

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 Jackson Magnet

Assessment Date:  
Thursday, April 27, 2023

---

## Project Description

---

IEA conducted a ventilation inspection in Jackson Magnet 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	5:00 AM	9:00 PM
Monday-Friday	Yes	6:00 AM	7:00 PM

Typical occupancy:

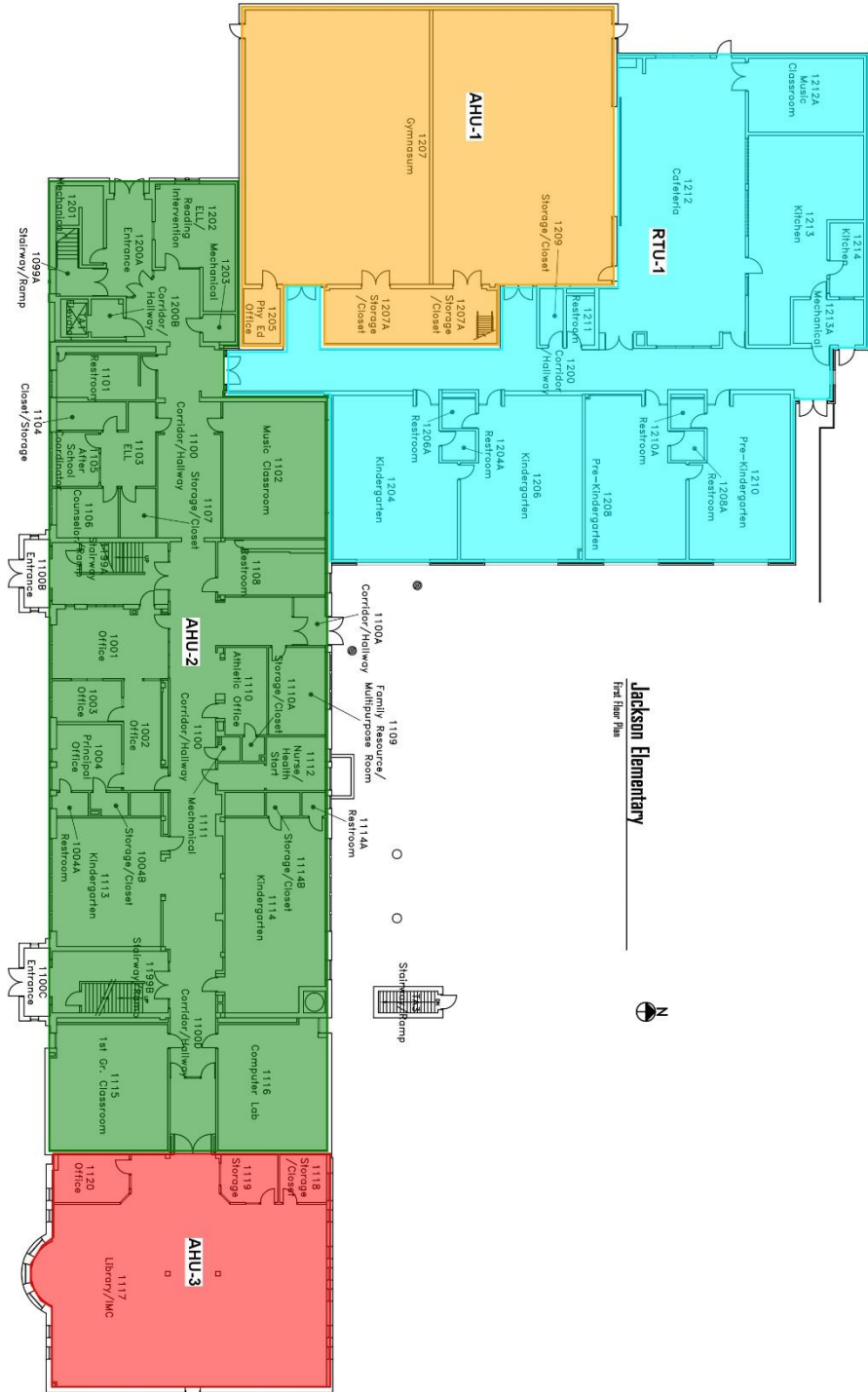
Day:	Occupied?	Start Time:	End Time:
Monday-Friday	No		
Saturday	No		
Sunday	No		
Holiday	No		

- CO2 sensors are not associated with the ventilation system.
- VAVs are not present.
- It is not known whether or not the building has variable frequency drives (VFD).
- The heating system is a steam boiler.
- A cooling system is not present.
- Filters used are:

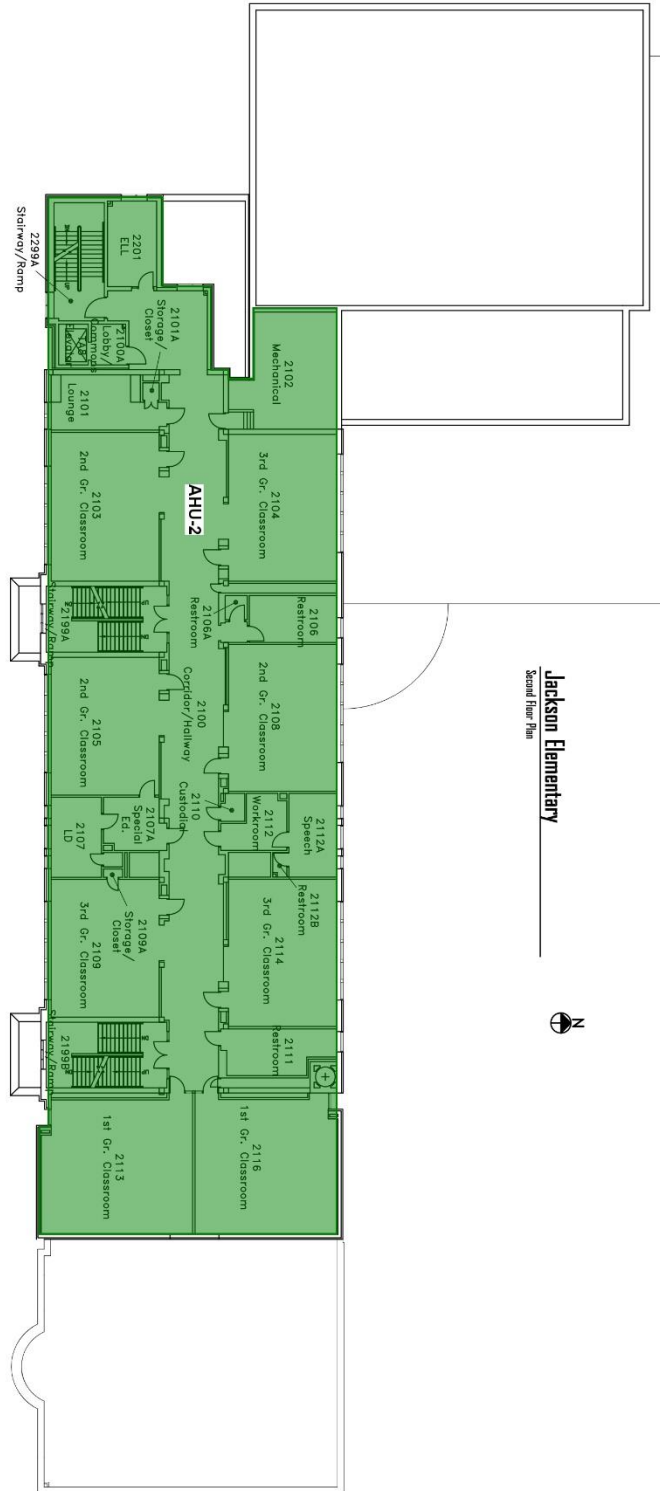
Filter Type	MERV Rating
Pleated	MERV 11
Pleated	MERV 13
Pleated	MERV 8

- 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 Winix /Areamax 2.0.
- It is not known whether or not the building was commissioned during the original construction.

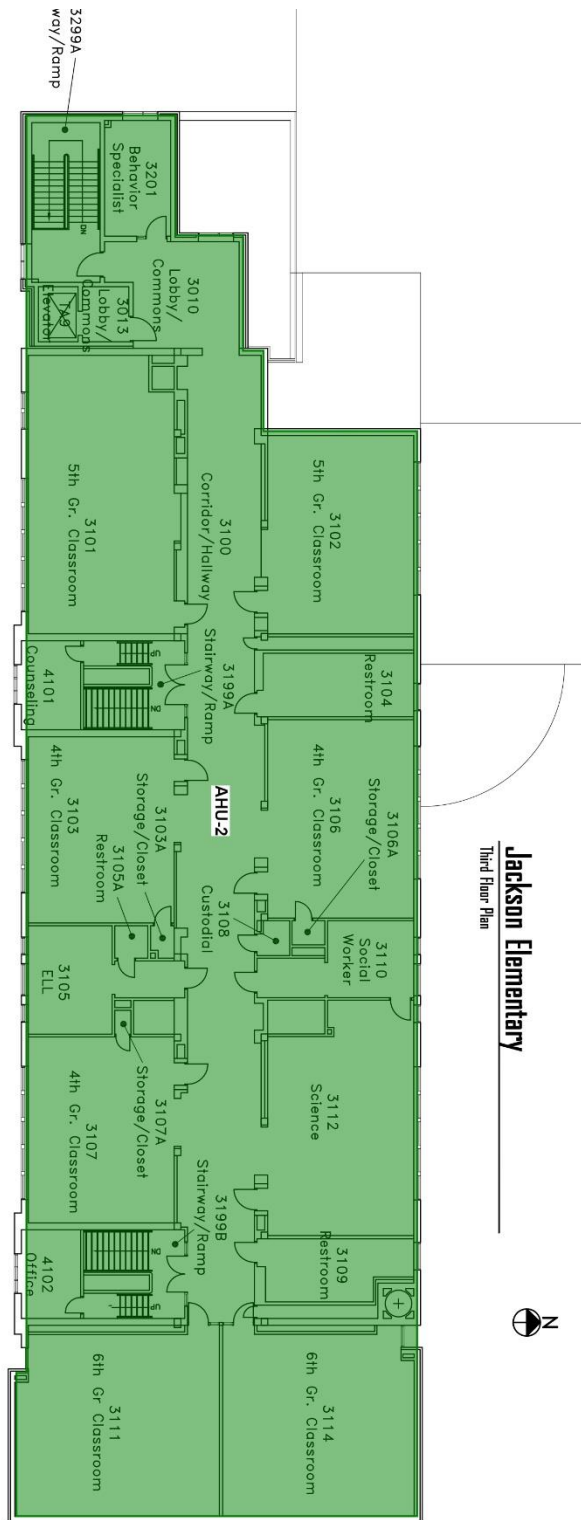
# Air Handling Unit Designations & Service Zones: Floor 1



# Air Handling Unit Designations & Service Zones: Floor 2



# Air Handling Unit Designations & Service Zones: Floor 3



# Assessment

## Ventilation System

The following information was gathered by IEA on Thursday, April 27, 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 2102	
<b>Areas Served:</b>	Gymnasium 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> <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 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 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> <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>

<b>Unit Designation:</b>	AHU_02	
<b>Location of Unit:</b>	Mechanical room 0101	
<b>Areas Served:</b>	Serves Main Building 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 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 1118	
<b>Areas Served:</b>	Library 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 - None</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 filters are clean and not in need of replacement (scoring 1 out of 5) and fit well. Mixed air filters are installed correctly.</p>
<b>Filter Type - Mixed</b> <ul style="list-style-type: none"> <li>Pre-filter: Pleated, MERV 8</li> <li>Main filter: Pleated, MERV 13</li> </ul>	<p>Outdoor air intake is in good condition.</p>	<p>Drain pans are not applicable or not present. Drain pan condition is not known.</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 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>

<b>Unit Designation:</b>	RTU_01	
<b>Location of Unit:</b>	Mechanical room 1207a roof access	
<b>Areas Served:</b>	Kitchen, Cafeteria, and North Classrooms 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) - Wheel</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 pre-filters are not present. Return air main filters are clean and not in need of replacement (scoring 1 out of 5) and fit well. Return air main filters are installed correctly.  Drain pans are not plugged. Drain pan condition is good.
<b>Filter Type - Outdoor</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 clean.  Exterior ducting is not visible. Exterior ducting insulation is in an unknown condition.
<b>Filter Type - Return</b> <ul style="list-style-type: none"> <li>Pre-filter: None</li> <li>Main filter: Pleated, MERV 11</li> </ul>		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.

---

# Recommendations

---