a worksite inspection. Trained union members, staff, or health and safety specialists can help you with a worksite inspection. You should pay particular attention to the following conditions:

- **Changes at the worksite.** Make note of recent changes in the office (new furnishings, machines, or partitions), cleaning, heat on or off, cigarette smoking, dust from ventilation systems, ceiling tiles missing or damaged.

- **The ventilation system.** There should be both a supply and an exhaust vent in each room. Ask the building manager to show you where fresh air enters the building. Check to see that the filters have been changed, that the ducts and air vents are clean, that the ventilation system is working properly, and that the louvers are open.

- **Sources of contamination.** Check areas where water, dust, dirt, debris, or germs may have collected. Look for mold or mildew on walls, floors, carpets, vents or other areas. Find out whether chemicals are being used in the building and where they are located.

- **Other.** Determine whether there are activities in or near the building (inside and outside) that could cause problems.

There is an indoor air pollution inspection worksheet in Appendix 4 and an information request in Appendix 6 which can help you collect more information about the building where you work.

SEIU's Health and Safety Department at (202) 898-3200 can give you assistance on indoor air quality problems. A list of SEIU Health and Safety Regional Offices is provided in Appendix 5.

Look For Patterns

When conducting a worksite inspection, it helps to look for patterns in the types of complaints that emerge. Target those areas of the building where the complaints are concentrated. The chart⁵ below lists some common symptoms and possible sources of the symptom.

Symptoms	Source
Temperature too hot or cold.	Check HVAC condition and operation. Measure indoor and outdoor temperature and humidity; see if conditions exceed design capacity of HVAC. Check for drafts, and areas where no air is moving.
Headache, drowsiness, nausea, dizziness.	If onset was sudden, go to the doctor; may indicate carbon monoxide poisoning. Check outside air intakes for nearby exhaust or fumes. Check overall ventilation to see if there are areas with poor ventilation and if a sufficient amount of fresh air is being brought into the building. Evacuate and get medical help if the problem is serious and not fixed quickly.
Congestion; itching; swelling; irritation of eyes, nose, or throat; headache; drowsiness; other non-specific symptoms.	May be allergic; may affect only a few workers. Get medical attention for allergies. Check for areas where dust, germs, mold, and bacteria might collect and grow (water damage to carpets and floor, ventilation, ducts). Check for irritating chemicals (formaldehyde, solvents).
Cough; shortness of breath; fever; chills; fatigue.	May be pneumonia, tuberculosis, or humidifier fever; call your union representative and the local health department.

⁵Environmental Protection Agency, *Building Air Quality: A Guide for Building Owners and Facility Managers*, December 1991, p. 56.

Sick Building Syndrome Standards Are Limited

No federal standards exist for indoor air!

One way to determine whether air quality problems exist in offices is to take measurements of the amount of chemicals and organisms in the air and compare that amount to levels that OSHA believes are “safe.” These “levels” are called permissible exposure limits (PELs). However, the existing OSHA PEL standards are based on health problems that occur in manufacturing and industrial worksites—not in offices! They do not work well for indoor air pollution problems. This is why OSHA is currently working on an indoor air quality standard for non-industrial settings.

In some situations, workers can use the “general duty clause” [Section 5(a)(1) of the Occupational Safety and Health Act] to get OSHA to inspect the worksite for indoor air pollution.

“Section 5(a). Each employer—
(1) shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing

or are likely to cause death or serious physical harm to his employees.”

In some states where public employees have no OSHA protection, the state or local health department and the building code might help workers deal with indoor air pollution hazards.

Fixing Indoor Air Pollution Problems

You do not have to sit and suffer the effects of poor air quality. There are some very basic steps that can be taken to eliminate air quality hazards once you have decided what the cause of the problem is. These include:

- Increasing the amount of fresh air that enters the building. Use local exhaust ventilation in areas where there are specific problems.
- Substituting less-dangerous materials for dangerous chemicals. Always have adequate ventilation where chemicals are being used.
- Regularly clean areas of the building where organisms, mold, dust and germs can grow.
- Regularly maintain and clean the ventilation system

Increase the amount of fresh air that enters the building

Bringing enough fresh air into the building can get rid of most indoor air pollution complaints.

Make sure all outdoor air supply louvers, dampers, and diffusers are kept open and do not close at certain times of the day or at certain temperatures. Sometimes air intakes are closed to save energy or because of faulty control systems.

Make sure fresh air reaches all areas of the building whenever the building is occupied. The ventilation system should be kept on during all workshifts. The minimum rate for how much fresh air should enter the building is 20 cubic feet per minute (CFM) per person.⁶ This reading should be taken regularly.

If an office is remodeled (for example, if walls are moved or room dividers are added), make sure enough air is being supplied to these new areas.

The ventilation system (HVAC) should be regularly inspected and maintained according to the system specifications. The ASHRAE standard explains how the system should be operated and maintained. Air filters should be

⁶American Society of Heating, Refrigeration, and Air-Conditioning Engineers (ASHRAE), Standard 62-1981 R(1086), “Ventilation for Acceptable Indoor Air Quality.”

changed regularly and air ducts should be kept free of dust and mold. Bring in a ventilation engineer to make sure the ventilation system is operating properly.

Maintain air temperature within the range of 68 to 78 degrees F and keep relative humidity between 30 and 60 percent.

Make sure local exhaust systems fully remove chemical fumes from work areas. In buildings where smoking is permitted, the best course of action is to directly exhaust the smoke. Ideally, a separate smoking area ventilated directly outside avoids circulating contaminated air within the building. Otherwise, increasing the amount of fresh air entering the building can help dilute the cigarette smoke.

Get rid of dangerous chemicals

The best way to reduce indoor air hazards caused by chemicals is to substitute less-toxic substances whenever possible. For example, solvent-free carpet adhesives can significantly reduce air contamination. If there is no good alternative, then take the following steps:

- Use local exhaust ventilation to remove chemical fumes and ventilate the air directly outside. Contaminated air should not be recirculated inside the building. For example, it might be necessary to install a separate ventilation system in a print shop where dangerous solvents are used. In most cases, the ventilation system should not be turned off when chemicals are being used in the building.
- Check locations of fresh air vents. Make sure they are not located near areas where they can pull chemical fumes into the building. For example, an air intake situated near a loading dock may introduce vehicle exhaust fumes into the building. In such cases, the air intake or the loading dock may need to be moved.
- Isolate areas that are being renovated, painted, or where carpet is being laid from other parts of the building which are occupied. The ventilation system for these areas should be separate. If possible, this type of work should be done on evenings and weekends. Management should inform the union before the work starts.
- All solvents should be baked off before workers begin working in a newly renovated area. This can be done by heating the area to 80-85 degrees F for 12 hours, and then ventilating the space with

outdoor air for 12 hours. Repeat this cycle as long as odors or fumes are present.

- Take special care when using pesticides. There are many ways to control pests without using chemicals: improved sanitation, traps, and removing clutter and food. This is called “integrated pest management.” If pesticides must be used, they should be used only when the building is unoccupied. The building should be thoroughly ventilated before entering. Make sure workers who are using the pesticides have enough protection (goggles, respirators, and protective clothing).
- Protect people who work with dangerous chemicals and pesticides with enough fresh air and the appropriate protective gear.
- Management should provide information about all chemicals that are used in the building. Such notification is required by the OSHA Hazard Communication Standard.

Clean up areas where germs, mold and fungi can grow

Clean and dry out damp areas. Molds, fungi and bacteria grow best in moist, dirty, or poorly lit areas. Promptly repair all areas where water collects or leaks. All ducts should be cleaned upstream and downstream from areas where dust or dirt are present.

Keep the relative humidity at less than 60 percent (but greater than 30 percent to prevent the air from being too dry). During the summer, cooling coils should be set at a temperature low enough to dehumidify conditioned air.

Prevent water from collecting under cooling deck coils and air handling units. These units should be positioned so they drain continuously. Where water has collected, the areas should be disinfected with detergents and bleach.

Use only steam, not water, in humidifiers. Check to make sure the steam does not contain dangerous chemicals.

Furniture, upholstery, carpets, and ceiling tiles damaged by water should be thrown away rather than disinfected.

All It Takes Is An Ounce of Prevention

It is important that each building have an indoor air quality program that describes what the employer and building owner or manager must do to improve air quality and keep the building free of SBS or BRL. Some things you should look for in a program include:

- **Source control:** Corrects indoor air pollution problems by removing or reducing the cause of the contamination or by eliminating, sealing, or covering the source. Sometimes, more fresh air will have to be brought into the building to dilute the contaminants.
- **Ventilation:** The ventilation system should be properly operated and maintained. This is the responsibility of the building owner (which may be your employer or a private owner). The ventilation system should be kept on during all regularly scheduled workshifts.
- **Medical removal:** In some cases, indoor air pollution problems cannot be fixed as quickly as we would wish. In those cases, the employer should make arrangements for the workers with serious complaints to work in other areas with less exposure.

Another possibility is to schedule activities that contribute to indoor air problems at off-peak hours.

- **Responsible person:** There should be someone responsible for making sure the indoor air program is working to prevent indoor air pollution problems.

- **Training:** All employees should receive information and training about sick building syndrome and building-related illness. The training should cover the sources of these problems, what can be done to fix the problems, and workers' legal rights under federal and state laws. Those responsible for the indoor air quality program and for making sure the ventilation system is working properly should have additional training in the operation and maintenance of the ventilation system as well as procedures for investigating complaints.

Summary

1. Information is power. By law and in your contract, you and your union have the right to obtain information from your employer. This includes records of injuries and sicknesses on the job, inspections reports, policies and procedures, and other documents.

2. Workplace surveys, building records, health and safety records, and worksite inspections are useful in documenting indoor air quality problems.

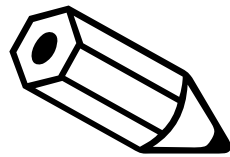
3. Although there is no federal legislation on indoor air quality, many workers are covered by OSHA standards which require the employer to provide a workplace free of recognized hazards. These standards are limited in their scope because they were developed for workers in industrial settings.

4. The best way to reduce chemical pollution leading to sick building syndrome is to substitute less-toxic chemicals for those typically used in many buildings and properly ventilate the affected areas.

5. Care should be taken to ensure there is an adequate supply of fresh air. Ventilation systems should be properly maintained: cleaning drip pans, changing filters as required, using the appropriate filters, and balancing the system to ensure adequate air in all parts of the building.

Union Strategies to Clean Up Sick Building Syndrome

Purpose: Develop action plans for mobilizing members to help pressure employers and building owners to implement needed air quality changes.



Task 3.1

In your small groups, think about the building you work in. Using your experience and the factsheets throughout this workbook, discuss what you can do to reduce indoor air pollution problems. Choose someone in your group to write down your answers and report back to the entire group.

1. What indoor air quality improvements do you think your union should be fighting for where you work?

2. List the steps you will take to win these improvements.

3. Could a health and safety committee help you win these improvements? How?

4. What will you do if management says “no” to the changes you want made?

Organizing to Clean Up Indoor Air Pollution

Workers and their unions have always led the fight for healthful and safe working conditions. That fight includes improving the quality of the air where we work. Our success depends on how well we organize. The first step in organizing to win is to come up with a plan of action that members support. A plan of action spells out how you are going to get the employer to take action to fix indoor air pollution problems.

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Identify hazards

Decide whether you have indoor air pollution problems and what they are. Be sure to include others in studying the problem. You may want to form a health and safety committee to do this.

Educate

Talk with your co-workers about what problems they are most concerned about.

Organize

Decide what you want the employer to do to fix the problem. You may want to involve someone who has experience dealing with indoor air pollution problems. Call your SEIU health and safety representative for more help (see Appendix 5).

Take action

Get as many workers as possible to join the health and safety committee in meeting with your employer or the building owner about the problem. Be sure to tell the employer about the survey and inspection results. If your demands are met, publicize your win!

It is important to also decide what you will do if your employer says “no” to making the changes you have asked for. Some things you might do include:

- Get your co-workers to sign a petition that describes what management should do to fix the problem.
- Identify your employer’s or the building owner’s weaknesses and use those weaknesses to embarrass or pressure them to say “yes.”

- Publicize the problem in local newspapers, radio, and television.
- Create a slogan campaign, post notices, and hand out flyers.
- File a grievance for all workers affected by the indoor air pollution problems.
- If you are covered by OSHA, contact the agency and file a complaint. Although there are no OSHA standards, OSHA can use the “General Duty Clause” to cite and fine employers if there is a clear and direct link between building problems and workers’ illnesses.
- Negotiate health and safety language in your next contract.
- Build coalitions with other unions and community organizations such as the American Lung Association to fight for laws, regulations, and building code revisions to protect workers from indoor air pollution.

What SEIU Is Doing About Indoor Air Quality Problems

Sick Building Syndrome

SEIU program good one to follow

Last in a series

Special to New England Labor News

They are unlikely victims. After all, hospital workers are supposed to cure the maladies of the ill and infirm; not suffer them. Yet recently at Hillcrest Hospital in Pittsfield, Mass., hospital workers and lab technicians kept getting sick. Finally the cause of the rash of illness was discovered—unhealthy indoor air circulating in their building.

For several months, Hillcrest employees exhibited symptoms associated with “sick building syndrome.” These included nausea, fatigue, headache, eye irritation and upper respiratory problems. Sources of such indoor air quality are often found within a building’s heating, ventilating, and air conditioning (HVAC) system. (For a further explanation of indoor air quality in the workplace, see New England Labor News, May 1989.)

Fortunately, Hillcrest Hospital employees are represented by Local 285 of the Service Employees International Union (SEIU). From the International to the regional and local levels, SEIU has championed the indoor air quality issue as a top health and safety priority for its members.

In response to its members’ requests, Local 285’s leadership met with Steve Schrag, SEIU’s regional health and safety representative to discuss the problems at Hillcrest and develop a systematic program to address them. Schrag advises SEIU’s affiliated locals and other unions in the New England region on the subject of indoor air quality.

The program SEIU undertook at Hillcrest Hospital can serve as a model for other unions facing an indoor air quality problem. The first step was to conduct a survey, which, designed by SEIU and consulting health specialists, supported earlier complaints. Indoor air quality,



according to the survey response, was a serious concern of a majority of members, many of whom reported similar symptoms.

Union representatives also conducted a walkthrough inspection of the hospital in order to locate any obvious signs of inadequate ventilation. In any walkthrough, particular attention should be given to signs of dirt and other obstructions around air supply outlets on ceilings/cooling units. In addition, thermostats and other climate control sensors should be in proper working order.

Perhaps the least technical, yet effective, test which anyone can perform is the “tissue test.” By holding a tissues of paper to the vent of an air diffuser or intake unit, one can determine if there is air movement at a given point in the system.

Of course, the tissue test cannot reveal unseen problems that may exist within the HVAC system. Only a qualified professional can conduct more scientific testing, and provide accurate information with regard to possible flaws in the handling of airborne contaminants present in many buildings.

When union leaders at Hillcrest Hospital made management aware that they were prepared to bring in union and technical experts, management was moved to make repairs to

the building’s ventilation system.

Some typical management responses to employee complaints about indoor air quality include ignorance, delay and denial. Often, it is the union which must point out to employers that the cost of proper maintenance and equipment involved in adequately ventilating a workplace is more than offset by improved productivity and reduced absenteeism attributable to indoor air-related illness.

Because of management’s reluctance to confront potential IAQ problems, unions are looking increasingly to collective bargaining agreements and legislation to provide workers some protection in this critical health and safety area. For instance, a coalition of public sector unions in Massachusetts, known as the Alliance, has proposed contract language which would force the state in newly owned or leased buildings to comply with air quality standards developed by the American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE).

The proposed contract language would also specify minimum levels for temperature and humidity inside state buildings. Other examples of possible contract provisions include commitments to inspect and regularly maintain ventilation systems in workplaces covered by an agreement.

New England Labor News & Commentary... July/August 1989

Health and Safety Committees

Forming a health and safety committee is a good way to get other workers involved in the fight to improve health and safety conditions. Committees can help keep track of worksite conditions, and help to develop strategies to identify and solve indoor air pollution problems. Some other responsibilities include:

- Talk regularly with members and stewards about health and safety problems. Organize worksite health and safety trainings and share information with members.

- Conduct workplace inspections and member surveys to identify dangerous working conditions. The committee should review new equipment, chemicals, and work practices and make recommendations to the employer.

- Investigate all illnesses, accidents and near misses and compile reports. Keep all records. Review maintenance records.

- Meet with your employer or building owner about steps they can take to improve workplace health and safety conditions.

- Check federal, state, and local laws and regulations to see if they help to improve health and safety conditions.

- File federal or state OSHA complaints when necessary. The committee should meet with the OSHA inspector before the worksite inspection and follow up on the complaint with the OSHA office. Again, keep all records.

- Develop health and safety contract proposals with the contract negotiating committee. Try to include the health and safety committee in your contract.

- Work with stewards to support worksite health and safety actions or grievances to force the employer to fix health and safety hazards.

Members of union health and safety committees can also represent the union on joint labor-management committees. Joint committees can provide an opportunity to raise issues outside the grievance procedure, but they may also be ineffective. Joint committees that have no real power, or which focus only on “think safety” campaigns, are useless at best. At the worst, such committees can pose a real danger to workers by delaying any real changes.

Speak with your SEIU regional health and safety representative to get help on setting up a union or joint labor-management health and safety committee (see Appendix 5).

Using Your Contract to Clean Up Indoor Air Pollution

One of the best ways to win a safe and healthful workplace is to win specific contract language. Here are some sample clauses relating to general indoor air pollution:

- General duty. The employer agrees to provide a safe and healthful work environment for employees and to maintain high standards of workplace ventilation, sanitation, light and noise levels, heating and cooling and health and safety in general. No worker shall be required to work under seriously hazardous conditions. No worker shall be discriminated against for exercising their right to a safe and healthy workplace.⁷

⁷ Contract language from Local 585, Local 668, and Local 1199P nursing homes.

- **No-retaliation clause.** No employee shall be discharged, penalized, or disciplined for filing an indoor air quality complaint or seeking relief from that complaint. The employer agrees not to retaliate or discriminate against that employee.

- **Indoor air pollution prevention program.** The employer shall develop and implement an indoor air pollution prevention program. This program will be evaluated and updated periodically. This program shall include, but not be limited to, the specific activities described below, and must be reviewed and approved by the union prior to implementation.

(a) **Worksite Analysis.** A worksite analysis of the entire work area will be conducted annually by an industrial hygienist familiar with indoor air quality problems and who is mutually agreeable to the union and the employer. The analysis will include injury and illness incident reports, interviews and surveys of workers, air quality testing, Material Safety Data Sheets and other source contamination review materials, and an inspection of all building systems.

(b) **Operation and Maintenance.** The program will describe management's plan for maintaining all building, heating, ventilation, and air conditioning systems clean and in proper working order, meeting manufacturers' specifications at all times. Management will keep the ventilation system operational during all workshifts.

(c) All efforts shall be made to eliminate the source of the air quality problem. For all indoor air quality sources of contamination, substitution, elimination of the hazard, and engineering controls will be the preferred method for maintaining proper air quality on an ongoing basis and during renovation work.

(d) The program will describe management's plan for notifying all staff of renovation work five days prior to the work commencing.

- **Joint labor-management health and safety committee.** The purpose of the committee is to identify and investigate health and safety hazards and make recommendations on preventive measures. Investigation and monitoring shall be understood to include necessary worksite investigations. Additionally, the committee will monitor all health and safety programs to assure their effectiveness in preventing hazardous work-

ing conditions. The committee shall make recommendations on policies to prevent indoor air pollution and on how to respond to complaints of indoor air pollution.

The committee shall be composed of an equal number of representatives from the union and the employer, and the union shall have the sole power to appoint its representatives to the committee. The committee shall meet at least monthly and at other times upon request of either side.

All complaints will be brought to the attention of the health and safety committee. The parties agree that the health and safety committee shall: (1) assist in the development of policies and workplace design changes that will reduce the risk of indoor air pollution; (2) regularly review all reports of poor air quality; and, (3) assist in the development and implementation of training programs that help workers understand what indoor air pollution is and how to fix indoor air pollution problems. Members of the committee will receive 24 hours initial training and eight hours of refresher training annually. Training shall use adult education methods and shall be conducted by a trainer who is mutually agreeable to the union and the employer.

- **Training.** The employer shall provide indoor air quality training to all employees. This training will

include, but not be limited to: (1) health effects of exposure to sick building syndrome and building related illness; (2) how to identify indoor air quality problems; (3) methods for remedying these problems; (4) a review of the building's indoor air pollution prevention program; (5) management's policy regarding medical management and removal; (6) review procedures for filing complaints; and (7) workers' rights under workers' compensation.

- **Medical management and medical removal.** Every effort will be made to not have staff work under conditions which would make them sick. When the air quality problem cannot be immediately corrected, the affected staff will be removed from the problematic work area until the problem is corrected. Because this removal is for medical reasons, the staff shall not be demoted nor receive any reduction in pay.

- **Building lease.** Current leases will be made available to the union for its inspection and copies of such leases will also be available to the union. Violations of lease provisions will be vigorously pursued and diligent corrective action will be taken by the employer to assure compliance. Upon request of the union, the employer shall attempt to provide notice of lease expiration and the employer shall meet and discuss, at the request of the union, prior to the renewal of any lease, union complaints

concerning the building in question and the union's recommendations regarding the renewal of the lease. A designated union steward on the premises and, by mutual agreement between the employer and the union, an additional employee may be granted reasonable time off, without loss of pay or leave time, to inspect buildings prior to the meeting and discuss lease renewals or occupancy of new buildings. When a new lease or a lease renewal is signed by the employer, a copy will be sent to the union. The employer shall notify the union when plans are being considered for remodeling or relocation of office space.⁸

- **Union non-liability.** The employer has the sole responsibility to provide a safe workplace and to correct health and safety hazards, and that nothing in this agreement shall imply that the union has undertaken or assumed any portion of that responsibility.

- **Other union rights.** The employer agrees that the union has the right to bring into the workplace any union staff or other union representatives to assist in investigating health and safety conditions.

Summary

1. A strategy is a plan for action. Develop a strategy that involves your co-workers.

2. Organize and agitate to get your employer to fix the indoor air pollution hazards.

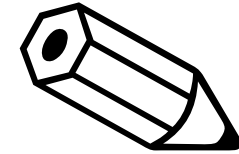
3. The more workers you get involved, the more likely you are to get a problem solved. The actions of many workers are more effective than the action of one. One way to involve workers is through the union health and safety committee.

4. Union health and safety committees can identify hazards by conducting workplace inspections, investigating accidents, and by reviewing building documents and other records gathered from management and the building owner.

5. When unions participate in labor management committees, they should have an equal number of union and management members and develop the agenda for meeting jointly with management.

6. One of the best ways to get a safe and healthful workplace is to win specific contract language.

⁸Local 668 state employee contract language.



Appendix 1

SEIU Indoor Air Pollution Survey

As part of our joint effort, we need your help. Please take a few minutes to complete the questions below to let us know where problems may exist. It is important that everyone participate in order to make the information collected as useful as possible. Your name will not be released to your employer. Once the surveys are collected and the data summarized, the results will be made available to you.

1. Please answer the following questions about your workplace temperature and air quality:

	Bothered most of the time	Bothered at specific times (describe)	Bothered some of the time	Not bothered
(a) Stuffy air/lack of air movement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(b) Odors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(c) Air too dry, especially in winter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(d) Air too humid	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(e) Temperature too hot	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(f) Temperature too cold	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(g) Cold drafts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(h) Warm drafts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(i) Other conditions (please list)				
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. Please answer the questions below about your work area:

	Yes	No
(a) Are there windows that can be opened in your work area?	<input type="checkbox"/>	<input type="checkbox"/>
(b) Are you allowed to open these windows?	<input type="checkbox"/>	<input type="checkbox"/>
(c) Are there noticeable dust accumulations on the furniture or equipment?	<input type="checkbox"/>	<input type="checkbox"/>
(d) Do you work with or near solvents such as typing correction fluid?	<input type="checkbox"/>	<input type="checkbox"/>
(e) Have you ever smelled pesticides after they were applied to your office area?	<input type="checkbox"/>	<input type="checkbox"/>
(f) Have pesticides ever been applied in your area while you were working?	<input type="checkbox"/>	<input type="checkbox"/>
(g) Has the building ever been tested for asbestos hazards?	<input type="checkbox"/>	<input type="checkbox"/>

	Yes	No
(h) Do you suspect there may be damaged or deteriorated asbestos-containing materials in your building?	<input type="checkbox"/>	<input type="checkbox"/>
(i) Do you suspect there may be a radon gas problem in your building?	<input type="checkbox"/>	<input type="checkbox"/>
(j) Are there noticeable dirt stains around air conditioning, air supply, or air return ducts?	<input type="checkbox"/>	<input type="checkbox"/>
(k) Have you ever noticed odors from strong cleaning chemicals used on the carpets, furniture, or floors?	<input type="checkbox"/>	<input type="checkbox"/>
(l) Do you suspect that the heating and ventilation system is not periodically inspected or maintained as it should be (changing filters, cleaning ducts, etc.)?	<input type="checkbox"/>	<input type="checkbox"/>
(m) Are photocopiers and other office machines which emit fumes supplied with a separate exhaust ventilation system?	<input type="checkbox"/>	<input type="checkbox"/>
(n) In general, is the workplace clean?	<input type="checkbox"/>	<input type="checkbox"/>
(o) Are there areas which are moldy or collect water?	<input type="checkbox"/>	<input type="checkbox"/>

3. How often have you experienced any of the symptoms or health problems listed below?

	Daily	Several times a week, but not daily	Several times a month	Rarely or never
(a) Headaches	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(b) Unusual fatigue or drowsiness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(c) Eyestrain	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(d) Eye irritation, itching, or watering	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(e) Throat irritation or sore throats	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(f) More frequent colds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(g) Asthma or wheezing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(h) Chest tightness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(i) Continual coughing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(j) Sinus congestion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(k) Runny nose, postnasal drip	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(l) Contact lens irritation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(m) Dizziness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(n) Nausea or vomiting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(o) Skin irritation or rashes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(p) Allergies or hay fever	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(q) Difficulty in concentrating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. Place a check mark next to any of these symptoms which you believe may be caused or aggravated by poor air quality where you work. If symptoms clear up on weekends, it is a good sign the building you work in is at fault.

- | | | |
|---|---|--|
| <input type="checkbox"/> Headaches | <input type="checkbox"/> Asthma or wheezing | <input type="checkbox"/> Dizziness |
| <input type="checkbox"/> Unusual fatigue or drowsiness | <input type="checkbox"/> Chest tightness | <input type="checkbox"/> Nausea or vomiting |
| <input type="checkbox"/> Eyestrain | <input type="checkbox"/> Continual coughing | <input type="checkbox"/> Skin irritation or rashes |
| <input type="checkbox"/> Eye irritation, itching, or watering | <input type="checkbox"/> Sinus congestion | <input type="checkbox"/> Allergies or hay fever |
| <input type="checkbox"/> Throat irritation or sore throats | <input type="checkbox"/> Runny nose, postnasal drip | <input type="checkbox"/> Difficulty in concentrating |
| <input type="checkbox"/> More frequent colds | <input type="checkbox"/> Contact lens irritation | |

5. How often, if ever, do you take any of the following medications to treat the symptoms indicated above?

	Daily	Several times a week, but not daily	Several times a month	Rarely or never
(a) Aspirin, Tylenol, or Ibuprofen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(b) Cough, cold, or sinus medication	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(c) Other (describe):	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. How many days work have you missed during the last 12 months because of illnesses related to poor office air quality?

Days of work missed: _____

7. For the same period, how many days did you feel sick enough to leave work but didn't, because of illnesses related to poor office air quality?

Days you felt sick enough to leave but didn't: _____

8. How many times during the last 12 months did you seek medical attention for illnesses related to poor office air quality?

Number of visits for medical attention: _____

If you sought medical attention, did your doctor ask you where you work?

- Yes No

Did your doctor think the condition was related to your workplace?

Yes No

9. Have you ever applied for workers' compensation for any of the forgoing health problems related to poor office air quality?

Yes No

If yes, please describe:

10. Do you feel that the poor air quality in your work area has a negative effect on productivity?

Yes No

If yes, indicate the percent decrease in productivity which you feel affects you because of this problem:

Percent decrease in productivity: _____%

11. Are there any other health and safety hazards in your workplace which you are concerned about?

Yes No

If yes, please describe:

12. How long have you worked in your building? _____ years _____ months

13. What is your job title? _____

14. Would you like to receive more information about workplace hazards?

Yes No

Please provide the following information so we can contact you for more information and to inform you about activities to improve air quality:

Name

Work address

Building name

Floor/room number or location

Home address

Work phone

Home phone

Appendix 2

Symptom Log

On the chart below, please make an entry each time you feel ill or uncomfortable due to poor air quality in the building.

Name: _____ Telephone: _____

Work Location: _____

Date/Time	Location	Symptom	Severity/Duration
-----------	----------	---------	-------------------

Appendix 3

Hazard Report Form

Please take a few minutes to fill out this form and return it to your union representative so the union can bring these problems to your employer's attention. Follow up with your employer about these problems.

Job title(s) affected:

Describe the hazard:

How long has this hazard been present?

Where is the hazard(s) located?

What effect has the hazard(s) had on you and your co-workers?

What action should be taken to correct the hazard(s)?

Employer's response to report of hazard(s):

Appendix 4

Worksheet for Indoor Air Pollution Inspection

Employer: _____

Workplace: _____

Building owner: _____ Age of building: _____

1. Sources of contamination (circle all that apply):

- | | |
|---|---|
| <input type="checkbox"/> Photocopiers | <input type="checkbox"/> Cleaning chemicals |
| <input type="checkbox"/> New carpeting | <input type="checkbox"/> Printing equipment |
| <input type="checkbox"/> Pesticides | <input type="checkbox"/> Standing water, moist areas |
| <input type="checkbox"/> New furniture | <input type="checkbox"/> Activities in or around the building |
| <input type="checkbox"/> Dust, molds, fungi | <input type="checkbox"/> _____ |
| <input type="checkbox"/> Ventilation system | <input type="checkbox"/> _____ |

2. Are there any possible sources of contamination located in the general vicinity of the air inlets?
 Yes No

Are contaminants likely to be drawn into the air inlets due to prevailing winds and inversions?
 Yes No

3. Building Construction:

(a) How was the building originally intended to be used? _____

(b) How many people work in the building? _____

(c) Is the building being used as designed?
 Yes No

(d) What types of activities go on in and around the building?

(e) How many floors? _____ Square feet per floor: _____

(f) Do the windows open?
 Yes No

(g) What changes have occurred since the original construction (partitions, additional offices, etc.)?

When did they occur? _____

(h) Does the building have sprayed or foamed insulation?
 Yes No

If yes, when was it applied? _____

4. Ventilation system (HVAC system):

(a) What type of heating system is used? _____

(b) What type of cooling system is used? _____

(c) What type of humidification system is used? _____

(d) How is the total ventilation system operated? _____

(e) Number of air handlers: _____

(f) What floors and rooms are served by each air handler?

(g) What type of filtration system is used? _____

How often is it changed or maintained? _____

Type of filter used: _____

(h) How much fresh air is being brought into the building through the ventilation system?

(i) Are there fresh air inlets and are they functioning properly?

(j) Where are the supply and exhaust vents in each work area?

(k) How does the exhaust air leave the building?

5. Who is responsible for operating and maintaining the building systems (e.g., ventilation)?

(a) Who is responsible for cleaning the interior of the building?

(b) How often is cleaning done?

Appendix 5

SEIU Regional Offices with Health and Safety Staff Members

SEIU Eastern Regional Health and Safety Office
14 Quentin Street
Waterbury, Conn. 06706
Tel. (203) 574-796

SEIU Mid-Atlantic Regional Health and Safety Office
237 Sixth Street
Pittsburgh, Pa. 15238
Tel. (412) 828-5100, ext. 31

SEIU New York Regional Office
330 West 42nd Street
Suite 1905
New York, N.Y. 10036
Tel. (212) 947-1944

SEIU Michigan State Council
419 S. Washington Street
Lansing, Mich. 48933
Tel. (517) 372-0903

SEIU Southern Regional Office
1422 W. Peachtree Street
Suite 300
Atlanta, Ga. 30309
Tel. (404) 874-2212

SEIU Central States Regional Office
940 West Adams
Suite 400
Chicago, Ill. 60607
Tel. (312) 455-1500

SEIU Western States Regional Office/Los Angeles
3055 Wilshire Blvd.
Suite 1050
Los Angeles, Calif. 90010
Tel. (213) 368-7400

SEIU Western States Regional Office/Oakland
7901 Oakport Street
Suite 4900
Oakland, Calif. 94621
Tel. (510) 568-2500

SEIU Western States Regional Office/Seattle
c/o SEIU Local 6
150 Denny Way
Seattle, Wash. 98109
Tel. (206) 448-7348

Appendix 6

Sample Information Request

Date _____

Dear _____:

On behalf of the workers represented by the Service Employees International Union (SEIU), Local _____, who work at _____, and in the interest of protecting the health and safety of these workers, I am requesting the following information:

1. Copy of the heating, ventilation, and air conditioning (HVAC) operation and maintenance plan.
2. Copy of results of any air quality testing, including but not limited to carbon dioxide, carbon monoxide, and organic compounds.
3. Copy of records and policies that describe the amount of fresh air in cubic feet per minute (CFM) being brought into the work zones.
4. The qualifications and references for the HVAC system operators.
5. The efficiency and frequency of replacement for ventilation system filters.
6. The temperature range as described in the HVAC specifications.
7. An audit for all chemicals brought into or used in the building including: pesticides, cleaning, renovation-related, and ventilation system lubricating chemicals.
8. A written determination that intake sources are free of possible contamination (including exhaust of system).
9. Copies of the complete OSHA 200 Logs (as per OSHA Standard 1904.7) for the past three years.

Sincerely,
[Your name]
[Your title]