

IEA, INC.

2023 - 2024 Ventilation Assessment



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Saint Paul Public Schools Saint Paul Music Academy

Assessment Date:
Wednesday, April 5, 2023

Project Description

IEA conducted a ventilation inspection in Saint Paul Music Academy by IEA representative, Sashya Wandmaker, 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	7:00 PM
Saturday	No		
Sunday	No		
Holiday	No		

Typical occupancy:

Day:	Occupied?	Start Time:	End Time:
Monday-Friday	Yes	7:30 AM	2:00 PM
Saturday	No		
Sunday	No		
Holiday	No		

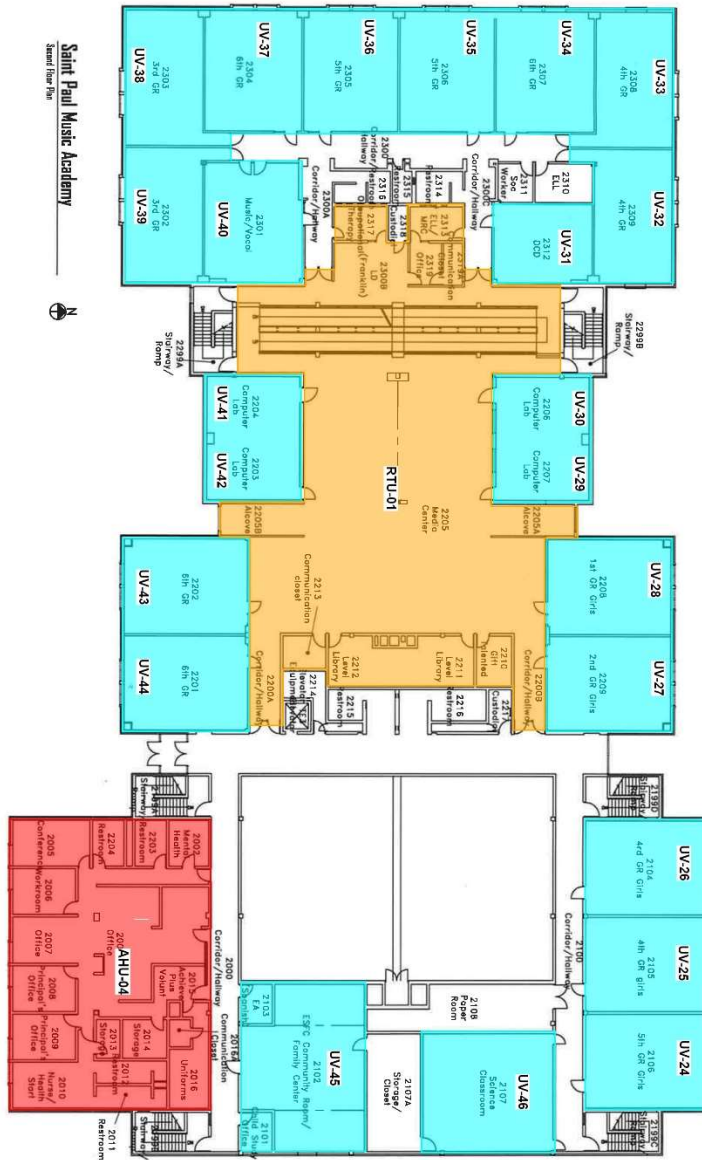
- CO2 sensors are not associated with the ventilation system.
- VAVs are present. They are not fan powered.
- Building has variable frequency drives (VFD).
- The heating system is gas-fired.
- A cooling system is not present.
- Filters used are:

Filter Type	MERV Rating
Inaccessible	
Pleated	MERV 11
- Filters are changed quarterly.
- Energy Recovery Units are not present.
- Units do not contain system Enhancements.
- Personal air purifiers are supplied for individual rooms. They are Winix, 3M/Plasmawave 2.0, Filtrete .
 - Location: All classrooms
- It is not known whether or not the building was commissioned during the original construction.

Air Handling Unit Designations & Service Zones: 1st Floor



Air Handling Unit Designations & Service Zones: 2nd Floor



Assessment

Ventilation System

The following information was gathered by IEA on Wednesday, April 5, 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 02	
Location of Unit:	Mechanical room N Gym Ceiling	
Areas Served:	North Gym See attached map	
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 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 filters are of unknown cleanliness and fit is unknown. Mixed air filters are installed but it is unknown whether they 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: Inaccessible Main filter: Inaccessible 	Outdoor air intake is in good condition.	Heating 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:	AHU 03	
Location of Unit:	Mechanical room S Gym Ceiling	
Areas Served:	South Gym See attached map	
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: Inaccessible Main filter: Inaccessible 	<p>Outdoor air intake is accessible</p> <p>Outdoor air intake is located on the roof.</p> <p>No nearby pollution sources were found.</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 filters are of unknown cleanliness and fit is unknown. Mixed air filters are installed but it is unknown whether they are installed correctly.</p> <p>Drain pans are not applicable or not present. Drain pan condition is not known.</p> <p>Heating coils are inaccessible.</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 04	
Location of Unit:	Mechanical room Rooftop	
Areas Served:	Administration See attached map	
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 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 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 visible. Interior ducting insulation is in good condition. Interior ducting is clean. 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 01	
Location of Unit:	Mechanical room Rooftop	
Areas Served:	Media Center See attached map	
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 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 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 visible. Interior ducting insulation is in good condition. Interior ducting is clean. 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:	UV-1210	
Location of Unit:	1210	
Areas Served:	1210	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type <ul style="list-style-type: none"> • Supply System - VAV • Heating - Steam • 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: Close to road</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> <p>Heating coils are clean.</p> <p>Heat wheels are not present.</p> <p>Exterior ducting is not visible. Exterior ducting insulation is in an unknown 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>
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>	

Unit Designation:	UV-16	
Location of Unit:	1203	
Areas Served:	1203	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type <ul style="list-style-type: none"> Supply System - VAV 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 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 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 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:	UV-1201	
Location of Unit:	1201	
Areas Served:	1201	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type <ul style="list-style-type: none"> • Supply System - VAV • Heating - Steam • 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>Outdoor air intake has a nearby pollution source: Near road</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 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> <p>Heating coils are clean.</p> <p>Heat wheels are not present.</p> <p>Exterior ducting is not visible. Exterior ducting insulation is in an unknown 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 not known.</p> <p>The general condition of the unit is good.</p>

Unit Designation:	UV-20	
Location of Unit:	1104	
Areas Served:	1104	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type <ul style="list-style-type: none"> • Supply System - VAV • Heating - Steam • 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>Outdoor air intake has a nearby pollution source: Near road</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 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> <p>Heating coils are clean.</p> <p>Heat wheels are not present.</p> <p>Exterior ducting is not visible. Exterior ducting insulation is in an unknown 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:	UV-1312	
Location of Unit:	1312	
Areas Served:	1312	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type <ul style="list-style-type: none"> Supply System - VAV Heating - Steam 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 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 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 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 inaccessible, and its condition is good. The general condition of the unit is good.

Unit Designation:	UV-8	
Location of Unit:	1307	
Areas Served:	1306	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type <ul style="list-style-type: none"> Supply System - VAV Heating - Steam 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 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 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 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:	UV-11	
Location of Unit:	1304	
Areas Served:	1304	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type <ul style="list-style-type: none"> Supply System - VAV Heating - Steam 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 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 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 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:	UV-13	
Location of Unit:	1302	
Areas Served:	1302	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type <ul style="list-style-type: none"> Supply System - VAV Heating - Steam 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 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 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 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:	UV-2201	
Location of Unit:	2201	
Areas Served:	2201	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type <ul style="list-style-type: none"> • Supply System - VAV • Heating - Steam • Cooling - None • Energy Recovery Unit (ERU) - None 	Outdoor air intake is inaccessible	Outdoor air filters are not present. Return air filters are not present.
	Outdoor air intake is located on an exterior wall.	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 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 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:	UV-2105	
Location of Unit:	2105	
Areas Served:	2105	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type <ul style="list-style-type: none"> • Supply System - VAV • Heating - Steam • 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>Outdoor air intake has a nearby pollution source: Above maintenance parking lot</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 not visible. Exterior ducting insulation is in an unknown 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:	UV-2106	
Location of Unit:	2106	
Areas Served:	2106	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type <ul style="list-style-type: none"> • Supply System - VAV • Heating - Steam • 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>Outdoor air intake has a nearby pollution source: Above maintenance parking lot</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 not visible. Exterior ducting insulation is in an unknown 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 not known.</p> <p>The general condition of the unit is good.</p>

Unit Designation:	UV-2209	
Location of Unit:	2209	
Areas Served:	2209	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type <ul style="list-style-type: none"> • Supply System - VAV • Heating - Steam • Cooling - None • Energy Recovery Unit (ERU) - None 	Outdoor air intake is inaccessible 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 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. 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 <ul style="list-style-type: none"> • Pre-filter: None • Main filter: Pleated, MERV 11 	Outdoor air intake is in good condition.	

Unit Designation:	UV-2309	
Location of Unit:	2309	
Areas Served:	2309	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type <ul style="list-style-type: none"> Supply System - VAV Heating - Steam 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>No nearby pollution sources were found.</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 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 not visible. Exterior ducting insulation is in an unknown 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 inaccessible, 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:	UV-2306	
Location of Unit:	2306	
Areas Served:	2306	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type <ul style="list-style-type: none"> Supply System - VAV Heating - Steam 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>No nearby pollution sources were found.</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 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 not visible. Exterior ducting insulation is in an unknown 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>

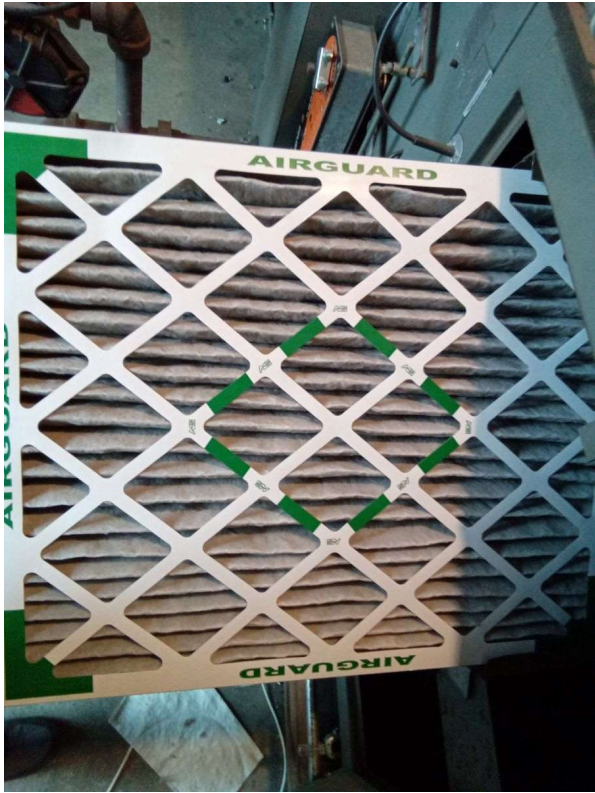
Unit Designation:	UV-2304	
Location of Unit:	2304	
Areas Served:	2304	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type <ul style="list-style-type: none"> Supply System - VAV Heating - Steam Cooling - None Energy Recovery Unit (ERU) - None 	<p>Outdoor air intake is inaccessible</p> <p>Outdoor air intake is located on an exterior wall.</p> <p>No nearby pollution sources were found.</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 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 not visible. Exterior ducting insulation is in an unknown 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:	UV-2302	
Location of Unit:	2302	
Areas Served:	2302	
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type <ul style="list-style-type: none"> Supply System - VAV Heating - Steam 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>No nearby pollution sources were found.</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 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 not visible. Exterior ducting insulation is in an unknown 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>

Recommendations

Appendix A

Photo Documentation



AHU 01

Mixed Main Filter Cleanliness



UV-1210

Mixed Main Filter Cleanliness



UV-1201

Mixed Main Filter Cleanliness



UV-20

Mixed Main Filter Cleanliness



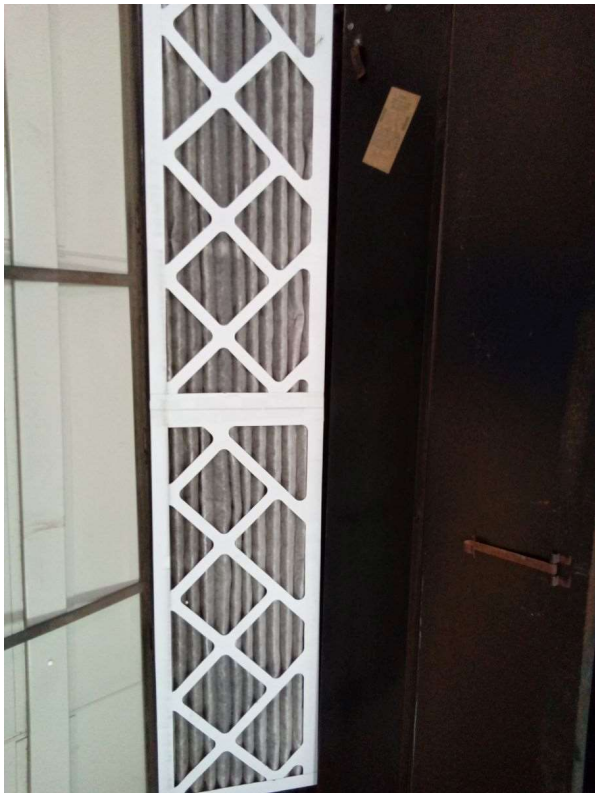
UV-2201

Mixed Main Filter Cleanliness



UV-2105

Mixed Main Filter Cleanliness



UV-2106

Mixed Main Filter Cleanliness



UV-2209

Mixed Main Filter Cleanliness