

IEA, INC.

2022 - 2023 IAQ Walkthrough



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Saint Paul Public Schools Global Arts Plus Upper

Walkthrough Date:
Thursday, February 2, 2023
Retest Date: March 21, 2023

Project Description

IEA conducted an Indoor Air Quality (IAQ) walkthrough at Global Arts Plus Upper 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.

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 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 1926.
- There are additions to the building, in the following year(s): 1939, 1965, 1978, 1997, 1999 and 2006.
- 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					366	0.8	69.9	9.6
1405	1	No		No	638	0.4	12.7	68.4
1414	10	No		No	558	0.4	9.6	68.7
1412	0	No		No	489	0.4	9.2	68.7
1410	15	No		No	690	0.4	11.0	68.5
1408	2	No		No	685	0.4	9.5	68.5
1406	1	No		No	505	0.4	9.0	68.7
1402	0	No		No	558	0.4	10.1	68.5
1401	0	No		No	512	0.4	8.6	68.4
1511	0	No		No	479	0.3	9.0	67.8
1507	1	No		No	962	0.3	12.0	67.8
1510	1	No		No	518	0.3	10.2	68.4
1503	25	No	<ul style="list-style-type: none"> • Stained Ceiling Tiles 	No	892	0.3	13.9	69.1
1504	0	No		No	480	0.3	9.4	69.3
1501	0	No		No	488	0.3	9.4	68.5
1002	3	No		No	508	0.3	9.8	67.6
1101	0	No		No	466	0.3	8.2	67.8
1004	0	No		No	542	0.3	10.8	67.8
1005	1	No		No	488	0.3	8.8	68.4
1006	2	No		No	516	0.3	9.6	68.5
1007	0	No		No	458	0.2	8.0	69.3
1008	1	No		No	520	0.2	9.5	69.6
1104	2	No		No	511	0.3	9.4	68.7

Room / Location	Number of Occupants	Odor Present	Observations	Dust Accumulation	CO ₂ (ppm)	CO (ppm)	RH (%)	Temp (°F)
1104A	0	No		Yes Air Return	519	0.2	10.2	68.5
1104C	0	No		No	500	0.2	9.6	68.7
MEDIA CENTER	3	No		No	751	0.3	13.6	67.6
1310A	0	No		No	680	0.2	13.6	68.4
1320	3	No		No	683	0.2	12.3	68.2
1330	0	No		No	734	0.2	10.4	67.8
1332	0	No		No	493	0.1	9.6	68.2
1334	0	No		No	497	0.1	10.2	68.5
1334A	0	No		No	550	0.1	11.6	68.5
1106	0	No	• Plants	No	689	0.2	12.9	67.6
1120	50	No		No	705	0.1	12.6	68.4
1120A	1	No		No	591	0.1	11.4	68.9
1122	5	No		No	623	0.2	11.4	68.7
1201	20	No		No	722	0.2	12.2	66.2
1203	1	No		No	728	0.1	12.4	67.3
1207	0	No		No	590	0.1	10.5	67.8
1209	0	No		No	642	0.1	10.6	67.7
1211	0	No		No	625	0.1	10.8	67.6
1255	0	No		No	622	0.1	11.2	68.4
1255B	0	No		No	534	0.1	9.8	68.7
1257	2	No		No	777	0.1	11.0	68.9
1250	2	No		No	780	0.1	10.3	69.4
1217	0	No		No	660	0.1	11.1	69.1
1219	8	No	• Aquariums (fish)	No	621	0.1	10.4	69.1
1221	0	No	• Aquariums (fish)	No	541	0.1	9.6	68.9
1223	0	No		No	611	0.1	11.3	68.7
2210	3	No	• Plants	No	567	0.1	9.7	68.2
2219	0	No		No	656	0.1	9.5	68.4
2217	30	No		No	890	0.1	13.4	68.4

Room / Location	Number of Occupants	Odor Present	Observations	Dust Accumulation	CO ₂ (ppm)	CO (ppm)	RH (%)	Temp (°F)
2215	25	No		No	803	0.1	12.0	68.4
2206	2	No		No	536	0.1	9.2	68.7
2207	30	No	• Plants	Yes Air Return	883	0.1	12.9	69.3
2205	25	No		Yes Air Return	911	0.1	18.4	69.8
2201	0	No		No	463	0.1	8.3	69.4
2201D	0	No		No	454	0.1	8.7	69.3
2201E	0	No		No	484	0.1	8.8	69.1
2201C	0	No		No	455	0.1	8.4	68.9
2201B	0	No		No	496	0.1	8.5	69.1
2122	0	No		No	504	0.1	8.5	69.4
2102	1	No		No	669	0.5	14.2	70.0
2120	0	No		No	529	0.1	8.6	69.4
2101	0	No	• Plants	No	747	0.1	10.8	69.3
2310	1	No		No	684	0.5	14.1	69.5
2301	5	No		No	591	0.1	9.5	68.9
2305	15	No		Yes Air Return	1,293	0.1	17.2	69.6
RETEST 2305	35	No		No	1,119	0.0	30.3	63.4
2402	0	No	• Bubbling/Peeling Paint: See Appendix A	No	509	0.1	8.5	68.9
2406	4	No		No	636	0.2	9.9	68.2
2408	1	No		No	527	0.1	8.8	68.2
2405	0	No		No	603	0.1	10.7	70.2
2410	0	No		No	602	0.1	9.6	70.3
2330	15	No	• Stained Ceiling Tiles	No	695	0.6	12.1	70.4
3410	20	No		No	756	0.1	11.8	69.1
3405	0	No		No	660	0.1	11.5	69.6
3408	25	No		No	730	0.1	11.0	70.2

Room / Location	Number of Occupants	Odor Present	Observations	Dust Accumulation	CO ₂ (ppm)	CO (ppm)	RH (%)	Temp (°F)
3406	25	No		Yes Air Return	844	0.1	12.4	69.8
3303	5	No	• Plants	No	496	0.1	9.7	69.4
3304	0	No		No	612	0.1	10.9	69.8
3402	15	No		Yes Air Return	744	0.2	11.6	69.4
3301	5	No		No	542	0.1	9.6	69.4
3302	4	No		No	614	0.1	10.6	69.9
3103	5	No		No	479	0.1	9.4	69.4
3104	30	No		No	1,016	0.2	14.4	69.4
3101	0	No		No	477	0.1	8.9	69.4

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.

- 2305

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 21, 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 eighty-five (85) 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.

- 1002
- 1004
- 1101
- 1106
- 1201
- 1203
- 1207
- 1209
- 1211
- 1330
- 1507
- 1511
- MEDIA CENTER
- RETEST 2305

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.

- 1503
- 2330

Bubbling/Peeling Paint Concerns

IEA observed bubbling/peeling paint in area(s) within the room(s) listed below. Bubbling/peeling paint can be caused by moisture issues. IEA recommends investigating the cause and repairing the paint. IEA recommends ensuring that the paint is not lead-based prior to disturbance.

- 2402

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.

- 1106 • 2210
- 2101 • 3303
- 2207

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.

- 1219 • 1221

Dust Accumulation

IEA observed dust accumulation in the following room(s) and recommend that the specified area is wiped clean using a damp rag.

- 1104A *Air Return* • 2305 *Air Return*
- 2205 *Air Return* • 3402 *Air Return*
- 2207 *Air Return* • 3406 *Air Return*

Appendix A

Photo Documentation



2402

Bubbling/Peeling Paint