

IEA, INC.

2023 - 2024 Ventilation Assessment



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Saint Paul Public Schools Battle Creek Magnet

Assessment Date:
Monday, April 3, 2023

Project Description

IEA conducted a ventilation inspection in Battle Creek Magnet 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 Tridum and controls can not be accessed remotely.
- Schedules:

Ventilation operation:

Day:	Occupied?	Start Time:	End Time:
Monday-Friday	Yes	6:00 AM	9:00 PM
Monday-Friday	Yes	6:00 AM	3:00 PM

Typical occupancy:

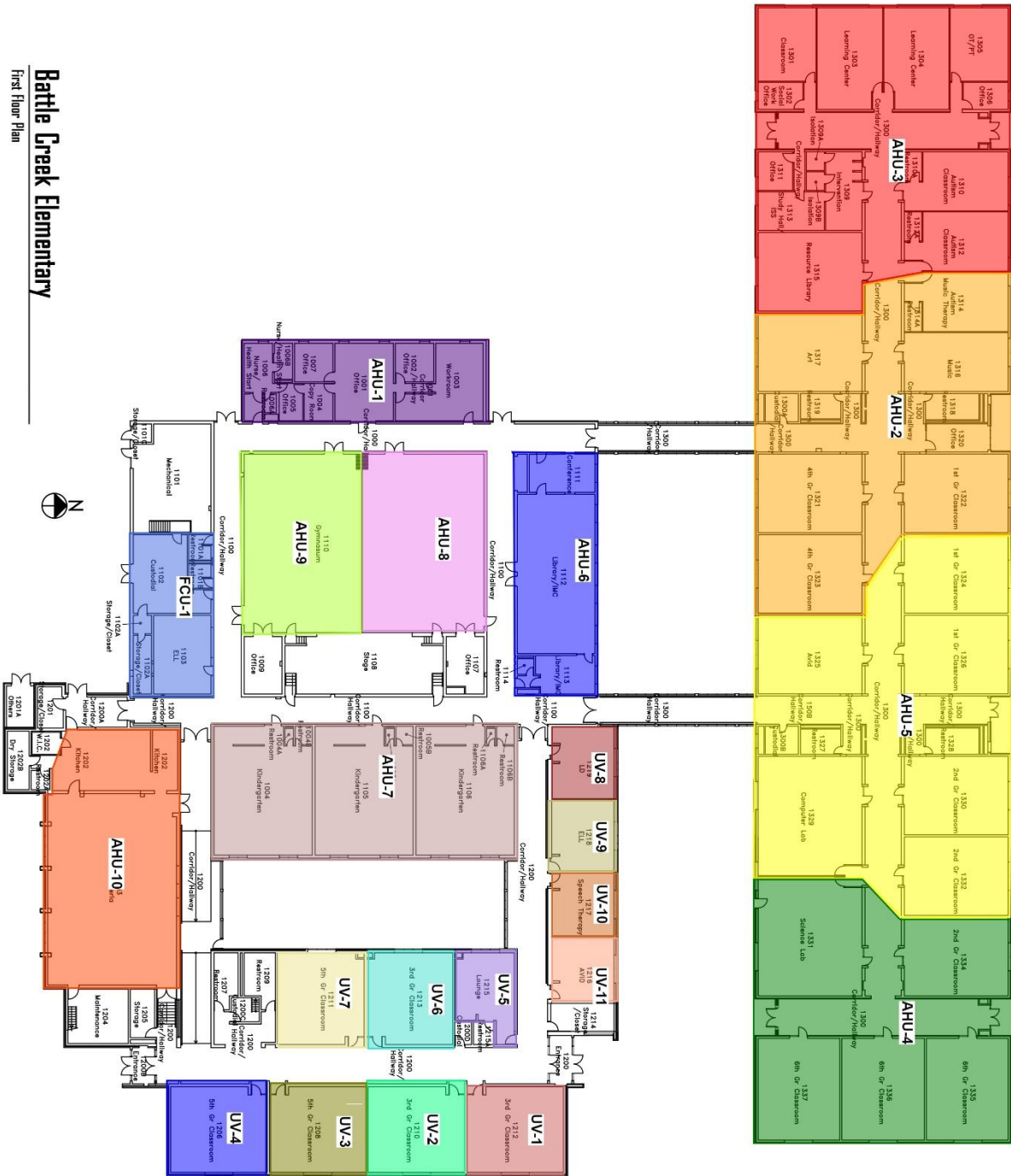
Day:	Occupied?	Start Time:	End Time:
Monday-Friday	Yes	8:00 AM	4:00 PM
Saturday	No		
Sunday	No		
Holiday	No		

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

Filter Type	MERV Rating
Pleated	MERV 11
Pleated	MERV 8

- Filters are changed quarterly.
- Energy Recovery Units are not 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.

Air Handling Unit Designations & Service Zones: 1st Floor



Battle Creek Elementary
First Floor Plan

Assessment

Ventilation System

The following information was gathered by IEA on Monday, April 3, 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:	AHU-01	
Location of Unit:	Tunnel under 1303	
Areas Served:	See attached map Office, South Bldg W Side	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • 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 open, and its condition is good. The general condition of the unit is good.

Unit Designation:	AHU-02	
Location of Unit:	Tunnel under 1300A	
Areas Served:	See attached map North Central West	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type <ul style="list-style-type: none"> • Supply System - Constant Volume • Heating - Hot Water • Cooling - None • Energy Recovery Unit (ERU) - None 	<p>Outdoor air intake is inaccessible</p> <p>Outdoor air intake is located in an unknown location.</p> <p>It is not known if there are nearby pollution sources.</p>	<p>Outdoor air filters are not present.</p> <p>Return air filters are not present.</p> <p>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.</p> <p>Drain pans are not applicable or not present. Drain pan condition is not known.</p>
Filter Type - Mixed <ul style="list-style-type: none"> • Pre-filter: None • Main filter: Pleated, MERV 11 	<p>Outdoor air intake is in good condition.</p>	<p>Heating coils are clean.</p> <p>Heat wheels are not present.</p> <p>Exterior ducting is visible. Exterior ducting insulation is not present.</p> <p>Interior ducting is not visible. Interior ducting insulation is in an unknown condition. Interior ducting is of unknown cleanliness.</p> <p>Air handling room is free of trash/chemicals.</p> <p>Outside damper is open, and its condition is good.</p> <p>Return damper is open, and its condition is good.</p> <p>The general condition of the unit is good.</p>

Unit Designation:	AHU-03	
Location of Unit:	Tunnel under 1303	
Areas Served:	See attached map NW Area (ECFE)	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type <ul style="list-style-type: none"> Supply System - Constant Volume Heating - Hot Water Cooling - None Energy Recovery Unit (ERU) - None 	<p>Outdoor air intake is accessible</p> <p>Outdoor air intake is located on an exterior wall.</p> <p>No nearby pollution sources were found.</p> <p>Outdoor air intake is in poor condition.</p>	<p>Outdoor air filters are not present.</p> <p>Return air filters are not present.</p> <p>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.</p> <p>Drain pans are not applicable or not present. Drain pan condition is not known.</p> <p>Heating coils are clean.</p> <p>Heat wheels are not present.</p> <p>Exterior ducting is visible. Exterior ducting insulation is not present.</p> <p>Interior ducting is visible. Interior ducting insulation is in good condition. Interior ducting is dirty.</p> <p>Air handling room is free of trash/chemicals.</p> <p>Outside damper is open, and its condition is poor. The seal is damaged.</p> <p>Return damper is open, and its condition is good.</p> <p>The general condition of the unit is good.</p>
Filter Type - Mixed <ul style="list-style-type: none"> Pre-filter: None Main filter: Pleated, MERV 11 		

Unit Designation:	AHU-04	
Location of Unit:	Tunnel under 1336	
Areas Served:	See attached map Northeast	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type <ul style="list-style-type: none"> • Supply System - Constant Volume • Heating - Hot Water • Cooling - None • Energy Recovery Unit (ERU) - None Filter Type - Mixed <ul style="list-style-type: none"> • Pre-filter: None • Main filter: Pleated, MERV 11 	<p>Outdoor air intake is accessible</p> <p>Outdoor air intake is located on an exterior wall.</p> <p>No nearby pollution sources were found.</p> <p>Outdoor air intake is in poor condition.</p>	<p>Outdoor air filters are not present.</p> <p>Return air filters are not present.</p> <p>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.</p> <p>Drain pans are not applicable or not present. Drain pan condition is not known.</p> <p>Heating coils are clean.</p> <p>Heat wheels are not present.</p> <p>Exterior ducting is not visible. Exterior ducting insulation is not present.</p> <p>Interior ducting is visible. Interior ducting insulation is in poor condition. Interior ducting is dirty.</p> <p>Air handling room is free of trash/chemicals.</p> <p>Outside damper is open, and its condition is poor. The seal is damaged.</p> <p>Return damper is closed, and its condition is good.</p> <p>The general condition of the unit is good.</p>

Unit Designation:	AHU-05	
Location of Unit:	Tunnel under 1300B	
Areas Served:	See attached map North Central East	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type <ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> 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 open, and its condition is good. The general condition of the unit is good.

Unit Designation:	AHU-06	
Location of Unit:	Tunnel under 1104	
Areas Served:	See attached map Rooms 1111, 1112, 1113	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type <ul style="list-style-type: none"> Supply System - Constant Volume Heating - Hot Water Cooling - None Energy Recovery Unit (ERU) - None 	<p>Outdoor air intake is inaccessible</p> <p>Outdoor air intake is located in an unknown location.</p> <p>It is not known if there are nearby pollution sources.</p>	<p>Outdoor air filters are not present.</p> <p>Return air filters are not present.</p> <p>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.</p> <p>Drain pans are not applicable or not present. Drain pan condition is not known.</p>
Filter Type - Mixed <ul style="list-style-type: none"> Pre-filter: None Main filter: Pleated, MERV 11 	<p>Outdoor air intake is in good condition.</p>	<p>Heating coils are clean.</p> <p>Heat wheels are not present.</p> <p>Exterior ducting is visible. Exterior ducting insulation is not present.</p> <p>Interior ducting is not visible. Interior ducting insulation is in an unknown condition. Interior ducting is of unknown cleanliness.</p> <p>Air handling room is free of trash/chemicals.</p> <p>Outside damper is inaccessible, and its condition is not known.</p> <p>Return damper is inaccessible, and its condition is not known.</p> <p>The general condition of the unit is good.</p>

Unit Designation:	AHU-08	
Location of Unit:	Gym Penthouse	
Areas Served:	See attached map North gym	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type <ul style="list-style-type: none"> • Supply System - Constant Volume • Heating - Hot Water • Cooling - None • Energy Recovery Unit (ERU) - None 	<p>Outdoor air intake is inaccessible</p> <p>Outdoor air intake is located on an exterior wall.</p> <p>It is not known if there are nearby pollution sources.</p>	<p>Outdoor air filters are not present.</p> <p>Return air filters are not present.</p> <p>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.</p> <p>Drain pans are not applicable or not present. Drain pan condition is not known.</p>
Filter Type - Mixed <ul style="list-style-type: none"> • Pre-filter: None • Main filter: Pleated, MERV 11 	<p>Outdoor air intake is in good condition.</p>	<p>Heating coils are clean.</p> <p>Heat wheels are not present.</p> <p>Exterior ducting is visible. Exterior ducting insulation is in good condition.</p> <p>Interior ducting is not visible. Interior ducting insulation is in an unknown condition. Interior ducting is of unknown cleanliness.</p> <p>Air handling room is free of trash/chemicals.</p> <p>Outside damper is open, and its condition is good.</p> <p>Return damper is open, and its condition is good.</p> <p>The general condition of the unit is good.</p>

Unit Designation:	AHU-09	
Location of Unit:	Gym penthouse above 1109	
Areas Served:	See attached map South Gym	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type <ul style="list-style-type: none"> • Supply System - Constant Volume • Heating - Hot Water • Cooling - None • Energy Recovery Unit (ERU) - None 	<p>Outdoor air intake is inaccessible</p> <p>Outdoor air intake is located on an exterior wall.</p> <p>It is not known if there are nearby pollution sources.</p>	<p>Outdoor air filters are not present.</p> <p>Return air filters are not present.</p> <p>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.</p> <p>Drain pans are not applicable or not present. Drain pan condition is not known.</p>
Filter Type - Mixed <ul style="list-style-type: none"> • Pre-filter: None • Main filter: Pleated, MERV 11 	<p>Outdoor air intake is in good condition.</p>	<p>Heating coils are dirty.</p> <p>Heat wheels are not present.</p> <p>Exterior ducting is visible. Exterior ducting insulation is not present.</p> <p>Interior ducting is not visible. Interior ducting insulation is in an unknown condition. Interior ducting is of unknown cleanliness.</p> <p>Air handling room is free of trash/chemicals.</p> <p>Outside damper is open, and its condition is good.</p> <p>Return damper is open, and its condition is good.</p> <p>The general condition of the unit is good.</p>

Unit Designation:	AHU-10 (100% OA)	
Location of Unit:	1204 Penthouse	
Areas Served:	See attached map Cafeteria & Kitchen	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type <ul style="list-style-type: none"> • Supply System - Constant Volume • Heating - Hot Water • Cooling - None • Energy Recovery Unit (ERU) - None 	<p>Outdoor air intake is accessible</p> <p>Outdoor air intake is located on an exterior wall.</p> <p>Outdoor air intake has a nearby pollution source: Leaves directly behind OA damper</p>	<p>Outdoor air pre-filters are not present. Outdoor air main filters are clean and not in need of replacement (scoring 1 out of 5) and fit well. Outdoor air main filters are installed correctly.</p> <p>Return air filters are not present.</p> <p>Drain pans are not plugged. Drain pan condition is poor.</p> <p>Heating coils are clean.</p>
Filter Type - Outdoor <ul style="list-style-type: none"> • Pre-filter: None • Main filter: Pleated, MERV 11 	<p>Outdoor air intake is in good condition.</p>	<p>Heat wheels are not present.</p> <p>Exterior ducting is visible. Exterior ducting insulation is not present.</p> <p>Interior ducting is not visible. Interior ducting insulation is not present. Interior ducting is of unknown cleanliness.</p> <p>Air handling room is free of trash/chemicals.</p> <p>Outside damper is open, and its condition is good.</p> <p>Return damper is not present.</p> <p>The general condition of the unit is good.</p>

Unit Designation:	AHU-11	
Location of Unit:	1204 Penthouse	
Areas Served:	See attached map Southeast Area	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type <ul style="list-style-type: none"> • Supply System - Constant Volume • Heating - Hot Water • Cooling - None • Energy Recovery Unit (ERU) - None 	<p>Outdoor air intake is inaccessible</p> <p>Outdoor air intake is located in an unknown location.</p> <p>It is not known if there are nearby pollution sources.</p>	<p>Outdoor air filters are not present.</p> <p>Return air filters are not present.</p> <p>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.</p> <p>Drain pans are not plugged. Drain pan condition is poor.</p>
Filter Type - Mixed <ul style="list-style-type: none"> • Pre-filter: None • Main filter: Pleated, MERV 11 	<p>Outdoor air intake is in good condition.</p>	<p>Heating coils are clean.</p> <p>Heat wheels are not present.</p> <p>Exterior ducting is visible. Exterior ducting insulation is not present.</p> <p>Interior ducting is not visible. Interior ducting insulation is in an unknown condition. Interior ducting is of unknown cleanliness.</p> <p>Air handling room is free of trash/chemicals.</p> <p>Outside damper is inaccessible, and its condition is not known.</p> <p>Return damper is inaccessible, and its condition is not known.</p> <p>The general condition of the unit is good.</p>

Unit Designation:	AHU-7	
Location of Unit:	Tunnel under 1004	
Areas Served:	See attached map.	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type <ul style="list-style-type: none"> Supply System - Unknown Heating - Hot Water Cooling - None Energy Recovery Unit (ERU) - None 	<p>Outdoor air intake is inaccessible</p> <p>Outdoor air intake is located on an exterior wall.</p> <p>It is not known if there are nearby pollution sources.</p>	<p>Outdoor air filters are not present.</p> <p>Return air filters are not present.</p> <p>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.</p> <p>Drain pans are not applicable or not present. Drain pan condition is not known.</p>
Filter Type - Mixed <ul style="list-style-type: none"> Pre-filter: None Main filter: Pleated, MERV 11 	<p>Outdoor air intake is in good condition.</p>	<p>Heating coils are clean.</p> <p>Heat wheels are not present.</p> <p>Exterior ducting is visible. Exterior ducting insulation is not present.</p> <p>Interior ducting is visible. Interior ducting insulation is in good condition. Interior ducting is clean.</p> <p>Air handling room is free of trash/chemicals.</p> <p>Outside damper is open, and its condition is poor. The seal is damaged.</p> <p>Return damper is inaccessible, and its condition is not known.</p> <p>The general condition of the unit is good.</p>

Unit Designation:	HUV 004	
Location of Unit:	1206	
Areas Served:	1206	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type <ul style="list-style-type: none"> Supply System - Unknown Heating - Hot Water Cooling - None Energy Recovery Unit (ERU) - None 	<p>Outdoor air intake is inaccessible</p> <p>Outdoor air intake is located in an unknown location.</p> <p>It is not known if there are nearby pollution sources.</p>	<p>Outdoor air filters are not present.</p> <p>Return air filters are not present.</p> <p>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.</p> <p>Drain pans are not applicable or not present. Drain pan condition is good.</p>
Filter Type - Mixed <ul style="list-style-type: none"> Pre-filter: None Main filter: Pleated, MERV 8 	<p>Outdoor air intake is in good condition.</p>	<p>Heating coils are clean.</p> <p>Heat wheels are not present.</p> <p>Exterior ducting is not visible. Exterior ducting insulation is not present.</p> <p>Interior ducting is visible. Interior ducting insulation is in good condition. Interior ducting is dirty.</p> <p>Air handling room is free of trash/chemicals.</p> <p>Outside damper is not present.</p> <p>Return damper is not present.</p> <p>The general condition of the unit is good.</p>

Unit Designation:	1208 UV	
Location of Unit:	1208	
Areas Served:	1208	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type <ul style="list-style-type: none"> • Supply System - Unknown • Heating - Hot Water • Cooling - None • Energy Recovery Unit (ERU) - None 	<p>Outdoor air intake is inaccessible</p> <p>Outdoor air intake is located in an unknown location.</p> <p>It is not known if there are nearby pollution sources.</p>	<p>Outdoor air filters are not present.</p> <p>Return air filters are not present.</p> <p>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.</p> <p>Drain pans are not applicable or not present. Drain pan condition is not known.</p>
Filter Type - Mixed <ul style="list-style-type: none"> • Pre-filter: None • Main filter: Pleated, MERV 8 	<p>Outdoor air intake is in good condition.</p>	<p>Heating coils are clean.</p> <p>Heat wheels are not present.</p> <p>Exterior ducting is not visible. Exterior ducting insulation is not present.</p> <p>Interior ducting is visible. Interior ducting insulation is in good condition. Interior ducting is dirty.</p> <p>Air handling room is free of trash/chemicals.</p> <p>Outside damper is not present.</p> <p>Return damper is not present.</p> <p>The general condition of the unit is good.</p>

Unit Designation:	1211 UV	
Location of Unit:	1211	
Areas Served:	1211	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type <ul style="list-style-type: none"> Supply System - Unknown Heating - Hot Water Cooling - None Energy Recovery Unit (ERU) - None 	<p>Outdoor air intake is inaccessible</p> <p>Outdoor air intake is located in an unknown location.</p> <p>It is not known if there are nearby pollution sources.</p>	<p>Outdoor air filters are not present.</p> <p>Return air filters are not present.</p> <p>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.</p> <p>Drain pans are not applicable or not present. Drain pan condition is not known.</p>
Filter Type - Mixed <ul style="list-style-type: none"> Pre-filter: None Main filter: Pleated, MERV 8 	<p>Outdoor air intake is in good condition.</p>	<p>Heating coils are clean.</p> <p>Heat wheels are not present.</p> <p>Exterior ducting is not visible. Exterior ducting insulation is not present.</p> <p>Interior ducting is visible. Interior ducting insulation is in good condition. Interior ducting is dirty.</p> <p>Air handling room is free of trash/chemicals.</p> <p>Outside damper is not present.</p> <p>Return damper is not present.</p> <p>The general condition of the unit is good.</p>

Unit Designation:	1212 UV	
Location of Unit:	1212	
Areas Served:	121w	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type <ul style="list-style-type: none"> Supply System - Unknown Heating - Hot Water Cooling - None Energy Recovery Unit (ERU) - None Filter Type - Mixed <ul style="list-style-type: none"> Pre-filter: None Main filter: Pleated, MERV 8 	<p>Outdoor air intake is inaccessible</p> <p>Outdoor air intake is located in an unknown location.</p> <p>It is not known if there are nearby pollution sources.</p> <p>Outdoor air intake is in good condition.</p>	<p>Outdoor air filters are not present.</p> <p>Return air filters are not present.</p> <p>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.</p> <p>Drain pans are not applicable or not present. Drain pan condition is not known.</p> <p>Heating coils are clean.</p> <p>Heat wheels are not present.</p> <p>Exterior ducting is not visible. Exterior ducting insulation is not present.</p> <p>Interior ducting is visible. Interior ducting insulation is in good condition. Interior ducting is dirty.</p> <p>Air handling room is free of trash/chemicals.</p> <p>Outside damper is not present.</p> <p>Return damper is not present.</p> <p>The general condition of the unit is good.</p>

Recommendations

Dirty Coils were observed on unit AHU-09 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 accessible ductwork for units 1208 UV, 1211 UV, 1212 UV, AHU-03, AHU-04 and HUV 004 was visibly dirty, damaged, or had evidence of moisture at the time of the site inspection.

Recommendation: IEA recommends further inspection into the overall condition of the interior ductwork and level of dirt/debris quantified. If deemed a concern, it is recommended that the interior ducting be cleaned by a professional contractor to improve the impact on the IAQ for the supply spaces.

The drain pan for units AHU-10 (100% OA) and AHU-11 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.

Appendix A

Photo Documentation



AHU-01

Mixed Main Filter Cleanliness



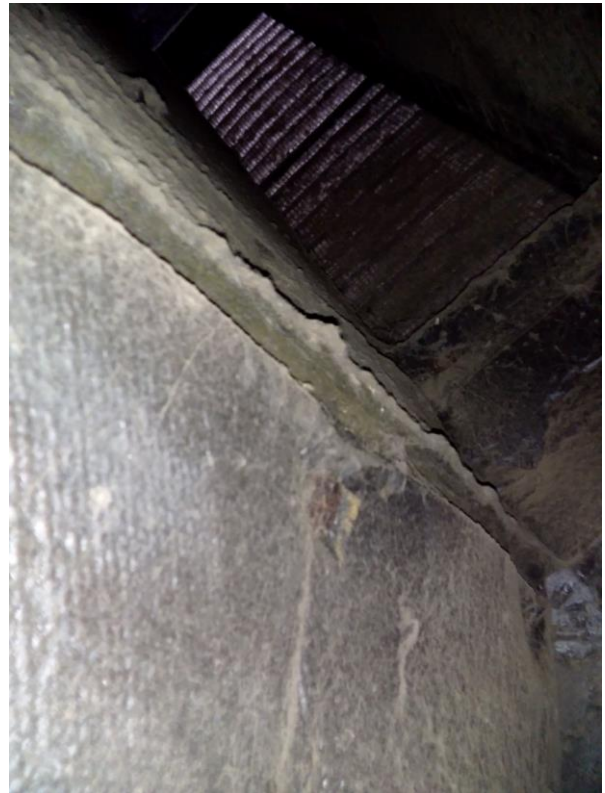
AHU-02

Mixed Main Filter Cleanliness



AHU-03

Outside Damper



AHU-03

Outdoor Intake



AHU-03
Interior Ducting



AHU-03
Interior Ducting



AHU-04
Outside Damper



AHU-04
Outdoor Intake



AHU-04
Interior Ducting



AHU-04
Interior Ducting



AHU-05
Mixed Main Filter Cleanliness



AHU-06
Mixed Main Filter Cleanliness



AHU-09
Heating Coils



AHU-10 (100% OA)
Drain Pans



AHU-11
Drain Pans



AHU-7
Outside Damper



AHU-7

Mixed Main Filter Cleanliness



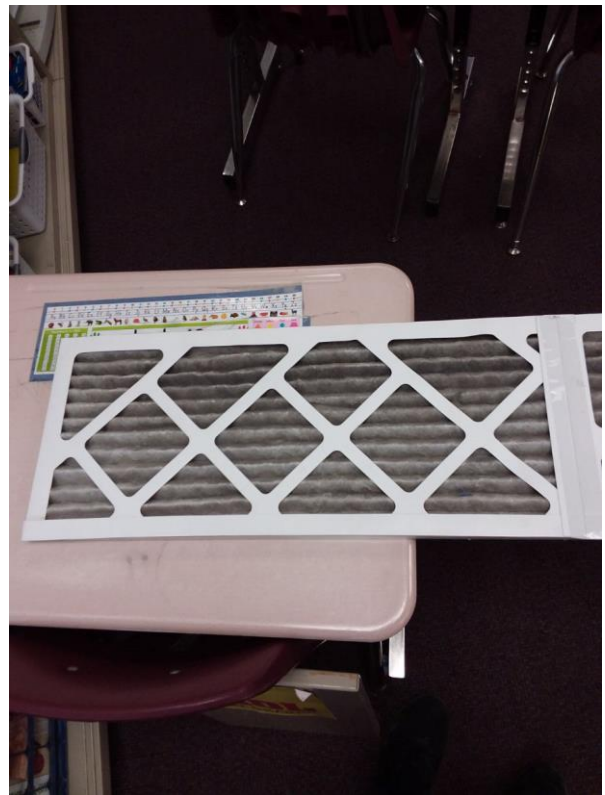
HUV 004

Mixed Main Filter Cleanliness



HUV 004

Interior Ducting



1208 UV

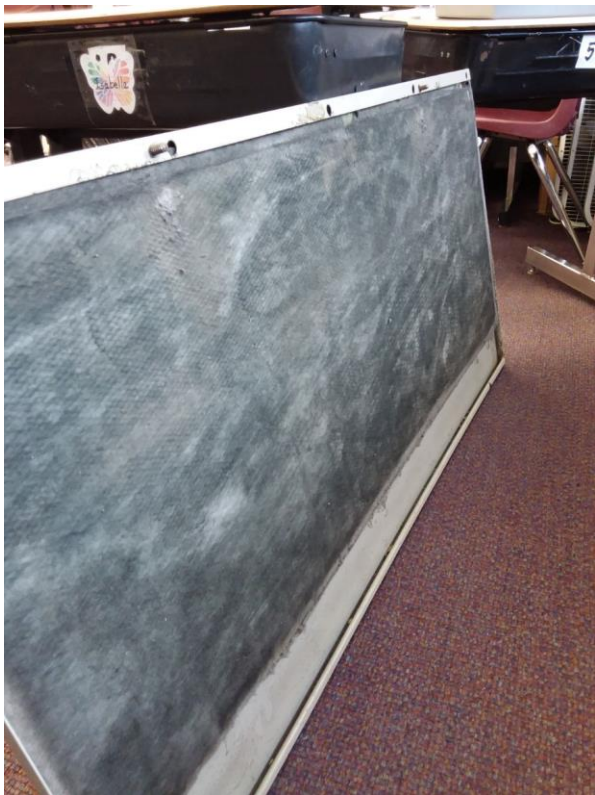
Mixed Main Filter Cleanliness



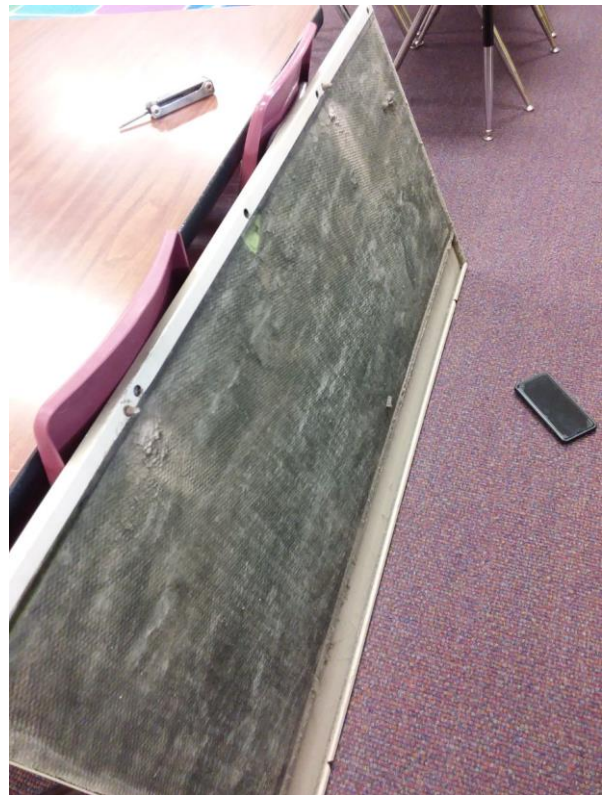
1208 UV
Interior Ducting



1211 UV
Mixed Main Filter Cleanliness



1211 UV
Interior Ducting



1212 UV
Interior Ducting