

Instructions

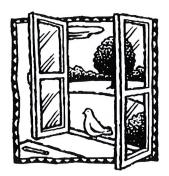
- 1. Read the *IAQ*Backgrounder and the Background Information for this checklist.
- 2. Keep the
 Background
 Information and
 make a copy of
 this checklist for
 each ventilation
 unit in your school,
 as well as a
 copy for future
 reference.
- 3. Complete the Checklist.
 - Check the "yes,"
 "no," or
 "not applicable"
 box beside each
 item. (A "no"
 response
 requires further
 attention.)
 - Make comments in the "Notes" section as necessary.
- Return the checklist portion of this document to the IAQ Coordinator.

Ventilation Checklist

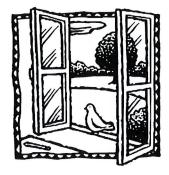
	0.1						
N	ame: William Blouin						
So	chool: Har-Bur Middle School						
	OTILE . 4111.15						
One ventiator/Arto No.							
Re	pom or Area: Middle School Date Completed: 1/3/24						
Si	gnature: Melin Bei						
1.	OUTDOOR AIR INTAKES						
1a.	1		No	N/A			
16	example, a fire escape floor plan)	_		<u>u</u>			
10.	mode	<u>v</u>					
	CTIVITY 1: OBSTRUCTIONS						
1c.	Ensured that outdoor air intakes are clear of obstructions, debris, clogs,						
1d	or covers	<u>"</u>	, 🗆	u			
ru.	frequently block an intake)						
	CTIVITY 2: POLLUTANT SOURCES		/				
le.	Checked ground-level intakes for pollutant sources (dumpsters, loading docks, and bus-idling areas)	/					
1f.	Checked rooftop intakes for pollutant sources (plumbing vents; kitchen,	_	_				
	toilet, or laboratory exhaust fans; puddles; and mist from	/					
	air-conditioning cooling towers)						
Ig.	Resolved any problems with pollutant sources located near outdoor air intakes (e.g., relocated dumpster or extended exhaust pipe)	٦.		П			
	makes (e.g., relocated dumpster of extended extraust pipe)	_	_	_			
AC	CTIVITY 3: AIRFLOW	/					
	Obtained chemical smoke (or a small piece of tissue paper or light plastic)						
li.	Confirmed that outdoor air is entering the intake appropriately	V					
2.	SYSTEM CLEANLINESS						
AC	TIVITY 4: AIR FILTERS	/	/				
2a.	Replaced filters per maintenance schedule	4	, 🗆				
2b.	Shut off ventilation system fans while replacing filters (prevents dirt from	/	<u></u>				
20	blowing downstream)						
	Confirmed proper fit of filters to prevent air from bypassing (flowing	<u> </u>					
		\forall	<u>-</u>				
2e.		4					

2. SYSTEM CLEANLINESS (continued)

ACTIVITY 5: DRAIN PANS							
2f.	Ensured that drain pans slant toward the drain (to prevent water from accumulating)	Yes f	No □	N/A			
2g.	Cleaned drain pans	🗹 /					
2h.	Checked drain pans for mold and mildew	🗹					
	TIVITY 6: COILS		ē.				
2i.	Ensured that heating and cooling coils are clean	🗹					
AC	TIVITY 7: AIR-HANDLING UNITS, UNIT VENTILATORS		/				
2j.	Ensured that the interior of air-handling unit(s) or unit ventilator						
21	(air-mixing chamber and fan blades) is clean			u			
2k.	Ensured that ducts are clean	🛂	u	Ц			
ACTIVITY 8: MECHANICAL ROOMS							
21.	Checked mechanical room for unsanitary conditions, leaks, and spills	⊻	\neg				
2m.	Ensured that mechanical rooms and air-mixing chambers are free of trash,						
	chemical products, and supplies	🛂					
3.	CONTROLS FOR OUTDOOR AIR SUPPLY	/	/				
	Ensured that air dampers are at least partially open (minimum position)	🗹 🎾					
3b.	Ensured that minimum position provides adequate outdoor air						
	for occupants	🛂	u				
AC	TIVITY 9: CONTROLS INFORMATION						
3c.	Obtained and reviewed all design inside/outside temperature and humidity						
	requirements, controls specifications, as-built mechanical drawings,		П				
	and controls operations manuals (often uniquely designed)	😃	_	_			
	TIVITY 10: CLOCKS, TIMERS, SWITCHES	/					
3d.	Turned summer-winter switches to the correct position	🛂					
	Set time clocks appropriately	🗆		L			
3f.	Ensured that settings fit the actual schedule of building use (including night/weekend use)	14					
	mgni/weekend use)	🛥	_				
	TIVITY 11: CONTROL COMPONENTS						
3g.	Ensured appropriate system pressure by testing line pressure at both the						
21.	occupied (day) setting and the unoccupied (night) setting						
3n. 3i.	Checked that the line dryer prevents moisture buildup	🛂	_				
31.	compressor manufacturer's recommendation (for example, when you			/			
	blow down the tank)	🗆		V			
3j.	Set the line pressure at each thermostat and damper actuator at the proper						
	level (no leakage or obstructions)	🗆		V			
ACTIVITY 12: OUTDOOR AIR DAMPERS							
3k.	Ensured that the outdoor air damper is visible for inspection	🗹					
31.	Ensured that the recirculating relief and/or exhaust dampers are visible						
3 m	for inspection	🛥 /		_			
JIII.	outdoor air damper is within the normal operating range	ta					
	1	March 1900	0.77				



NOTE: It is necessary to ensure that the damper is operating properly and within the normal range to continue.



3.	CONTROLS FOR OUTDOOR AIR SUPPLY (continued)	
3n.	Checked that the outdoor air damper fully closes within a few minutes of shutting off appropriate air handler	N/A
	Checked that the outdoor air damper opens (at least partially with no delay) when the air handler is turned on	
3p.	If in heating mode, checked that the outdoor air damper goes to its minimum position (without completely closing) when the room thermostat is set to 85°F	
	If in cooling mode, checked that the outdoor air damper goes to its minimum position (without completely closing) when the room thermostat is set to 60°F and mixed air thermostat is set to 45°F	
3r.	If the outdoor air damper does not move, confirmed the following items: • The damper actuator links to the damper shaft, and any linkage set screws or bolts are tight	
	 Moving parts are free of impediments (e.g., rust, corrosion) Electrical wire or pneumatic tubing connects to the damper actuator The action is the present of (a) is found in the present of (a) is the print of the present of (a). 	
	• The outside air thermostat(s) is functioning properly (e.g., in the right location, calibrated correctly)	
Pro	ceed to Activities 13–16 if the damper seems to be operating properly.	
	TIVITY 13: FREEZE STATS	
	Disconnected power to controls (for automatic reset only) to test continuity across terminals	
OR		
3t.	Confirmed (if applicable) that depressing the manual reset button (usually red) trips the freeze stat (clicking sound indicates freeze stat was tripped)	
3u.	Assessed the feasibility of replacing all manual reset freeze-stats with automatic reset freeze-stats	
clos	TE: HVAC systems with water coils need protection from the cold. The freeze-stat may se the outdoor air damper and disconnect the supply air when tripped. The typical trip ge is $35^{\circ}F$ to $42^{\circ}F$.	
AC	TIVITY 14: MIXED AIR THERMOSTATS	
3v.	Ensured that the mixed air stat for heating mode is set no higher than 65°F	
3w.	Ensured that the mixed air stat for cooling mode is set no lower than the room thermostat setting	
10	TIVITY 15: ECONOMIZERS	
	Confirmed proper economizer settings based on design specifications or local practices	
NO	TE: The dry-bulb is typically set at 65°F or lower.	
3у.	Checked that sensor on the economizer is shielded from direct sunlight	
3z.	Ensured that dampers operate properly (for outside air, return air, exhaust/relief air, and recirculated air), per the design specifications	
loa	TE: Economizers use varying amounts of cool outdoor air to assist with the cooling d of the room or rooms. There are two types of economizers, dry-bulb and enthalpy.	
ana	p-bulb economizers vary the amount of outdoor air based on outdoor temperature, I enthalpy economizers vary the amount of outdoor air based on outdoor temperature I humidity level.	

3. CONTROLS FOR OUTDOOR AIR SUPPLY (continued) **ACTIVITY 16: FANS** 3aa. Ensured that all fans (supply fans and associated return or relief fans) Yes No N/A that move outside air indoors continuously operate during occupied hours (even when room thermostat is satisfied)...... NOTE: If fan shuts off when the thermostat is satisfied, adjust control cycle as necessary to ensure sufficient outdoor air supply. 4. AIR DISTRIBUTION **ACTIVITY 17: AIR DISTRIBUTION** 4a. Ensured that supply and return air pathways in the existing ventilation system perform as required...... 4b. Ensured that passive gravity relief ventilation systems and transfer grilles between rooms and corridors are functioning..... NOTE: If ventilation system is closed or blocked to meet current fire codes, consult with a professional engineer for remedies. 4c. Made sure every occupied space has supply of outdoor air (mechanical system or operable windows) 4d. Ensured that supply and return vents are open and unblocked NOTE: If outlets have been blocked intentionally to correct drafts or discomfort, investigate and correct the cause of the discomfort and reopen the vents. 4e. Modified the HVAC system to supply outside air to areas without an outdoor air supply...... 4f. Modified existing HVAC systems to incorporate any room or zone layout 4g. Moved all barriers (for example, room dividers, large free-standing blackboards or displays, bookshelves) that could block movement of air in the room, especially those blocking air vents 4h. Ensured that unit ventilators are quiet enough to accommodate classroom activities 4i. Ensured that classrooms are free of uncomfortable drafts produced by air **ACTIVITY 18: PRESSURIZATION IN BUILDINGS** NOTE: To prevent infiltration of outdoor pollutants, the ventilation system is designed to maintain positive pressurization in the building. Therefore, ensure that the system, including any exhaust fans, is operating on the "occupied" cycle when doing this activity. Ensured that air flows out of the building (using chemical smoke) through windows, doors, or other cracks and holes in exterior wall (for example, floor joints, pipe openings)...... 5. EXHAUST SYSTEMS **ACTIVITY 19: EXHAUST FAN OPERATION** 5a. Checked (using chemical smoke) that air flows into exhaust fan grille(s)

If fans are running but air is not flowing toward the exhaust intake, check for the following:

Inoperable dampers

· Broken fan belt

Obstructed, leaky, or disconnected ductwork Undersized or improperly installed fan

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5. EXHAUST SYSTEMS (continued)

ACTIVITY 20: EXHAUST AIRFLOW

NOTE: Prevent migration of indoor contaminants from areas such as bathrooms, kitchens, and labs by keeping them under negative pressure (as compared to surrounding spaces). Yes No N/A 5b. Checked (using chemical smoke) that air is drawn into the room from adjacent spaces Stand outside the room with the door slightly open while checking airflow high and low in the door opening (see "How to Measure Airflow"). 5c. Ensured that air is flowing toward the exhaust intake **ACTIVITY 21: EXHAUST DUCTWORK** 5d. Checked that the exhaust ductwork downstream of the exhaust fan (which is under positive pressure) is sealed and in good condition..... 6. QUANTITY OF OUTDOOR AIR **ACTIVITY 22: OUTDOOR AIR MEASUREMENTS AND CALCULATIONS** NOTE: Refer to "How to Measure Airflow" for techniques. 6a. Measured the quantity of outdoor air supplied (22a) to each ventilation unit <u>ଏ</u> 6b. Calculated the number of occupants served (22b) by the ventilation unit 6c. Divided outdoor air supply (22a) by the number of occupants (22b) to determine the existing quantity of outdoor air supply per person (22c)......... **ACTIVITY 23: ACCEPTABLE LEVELS OF OUTDOOR AIR QUANTITIES** 6d. Compared the existing outdoor air per person (22c) to the recommended levels in Table 1..... 6e. Corrected problems with ventilation units that supplied inadequate quantities of outdoor air to ensure that outdoor air quantities (22c) meet

the recommended levels in Table 1.....

NOTES