

#### Instructions

- Read the IAQ
   Backgrounder and
   the Background
   Information for
   this checklist.
- 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.
- 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**

	hool: Strong Middle School		
	2 4 1 12		_
000000000000000000000000000000000000000	it Ventilator/AHU No:		
Ro	om or Area: AHU-ROOF Date Completed: 01-05-24		
Sic	gnature:		
310	, alterio.		
	OUTDOOR AIR INTAKES		
	example, a fire escape floor plan) BMS System	No	N/A
1b.	Ensured that the ventilation system was on and operating in "occupied" mode		
	TIVITY 1: OBSTRUCTIONS		
	Ensured that outdoor air intakes are clear of obstructions, debris, clogs, or covers		
1d.	Installed corrective devices as necessary (e.g., if snowdrifts or leaves frequently block an intake)		
	requently block an mane,		
	TIVITY 2: POLLUTANT SOURCES		
1e.	Checked ground-level intakes for pollutant sources (dumpsters, loading	П	П
1.6	docks, and bus-idling areas)	J	_
11.	toilet, or laboratory exhaust fans; puddles; and mist from		
	air-conditioning cooling towers)	П	
lg.	Resolved any problems with pollutant sources located near outdoor air intakes (e.g., relocated dumpster or extended exhaust pipe)		
AC	Obtained chemical smoke (or a small piece of tissue paper or light plastic).		
1h. 1i.	Confirmed that outdoor air is entering the intake appropriately		
2	SYSTEM CLEANLINESS		
AC	Replaced filters per maintenance schedule twice Annually		
2b.	Shut off ventilation system fans while replacing filters (prevents dirt from		1000
	blowing downstream)		
2c.	Vacuumed filter areas before installing new filters		Ц
	Confirmed proper fit of filters to prevent air from bypassing (flowing around) the air filter		
2e.	Confirmed proper installation of filters (correct direction for airflow)		

## 2. SYSTEM CLEANLINESS (continued)

AC'	TIVITY 5: DRAIN PANS	_	B.L.	BIZA
	accumulating)	ľ		N/A
2g	Cleaned drain pans			O
2h.	Checked drain pans for mold and mildew	1		
AC	TIVITY:6: COILS			~
2i.	Ensured that heating and cooling coils are clean	1		
AC	TIVITY 7: AIR-HANDLING UNITS, UNIT VENTILATORS			
-	Ensured that the interior of air-handling unit(s) or unit ventilator (air-mixing chamber and fan blades) is clean	•	0	
2k.	Ensured that ducts are clean	J		
AC	TIVITY 8: MECHANICAL ROOMS	*	_	<i>e</i> -20
21.	Checked mechanical room for unsanitary conditions, leaks, and spills	4		
2m.	Ensured that mechanical rooms and air-mixing chambers are free of trash, chemical products, and supplies	ā		
3.	CONTROLS FOR OUTDOOR AIR SUPPLY			
3a.	Ensured that air dampers are at least partially open (minimum position)	Í		
3b.	Ensured that minimum position provides adequate outdoor air for occupants	Í		Ü
A.C	TIVITY 9: CONTROLS INFORMATION			
3c.	Obtained and reviewed all design inside/outside temperature and humidity			
	requirements, controls specifications, as-built mechanical drawings, and controls operations manuals (often uniquely designed)	4		
A C	TIVITY 10: CLOCKS, TIMERS, SWITCHES			
3d.	Turned summer-winter switches to the correct position	đ		
3e.	Set time clocks appropriately	1		
3f.	Ensured that settings fit the actual schedule of building use (including night/weekend use)			
<b>A</b> C	TIVITY 11: CONTROL COMPONENTS No Preumatics			
3g.	Ensured appropriate system pressure by testing line pressure at both the	_	_:	عبد
-	occupied (day) setting and the unoccupied (night) setting	_l l		NA MA
	Checked that the line dryer prevents moisture buildup		_	400
3í.	compressor manufacturer's recommendation (for example, when you	~	. 🗀	182
	blow down the tank)	_	السا	-
3j.	Set the line pressure at each thermostat and damper actuator at the proper level (no leakage or obstructions)	1		2
	TIVITY 12: OUTDOOR AIR DAMPERS	_		
3k.	Ensured that the outdoor air damper is visible for inspection	Ŋ		
	Ensured that the recirculating relief and/or exhaust dampers are visible for inspection	<b>4</b>		
3m	Ensured that air temperature in the indoor area(s) served by each outdoor air damper is within the normal operating range		⊐	
			a na	eriozak



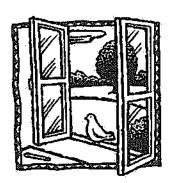
NOTE; It is necessary to ensure that the damper is operating properly and within the normal range to continue.

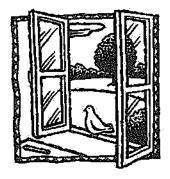


3.	CONTROLS FOR OUTDOOR AIR SUPPLY (continued)			
3n.	Checked that the outdoor air damper fully closes within a few minutes of shutting off appropriate air handler		No □	N/A
30,	Checked that the outdoor air damper opens (at least partially with no delay) when the air handler is turned on	١	۵	
3р.	If 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			
3q.	If in cooling mode, checked that the outdoor air damper goes to its minimur position (without completely closing) when the room thermostat is set to 60°F and mixed air thermostat is set to 45°F	m:		۵
3r.	C'	_	۵	<u> </u>
	and the control of th	. <b>83</b>		۵
	me it is the state of the decimal particular	52		
	Electrical wire or pneumatic tubing connects to the namper actuator     The outside air thermostat(s) is functioning properly (e.g., in the right location, calibrated correctly)		۵	<u> </u>
Pro	oceed 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 terininals	<b>ם</b>		ø
OR	Confirmed (if applicable) that depressing the manual reset button (usually			
	red) trips the freeze stat (clicking sound indicates freeze stat was	. <b>M</b>		
3u.	Assessed the feasibility of replacing all manual reset freeze-stats with automatic reset freeze-stats	٠.		۵
clo	OTE: HVAC systems with water coils need protection from the cold. The freeze use the outdoor air damper and disconnect the supply air when tripped. The tage is $35^{\circ}F$ to $42^{\circ}F$ .	2-sta ypice	t may il trij	, D
40	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	. <b>#</b>	ø	۵
A	CTIVITY 15: ECONOMIZERS			
	Confirmed proper economizer settings based on design specifications or local practices	🗷		۵
NO	OTE: The dry-bulb is typically set at 65°F or lower.			
3 v.	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			
loc Dr an	OTE: Economizers use varying amounts of cool outdoor air to assist with the aid of the room or rooms. There are two types of economizers, dry-bulb and ency-bulb economizers vary the amount of outdoor air based on outdoor temped and enthalpy economizers vary the amount of outdoor air based on outdoor tended humidity level.	uhai ratur	ру. e,	٠.

#### 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 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 and population changes ...... 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 from supply terminals ..... **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. 4]. Ensured that air flows out of the building (using chemical smoke) through windows, doors, or other cracks and holes in exterior wall (for example, 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 · Obstructed, leaky, or disconnected ductwork · Undersized or improperly installed fan

· Broken fan belt





## 5. EXHAUST SYSTEMS (continued)

### ACTIVITY 20: EXHAUST AIRFLOW

NOTE: Prevent migration of indoor contaminants from areas such as bathrooms; and labs by keeping them under negative pressure (as compared to surrounding such as the surround	<sub>s</sub> kite spac	enens es).	ī,
5b. Checked (using chemical smoke) that air is drawn into the room from adjacent spaces	/es □	No M	N/A
Stand outside the room with the door slightly open while checking airflow high a the door opening (see "How to Measure Airflow").	nd l	ow ii	1
5c. Ensured that air is flowing toward the exhaust intake	T		
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	製	۵	<b>0</b>
6. QUANTITY OF OUTDOOR AIR			
ACTIVITY 22: OUTDOOR AIR MEASUREMENTS AND CALCULATION	NS		
NOTE: Refer to "How to Measure Airflow" for techniques.			
6a. Measured the quantity of outdoor air supplied (22a) to each ventilation unit	ď	-	
6b. Calculated the number of occupants served (22b) by the ventilation unit under consideration	À		Ö
6c. Divided outdoor air supply (22a) by the number of occupants (22b) to determine the existing quantity of outdoor air supply per person (22c)	Ø	ū	0
ACTIVITY 23: ACCEPTABLE LEVELS OF OUTDOOR AIR QUANTITIE 6d. Compared the existing outdoor air per person (22c) to the recommended	ES		
levels in Table 1	煪		Ü
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	と	o	۵

NOTES