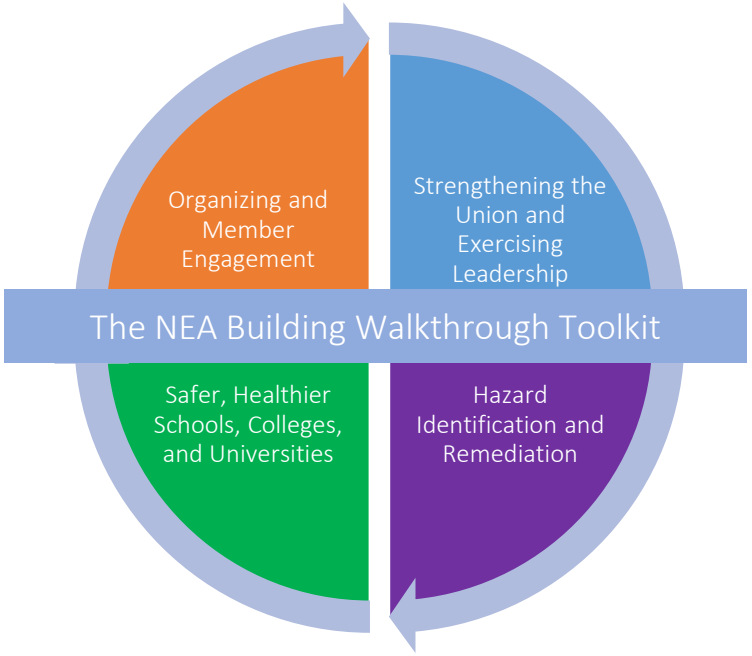


See the Overview Document for More Information

Building Ventilation Walkthrough Checklist

Building Ventilation Walkthrough Checklist

This is a building ventilation walkthrough checklist that will help users identify what areas/items require further investigation. It is part of a series of documents in an NEA Building Walkthrough Toolkit. For further evaluation of the building's ventilation, users can complete the indoor air quality checklist.

Worksite Address	
Building Name	
Location within Building	
Date and Time	
Facilities Representative(s)	
Conducted by Health and Safety Committee Local	

	Section 1: Overall Information About the Building The facilities representative should provide this information. Note, if any information is not available (N/A), the local association should follow up to obtain it. The ventilation walkthrough should include both an exterior and interior inspection.	
1	How old is the building? If there are any significant renovations or additions, where are they located?	

2	How old is the existing building ventilation equipment? Have there been any major renovations, additions, or upgrades?	
3	Since the building was constructed, have there been changes to occupancy that resulted in changes to the ventilation system? *For example, the building may have originally not been an educational building but was adapted to become one.* Did the HVAC design keep up with the needs of new occupancy? Did a recent renovation cut off ducts or change the original configuration that the HVAC system was designed around? *For example, a space that was originally an office or classroom is now used as a laboratory; a closet is now used as an office.*	
4	List the ventilation systems in the building. *(List all types)*	
5	Where does the air come into the building? *For example, on the roof, on the side of the building, on ground level, and/or only through a window or door.*	
6	Are there special ventilation (local exhaust) requirements in the educational setting (laboratories, art rooms, cafeterias, garages, etc.)?	

7	Who is responsible for maintaining the ventilation equipment? Is there a regularly scheduled HVAC maintenance program? If so, how often?	
8	What is the condition of the air conditioner units or central systems on the roof, air intake, and exhaust sources?	
9	Are outside air dampers operated manually or automatically?	
10	What percentage is the outside air dampers open?	
11	What triggers the changes in outside air percentage provided to the space?	
12	What is the rate of air changes per hour (ACH) in rooms in this building? Is it the same in all areas of occupancy? Do gyms, labs, auditoriums, and lunchrooms have the appropriate ACH rates? *Disclaimer: In some cases, the facilities manager might not have ACH rates information.*	
13	Is on-demand ventilation or carbon dioxide monitoring used?	
14	What are the Minimum Efficiency Reporting Values (MERV) filter ratings and how often are filters changed?	
15	Are pre-filters used? What are their ratings, and how often are they changed?	
16	Has the building/area of concern recently (past three months) needed to be shut down for any reason?	

During the walkthrough:

- Observe all restrooms, health offices, and isolation rooms first, if possible, as they are important areas of concern. Also, observe spaces like cafeteria/eating areas, break rooms, offices, and storage areas. Health offices and isolation rooms require additional ACH rates to minimize the potential transmission of diseases. Stand-alone portable HEPA-filtered-air cleaning units should be provided to those areas.

- When observing classrooms in a small building, observe all occupied classrooms. In larger buildings, observe several representative classrooms with similar uses on each wing, floor, and area serviced by different ventilation systems. If familiar with the building, use your knowledge or refer to Section 1.

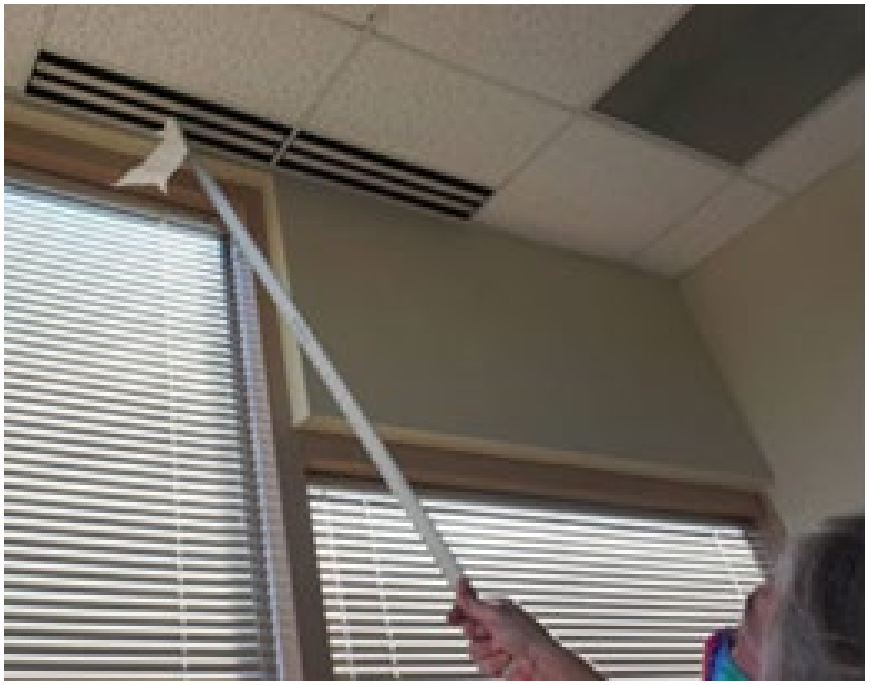
- Note overall air circulation, extreme temperatures, and any odors present. Listen for unusually noisy equipment. Common problems with HVAC systems include poor maintenance; covered or blocked air intakes/air exhaust; failure to reconfigure after renovations; proximity to pollution; broken controls, fans, and belts; dirty fibers; and microbiological growth because of standing water in drip pans, ductwork, coils, and humidifiers.

- Check the building's ventilation using the tissue test. Check that air is coming out of air supply vents and leaving through exhaust/return vents. If applicable, use a tissue on a stick and record observations (see illustration below). The tissue test is a simple way to check air circulation using a tissue taped to the end of a long stick.

- Take videos and/or pictures or make drawings to document observations and any concerns.

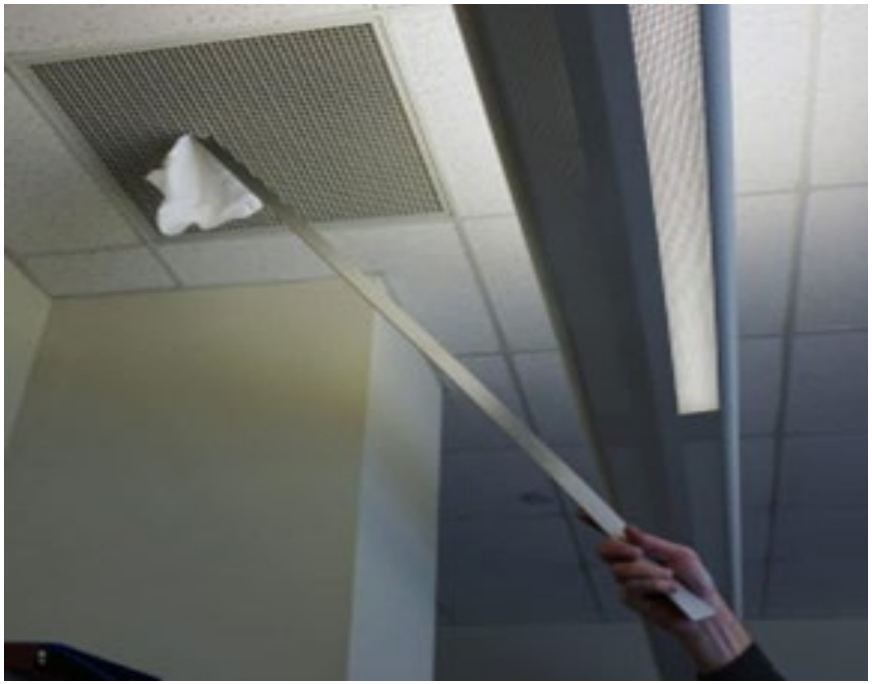
- Focus on ventilation issues. Note other ventilation-related issues, including mold, for possible follow-up in Section 3 of this checklist. Check for signs of water stains and mold.

Tissue Test



This image of a supply vent demonstrates airflow (air blowing out of the vent); the tissue should blow at a **right angle away from the vent.**

*Short-circuiting is when the return vent is located close to the supply duct. It limits the chance of fresh air reaching any room occupant. Short-circuiting is a design or renovation flaw.



This image of an exhaust/return vent demonstrates a lack of airflow (air flowing into the vent); the tissue is not pulled toward/against the vent.

Table 1: Possible Ventilation Types *(Common types are listed below, but this is not a complete list.)*	
Central	Units on the roof supply air through ducts throughout the building, with supply/return vents in rooms
Univent	A common classroom cabinet ventilator with a fan that mixes and blows air
Aerodale	Similar to the univent and may have ductwork and supply/return vents
Natural	A natural flow of outdoor air comes in through opening operable windows and doors, when temperature and humidity levels permit
Exhaust fan	A dedicated air exhaust fan that exhausts air to the outside, used primarily in bathrooms
Portable air cleaning units	Filters air in the room to supplement ventilation but does not provide fresh air
Wall-mounted	Similar to window air conditioner units and usually only recirculates air
Ceiling-mounted	Usually only recirculates air
Stand-alone portable unit	Usually does not provide fresh air, unless it is ducted to the window
Radiator	Does not bring in fresh air, only provides heat to a room
Table 2: Possible Window Types *(Common types are listed below, but this is not a complete list.)*	
Double-hung	Moves up and down
Casement	Pivots outward like a door, with the help of hinges
Fixed	Doesn't move/doesn't open or close (may have been designed not to open or were nailed or painted shut)
Jalousie	Narrow panes of glass that pivot in and out, operated by turning a small handle
None	Note if no windows are present

Section 2: Building Ventilation Observations *Copy this page, as needed*							
Room *(Name / Number)*	Ventilation Type *(See Table 1)*	Window Type *(See Table 2)*	Windows Open *(Yes / No)*	Airflow *(Yes / No)*	Air Flow Supply Vents *(Yes / No)*	Air Flow Return Register or Vent *(Yes / No)*	Notes/Concerns

Section 3: Other Ventilation Observations	
Location *(Room, wing, building-wide, exterior of the building)*	Observations