

 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 Humboldt Senior High School

Walkthrough Date:
Monday, January 23, 2023

Project Description

IEA conducted an Indoor Air Quality (IAQ) walkthrough at Humboldt Senior High School by IEA representative, Jon Gorostiaga & 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 and inoperable windows in the exterior rooms within the building.
- The building was originally constructed in 1924.
- There are additions to the building, in the following year(s): 2020 and 1975.
- The building does utilize walk-off mats.
- There are no 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					415	1.1	81.0	12.1
WEIGHT ROOM	5	No		No	706	0.5	19.0	69.1
2300C GYM	18	No		No	681	0.5	20.9	69.3
3131 ENGINEER OFFICE	0	No		No	541	0.5	19.8	68.7
3133 CUSTODIAN LOUNGE	1	No		No	556	0.5	19.7	69.1
3126 SHARED GYM OFFICE	1	No		No	499	0.4	17.0	68.0
1401 GYMNASIUM	19	No		No	498	0.5	16.2	67.5
3112 WRESTLING ROOM	0	No		No	541	0.4	17.3	68.0
3117 OFFICE	0	No		No	522	0.3	16.3	70.0
1114A KITCHEN OFFICE	0	No		No	613	1.0	17.8	67.9
3137 KITCHEN	6	No		No	591	0.6	21.6	67.1
2300F CAFETERIA	4	No		No	550	0.4	18.6	68.5
2300G GYMNASIUM	1	No		No	690	0.4	19.7	69.6
2300L SHARED GYM OFFICE	1	No		No	563	0.5	18.4	71.1
3145 POOL OFFICE	0	No		No	608	0.6	19.4	76.1
2300H POOL	0	No		No	539	0.6	55.2	78.1
1505 AUDITORIUM	0	No		No	450	0.3	15.1	70.3
1800D STAGE	0	No		No	445	0.4	14.7	69.8
AUDITORIUM SOUND ROOM	0	No		No	525	0.3	14.0	73.6
1805 STAFF LOUNGE	3	No	• Plants	No	624	0.4	18.0	69.6
1807 OFFICE	0	No		No	663	0.4	18.1	70.9
1608 CLINIC	1	No		No	716	0.5	18.5	70.7

Room / Location	Number of Occupants	Odor Present	Observations	Dust Accumulation	CO ₂ (ppm)	CO (ppm)	RH (%)	Temp (°F)
1608E OFFICE	0	No		No	639	0.5	17.3	71.6
1608F OFFICE	0	No		No	666	0.5	17.5	72.3
1608A OFFICE	1	No		No	703	0.5	17.3	72.7
1608B OFFICE	0	No		No	635	0.5	16.6	72.9
1608C OFFICE	0	No		No	632	0.5	16.8	73.0
1810 HEALTH RECEPTION	1	No		No	667	0.5	17.7	71.8
1812 OFFICE	1	No		No	685	0.5	17.8	72.1
1811 COT ROOM	0	No		No	684	0.5	17.9	72.5
1814 OFFICE	1	No		No	729	0.5	20.8	72.7
1813 OFFICE	1	No		No	765	0.5	18.6	72.9
1710 CUBICLES	0	No		No	638	0.5	17.3	72.3
1114	0	No		No	600	0.5	16.9	72.1
1113 OFFICE	0	No		No	588	0.5	16.4	72.5
1115	7	No	• Plants	No	667	0.5	17.4	72.3
1112	14	No		No	822	0.6	19.7	71.8
1109	0	No		No	666	0.6	17.4	71.8
1208	14	No		No	1,036	2.2	20.9	72.1
1207	14	No		No	714	0.4	17.7	72.7
1304	0	No		No	690	0.5	17.1	73.0
1304A OFFICE	0	No		No	625	0.5	16.8	72.9
1304B REPAIR OFFICE	0	No		No	590	0.5	16.1	73.0
1304C OFFICE	0	No		No	612	0.5	16.5	73.2
1502 CHOIR	1	No		No	485	0.3	14.9	70.3
1502A PRACTICE ROOM	0	No		No	580	0.3	15.3	69.6
1502B PRACTICE ROOM	0	No		No	514	0.4	15.7	69.3
1502C OFFICE	0	No		No	467	0.3	15.2	69.8
1404 CONFERENCE	0	Yes Fragrance	• Plants	No	502	0.4	16.3	69.1
1403 BAND	9	No	• Stained Ceiling Tiles	No	561	0.2	16.1	68.5

Room / Location	Number of Occupants	Odor Present	Observations	Dust Accumulation	CO ₂ (ppm)	CO (ppm)	RH (%)	Temp (°F)
1402 PIANO ROOM	0	No		No	467	0.5	16.3	66.7
1303	11	No		No	657	0.3	19.8	68.0
1303B OFFICE	2	No		No	747	0.4	19.6	68.9
1302	20	No		No	858	0.5	21.1	69.8
1301	15	No	<ul style="list-style-type: none"> Plants 	No	777	0.5	19.6	70.2
1301B	1	No		No	869	0.5	20.0	71.1
1206 CUBICLES	0	No		No	662	0.5	18.8	70.5
1205	0	No		No	607	0.5	17.6	70.9
1201	0	No		No	647	0.5	20.3	70.7
1202	5	No	<ul style="list-style-type: none"> Aquariums (fish) Live Animals Plants 	No	663	0.5	26.1	71.1
1203	6	No		No	597	0.5	18.0	70.3
1204	5	No	<ul style="list-style-type: none"> Stained Ceiling Tiles Plants 	No	644	0.3	21.0	68.5
1802	5	No		No	880	0.5	21.1	69.8
1804	0	No		No	861	0.5	20.8	70.9
1108	25	No		No	1,038	0.5	23.5	71.4
1105	20	No		No	994	0.6	21.4	71.8
1107	17	No		No	944	0.5	20.9	71.2
1106	15	No		No	915	0.6	20.9	71.2
1104	22	No		No	1,004	0.5	22.7	71.8
1103	3	No		No	891	0.5	20.8	73.4
1001 MAIN OFFICE	4	No		No	737	0.8	18.1	71.4
1004 CONFERENCE	0	No		No	703	0.7	17.9	71.2
1005 OFFICE	0	No		No	663	0.6	17.7	71.4
1023 WORKROOM	2	No		No	719	0.6	18.7	71.4
1006 OFFICE	1	No		No	779	0.6	19.4	71.6
1008 OFFICE	0	No		No	800	0.6	19.6	71.1

Room / Location	Number of Occupants	Odor Present	Observations	Dust Accumulation	CO ₂ (ppm)	CO (ppm)	RH (%)	Temp (°F)
1022 OFFICE	0	No		No	680	0.6	18.2	70.9
1009 OFFICE	0	No		No	654	0.6	18.4	70.5
1021 OFFICE	0	No		No	679	0.6	18.4	70.2
1010 OFFICE	0	No		No	674	0.6	18.4	70.7
1011 OFFICE	0	Yes Fragrance	• Plants	No	670	0.6	22.5	71.2
1012 OFFICE	2	No		No	876	0.6	20.5	71.2
1013 OFFICE	1	No		No	787	0.6	20.3	71.2
1020 OFFICE	1	No		No	988	0.6	23.7	71.4
1019 OFFICE	1	No		No	869	0.7	22.2	71.4
1018 OFFICE	3	No		No	1,030	0.7	23.9	71.6
1017 OFFICE	0	No		No	782	0.6	19.3	71.1
1016 OFFICE	0	No		No	770	0.6	19.2	71.2
1015 OFFICE	0	No		No	778	0.6	19.4	71.4
1701	5	No		No	771	0.6	19.5	70.7
1709	0	No		No	668	0.6	18.1	70.7
1708 OFFICE	3	No		No	966	0.5	20.9	71.1
1707	1	No	• Plants	No	739	0.6	19.7	69.8
1706 OFFICE	0	No		No	636	0.5	18.4	69.4
1705 OFFICE	1	No		No	836	0.6	21.1	69.3
1704 OFFICE	1	No		No	892	0.6	22.4	68.9
1703 OFFICE	3	No		No	769	0.6	20.1	69.1
3312	1	No		No	591	1.0	17.1	69.1
3310	30	No		No	747	1.0	18.4	68.7
3309	30	No	• Stained Ceiling Tiles	No	1,094	1.0	22.0	69.6
3308	3	No		No	785	1.0	19.0	70.3
3307	15	No		No	702	1.0	17.3	70.3
3306	25	No		No	843	0.9	19.5	70.5
3305	12	No	• Plants	No	662	0.9	17.5	70.9

Room / Location	Number of Occupants	Odor Present	Observations	Dust Accumulation	CO ₂ (ppm)	CO (ppm)	RH (%)	Temp (°F)
3303	1	No		No	704	0.8	17.3	70.9
3302	3	No	• Plants	No	560	0.8	16.1	71.2
3301	0	No	• Plants	No	634	0.8	17.1	71.1
3203	20	No		No	697	0.7	17.0	71.6
3600	2	No		No	722	0.8	17.2	71.2
3608	2	No		No	590	0.7	16.3	71.2
3601	5	No		No	616	0.7	16.4	70.5
3605	1	No		No	578	0.6	16.4	70.3
3606	1	No		No	559	0.6	16.3	70.5
3202	35	No	• Plants	No	771	0.6	18.0	70.9
3201	15	No		No	714	0.6	17.3	71.6
3505	0	No		No	580	0.6	15.7	71.8
3504	20	No		No	826	0.6	18.3	71.8
3111	30	No	• Stained Ceiling Tiles	No	980	0.7	19.9	72.5
3110	25	No		No	935	0.7	20.0	73.2
3104	1	No		No	800	0.7	18.0	73.4
3609	1	No		No	911	0.7	18.8	73.4
3109	3	No		No	1,034	0.7	20.9	72.9
3108	0	No		No	722	0.6	17.3	72.5
3107	20	No		Yes Air Return	999	0.6	20.0	72.6
3106	1	No		No	886	0.6	19.2	72.6
3105	0	No		No	788	0.6	18.3	71.6
3103	1	No		No	863	0.6	19.7	70.5
3503	4	No		No	580	0.5	16.7	71.4
3502	0	Yes Fragrance		No	742	0.5	18.1	72.3
3501	0	No		No	603	0.5	16.3	71.4
3403	2	No		No	605	0.5	17.2	70.2

Room / Location	Number of Occupants	Odor Present	Observations	Dust Accumulation	CO ₂ (ppm)	CO (ppm)	RH (%)	Temp (°F)
3404	0	No		No	561	0.4	17.3	69.4
3402	2	No	• Plants	No	657	0.5	18.1	70.0
3401	25	No	• Stained Ceiling Tiles • Plants	Yes Rug	689	0.5	18.3	69.8
2606	0	No		No	730	0.5	18.8	71.4
2600 E	5	No	• Plants	No	718	0.5	18.5	71.6
2600 W	4	No		No	722	0.5	18.7	71.6
2409	0	No		No	740	0.6	18.7	71.8
2406	0	No		No	700	0.5	18.4	72.0
2405	1	No		No	886	0.6	18.9	72.0
2404	0	No	• Plants	No	734	0.6	18.4	72.1
2403	15	No		No	821	0.6	19.7	72.1
2402	1	No		No	718	0.6	18.0	72.1
2314	0	No		No	622	0.6	17.2	71.2
2312	1	No	• Plants	No	627	0.5	17.8	70.3
2312A	0	No		No	627	0.5	18.1	70.0
2311	1	No		No	667	0.5	18.9	69.6
2310	6	No		No	742	0.5	19.5	70.3
2310A	0	No		No	643	0.5	17.9	70.7
2309	4	No		No	1,184	0.6	24.1	71.4
2308	0	No		No	689	0.6	17.8	71.4
2307	1	No		No	658	0.6	18.0	71.1
2306	10	No		No	718	0.5	18.9	70.5
2305	0	No		No	616	0.6	17.8	70.0
2304	1	No		No	623	0.5	18.0	70.0
2302	0	No		No	670	0.5	17.6	70.5
2303	30	No	• Plants	No	919	0.5	21.4	70.9
2317	25	No		No	877	0.5	20.5	71.4
2601	0	No		No	696	0.6	18.4	71.8

Room / Location	Number of Occupants	Odor Present	Observations	Dust Accumulation	CO ₂ (ppm)	CO (ppm)	RH (%)	Temp (°F)
2202	15	No		No	646	0.6	17.1	72.0
2201	25	No		No	749	0.6	19.0	71.6
2109	20	No		No	899	0.6	19.6	71.6
2108	0	No		No	706	0.6	18.1	71.6
2102	1	No		No	754	0.6	18.7	72.3
2103	1	No		No	744	0.6	18.1	72.6
2107	1	No		No	831	0.6	19.0	72.3
2106	1	No		No	734	0.6	18.4	72.1
2105	0	No		No	717	0.6	18.0	72.1
2104	10	No		No	805	0.6	19.0	72.1
2506	30	No		No	1,169	0.6	23.6	72.0
2600C	0	No		No	579	0.5	16.8	71.2
2505	35	No		No	962	0.6	21.9	70.3
2504	25	No		No	990	0.6	21.2	70.3
2503A	0	No		No	806	0.6	20.7	70.0
2503	25	No		No	936	0.5	22.2	70.0
2502	30	No	• Plants	No	981	0.6	21.4	69.8
2501	0	No		Yes Air Return	786	0.6	20.1	69.6

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 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 seventy-five (175) 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.

- 1114A KITCHEN OFFICE
- 1401 GYMNASIUM
- 1402 PIANO ROOM
- 2300H POOL
- 3137 KITCHEN
- 3145 POOL OFFICE

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.

- 1011 OFFICE *Fragrance*
- 1404 CONFERENCE *Fragrance*
- 3502 *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.

- 1204
- 1403 BAND
- 3111
- 3309
- 3401

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.

- 1011 OFFICE
- 1115
- 1202
- 1204
- 1301
- 1404 CONFERENCE
- 1707
- 1805 STAFF LOUNGE
- 2303
- 2312
- 2404
- 2502
- 2600 E
- 3202
- 3301
- 3302
- 3305
- 3401
- 3402

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.

- 1202
- 1202

Dust Accumulation

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

- 2501 *Air Return*
- 3107 *Air Return*
- 3401 *Rug*