

IEA, INC.

# 2022 - 2023 IAQ Walkthrough



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## Saint Paul Public Schools Frost 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 Frost Lake 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 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 1964.
- There are additions to the building, in the following year(s): 1966, 1973, 1990, 1994, 2000 and 2020.
- 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					500	0.5	15.5	15.0
CUSTODIAL OFFICE	1	No		No	622	0.1	9.9	70.8
CAFETERIA	26	No		No	694	0.1	12.5	69.9
KITCHEN	6	No		No	663	0.1	12.6	69.7
KITCHEN OFFICE	1	No		No	667	0.1	12.0	70.2
GYMNASIUM 101	25	No		No	714	0.1	10.4	69.5
GYM OFFICE	0	No		No	614	0.1	9.3	70.8
MEDIA CENTER	2	No		No	551	0.1	8.3	71.6
1102	1	No		No	541	0.1	7.5	71.7
1104 STAFF LOUNGE	3	No	<ul style="list-style-type: none"> <li>• Plants</li> </ul>	No	603	0.1	9.3	71.6
1008 NURSE	3	No		No	600	0.1	8.2	73.2
1008C	1	No		No	587	0.2	8.3	72.4
1113 MOTOR ROOM	0	No		No	448	0.1	5.0	71.9
1114	0	No		No	509	0.1	7.1	71.5
1115	1	Yes Dirty or Dusty Carpet		No	569	0.1	6.6	71.7
1119	3	No	<ul style="list-style-type: none"> <li>• Plants</li> </ul>	No	496	0.1	5.8	71.6
1121	6	No		No	613	0.1	8.3	71.4
1123	19	No		No	912	0.1	12.1	71.6
1122	2	No		No	598	0.1	9.3	71.8
1205	2	No		No	598	0.1	8.7	70.1
1207	21	No		No	739	0.1	10.5	70.8
1209	26	No		No	893	0.1	11.7	71.9

Room / Location	Number of Occupants	Odor Present	Observations	Dust Accumulation	CO <sub>2</sub> (ppm)	CO (ppm)	RH (%)	Temp (°F)
1210	26	No		No	1,128	0.1	15.9	74.5
1211	4	No		No	562	0.2	7.9	73.0
1215	0	No		No	461	0.1	7.4	70.6
1219	0	No	• Plants	No	466	0.1	8.0	70.8
1220 COUNSELOR	0	No	• Plants	No	508	0.1	8.2	70.7
1221	9	Yes Fragrance		No	821	0.1	9.8	71.3
1223	1	No		No	582	0.1	8.6	70.0
1222	0	No	• Stained Ceiling Tiles • Plants	No	512	0.1	8.1	70.0
1225	33	No	• Plants	No	1,044	0.1	14.5	71.1
1224	0	No	• Plants	No	522	0.1	8.4	71.4
1224A	0	No	• Plants	No	508	0.1	8.2	71.3
1227	24	No		No	823	0.1	11.4	71.6
1402 WORK ROOM	0	No		No	764	0.1	10.9	72.7
1401	16	No		No	814	0.1	10.8	72.1
1405	0	No		No	683	0.1	9.3	71.8
1409	0	No		No	694	0.1	9.4	71.9
1416	17	No		No	881	0.1	11.1	71.4
1411	0	No		No	714	0.1	9.9	72.3
1415	27	No		No	935	0.1	12.0	72.5
1417	0	No		No	692	0.1	9.4	71.9
1419	2	No		No	777	0.1	10.3	72.1
1422	1	No		No	693	0.1	9.4	72.6
1423	1	No		No	775	0.1	10.6	73.1
1425	0	No		No	773	0.1	9.8	73.3
1427	2	No	• Plants	No	838	0.1	11.5	74.6
1428	0	No		No	703	0.1	8.7	73.2

Room / Location	Number of Occupants	Odor Present	Observations	Dust Accumulation	CO <sub>2</sub> (ppm)	CO (ppm)	RH (%)	Temp (°F)
1323	13	No	• Plants	No	778	0.1	10.2	73.2
1352	0	Yes Stuffy, Dirty or Dusty Carpet		No	553	0.1	8.0	72.6
1357	1	No		No	549	0.1	8.4	76.5
1355	1	No		No	523	0.1	8.1	74.4
1324	0	No		No	531	0.1	7.7	73.1
1321	20	No		No	774	0.1	11.1	72.3
1315	24	No		No	847	0.1	12.1	72.1
1313	1	No		No	539	0.1	9.1	71.4
1311	1	No	• Plants	No	581	0.1	9.6	71.1
1310	16	No		No	868	0.1	12.3	71.2
1308	0	No		No	536	0.1	8.1	68.8
1309	0	No		No	518	0.1	10.1	68.7
1307	1	No		No	541	0.1	9.6	69.7
1303	23	No		No	912	0.1	13.8	70.8
1301	19	No		No	796	0.1	12.4	71.4
1320	1	No	• Plants	No	589	0.1	9.5	71.5
1501	14	No		No	735	0.1	10.5	71.6
1503	18	No		No	638	0.1	9.8	71.7
1505	15	No		No	656	0.1	10.0	71.9
1507	1	No	• Plants	No	584	0.1	9.1	72.0
1509	15	No	• Stained Ceiling Tiles	No	743	0.1	12.0	73.9
1513	15	No		No	720	0.1	9.5	73.8
1506	16	No		No	651	0.1	9.6	72.9
1506	6	No	• Plants	No	717	0.1	10.3	72.6
1504	1	No		No	559	0.1	8.2	73.1
1002	0	No	• Plants	No	569	0.1	8.8	71.8
1003	0	No	• Plants	No	760	0.1	10.4	72.6

Room / Location	Number of Occupants	Odor Present	Observations	Dust Accumulation	CO <sub>2</sub> (ppm)	CO (ppm)	RH (%)	Temp (°F)
1004	1	No		No	637	0.1	9.1	71.6
MAIN OFFICE	4	No		No	586	0.1	8.8	71.5
1213	5	No	• Plants	No	576	0.1	8.4	71.3
1201	1	No		No	478	0.1	7.6	71.0

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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-eight (78) 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.

- 1357

### **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.

- 1115 *Dirty or Dusty Carpet*
- 1221 *Fragrance*
- 1352 *Stuffy, Dirty or Dusty Carpet*

### **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.

- 1222
- 1509



## **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.

- 1002
- 1003
- 1104 STAFF LOUNGE
- 1119
- 1213
- 1219
- 1220 COUNSELOR
- 1222
- 1224
- 1224A
- 1225
- 1311
- 1320
- 1323
- 1427
- 1506
- 1507