

IEA, INC.

# 2022 - 2023 IAQ Walkthrough



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## Saint Paul Public Schools Phalen Lake Elementary School

Walkthrough Date:  
Friday, February 17, 2023

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## Project Description

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IEA conducted an Indoor Air Quality (IAQ) walkthrough at Phalen Lake Elementary School by IEA representative, Erik Holloman. 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 two (2) 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): 2000.
- 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					418	1.0	75.0	11.0
1001	2	No		No	520	0.9	11.2	66.7
1002	1	No		No	509	1.0	11.5	67.8
1003	3	No		No	595	1.0	13.4	68.5
1004	0	No		No	487	1.1	10.0	69.1
1007	0	No		No	483	1.1	9.2	69.1
1006A	0	No		No	493	1.1	10.9	69.1
1006	0	No		No	487	1.1	9.9	68.9
1014	0	No		No	468	1.0	9.3	69.6
0111	0	No		No	499	1.1	9.5	69.4
GYMNASIUM	19	No		No	596	1.0	10.9	68.4
1104	1	No		No	584	1.1	12.3	68.4
1107	0	No		No	520	1.0	10.5	68.4
1108	0	No		No	536	1.0	10.1	68.7
1112	1	No	• Plants	No	554	1.0	10.2	69.3
1111	4	No		No	558	1.0	10.9	69.8
CAFETERIA	80	No		No	663	1.0	10.7	70.0
1401	5	No	• Plants	No	473	1.0	8.1	69.8
1505	0	No		No	457	1.0	7.5	69.0
1405	11	No		No	570	1.0	9.0	68.9
1403	15	No		No	555	0.9	9.0	68.9
1403	15	No		No	561	0.9	8.8	68.4
1403A	0	No		No	564	0.9	9.0	68.4
1410	19	No		No	583	0.9	8.9	68.9
1404	19	No		No	611	0.9	9.4	68.4

Room / Location	Number of Occupants	Odor Present	Observations	Dust Accumulation	CO <sub>2</sub> (ppm)	CO (ppm)	RH (%)	Temp (°F)
1404A	0	No		No	616	0.9	9.0	68.2
1409	19	No		No	586	0.0	8.7	68.5
1406	1	No		No	557	0.9	8.8	69.4
1407	4	No	• Condensation	No	557	0.9	8.7	68.9
1411	20	No		No	662	0.8	9.4	69.4
1411A	0	No		No	621	0.8	9.2	69.4
1416	24	No		No	765	0.8	9.9	69.3
1417	19	No		No	648	0.8	9.5	70.0
1418	18	No		No	869	0.8	12.0	71.1
1303	20	No		No	632	0.9	9.4	70.9
1413	0	No		No	634	0.9	10.4	70.9
1412	7	No		No	794	0.9	10.5	71.2
1412A	0	No		No	511	0.9	10.3	72.1
1415	1	No		No	516	0.8	7.9	71.2
1414	9	No		No	618	0.8	8.2	70.7
1504	1	No		No	612	0.8	9.0	70.7
1302	19	No		No	741	0.8	10.2	70.5
1301	23	No		No	750	0.8	15.0	70.7
1304	21	No		No	765	0.8	10.2	70.3
1223	24	No	• Plants	No	790	0.8	10.3	70.2
1222	21	No		No	854	0.8	10.7	69.8
1221	16	No		No	757	0.0	10.5	70.0
1220	24	No		No	836	0.8	10.8	70.0
1219A	0	No		No	635	0.8	9.2	70.3
1219	3	No		No	557	0.8	8.4	69.6
1218	18	No		No	714	0.7	9.4	70.0
1218A	0	No		No	745	0.8	9.7	70.9
1217	17	No		No	798	0.8	9.7	71.4
1216	18	No		No	709	0.8	9.7	71.8
1215	7	No		No	623	0.8	8.8	71.1

Room / Location	Number of Occupants	Odor Present	Observations	Dust Accumulation	CO <sub>2</sub> (ppm)	CO (ppm)	RH (%)	Temp (°F)
1214	0	No		No	544	0.7	8.3	71.1
1213	0	No		No	514	0.7	8.4	70.3
1211	0	No		No	562	0.7	8.1	69.4
1502	0	No		No	554	0.7	8.3	69.3
1210	23	No		No	833	0.7	11.0	70.3
1209	1	No		No	715	0.8	9.9	70.9
1208	2	No		No	734	0.8	9.9	69.8
1207	22	No	<ul style="list-style-type: none"> <li>• Live Animals</li> <li>• Plants</li> </ul>	No	962	0.8	11.8	70.3
1206	25	No		No	984	0.8	11.4	70.9
1205	22	No		No	938	0.8	11.3	71.1
1204	1	No		No	842	0.8	10.5	71.8
1203	15	No		No	1,128	0.8	11.5	72.5
2001	0	No		No	683	0.8	11.2	69.4
2002	23	No		No	951	0.8	12.4	69.3
2004	24	No		No	852	0.7	12.5	69.4
2003	19	No	<ul style="list-style-type: none"> <li>• Plants</li> </ul>	No	801	0.7	11.9	69.6
2006	0	No		No	794	0.7	11.8	70.0
2005	1	No	<ul style="list-style-type: none"> <li>• Plants</li> </ul>	No	789	0.7	11.8	70.0
2009	0	No	<ul style="list-style-type: none"> <li>• Plants</li> </ul>	No	731	0.8	12.2	68.9
2005	1	No		No	818	0.7	12.8	69.6
2007	20	No		No	864	0.7	13.2	70.5

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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 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 seventy-five (75) 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.

- 1001
- 1002

### **Condensation Concerns**

IEA located area(s) where condensation was forming. Condensation on interior sources can increase the humidity in the area and may become a source of microbial growth. Temperature differentials that cause condensation on surfaces may suggest a ventilation concern and should be evaluated. Window condensation and frost can also contribute to condensation during extreme cold outdoor temperatures.

- 1407

### **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.

- 1112
- 1207
- 1223
- 1401
- 2003
- 2005
- 2009

### **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.

- 1207