

IEA, INC.

2023 - 2024 Ventilation Assessment



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Saint Paul Public Schools Harding Senior High School

Assessment Date:
Tuesday, April 4, 2023

Project Description

IEA conducted a ventilation inspection in Harding Senior High School by IEA representative, Eddie Anderson, with the intent of gathering visual observations and overall ventilation information which will assist the District in making informed and proactive decisions to improve and maintain acceptable air quality in the building. This inspection is based upon the Environmental Protection Agency's (EPA's) Tools for Schools IAQ guidelines and the recommended Minnesota Department of Education (MDE) portion of a school district's IAQ management plan. Ventilation verification is also recommended by American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE).

Some observations gathered during the inspection may identify issues which may require additional testing, evaluation, further investigation, or maintenance on the ventilation systems.

The findings, conclusions and recommendations presented herein are believed to be accurate and representative of the building on the date and time of the inspection.

GENERAL COMMENTS

The analysis and opinions expressed in this report are based upon data obtained from Saint Paul Public Schools at the indicated locations. This report does not reflect variations in conditions that may occur across the site, property, or facility. Actual conditions may vary and may not become evident without further assessment.

The report is prepared for the exclusive use of our client for specific application to the project discussed and has been prepared in accordance with generally accepted indoor air quality practices. Other than as provided in the preceding sentence, no warranties are extended or made.

Building Information

General information regarding the building was collected by IEA during an interview with building maintenance staff. The information gathered during this process is a vital component, as it is helpful in determining how these items may play a role in possible IAQ related issues.

Below is a summary of the information gathered during the interview:

- Automation controls are managed internally.
- A Building Automation System is present. The automation control software program is Tridium and controls can not be accessed remotely.
- Schedules:

Ventilation operation:

Day:	Occupied?	Start Time:	End Time:
Monday-Friday	Yes	6:00 AM	9:30 PM
Monday-Friday	Yes	6:00 AM	4:30 PM

Typical occupancy:

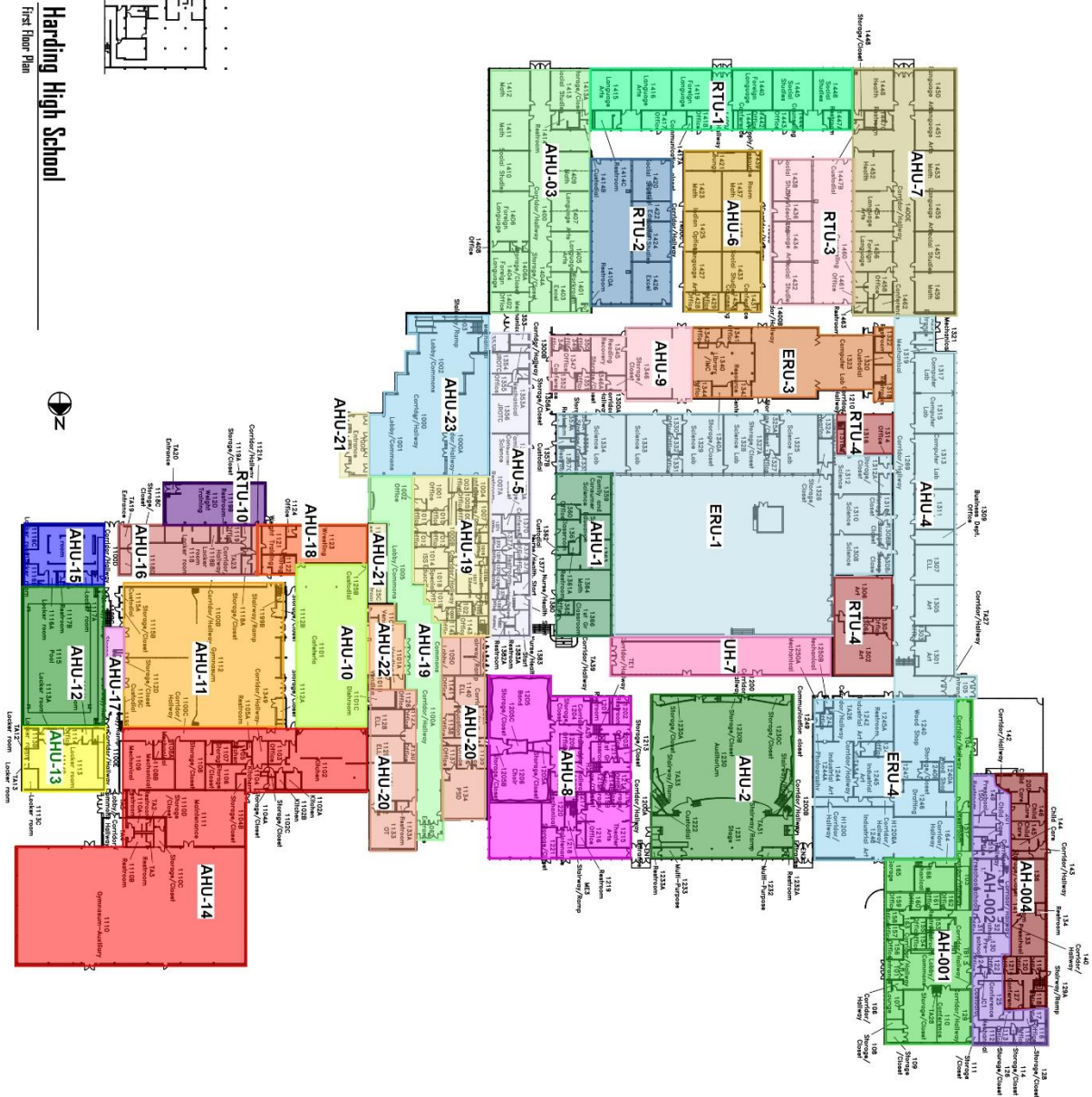
Day:	Occupied?	Start Time:	End Time:
Monday-Friday	Yes	8:15 AM	3:00 PM
Saturday	No	7:00 AM	3:00 PM
Sunday	No		
Holiday	No		

- CO2 sensors are associated with the ventilation system. They are located within duct work. The highest CO2 setpoint is unknown.
- VAVs are present. They are not fan powered.
- Building has variable frequency drives (VFD).
- The heating system is a hot water boiler.
- A cooling system is present and is a Dx and chilled water (air cooled) type system.
- Filters used are:

Filter Type	MERV Rating
Pleated	MERV 11
Pleated	MERV 8
Pleated	N/A

- Filters are changed Every six months.
- Energy Recovery Units are present.
- Units do not contain system Enhancements.
- Personal air purifiers are not supplied for individual rooms.
- It is not known whether or not the building was commissioned during the original construction.

The first floor plan shows a large rectangular building with a complex internal layout. It includes a large central hall, several smaller rooms, and a series of corridors. The building is oriented with its long side running horizontally. The plan is drawn on a grid of dots.



Assessment

Ventilation System

The following information was gathered by IEA on Tuesday, April 4, 2023 with support from the district building representative during the on-site interview. The type of heating, ventilating and air-conditioning (HVAC) system and its assessment is included for each unit below:

Unit Designation:	AH_001	
Location of Unit:	Hub Boiler Room (1625 Mechanical)	
Areas Served:	Hubb's Community Ed. See attached map	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type - Supply System - VAV - Heating - Hot Water - Cooling - Dx - Energy Recovery Unit (ERU) - None	Outdoor air intake is inaccessible Outdoor air intake is located on an exterior wall. It is not known if there are nearby pollution sources.	Outdoor air filters are not present. Return air filters are not present. Mixed air pre-filters are not present. Mixed air main filters are clean and not in need of replacement (scoring 2 out of 5) and fit well. Mixed air main filters are installed correctly. Drain pans are not plugged. Drain pan condition is good.
Filter Type - Mixed - Pre-filter: None - Main filter: Pleated, MERV 11	Outdoor air intake is in good condition.	Heating coils are clean and cooling coils are clean. Heat wheels are not present. Exterior ducting is visible. Exterior ducting insulation is not present. Interior ducting is not visible. Interior ducting insulation is in an unknown condition. Interior ducting is of unknown cleanliness. Air handling room is free of trash/chemicals. Outside damper is inaccessible, and its condition is not known. Return damper is inaccessible, and its condition is not known. The general condition of the unit is good.

Unit Designation:	AH_002	
Location of Unit:	Hub Boiler Room (1625 Mechanical)	
Areas Served:	Hubb's Meeting Room See attached map	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type - Supply System - VAV - Heating - Hot Water - Cooling - Dx - Energy Recovery Unit (ERU) - None	Outdoor air intake is inaccessible Outdoor air intake is located on an exterior wall. It is not known if there are nearby pollution sources.	Outdoor air filters are not present. Return air filters are not present. Mixed air pre-filters are not present. Mixed air main filters are clean and not in need of replacement (scoring 2 out of 5) and fit well. Mixed air main filters are installed correctly. Drain pan plugged status is not known. Drain pan condition is not known.
Filter Type - Mixed - Pre-filter: None - Main filter: Pleated, MERV 11	Outdoor air intake is in good condition.	Heating coils are clean and cooling coils are inaccessible. Heat wheels are not present. Exterior ducting is visible. Exterior ducting insulation is not present. Interior ducting is not visible. Interior ducting insulation is in an unknown condition. Interior ducting is of unknown cleanliness. Air handling room is free of trash/chemicals. Outside damper is inaccessible, and its condition is not known. Return damper is inaccessible, and its condition is not known. The general condition of the unit is good.

Unit Designation:	AH_004	
Location of Unit:	Hub Boiler Room (1625 Mechanical)	
Areas Served:	Hubb's Westside Classrooms See attached map	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type - Supply System - VAV - Heating - Hot Water - Cooling - Dx - Energy Recovery Unit (ERU) - None	Outdoor air intake is inaccessible	Outdoor air filters are not present.
	Outdoor air intake is located on an exterior wall.	Return air filters are not present.
	It is not known if there are nearby pollution sources.	Mixed air pre-filters are not present. Mixed air main filters are somewhat dirty and on the border of needing replacement (scoring 3 out of 5) and fit well. Mixed air main filters are installed correctly.
		Drain pans are not plugged. Drain pan condition is good.
Filter Type - Mixed - Pre-filter: None - Main filter: Pleated, MERV 11	Outdoor air intake is in good condition.	Heating coils are clean and cooling coils are clean.
		Heat wheels are not present.
		Exterior ducting is visible. Exterior ducting insulation is not present.
		Interior ducting is not visible. Interior ducting insulation is in an unknown condition. Interior ducting is of unknown cleanliness.
		Air handling room is free of trash/chemicals.
		Outside damper is inaccessible, and its condition is not known.
		Return damper is inaccessible, and its condition is not known.
		The general condition of the unit is good.

Unit Designation:	AH_005	
Location of Unit:	Hub Boiler Room	
Areas Served:	Hubb's Daycare See attached map	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type - Supply System - VAV - Heating - Hot Water - Cooling - Dx - Energy Recovery Unit (ERU) - None	Outdoor air intake is inaccessible	Outdoor air filters are not present.
	Outdoor air intake is located on an exterior wall.	Return air filters are not present.
	It is not known if there are nearby pollution sources.	Mixed air pre-filters are not present. Mixed air main filters are somewhat dirty and on the border of needing replacement (scoring 3 out of 5) and fit well. Mixed air main filters are installed correctly.
Filter Type - Mixed		Drain pans are not applicable or not present. Drain pan condition is not known.
- Pre-filter: None - Main filter: Pleated, MERV 11	Outdoor air intake is in good condition.	Heating coils are clean and cooling coils are clean.
		Heat wheels are not present.
		Exterior ducting is visible. Exterior ducting insulation is not present.
		Interior ducting is not visible. Interior ducting insulation is in an unknown condition. Interior ducting is of unknown cleanliness.
		Air handling room is free of trash/chemicals.
		Outside damper is inaccessible, and its condition is not known.
		Return damper is inaccessible, and its condition is not known.
		The general condition of the unit is poor.

Unit Designation:	AHU_01	
Location of Unit:	Un named Mechanical near custodial area	
Areas Served:	Rooms 1359-1366 See attached map	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type - Supply System - Constant Volume - Heating - Hot Water - Cooling - None - Energy Recovery Unit (ERU) - None	Outdoor air intake is inaccessible Outdoor air intake is located on an exterior wall. It is not known if there are nearby pollution sources.	Outdoor air filters are not present. Return air filters are not present. Mixed air pre-filters are not present. Mixed air main filters are somewhat dirty and on the border of needing replacement (scoring 4 out of 5) and fit well. Mixed air main filters are installed correctly. Drain pans are not applicable or not present. Drain pan condition is not known.
Filter Type - Mixed - Pre-filter: None - Main filter: Pleated, MERV 11	Outdoor air intake is in good condition.	Heating coils are clean. Heat wheels are not present. Exterior ducting is not visible. Exterior ducting insulation is not present. Interior ducting is not visible. Interior ducting insulation is in an unknown condition. Interior ducting is of unknown cleanliness. Air handling room is free of trash/chemicals. Outside damper is open, and its condition is good. Return damper is inaccessible, and its condition is not known. The general condition of the unit is good.

Unit Designation:	AHU_02	
Location of Unit:	Un named Mechanical near custodial area	
Areas Served:	Auditorium 1230 See attached map	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type • Supply System - Constant Volume • Heating - Hot Water • Cooling - None • Energy Recovery Unit (ERU) - None	Outdoor air intake is inaccessible Outdoor air intake is located on an exterior wall. It is not known if there are nearby pollution sources.	Outdoor air filters are not present. Return air filters are not present. Mixed air pre-filters are not present. Mixed air main filters are somewhat dirty and on the border of needing replacement (scoring 4 out of 5) and fit well. Mixed air main filters are installed correctly. Drain pans are not applicable or not present. Drain pan condition is not known.
Filter Type - Mixed • Pre-filter: None • Main filter: Pleated, MERV 11	Outdoor air intake is in good condition.	Heating coils are clean. Heat wheels are not present. Exterior ducting is visible. Exterior ducting insulation is not present. Interior ducting is not visible. Interior ducting insulation is in an unknown condition. Interior ducting is of unknown cleanliness. Air handling room is free of trash/chemicals. Outside damper is open, and its condition is good. Return damper is open, and its condition is good. The general condition of the unit is good.

Unit Designation:	AHU_03	
Location of Unit:	Mechanical room 1403	
Areas Served:	Southeast Classrooms See attached map	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type - Supply System - Constant Volume - Heating - Hot Water - Cooling - None - Energy Recovery Unit (ERU) - None	Outdoor air intake is inaccessible Outdoor air intake is located on an exterior wall. It is not known if there are nearby pollution sources.	Outdoor air filters are not present. Return air filters are not present. Mixed air pre-filters are not present. Mixed air main filters are somewhat dirty and on the border of needing replacement (scoring 4 out of 5) and fit well. Mixed air main filters are installed correctly. Drain pans are plugged. Drain pan condition is good.
Filter Type - Mixed - Pre-filter: None - Main filter: Pleated, MERV 11	Outdoor air intake is in good condition.	Heating coils are clean. Heat wheels are not present. Exterior ducting is visible. Exterior ducting insulation is not present. Interior ducting is not visible. Interior ducting insulation is in an unknown condition. Interior ducting is of unknown cleanliness. Air handling room is free of trash/chemicals. Outside damper is inaccessible, and its condition is not known. Return damper is inaccessible, and its condition is not known. The general condition of the unit is poor.

Unit Designation:	AHU_04	
Location of Unit:	Mechanical room 1301 (Tunnel under 1301)	
Areas Served:	Northwest Classrooms See attached map	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type - Supply System - Constant Volume - Heating - Hot Water - Cooling - None - Energy Recovery Unit (ERU) - None	Outdoor air intake is inaccessible Outdoor air intake is located on an exterior wall. It is not known if there are nearby pollution sources.	Outdoor air filters are not present. Return air filters are not present. Mixed air pre-filters are not present. Mixed air main filters are somewhat dirty and on the border of needing replacement (scoring 4 out of 5) and fit well. Mixed air main filters are installed correctly. Drain pans are not applicable or not present. Drain pan condition is not known.
Filter Type - Mixed - Pre-filter: None - Main filter: Pleated, MERV 11	Outdoor air intake is in good condition.	Heating coils are clean. Heat wheels are not present. Exterior ducting is visible. Exterior ducting insulation is not present. Interior ducting is not visible. Interior ducting insulation is in an unknown condition. Interior ducting is of unknown cleanliness. Air handling room is free of trash/chemicals. Outside damper is open, and its condition is poor. The seal is damaged. Return damper is open, and its condition is poor. The seal is damaged. The general condition of the unit is good.

Unit Designation:	AHU_05	
Location of Unit:	Un named Mechanical near custodial area	
Areas Served:	Room 1370-1383 Clinic See attached map	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type • Supply System - Constant Volume • Heating - Hot Water • Cooling - None • Energy Recovery Unit (ERU) - None	Outdoor air intake is inaccessible Outdoor air intake is located on an exterior wall. It is not known if there are nearby pollution sources.	Outdoor air filters are not present. Return air filters are not present. Mixed air pre-filters are not present. Mixed air main filters are somewhat dirty and on the border of needing replacement (scoring 3 out of 5) and fit well. Mixed air main filters are installed correctly. Drain pans are not applicable or not present. Drain pan condition is not known.
Filter Type - Mixed • Pre-filter: None • Main filter: Pleated, MERV 11	Outdoor air intake is in good condition.	Heating coils are clean. Heat wheels are not present. Exterior ducting is visible. Exterior ducting insulation is not present. Interior ducting is not visible. Interior ducting insulation is in an unknown condition. Interior ducting is of unknown cleanliness. Air handling room is free of trash/chemicals. Outside damper is open, and its condition is good. Return damper is inaccessible, and its condition is not known. The general condition of the unit is good.

Unit Designation:	AHU_06	
Location of Unit:	Tunnel under 1430 office	
Areas Served:	South Island See attached map	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type - Supply System - Constant Volume - Heating - Hot Water - Cooling - None - Energy Recovery Unit (ERU) - None	Outdoor air intake is inaccessible Outdoor air intake is located in an unknown location. It is not known if there are nearby pollution sources.	Outdoor air filters are not present. Return air filters are not present. Mixed air pre-filters are not present. Mixed air main filters are somewhat dirty and on the border of needing replacement (scoring 4 out of 5) and fit well. Mixed air main filters are installed correctly. Drain pans are not applicable or not present. Drain pan condition is not known.
Filter Type - Mixed - Pre-filter: None - Main filter: Pleated, MERV 11	Outdoor air intake is in good condition.	Heating coils are clean. Heat wheels are not present. Exterior ducting is visible. Exterior ducting insulation is not present. Interior ducting is not visible. Interior ducting insulation is in an unknown condition. Interior ducting is of unknown cleanliness. Air handling room is free of trash/chemicals. Outside damper is open, and its condition is good. Return damper is open, and its condition is not known. The general condition of the unit is good.

Unit Designation:	AHU_07	
Location of Unit:	Mechanical room 1458 (Tunnel under 1462)	
Areas Served:	Southwest Classrooms See attached map	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type - Supply System - Constant Volume - Heating - Hot Water - Cooling - None - Energy Recovery Unit (ERU) - None	Outdoor air intake is inaccessible Outdoor air intake is located in an unknown location. It is not known if there are nearby pollution sources.	Outdoor air filters are not present. Return air filters are not present. Mixed air pre-filters are not present. Mixed air main filters are somewhat dirty and on the border of needing replacement (scoring 4 out of 5) and fit well. Mixed air main filters are installed correctly. Drain pans are not applicable or not present. Drain pan condition is not known.
Filter Type - Mixed - Pre-filter: None - Main filter: Pleated, MERV 11	Outdoor air intake is in good condition.	Heating coils are clean. Heat wheels are not present. Exterior ducting is visible. Exterior ducting insulation is not present. Interior ducting is not visible. Interior ducting insulation is in an unknown condition. Interior ducting is of unknown cleanliness. Air handling room is free of trash/chemicals. Outside damper is inaccessible, and its condition is not known. Return damper is inaccessible, and its condition is not known. The general condition of the unit is good.

Unit Designation:	AHU_08	
Location of Unit:	Un named Mechanical near custodial area	
Areas Served:	Music and Band Room See attached map	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type • Supply System - Constant Volume • Heating - Hot Water • Cooling - None • Energy Recovery Unit (ERU) - None	Outdoor air intake is inaccessible Outdoor air intake is located on an exterior wall. It is not known if there are nearby pollution sources.	Outdoor air filters are not present. Return air filters are not present. Mixed air pre-filters are not present. Mixed air main filters are somewhat dirty and on the border of needing replacement (scoring 3 out of 5) and fit well. Mixed air main filters are installed correctly. Drain pans are not applicable or not present. Drain pan condition is not known.
Filter Type - Mixed • Pre-filter: None • Main filter: Pleated, MERV 11	Outdoor air intake is in good condition.	Heating coils are clean. Heat wheels are not present. Exterior ducting is visible. Exterior ducting insulation is not present. Interior ducting is not visible. Interior ducting insulation is in an unknown condition. Interior ducting is of unknown cleanliness. Air handling room is free of trash/chemicals. Outside damper is open, and its condition is good. Return damper is open, and its condition is poor. The seal is damaged. The general condition of the unit is good.

Unit Designation:	AHU_09	
Location of Unit:	Tunnel under 1430 Office	
Areas Served:	Library See attached map	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type - Supply System - Constant Volume - Heating - Hot Water - Cooling - None - Energy Recovery Unit (ERU) - None	Outdoor air intake is inaccessible Outdoor air intake is located in an unknown location. It is not known if there are nearby pollution sources.	Outdoor air filters are not present. Return air filters are not present. Mixed air pre-filters are not present. Mixed air main filters are somewhat dirty and on the border of needing replacement (scoring 3 out of 5) and fit well. Mixed air main filters are installed correctly. Drain pans are not applicable or not present. Drain pan condition is not known.
Filter Type - Mixed - Pre-filter: None - Main filter: Pleated, MERV 11	Outdoor air intake is in good condition.	Heating coils are clean. Heat wheels are not present. Exterior ducting is visible. Exterior ducting insulation is not present. Interior ducting is not visible. Interior ducting insulation is in an unknown condition. Interior ducting is of unknown cleanliness. Air handling room is free of trash/chemicals. Outside damper is open, and its condition is good. Return damper is open, and its condition is good. The general condition of the unit is good.

Unit Designation:	AHU_10	
Location of Unit:	Mechanical room 1199E/M7	
Areas Served:	Cafeteria See attached map	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type - Supply System - Constant Volume - Heating - Hot Water - Cooling - None - Energy Recovery Unit (ERU) - None	Outdoor air intake is inaccessible Outdoor air intake is located on an exterior wall. It is not known if there are nearby pollution sources.	Outdoor air filters are not present. Return air filters are not present. Mixed air pre-filters are not present. Mixed air main filters are somewhat dirty and on the border of needing replacement (scoring 3 out of 5) and fit well. Mixed air main filters are installed correctly. Drain pans are not applicable or not present. Drain pan condition is not known.
Filter Type - Mixed - Pre-filter: None - Main filter: Pleated, MERV 11	Outdoor air intake is in good condition.	Heating coils are dirty. Heat wheels are not present. Exterior ducting is visible. Exterior ducting insulation is not present. Interior ducting is not visible. Interior ducting insulation is in an unknown condition. Interior ducting is of unknown cleanliness. Air handling room is free of trash/chemicals. Outside damper is inaccessible, and its condition is not known. Return damper is open, and its condition is good. The general condition of the unit is good.

Unit Designation:	AHU_11	
Location of Unit:	Mechanical room 1199E	
Areas Served:	Old Gym See attached map	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type - Supply System - Constant Volume - Heating - Hot Water - Cooling - None - Energy Recovery Unit (ERU) - None	Outdoor air intake is inaccessible Outdoor air intake is located on an exterior wall. It is not known if there are nearby pollution sources.	Outdoor air filters are not present. Return air filters are not present. Mixed air pre-filters are not present. Mixed air main filters are somewhat dirty and on the border of needing replacement (scoring 3 out of 5) and fit well. Mixed air main filters are installed correctly. Drain pans are not applicable or not present. Drain pan condition is not known.
Filter Type - Mixed - Pre-filter: None - Main filter: Pleated, MERV 11	Outdoor air intake is in good condition.	Heating coils are clean. Heat wheels are not present. Exterior ducting is visible. Exterior ducting insulation is not present. Interior ducting is not visible. Interior ducting insulation is in an unknown condition. Interior ducting is of unknown cleanliness. Air handling room is free of trash/chemicals. Outside damper is open, and its condition is good. Return damper is open, and its condition is good. The general condition of the unit is good.

Unit Designation:	AHU_12	
Location of Unit:	Mechanical room 1199E	
Areas Served:	Pool Unit See attached map	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type - Supply System - Constant Volume - Heating - Hot Water - Cooling - None - Energy Recovery Unit (ERU) - None	Outdoor air intake is inaccessible Outdoor air intake is located on an exterior wall. It is not known if there are nearby pollution sources.	Outdoor air pre-filters are not present. Outdoor air main filters are of unknown cleanliness and fit is unknown. Outdoor air main filters are installed but it is unknown whether they are installed correctly. Return air filters are not present. Mixed air pre-filters are not present. Mixed air main filters are somewhat dirty and on the border of needing replacement (scoring 3 out of 5) and fit well. Mixed air main filters are installed correctly.
Filter Type - Outdoor - Pre-filter: None - Main filter: Inaccessible	Outdoor air intake is in good condition.	Drain pan plugged status is not known. Drain pan condition is not known. Heating coils are inaccessible. Heat wheels are not present.
Filter Type - Mixed - Pre-filter: None - Main filter: Pleated, MERV 11		Exterior ducting is visible. Exterior ducting insulation is not present. Interior ducting is not visible. Interior ducting insulation is in an unknown condition. Interior ducting is of unknown cleanliness. Air handling room is free of trash/chemicals. Outside damper is open, and its condition is good. Return damper is inaccessible, and its condition is not known. The general condition of the unit is good.

Unit Designation:	AHU_13	
Location of Unit:	Women's Locker Room	
Areas Served:	Women's Pool Locker Room See attached map	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type - Supply System - Constant Volume - Heating - Hot Water - Cooling - None - Energy Recovery Unit (ERU) - None	Outdoor air intake is inaccessible Outdoor air intake is located in an unknown location. It is not known if there are nearby pollution sources.	Outdoor air filters are not present. Return air filters are not present. Mixed air pre-filters are not present. Mixed air main filters are clean and not in need of replacement (scoring 2 out of 5) and fit well. Mixed air main filters are installed correctly. Drain pan plugged status is not known. Drain pan condition is not known.
Filter Type - Mixed - Pre-filter: None - Main filter: Pleated, MERV 11	Condition of the outdoor air intake is not known.	Heating coils are clean. Heat wheels are not present. Exterior ducting is not visible. Exterior ducting insulation is in an unknown condition. Interior ducting is not visible. Interior ducting insulation is in an unknown condition. Interior ducting is of unknown cleanliness. Air handling room is inaccessible. Outside damper is inaccessible, and its condition is not known. Return damper is inaccessible, and its condition is not known.

Unit Designation:	AHU_15	
Location of Unit:	Men's locker Room	
Areas Served:	Women's Pool Locker Room See attached map	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type - Supply System - Constant Volume - Heating - Hot Water - Cooling - None - Energy Recovery Unit (ERU) - None	Outdoor air intake is inaccessible Outdoor air intake is located in an unknown location. It is not known if there are nearby pollution sources.	Outdoor air filters are not present. Return air filters are not present. Mixed air pre-filters are not present. Mixed air main filters are clean and not in need of replacement (scoring 2 out of 5) and fit well. Mixed air main filters are installed correctly. Drain pan plugged status is not known. Drain pan condition is not known.
Filter Type - Mixed - Pre-filter: None - Main filter: Pleated, MERV 11	Condition of the outdoor air intake is not known.	Heating coils are clean. Heat wheels are not present. Exterior ducting is not visible. Exterior ducting insulation is in an unknown condition. Interior ducting is not visible. Interior ducting insulation is in an unknown condition. Interior ducting is of unknown cleanliness. Air handling room is inaccessible. Outside damper is inaccessible, and its condition is not known. Return damper is inaccessible, and its condition is not known. The general condition of the unit is good.

Unit Designation:	AHU_16	
Location of Unit:	Mechanical room 1118D (Inside Varsity Locker Room)	
Areas Served:	Men's Varsity Locker Room See attached map	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type - Supply System - Constant Volume - Heating - Hot Water - Cooling - None - Energy Recovery Unit (ERU) - None	Outdoor air intake is inaccessible Outdoor air intake is located on the roof. It is not known if there are nearby pollution sources. Outdoor air intake is in good condition.	Outdoor air filters are not present. Return air filters are not present. Mixed air pre-filters are not present. Mixed air main filters are dirty and in need of replacement (scoring 5 out of 5) and fit well. Mixed air main filters are installed correctly. Drain pans are not applicable or not present. Drain pan condition is not known. Heating coils are clean. Heat wheels are not present. Exterior ducting is not visible. Exterior ducting insulation is in an unknown condition. Interior ducting is not visible. Interior ducting insulation is in an unknown condition. Interior ducting is of unknown cleanliness. Air handling room is free of trash/chemicals. Outside damper is open, and its condition is good. Return damper is open, and its condition is good. The general condition of the unit is good.
Filter Type - Mixed - Pre-filter: None - Main filter: Pleated, MERV 8		

Unit Designation:	AHU_17	
Location of Unit:	Mechanical room 1199E	
Areas Served:	Women's Varsity Locker Room See attached map	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type - Supply System - Constant Volume - Heating - Hot Water - Cooling - None - Energy Recovery Unit (ERU) - None	Outdoor air intake is inaccessible Outdoor air intake is located on an exterior wall. It is not known if there are nearby pollution sources.	Outdoor air filters are not present. Return air filters are not present. Mixed air pre-filters are not present. Mixed air main filters are somewhat dirty and on the border of needing replacement (scoring 3 out of 5) and fit well. Mixed air main filters are installed correctly. Drain pans are not applicable or not present. Drain pan condition is not known.
Filter Type - Mixed - Pre-filter: None - Main filter: Pleated, MERV 11	Outdoor air intake is in good condition.	Heating coils are clean. Heat wheels are not present. Exterior ducting is visible. Exterior ducting insulation is not present. Interior ducting is not visible. Interior ducting insulation is in an unknown condition. Interior ducting is of unknown cleanliness. Air handling room is free of trash/chemicals. Outside damper is inaccessible, and its condition is not known. Return damper is inaccessible, and its condition is not known. The general condition of the unit is good.

Unit Designation:	AHU_18	
Location of Unit:	Mechanical room 1123 wrestling room	
Areas Served:	Wrestling Room 1123 See attached map	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type - Supply System - Constant Volume - Heating - Hot Water - Cooling - None - Energy Recovery Unit (ERU) - None	Outdoor air intake is inaccessible Outdoor air intake is located in an unknown location. It is not known if there are nearby pollution sources.	Outdoor air filters are not present. Return air filters are not present. Mixed air pre-filters are not present. Mixed air main filters are dirty and in need of replacement (scoring 5 out of 5) and fit well. Mixed air main filters are installed correctly. Drain pans are not applicable or not present. Drain pan condition is not known.
Filter Type - Mixed - Pre-filter: None - Main filter: Pleated, MERV 11	Outdoor air intake is in good condition.	Heating coils are dirty. Heat wheels are not present. Exterior ducting is not visible. Exterior ducting insulation is in an unknown condition. Interior ducting is not visible. Interior ducting insulation is in an unknown condition. Interior ducting is of unknown cleanliness. Air handling room is free of trash/chemicals. Outside damper is open, and its condition is good. Return damper is open, and its condition is good. The general condition of the unit is good.

Unit Designation:	AHU_19	
Location of Unit:	Mechanical Room 1199C	
Areas Served:	See attached map.	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type - Supply System - Unknown - Heating - Hot Water - Cooling - None - Energy Recovery Unit (ERU) - None	Outdoor air intake is accessible Outdoor air intake is located on an exterior wall. No nearby pollution sources were found.	Outdoor air filters are not present. Return air filters are not present. Mixed air pre-filters are not present. Mixed air main filters are somewhat dirty and on the border of needing replacement (scoring 3 out of 5) and fit well. Mixed air main filters are installed correctly. Drain pans are not applicable or not present. Drain pan condition is not known.
Filter Type - Mixed - Pre-filter: None - Main filter: Pleated, MERV 11	Outdoor air intake is in good condition.	Heating coils are clean. Heat wheels are not present. Exterior ducting is visible. Exterior ducting insulation is not present. Interior ducting is not visible. Interior ducting insulation is in an unknown condition. Interior ducting is of unknown cleanliness. Air handling room is free of trash/chemicals. Outside damper is open, and its condition is good. Return damper is open, and its condition is good. The general condition of the unit is good.

Unit Designation:	AHU_20	
Location of Unit:	Mechanical room 1199C	
Areas Served:	New Class Rooms G See attached map	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type - Supply System - Constant Volume - Heating - Hot Water - Cooling - None - Energy Recovery Unit (ERU) - None	Outdoor air intake is inaccessible Outdoor air intake is located on an exterior wall. It is not known if there are nearby pollution sources.	Outdoor air filters are not present. Return air filters are not present. Mixed air pre-filters are not present. Mixed air main filters are somewhat dirty and on the border of needing replacement (scoring 4 out of 5) and fit well. Mixed air main filters are installed correctly. Drain pans are not applicable or not present. Drain pan condition is not known.
Filter Type - Mixed - Pre-filter: None - Main filter: Pleated, MERV 11	Outdoor air intake is in good condition.	Heating coils are clean. Heat wheels are not present. Exterior ducting is not visible. Exterior ducting insulation is in an unknown condition. Interior ducting is not visible. Interior ducting insulation is in an unknown condition. Interior ducting is of unknown cleanliness. Air handling room is free of trash/chemicals. Outside damper is open, and its condition is good. Return damper is open, and its condition is good. The general condition of the unit is good.

Unit Designation:	AHU_21	
Location of Unit:	Mechanical room 1199C	
Areas Served:	New NE Hallway See attached map	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type - Supply System - Constant Volume - Heating - Hot Water - Cooling - None - Energy Recovery Unit (ERU) - None	Outdoor air intake is accessible Outdoor air intake is located on an exterior wall. No nearby pollution sources were found.	Outdoor air filters are not present. Return air filters are not present. Mixed air pre-filters are clean and not in need of replacement (scoring 2 out of 5) and fit well. Mixed air pre-filters are installed correctly. Mixed air main filters are somewhat dirty and on the border of needing replacement (scoring 3 out of 5) and fit well. Mixed air main filters are installed correctly. Drain pans are not applicable or not present. Drain pan condition is not known. Heating coils are clean.
Filter Type - Mixed - Pre-filter: Pleated, MERV 8 - Main filter: Pleated, MERV 11	Outdoor air intake is in good condition.	Heat wheels are not present. Exterior ducting is not visible. Exterior ducting insulation is in an unknown condition. Interior ducting is not visible. Interior ducting insulation is in an unknown condition. Interior ducting is of unknown cleanliness. Air handling room is free of trash/chemicals. Outside damper is open, and its condition is good. Return damper is open, and its condition is good. The general condition of the unit is good.

Unit Designation:	AHU_22	
Location of Unit:	Mechanical room 1199C	
Areas Served:	New Cafe Entrance See attached map	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type - Supply System - Constant Volume - Heating - Hot Water - Cooling - None - Energy Recovery Unit (ERU) - None	Outdoor air intake is accessible Outdoor air intake is located on an exterior wall. No nearby pollution sources were found.	Outdoor air filters are not present. Return air filters are not present. Mixed air pre-filters are not present. Mixed air main filters are somewhat dirty and on the border of needing replacement (scoring 3 out of 5) and fit well. Mixed air main filters are installed correctly. Drain pans are not applicable or not present. Drain pan condition is not known.
Filter Type - Mixed - Pre-filter: None - Main filter: Pleated, MERV 11	Outdoor air intake is in good condition.	Heating coils are dirty. Heat wheels are not present. Exterior ducting is not visible. Exterior ducting insulation is in an unknown condition. Interior ducting is not visible. Interior ducting insulation is in an unknown condition. Interior ducting is of unknown cleanliness. Air handling room is free of trash/chemicals. Outside damper is closed, and its condition is good. Return damper is open, and its condition is good. The general condition of the unit is good.

Unit Designation:	AHU_23	
Location of Unit:	Mechanical room 1353B	
Areas Served:	Atrium/SE Commons See attached map	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type - Supply System - Constant Volume - Heating - Hot Water - Cooling - None - Energy Recovery Unit (ERU) - None	Outdoor air intake is inaccessible Outdoor air intake is located on the roof. It is not known if there are nearby pollution sources. Outdoor air intake is in good condition.	Outdoor air filters are not present. Return air filters are not present. Mixed air pre-filters are not present. Mixed air main filters are somewhat dirty and on the border of needing replacement (scoring 3 out of 5) and fit well. Mixed air main filters are installed correctly. Drain pans are not plugged. Drain pan condition is poor. Heating coils are dirty. Heat wheels are not present. Exterior ducting is visible. Exterior ducting insulation is not present. Interior ducting is not visible. Interior ducting insulation is in an unknown condition. Interior ducting is of unknown cleanliness. Air handling room is free of trash/chemicals. Outside damper is open, and its condition is good. Return damper is open, and its condition is good. The general condition of the unit is good.
Filter Type - Mixed - Pre-filter: None - Main filter: Pleated, MERV 11		

Unit Designation:	ERU_02 (100% OA)	
Location of Unit:	Mechanical room roof	
Areas Served:	Science Rooms See attached map	
System Enhancements:	Ultraviolet Light (UVC)	
Supply System	Outdoor Air	Cleanliness and Observations
Type - Supply System - Constant Volume - Heating - Hot Water - Cooling - None - Energy Recovery Unit (ERU) - Wheel	Outdoor air intake is accessible Outdoor air intake is located on the roof. No nearby pollution sources were found.	Outdoor air filters are dirty and in need of replacement (scoring 5 out of 5) and fit well. Outdoor air filters are installed correctly. Return air filters are not present. Drain pans are not applicable or not present. Drain pan condition is not known.
Filter Type - Outdoor - Pre-filter: Pleated, MERV 11 - Main filter: Pleated, MERV 11	Outdoor air intake is in good condition.	Heating coils are clean. Heat wheels are clean. Exterior ducting is not visible. Exterior ducting insulation is in an unknown condition. Interior ducting is not visible. Interior ducting insulation is in an unknown condition. Interior ducting is of unknown cleanliness. Air handling room is free of trash/chemicals. Outside damper is open, and its condition is good. Return damper is not present. The general condition of the unit is good.

Unit Designation:	ERU_03/1	
Location of Unit:	Mechanical room roof	
Areas Served:	Career Center See attached map	
System Enhancements:	Ultraviolet Light (UVC)	
Supply System	Outdoor Air	Cleanliness and Observations
Type - Supply System - Constant Volume - Heating - Hot Water - Cooling - Dx - Energy Recovery Unit (ERU) - Wheel	Outdoor air intake is accessible Outdoor air intake is located on the roof. No nearby pollution sources were found.	Outdoor air pre-filters are not present. Outdoor air main filters are dirty and in need of replacement (scoring 5 out of 5) and fit well. Outdoor air main filters are installed correctly. Return air pre-filters are not present. Return air main filters are dirty and in need of replacement (scoring 5 out of 5) and fit well. Return air main filters are installed correctly. Mixed air pre-filters are not present. Mixed air main filters are dirty and in need of replacement (scoring 5 out of 5) and fit well. Mixed air main filters are installed correctly.
Filter Type - Outdoor - Pre-filter: None - Main filter: Pleated, MERV 11	Outdoor air intake is in good condition.	Drain pan plugged status is not known. Drain pan condition is not known. Heating coils are inaccessible and cooling coils are inaccessible. Heat wheels are clean.
Filter Type - Return - Pre-filter: None - Main filter: Pleated, MERV 11		Exterior ducting is not visible. Exterior ducting insulation is not present. Interior ducting is not visible. Interior ducting insulation is in an unknown condition. Interior ducting is of unknown cleanliness.
Filter Type - Mixed - Pre-filter: None - Main filter: Pleated, N/A		Air handling room is free of trash/chemicals. Outside damper is open, and its condition is good. Return damper is closed, and its condition is good. The general condition of the unit is good.

Unit Designation:	ERU 3	
Location of Unit:	Roof	
Areas Served:	See attached map.	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type - Supply System - Unknown - Heating - Hot Water - Cooling - Dx - Energy Recovery Unit (ERU) - None	Outdoor air intake is accessible Outdoor air intake is located on the roof. No nearby pollution sources were found.	Outdoor air pre-filters are not present. Outdoor air main filters are somewhat dirty and on the border of needing replacement (scoring 3 out of 5) and fit well. Outdoor air main filters are installed correctly. Return air filters are not present. Drain pans are not plugged. Drain pan condition is good. Heating coils are clean and cooling coils are clean. Heat wheels are not present.
Filter Type - Outdoor - Pre-filter: None - Main filter: Pleated, MERV 11	Outdoor air intake is in good condition.	Exterior ducting is not visible. Exterior ducting insulation is in an unknown condition. Interior ducting is not visible. Interior ducting insulation is in an unknown condition. Interior ducting is of unknown cleanliness. Air handling room is free of trash/chemicals. Outside damper is open, and its condition is good. Return damper is unknown, and its condition is not known. The general condition of the unit is good.

Unit Designation:	ERU 4 NEXT TO MAU 1	
Location of Unit:	Roof	
Areas Served:	See attached map.	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type - Supply System - Unknown - Heating - Hot Water - Cooling - Dx - Energy Recovery Unit (ERU) - None	Outdoor air intake is accessible Outdoor air intake is located on the roof. No nearby pollution sources were found.	Outdoor air pre-filters are somewhat dirty and on the border of needing replacement (scoring 4 out of 5) and fit well. Outdoor air pre-filters are installed correctly. Outdoor air main filters are somewhat dirty and on the border of needing replacement (scoring 3 out of 5) and fit well. Outdoor air main filters are installed correctly. Return air filters are not present. Drain pan plugged status is not known. Drain pan condition is not known. Heating coils are inaccessible and cooling coils are inaccessible.
Filter Type - Outdoor - Pre-filter: Pleated, N/A - Main filter: Pleated, MERV 11	Outdoor air intake is in good condition.	Heat wheels are not present. Exterior ducting is not visible. Exterior ducting insulation is in an unknown condition. Interior ducting is not visible. Interior ducting insulation is in an unknown condition. Interior ducting is of unknown cleanliness. Air handling room is free of trash/chemicals. Outside damper is open, and its condition is good. Return damper is not present. The general condition of the unit is good.

Unit Designation:	MAU_01	
Location of Unit:	Mechanical room roof	
Areas Served:	See attached map	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type - Supply System - Constant Volume - Heating - Hot Water - Cooling - Dx - Energy Recovery Unit (ERU) - None	Outdoor air intake is accessible Outdoor air intake is located on the roof. No nearby pollution sources were found.	Outdoor air pre-filters are not present. Outdoor air main filters are clean and not in need of replacement (scoring 2 out of 5) and fit well. Outdoor air main filters are installed correctly. Return air filters are not present. Drain pans are not plugged. Drain pan condition is good. Heating coils are clean and cooling coils are clean.
Filter Type - Outdoor - Pre-filter: None - Main filter: Pleated, MERV 11	Outdoor air intake is in good condition.	Heat wheels are not present. Exterior ducting is visible. Exterior ducting insulation is not present. Interior ducting is not visible. Interior ducting insulation is in an unknown condition. Interior ducting is of unknown cleanliness. Air handling room is free of trash/chemicals. Outside damper is open, and its condition is good. Return damper is not present. The general condition of the unit is good.

Unit Designation:	MAU_02	
Location of Unit:	Roof near East Side Learning Hub	
Areas Served:	West Auto Shop See attached map	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type - Supply System - Constant Volume - Heating - Gas Fired - Cooling - None - Energy Recovery Unit (ERU) - None	Outdoor air intake is accessible Outdoor air intake is located on the roof. No nearby pollution sources were found.	Outdoor air filters are not present. Return air filters are not present. Mixed air pre-filters are not present. Mixed air main filters are clean and not in need of replacement (scoring 2 out of 5) and fit well. Mixed air main filters are installed correctly. Drain pan plugged status is not known. Drain pan condition is not known.
Filter Type - Mixed - Pre-filter: None - Main filter: Pleated, MERV 11	Outdoor air intake is in good condition.	Heating coil cleanliness is not known. Heat wheels are not present. Exterior ducting is not visible. Exterior ducting insulation is in an unknown condition. Interior ducting is not visible. Interior ducting insulation is in an unknown condition. Interior ducting is of unknown cleanliness. Air handling room is free of trash/chemicals. Outside damper is closed, and its condition is good. Return damper is open, and its condition is good. The general condition of the unit is good.

Unit Designation:	MAU_03	
Location of Unit:	Roof near East Side Learning Hub	
Areas Served:	East Auto Shop See attached map	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type - Supply System - Constant Volume - Heating - Gas Fired - Cooling - None - Energy Recovery Unit (ERU) - None	Outdoor air intake is accessible	Outdoor air pre-filters are not present. Outdoor air main filters are not present.
	Outdoor air intake is located on the roof.	Return air filters are not present.
	No nearby pollution sources were found.	Mixed air pre-filters are not present. Mixed air main filters are somewhat dirty and on the border of needing replacement (scoring 3 out of 5) and fit well. Mixed air main filters are installed correctly.
Filter Type - Mixed		Drain pan plugged status is not known. Drain pan condition is not known.
- Pre-filter: None - Main filter: Pleated, MERV 11	Outdoor air intake is in good condition.	Heating coil cleanliness is not known.
		Heat wheels are not present.
		Exterior ducting is not visible. Exterior ducting insulation is in an unknown condition.
		Interior ducting is not visible. Interior ducting insulation is in an unknown condition. Interior ducting is of unknown cleanliness.
		Air handling room is free of trash/chemicals.
		Outside damper is closed, and its condition is good.
		Return damper is open, and its condition is good.
		The general condition of the unit is good.

Unit Designation:	MAU_04 (100% OA)	
Location of Unit:	Roof near East Side Learning Hub	
Areas Served:	Wood Shop See attached map	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type - Supply System - Constant Volume - Heating - Hot Water - Cooling - None - Energy Recovery Unit (ERU) - None	Outdoor air intake is accessible Outdoor air intake is located on the roof. No nearby pollution sources were found.	Outdoor air pre-filters are not present. Outdoor air main filters are clean and not in need of replacement (scoring 2 out of 5) and fit well. Outdoor air main filters are installed correctly. Return air filters are not present. Drain pan plugged status is not known. Drain pan condition is not known. Heating coils are clean.
Filter Type - Outdoor - Pre-filter: None - Main filter: Pleated, MERV 11	Outdoor air intake is in good condition.	Heat wheels are not present. Exterior ducting is not visible. Exterior ducting insulation is in good condition. Interior ducting is not visible. Interior ducting insulation is in an unknown condition. Interior ducting is of unknown cleanliness. Air handling room is free of trash/chemicals. Outside damper is open, and its condition is good. Return damper is not present. The general condition of the unit is good.

Unit Designation:	MAU 5	
Location of Unit:	Roof near mau 1 and 2	
Areas Served:	See attached map.	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type - Supply System - Unknown - Heating - None - Cooling - None - Energy Recovery Unit (ERU) - None	Outdoor air intake is accessible Outdoor air intake is located on the roof. No nearby pollution sources were found.	Outdoor air filters are not present. Return air filters are not present. Mixed air pre-filters are not present. Mixed air main filters are somewhat dirty and on the border of needing replacement (scoring 3 out of 5) and fit well. Mixed air main filters are installed correctly. Drain pan plugged status is not known. Drain pan condition is not known. Heat wheels are not present. Exterior ducting is not visible. Exterior ducting insulation is in good condition. Interior ducting is not visible. Interior ducting insulation is in an unknown condition. Interior ducting is of unknown cleanliness. Air handling room is free of trash/chemicals. Outside damper is inaccessible, and its condition is not known. Return damper is open, and its condition is good. The general condition of the unit is good.
Filter Type - Mixed - Pre-filter: None - Main filter: Pleated, MERV 11	Outdoor air intake is in good condition.	

Unit Designation:	RTU_01	
Location of Unit:	Roof exterior building	
Areas Served:	Rooms 1413-1419, 1440-1448 See attached map	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type - Supply System - Constant Volume - Heating - Hot Water - Cooling - None - Energy Recovery Unit (ERU) - None	Outdoor air intake is accessible Outdoor air intake is located on the unit. Outdoor air intake has a nearby pollution source: Dust buildup on outside air intake grille.	Outdoor air filters are not present. Return air filters are not present. Mixed air pre-filters are not present. Mixed air main filters are dirty and in need of replacement (scoring 5 out of 5) and fit well. Mixed air main filters are installed correctly. Drain pans are not applicable or not present. Drain pan condition is not known.
Filter Type - Mixed - Pre-filter: None - Main filter: Pleated, MERV 11	Outdoor air intake is in good condition.	Heating coils are clean. Heat wheels are not present. Exterior ducting is not visible. Exterior ducting insulation is in an unknown condition. Interior ducting is not visible. Interior ducting insulation is in an unknown condition. Interior ducting is of unknown cleanliness. Air handling room is free of trash/chemicals. Outside damper is open, and its condition is good. Return damper is open, and its condition is poor. The seal is damaged. The general condition of the unit is good.

Unit Designation:	RTU_02	
Location of Unit:	Roof	
Areas Served:	East Courtyard Classrooms See attached map	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type - Supply System - Constant Volume - Heating - Hot Water - Cooling - None - Energy Recovery Unit (ERU) - None	Outdoor air intake is accessible	Outdoor air filters are not present. Return air filters are not present.
	Outdoor air intake is located on the unit.	Mixed air pre-filters are not present. Mixed air main filters are somewhat dirty and on the border of needing replacement (scoring 3 out of 5) and fit well. Mixed air main filters are installed correctly.
	No nearby pollution sources were found.	Drain pans are not applicable or not present. Drain pan condition is not known.
Filter Type - Mixed - Pre-filter: None - Main filter: Pleated, MERV 11	Outdoor air intake is in good condition.	Heating coils are clean. Heat wheels are not present. Exterior ducting is not visible. Exterior ducting insulation is in an unknown condition. Interior ducting is not visible. Interior ducting insulation is in an unknown condition. Interior ducting is of unknown cleanliness. Air handling room is free of trash/chemicals. Outside damper is open, and its condition is good. Return damper is open, and its condition is good. The general condition of the unit is good.

Unit Designation:	RTU_03	
Location of Unit:	Roof	
Areas Served:	West Courtyard Classrooms See attached map	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type - Supply System - Constant Volume - Heating - Hot Water - Cooling - None - Energy Recovery Unit (ERU) - None	Outdoor air intake is accessible Outdoor air intake is located on the roof. No nearby pollution sources were found.	Outdoor air filters are not present. Return air filters are not present. Mixed air pre-filters are not present. Mixed air main filters are somewhat dirty and on the border of needing replacement (scoring 3 out of 5) and fit well. Mixed air main filters are installed correctly. Drain pans are not applicable or not present. Drain pan condition is good.
Filter Type - Mixed - Pre-filter: None - Main filter: Pleated, MERV 11	Outdoor air intake is in good condition.	Heating coils are clean. Heat wheels are not present. Exterior ducting is not visible. Exterior ducting insulation is in an unknown condition. Interior ducting is not visible. Interior ducting insulation is in an unknown condition. Interior ducting is of unknown cleanliness. Air handling room is free of trash/chemicals. Outside damper is open, and its condition is good. Return damper is open, and its condition is good. The general condition of the unit is good.

Unit Designation:	RTU-4 (ERU-4_	
Location of Unit:	Roof near ERU 1	
Areas Served:	See attached map.	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type - Supply System - Unknown - Heating - Hot Water - Cooling - None - Energy Recovery Unit (ERU) - None	Outdoor air intake is accessible Outdoor air intake is located in an unknown location. No nearby pollution sources were found.	Outdoor air filters are not present. Return air filters are not present. Mixed air pre-filters are not present. Mixed air main filters are clean and not in need of replacement (scoring 1 out of 5) and fit well. Mixed air main filters are installed correctly. Drain pans are not plugged. Drain pan condition is poor.
Filter Type - Mixed - Pre-filter: None - Main filter: Pleated, MERV 11	Outdoor air intake is in good condition.	Heating coils are clean. Heat wheels are not present. Exterior ducting is not visible. Exterior ducting insulation is in an unknown condition. Interior ducting is not visible. Interior ducting insulation is in an unknown condition. Interior ducting is of unknown cleanliness. Air handling room is free of trash/chemicals. Outside damper is open, and its condition is good. Return damper is open, and its condition is good. The general condition of the unit is good.

Unit Designation:	AHU_14	
Location of Unit:	Unlabeled AHU lower roof near baseball field	
Areas Served:	See attached map.	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type - Supply System - Unknown - Heating - Steam - Cooling - None - Energy Recovery Unit (ERU) - None	Outdoor air intake is accessible	Outdoor air filters are not present. Return air filters are not present.
Filter Type - Mixed - Pre-filter: None - Main filter: Pleated, MERV 11	Outdoor air intake is located on the roof. No nearby pollution sources were found.	Mixed air pre-filters are not present. Mixed air main filters are somewhat dirty and on the border of needing replacement (scoring 3 out of 5) and fit well. Mixed air main filters are installed correctly. Drain pans are not applicable or not present. Drain pan condition is not known.
	Outdoor air intake is in good condition.	Heating coils are inaccessible. Heat wheels are not present. Exterior ducting is not visible. Exterior ducting insulation is in an unknown condition. Interior ducting is not visible. Interior ducting insulation is in an unknown condition. Interior ducting is of unknown cleanliness. Air handling room is free of trash/chemicals. Outside damper is closed, and its condition is good. Return damper is open, and its condition is good. The general condition of the unit is good.

Unit Designation:	RTU_10	
Location of Unit:	Roof	
Areas Served:	Fitness Center Room 1120 See attached map	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type - Supply System - Constant Volume - Heating - Hot Water - Cooling - None - Energy Recovery Unit (ERU) - None	Outdoor air intake is accessible	Outdoor air filters are not present. Return air filters are not present.
	Outdoor air intake is located on the roof.	Mixed air pre-filters are not present. Mixed air main filters are somewhat dirty and on the border of needing replacement (scoring 4 out of 5) and fit well. Mixed air main filters are installed correctly.
	No nearby pollution sources were found.	Drain pan plugged status is not known. Drain pan condition is not known.
Filter Type - Mixed - Pre-filter: None - Main filter: Pleated, N/A	Outdoor air intake is in good condition.	Heating coils are inaccessible. Heat wheels are not present. Exterior ducting is not visible. Exterior ducting insulation is in an unknown condition. Interior ducting is not visible. Interior ducting insulation is in an unknown condition. Interior ducting is of unknown cleanliness. Air handling room is free of trash/chemicals. Outside damper is open, and its condition is good. Return damper is unknown, and its condition is not known. The general condition of the unit is good.

Recommendations

Dirty Coils were observed on units AHU_10, AHU_18, AHU_22 and AHU_23 during the ventilation inspection.

Recommendation: Impacted/dirty coils can result in poor ventilation air supply as well as be a source for mold and bacterial growth on the coils. Coils should be cleaned annually, or as needed, as identified in the operations and maintenance program.

The drain pan for units AHU_03, AHU_23 and RTU-4 (ERU-4_ was plugged or damaged at the time of the site inspection.

Recommendation: Damage to the drain pan should be repaired, or the drain pan should be inspected more frequently to ensure that it does not become plugged.

The general condition of units AH_005 and AHU_03 was poor.

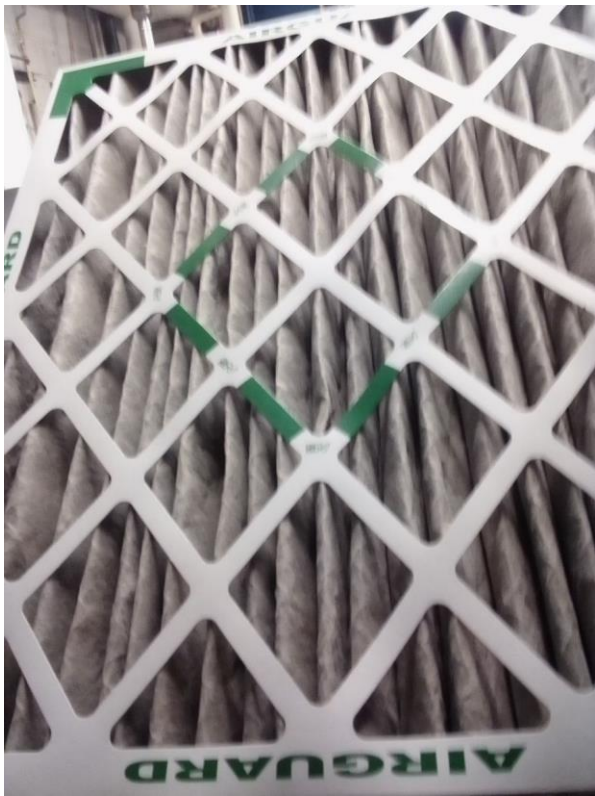
Recommendation: The units should be repaired or cleaned as needed.

Dirty or poorly fitting filters were observed in units AHU_16, AHU_18, ERU_02 (100% OA), ERU_03/1 and RTU_01 during the ventilation inspection.

Recommendation: The operations and maintenance program for filter changes should be reviewed and revised to ensure proper filter changes to optimize filtration capacity.

Appendix A

Photo Documentation



AH_004

Mixed Main Filter Cleanliness



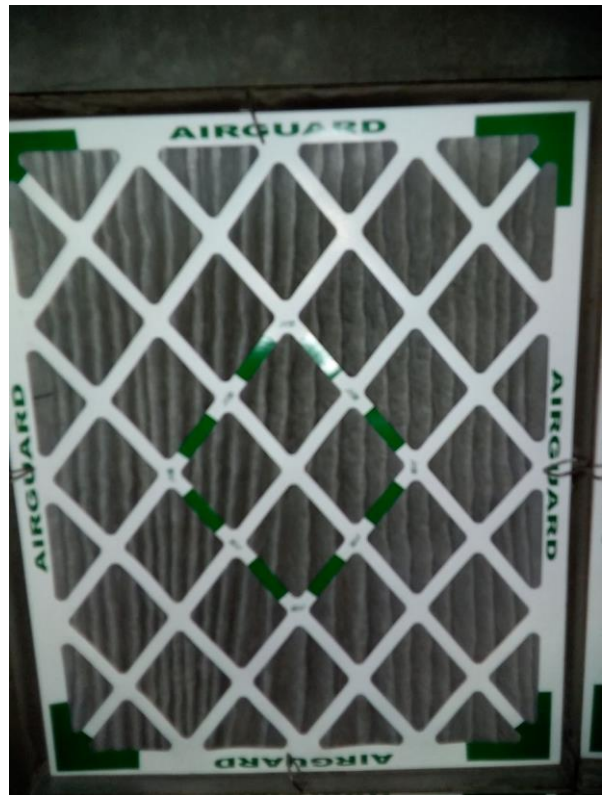
AH_005

Mixed Main Filter Cleanliness



AH_005

General Condition



AHU_01

Mixed Main Filter Cleanliness



AHU_02

Mixed Main Filter Cleanliness



AHU_03

Mixed Main Filter Cleanliness



AHU_03

Drain Pans



AHU_03

General Condition



AHU_03

General Condition



AHU_04

Mixed Main Filter Cleanliness



AHU_05

Mixed Main Filter Cleanliness



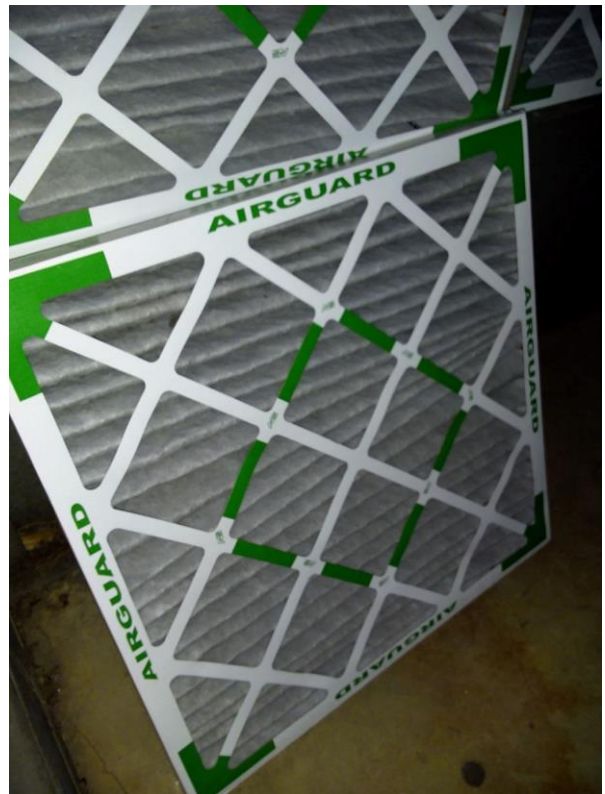
AHU_06

Mixed Main Filter Cleanliness



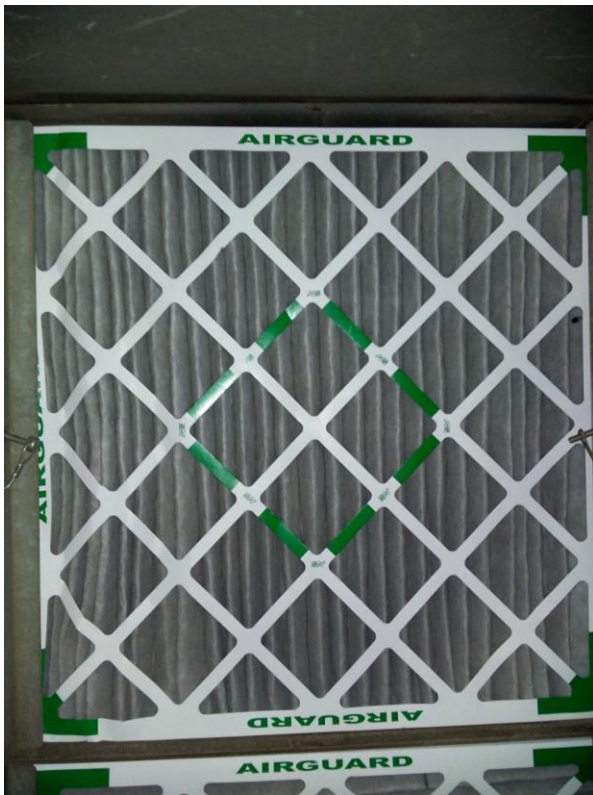
AHU_07

Mixed Main Filter Cleanliness



AHU_08

Mixed Main Filter Cleanliness



AHU_09

Mixed Main Filter Cleanliness



AHU_10

Mixed Main Filter Cleanliness



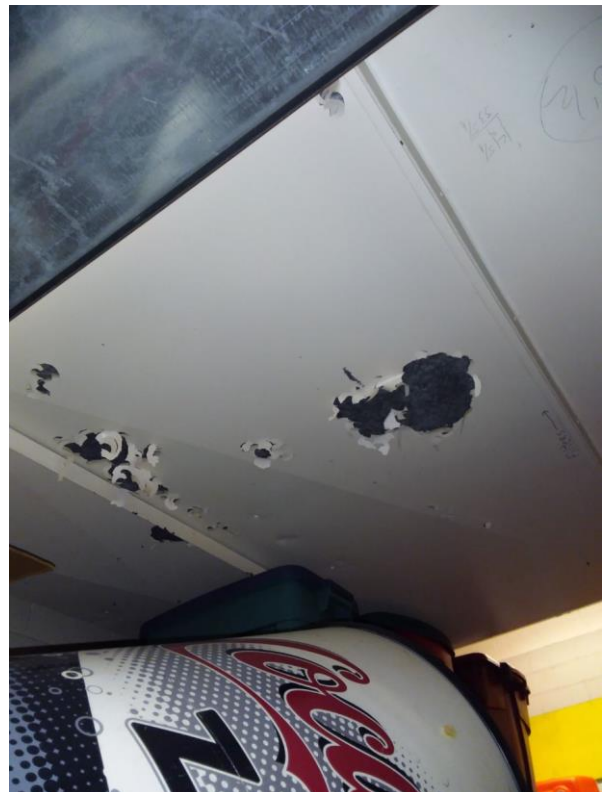
AHU_11
Heating Coils



AHU_16
Mixed Pre-Filter Cleanliness



AHU_16
Mixed Main Filter Cleanliness

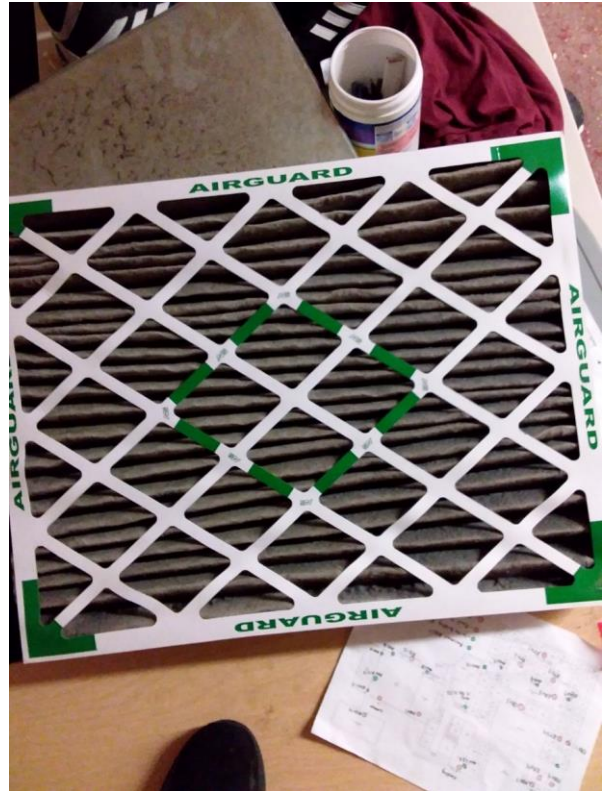


AHU_16
General Condition



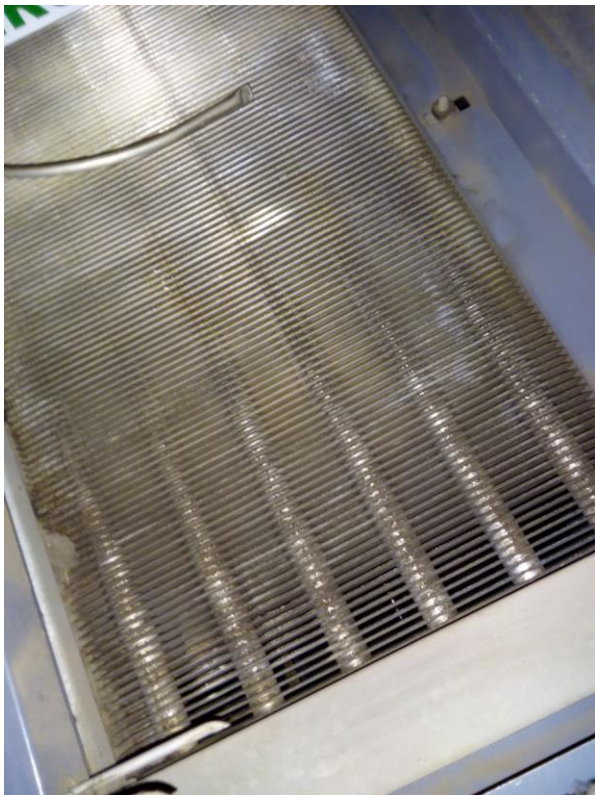
AHU_17

Mixed Main Filter Cleanliness



AHU_18

Mixed Main Filter Cleanliness



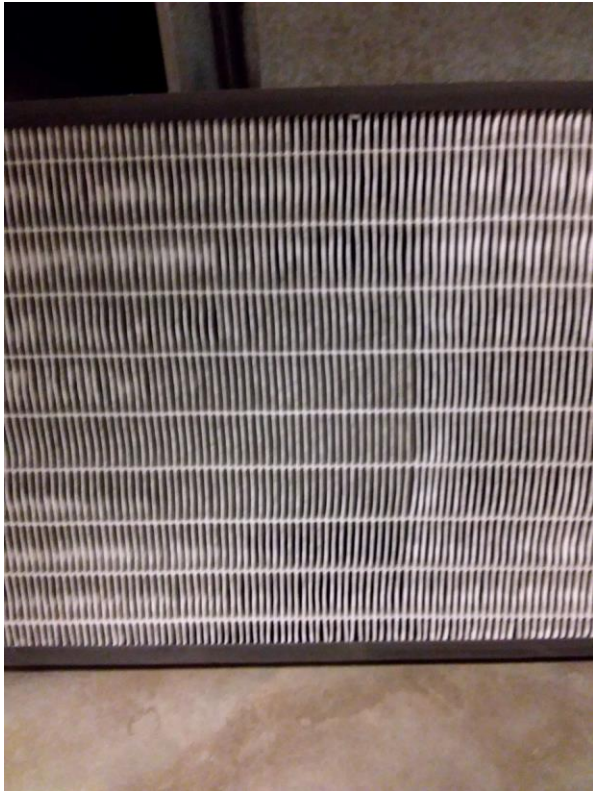
AHU_18

Heating Coils



AHU_19

Mixed Main Filter Cleanliness



AHU_20

Mixed Main Filter Cleanliness



AHU_21

Mixed Main Filter Cleanliness



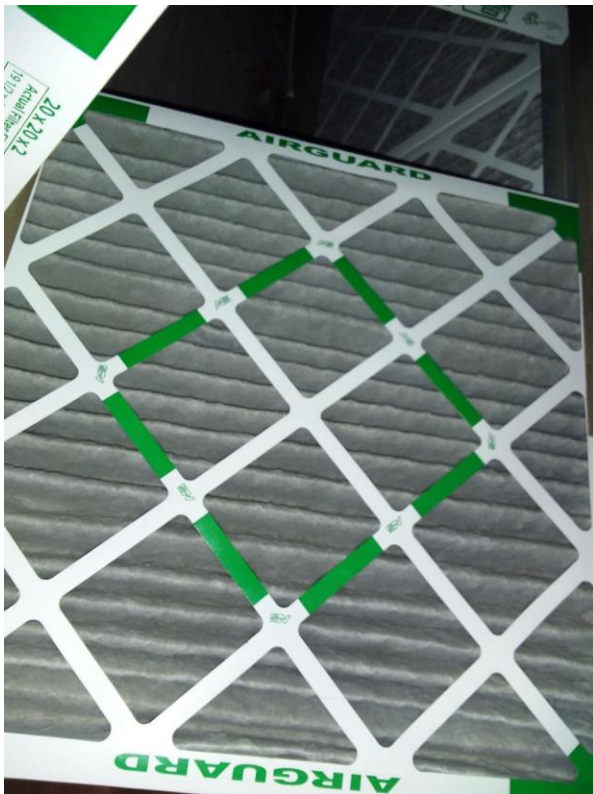
AHU_22

Mixed Main Filter Cleanliness



AHU_22

Heating Coils



AHU_23
Mixed Main Filter Cleanliness



AHU_23
Drain Pans



AHU_23
Heating Coils



ERU_02 (100% OA)
Outdoor Pre-Filter Cleanliness



ERU_02 (100% OA)
Outdoor Main Filter Cleanliness



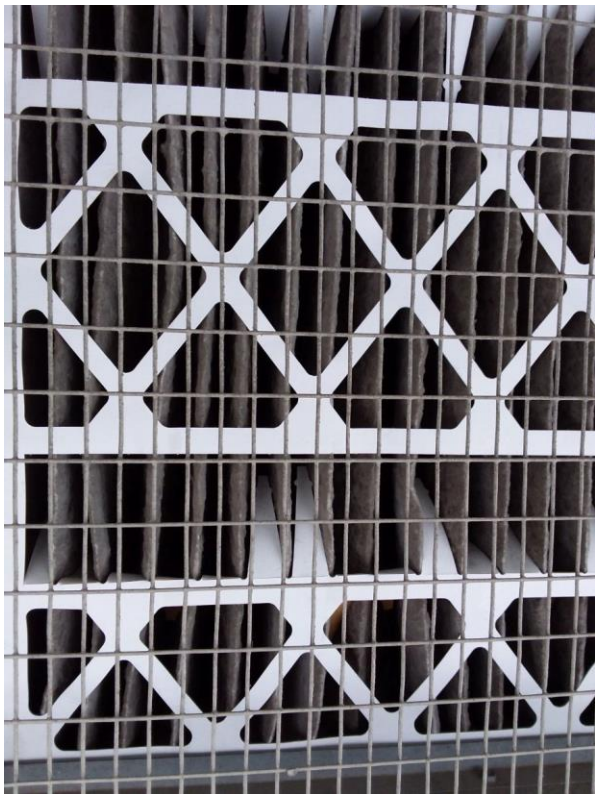
ERU_03/1
Outdoor Main Filter Cleanliness



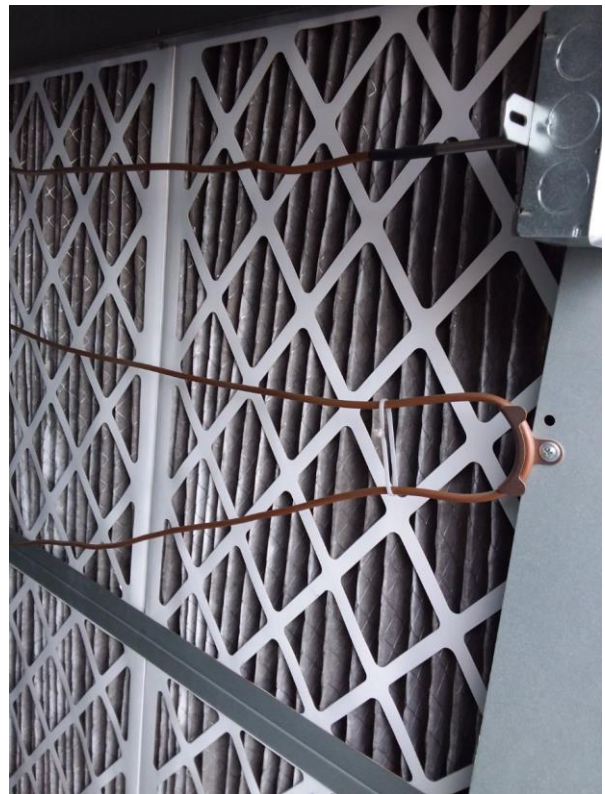
ERU_03/1
Return Main Filter Cleanliness



ERU_03/1
Mixed Main Filter Cleanliness



ERU 4 NEXT TO MAU 1
Outdoor Pre-Filter Cleanliness



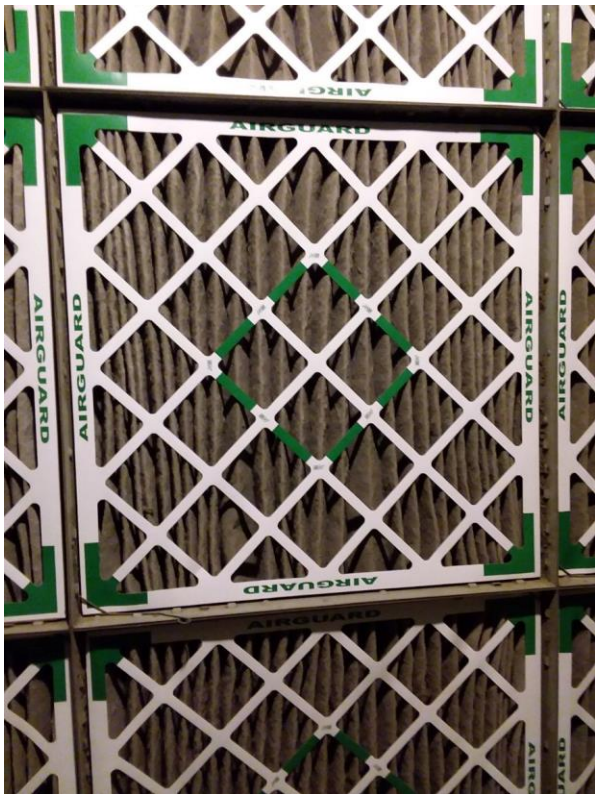
ERU 4 NEXT TO MAU 1
Outdoor Main Filter Cleanliness



MAU_03
Mixed Main Filter Cleanliness



MAU 5
Mixed Main Filter Cleanliness



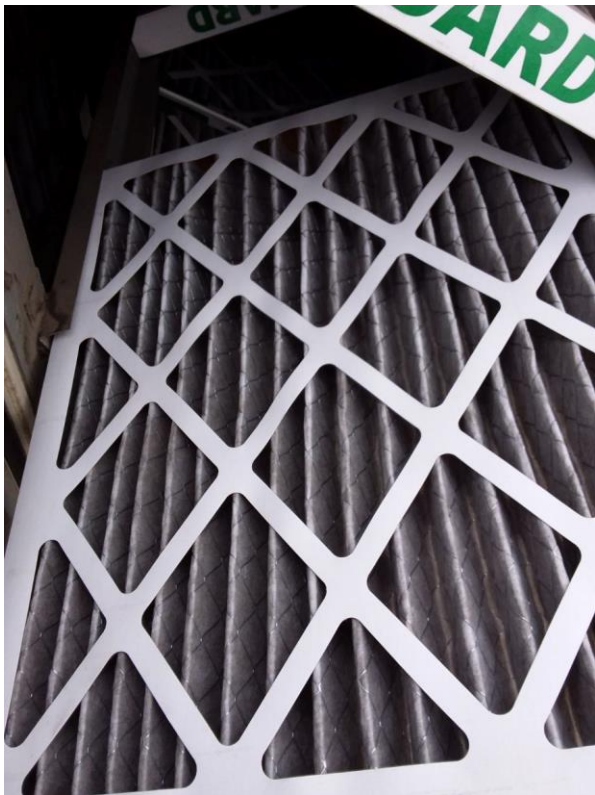
RTU_01

Mixed Main Filter Cleanliness



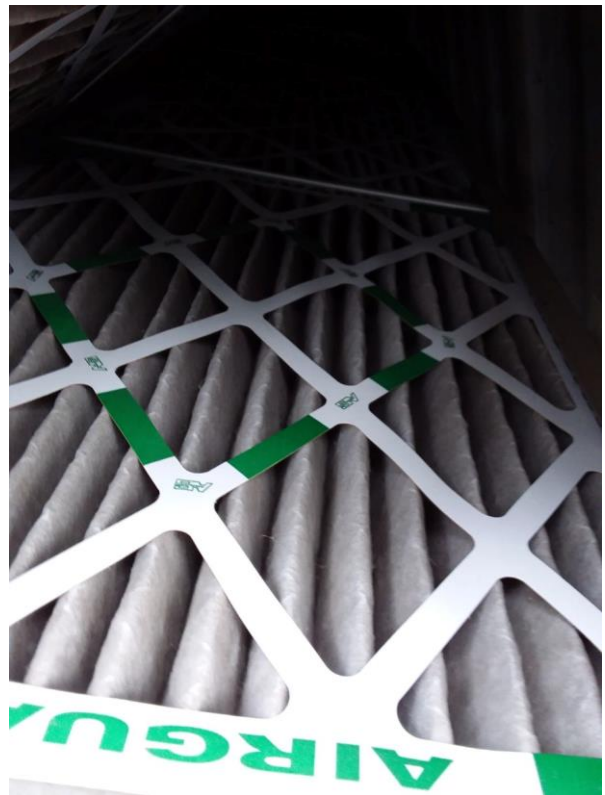
RTU_02

Mixed Pre-Filter Cleanliness



RTU_02

Mixed Main Filter Cleanliness



RTU_03

Mixed Main Filter Cleanliness



AHU_14

Mixed Main Filter Cleanliness



RTU_10

Mixed Main Filter Cleanliness