

IEA, INC.

2022 - 2023 IAQ Walkthrough



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Saint Paul Public Schools Hmong Language & Culture Middle School

Walkthrough Date:
Wednesday, January 18, 2023

Project Description

IEA conducted an Indoor Air Quality (IAQ) walkthrough at Hmong Language & Culture Middle School 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 1925.
- There are additions to the building, in the following year(s): 1958 and 1974.
- 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					379	0.4	80.0	32.0
1312A	1	No		No	677	0.4	26.0	70.2
1222 KITCHEN	3	No		Yes Air Return	485	0.4	25.6	70.0
1311	1	No		No	532	0.4	25.6	69.6
1314 STAGE	0	No		No	405	0.4	22.0	71.2
1308	0	No		No	536	0.3	24.8	71.4
1310	0	No		No	531	0.4	23.7	72.3
1309	0	Yes Stuffy		No	664	0.4	24.2	73.0
1304	1	No		Yes Fabric sound panels	453	0.4	25.0	72.7
1301	2	No		No	456	0.4	26.6	71.6
1005	1	No		No	483	0.4	23.2	71.2
1001	2	No	• Stained Ceiling Tiles	No	499	0.4	23.6	70.5
1004	0	No		No	500	0.3	24.4	69.4
1101	0	No	• Stained Ceiling Tiles	Yes Ceiling Tiles Around Air Supply	423	0.3	24.6	68.1
1119	1	No		No	528	0.3	25.4	68.7
1102	1	No		Yes Air Return, Air Supply	429	0.3	24.4	68.4
1103	1	No		Yes Ceiling Tiles Around Air Supply	417	0.3	24.4	67.6

Room / Location	Number of Occupants	Odor Present	Observations	Dust Accumulation	CO ₂ (ppm)	CO (ppm)	RH (%)	Temp (°F)
1116	1	No		No	485	0.3	24.9	68.7
1107	1	No		No	479	0.3	23.5	69.1
1115	0	No		No	428	0.3	23.9	68.5
1315	23	No		No	618	0.4	28.0	69.1
1312	35	No		No	564	0.3	24.9	69.1
1203	0	No		No	433	0.4	24.4	68.4
1207	1	No		No	482	0.3	25.4	68.2
1206	0	No		No	475	0.3	25.1	68.4
1204	0	No		Yes Air Return	488	0.4	25.3	68.4
1208	2	No	• Stained Ceiling Tiles	No	461	0.3	24.9	68.4
1215	18	Yes Rubber		Yes Air Return	599	0.5	25.5	69.5
1223	0	No		No	702	1.1	27.5	69.3
1221	0	No		Yes Air Return	680	0.8	27.7	69.8
1224	0	No		No	543	0.5	25.6	68.9
1109	19	No		No	533	0.4	26.3	67.8
1110 FLEX	0	No		No	436	0.4	25.8	66.4
1111	18	No		No	651	0.3	25.7	66.7
1112	20	No		No	634	0.4	26.4	69.5
1113	0	No		No	412	0.3	25.4	66.7
1114	21	No		No	623	0.3	26.2	68.0
2107	0	No		No	472	0.3	23.8	69.1
2101	0	No		No	416	0.3	24.2	67.8
2118	0	No		Yes Air Return	448	0.4	24.6	68.0
2117	0	No		Yes Ceiling Tiles Around Air Supply	440	0.4	24.4	68.2

Room / Location	Number of Occupants	Odor Present	Observations	Dust Accumulation	CO ₂ (ppm)	CO (ppm)	RH (%)	Temp (°F)
2116	0	No		Yes Ceiling Tiles Around Air Supply	439	0.4	24.3	68.4
2103	0	No		Yes Ceiling Tiles Around Air Supply	416	0.4	23.8	68.4
2115	0	No		No	443	0.4	24.6	68.4
2114	0	No	Plants	Yes Ceiling Tiles Around Air Supply	444	0.4	24.0	68.7
2113	0	No		Yes Ceiling Tiles Around Air Supply	440	0.4	24.1	68.7
2112	0	No		Yes Ceiling Tiles Around Air Supply	441	0.4	24.3	68.2
2111	0	No	Bubbling/Peeling Paint: See Appendix A	No	412	0.4	23.9	68.4
2409	0	No		No	404	0.3	23.3	68.7
2307	0	No	Stained Ceiling Tiles	No	408	0.4	23.3	68.7
2303	0	No	Bubbling/Peeling Paint: See Appendix A	No	452	0.4	25.5	70.3
2301	0	No	Bubbling/Peeling Paint: See Appendix A	No	463	0.4	24.3	71.8
3303	0	No		No	456	0.4	23.8	73.2
3301	0	No		No	442	0.4	23.5	73.4

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 fifty-three (53) 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.

- 1103 • 1111
- 1109 • 1113
- 1110 FLEX • 2101

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.

- 1215 *Rubber* • 1309 *Stuffy*

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.

- 1001 • 1208
- 1101 • 2307

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.

- 2111 • 2303
- 2301

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.

- 2114

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 | <i>Ceiling Tiles Around Air Supply</i> | • 2103 | <i>Ceiling Tiles Around Air Supply</i> |
| • 1102 | <i>Air Return, Air Supply</i> | • 2112 | <i>Ceiling Tiles Around Air Supply</i> |
| • 1103 | <i>Ceiling Tiles Around Air Supply</i> | • 2113 | <i>Ceiling Tiles Around Air Supply</i> |
| • 1204 | <i>Air Return</i> | • 2114 | <i>Ceiling Tiles Around Air Supply</i> |
| • 1215 | <i>Air Return</i> | • 2116 | <i>Ceiling Tiles Around Air Supply</i> |
| • 1221 | <i>Air Return</i> | • 2117 | <i>Ceiling Tiles Around Air Supply</i> |
| • 1222 KITCHEN | <i>Air Return</i> | • 2118 | <i>Air Return</i> |
| • 1304 | <i>Fabric sound panels</i> | | |

Appendix A

Photo Documentation



1304
Dust



2111
Bubbling/Peeling Paint



2303
Bubbling/Peeling Paint



2301
Bubbling/Peeling Paint