What are the Major Reasons for Poor Indoor Air Quality for Office Workers?



QUESTION

What are the major reasons for poor indoor air quality for office workers?

A. Poor housekeeping practices/protocols, humidifier fever, microbial contamination.
B. Poorly designed or ventilation systems, indoor air pollution sources, uses of building not anticipated when building was designed.
C. Uses of building not anticipated when building was designed, poor indoor air quality, poor housekeeping practices/protocols.
D. Poor indoor air quality, hypersensitivity pneumonitis, indoor air pollution sources.

ANSWER:

B. Poorly designed or ventilation systems, indoor air pollution sources, use of building not anticipated when the building was designed.

WHY IS IT RIGHT

Molten metal ironworks, plastic and chemical plants harbor very serious and dangerous materials/products and work practices.

Compared to the molten metal and massive machines found in workplaces, office hazards seem pretty tame.

The white-collar office environment has a plethora of ways office employees are injured.

1. Slips, trips, and falls.
2. Fires.
3. Chemical hazards.
4. Lifting.
5. Heavy objects.
6. Office entanglement.
7. Office collisions

Office Health and Safety

Occupational Health and Safety (OHS) in the office, and indeed any type of workplace is important for employers to bear in mind as it is part of their legal responsibilities.

Despite being a relatively low-risk environment, offices and similar workspaces bring their own hazards (like manual handling) when it comes to employee wellbeing. It is important to secure Occupational Health and safety for organizations as the environmental health of the whole office can be affected and productivity may be stunted if workers are sick and have days off. According to the National Health Service (NHS), £100 billion is lost every year to days off due to work-related injuries.

The Health and Safety Executive (HSE) enforces the laws that govern office wellbeing, and as such provides detailed guidelines for businesses to refer to if they need to for example carry out an office risk assessment or safety training.

What is Office Health and Safety?

Occupational health in the office or general workplace is defined as the absence of threats to both physical and mental health. It means, as included in employer health and safety responsibilities, that a workplace should always be safe from things like electrical and tripping hazards.

Office wellbeing is secured by laws like the Health and Safety Act 1974 or HASAWA, with its statutory regulations like the Controlling of Substances Hazardous to Health or COSHH.

In order to secure employee wellbeing, a few areas of the workplace need to be examined, including:

- Any tripping hazards
- Any electrical hazards due to faulty equipment
- Desk areas (monitors, chairs, desk tables) for ergonomics
- Signs of noise pollution
- Fire safety policies
- Display Screen Equipment (DSE)

The most prominent of these for the office workplace is the desk areas of the employee since this is the area they will spend the most time in. It is required by legislation for health and safety that all desks and chairs are adjustable for maximum comfort, to prevent any posture-related physical problems. This may include desks that can be raised into a stand-up position. Monitors should also be adjustable to aid the good posture of staff members, and keyboards should have wrist rests to avoid a repetitive strain injury (RSI). Sitting at a desk daily with indecent posture can also lead to various injuries at work like lower back pain, headaches, dry eyes, and neck muscle stiffness. DSE like laptop or smartphone screens are legislated against, and it is required by law that employees have regular breaks to avoid eye problems.

Office Worker Responsibilities

Office staff may type or file documents, correspondence, reports, statements,

and other material. Their workstation usually has a computer/laptop/keyboard and telephone, among other equipment.

The main duties of an office worker include:

- Answer telephone or personal inquiries.
- Photocopy and collate documents.
- Maintain and update filing, inventory, mailing, and database systems.
- Open, sort, and route incoming mail and courier packages.
- Process reports, applications, receipts, expenditures, and other documents, using a computer

HAZARDS

Office environments present a number of hazards, including:

- Perfumes and other scents(potential allergens).
- In some cases, exposure to cleaning products.
- Indoor air quality or exposure to toxic substances.
- Sitting for long periods of time.
- Working in awkward positions, or performing repetitive manual tasks.
- Lifting awkward or heavy objects.
- Eye strain.
- Musculoskeletal disorders (MSDs) from excessive computer use or improper ergonomic situations.
- Improperly adjusted chairs.
- Working in uncomfortable temperatures.
- Annoying or distracting noise and vibration from electronic equipment.
- Slips, trips, and falls.
- Injuries from falling files or other objects
- Cuts from office tools such as scissors, mail openers, etc.
- Risk of violence.
- Working alone.
- Stress.
- Bullying.

OFFICE INDOOR AIR PROBLEMS

As the public recognizes the importance of healthy, comfortable, and productive indoor environments, and the demand for good indoor air quality (IAQ).. This demand has resulted in IAQ emerging as a major concern in office buildings. Many office buildings have significant indoor air pollution sources. These sources include:

- furnishings
- occupant activities
- housekeeping practices
- pesticide applications
- microbial contamination

Health Effects

A number of well-identified illnesses, such as Legionnaire’s disease, asthma, hypersensitivity pneumonitis, and humidifier fever, have been directly traced to specific building problems. These are called building-related illnesses. Most of

these diseases can be treated; nevertheless, some pose serious health risks and may require prolonged recovery times after leaving the building.

Sometimes, however, building occupants experience symptoms that do not fit the pattern of any particular illness and are difficult to trace to any specific source. People may complain of one or more of the following symptoms:

- dry or burning mucous membranes in the nose, eyes, and throat
- sneezing
- stuffy or runny nose
- fatigue or lethargy
- headache
- dizziness
- nausea
- irritability
- forgetfulness

These symptoms may or may not be related to poor indoor air quality. Poor lighting, noise, vibration, thermal discomfort and psychological stress may also cause, or contribute to, these symptoms. There is not a single manner in which these health problems appear. The complaints may be localized in a particular room or zone or may be widespread throughout the building. When most of the complainants report relief of these symptoms soon after leaving the building, the phenomenon has been labeled sick building syndrome.

POOR INDOOR AIR QUALITY – PROBLEMS

Three major reasons for **poor indoor air quality** in office buildings are the presence of indoor air pollution sources; poorly designed, maintained, or operated ventilation systems; and uses of the building that were unanticipated or poorly planned for when the building was designed or renovated.

Sources of Office Air Pollution

The most important factor influencing indoor air quality is the presence of pollutant sources. Commonly found office pollutants and their sources include:

- environmental tobacco smoke
- asbestos from insulating and fire-retardant building supplies
- formaldehyde from pressed wood products
- other organics from building materials
- carpet, and other office furnishings
- cleaning materials and activities
- restroom air fresheners
- paints, adhesives, copying machines, and photography and print shops
- biological contaminants from dirty ventilation systems or water-damaged walls, ceilings, and carpets
- pesticides from pest management practices

Ventilation Systems

Mechanical ventilation systems in large buildings are designed and operated not only to heat and cool the air but also to draw in and circulate outdoor air. If they are poorly designed, operated, or maintained, however, ventilation systems can contribute to indoor air problems.

For example, problems arise when, in an effort to save energy, ventilation systems are not used to bring in adequate amounts of outdoor air. Inadequate ventilation also occurs if the air supply and return vents within each room are blocked or placed in such a way that outdoor air does not actually reach the breathing zone of building occupants. Improperly located outdoor air intake vents can also bring in air contaminated with automobile and truck exhaust, boiler emissions, fumes from dumpsters, or air vented from restrooms. Finally, ventilation systems can be a source of indoor pollution themselves by spreading biological contaminants that have multiplied in:

- cooling towers
- humidifiers
- dehumidifiers
- air conditioners
- the inside surfaces of ventilation ductwork

WHY IS EVERYTHING ELSE WRONG

The leading causes of office injuries are slipping, tripping, and falling. Falls from the same level cause more accidents and injuries than falls from ladders or scaffolds, and they can happen just as easily in the office as anywhere.

FALL PREVENTION

- Keep the office free from clutter. Boxes should be stacked out of the way of traffic. Trash and spills should be cleaned up from the floor.
- Re-route electrical cords away from traffic areas.
- Report and repair any defective chairs. And as far as office chairs go, if they have wheels under them, they should have five legs.
- Close drawers so nobody will trip over them. A trip over an open drawer can cause worse injuries than just bruised shins.
- Don’t use makeshift ladders such as boxes stacked on chairs. Use stepladders and stepstools correctly.

Fires:

- Make sure or encourage that emergency numbers, first aid contacts, and evacuation procedures for your office are posted where everyone will be sure to see them.
- Know where to find fire extinguishers and how to use them.
- Do not overload electrical circuits.

Chemical Hazards:

- Know the chemicals that you work with or around. A tour of your office could reveal a surprising number of hazardous materials like cleaning fluids, art supplies, and solvents.
- Use appropriate protective equipment, such as gloves or safety eyewear when handling these products.

Safe Lifting:

- Many workers consistently make a conscious effort to safely lift loads in the shop because they are prepared for the possibility of injury. But you can also be injured by lifting a box of envelopes because you are not

expecting to get hurt in an office and therefore do not lift it properly.
- Don’t lift a load you cannot handle, such as office furniture or equipment.
- Plan your lift carefully so that your leg muscles, rather than your back, handle most of the load.
- Don’t twist your body even when lifting a light load.
- Make sure your back is straight and your footing is secure. Use ladders and stepstools safely.

Heavy Objects:

- Filing cabinets can cause serious injury. Open just one drawer at a time. If you open more then you risk the cabinet falling over onto you. Load filing cabinet drawers evenly, starting with the bottom ones.
- Make sure shelves are securely anchored and do not overload them. Do not place heavy objects on overhead shelves.

Office Entanglements:

- Long hair, jewelry, and loose clothing are all potentially hazardous around office equipment. They can become entangled in moving parts of typewriters, computer printers, postage meters, and other equipment.

Office collisions:

- When opening a door without a window, be aware that someone may be on the other side and about to do the same thing. If the door opens away from you, don’t fling it wide with a great amount of force, this type of accident has caused broken noses, broken glasses, cuts, and eye injuries.
- If a door opens towards you, approach it slowly and cautiously watching for any signs that it may be starting to move. By being aware of the hazard you may be able to avoid an accident. Keep one arm raised and slightly bent at the elbow to absorb any sudden and forceful movements.
- Mark glass doors or floor-length windows clearly, using eye-level stickers or tape to help people see the hazard. Many serious accidents have happened with people walking into, and sometimes right through, unsees glass.

Office Safe Work Practices:

- Maintain a clean and tidy work area. Never leave objects on the floor or in the area where you or others can trip over them. Always make sure file drawers are closed immediately after you open them.
- Eliminate the amount of awkward or heavy lifts around the office. If you have a heavy box, set it down on a table instead of the ground. This saves you or someone else from having to bend down to pick it. When you have to lift an object, use the buddy system if it is a heavy or awkward load. Always use proper lifting techniques.
- Set up your office work area to fit your body. Every piece of your office should be adjusted to fit you specifically. Pick a chair that is adjusted to where your thighs are parallel to the floor, feet are on the ground, and lower back is supported. Have your desk at a height where your arms make a 90-degree angle and your wrists are straight.
- Have a document holder or a second computer screen to avoid looking down and back up to copy information into another document.

SAFE PROCEDURES RECOMMENDED:

- Identify key components of a health and safety program.
- Recognize the elements of an ergonomically correct workstation.
- Recognize and control for the potential health effects of poor lighting.
- Recognize causes of, and control workplace stress.
- Identify factors that affect indoor air quality.
- Recognize ways to reduce or eliminate general safety hazards (e.g. slips, trips, and falls) and electrical hazards.
- Identify chemical hazards in an office.
- Identify procedures to follow in case of a fire.

Preventive measures for office workers:

- Learn about how to avoid musculoskeletal pain or injury from repetitive or physically awkward tasks. Take breaks as needed.
- Learn safe lifting
- Keep all work areas clear of clutter.
- Set up your workstation ergonomically. Have a competent person assess your workstation for ergonomic issues.
- Know how to relax strained body parts by doing correct stretching
- Know emergency evacuation plans and procedures.
- Know personal or individual risk factors.

Good general safe work practices:

- Follow company safety rules.
- Learn fire safety.
- Learn about chemical safety, WHMISand SDSs.
- Know how to report a hazard and near miss.
- Practice safe lifting.
- Follow good housekeeping

PREVENTIVE STEPS WITH INDOOR AIR QUALITY PROBLEMS

If you or others at your office are experiencing health or comfort problems that you suspect may be caused by indoor air pollution, you can take the following preventive steps:

- Talk with other workers, your supervisor and union representatives to see if the problems are being experienced by others and urge that a record of reported health complaints be kept by management, if one has not already been established.
- Talk with your own physician and report your problems to the company physician, nurse, or health and safety officer.
- Call your state or local health department or air pollution control agency to talk over the symptoms and possible causes.
- Frequently, indoor air quality problems in large commercial buildings cannot be effectively identified or remedied without a comprehensive building investigation. These investigations may start with written questionnaires and telephone consultations in which building investigators assess the history of occupant symptoms and building operation procedures. In some cases, these inquiries may quickly uncover the problem and on-site visits are unnecessary.
- More often, however, investigators will need to come to the building to conduct personal interviews with occupants, to look for possible sources of the problems, and to inspect the design and operation of the ventilation

system and other building features. Because taking measurements of pollutants at the very low levels often found in office buildings is expensive and may not yield information readily useful in identifying problem sources, investigators may not take many measurements. The process of solving indoor air quality problems that result in health and comfort complaints can be a slow one, involving several trial solutions before successful remedial actions are identified.

- If a professional company is hired to conduct a building investigation, select a company on the basis of its experience in identifying and solving indoor air quality problems in non-industrial buildings.
- Work with others to establish a smoking policy that eliminates involuntary nonsmoker exposure to environmental tobacco smoke.
- Call the National Institute for Occupational Safety and Health (NIOSH)for information on obtaining a health hazard evaluation of your office (800-35NIOSH), or contact the Occupational Safety and Health Administration (OSHA), (202) 219-8151.