

IEA, INC.

2022 - 2023 IAQ Walkthrough



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Saint Paul Public Schools Farnsworth Aerospace Lower

Walkthrough Date & Time:
Thursday, March 2, 2023

Project Description

IEA conducted an Indoor Air Quality (IAQ) walkthrough at Farnsworth Aerospace Lower by IEA representative, Sashya Wandmaker. 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.

Building Information

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 1922.
- There are additions to the building, in the following year(s): 1924.
- 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 ₂ (ppm)	CO (ppm)	RH (%)	Temp (°F)
OUTDOORS					500	1.2	82.0	37.0
1302	1	No		No	674	0.0	29.9	67.2
1206	7	No	• Stained Ceiling Tiles	No	779	0.0	28.3	69.9
1207	19	No		Yes Air Return	878	0.0	31.2	69.7
1205	0	No		No	635	0.0	26.9	69.4
1208	0	No	• Plants	No	662	0.0	26.1	70.5
1204	1	No		No	802	0.0	26.3	71.3
1001	3	No		No	707	0.0	25.7	71.9
1002	0	No	• Plants	No	639	0.0	24.7	71.9
1005	3	No	• Plants	No	716	0.0	26.8	72.1
1005	0	No		No	667	0.0	25.6	71.9
1003	1	No	• Plants	No	649	0.0	24.5	71.5
1101	22	Yes Fragrance	• Bubbling/Peeling Paint: Along ceiling above windows; See Appendix A	Yes Air Return	615	0.0	25.3	70.7
2201	2	No		No	779	0.0	27.6	71.6
2203	7	No		No	708	0.0	24.9	72.7
2204	17	No	• Plants	No	888	0.0	29.6	72.6
2205	2	No	• Stained Ceiling Tiles	No	761	0.0	24.8	72.4
2208	21	No		No	793	0.0	28.3	72.1
2209	0	Yes Essential oils		No	649	0.0	24.5	71.2
2101	24	No	• Plants	No	872	0.0	28.5	71.5
2102	20	No		No	843	0.0	28.6	70.6

Room / Location	Number of Occupants	Odor Present	Observations	Dust Accumulation	CO ₂ (ppm)	CO (ppm)	RH (%)	Temp (°F)
2105	0	No	- Bubbling/Peeling Paint: Ceiling above windows; See Appendix A - Plants - Taxidermy	No	738	0.0	26.2	70.8
2104	0	No		No	734	0.0	27.1	70.1
2103	24	No	- Bubbling/Peeling Paint: Ceiling above windows - Plants	No	716	0.0	26.2	71.4
3299 STAIRWELL GROUP AREA	7	No		No	876	0.0	28.4	70.2
3104	3	No	Bubbling/Peeling Paint: Throughout ceiling	No	697	0.0	26.0	69.9
3103	19	No	Bubbling/Peeling Paint: On wall underneath the windows; See Appendix A	No	832	0.0	28.0	70.1
3105	23	No	- Bubbling/Peeling Paint: Small area of peeling near NE corner - Plants	No	753	0.0	27.1	69.7
3101	5	No	- Bubbling/Peeling Paint: On ceiling above windows - Plants	No	663	0.0	26.6	69.3
3211	5	No		No	786	0.0	28.4	70.4
3201	23	No	Stained Ceiling Tiles	No	986	0.0	29.4	71.5
3210	19	No		No	792	0.0	26.5	70.0
3209	0	No		No	721	0.0	27.4	70.5
3208	15	No	Plants	No	998	0.0	30.9	70.4
3203	24	No		No	1,118	0.0	29.6	71.0
3204	15	No		No	803	0.0	27.3	70.6
3205	1	No	Stained Ceiling Tiles	No	762	0.0	26.6	70.2
3207	27	No		No	741	0.0	26.9	70.7
3206	0	No		No	579	0.0	25.7	70.6

Room / Location	Number of Occupants	Odor Present	Observations	Dust Accumulation	CO ₂ (ppm)	CO (ppm)	RH (%)	Temp (°F)
1102	2	No	• Plants	No	646	0.0	26.2	69.9
1103	24	No		No	898	0.0	29.1	70.4
1104	0	Yes Strongly smelling essential oils	• Plants	No	624	0.0	25.7	70.8
1105	23	No	• Plants	Yes Air Return	894	0.0	28.7	70.6
1201	0	No		No	722	0.0	27.7	70.1
1202	1	No		No	933	0.0	29.8	71.0
1301B	40	No		No	1,068	0.0	36.2	71.2
1301A	14	No		No	1,008	0.0	33.9	71.3
1203A	1	No		No	863	0.0	31.9	71.8
KITCHEN	4	No		Yes Air Supply, Ceiling Tiles Around Air Supply	656	0.0	29.8	70.4
2206	24	No		No	717	0.0	27.4	69.8
3102	21	No	• Plants	No	721	0.0	22.5	70.8

Summary of Concerns & Recommendations

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

Indoor Air Quality Parameters/Guidelines

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 forty-five (45) 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.

- 1302

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.

- 1101 *Fragrance*
- 2209 *Essential oils*
- 1104 *Strongly smelling essential oils*

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.

- 1206
- 3201
- 2205
- 3205

Bubbling/Peeling Paint Concerns

IEA observed bubbling/peeling paint in area(s) within the room(s) listed below. Bubbling/peeling paint can be caused by moisture issues. IEA recommends investigating the cause and repairing the paint. IEA recommends ensuring that the paint is not lead-based prior to disturbance.

- 1101 *Along ceiling above windows*
- 3103 *On wall underneath the windows*
- 2103 *Ceiling above windows*
- 3104 *Throughout ceiling*
- 2105 *Ceiling above windows*
- 3105 *Small area of peeling near NE corner*

- 3101 *On ceiling above windows*

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.

- 1002 • 2103
- 1003 • 2105
- 1005 • 2204
- 1102 • 3101
- 1104 • 3102
- 1105 • 3105
- 1208 • 3208
- 2101

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.

- 2105

Dust Accumulation

IEA observed dust accumulation in the following room(s) and recommend that the specified area is wiped clean using a damp rag.

- 1101 *Air Return*
- 1105 *Air Return*
- 1207 *Air Return*
- KITCHEN *Air Supply, Ceiling Tiles Around Air Supply*

Appendix A

Photo Documentation



1101
Bubbling/Peeling Paint



2105
Bubbling/Peeling Paint



3103
Bubbling/Peeling Paint