

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 Creative Arts Secondary School

Walkthrough Date:
Monday, December 12, 2022
Retest Date: March 23, 2023

Project Description

IEA conducted an Indoor Air Quality (IAQ) walkthrough at Creative Arts Secondary School by IEA representative, Nick Lundgren. 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 ten (10) 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 1890.
- There are additions to the building, in the following year(s): 1972.
- The building does utilize walk-off mats.
- There are below grade floors.
- There are no 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					303	0.4	77.0	32.0
1102	3	No		No	371	0.1	27.5	68.4
1102C	0	No		No	375	0.1	25.5	68.5
1102B	1	No		No	389	0.2	24.3	68.6
1102A	3	No		No	1,063	0.2	27.0	68.9
1104	1	No		No	408	0.2	22.5	69.4
1106	14	No	<ul style="list-style-type: none"> Stained Ceiling Tiles 	No	536	0.3	22.9	70.9
1103	0	No		No	371	0.3	22.2	69.8
1208	5	No	<ul style="list-style-type: none"> Stained Ceiling Tiles 	No	601	0.3	23.7	68.2
1202	0	No		Yes Horizontal Surfaces	385	0.2	21.9	70.9
1203	0	No	<ul style="list-style-type: none"> Housekeeping: Scene shop storage 	Yes Air Return	318	0.3	22.1	68.2
1209A	0	No		No	332	0.2	21.9	69.6
1202	0	No		No	321	0.2	21.2	69.6
1209	6	No		No	466	0.2	24.1	69.4
1105	1	No		No	468	0.3	23.0	70.7
1105A	1	No		No	354	0.2	20.6	71.2
1107A	0	No		No	521	0.2	23.9	70.0
0106	0	No	<ul style="list-style-type: none"> Stained Ceiling Tiles 	Yes Air Return	374	0.3	22.5	72.9
0109	0	No	<ul style="list-style-type: none"> Housekeeping: Storage 	No	363	0.3	22.3	73.0
0117	0	No	<ul style="list-style-type: none"> Stained Ceiling Tiles 	No	373	0.3	21.9	73.4
0107	0	No		No	352	0.3	22.0	73.2
0107A	0	No		No	342	0.3	21.8	73.2

Room / Location	Number of Occupants	Odor Present	Observations	Dust Accumulation	CO ₂ (ppm)	CO (ppm)	RH (%)	Temp (°F)
0112	0	Yes Fragrance		No	356	0.3	21.3	73.8
0113	0	No	<ul style="list-style-type: none"> Stained Ceiling Tiles Taxidermy 	No	372	0.3	21.8	73.6
0114	0	No	<ul style="list-style-type: none"> Stained Ceiling Tiles 	No	356	0.3	22.4	72.7
0116	0	No	<ul style="list-style-type: none"> Moisture Impacted Materials: See Appendix A Stained Ceiling Tiles: See Appendix A 	No	343	0.3	22.9	72.0
0118	0	No		Yes Air Return	348	0.3	23.0	71.8
0208	1	No		Yes Air Supply	374	0.2	22.3	70.9
0204	0	No	<ul style="list-style-type: none"> Housekeeping: Storage 	Yes Air Supply	328	0.2	21.5	71.2
1105B	3	No		No	816	0.2	25.7	72.1
M1	0	No		No	520	0.2	22.1	72.7
M2	0	No		No	542	0.2	22.3	72.5
M3	0	No		No	510	0.2	22.3	72.3
2100	1	No		No	588	0.2	23.0	72.1
M10	0	No		No	497	0.2	22.4	71.8
M9	1	Yes Fragrance		No	610	0.2	24.1	71.4
M8	0	No		No	520	0.2	22.9	71.4
M7	1	No		No	619	0.2	23.8	71.4
2201	1	No		No	530	0.2	22.1	72.5
2202	0	No		No	400	0.2	21.3	72.3
2203C	0	Yes Food		No	442	0.2	21.9	72.3
2204	0	No		No	538	0.2	22.5	72.1
2203B	1	No		No	618	0.2	23.4	72.0

Room / Location	Number of Occupants	Odor Present	Observations	Dust Accumulation	CO ₂ (ppm)	CO (ppm)	RH (%)	Temp (°F)
2207	18	No		No	773	0.2	23.9	72.3
2316	1	No		No	616	0.2	24.4	72.5
2316	1	No		No	626	0.2	23.0	72.5
2316D	1	No	• Plants	No	596	0.2	23.5	72.7
2316B	2	Yes Fragrance	• Plants	No	700	0.3	23.1	72.5
2316A	1	No		No	601	0.2	23.9	71.2
2315	12	No		No	735	0.3	25.3	71.1
2312	0	No		No	562	0.2	23.5	72.0
2311	0	No		No	653	0.2	22.6	73.9
2310	0	No		No	544	0.3	22.2	72.7
2305	0	No		No	556	0.3	23.7	70.7
2314	0	No		No	525	0.2	24.3	69.6
2313	1	No		No	581	0.2	24.9	69.8
2306	0	No		Yes Ceiling Tiles Around Air Supply	525	0.3	25.0	68.7
GYM	20	Yes Musty		No	836	0.1	28.8	69.6
KITCHEN	4	No		No	525	0.2	26.3	70.7
3102A	1	No		No	525	0.2	26.3	69.6
CAFETERIA NEAR KITCHEN	0	No		Yes Ceiling Tiles Around Air Supply	432	0.2	23.8	70.0
CAFETERIA SOUTH	0	No		No	419	0.1	22.2	72.0
4105	0	No		Yes Air Return, Ceiling Tiles Around Air Supply	495	0.3	23.5	70.7
4106	2	No		Yes Air Return	525	0.2	23.9	70.2
4108	18	No		No	962	0.3	33.6	71.8

Room / Location	Number of Occupants	Odor Present	Observations	Dust Accumulation	CO ₂ (ppm)	CO (ppm)	RH (%)	Temp (°F)
4109	0	No	• Stained Ceiling Tiles	No	538	0.3	22.7	72.5
4111	2	No		No	648	0.3	23.9	72.1
4112	0	No		No	537	0.3	24.6	71.8
5109	0	No		No	611	0.2	24.1	70.9
5107	14	No		No	933	0.3	26.4	71.6
5106	12	No		No	737	0.2	25.0	71.8
5105	0	No		No	555	0.3	23.5	71.4
5102	9	No		No	728	0.3	25.4	70.9
5103	0	No		No	591	0.2	24.5	69.2
5104	0	No		No	573	0.2	25.0	69.3
6112	0	No		No	672	0.1	24.5	72.3
6113	1	No		No	582	0.2	23.0	73.0
6110	16	No		No	890	0.3	24.8	74.1
6114	0	No		No	561	0.3	21.8	74.7
6109	0	No		No	579	0.3	21.3	74.7
6107	15	No		No	730	0.4	24.1	74.7
6106	13	No		No	795	0.3	24.2	74.5
6108	2	No		No	598	0.3	21.9	74.8
7112	0	No	• Plants	No	616	0.3	22.8	73.9
7113	1	No		No	552	0.3	22.0	73.8
7110	14	No	• Plants	No	695	0.3	24.4	73.9
7114	0	No		No	545	0.3	22.3	74.1
7109	15	No		No	1,111	0.3	27.1	74.1
RETEST 7109	5	No		No	621	0.0	16.3	73.1
7108	1	No		No	763	0.3	24.5	73.8
7107	17	No		No	708	0.3	24.2	73.8
7106	0	No		No	675	0.3	23.3	74.1
8112	14	No		No	585	0.3	22.7	73.0
8110	16	No		No	739	0.3	25.9	72.3

Room / Location	Number of Occupants	Odor Present	Observations	Dust Accumulation	CO ₂ (ppm)	CO (ppm)	RH (%)	Temp (°F)
8113	0	No		No	718	0.2	23.1	73.2
8114	1	No	<ul style="list-style-type: none"> Plants 	No	849	0.3	24.0	74.1
8108	0	No		No	737	0.3	24.1	72.5
8107	20	No	<ul style="list-style-type: none"> Condensation 	No	831	0.4	27.0	71.8
8106	10	No	<ul style="list-style-type: none"> Condensation 	No	708	0.2	23.8	73.6

Summary of Concerns & Recommendations

See below for IEA's list of concern areas and recommendations:

Indoor Air Quality Parameters/Guidelines

After IEA completed the initial IAQ walkthrough, the ventilation system(s) serving rooms with carbon dioxide measurements at or above 1,100 ppm were evaluate by SPPS. After ventilation adjustments or repairs were made, IEA returned to those rooms on March 20, 2023, to repeat the walkthrough. The “retest” date 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 ninety-seven (97) 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.

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.

- 0112 *Fragrance*
- 2203C *Food*
- 2316B *Fragrance*
- GYM *Musty*
- M9 *Fragrance*

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.

- 0116

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.

- 0106
- 0113
- 0114
- 0116
- 0117
- 1106
- 1208
- 4109

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.

- 8106
- 8107

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.

- 2316B
- 7112
- 2316D
- 8114
- 7110

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.

- 0113

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.

- 0109 *Storage*
- 1203 *Scene shop storage*
- 0204 *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.

- | | | |
|---|--------------------------|--|
| • 0106 <i>Air Return</i> | • 4105 | <i>Air Return, Ceiling Tiles Around Air Supply</i> |
| • 0118 <i>Air Return</i> | • 4106 | <i>Air Return</i> |
| • 0204 <i>Air Supply</i> | • CAFETERIA NEAR KITCHEN | <i>Ceiling Tiles Around Air Supply</i> |
| • 0208 <i>Air Supply</i> | | |
| • 1202 <i>Horizontal Surfaces</i> | | |
| • 1203 <i>Air Return</i> | | |
| • 2306 <i>Ceiling Tiles Around Air Supply</i> | | |

Appendix A

Photo Documentation



0116

Moisture-Impacted Materials



0116

Stained Ceiling Tiles