

IEA, INC.

2022 - 2023 IAQ Walkthrough



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Saint Paul Public Schools Highland Park Senior High School

Walkthrough Date:
Friday, January 6, 2023

Project Description

IEA conducted an Indoor Air Quality (IAQ) walkthrough at Highland Park Senior High School by IEA representative, Jon Gorostiaga. 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 four (4) 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 1963.
- There are additions to the building, in the following year(s): 1970.
- 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					419	0.8	22.0	17.0
1201 MAINTENANCE	2	No		No	599	0.6	18.0	73.0
1201 MAINTENANCE OFFICE	1	No		No	658	0.6	17.7	73.2
1216 OFFICE	0	No		No	615	0.6	17.8	71.4
SCHOOL HOUSE	25	Yes Fragrance		No	1,066	0.7	52.9	64.9
0154 WOODSHOP	21	No		No	847	0.3	28.3	68.7
0154 WOODSHED FINISHING ROOM	1	No		No	739	0.5	25.0	68.7
0150 ART	32	No		No	1,235	0.6	25.4	69.8
0159 ART	27	No	• Stained Ceiling Tiles	No	866	0.6	20.5	69.1
1217	9	No		No	667	0.6	17.1	70.9
1215	5	No		No	596	0.6	16.9	70.3
1215A	1	No		No	675	0.6	20.0	70.2
1213	5	No		No	821	0.6	19.5	70.3
1211	19	No		No	708	0.5	19.5	70.0
1210 LIBRARY LEARNING ROOM	2	No		No	654	0.6	14.8	69.4
1205 MEDIA CENTER	6	No		No	604	0.5	17.8	68.5
1401	5	No		No	678	0.5	15.9	68.4
1405 SMALL WORKOUT ROOM	2	No		No	956	0.5	24.5	70.3
1405 FITNESS CENTER	30	No		No	933	0.5	22.7	70.3
1329	11	No		No	750	0.6	17.9	69.6
1328	18	No		No	738	0.5	19.3	68.9

Room / Location	Number of Occupants	Odor Present	Observations	Dust Accumulation	CO ₂ (ppm)	CO (ppm)	RH (%)	Temp (°F)
1315 HEALTH SERVICES	0	No		No	920	0.5	15.7	72.0
1325 NURSE COT	0	No		No	625	0.5	14.2	72.1
1323 NURSE COT	0	No		No	620	0.5	13.6	72.7
1324 NURSE OFFICE	1	No		No	700	0.5	14.9	72.9
1315 CLINIC	1	No		No	834	0.6	17.9	72.3
1321 OFFICE	0	No		No	592	0.6	13.8	71.4
1322 OFFICE	0	No		No	590	0.6	14.0	70.7
1320 OFFICE	0	No		No	595	0.5	14.2	70.5
1319 OFFICE	1	No		No	753	0.5	15.1	72.9
1317 OFFICE	0	No		No	606	0.6	14.4	70.0
1316 OFFICE	0	No		No	618	0.4	15.4	69.4
1314	30	No		No	932	0.5	18.0	70.9
1311 OFFICE	0	No		No	551	0.5	14.1	71.4
1312 OFFICE	1	No		No	651	0.5	15.8	71.4
1310	5	No		No	919	0.5	14.7	72.3
1303 OFFICE	4	No		No	720	0.5	16.2	73.0
1304 OFFICE	0	No		No	560	0.5	12.8	72.3
1305 OFFICE	0	No		No	742	0.5	15.0	72.1
1306 OFFICE	0	No		No	644	0.4	12.8	73.9
1307 OFFICE	1	No		No	619	0.5	12.6	75.9
1308 OFFICE	0	No		No	559	0.5	12.1	75.4
1309 OFFICE	2	No		No	769	0.5	15.6	75.0
1204 OFFICE	2	Yes Fragrance		No	622	0.5	16.6	73.4
1115 PENTHOUSE	10	No		No	544	0.5	14.4	71.2
1117 OFFICE	3	No		No	651	0.5	18.0	71.4
1101 AUDITORIUM	54	No		No	598	0.4	18.9	71.1
1001 MAIN OFFICE	2	No		No	612	0.5	17.3	70.0
1008 OFFICE	0	No		No	786	0.5	16.4	69.1
1001A WAITING	0	No		No	699	0.5	16.4	69.1

Room / Location	Number of Occupants	Odor Present	Observations	Dust Accumulation	CO ₂ (ppm)	CO (ppm)	RH (%)	Temp (°F)
1006 OFFICE	1	No		No	609	0.5	16.9	68.9
1005 OFFICE	2	No		No	60	0.4	19.2	69.3
1004 OFFICE	1	No		No	599	0.4	15.7	69.6
1003 OFFICE	1	No		No	628	0.4	16.2	69.8
1002 OFFICE	1	No		No	622	0.4	16.1	69.1
1009 WORKROOM	1	No		No	590	0.4	16.4	69.3
0401 GYMNASIUM	4	No		No	584	0.4	15.3	69.3
0403 GYM OFFICE	2	No		No	814	0.5	15.8	72.0
0425 GYM OFFICE	1	No		No	655	0.5	16.7	72.0
2309A WORKROOM	0	No		No	867	0.5	16.2	70.2
2308	28	No		No	1,199	0.5	21.5	69.8
2309	25	No		No	946	0.5	18.0	69.3
2310	0	No		No	705	0.5	15.6	66.9
2311	24	No		No	829	0.5	18.1	66.2
2313	32	No		No	1,024	0.4	19.4	67.3
2313	23	No		No	1,047	0.5	18.5	68.0
2314	2	No		No	750	0.5	18.6	66.7
2201	35	Yes Stuffy	<ul style="list-style-type: none"> Stained Ceiling Tiles 	No	1,540	0.5	25.8	68.9
2202	24	No	<ul style="list-style-type: none"> Stained Ceiling Tiles 	No	1,247	5.0	19.6	70.3
2203	1	Yes Coffee		No	830	0.5	16.2	70.7
2204	23	No	<ul style="list-style-type: none"> Stained Ceiling Tiles 	No	1,172	0.6	19.4	71.1
2205	1	No		No	832	0.6	16.1	70.9
2206	0	No		No	841	0.5	16.8	70.5
2401 STAFF ROOM	0	No		No	696	0.6	15.7	69.3
2207	0	No		No	1,240	0.5	21.3	68.7
2208	28	No		No	1,022	0.5	18.9	68.9

Room / Location	Number of Occupants	Odor Present	Observations	Dust Accumulation	CO ₂ (ppm)	CO (ppm)	RH (%)	Temp (°F)
2209	28	No		No	1,147	0.6	22.1	69.6
2210	1	No		No	718	0.6	16.1	67.6
2211	9	Yes Fragrance		No	835	0.5	17.3	66.4
2213	36	No		No	1,112	0.5	21.0	67.8
2214	36	No		No	1,017	0.5	19.6	68.2
2216	26	No		No	990	0.6	19.5	67.3
2217	24	No		No	1,045	0.6	21.4	66.9
2218	0	Yes Stuffy		No	684	0.5	16.1	66.7
2220	26	No	• Stained Ceiling Tiles	No	987	0.6	19.7	67.3
2222	34	No		No	950	0.6	19.8	67.3
2303	30	No		No	1,362	0.6	25.5	70.7
2304	33	No		No	1,284	0.6	21.5	71.6
2305	19	No		No	1,107	0.7	18.4	71.4
2306	28	No		No	1,101	0.7	20.9	71.2
2307	15	No		No	910	0.7	17.6	71.1
3312	20	No		No	946	0.7	17.2	69.1
3311	24	No		No	913	0.7	19.9	68.9
3310	33	No		No	948	0.6	20.1	68.9
3309	20	No		No	957	0.6	18.6	68.5
3308	27	No		No	1,090	0.6	19.8	70.2
3307	8	No	• Stained Ceiling Tiles	No	774	0.5	14.0	72.0
3306	7	No		No	733	0.6	13.6	72.3
3305	2	No		No	921	0.7	15.8	72.7
3304	1	No		No	663	0.7	14.2	71.6
3303	32	No		No	95	0.6	19.5	71.4
3302	2	No		No	809	0.6	15.3	71.6

Room / Location	Number of Occupants	Odor Present	Observations	Dust Accumulation	CO ₂ (ppm)	CO (ppm)	RH (%)	Temp (°F)
3211	17	No		No	740	0.6	16.7	69.6
3210	19	No		No	835	0.6	18.6	70.7
3209 OFFICE	0	No		No	657	0.6	17.9	71.1
3208	8	No		No	812	0.6	16.7	70.5
3207	24	No		No	937	0.6	19.1	70.9
3206	20	No		No	932	0.6	19.2	70.2
3205	15	No		No	854	0.5	18.9	68.0
3204	20	No	<ul style="list-style-type: none"> Stained Ceiling Tiles 	No	944	0.6	19.0	70.0
3203	21	No	<ul style="list-style-type: none"> Aquariums (fish) Taxidermy 	No	819	0.6	17.8	69.8
3202	0	No		No	761	0.6	15.9	69.8
3201	29	No		No	899	0.6	18.4	69.1

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.

- 0150 ART
- 2207
- 2201
- 2303
- 2202
- 2304

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 one hundred and eleven (111) 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.

- 1307 OFFICE
- 2220
- 1308 OFFICE
- 2222
- 2210
- 2310
- 2211
- 2311
- 2213
- 2313
- 2216
- 2314
- 2217
- SCHOOL HOUSE
- 2218

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.

- 1204 OFFICE *Fragrance*
- 2201 *Stuffy*
- 2203 *Coffee*
- 2211 *Fragrance*
- 2218 *Stuffy*
- SCHOOL HOUSE *Fragrance*

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.

- 0159 ART
- 2201
- 2202
- 2204
- 2220
- 3204
- 3307

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.

- 3203

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.

- 3203