

HVAC Engineer Investigation Report - 2020 School Reopening HVAC Requirements & Considerations

Hillside Elementary School

Draft - 7/30/2020

Legend:

Mandatory	Mandatory requirement per NYSED Reopening Guidance
Recommended	Encouraged per NYSED Reopening Guidance
Suggested	Consideration per NYSED Reopening Guidance
Text	Action Item
S	Work to be performed by school maintenance staff
M	Work may require school to hire a mechanical contractor
C	Work may require school to hire a controls contractor
B	Work requires school to hire a balancer
A/E	Architectural / Engineering Support Required

General Recommendations / Best Practice

- Operate HVAC systems outside of occupied schedule. Start 2 hours before, end 4 hours after.
 - Nurse's Office and rooms for sick children - provide portable fan/HEPA filter unit *.
 - Due to limitations of existing Unit Ventilators & PTACs - consider providing portable fan/HEPA filter units *.
- * Portable fan/HEPA filter units for 1,000 SF capacity range in cost from <\$1,000 (residential grade) to \$8,000

Responsibility:

Room Number	Room Name/Type	System Type	Manufacturer	Mandatory			Recommended - Increase Ventilation			Suggested - Increase Filtration Efficiency		
				Existing Systems	Ventilation	With Modification	Current Method/System	Feasibility	Modifications	Existing Filter	Highest Feasible	Modifications
NA	General Buidling Systems	Exhaust Fans	All	S, M (1)								
NA	General Buidling Systems	Relief Dampers	All	S (2)								
NA	General Buidling Systems	Control Dampers	All	S (2)								
NA	General Buidling Systems	Controls	All	S, C (3)								
N/A	Corridor	Ducted HV Unit	Nesbitt	S(4)	Meets Code		DDC Control	(E)	A/E, C	(e) MERV 8	MERV 13	N/A
Varies	Classrooms (6)	Unit Ventilators	Magic Aire	S (4)	Meets Code		DDC Control	(A)	A/E, B (B)	(a) MERV 4	400 fpm - MERV 4	NA
Varies	Classrooms (27)	Unit Ventilators	Magic Aire	S (4)	Meets Code		DDC Control	(A)	A/E, B (B)	(b) MERV 4	400 fpm - MERV 4	NA
Varies	Classrooms (4)	Unit Ventilators	Magic Aire	S (4)	Meets Code		DDC Control	(A)	A/E, B (B)	(c) MERV 4	400 fpm - MERV 4	NA
N/A	Addition Multi-Purpose Room	Ducted HV Unit	McQuay	S(4)	Meets Code		DDC Control	(E)	A/E, B (B)	(d) MERV 4	MERV 8	NA
N/A	Addition Playroom	HV Unit / Unit Ventilator	Unconfirmed	S(4)	Meets Code		DDC Control	(A)	A/E, B (I)	(f) Unknown	(f) Unknown	NA
102	Classroom	NA	NA	NA	Meets Code		Operable Window	(F)	A/E, C	NA	NA	NA
105	Library	NA	NA	NA	Meets Code		Operable Window	(F)	A/E, C	NA	NA	NA
106	Classroom	NA	NA	NA	Meets Code		Operable Window	(F)	A/E, C	NA	NA	NA
110	Classroom (Partitioned)	NA	NA	NA	Meets Code		Operable Window	(F)	A/E, C	NA	NA	NA
111	Nurse / School Counselor Partitioned Room	NA	NA	NA	Meets Code		Operable Window	(F)	A/E, C (D)	NA	NA	NA
114	Classroom	NA	NA	NA	Meets Code		Operable Window	(F)	A/E, C	NA	NA	NA
116	Faculty Room	NA	NA	NA	Meets Code		Operable Window	(F)	A/E, C	NA	NA	NA
117	Principal	NA	NA	NA	Meets Code		Operable Window	(F)	A/E, C	NA	NA	NA
119	Main Office	NA	NA	NA	Meets Code		Operable Window	(F)	A/E, C	NA	NA	NA
209	Classroom	NA	NA	NA	Meets Code		Operable Window	(F)	A/E, C(G)	NA	NA	NA
N/A	All Purpose Room	Ducted HV Unit	Nesbitt	S(4)	Meets Code		DDC Control	(E)	A/E, C	(e) MERV 8	MERV 13	N/A
118	Assistant Principal	None	NA	NA	Upgrades Required	Meets Code	None	(F)	A/E, C (H)	NA	NA	NA
130A	Speech	None	NA	NA	Upgrades Required	Meets Code	None	(F)	A/E, C (D) (H)	NA	NA	NA
155	Sensory Room	None	NA	NA	Upgrades Required	Meets Code	None	(F)	A/E, C (D) (H)	NA	NA	NA
57	Basement level Conference Room	None	NA	NA	Upgrades Required	Meets Code	None	(F)	A/E, C (H)	NA	NA	NA
N/A	Conference Room Adjacent to Art Room	None	NA	NA	Upgrades Required	Meets Code	None	(F)	A/E, C (H)	NA	NA	NA
N/A	Office off of All Purpose Room	None	NA	NA	Upgrades Required	Meets Code	None	(F)	A/E, C (H)	NA	NA	NA
N/A	Office adjacent to stage corridor (converted storage)	None	NA	NA	Upgrades Required	Meets Code	None	(F)	A/E, C (H)	NA	NA	NA
N/A	Custodian Office	None	NA	NA	Upgrades Required	Meets Code	None	(F)	A/E, C (H)	NA	NA	NA

Responsibility Notes (x):

- Perform PM. Replace belts. Verify existing fans operate
- Lubricate dampers and linkages. Verify actuators operate
- Verify day/night controls, fans and dampers respond accordingly
- Perform PM. Verify equipment is operational

Ventilation Notes (x):

- Limited ability to adjust ventilation. Risk of freezing coils if excess fresh air
- Recommend school hire balancer to perform baseline air testing
Engineer to review and recommend revised airflow pending baseline report
- Not Used
- Changes in space use (partitions, etc.) require OFP approval.
- Fixed fresh air capacity
- Provide ERV (Energy Recovery Ventilator) for required fresh air
- Provide unit ventilator for classroom heating and ventilation
- Interior spaces have no operable windows
- Units inaccessible for inspection

Filtration Notes (x):

- 9-3/4" x 60-1/4" x 1" disposable mesh filter.
- 9-3/4" x 72-1/4" x 1" disposable mesh filter.
- 9-3/4" x 24-1/4" x 1" disposable mesh filter.
- (4)16" x 20" x 2" disposable mesh filter
- (8) 20" x 20" x 2" MERV 8 Filter
- Units were not accessible.