

IEA, INC.

2022 - 2023 IAQ Walkthrough



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Saint Paul Public Schools Obama Elementary School

Walkthrough Date:
Tuesday, December 6, 2022

Project Description

IEA conducted an Indoor Air Quality (IAQ) walkthrough at Obama Elementary School by IEA representative, Nick Lundgren. 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 four (4) 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): 1926 and 1975.
- 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					401	0.6	78.0	12.0
1301	0	No		No	642	0.3	15.9	70.7
1302	1	No	<ul style="list-style-type: none"> Plants 	No	603	0.3	16.0	69.4
1303	6	No		No	760	0.2	17.7	69.8
1304	0	No		No	680	0.2	16.7	69.1
1305	0	No	<ul style="list-style-type: none"> Bubbling/Peeling Paint: See Appendix A Plants 	No	609	0.1	17.0	67.6
1306	0	No	<ul style="list-style-type: none"> Bubbling/Peeling Paint: See Appendix A 	No	658	0.1	17.6	67.1
1307	13	No		No	832	0.1	16.9	70.5
1308	12	No	<ul style="list-style-type: none"> Plants 	No	852	0.2	17.9	70.0
1309	10	Yes Fragrance		No	857	0.2	17.1	70.7
1310	0	No		No	683	0.1	17.0	69.8
1312	0	No		No	677	0.1	16.3	69.8
1317 GYMNASIUM	0	No		No	784	0.2	15.4	71.2
1116	0	No		No	455	0.1	13.2	69.4
1618	0	No		No	518	0.1	12.5	71.4
1119	0	No		No	491	0.1	11.9	73.0
1114	0	No		No	456	0.1	13.2	68.7

Room / Location	Number of Occupants	Odor Present	Observations	Dust Accumulation	CO ₂ (ppm)	CO (ppm)	RH (%)	Temp (°F)
MEDIA CENTER EAST	1	No		No	443	0.1	13.1	67.8
MEDIA CENTER WEST	0	No	• Stained Ceiling Tiles: See Appendix A	No	444	0.1	13.2	67.6
1111	1	No		No	488	0.1	13.3	69.6
1112	0	No		No	464	0.1	13.2	68.7
1113	0	No		No	456	0.1	13.6	67.5
1120	16	No		No	743	0.1	17.3	70.7
1104	3	No		No	496	0.1	19.3	67.6
1106	1	No		No	534	0.1	19.7	67.6
1101	0	No	• Stained Ceiling Tiles	No	459	0.1	13.1	67.5
1102	0	No		No	445	0.1	12.5	68.5
1103A	0	No	• Stained Ceiling Tiles	No	456	0.1	12.2	70.5
1201 GYMNASIUM	1	No	• Bubbling/Peeling Paint: See Appendix A	No	494	0.1	13.4	70.2
1206	0	No		No	537	0.1	14.5	69.6
1207	22	No	• Plants	No	573	0.1	15.2	71.4
1209	0	No		No	532	0.1	13.5	73.9
1210	0	No		No	542	0.1	14.4	71.6
1212	0	No		No	544	0.1	14.8	71.1
1211	0	No		No	538	0.1	15.0	70.5
1215	0	No		No	488	0.1	15.1	69.4
1216	0	No		No	488	0.1	15.5	68.4
1217	0	No		No	502	0.1	15.4	68.4
1219 WEST	0	No		No	473	0.1	18.5	64.0
1219 EAST	0	No		No	476	0.1	19.1	63.1
1220	0	No		No	480	0.1	16.0	67.3

Room / Location	Number of Occupants	Odor Present	Observations	Dust Accumulation	CO ₂ (ppm)	CO (ppm)	RH (%)	Temp (°F)
1220A	0	No		No	490	0.1	15.6	68.2
AUDITORIUM	0	No		No	455	0.1	13.9	68.7
CAFETERIA	60	No		No	550	0.2	17.6	69.8
2303	0	No		No	623	0.1	16.0	70.2
2305	0	No	• Plants	No	612	0.1	16.3	69.6
2307	6	No	• Plants	No	800	0.1	17.1	70.5
2308	0	No		No	638	0.1	16.0	70.3
2309	1	No	• Plants	No	619	0.1	15.9	70.3
2310	0	No	• Housekeeping: Storage	No	628	0.1	16.3	70.2
2311	0	No		No	618	0.1	16.1	69.8
2312	0	No		No	646	0.1	16.2	70.2
2313	2	No		No	642	0.1	16.1	70.3
2302	0	No		No	610	0.1	16.1	70.0
2301	0	No		No	625	0.1	16.0	70.5
1001	1	No		No	568	0.1	14.9	70.5
1003	0	No		No	561	0.1	14.4	71.2
1005	0	No		No	501	0.1	13.9	70.3
1007	2	No		No	676	0.1	15.5	70.7
1006	1	No		No	677	0.1	16.5	71.8
1016	1	No		No	554	0.2	14.9	71.1
1015	0	No		No	557	0.1	15.1	70.3
1015	0	No		No	553	0.1	14.7	69.8
1013	0	No		No	551	0.1	16.2	69.3
1010	0	No		No	506	0.1	14.8	69.3
3303	0	No		No	613	0.1	16.0	71.1
3304	0	No		No	598	0.2	16.8	69.3

Room / Location	Number of Occupants	Odor Present	Observations	Dust Accumulation	CO ₂ (ppm)	CO (ppm)	RH (%)	Temp (°F)
3305	0	No		No	601	0.1	16.9	68.4
3306	2	No		No	631	0.1	17.1	68.9
3307	15	No	• Plants	No	654	0.1	17.0	70.3
3308	0	No	• Plants	No	654	0.1	16.9	70.2
3309	16	Yes Fragrance		No	793	0.1	18.0	71.4
3311	0	No		No	582	0.1	15.7	71.2
3312	0	No		No	582	0.1	15.9	70.9
3310	0	Yes Musty		No	684	0.1	16.6	71.4
3302	0	No		No	586	0.1	15.8	71.6
3301	0	No	• Plants	No	614	0.1	16.5	71.1
2203	1	No		No	509	0.1	15.2	71.4
2204	0	No		No	493	0.1	14.9	71.4
2205	1	No		No	510	0.1	15.0	71.8
2207	1	No		No	520	0.1	14.9	71.6
2208	1	No	• Bubbling/Peeling Paint: See Appendix A	No	511	0.1	14.8	72.0
2209	0	No		No	503	0.1	15.3	70.3
2210	0	No		No	517	0.1	16.0	69.8
2212	0	No	• Plants	No	502	0.1	15.9	69.1
2211	0	No		No	505	0.1	15.9	69.8
2216	0	No		No	517	0.1	16.3	69.4
2217	1	No		No	506	0.1	15.8	69.6
5518	1	No		No	497	0.1	14.4	72.5
2219	0	No		No	508	0.1	14.5	72.9
2220	0	No		No	498	0.2	14.3	72.7

Room / Location	Number of Occupants	Odor Present	Observations	Dust Accumulation	CO ₂ (ppm)	CO (ppm)	RH (%)	Temp (°F)
2230	0	No	<ul style="list-style-type: none"> Bubbling/Peeling Paint: See Appendix A 	Yes Horizontal Surfaces, Air Supply	495	0.1	14.1	73.6
2229	0	No	<ul style="list-style-type: none"> Bubbling/Peeling Paint: See Appendix A 	No	521	0.1	14.5	73.6
2228	0	No		No	610	0.1	14.6	73.6
2221	0	No		No	497	0.2	14.3	72.9
2222	0	No		No	521	0.1	14.3	73.2
2223	1	No		No	524	0.1	14.4	73.2
2224	0	No	<ul style="list-style-type: none"> Bubbling/Peeling Paint: See Appendix A Stained Ceiling Tiles 	No	461	0.2	14.6	70.7
3216	0	No	<ul style="list-style-type: none"> Bubbling/Peeling Paint: See Appendix A 	No	512	0.1	15.9	70.1
3215	0	No		No	557	0.1	16.3	68.7
3214	0	No	<ul style="list-style-type: none"> Bubbling/Peeling Paint: See Appendix A 	No	486	0.1	16.1	68.7
3213	0	No		No	492	0.1	16.0	68.7
3210	0	No		No	493	0.1	16.2	68.9
3209	0	No		No	487	1.0	16.2	68.4
3207	0	No	<ul style="list-style-type: none"> Housekeeping: Storage 	No	475	0.1	16.3	67.5
3205	0	No	<ul style="list-style-type: none"> Housekeeping: Storage 	No	474	0.1	16.8	66.0
3204	0	No	<ul style="list-style-type: none"> Housekeeping: Storage 	No	465	0.1	16.7	66.2
3203	0	No	<ul style="list-style-type: none"> Housekeeping: Storage 	No	472	0.1	16.4	67.7
3208	0	No	<ul style="list-style-type: none"> Housekeeping: Storage 	No	471	0.1	16.1	67.6

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 one hundred and eight (108) 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.

- 1101
- 1104
- 1106
- 1113
- 1219 EAST
- 1219 WEST
- 1220
- 1305
- 1306
- 3203
- 3204
- 3205
- 3207
- 3208
- MEDIA CENTER EAST
- MEDIA CENTER WEST

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.

- 1309 *Fragrance*
- 3309 *Fragrance*
- 3310 *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.

- 1101
- 1103A
- 2224
- MEDIA CENTER WEST

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.

- 1201 GYMNASIUM
- 1305
- 1306
- 2208
- 2224
- 2229
- 2230
- 3214
- 3216

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.

- 1207
- 1302
- 1305
- 1308
- 2212
- 2305
- 2307
- 2309
- 3301
- 3307
- 3308

Poor Housekeeping

Area(s) identified by IEA as having poor housekeeping (excessive clutter, excessive dust/debris on horizontal surfaces, etc.) were documented within the building. Poor housekeeping can limit building maintenance from conducting a proper cleaning of the area. This can result in elevated potential for allergen issues in sensitized individuals due to dirt and debris loading. Poor housekeeping can also allow for pest (insects and rodents) issues in the space.

- 2310 *Storage*
- 3203 *Storage*
- 3204 *Storage*
- 3205 *Storage*
- 3207 *Storage*
- 3208 *Storage*

Dust Accumulation

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

- 2230 *Horizontal Surfaces,
Air Supply*

Appendix A

Photo Documentation



1305

Bubbling/Peeling Paint



1306

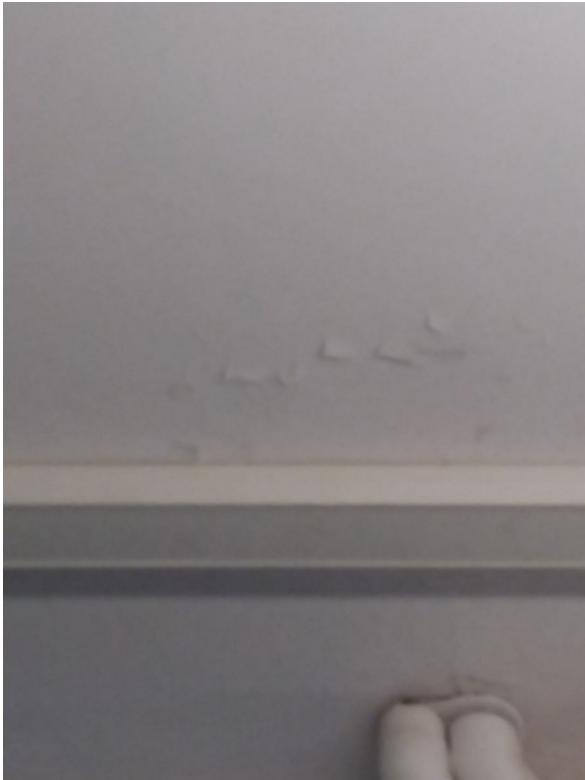
Bubbling/Peeling Paint



MEDIA CENTER WEST
Stained Ceiling Tiles



1201 GYMNASIUM
Bubbling/Peeling Paint



2208

Bubbling/Peeling Paint



2230

Bubbling/Peeling Paint



2229

Bubbling/Peeling Paint



2224

Bubbling/Peeling Paint



3216

Bubbling/Peeling Paint



3214

Bubbling/Peeling Paint