



IEA, INC.

## 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](http://www.ieasafety.com)

[info@ieasafety.com](mailto:info@ieasafety.com)

800-233-9513

## Saint Paul Public Schools Farnsworth Aerospace Upper

Assessment Date:  
Wednesday, April 19, 2023

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## Project Description

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IEA conducted a ventilation inspection in Farnsworth Aerospace Upper 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.

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## Building Information

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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	5:00 AM	9:00 PM
Monday-Friday	Yes	6:00 AM	5:00 PM

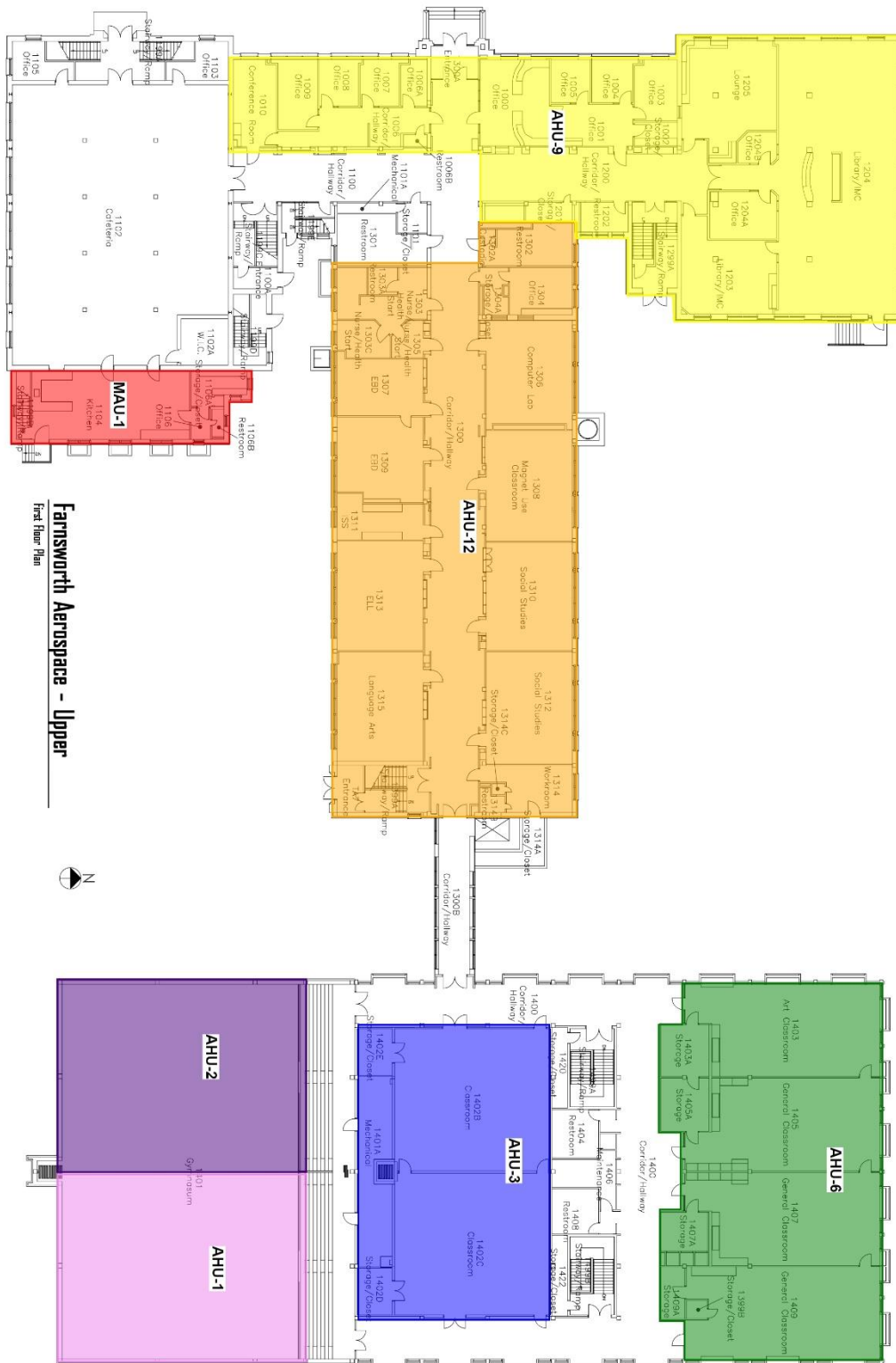
Typical occupancy:

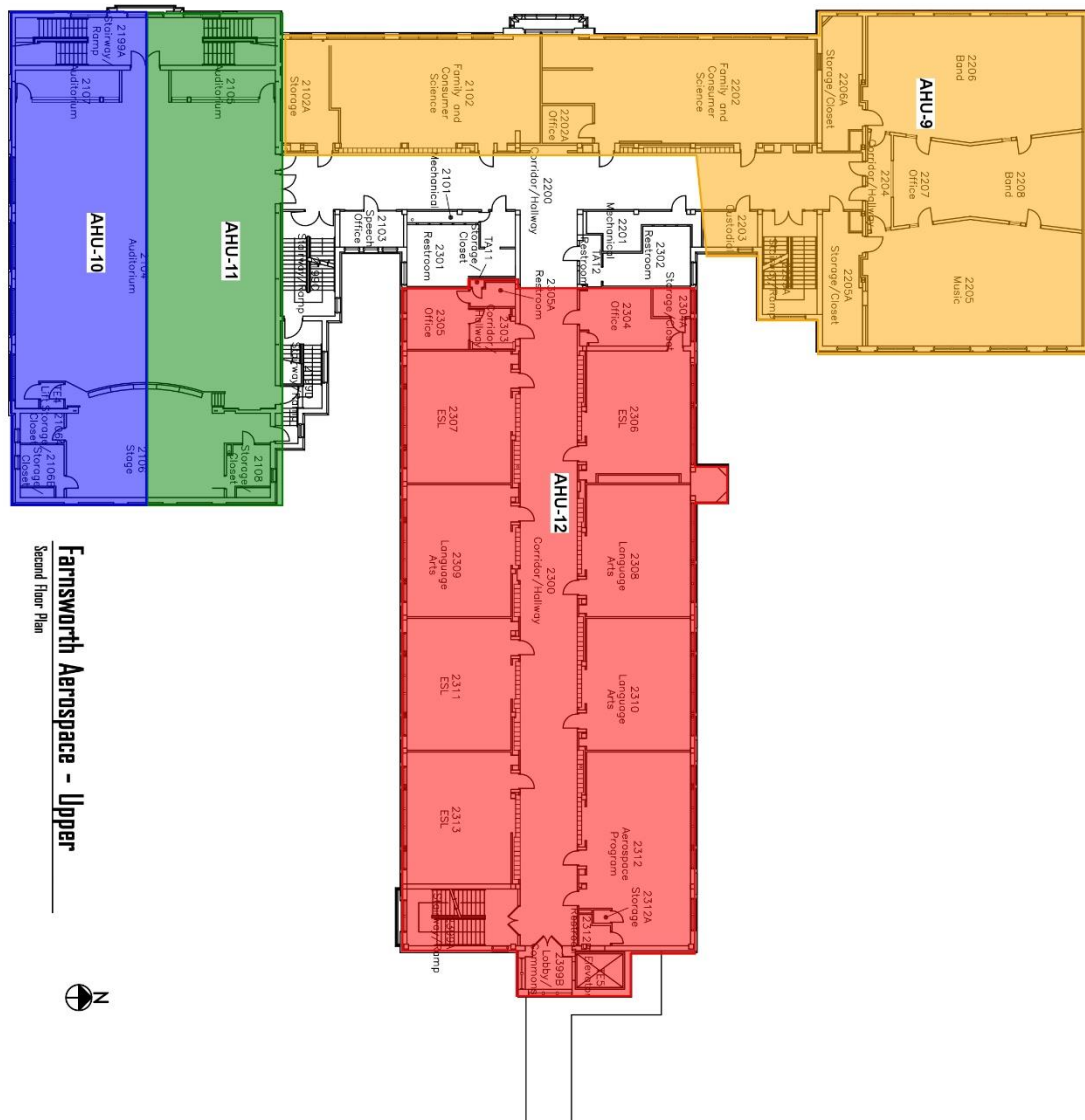
Day:	Occupied?	Start Time:	End Time:
Monday-Friday	Yes	8:00 AM	6:00 AM
Saturday	No		
Sunday	No		
Holiday	No		

- It is not known whether or not CO2 sensors are associated with the ventilation system.
- VAVs are present. They are fan powered with a None filter.
- 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
Metal Mesh	N/A
Pleated	MERV 11
Pleated	MERV 13
Pleated	MERV 8

- Filters are changed 3-4 times.
- Energy Recovery Units are not present.
- Units do not contain system Enhancements.
- It is not known whether or not personal air purifiers are supplied for individual rooms.
- It is not known whether or not the building was commissioned during the original construction.





**Farnsworth Aerospace - Upper**  
**Third Floor Plan**





## Assessment

### Ventilation System

The following information was gathered by IEA on Wednesday, April 19, 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:

<b>Unit Designation:</b>	AHU_01	
<b>Location of Unit:</b>	Mechanical room 1401	
<b>Areas Served:</b>	Gym 1401 - East See attached map	
<b>System Enhancements:</b>	None	
<b>Supply System</b>	<b>Outdoor Air</b>	<b>Cleanliness and Observations</b>
<b>Type</b> <ul style="list-style-type: none"> <li>Supply System - Constant Volume</li> <li>Heating - Hot Water</li> <li>Cooling - None</li> <li>Energy Recovery Unit (ERU) - None</li> </ul>	Outdoor air intake is accessible  Outdoor air intake is located on the roof.  No nearby pollution sources were found.	Outdoor air filters are not present.  Return air filters are not present.  Mixed air pre-filters are not present. Mixed air main filters are clean and not in need of replacement (scoring 2 out of 5) and fit well. Mixed air main filters are installed correctly.  Drain pan plugged status is not known. Drain pan condition is not known.
<b>Filter Type - Mixed</b> <ul style="list-style-type: none"> <li>Pre-filter: None</li> <li>Main filter: Pleated, MERV 11</li> </ul>	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.



<b>Unit Designation:</b>	AHU_02	
<b>Location of Unit:</b>	Mechanical room 1401	
<b>Areas Served:</b>	Gym 1401 - West See attached map	
<b>System Enhancements:</b>	None	
<b>Supply System</b>	<b>Outdoor Air</b>	<b>Cleanliness and Observations</b>
<b>Type</b> <ul style="list-style-type: none"> <li>Supply System - Constant Volume</li> <li>Heating - Hot Water</li> <li>Cooling - None</li> <li>Energy Recovery Unit (ERU) - None</li> </ul>	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.
<b>Filter Type - Mixed</b> <ul style="list-style-type: none"> <li>Pre-filter: None</li> <li>Main filter: Pleated, MERV 11</li> </ul>	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.

<b>Unit Designation:</b>	AHU_03	
<b>Location of Unit:</b>	Mechanical room 1401	
<b>Areas Served:</b>	Classroom 1402B/C See attached map	
<b>System Enhancements:</b>	None	
<b>Supply System</b>	<b>Outdoor Air</b>	<b>Cleanliness and Observations</b>
<b>Type</b> <ul style="list-style-type: none"> <li>Supply System - Constant Volume</li> <li>Heating - Hot Water</li> <li>Cooling - None</li> <li>Energy Recovery Unit (ERU) - None</li> </ul>	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.
<b>Filter Type - Mixed</b> <ul style="list-style-type: none"> <li>Pre-filter: None</li> <li>Main filter: Pleated, MERV 11</li> </ul>	Outdoor air intake is in good condition.	Heating coils are dirty.  Heat wheels are not present.  Exterior ducting is visible. Exterior ducting insulation is not present.  Interior ducting is not visible. Interior ducting insulation is in an unknown condition. Interior ducting is of unknown cleanliness.  Air handling room is free of trash/chemicals.  Outside damper is open, and its condition is good.  Return damper is open, and its condition is good.  The general condition of the unit is good.

<b>Unit Designation:</b>	AHU_04	
<b>Location of Unit:</b>	Mechanical room 1401	
<b>Areas Served:</b>	Girls Locker 0404 See attached map	
<b>System Enhancements:</b>	None	
<b>Supply System</b>	<b>Outdoor Air</b>	<b>Cleanliness and Observations</b>
<b>Type</b> <ul style="list-style-type: none"> <li>Supply System - Constant Volume</li> <li>Heating - Hot Water</li> <li>Cooling - None</li> <li>Energy Recovery Unit (ERU) - None</li> </ul>	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.
<b>Filter Type - Mixed</b> <ul style="list-style-type: none"> <li>Pre-filter: None</li> <li>Main filter: Pleated, MERV 11</li> </ul>	Outdoor air intake is in good condition.	Heating coils are clean.  Heat wheels are not present.  Exterior ducting is visible. Exterior ducting insulation is not present.  Interior ducting is not visible. Interior ducting insulation is in an unknown condition. Interior ducting is of unknown cleanliness.  Air handling room is free of trash/chemicals.  Outside damper is open, and its condition is good.  Return damper is open, and its condition is good.  The general condition of the unit is good.

<b>Unit Designation:</b>	AHU_05	
<b>Location of Unit:</b>	Mechanical room 1401	
<b>Areas Served:</b>	Boys Locker 0405 See attached map	
<b>System Enhancements:</b>	None	
<b>Supply System</b>	<b>Outdoor Air</b>	<b>Cleanliness and Observations</b>
<b>Type</b> <ul style="list-style-type: none"> <li>Supply System - Constant Volume</li> <li>Heating - Hot Water</li> <li>Cooling - None</li> <li>Energy Recovery Unit (ERU) - None</li> </ul>	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 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.
<b>Filter Type - Mixed</b> <ul style="list-style-type: none"> <li>Pre-filter: None</li> <li>Main filter: Pleated, MERV 11</li> </ul>	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.

<b>Unit Designation:</b>	AHU_06	
<b>Location of Unit:</b>	Mechanical room 1401	
<b>Areas Served:</b>	1st Floor NE See attached map	
<b>System Enhancements:</b>	None	
<b>Supply System</b>	<b>Outdoor Air</b>	<b>Cleanliness and Observations</b>
<b>Type</b> <ul style="list-style-type: none"> <li>Supply System - Constant Volume</li> <li>Heating - Hot Water</li> <li>Cooling - None</li> <li>Energy Recovery Unit (ERU) - None</li> </ul>	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.
<b>Filter Type - Mixed</b> <ul style="list-style-type: none"> <li>Pre-filter: None</li> <li>Main filter: Pleated, MERV 11</li> </ul>	Outdoor air intake is in good condition.	Heating coils are clean.  Heat wheels are not present.  Exterior ducting is visible. Exterior ducting insulation is not present.  Interior ducting is not visible. Interior ducting insulation is in an unknown condition. Interior ducting is of unknown cleanliness.  Air handling room is free of trash/chemicals.  Outside damper is open, and its condition is good.  Return damper is open, and its condition is good.  The general condition of the unit is good.

<b>Unit Designation:</b>	AHU_07	
<b>Location of Unit:</b>	Mechanical room 406	
<b>Areas Served:</b>	Science 406 See attached map	
<b>System Enhancements:</b>	None	
<b>Supply System</b>	<b>Outdoor Air</b>	<b>Cleanliness and Observations</b>
<b>Type</b> <ul style="list-style-type: none"> <li>Supply System - Constant Volume</li> <li>Heating - Hot Water</li> <li>Cooling - None</li> <li>Energy Recovery Unit (ERU) - None</li> </ul>	Outdoor air intake is accessible  Outdoor air intake is located on an exterior wall.  No nearby pollution sources were found.  Outdoor air intake is in good condition.	Outdoor air filters are not present.  Return air filters are not present.  Mixed air pre-filters are not present. Mixed air main filters are 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.  Heating coils are clean.  Heat wheels are not present.  Exterior ducting is visible. Exterior ducting insulation is not present.  Interior ducting is not visible. Interior ducting insulation is in an unknown condition. Interior ducting is of unknown cleanliness.  Air handling room is free of trash/chemicals.  Outside damper is open, and its condition is good.  Return damper is open, and its condition is good.  The general condition of the unit is good.
<b>Filter Type - Mixed</b> <ul style="list-style-type: none"> <li>Pre-filter: None</li> <li>Main filter: Pleated, MERV 11</li> </ul>		

<b>Unit Designation:</b>	AHU_08	
<b>Location of Unit:</b>	Mechanical room 408	
<b>Areas Served:</b>	Flight Simulator 408 See attached map	
<b>System Enhancements:</b>	None	
<b>Supply System</b>	<b>Outdoor Air</b>	<b>Cleanliness and Observations</b>
<b>Type</b> <ul style="list-style-type: none"> <li>Supply System - Constant Volume</li> <li>Heating - Hot Water</li> <li>Cooling - None</li> <li>Energy Recovery Unit (ERU) - None</li> </ul>	Outdoor air intake is accessible  Outdoor air intake is located on an exterior wall.  No nearby pollution sources were found.  Outdoor air intake is in good condition.	Outdoor air filters are not present.  Return air filters are not present.  Mixed air pre-filters are not present. Mixed air main filters are 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.  Heating coils are clean.  Heat wheels are not present.  Exterior ducting is visible. Exterior ducting insulation is not present.  Interior ducting is not visible. Interior ducting insulation is in an unknown condition. Interior ducting is of unknown cleanliness.  Air handling room is free of trash/chemicals.  Outside damper is open, and its condition is good.  Return damper is open, and its condition is good.  The general condition of the unit is good.
<b>Filter Type - Mixed</b> <ul style="list-style-type: none"> <li>Pre-filter: None</li> <li>Main filter: Pleated, MERV 11</li> </ul>		

<b>Unit Designation:</b>	AHU_09	
<b>Location of Unit:</b>	Mechanical room 304	
<b>Areas Served:</b>	Old Bldg - West See attached map	
<b>System Enhancements:</b>	None	
<b>Supply System</b>	<b>Outdoor Air</b>	<b>Cleanliness and Observations</b>
<b>Type</b> <ul style="list-style-type: none"> <li>Supply System - VAV</li> <li>Heating - Hot Water</li> <li>Cooling - None</li> <li>Energy Recovery Unit (ERU) - None</li> </ul>	<p>Outdoor air intake is accessible</p> <p>Outdoor air intake is located on an exterior wall.</p> <p>No nearby pollution sources were found.</p>	<p>Outdoor air filters are not present.</p> <p>Return air filters are not present.</p> <p>Mixed air pre-filters are not present. Mixed air main filters are clean and not in need of replacement (scoring 2 out of 5) and fit well. Mixed air main filters are installed correctly.</p> <p>Drain pans are not applicable or not present. Drain pan condition is not known.</p>
<b>Filter Type - Mixed</b> <ul style="list-style-type: none"> <li>Pre-filter: None</li> <li>Main filter: Pleated, MERV 11</li> </ul>	<p>Outdoor air intake is in good condition.</p>	<p>Heating coils are clean.</p> <p>Heat wheels are not present.</p> <p>Exterior ducting is visible. Exterior ducting insulation is in good condition.</p> <p>Interior ducting is visible. Interior ducting insulation is not present. Interior ducting is clean.</p> <p>Air handling room is free of trash/chemicals.</p> <p>Outside damper is closed, 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>



<b>Unit Designation:</b>	AHU_10	
<b>Location of Unit:</b>	Mechanical room 2106	
<b>Areas Served:</b>	Auditorium - South See attached map	
<b>System Enhancements:</b>	None	
<b>Supply System</b>	<b>Outdoor Air</b>	<b>Cleanliness and Observations</b>
<b>Type</b> <ul style="list-style-type: none"> <li>Supply System - Constant Volume</li> <li>Heating - Hot Water</li> <li>Cooling - None</li> <li>Energy Recovery Unit (ERU) - None</li> </ul>	<p>Outdoor air intake is accessible</p> <p>Outdoor air intake is located on an exterior wall.</p> <p>No nearby pollution sources were found.</p> <p>Outdoor air intake is in good condition.</p>	<p>Outdoor air filters are not present.</p> <p>Return air filters are not present.</p> <p>Mixed air pre-filters are not present. Mixed air main filters are clean and not in need of replacement (scoring 2 out of 5) and fit well. Mixed air main filters are installed correctly.</p> <p>Drain pans are not applicable or not present. Drain pan condition is not known.</p> <p>Heating coils are 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 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>
<b>Filter Type - Mixed</b> <ul style="list-style-type: none"> <li>Pre-filter: None</li> <li>Main filter: Pleated, MERV 11</li> </ul>		

<b>Unit Designation:</b>	AHU_11	
<b>Location of Unit:</b>	Mechanical room 2108, need key for lock	
<b>Areas Served:</b>	Auditorium - North See attached map	
<b>System Enhancements:</b>	None	
<b>Supply System</b>	<b>Outdoor Air</b>	<b>Cleanliness and Observations</b>
<b>Type</b> <ul style="list-style-type: none"> <li>Supply System - Constant Volume</li> <li>Heating - Hot Water</li> <li>Cooling - None</li> <li>Energy Recovery Unit (ERU) - None</li> </ul>	<p>Outdoor air intake is accessible</p> <p>Outdoor air intake is located on an exterior wall.</p> <p>No nearby pollution sources were found.</p>	<p>Outdoor air pre-filters are not present. Outdoor air main filters are somewhat dirty and on the border of needing replacement (scoring 3 out of 5) and fit well. Outdoor air main filters are installed correctly.</p> <p>Return air filters are not present.</p> <p>Drain pans are not applicable or not present. Drain pan condition is not known.</p> <p>Heating coils are inaccessible.</p>
<b>Filter Type - Outdoor</b> <ul style="list-style-type: none"> <li>Pre-filter: None</li> <li>Main filter: Pleated, MERV 13</li> </ul>	<p>Outdoor air intake is in good condition.</p>	<p>Heat wheels are not present.</p> <p>Exterior ducting is visible. Exterior ducting insulation is not present.</p> <p>Interior ducting is not visible. Interior ducting insulation is 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 not present.</p> <p>The general condition of the unit is good.</p>

<b>Unit Designation:</b>	AHU_12	
<b>Location of Unit:</b>	Mechanical room 300	
<b>Areas Served:</b>	1st and 2nd Floor West See attached map	
<b>System Enhancements:</b>	None	
<b>Supply System</b>	<b>Outdoor Air</b>	<b>Cleanliness and Observations</b>
<b>Type</b> <ul style="list-style-type: none"> <li>Supply System - VAV</li> <li>Heating - Hot Water</li> <li>Cooling - None</li> <li>Energy Recovery Unit (ERU) - None</li> </ul>	<p>Outdoor air intake is accessible</p> <p>Outdoor air intake is located on an exterior wall.</p> <p>No nearby pollution sources were found.</p>	<p>Outdoor air filters are not present.</p> <p>Return air filters are not present.</p> <p>Mixed air pre-filters are not present. Mixed air main filters are clean and not in need of replacement (scoring 2 out of 5) and fit well. Mixed air main filters are installed correctly.</p> <p>Drain pans are not applicable or not present. Drain pan condition is not known.</p>
<b>Filter Type - Mixed</b> <ul style="list-style-type: none"> <li>Pre-filter: None</li> <li>Main filter: Pleated, MERV 8</li> </ul>	<p>Outdoor air intake is in good condition.</p>	<p>Heating coils are clean.</p> <p>Heat wheels are not present.</p> <p>Exterior ducting is visible. Exterior ducting insulation is in good condition.</p> <p>Interior ducting is not visible. Interior ducting insulation is in an unknown condition. Interior ducting is of unknown cleanliness.</p> <p>Air handling room is free of trash/chemicals.</p> <p>Outside damper is closed, 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>

<b>Unit Designation:</b>	AHU_13	
<b>Location of Unit:</b>	Mechanical room 3204A	
<b>Areas Served:</b>	West Science Rooms See attached map	
<b>System Enhancements:</b>	None	
<b>Supply System</b>	<b>Outdoor Air</b>	<b>Cleanliness and Observations</b>
<b>Type</b> <ul style="list-style-type: none"> <li>Supply System - Constant Volume</li> <li>Heating - Hot Water</li> <li>Cooling - None</li> <li>Energy Recovery Unit (ERU) - None</li> </ul>	Outdoor air intake is accessible  Outdoor air intake is located on an exterior wall.  No nearby pollution sources were found.  Outdoor air intake is in good condition.	Outdoor air filters are not present.  Return air filters are not present.  Mixed air pre-filters are not present. Mixed air main filters are 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.  Heating coils are dirty.  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.
<b>Filter Type - Mixed</b> <ul style="list-style-type: none"> <li>Pre-filter: None</li> <li>Main filter: Pleated, MERV 8</li> </ul>		

<b>Unit Designation:</b>	RTU_01	
<b>Location of Unit:</b>	Mechanical room DOOR 3300A	
<b>Areas Served:</b>	3rd Floor West See attached map	
<b>System Enhancements:</b>	None	
<b>Supply System</b>	<b>Outdoor Air</b>	<b>Cleanliness and Observations</b>
<b>Type</b> <ul style="list-style-type: none"> <li>Supply System - VAV</li> <li>Heating - Hot Water</li> <li>Cooling - None</li> <li>Energy Recovery Unit (ERU) - None</li> </ul>	<p>Outdoor air intake is accessible</p> <p>Outdoor air intake is located on the unit.</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>
<b>Filter Type - Mixed</b> <ul style="list-style-type: none"> <li>Pre-filter: None</li> <li>Main filter: Pleated, MERV 8</li> </ul>	<p>Outdoor air intake is in good condition.</p>	<p>Heating coils are dirty.</p> <p>Heat wheels are not present.</p> <p>Exterior ducting is visible. Exterior ducting insulation is in good condition.</p> <p>Interior ducting is not visible. Interior ducting insulation is in an unknown condition. Interior ducting is of unknown cleanliness.</p> <p>Air handling room is free of trash/chemicals.</p> <p>Outside damper is open, and its condition is good.</p> <p>Return damper is open, and its condition is good.</p> <p>The general condition of the unit is good.</p>

<b>Unit Designation:</b>	MAU_01 (100% OA)	
<b>Location of Unit:</b>	Outdoors near door 4, in back parking lot	
<b>Areas Served:</b>	Kitchen See attached map	
<b>System Enhancements:</b>	None	
<b>Supply System</b>	<b>Outdoor Air</b>	<b>Cleanliness and Observations</b>
<b>Type</b> <ul style="list-style-type: none"> <li>Supply System - Constant Volume</li> <li>Heating - Hot Water</li> <li>Cooling - None</li> <li>Energy Recovery Unit (ERU) - None</li> </ul>	Outdoor air intake is accessible  Outdoor air intake is located on the unit.  No nearby pollution sources were found.	Outdoor air pre-filters are not present. Outdoor air main filters are clean and not in need of replacement (scoring 1 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.
<b>Filter Type - Outdoor</b> <ul style="list-style-type: none"> <li>Pre-filter: None</li> <li>Main filter: Metal Mesh, N/A</li> </ul>	Outdoor air intake is in good condition.	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 not present.  The general condition of the unit is good.

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## Recommendations

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Dirty Coils were observed on units AHU\_03, AHU\_13 and RTU\_01 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.

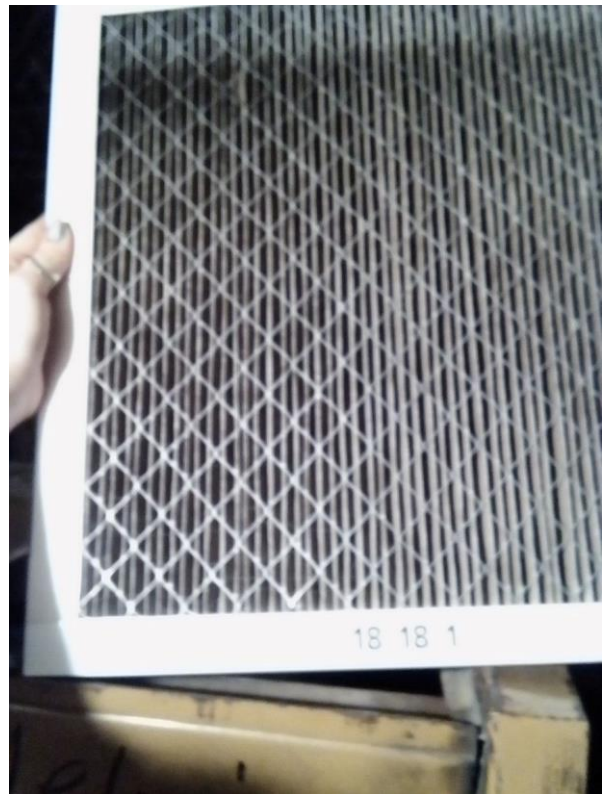
## **Appendix A**

### Photo Documentation





AHU\_03  
Heating Coils



AHU\_11  
Outdoor Main Filter Cleanliness



AHU\_13  
Heating Coils



RTU\_01  
Heating Coils