

IEA, INC.

2022 - 2023 IAQ Walkthrough



Contact Us:

BROOKLYN PARK OFFICE

9201 W. BROADWAY, #600
BROOKLYN PARK, MN 55445
763-315-7900

MANKATO OFFICE

610 N. RIVERFRONT DRIVE
MANKATO, MN 56001
507-345-8818

ROCHESTER OFFICE

210 WOOD LAKE DRIVE SE
ROCHESTER, MN 55904
507-281-6664

BRAINERD OFFICE

601 NW 5TH STREET SUITE #4
BRAINERD, MN 56401
218-454-0703

MARSHALL OFFICE

1420 EAST COLLEGE DRIVE
MARSHALL, MN 56258
507-476-3599

VIRGINIA OFFICE

5525 EMERALD AVENUE
MOUNTAIN IRON, MN 55768
218-410-9521

www.ieasafety.com

info@ieasafety.com

800-233-9513

Saint Paul Public Schools Maxfield Elementary School

Walkthrough Date:
Tuesday, December 13, 2022
Retest Date: January 26, 2023

Project Description

IEA conducted an Indoor Air Quality (IAQ) walkthrough at Maxfield 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.

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 1954.
- There are additions to the building, in the following year(s): 1973 and 2002.
- 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					482	0.4	36.0	36.0
1112	3	No	<ul style="list-style-type: none"> Moisture Impacted Materials: Rust on floor tile Stained Ceiling Tiles 	No	899	0.0	26.5	69.8
1113	0	No	<ul style="list-style-type: none"> Housekeeping: Storage 	No	591	0.2	25.7	68.9
1102	17	No		No	928	0.2	29.3	68.0
1103	17	No		No	1,143	0.2	29.7	69.3
RETEST 1103	19	No		No	689	2.3	16.1	67.3
1104	14	No	<ul style="list-style-type: none"> Plants 	No	734	0.3	25.8	70.3
2106	14	No		No	921	0.3	29.6	67.3
2105	21	No		No	1,451	0.2	34.1	68.0
RETEST 2105	21	No		No	1,101	2.3	19.5	67.8
2104	21	Yes Stuffy		No	1,726	0.3	33.7	69.1
RETEST 2104	17	No		No	720	0.8	16.1	69.8
2110	2	Yes Fragrance		No	1,083	0.3	29.9	68.2
2103	22	Yes Fragrance	<ul style="list-style-type: none"> Stained Ceiling Tiles 	No	1,610	0.3	33.2	68.5
RETEST 2103	17	No		No	788	0.8	16.6	69.1
2111	0	No		No	981	0.3	28.1	70.0
1203	50	No		No	817	0.3	28.9	70.0
1209	0	No		Yes Air Return	807	0.3	27.9	71.6

Room / Location	Number of Occupants	Odor Present	Observations	Dust Accumulation	CO ₂ (ppm)	CO (ppm)	RH (%)	Temp (°F)
1504	19	No	<ul style="list-style-type: none"> • Live Animals • Plants • Taxidermy 	Yes Air Return	581	0.0	26.5	68.9
1302	12	No		No	715	0.3	27.5	69.4
1303	17	No		No	955	0.3	27.3	70.2
1304	3	No		No	572	0.3	26.3	68.9
1307	6	No		Yes Air Return, Air Supply	521	0.2	26.3	68.2
1308	0	No		Yes Horizontal Surfaces	571	0.2	27.0	68.2
1401	0	No	<ul style="list-style-type: none"> • Stained Ceiling Tiles 	No	522	0.2	25.1	69.1
1402	8	No		No	733	0.3	26.6	69.8
1403	2	No		No	523	0.3	26.1	68.7
1404	3	No	<ul style="list-style-type: none"> • Stained Ceiling Tiles 	No	619	0.2	26.9	69.3
1405	1	No	<ul style="list-style-type: none"> • Stained Ceiling Tiles 	No	595	0.2	25.5	70.3
1407	2	No		No	775	0.3	27.4	70.3
1408	1	No		No	633	0.3	27.5	69.4
1406	0	No		No	572	0.2	26.4	68.5
1409	16	No		No	774	0.0	28.1	68.9
1411	8	No		No	558	0.2	26.9	68.4
1410	0	Yes Stale		No	505	0.0	26.4	68.5
1413	16	No	<ul style="list-style-type: none"> • Aquariums (fish) 	No	624	0.2	26.6	69.3
1512	0	Yes Musty		Yes Air Supply	560	0.0	25.4	70.2
1509	0	No		No	494	0.0	25.6	68.4
1508	0	No		No	630	0.0	27.7	68.4
1506	15	No		No	635	0.0	26.3	68.5
1507	2	No		No	525	0.0	24.6	70.9

Room / Location	Number of Occupants	Odor Present	Observations	Dust Accumulation	CO ₂ (ppm)	CO (ppm)	RH (%)	Temp (°F)
1505	3	No		No	715	0.2	25.5	70.3
1501	0	No	<ul style="list-style-type: none"> Plants 	No	494	0.3	25.2	69.6
1502	0	No		No	516	0.0	25.1	70.3
1503	0	Yes Stale	<ul style="list-style-type: none"> Stained Ceiling Tiles Suspect Microbial Growth: See Appendix A 	No	509	0.2	24.1	70.7
1305	2	No		No	511	0.2	25.5	69.1
1306	14	No		No	760	0.2	27.6	69.1
1001	2	No	<ul style="list-style-type: none"> Stained Ceiling Tiles Plants 	No	1,025	0.2	28.6	68.9
1002	0	No		No	760	0.2	27.9	68.7
1003	0	No		No	752	0.2	27.5	69.3
1007	0	No	<ul style="list-style-type: none"> Stained Ceiling Tiles 	Yes Air Supply	787	0.2	28.3	69.4
1111	0	Yes Fragrance		No	1,365	0.2	32.0	68.9
RETEST 1111	1	No		No	1,052	2.0	21.5	65.8
1110	2	No	<ul style="list-style-type: none"> Plants 	No	1,345	0.3	32.0	68.0
RETEST 1110	2	No		No	1,186	2.1	21.4	66.7
1105	0	No	<ul style="list-style-type: none"> Stained Ceiling Tiles Housekeeping: See Appendix A 	No	833	0.3	28.4	68.5
1106	0	No	<ul style="list-style-type: none"> Plants 	No	872	0.3	29.4	68.2
1602	15	No		No	1,015	0.2	29.1	70.2
2102	3	No		No	755	0.2	27.6	70.0
2101	0	No		No	633	0.3	26.5	69.3
1210	2	No		No	1,075	0.2	30.1	72.0
1603	15	No		No	745	0.3	25.9	71.4

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.

- 1110 • 2104
- 1111 • 2105
- 2103

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 January 26, 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-five (55) 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.

- 2106 • RETEST 1111
- RETEST 1103 • RETEST 2105
- RETEST 1110

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.

- 1111 *Fragrance* • 2103 *Fragrance*
- 1410 *Stale* • 2104 *Stuffy*
- 1503 *Stale* • 2110 *Fragrance*
- 1512 *Musty*

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.

- 1112 *Rust on floor tile*

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.

- 1001 • 1404
- 1007 • 1405
- 1105 • 1503
- 1112 • 2103
- 1401

Suspect Microbial Growth Concerns

IEA observed building materials with possible microbial growth that should be removed and/or cleaned under controlled conditions, per the Minnesota Department of Health *Recommended Best Practices for Mold Remediation in Minnesota Schools* guidelines

(<https://www.health.state.mn.us/communities/environment/air/docs/schools/remediation.pdf>) or

following the Institute of Inspection, Cleaning and Restoration (IICRC) S520 Standard and Guide for Professional Mold Remediation to prevent possible contamination of adjacent locations and impact to building occupants. Further assessment or fungal sampling may be necessary to identify a scope of work for a professional mold remediation contractor.

- 1503

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.

- 1001 • 1110
- 1104 • 1501
- 1106 • 1504

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.

- 1504

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.

- 1413
- 1504

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.

- 1105
- 1113 *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.

- 1007 *Air Supply*
- 1209 *Air Return*
- 1307 *Air Return, Air Supply*
- 1308 *Horizontal Surfaces*
- 1504 *Air Return*
- 1512 *Air Supply*

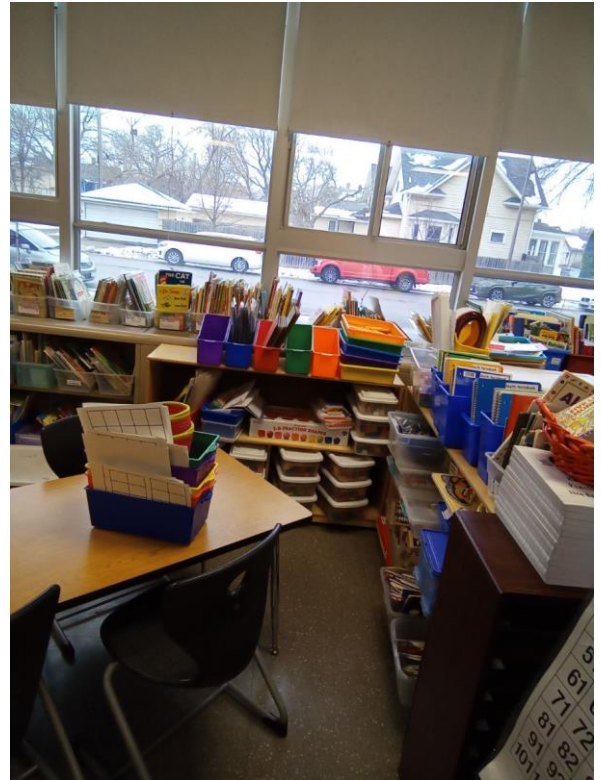
Appendix A

Photo Documentation



1503

Suspect Microbial Growth



1105

Housekeeping