

IEA, INC.

2022 - 2023 IAQ Walkthrough



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Saint Paul Public Schools Randolph Heights Elementary School

Walkthrough Date:
Tuesday, January 17, 2023

Project Description

IEA conducted an Indoor Air Quality (IAQ) walkthrough at Randolph Heights Elementary 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 two (2) floors.
- The building has not had recent construction.
- There are operable windows in the exterior rooms within the building.
- The building was originally constructed in 1915.
- There are additions to the building, in the following year(s): 1920 and 1923.
- 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					415	0.9	85.0	34.0
1014	1	No		No	722	0.7	28.1	71.8
1415	26	No	• Plants	No	801	0.7	28.7	71.6
1411	23	No		No	810	0.7	30.8	70.3
1409	22	No	• Plants	No	815	0.7	30.4	69.8
1407	17	No		No	702	0.7	27.5	72.0
1403	18	No		No	848	0.8	28.6	72.1
GYMNASIUM	24	No		No	895	0.9	32.2	70.9
GYMNASIUM OFFICE	0	No		No	861	0.8	32.0	70.9
1204	22	No	• Stained Ceiling Tiles	No	935	0.8	32.0	71.6
2212	1	No	• Moisture Impacted Materials: See Appendix A	No	870	0.8	29.7	69.6
2211	22	No		No	964	0.8	34.5	69.1
2210	20	No		No	1,076	0.8	35.4	68.7
2208	1	No		No	842	0.7	32.8	68.5
2206	19	No		No	938	0.7	33.2	69.4
2207	0	No		No	675	0.7	29.0	71.2
2230	2	No		No	721	0.7	27.9	72.3
2204	34	No	• Plants	No	777	0.7	29.8	71.6
2100 CAFETERIA	55	No		No	690	0.6	29.2	70.7
2202	1	No	• Plants	No	706	0.6	30.1	70.3
2005	0	No		No	739	0.7	30.3	70.0
2004	2	No		No	677	0.6	29.0	70.7
2004A	0	No		No	657	0.6	29.2	70.7

Room / Location	Number of Occupants	Odor Present	Observations	Dust Accumulation	CO ₂ (ppm)	CO (ppm)	RH (%)	Temp (°F)
2001	27	No	- Stained Ceiling Tiles - Plants	No	688	0.6	29.0	70.0
2312	21	No		No	1,151	0.6	32.7	71.6
2313	21	No		No	1,150	0.7	31.5	72.9
2315	25	No		No	1,041	0.7	29.4	75.2
2402	23	No		No	1,350	0.7	33.6	72.9
2405	21	No	- Stained Ceiling Tiles - Taxidermy	No	1,052	0.6	29.3	73.6
2407	20	No		No	1,055	0.6	29.3	73.2
2409	5	No		No	660	0.6	27.1	71.4
2411	0	No	Plants	No	599	0.5	25.6	73.0
2415	3	No		No	655	0.5	25.2	74.5
2410	1	No		No	592	0.6	26.8	71.2
2401	0	No	Plants	No	856	0.5	27.9	72.1
2221 KITCHEN	0	No		Yes Air Supply, Ceiling Tiles Around Air Supply	713	0.6	28.8	71.8
2002	0	No		No	669	0.6	28.1	70.7
2004B	1	No		No	779	0.6	30.7	70.9
2205	4	No		No	895	0.6	30.7	71.1
2003	0	No	Bubbling/Peeling Paint: See Appendix A	No	685	0.6	28.4	70.7
2003 A PRINCIPALS OFFICE	0	No		No	651	0.6	29.4	69.4

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 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.

- 2402

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 twenty-four (24) 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.

- 2315

Moisture-Impacted Building Material Concerns

Moisture-impacted building materials should be repaired or replaced when discoloration or water staining is observed. Moisture-impacted building materials can be a source for microbial growth. The source for the moisture infiltration should be investigated and repaired if not easily identified.

- 2212

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.

- 1204 • 2405
- 2001

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.

- 2003

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.

- 1409
- 1415
- 2001
- 2202
- 2204
- 2401
- 2411

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.

- 2405

Dust Accumulation

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

- 2221 KITCHEN *Air Supply, Ceiling Tiles Around Air Supply*

Appendix A

Photo Documentation



2212

Moisture-Impacted Materials



2003

Bubbling/Peeling Paint