

## 2023 - 2024 Ventilation Assessment



### **Contact Us:**

#### **BROOKLYN PARK OFFICE**

9201 W. BROADWAY, #600 BROOKLYN PARK, MN 55445 763-315-7900

#### **MANKATO OFFICE**

610 N. RIVERFRONT DRIVE MANKATO, MN 56001 507-345-8818

### ROCHESTER OFFICE

210 WOOD LAKE DRIVE SE ROCHESTER, MN 55904 507-281-6664

### **BRAINERD OFFICE**

601 NW 5TH STREET SUITE #4 BRAINERD, MN 56401 218-454-0703

## MARSHALL OFFICE

1420 EAST COLLEGE DRIVE MARSHALL, MN 56258 507-476-3599

#### **VIRGINIA OFFICE**

5525 EMERALD AVENUE MOUNTAIN IRON, MN 55768 218-410-9521

www.ieasafety.com

info@ieasafety.com

800-233-9513

## Saint Paul Public Schools Johnson Senior High School

Assessment Date: Thursday, April 6, 2023

## **Project Description**

IEA conducted a ventilation inspection in Johnson 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 be accessed remotely.
- Schedules:

Ventilation operation:

Day:	Occupied?	Start Time:	End Time:
Monday- Friday	Yes	8:30 AM	3:00 PM
Saturday	No		
Sunday	No		
Holiday	No		

Typical occupancy:

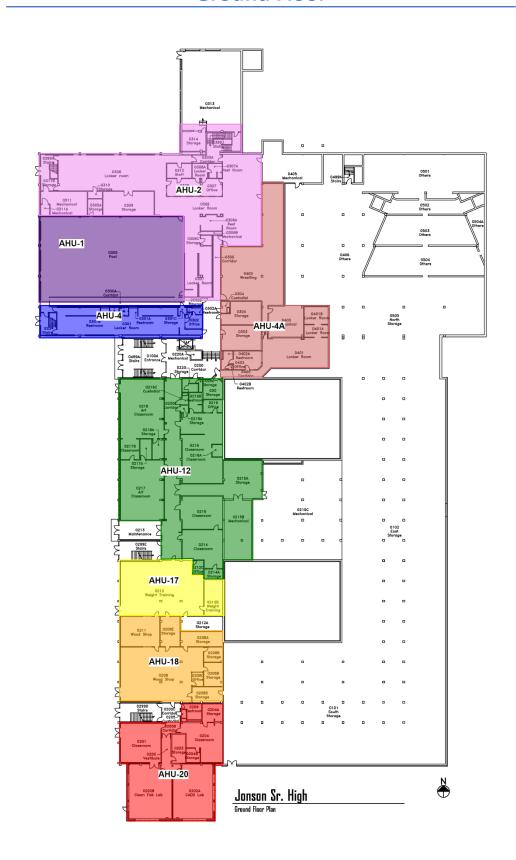
Day:	Occupied?	Start Time:	End Time:
Monday- Friday	Yes	8:30 AM	3:00 PM
Saturday	Yes	7:00 AM	3:00 PM
Sunday	No		
Holiday	No		

- 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 steam and hot water boiler.
- A cooling system is present and is a Dx and Heat Pump CHW type system.
- Filters used are:

Filter Type	MERV Rating
Bag	MERV 11
Pleated	MERV 11
Pleated	MERV 13
Pleated	MERV 8

- Filters are changed quarterly.
- Energy Recovery Units are present.
- Units do not contain system Enhancements.
- Personal air purifiers are supplied for individual rooms. They are of unknown make or model.
- It is not known whether or not the building was commissioned during the original construction.

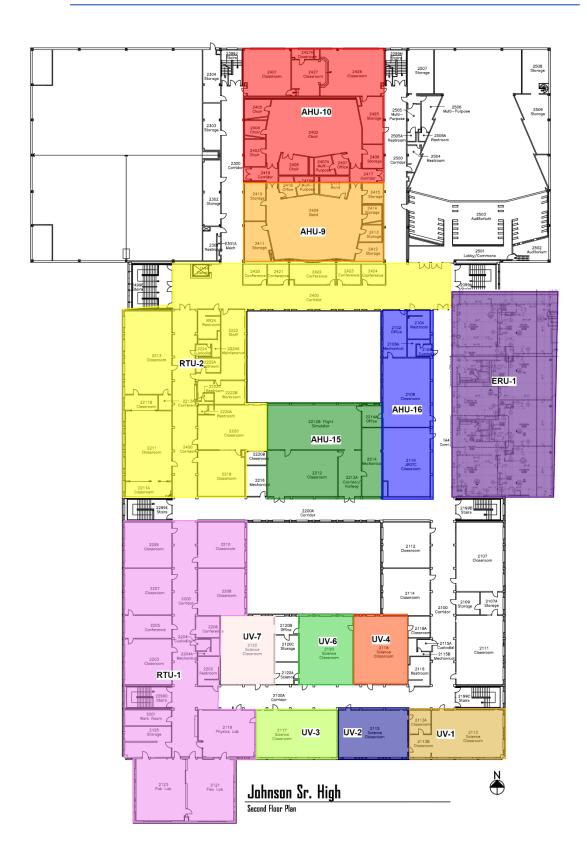
## **Air Handling Unit Designations & Service Zones: Ground Floor**



# **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 Thursday, April 6, 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:

(1107 to) system and tes ass	sessment is included for	cacif affic below.
Unit Designation:	AHU-01	
Location of Unit:	Pool mechanical room 2	211 outside stairwell/206 locker room
Areas Served: See attached map.		
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type  Supply System - Unknown Heating - Hot Water Cooling - Chilled Water 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 filters are somewhat dirty and on the border of needing replacement (scoring 4 out of 5) and fit well. Mixed air filters are installed correctly.  Drain pans are not plugged. Drain pan condition is poor.
Filter Type - Mixed  • Pre-filter: Pleated, MERV 8 • Main filter: Pleated, MERV 13	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 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 good.  Return damper is inaccessible, and its condition is good.  The general condition of the unit is good.

Unit Designation:	AHU-02	
Location of Unit:	Electrical room 040	05
Areas Served:	See attached map Boys Varsity Locker Room	
System	None	
Enhancements:		
Supply System	Outdoor Air	Cleanliness and Observations
Туре	Outdoor air intake	Outdoor air filters are not present.
<ul> <li>Supply</li> </ul>	is inaccessible	
System - VAV	,	Return air filters are not present.
<ul> <li>Heating - Hot</li> </ul>	Outdoor air intake	
Water	is located on an	Mixed air pre-filters are clean and not in need of replacement
<ul> <li>Cooling -</li> </ul>	exterior wall.	(scoring 2 out of 5) and fit well. Mixed air pre-filters are installed
Chilled		correctly. Mixed air main filters are somewhat dirty and on the
Water	It is not known if	border of needing replacement (scoring 3 out of 5) and fit well.
<ul> <li>Energy</li> </ul>	,	Mixed air main filters are installed correctly.
Recovery	pollution sources.	
Unit (ERU) -		Drain pans are not plugged. Drain pan condition is good.
None	Outdoor air intake	
	is in good	Heating coils are clean and cooling coils are clean.
Filter Type - Mixed	condition.	
<ul><li>Pre-filter:</li></ul>		Heat wheels are not present.
Pleated,		
MERV 8		Exterior ducting is visible. Exterior ducting insulation is in good
Main filter:		condition.
Pleated,		
MERV 13		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-04		
_	Mechanical 0403 inside wrestling		
Areas Served:	See attached map Girls Locker Room		
System	None		
Enhancements:			
Supply System	Outdoor Air	Cleanliness and Observations	
Туре	Outdoor air intake	Outdoor air filters are not present.	
<ul> <li>Supply</li> </ul>	is inaccessible		
System - VAV		Return air filters are not present.	
<ul> <li>Heating - Hot</li> </ul>	Outdoor air intake		
Water	is located on an	Mixed air pre-filters are clean and not in need of replacement	
<ul><li>Cooling -</li></ul>	exterior wall.	(scoring 2 out of 5) and fit well. Mixed air pre-filters are installed	
Chilled		correctly. Mixed air main filters are somewhat dirty and on the	
	It is not known if	border of needing replacement (scoring 3 out of 5) and fit well.	
<b>.</b>	•	Mixed air main filters are installed correctly.	
•	pollution sources.		
Unit (ERU) -		Drain pans are not plugged. Drain pan condition is good.	
	Outdoor air intake		
	is in good	Heating coils are clean and cooling coils are dirty.	
	condition.		
<ul><li>Pre-filter:</li></ul>		Heat wheels are not present.	
Pleated,			
MERV 8		Exterior ducting is visible. Exterior ducting insulation is in good	
Main filter:		condition.	
Pleated,			
MERV 13		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-4A		
Location of Unit:	Tunnel near wrestling		
Areas Served:	See attached map		
	Locker Rooms		
System	None		
Enhancements:			
Supply System	Outdoor Air	Cleanliness and Observations	
<u>Type</u>	Outdoor air intake	Outdoor air filters are not present.	
<ul> <li>Supply</li> </ul>	is inaccessible		
System - VAV		Return air filters are not present.	
_	Outdoor air intake		
Water	is located in an	Mixed air pre-filters are clean and not in need of replacement	
Cooling -	unknown location.	(scoring 2 out of 5) and fit well. Mixed air pre-filters are	
Chilled		installed correctly. Mixed air main filters are somewhat dirty	
Water	It is not known if	and on the border of needing replacement (scoring 3 out of 5)	
• Energy	there are nearby pollution sources.	and fit well. Mixed air main filters are installed correctly.	
Recovery Unit (ERU) -	poliution sources.	Drain pans are not plugged. Drain pan condition is good.	
None	Outdoor air intake	Drain pans are not plugged. Drain pan condition is good.	
None	is in good	Heating coils are clean and cooling coils are clean.	
Filter Type - Mixed	condition.	reating consule clear and cooming consule clear.	
• Pre-filter:		Heat wheels are not present.	
Pleated,			
MERV 8		Exterior ducting is visible. Exterior ducting insulation is in good	
<ul> <li>Main filter:</li> </ul>		condition.	
Pleated,			
MERV 13		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 demands and the conflict of the conflict	
		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-05	
Location of Unit:	Kitchen Storage 1412	
Areas Served:	See attached map Kitchen & Hood Exhaust Fan	
System	None	
Enhancements:		
Supply System	Outdoor Air	Cleanliness and Observations
Type  Supply System - Constant Volume Heating - Hot Water Cooling - None Energy Recovery Unit	Outdoor air intake is	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 pan plugged status is not known. Drain pan condition is good.  Heating coils are clean.  Heat wheels are not present.  Exterior ducting is 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 good.
		Return damper is inaccessible, and its condition is good.  The general condition of the unit is good.

Unit D	esignation:	AHU-06	
Locatio	on of Unit:	West Penthouse	
Areas S	Served:	See attached map. North Gym	
System	Enhancements:	None	
S	upply System	Outdoor Air	Cleanliness and Observations
Filter 1	Cooling - None Energy Recovery	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 filters are clean and not in need of replacement (scoring 1 out of 5) and fit well. Mixed air filters are installed correctly.  Drain pan plugged status is not known. Drain pan condition is not known.  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 closed, and its condition is good.  Return damper is inaccessible, and its condition is not known.
			The general condition of the unit is good.

Unit De	signation:	AHU-07	
Locatio	n of Unit:	West Penthouse	
Areas S	erved:	Gym South	
System	Enhancements:	None	
Suj	pply System	Outdoor Air	Cleanliness and Observations
Filter Ty	Water Cooling - None Energy Recovery Unit (ERU) - None  ype - Mixed Pre-filter: None	Outdoor air intake is inaccessible  Outdoor air intake is located on the roof.  It is not known if there are nearby pollution sources.  Condition of the outdoor air intake is not known.	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.  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 good.

Hait D	esignation:	AHU-08 (100% OA)	
		W Penthouse	
Areas :		See attached map	
		Cafeteria	
Systen	n Enhancements:	None	
Su	ipply System	Outdoor Air	Cleanliness and Observations
Type		Outdoor air intake is	Outdoor air pre-filters are not present. Outdoor air main
•	Supply System	inaccessible	filters are clean and not in need of replacement (scoring 2
	- Constant		out of 5) and fit well. Outdoor air main filters are installed
	Volume	Outdoor air intake is	correctly.
•	Heating - Hot	located on an exterior	
	Water	wall.	Return air filters are not present.
•	Cooling - None		
•	Energy	It is not known if	Drain pan plugged status is not known. Drain pan
	Recovery Unit	there are nearby	condition is not known.
	(ERU) - None	pollution sources.	
			Heating coils are clean.
Filter 1	Гуре - Outdoor	Outdoor air intake is	
•	Pre-filter: None	in good condition.	Heat wheels are not present.
•	Main filter:		
	Pleated, MERV		Exterior ducting is visible. Exterior ducting insulation is not
	11		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:	AHU-09	
Location of Unit: W Penthouse		
Areas Served:	: See attached map Band room	
System	None	
Enhancements:		
Supply System	Outdoor Air	Cleanliness and Observations
<ul> <li>Heating - Hot Water</li> <li>Cooling - None</li> <li>Energy Recovery Unit</li> </ul>		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.
	Outdoor air intake is in good condition.	Heating coils are dirty.  Heat wheels are not present.  Exterior ducting is visible. Exterior ducting insulation is in an unknown condition.  Interior ducting is not visible. Interior ducting insulation is in good 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-10		
Location of Unit:	E Penthouse	E Penthouse	
Areas Served:	See attached map Room 2402 / Choir		
System Enhancements:	None		
Supply System	Outdoor Air	Cleanliness and Observations	
Type      Supply System     Constant     Volume     Heating - Hot     Water     Cooling - None     Energy	Outdoor air intake is	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 plugged. Drain pan condition is good.  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 poor.	

Unit Designation:	AHU-11	
Location of Unit:	E Penthouse	
Areas Served:	Auditorium and Dressing Rooms	
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	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.  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.

Unit Designation:	AHU-12		
Location of Unit:	0215C	0215C	
Areas Served:	See attached map Ground Floor Classrooms		
System	None		
Enhancements:			
Supply System	Outdoor Air	Cleanliness and Observations	
<u>Type</u>	Outdoor air intake	Outdoor air filters are not present.	
<ul> <li>Supply</li> </ul>	is inaccessible		
System - VAV		Return air filters are not present.	
<ul> <li>Heating - Hot</li> </ul>	Outdoor air intake		
Water		Mixed air pre-filters are clean and not in need of replacement	
<ul> <li>Cooling -</li> </ul>	unknown location.	(scoring 2 out of 5) and fit well. Mixed air pre-filters are	
Chilled		installed correctly. Mixed air main filters are somewhat dirty	
Water	It is not known if	and on the border of needing replacement (scoring 3 out of 5)	
<ul> <li>Energy</li> </ul>	there are nearby	and fit well. Mixed air main filters are installed correctly.	
Recovery	pollution sources.		
Unit (ERU) -		Drain pans are not plugged. Drain pan condition is good.	
None	Outdoor air intake		
	is in good	Heating coils are clean and cooling coils are clean.	
Filter Type - Mixed	condition.	Heat wheels are not green	
Pre-filter:		Heat wheels are not present.	
Pleated, MERV 8		Exterior ducting is visible. Exterior ducting insulation is in good	
Main filter:		Exterior ducting is visible. Exterior ducting insulation is in good condition.	
Pleated,		condition.	
MERV 13		Interior ducting is not visible. Interior ducting insulation is in an	
IVILITY 13		unknown condition. Interior ducting is of unknown cleanliness.	
		anknown condition. Interior ducting is or anknown cicaminess.	
		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:	0215C	
Areas Served:	See attached map	
	classrooms to west & south of north courtyard	
System	None	
Enhancements:		
Supply System	Outdoor Air	Cleanliness and Observations
<u>Type</u>	Outdoor air intake	Outdoor air filters are not present.
<ul> <li>Supply</li> </ul>	is inaccessible	
System - VAV		Return air filters are not present.
<ul> <li>Heating - Hot</li> </ul>	Outdoor air intake	
Water		Mixed air pre-filters are clean and not in need of replacement
<ul> <li>Cooling -</li> </ul>	unknown location.	(scoring 2 out of 5) and fit well. Mixed air pre-filters are
Chilled		installed correctly. Mixed air main filters are somewhat dirty
Water	It is not known if	and on the border of needing replacement (scoring 3 out of 5)
<ul> <li>Energy</li> </ul>	there are nearby	and fit well. Mixed air main filters are installed correctly.
Recovery	pollution sources.	
Unit (ERU) -		Drain pans are not plugged. Drain pan condition is poor.
None	Outdoor air intake	
	is in good	Heating coils are clean and cooling coils are clean.
Filter Type - Mixed	condition.	
Pre-filter:		Heat wheels are not present.
Pleated,		
MERV 8		Exterior ducting is visible. Exterior ducting insulation is in good
Main filter:		condition.
Pleated,		
MERV 13		Interior ducting is not visible. Interior ducting insulation is in an
		unknown condition. Interior ducting is of unknown cleanliness.
		Air handling room is from of trach /shomicals
		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-13A	
Location of Unit:	0215C	
Areas Served:	See attached map	
	classrooms around south courtyard	
System	None	
Enhancements:		
Supply System	Outdoor Air	Cleanliness and Observations
<u>Type</u>	Outdoor air intake	Outdoor air filters are not present.
<ul> <li>Supply</li> </ul>	is inaccessible	
System - VAV		Return air filters are not present.
<ul> <li>Heating - Hot</li> </ul>	Outdoor air intake	
Water		Mixed air pre-filters are clean and not in need of replacement
<ul> <li>Cooling -</li> </ul>	unknown location.	(scoring 2 out of 5) and fit well. Mixed air pre-filters are
Chilled		installed correctly. Mixed air main filters are somewhat dirty
Water	It is not known if	and on the border of needing replacement (scoring 3 out of 5)
<ul> <li>Energy</li> </ul>	there are nearby	and fit well. Mixed air main filters are installed correctly.
Recovery	pollution sources.	
Unit (ERU) -		Drain pans are not plugged. Drain pan condition is good.
None	Outdoor air intake	
	is in good	Heating coils are clean and cooling coils are clean.
Filter Type - Mixed	condition.	
Pre-filter:		Heat wheels are not present.
Pleated,		
MERV 8		Exterior ducting is visible. Exterior ducting insulation is in good
Main filter:		condition.
Pleated, MERV 13		Interior ducting is not visible. Interior ducting insulation is in an
IVIERV 15		unknown condition. Interior ducting insulation is in an
		unknown condition. Interior ducting is of unknown cleaniness.
		Air handling room is free of trash/chemicals.
		All Harlaning room is free or trashfullerintals.
		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-13B	
Location of Unit:	Crawl space SE	
Areas Served:	See attached map	
C	1st Floor Classrooms	
System Enhanceme		
Supply System		Cleanliness and Observations
VAV • Heating - Ho Water • Cooling - Ch Water	located in an unknown location.	Outdoor air filters are not present.  Return air filters are not present.  Mixed air filters are somewhat dirty and on the border of needing replacement (scoring 3 out of 5) and fit well. Mixed air filters are installed correctly.  Drain pans are not plugged. Drain pan condition is good.  Heating coils are clean and cooling coils are clean.
Pleated, ME  Main filter: Pleated, ME  13		Exterior ducting is 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 open, and its condition is good.  The general condition of the unit is good.

Unit Designation:	AHU-14	
Location of Unit:	Crawl space center near 4A	
Areas Served:	See attached map	
	1st Floor Commons	
System Enhancements:	None	
	Outdoor Air	Cleanliness and Observations
Supply System		
<u>Type</u>		Outdoor air filters are not present.
• Supply	is inaccessible	
System -		Return air pre-filters are dirty and in need of replacement
		(scoring 5 out of 5) and fit well. Return air pre-filters are
	is located in an	installed correctly. Return air main filters are somewhat dirty
_		and on the border of needing replacement (scoring 3 out of 5)
Water		and fit well. Return air main filters are installed correctly.
J	It is not known if	
		Drain pans are not plugged. Drain pan condition is good.
Water	pollution sources.	
• Energy		Heating coils are clean and cooling coils are clean.
Recovery	Outdoor air intake	
1	is in good	Heat wheels are not present.
None	condition.	
E'lle Too But on		Exterior ducting is visible. Exterior ducting insulation is in good
Filter Type - Return		condition.
Pre-filter:		
Pleated, MERV 8		Interior ducting is not visible. Interior ducting insulation is in an
611		unknown condition. Interior ducting is of unknown cleanliness.
<ul> <li>Main filter:</li> <li>Pleated,</li> </ul>		Air handling room is free of trash/chemicals.
MERV 13		Air nandling room is free of trash/chemicals.
IVIERV 13		Outside damper is not present.
		Return damper is open, and its condition is good.
		The general condition of the unit is good.

Unit Designation:	AHU-15	
_	2216 Mechanical	
Areas Served: System	See attached map 2nd Floor Aerospace None	
Enhancements:		
Supply System	Outdoor Air Outdoor air	Cleanliness and Observations Outdoor air filters are not present.
System - VAV  Heating - Hot Water Cooling - Chilled Water Energy Recovery Unit (ERU) - None  Filter Type - Mixed	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.	Return air filters are not present.  Mixed air pre-filters are somewhat dirty and on the border of needing replacement (scoring 3 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 4 out of 5) and fit well. Mixed air main filters are installed correctly.  Drain pans are not plugged. Drain pan condition is good.  Heating coils are clean and cooling coils are clean.  Heat wheels are not present.  Exterior ducting is 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 open, and its condition is good.

Unit Designation:	AHU-16	
_	2214 Mechanical	
Areas Served:	See attached map ROTC and 2110	
System	None	
Enhancements:		
Supply System	Outdoor Air	Cleanliness and Observations
Туре	Outdoor air intake	Outdoor air filters are not present.
	is inaccessible	
System - VAV		Return air filters are not present.
Heating - Hot	Outdoor air intake	·
Water	is located on the	Mixed air pre-filters are clean and not in need of replacement
<ul> <li>Cooling -</li> </ul>	roof.	(scoring 2 out of 5) and fit well. Mixed air pre-filters are installed
Chilled		correctly. Mixed air main filters are somewhat dirty and on the
Water	It is not known if	border of needing replacement (scoring 3 out of 5) and fit well.
<ul> <li>Energy</li> </ul>	there are nearby	Mixed air main filters are installed correctly.
Recovery	pollution sources.	
Unit (ERU) -		Drain pans are not plugged. Drain pan condition is good.
None	Outdoor air intake	
	is in good	Heating coils are clean and cooling coils are clean.
Filter Type - Mixed	condition.	
<ul><li>Pre-filter:</li></ul>		Heat wheels are not present.
Pleated,		
MERV 8		Exterior ducting is visible. Exterior ducting insulation is in good
<ul><li>Main filter:</li></ul>		condition.
Pleated,		
MERV 13		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-17	
Location of Unit:	Crawl space south	
Areas Served:	See attached map Room 0212 / Weight Room	
System	None	
Enhancements:		
Supply System	Outdoor Air	Cleanliness and Observations
Туре	Outdoor air intake	Outdoor air filters are not present.
<ul><li>Supply</li></ul>	is inaccessible	·
System - VAV	,	Return air filters are not present.
<ul> <li>Heating - Hot</li> </ul>	Outdoor air intake	, i
Water	is located in an	Mixed air pre-filters are clean and not in need of replacement
<ul> <li>Cooling -</li> </ul>	unknown location.	(scoring 2 out of 5) and fit well. Mixed air pre-filters are
Chilled		installed correctly. Mixed air main filters are somewhat dirty
Water	It is not known if	and on the border of needing replacement (scoring 3 out of 5)
<ul> <li>Energy</li> </ul>	there are nearby	and fit well. Mixed air main filters are installed correctly.
Recovery	pollution sources.	
Unit (ERU) -		Drain pans are not plugged. Drain pan condition is good.
None	Outdoor air intake	
	is in good	Heating coils are clean.
Filter Type - Mixed	condition.	
<ul><li>Pre-filter:</li></ul>		Heat wheels are not present.
Pleated,		
MERV 8		Exterior ducting is visible. Exterior ducting insulation is in good
<ul> <li>Main filter:</li> </ul>		condition.
Pleated,		
MERV 13		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.
		and the state of tracting the state of tracting the state of tracting tracting the state of tracting t
		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-18	
Location of Unit:	Crawl space south	
	See attached map Room 0208 / Wood Shop	
System	None	
Enhancements:		
Supply System	Outdoor Air	Cleanliness and Observations
Type  Supply System - VAV Heating - Hot Water Cooling - Chilled Water 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 intake is in good condition.	Cleanliness and Observations  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 plugged. Drain pan condition is good.  Heating coils are clean and cooling coils are clean.  Heat wheels are not present.  Exterior ducting is 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 open, and its condition is good.  The general condition of the unit is good.

Unit Designation:	AHU-20	
Location of Unit:	Crawl space south	
Areas Served:	See attached map Room 0201 / Drafting	
System	None	
Enhancements:		
Supply System	Outdoor Air	Cleanliness and Observations
• Supply System - VAV • Heating - Hot	is inaccessible	Outdoor air filters are not present.  Return air filters are not present.
Water  Cooling - Chilled Water  Energy Recovery Unit (ERU) -	is located in an unknown location. It is not known if there are nearby pollution sources.	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 plugged. Drain pan condition is good.
None  Filter Type - Mixed  • Pre-filter: Pleated,	Outdoor air intake is in good condition.	Heating coils are clean and cooling coils are dirty.  Heat wheels are not present.
MERV 8 • Main filter: Pleated, MERV 13		Exterior ducting is 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 open, and its condition is good.
		The general condition of the unit is good.

	ERTU-01	
Location of Unit:	Roof E Center	
Areas Served:	See attached map	
	1st Floor Admin, 2	2nd Floor E. Classrooms
System Enhancements:	None	
Supply System	Outdoor Air	Cleanliness and Observations
Type	Outdoor air	Outdoor air pre-filters are not present. Outdoor air main filters
Supply System -	intake is	are somewhat dirty and on the border of needing replacement
	accessible	(scoring 3 out of 5) and fit well. Outdoor air main filters are
Volume		installed correctly.
<ul> <li>Heating - Hot</li> </ul>	Outdoor air	·
Water	intake is located	Return air pre-filters are not present. Return air main filters
<ul> <li>Cooling - Dx</li> </ul>	on the roof.	are clean and not in need of replacement (scoring 2 out of 5)
<ul> <li>Energy</li> </ul>		and fit well. Return air main filters are installed correctly.
· · · · · · · · · · · · · · · · · · ·	No nearby	
1	•	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
Filter Type - Outdoor		fit well. Mixed air main filters are installed correctly.
Pre-filter: None		
	_	Drain pans are not plugged. Drain pan condition is good.
·	condition.	
11		Heating coils are clean and cooling coils are clean.
Filter Type - Return		Heat wheels are clean.
Pre-filter: None		ricat wheels are clean.
Main filter:		Exterior ducting is visible. Exterior ducting insulation is not
Pleated, MERV		present.
11		P
		Interior ducting is not visible. Interior ducting insulation is in an
Filter Type - Mixed		unknown condition. Interior ducting is of unknown cleanliness.
Pre-filter: None		
<ul> <li>Main filter:</li> </ul>		Air handling room is free of trash/chemicals.
Bag, MERV 11		
		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-01	
Location of Unit: Roof SW		Roof SW	
Area	s Served:	See attached map	
		2nd Floor Southw	est Addition
Syste	em Enhancements:	None	
:	Supply System	Outdoor Air	Cleanliness and Observations
Туре	2	Outdoor air	Outdoor air filters are not present.
•	<ul><li>Supply System -</li></ul>	intake is	
	Constant Volume	accessible	Return air filters are not present.
•	O	Outdoor air intake is located	Mixed air pre-filters are not present. Mixed air main filters are somewhat dirty and on the border of needing replacement
•	Chilled Water	on the roof.	(scoring 3 out of 5) and fit well. Mixed air main filters are installed correctly.
•	0,	No nearby	
	=	pollution sources were found.	Drain pans are not plugged. Drain pan condition is good.
			Heating coils are clean and cooling coils are clean.
		Outdoor air	
		_	Heat wheels are not present.
	<ul><li>Main filter:</li><li>Pleated, MERV</li><li>13</li></ul>	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 open, and its condition is good.
			The general condition of the unit is good.

Unit De	esignation:	RTU-02	
Locatio	n of Unit:	Above field house	
Areas S	erved:	See attached map	
System	Enhancements:	None	
Su	pply System	Outdoor Air	Cleanliness and Observations
<u>Type</u> •  •	Supply System - Unknown Heating - Hot Water Cooling - Chilled Water Energy Recovery Unit (ERU) - None  ype - Mixed Pre-filter: None Main filter:	Outdoor air intake is accessible  Outdoor air intake is located on the roof.  No nearby pollution sources were found.	Cleanliness and Observations  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 good.  Heating coils are inaccessible and cooling 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 open, and its condition is good.  The general condition of the unit is poor.

Unit D	esignation:	RTU-03		
Location of Unit: Ro		Roof near West Penthouse		
Areas	Served:	See attached map.		
Systen	n Enhancements:	None		
S	Supply System	Outdoor Air	Cleanliness and Observations	
Type		Outdoor air intake	Outdoor air pre-filters are not present. Outdoor air main	
•	Supply System - Unknown	is accessible	filters are not present.	
•	Heating - Hot Water	Outdoor air intake is located on the	Return air filters are not present.	
•	Cooling - Chilled Water Energy Recovery	roof.	Mixed air filters are somewhat dirty and on the border of needing replacement (scoring 3 out of 5) and fit well.  Mixed air filters are installed correctly.	
	, ,	were found.	Drain pans are not plugged. Drain pan condition is good.	
Filter 1	Type - Mixed Pre-filter: Pleated, MERV 8	Outdoor air intake is in good	Heating coils are clean and cooling coils are clean.	
•	Main filter: Pleated, MERV	condition.	Heat wheels are not present.	
	13		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.	

Unknown  Heating - Hot Water  Cooling - Chilled Water  Energy Recovery Unit (ERU) - None  Filter Type - Outdoor  Main filter: Pleated, MERV 11  Outdoor air intake is located on the roof.  Return air filters are not present.  Drain pan plugged status is not known. Drain pan condition not known.  Heating coils are inaccessible and cooling coils are  Outdoor air intake is not known. Drain pan condition not known.  Heating coils are inaccessible and cooling coils are  Outdoor air intake is not known.  Heating coils are inaccessible and cooling coils are  Fitter Type - Outdoor  Exterior ducting is not visible. Exterior ducting insulation is in an unknown condition.  Interior ducting is not visible. Interior ducting is of unknown cleanliness.  Air handling room is free of trash/chemicals.  Outside damper is inaccessible, and its condition is not	Unit D	esignation:	RTU- COOKING RO	OM
System Enhancements:  Supply System Outdoor Air Cleanliness and Observations  Type Supply System - Unknown Heating - Hot Water Cooling - Chilled Water Energy Recovery Unit (ERU) - None Filter Type - Outdoor Main filter: Pleated, MERV 11 Pleated, MERV 11 Cleanliness and Observations Cleanliness are clean and not in need of replacement (scoring 2 of 5) and fit well. Outdoor air main filters are not present.  Return air filters are not present.  Prain pan plugged status is not known. Drain pan condition not known.  Heating coils are inaccessible and cooling coils are 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 inaccessible, and its condition is not	Location	on of Unit:	Rooftop.	
System Enhancements:  Supply System  Outdoor Air  Cleanliness and Observations  Outdoor air intake is accessible Unknown Heating - Hot Water Energy Recovery Unit (ERU) - None Pre-filter: None Main filter: Pleated, MERV  11  Outdoor air intake is accessible Outdoor air intake correctly. So and fit well. Outdoor air main filters are installed Outdoor air intake correctly. Return air filters are not present.  Pre-filter Type - Outdoor Outdoor air intake is in good condition.  Heating coils are inaccessible and cooling coils are 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 is of unknown cleanliness.  Air handling room is free of trash/chemicals.  Outside damper is inaccessible, and its condition is not	Areas	Served:	See attached map	
Supply System  Outdoor Air  Outdoor air intake Supply System - Unknown  Heating - Hot Water  Energy Recovery Unit (ERU) - None  Main filter: Pleated, MERV  11  Cleanliness and Observations  Outdoor air intake is accessible is accessible of 5) and fit well. Outdoor air main filters are installed Outdoor air intake correctly. Is located on the roof. Return air filters are not present.  Prain pan plugged status is not known. Drain pan condition not known.  Heating coils are inaccessible and cooling coils are Outdoor air intake correctly. Interior ducting is not visible. Exterior ducting insulation is in an unknown condition. Interior ducting is of unknown cleanliness.  Air handling room is free of trash/chemicals.  Outdoor air intake filters are not present.  Outdoor air main filters are installed Outdoor air main filters are installed Outdoor air main filters are not present.  Prain pan plugged status is not known. Drain pan condition not known.  Heating coils are inaccessible and cooling coils are Interior ducting is not visible. Exterior ducting insulation is in an unknown condition.  Interior ducting is not visible. Interior ducting is of unknown cleanliness.  Air handling room is free of trash/chemicals.  Outside damper is inaccessible, and its condition is not			Cooking room	
Outdoor air intake     Supply System - Unknown     Heating - Hot Water     Cooling - Chilled Water     Energy Recovery Unit (ERU) - None     Pre-filter: None     Main filter: Pleated, MERV     11     Outdoor air intake     Outdoor air intake     is accessible of 5) and fit well. Outdoor air main filters are installed     or 5) and fit well. Outdoor air main filters are installed     or 5) and fit well. Outdoor air main filters are installed     or 5) and fit well. Outdoor air main filters are installed     or 5) and fit well. Outdoor air main filters are installed     or 5) and fit well. Outdoor air main filters are installed     or 5) and fit well. Outdoor air main filters are installed     or 5) and fit well. Outdoor air main filters are installed     or 5) and fit well. Outdoor air main filters are installed     or 5) and fit well. Outdoor air main filters are installed     or 5) and fit well. Outdoor air main filters are installed     or 5) and fit well. Outdoor air main filters are installed     or 5) and fit well. Outdoor air main filters are installed     orrectly.     Return air filters are not present.     Heating coils are inaccessible and cooling coils are     outdoor air intake is located on the     Return air filters are not present.     Heating coils are inaccessible and cooling coils are     outdoor air intake is located on the     Return air filters are not present.     Heating coils are inaccessible and cooling coils are     outdoor air intake is located on the     Return air filters are not present.     Heating coils are inaccessible and cooling coils are     inaccessible.     Interior ducting is not visible. Exterior ducting insulation is in an unknown condition.     Interior ducting is not visible. Interior ducting is of unknown cleanliness.     Air handling room is free of trash/chemicals.     Outside damper is inaccessible, and its condition is not	Systen	m Enhancements:	None	
<ul> <li>Supply System - Unknown</li> <li>Heating - Hot Water</li> <li>Cooling - Chilled Water</li> <li>Energy Recovery Unit (ERU) - None</li> <li>Pre-filter: None</li> <li>Main filter: Pleated, MERV</li> <li>Interior ducting is not visible. Exterior ducting is not unknown condition.</li> <li>Interior ducting is not visible. Interior ducting is of unknown cleanliness.</li> <li>Air handling room is free of trash/chemicals.</li> <li>Outdoor air intake is located on the roof.</li> <li>Return air filters are clean and not in need of replacement (scoring 2 or of 5) and fit well. Outdoor air main filters are installed</li> <li>Outdoor air intake is located on the roof.</li> <li>Return air filters are not present.</li> <li>Drain pan plugged status is not known. Drain pan condition not known.</li> <li>Heating coils are inaccessible and cooling coils are</li> <li>Heat wheels are not present.</li> <li>Exterior ducting is not visible. Exterior ducting insulation is in an unknown condition.</li> <li>Interior ducting is not visible. Interior ducting is of unknown cleanliness.</li> <li>Air handling room is free of trash/chemicals.</li> <li>Outside damper is inaccessible, and its condition is not</li> </ul>	Sı	upply System	Outdoor Air	Cleanliness and Observations
	• • • Filter	Unknown Heating - Hot Water Cooling - Chilled Water Energy Recovery Unit (ERU) - None  Type - Outdoor Pre-filter: None Main filter: Pleated, MERV	is accessible  Outdoor air intake is located on the roof.  No nearby pollution sources were found.  Outdoor air intake is in good condition.	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 inaccessible and cooling 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.

Unit I	Designation:	UV 2209	
Location of Unit:		2209	
Areas	Served:	2209	
Syste	m Enhancements:	None	
S	Supply System	Outdoor Air	Cleanliness and Observations
<u>Type</u> •	Supply System -		Outdoor air filters are not present.
•	Heating - Hot	accessible	Return air pre-filters are not present. Return air main filters are somewhat dirty and on the border of needing replacement
•	Water Cooling - None Energy	Outdoor air intake is located on the unit.	(scoring 4 out of 5) and fit well. Return air main filters are installed correctly.
	Recovery Unit	No nearby	Drain pans are not plugged. Drain pan condition is good.
Filter	Type - Return	pollution sources were found.	Heating coils are clean.
•	Pre-filter: None Main filter:	Outdoor air	Heat wheels are not present.
	Pleated, MERV 8	intake is in good condition.	Exterior ducting is not visible. Exterior ducting insulation is not present.
			Interior ducting is not visible. Interior ducting insulation is not present. Interior ducting is of unknown cleanliness.
			Air handling room is free of trash/chemicals.
			Outside damper is not present.
			Return damper is not present.
			The general condition of the unit is good.

Unit D	Designation:	UV 2210	
Locati	on of Unit:	2210	
Areas	Served:	2210	
Syster	m Enhancements:	None	
S	upply System	Outdoor Air	Cleanliness and Observations
Type •	Supply System -	Outdoor air	Outdoor air filters are not present.
•	Unknown Heating - Hot	accessible	Return air pre-filters are not present. Return air main filters are somewhat dirty and on the border of needing replacement
•		Outdoor air intake is located on the unit.	(scoring 3 out of 5) and fit well. Return air main filters are installed correctly.
	Recovery Unit (ERU) - None	No nearby	Drain pans are not plugged. Drain pan condition is good. Heating coils are clean.
Filter	Type - Return Pre-filter: None	were found.	Heat wheels are not present.
•	Main filter:	_	Exterior ducting is not visible. Exterior ducting insulation is not
	8	condition.	present.
			Interior ducting is not visible. Interior ducting insulation is not present. Interior ducting is of unknown cleanliness.
			Air handling room is free of trash/chemicals.
			Outside damper is not present.
			Return damper is not present.  The general condition of the unit is good.

Unit Designation: UV 2207		UV 2207	
Locat	tion of Unit:	2207	
Areas	s Served:	2207	
Syste	em Enhancements:	None	
9	Supply System	Outdoor Air	Cleanliness and Observations
Type		Outdoor air	Outdoor air filters are not present.
•	Supply System -	intake is	
	Unknown	accessible	Return air pre-filters are not present. Return air main filters
•	Heating - Hot		are somewhat dirty and on the border of needing replacement
	Water		(scoring 4 out of 5) and fit well. Return air main filters are
•	Cooling - None		installed correctly.
•	Energy	on the unit.	
	Recovery Unit		Drain pans are not plugged. Drain pan condition is poor.
	(ERU) - None	No nearby	
		F	Heating coils are clean.
Filter	<u> Type - Return</u>	were found.	
•			Heat wheels are not present.
•		Outdoor air	
		_	Exterior ducting is not visible. Exterior ducting insulation is not
	8	condition.	present.
			Interior ducting is not visible. Interior ducting insulation is not
			present. Interior ducting is of unknown cleanliness.
			Air handling room is free of trash/chemicals.
			Outside damper is not present.
			Return damper is not present.
			The general condition of the unit is good.

Unit Designa	ation:	UV 2203		
Location of Unit:		2203		
Areas Serve	d:	2203		
System Enha	ancements:	None		
Supply	System	Outdoor Air	Cleanliness and Observations	
<u>Type</u>	.1. 61		Outdoor air filters are not present.	
	oly System - nown	is accessible	Return air pre-filters are not present. Return air main filters	
<ul><li>Heat</li><li>Wat</li></ul>	ting - Hot er	Outdoor air intake is located on the	are dirty and in need of replacement (scoring 5 out of 5) and fit well. Return air main filters are installed correctly.	
• Ener	ling - None rgy Recovery (ERU) -	unit. No nearby	Drain pans are not plugged. Drain pan condition is poor.	
Non			Heating coils are clean.	
<u> Filter Type -</u>			Heat wheels are not present.	
• Mair	filter: None n filter: ted, MERV 8	•	Exterior ducting is not visible. Exterior ducting insulation is not present.	
			Interior ducting is not visible. Interior ducting insulation is not present. Interior ducting is of unknown cleanliness.	
			Air handling room is free of trash/chemicals.	
			Outside damper is not present.	
			Return damper is not present.	
			The general condition of the unit is poor.	

Unit Designation:		UV 2107		
Location of Unit:		2107		
Areas Served:		2107		
System		None		
Enhancements:				
Sup	oply System	Outdoor Air	Cleanliness and Observations	
<u>Type</u> •	Supply System - Heating - Hot	accessible Outdoor air intake is	Outdoor air filters are not present.  Return air pre-filters are not present. Return air main filters are somewhat dirty and on the border of needing	
•	Energy	located in an unknown location.	replacement (scoring 3 out of 5) and fit well. Return air main filters are installed correctly.	
	Recovery Unit (ERU) - None	No nearby pollution sources were found.	Drain pans are not plugged. Drain pan condition is poor.  Heating coils are clean.	
Filter Type - Return		Outdoor air intake is	- I	
•	Pre-filter: None	in good condition.	Heat wheels are not present.	
•	Main filter: Pleated, MERV 8		Exterior ducting is not visible. Exterior ducting insulation is not present.	
			Interior ducting is not visible. Interior ducting insulation is not present. Interior ducting is of unknown cleanliness.	
			Air handling room is free of trash/chemicals.	
			Outside damper is not present.	
			Return damper is not present.	
			The general condition of the unit is poor.	

Unit Designation:		UV 2114		
Location of Unit:		2114		
Areas Served:		2114		
System Enhancements:		None		
	Supply System	Outdoor Air	Cleanliness and Observations	
Type	Supply System - Unknown Heating - Hot Water Cooling - None Energy Recovery Unit (ERU) - None  Type - Return Pre-filter: None Main filter:	accessible  Outdoor air intake is located on the unit.  No nearby pollution sources were found.  Outdoor air intake is in good condition.	Outdoor air filters are not present.  Return air pre-filters are not present. Return air main filters are somewhat dirty and on the border of needing replacement (scoring 4 out of 5) and fit well. Return air main filters are installed correctly.  Drain pans are not plugged. Drain pan condition is poor.  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 not present. Interior ducting is of unknown cleanliness.  Air handling room is free of trash/chemicals.  Outside damper is not present.  Return damper is not present.	
			The general condition of the unit is poor.	

Unit Designation:		UV 2112		
Location of Unit:		2112		
Areas Served:		2112		
System Enhancements:		None		
S	upply System	Outdoor Air	Cleanliness and Observations	
Type •	Supply System -	Outdoor air	Outdoor air filters are not present.	
•	Unknown Heating - Hot Water	accessible Outdoor air	Return air pre-filters are not present. Return air main filters are somewhat dirty and on the border of needing replacement (scoring 3 out of 5) and fit well. Return air main filters are	
•	Cooling - None Energy Recovery Unit	intake is located on the unit.	installed correctly.  Drain pans are not plugged. Drain pan condition is poor.	
T:l+o=	(ERU) - None	No nearby pollution sources were found.	Heating coils are clean.	
•	Type - Return Pre-filter: None Main filter:	Outdoor air	Heat wheels are not present.	
	Pleated, MERV 8	intake is in good condition.	Exterior ducting is not visible. Exterior ducting insulation is not present.	
			Interior ducting is not visible. Interior ducting insulation is not present. Interior ducting is of unknown cleanliness.	
			Air handling room is free of trash/chemicals.	
			Outside damper is not present.	
			Return damper is not present.	
			The general condition of the unit is good.	

## **Recommendations**

Dirty Coils were observed on units AHU-04, AHU-09 and AHU-20 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-01, AHU-09, AHU-10, AHU-13, UV 2107, UV 2112, UV 2114, UV 2203 and UV 2207 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 AHU-10, RTU-02, UV 2107, UV 2114 and UV 2203 was poor.

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

Dirty or poorly fitting filters were observed in units AHU-14 and UV 2203 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** 



AHU-01
Mixed Pre-Filter Cleanliness



AHU-01 Drain Pans



AHU-01
Mixed Main Filter Cleanliness



AHU-02
Mixed Main Filter Cleanliness



AHU-04
Mixed Main Filter Cleanliness



AHU-4A
Mixed Main Filter Cleanliness



AHU-04 Cooling Coils



AHU-05
Mixed Main Filter Cleanliness



AHU-09 Mixed Main Filter Cleanliness



AHU-09 Heating Coils



AHU-09 Drain Pans



AHU-10
Mixed Main Filter Cleanliness



AHU-10 Drain Pans



AHU-12
Mixed Main Filter Cleanliness



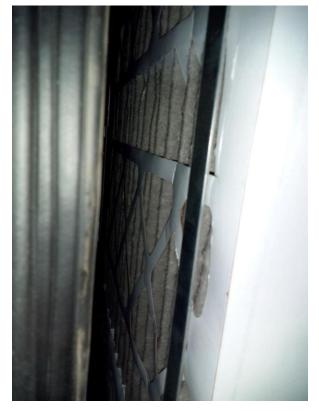
AHU-11
Mixed Main Filter Cleanliness



AHU-13
Mixed Main Filter Cleanliness



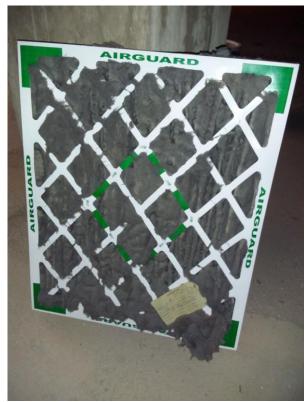
AHU-13A
Mixed Main Filter Cleanliness



AHU-13B
Mixed Main Filter Cleanliness



AHU-13B
Mixed Pre-Filter Cleanliness



AHU-14
Return Pre-Filter Cleanliness



AHU-14
Return Main Filter Cleanliness



AHU-15
Mixed Main Filter Cleanliness



AHU-15
Mixed Pre-Filter Cleanliness



AHU-16
Mixed Main Filter Cleanliness



AHU-17
Mixed Main Filter Cleanliness



AHU-20 Mixed Main Filter Cleanliness



AHU-18
Mixed Main Filter Cleanliness



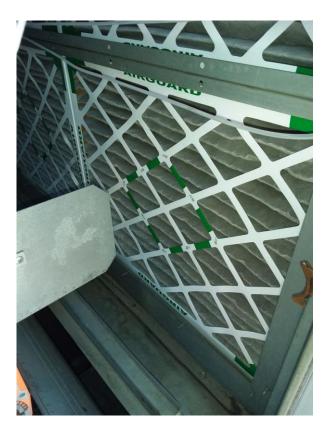
AHU-20 Cooling Coils



ERTU-01
Outdoor Main Filter Cleanliness



RTU-02
Mixed Main Filter Cleanliness



RTU-01
Mixed Main Filter Cleanliness



RTU-03
Outdoor Main Filter Cleanliness



RTU-03
Mixed Pre-Filter Cleanliness



UV 2209
Return Main Filter Cleanliness



RTU-03
Mixed Main Filter Cleanliness



UV 2210
Return Main Filter Cleanliness



UV 2207 Return Main Filter Cleanliness



UV 2203
Return Main Filter Cleanliness



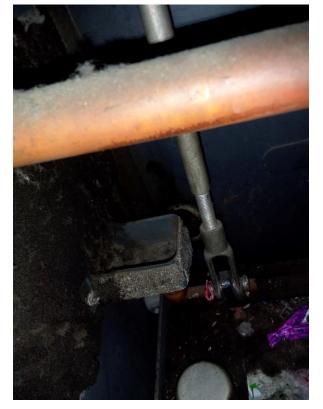
UV 2207 Drain Pans



UV 2203 Drain Pans



UV 2203
General Condition



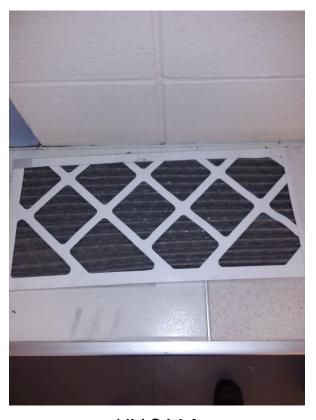
UV 2107 Drain Pans



UV 2107
Return Main Filter Cleanliness



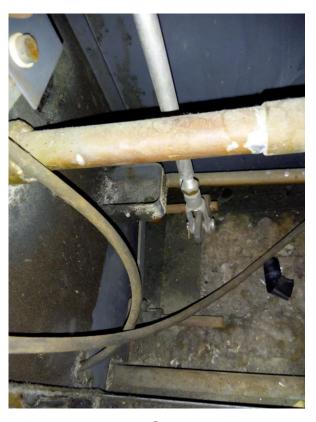
UV 2107
General Condition



UV 2114
Return Main Filter Cleanliness



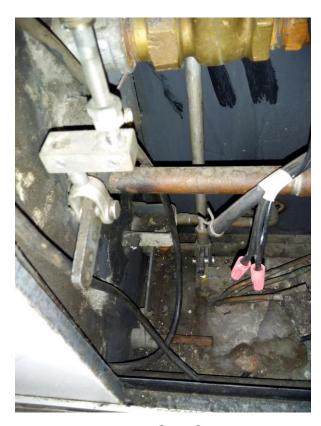
UV 2114
General Condition



UV 2114 Drain Pans



UV 2112
Return Main Filter Cleanliness



UV 2112 Drain Pans