

IEA, INC.

# 2022 - 2023 IAQ Walkthrough



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## Saint Paul Public Schools Farnsworth Aerospace Upper

Walkthrough Date:  
Friday, January 20, 2023  
Retest Date: March 22, 2023

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## Project Description

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IEA conducted an Indoor Air Quality (IAQ) walkthrough at Farnsworth Aerospace Upper by IEA representative, Eddie Anderson. This walkthrough was conducted with the intent of gathering basic air quality and visual observations which will assist the District in making informed and proactive decisions to improve and maintain acceptable air quality in the building. This walkthrough is based upon the Environmental Protection Agency's (EPA's) Tools for Schools IAQ guidelines.

Some observations gathered during the walkthrough may identify issues which may require additional testing, evaluation or further investigation.

The findings, conclusions and recommendations presented herein are believed to be accurate and representative of the building on the date and time of the walkthrough.

### **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 during the walkthrough. 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 walkthrough:

- The building has three (3) floors.
- The building has not had recent construction.
- There are operable and inoperable windows in the exterior rooms within the building.
- The building was originally constructed in 1924.
- There are additions to the building, in the following year(s): 1969.
- The building does utilize walk-off mats.
- There are below grade floors.
- There are tunnels under portions of the building.

## Observations Summary and Air Quality Measurements

Room / Location	Number of Occupants	Odor Present	Observations	Dust Accumulation	CO <sub>2</sub> (ppm)	CO (ppm)	RH (%)	Temp (°F)
OUTDOORS					767	0.5	51.8	31.5
1000	1	No		No	671	0.5	18.6	71.8
1005	0	No		No	705	0.5	18.4	71.6
1204	1	No		No	678	0.5	18.7	72.1
1003	0	No		No	683	0.6	19.5	71.4
1204	1	No		No	563	0.3	20.1	68.4
1204B	0	No		No	548	0.4	20.6	67.5
1204A	0	Yes Fragrance		No	566	0.3	20.8	68.2
1203	0	No		No	591	0.5	19.7	70.5
1205	0	No		No	595	0.5	19.6	70.7
1304	2	No		No	976	0.5	20.6	72.1
1303	4	No		No	735	0.5	19.5	72.3
1303B	1	No		No	778	0.5	19.8	72.5
1305	3	No		No	921	0.5	20.0	72.9
1306	0	No		No	606	0.5	17.7	72.7
1307	1	No		No	579	0.6	17.8	72.0
1309	4	No		No	655	0.5	18.4	71.2
1308	8	No		No	886	0.5	19.8	71.2
1311	0	No		No	584	0.5	18.1	71.2
1313	1	No		No	683	0.6	19.1	71.1
1310	11	Yes Musty		No	906	0.5	20.6	71.1
1315	8	No		No	919	0.5	21.6	71.2
1312	13	No		No	1,079	0.5	21.9	72.0

Room / Location	Number of Occupants	Odor Present	Observations	Dust Accumulation	CO <sub>2</sub> (ppm)	CO (ppm)	RH (%)	Temp (°F)
1314	1	No	• Stained Ceiling Tiles	No	667	0.6	18.4	72.1
1420	0	No		No	548	0.5	17.3	70.3
1422	0	No		No	540	0.5	17.9	70.0
1403	22	No		No	1,015	0.4	19.3	71.0
1403A	0	No		No	770	0.5	19.2	69.8
1405	24	No		No	889	0.5	20.4	69.4
1407	30	No	• Aquariums (fish)	No	926	0.5	20.2	70.3
1409	26	No		No	932	0.5	21.1	70.0
1402B	0	No	• Stained Ceiling Tiles	No	657	0.5	18.1	69.4
2312	1	No	• Taxidermy	No	1,015	0.6	21.2	71.1
3399	0	No		No	740	0.5	20.0	70.7
3312	0	No		No	718	0.5	20.3	70.5
1009	0	No		No	581	0.6	19.7	72.0
1008	0	No	• Plants	No	595	0.6	20.5	71.2
1007	2	No		No	749	0.5	21.5	70.7
1006A	0	No		No	622	0.5	20.3	70.5
3309	20	No		No	1,059	0.6	23.8	72.1
3310	24	No		No	1,267	0.6	26.0	70.3
RETEST 3310	23	No		No	1,084	0.0	27.4	72.0
3307	18	No		No	965	0.5	23.7	71.1
3308	24	No		No	1,335	0.6	25.1	71.4
RETEST 3308	25	No		No	1,042	0.0	26.5	72.0
3305	0	No		No	1,014	0.6	23.2	71.2
3306	25	No		No	1,172	0.6	23.8	71.6
RETEST 3306	19	No		No	655	0.0	23.1	71.8
3303	0	No		No	736	0.5	19.4	72.3
3103	0	No		No	816	0.7	21.3	74.3
3104	0	No		No	595	0.7	17.3	73.6
3202	21	No	• Plants	No	803	0.6	16.9	73.0

Room / Location	Number of Occupants	Odor Present	Observations	Dust Accumulation	CO <sub>2</sub> (ppm)	CO (ppm)	RH (%)	Temp (°F)
3305	26	No		No	1,087	0.6	24.2	72.9
3205B	1	No	• Condensation	No	965	0.5	26.9	72.7
1010	2	No		No	910	0.7	22.0	74.8
1102	65	No		No	1,327	0.8	26.8	75.6
RETEST 1102	10	No		No	702	0.0	27.4	69.4
D406	4	No		No	661	0.6	17.6	72.0
406B	0	No		No	646	0.6	18.3	71.2
408	2	No		No	481	0.5	16.4	70.9
408C	0	No		No	473	0.5	17.2	71.1
401	0	No	• Stained Ceiling Tiles: Above door 10	No	699	0.5	19.8	69.6
403	1	No		No	762	0.5	21.7	68.0
402	1	No		No	823	0.4	23.1	66.9
1103	0	No		No	735	0.7	25.0	73.6
1105	0	No		No	572	0.6	20.3	73.8
KITCHEN	6	No		No	643	0.7	24.4	72.5
1106	0	No		No	742	0.7	25.4	72.0
2313	0	No		No	1,493	0.6	2.4	71.2
RETEST 2313	15	No		No	908	0.0	25.1	71.2
2310	1	No		No	663	0.5	20.4	69.8
2311	3	No		No	680	0.5	19.9	70.2
2308	15	No		No	1,106	0.5	24.0	70.5
RETEST 2308	12	No		No	933	0.0	25.2	71.7
2309	2	No		No	642	0.5	18.8	71.6
2306	218	No		No	882	0.5	19.4	71.8
2307	0	No	• Plants	No	655	0.5	21.0	71.1
2304	1	No	• Taxidermy	No	743	0.5	20.4	70.9
2305	0	No		No	656	0.5	19.0	70.7
2103	0	No		No	629	0.5	22.1	71.8
2104	0	No		No	516	0.6	19.4	70.3

Room / Location	Number of Occupants	Odor Present	Observations	Dust Accumulation	CO <sub>2</sub> (ppm)	CO (ppm)	RH (%)	Temp (°F)
2106	0	No		No	538	0.6	20.1	69.4
2102	24	No		No	1,264	0.5	25.1	71.4
RETEST 2102	11	No		No	1,188	0.0	27.3	71.9
2202	3	No		No	775	0.6	19.3	73.2
2206A	3	No	<ul style="list-style-type: none"> <li>Stained Ceiling Tiles</li> </ul>	No	887	0.6	20.0	72.7
2202B	6	No	<ul style="list-style-type: none"> <li>Plants</li> </ul>	No	806	0.6	19.7	73.4
2206	17	No		No	698	0.5	31.0	69.8
2205A	0	Yes Musty		No	853	0.5	21.3	71.2
2207/253	1	No		No	671	0.6	20.2	71.1
2205	0	No		No	658	0.5	20.5	70.2

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## Summary of Concerns & Recommendations

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See below for IEA's list of concern areas and recommendations:

### **Indoor Air Quality Parameters/Guidelines**

IEA recorded area(s) with carbon dioxide measurements above 1,200 ppm in the room(s) listed below. IEA considers carbon dioxide measurements above 1,200 ppm as an indication of a possible ventilation issue. The ventilation system(s) serving the location(s) with these levels should be evaluated.

- 1102
- 2102
- 2313
- 3308
- 3310

After IEA completed the initial IAQ walkthrough, the ventilation system(s) serving rooms with carbon dioxide measurements at or above 1,100 ppm were evaluated by SPPS. After ventilation adjustments or repairs were made, IEA returned to those rooms on March 22, 2023, to repeat the walkthrough. The “retest” data is included in this report for reference.

IEA recorded area(s) with humidity levels outside the ASHRAE recommended range of 30 - 60%. Relative humidity levels identified in area(s) listed below were found to be outside these guidelines. Low humidity levels tend to dry mucous membranes which may result in increased susceptibility to irritation. Elevated humidity levels can lead to condensation and provide conditions conducive to fungal growth. Low relative humidity is common in buildings during the heating season. An evaluation of the ventilation system controls, performance and operation is recommended.

- IEA identified eighty-nine (89) rooms with relative humidity levels below 30%. However, this is common for non-humidified buildings during the heating season and is not considered an issue.

IEA recorded area(s) with temperatures outside the recommended range. During the heating season, ASHRAE recommends that temperatures be between 68°F and 75°F. Evaluation of temperature controls and/or ventilation system performance and operation is recommended.

- 1102
- 1204B
- 402

### **Odors**

Odors were detected during the site visit in the building. If the source of the odor cannot be easily identified, IEA can provide further investigation or recommendations.

- 1204A *Fragrance*
- 1310 *Musty*
- 2205A *Musty*



### **Stained Ceiling Tiles**

Stained ceiling tiles were found in the room(s) shown below. The impacted ceiling tiles should be removed and replaced, and the cause of the moisture repaired.

- 1314
- 2206A
- 1402B
- 401 *Above door 10*

### **Condensation Concerns**

IEA located area(s) where condensation was forming. Condensation on interior sources can increase the humidity in the area and may become a source of microbial growth. Temperature differentials that cause condensation on surfaces may suggest a ventilation concern and should be evaluated. Window condensation and frost can also contribute to condensation during extreme cold outdoor temperatures.

- 3205B

### **Plants**

Plants in an occupied location can be a source of allergens to sensitized individuals due to the pollen and soil mold. It is recommended that plants be removed from locations occupied by sensitized individuals. If plants are to remain in the area, IEA recommends that plants should not be placed near air unit ventilators or air supply diffusers. Additionally, plants should be watered from the bottom. These measures will help control pollen and mold spores from becoming airborne.

- 1008
- 2307
- 2202B
- 3202

### **Taxidermy**

IEA observed area(s) with taxidermy mounts present. Individuals with allergies or asthma may be sensitive to dust, animal fur, or dander, and may have a reaction when exposed to these allergens. IEA recommends using an alternative to taxidermy mounts if allergen symptoms are found by occupants within the classroom.

- 2304
- 2312

### **Live Animals / Aquariums**

IEA observed live animal(s). Prior to having animals, the Building Principal should be consulted. Consult parents about potential allergies in a take-home note with students or during parent-teacher conferences. IEA recommends that the animal and cages/cases are regularly cleaned/maintained and stored away from air supply and return vents.

- 1407