

IEA, INC.

# 2022 - 2023 IAQ Walkthrough



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## Saint Paul Public Schools Chelsea Heights Elementary School

Walkthrough Date:  
Friday, February 3, 2023  
Retest Date: March 20, 2023

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## Project Description

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IEA conducted an Indoor Air Quality (IAQ) walkthrough at Chelsea Heights Elementary School by IEA representative, David McNeill. 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 three (3) 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 1932.
- There are additions to the building, in the following year(s): 1939, 1954 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 <sub>2</sub> (ppm)	CO (ppm)	RH (%)	Temp (°F)
OUTDOORS					300	0.5	64.5	-9.0
0205	0	No	<ul style="list-style-type: none"> <li>Housekeeping: Storage</li> </ul>	No	682	0.1	10.7	70.0
0206	15	No	<ul style="list-style-type: none"> <li>Aquariums (fish)</li> <li>Live Animals</li> <li>Plants</li> </ul>	No	863	0.4	10.7	69.6
2100	1	No	<ul style="list-style-type: none"> <li>Plants</li> </ul>	No	865	0.4	10.3	69.4
2106	0	No	<ul style="list-style-type: none"> <li>Plants</li> </ul>	No	839	0.4	10.1	70.0
2104	0	No		No	786	0.4	8.9	69.3
2103	25	No	<ul style="list-style-type: none"> <li>Plants</li> </ul>	No	1,132	0.4	12.9	69.1
RETEST 2103	29	No		No	1,039	0.0	21.8	70.0
2102	20	No		No	1,079	0.4	12.1	69.3
2101	0	No	<ul style="list-style-type: none"> <li>Plants</li> </ul>	No	793	0.4	9.4	68.2
2118	2	No	<ul style="list-style-type: none"> <li>Stained Ceiling Tiles</li> </ul>	No	1,149	0.3	14.2	69.1
RETEST 2118	3	No		No	1,308	0.0	20.7	70.0
2111	20	No		No	881	0.3	10.1	68.9
2110	25	No	<ul style="list-style-type: none"> <li>Plants</li> </ul>	No	1,015	0.3	11.8	68.7
2109	0	No		No	796	0.3	9.3	68.9
2112	10	No		No	957	0.3	11.1	68.9
2117	0	No	<ul style="list-style-type: none"> <li>Stained Ceiling Tiles</li> </ul>	Yes Horizontal Surfaces	798	0.2	8.0	73.0
2208	30	No		No	703	0.4	7.4	72.3
2201	0	No		No	606	0.4	6.8	70.9
2202	0	No	<ul style="list-style-type: none"> <li>Plants</li> </ul>	No	612	0.3	8.0	69.8
2203	25	No		No	807	0.3	9.8	69.4

Room / Location	Number of Occupants	Odor Present	Observations	Dust Accumulation	CO <sub>2</sub> (ppm)	CO (ppm)	RH (%)	Temp (°F)
2206	0	No	• Plants	No	602	0.3	7.1	69.9
2204	0	No	• Plants	No	652	0.3	7.9	69.6
2205	1	No		No	598	0.3	7.1	69.3
1201	15	No		No	876	0.3	11.2	68.5
1202	20	No		No	1,016	0.3	11.9	69.1
1001	1	No		No	691	0.3	9.0	68.7
1003	1	No		No	682	0.3	8.7	68.5
1002	0	No		No	717	0.3	9.1	68.4
1204	1	No		No	760	0.3	11.2	68.7
1203	0	No		No	785	0.2	11.7	68.9
1207	2	No	• Plants	No	661	0.3	8.3	67.8
1207B	1	No		No	641	0.3	8.3	67.3
1207D	0	No		No	653	0.2	8.7	67.6
1208	0	No		No	708	0.2	9.5	68.4
1210	0	No		No	674	0.2	9.0	68.5
1212	0	No		No	675	0.2	8.9	68.5
1211	1	No		No	757	0.2	10.1	68.7
1214	0	No		No	684	0.2	9.0	68.9
1209	4	No		No	798	0.3	9.1	69.1
1101	0	No		No	763	0.3	9.4	68.7
1102	25	No	• Plants	No	1,246	0.2	13.5	68.4
RETEST 1102	26	No		No	1,018	0.0	23.8	69.3
1102A	0	No		Yes Air Return	1,180	0.2	12.5	68.7
RETEST 1102A	0	No		No	1,150	0.0	35.5	69.5
1103	0	No		No	1,007	0.3	10.7	68.0
1108	1	No		No	980	0.2	11.2	67.6
1106	0	No		Yes Ceiling Tiles Around Air Supply	796	0.1	9.8	67.5
1117	0	No	• Stained Ceiling Tiles	No	563	0.2	6.1	66.4

Room / Location	Number of Occupants	Odor Present	Observations	Dust Accumulation	CO <sub>2</sub> (ppm)	CO (ppm)	RH (%)	Temp (°F)
1119	0	No		No	690	0.1	7.8	65.5
1118	0	No		No	674	0.1	7.8	65.8
1301	1	No		Yes Air Return, Ceiling Tiles Around Air Supply	786	0.2	10.0	67.8
1302	1	No	• Plants	No	761	0.2	10.2	68.0
1303	20	No		No	824	0.3	10.7	67.8
1304	20	No	• Plants	Yes Air Return, Ceiling Tiles Around Air Supply	773	0.3	10.1	67.1
1305 COMMONS	2	No	• Stained Ceiling Tiles	No	693	0.3	10.1	66.4
1305	25	No		No	702	0.2	9.4	66.7
1306	20	No		No	735	0.1	9.5	68.4
CAFETERIA	40	No		No	873	0.3	12.6	67.5
STAGE	1	No		No	907	0.3	12.9	67.3
KITCHEN	4	No		Yes Air Return	808	0.3	14.3	67.1

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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.

- 1102
- RETEST 2118

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 20, 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 fifty-nine (59) 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.

- 1106
- 1108
- 1117
- 1118
- 1119
- 1207
- 1207B
- 1207D
- 1301
- 1303
- 1304
- 1305
- 1305 COMMONS
- CAFETERIA
- KITCHEN
- STAGE

### **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.

- 1117
- 1305 COMMONS
- 2117
- 2118

### **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.

- 0206
- 1102
- 1207
- 1302
- 1304
- 2100
- 2101
- 2103
- 2106
- 2110
- 2202
- 2204
- 2206

### **Live Animals / Aquariums**

IEA observed live animal(s). Prior to having animals, the Building Principal should be consulted. Consult parents about potential allergies in a take-home note with students or during parent-teacher conferences. IEA recommends that the animal and cages/cases are regularly cleaned/maintained and stored away from air supply and return vents.

- 0206
- 0206

### **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.

- 0205 *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.

- 1102A *Air Return*
- 1106 *Ceiling Tiles Around Air Supply*
- 1301 *Air Return, Ceiling Tiles Around Air Supply*
- 1304 *Air Return, Ceiling Tiles Around Air Supply*
- 2117 *Horizontal Surfaces*
- KITCHEN *Air Return*