

IEA, INC.

# 2022 - 2023 IAQ Walkthrough



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## Saint Paul Public Schools Cherokee Heights Elementary School

Walkthrough Date:  
Friday, February 10, 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 Cherokee Heights Elementary School 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 four (4) 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 1925.
- There are additions to the building, in the following year(s): 1971, 1978, 2000 and 2001.
- 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					567	0.7	15.6	20.1
1201	35	No		Yes Air Return, Air Supply	58	0.6	12.9	68.7
POOL	2	No	<ul style="list-style-type: none"> <li>Bubbling/Peeling Paint: Various locations</li> <li>Moisture Impacted Materials: See Appendix A</li> </ul>	Yes Air Supply	472	0.7	15.5	79.0
1213	1	No		No	510	0.8	13.1	78.8
2211	5	No		No	588	0.5	11.6	70.2
2211A	0	No		No	622	0.5	11.5	70.5
2210	1	No		No	458	0.5	5.6	69.6
2209	0	No		No	481	0.6	6.3	67.3
2208	0	No		No	515	0.4	8.5	66.4
2207	2	No		No	579	0.4	10.6	68.4
2203	0	No		No	486	0.5	7.6	68.5
2206	1	No		No	506	0.5	8.1	67.5
2008	0	No		No	553	0.5	10.7	72.3
2004	0	No		No	537	0.6	10.1	71.4
2007 COPY ROOM	0	No	<ul style="list-style-type: none"> <li>Stained Ceiling Tiles</li> </ul>	No	545	0.6	10.9	72.0
2001 MAIN OFFICE LOBBY	2	No	<ul style="list-style-type: none"> <li>Stained Ceiling Tiles</li> </ul>	No	515	0.6	7.7	71.8
2003	0	No	<ul style="list-style-type: none"> <li>Plants</li> </ul>	No	571	0.6	7.6	71.6
2002	0	No		No	524	0.6	8.8	70.0
2202	3	No		No	582	0.5	9.0	70.0

Room / Location	Number of Occupants	Odor Present	Observations	Dust Accumulation	CO <sub>2</sub> (ppm)	CO (ppm)	RH (%)	Temp (°F)
2102	0	No	• Stained Ceiling Tiles	No	535	0.6	8.6	7.5
2103	18	No		No	868	0.5	12.6	70.9
2104	13	No		No	881	0.6	12.1	72.5
2105/2106	1	No		No	837	0.6	12.0	70.5
2107/2108	2	No	• Plants	No	711	0.5	9.9	72.7
2109/2110	1	No	• Plants	No	477	0.6	8.5	73.0
3110	17	No		No	1,331	0.6	15.6	71.6
RETEST 3110	13	No		No	1,063	0.0	29.0	68.2
4202	0	No		No	562	0.6	11.6	68.4
4203	0	No		No	527	0.6	8.6	69.1
4204	2	No		No	558	0.6	8.9	68.7
4201	0	No		No	481	0.5	8.3	68.4
1104	0	No		No	514	0.5	10.0	67.3
1102	1	No	• Stained Ceiling Tiles	Yes Air Return	629	0.5	13.6	66.2
3109	0	No	• Plants	No	971	0.6	12.7	71.4
3107/3108	2	No		No	795	0.6	12.0	69.3
3106 /3105	26	No		No	1,242	0.7	13.8	71.4
RETEST 3106/3105	25	No		No	1,120	0.0	36.1	68.4
3103/3104	16	No		No	976	0.6	11.6	71.2
3111	2	No	• Stained Ceiling Tiles	No	727	0.6	10.6	71.1
3114	0	No		No	820	0.6	12.0	69.8
3201	5	No	• Plants	No	511	0.5	8.0	69.4
3203	3	No	• Plants	No	543	0.5	9.0	68.9
3204	0	No		No	678	0.5	12.1	67.8
3205	0	No		No	659	0.5	13.7	68.7
3206	2	No	• Plants	No	803	0.5	12.7	69.6
1208	0	No	• Bubbling/Peeling Paint: See Appendix A	No	447	0.6	8.1	68.7
1113	21	No	• Stained Ceiling Tiles	No	609	0.5	10.5	67.6

Room / Location	Number of Occupants	Odor Present	Observations	Dust Accumulation	CO <sub>2</sub> (ppm)	CO (ppm)	RH (%)	Temp (°F)
C109	2	No		Yes Air Supply	475	0.5	11.5	68.5
C108	0	No		No	501	0.5	11.6	69.1
C102	0	No	<ul style="list-style-type: none"> <li>Stained Ceiling Tiles</li> </ul>	No	448	0.5	11.4	69.3
C100 LOBBY	1	No	<ul style="list-style-type: none"> <li>Stained Ceiling Tiles</li> </ul>	No	462	0.5	11.1	69.6
C202A BREAK ROOM	0	No	<ul style="list-style-type: none"> <li>Stained Ceiling Tiles</li> <li>Plants</li> </ul>	No	452	0.5	11.5	69.6
C202B	0	No		No	488	0.5	11.4	70.2
C OPEN OFFICES	9	No	<ul style="list-style-type: none"> <li>Plants</li> </ul>	No	475	0.5	11.2	70.3
C204	8	No	<ul style="list-style-type: none"> <li>Plants</li> </ul>	No	518	0.5	11.5	70.7
2214	0	No		No	655	0.5	11.3	67.6
2213	1	No		No	682	0.5	10.8	69.3
C201	0	No		No	465	0.5	10.5	70.9
1103	25	No		No	657	0.6	12.5	68.4
1104	7	No		No	935	0.6	13.7	67.1
1106	0	No		No	488	0.6	7.8	70.0
1107	3	No		No	589	0.6	11.6	67.8
1109	1	No		No	653	0.6	12.4	67.6

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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.

- 3106 /3105
- 3110

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 sixty-one (61) 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
- 1104
- 1104
- 1107
- 1109
- 1113
- 1213
- 2102
- 2206
- 2208
- 2209
- 2214
- 3204
- POOL

### **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.

- POOL

**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.

- 1102
- 1113
- 2001 MAIN OFFICE LOBBY
- 2007 COPY ROOM
- 2102
- 3111
- C100 LOBBY
- C102
- C202A BREAK ROOM

**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.

- 1208
- POOL *Various locations*

**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.

- 2003
- 2107/2108
- 2109/2110
- 3109
- 3201
- 3203
- 3206
- C OPEN OFFICES
- C202A BREAK ROOM
- C204

**Dust Accumulation**

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

- 1102 *Air Return*
- 1201 *Air Return, Air Supply*
- C109 *Air Supply*
- POOL *Air Supply*

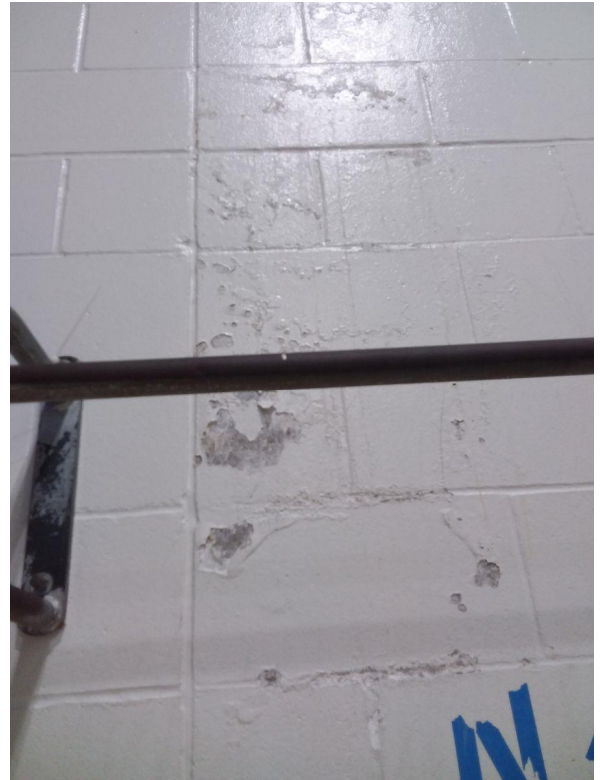
# **Appendix A**

## Photo Documentation



**POOL**

**Moisture Impacted Materials**



**1208**

**Bubbling/Peeling Paint**