

IEA, INC.

2021 - 2022 IAQ Walkthrough



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Saint Paul Public Schools Jackson Elementary School

Walkthrough Date:
Thursday, November 18, 2021
Retest Dates:
Friday, February 11, 2022
Thursday, February 17, 2022

Project Description

IEA conducted an Indoor Air Quality (IAQ) walkthrough at Jackson Elementary 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 four (4) floors.
- The building was originally constructed in 1923.
- There are additions to the building, in the following year(s): 1971, 1998, 1999, and 2004.
- There are operable windows in the exterior rooms within the building.
- 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	Flooring Type	Odor Present	Observations	Dust Accumulation	CO ₂ (ppm)	CO (ppm)	RH (%)	Temp (°F)
OUTDOORS						453	2.5	20.0	34.0
3101	17	VCT	No		No	760	0.7	34.7	66.9
3103	16	Wood	No	<ul style="list-style-type: none"> Plants 	No	780	1.0	32.7	68.8
3102	15	VCT	Yes Musty		No	785	0.8	31.4	69.6
3106	21	VCT	No	<ul style="list-style-type: none"> Bubbling/Peeling Paint: Top of the window sills is cracking and chipping. 	No	765	1.0	29.3	69.8
3112	18	VCT	No	<ul style="list-style-type: none"> Moisture Impacted Materials: Delaminating & paint is chipping Plants 	No	958	1.0	30.4	71.7
3114	17	Carpet, VCT	No		No	853	1.2	25.8	72.9
3111	4	Carpet	No	<ul style="list-style-type: none"> Stained Ceiling Tiles Plants 	No	720	1.2	21.7	71.7
3105	5	VCT	No		No	775	0.9	26.5	73.0
4102	3	Carpet	No		No	689	1.1	20.4	72.6
2113	14	Carpet	No	<ul style="list-style-type: none"> Stained Ceiling Tiles Housekeeping: General clutter 	No	859	1.2	21.7	73.3
2116	15	Carpet, VCT	No	<ul style="list-style-type: none"> Stained Ceiling Tiles Plants Taxidermy 	No	1,115	1.1	24.4	74.2
RETEST 2116	18	Carpet	No		No	902	0.0	23.2	71.7
2101 LOUNGE	1	Wood	No		No	681	1.2	24.0	74.4

Room / Location	Number of Occupants	Flooring Type	Odor Present	Observations	Dust Accumulation	CO ₂ (ppm)	CO (ppm)	RH (%)	Temp (°F)
2201	1	Carpet	Yes Dirty or Dusty Carpet	<ul style="list-style-type: none"> Plants 	No	911	1.0	24.5	75.3
2114	8	Carpet	No		No	724	1.1	23.7	74.5
LIBRARY	16	Carpet Tile	No		No	530	1.0	14.1	70.9
1114	17	Carpet Tile	Yes Musty	<ul style="list-style-type: none"> Bubbling/Peeling Paint: Wood delaminating over windows 	No	792	0.8	24.5	74.7
1001	2	Carpet	No		No	639	1.1	20.0	72.3
NURSES OFFICE	1	Wood	No		No	656	0.8	23.0	74.4
GYM	70	VCT	No		No	1,189	3.0	19.7	69.8
RETEST GYM	20	VCT	No		No	632	0.0	21.2	69.8
3110	1	Carpet	No	<ul style="list-style-type: none"> Bubbling/Peeling Paint: See Appendix A 	No	1,023	2.2	18.3	69.4
3107	2	VCT	No	<ul style="list-style-type: none"> Plants 	No	1,034	2.3	18.5	70.8
2107A	1	Carpet	No		No	990	1.7	17.0	70.3
2107	1	Wood	No		No	961	1.7	18.3	70.4
2105	2	VCT	No		Yes Horizontal Surfaces	995	1.9	19.0	69.3
2104	15	VCT	No	<ul style="list-style-type: none"> Moisture Impacted Materials: See Appendix A Plants 	No	1,132	2.0	20.3	70.9
RETEST 2104	19	VCT	No		No	952	0.0	28.4	71.9
2103	23	Carpet	No	<ul style="list-style-type: none"> Plants 	Yes Horizontal Surfaces	1,153	2.3	20.8	69.8
RETEST 2103	19	Carpet	No	<ul style="list-style-type: none"> Plants: 16 large plants 	No	1,009	0.0	29.5	71.5
2108	16	VCT	No		No	1,102	2.8	19.6	69.7
RETEST 2108	22	VCT	No		No	1,002	0.0	17.7	70.3
1004	1	Carpet	No		No	1,062	1.7	17.8	70.3

Room / Location	Number of Occupants	Flooring Type	Odor Present	Observations	Dust Accumulation	CO ₂ (ppm)	CO (ppm)	RH (%)	Temp (°F)
1003	1	Carpet	No		No	996	0.6	17.0	70.2
1120	1	Carpet Tile	No		Yes Horizontal Surfaces	742	1.3	11.1	68.8
1115	1	Carpet	No		No	670	1.1	10.9	72.5
1116	1	Carpet	No		No	669	1.9	10.6	71.8
1113	14	Carpet	No		No	1,103	2.2	19.6	71.9
RETEST 1113	4	Carpet	No	• Plants	No	785	0.0	16.5	70.3
1110	1	Carpet	No		No	1,034	1.7	17.4	72.5
1105	1	Carpet	No		No	1,000	1.0	17.8	70.5
1103	1	Carpet	No		No	1,103	2.4	18.3	70.8
RETEST 1103	0	Carpet	No		No	809	0.0	38.7	69.2
1205	1	Sealed Concrete	No		No	1,079	1.0	16.5	74.2
1204	17	Carpet, VCT	No		No	913	0.9	12.2	72.1
1208	17	Carpet, VCT	No		No	727	0.6	11.2	71.8
1210	12	Carpet, VCT	No	• Moisture Impacted Materials: Rusty ceiling grid	No	666	1.3	12.7	69.8
1213	3	Tile / Quarry	No		No	800	1.7	14.6	69.4
1214	1	Tile / Quarry	Yes Fragrance		No	846	1.0	15.7	69.3
1212A	1	VCT	No		No	618	0.7	10.4	67.6
1212 CAFETERIA	60	VCT	No		No	790	1.2	14.8	69.2
1202	1	Carpet	No		No	930	1.7	16.3	69.4
4101	0	Carpet	No		No	981	2.2	15.9	70.6
2109	1	VCT	No	• Plants	No	1,030	1.6	19.8	69.5

Room / Location	Number of Occupants	Flooring Type	Odor Present	Observations	Dust Accumulation	CO ₂ (ppm)	CO (ppm)	RH (%)	Temp (°F)
2112	0	VCT, Wood	Yes Musty		No	1,068	1.4	21.5	68.9
1106	0	Carpet	No		No	1,020	2.3	18.5	69.8
1102	0	Carpet	No	<ul style="list-style-type: none"> Housekeeping: Storage 	Yes Horizontal Surfaces	1,041	0.3	18.5	72.3
1206	26	Carpet, VCT	No		No	789	1.7	14.0	70.1

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 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-three (53) 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.

- 1212A • 3101
- 2201

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.

- 1114 *Musty* • 2201 *Dirty or Dusty Carpet*
- 1214 *Fragrance* • 3102 *Musty*
- 2112 *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.

- 1210 *Rusty ceiling grid* • 3112 *Delaminating & paint is chipping*
- 2104

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.

- 2113 • 3111
- 2116

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.

- 1114 *Wood delaminating over windows*
- 3106 *Top of the window stills is cracking and chipping.*
- 3110

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.

- 2103
- 2104
- 2109
- 2116
- 2201
- 3103
- 3107
- 3111
- 3112
- RETEST 1113
- RETEST 2103 *16 large plants*

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.

- 2116

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.

- 1102 *Storage*
- 2113 *General clutter*

Dust Accumulation

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

- 1102 *Horizontal Surfaces*
- 1120 *Horizontal Surfaces*
- 2103 *Horizontal Surfaces*
- 2105 *Horizontal Surfaces*

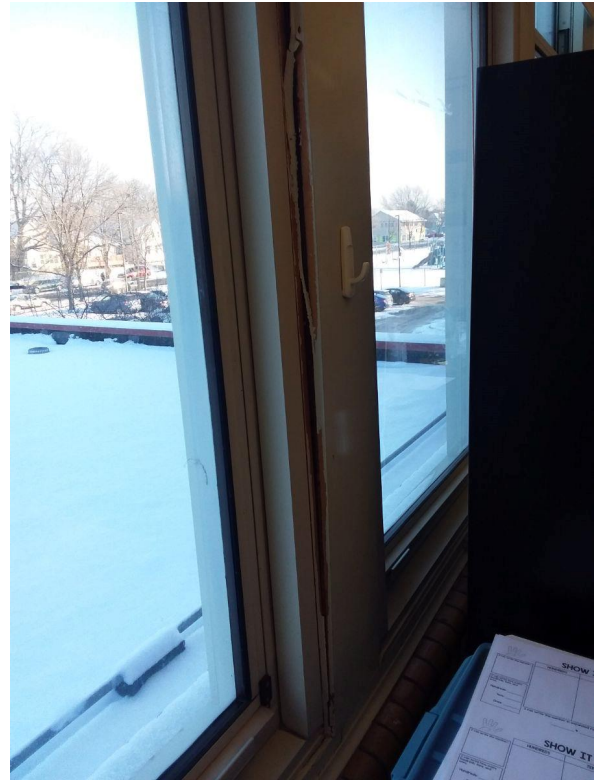
Appendix A

Photo Documentation



3110

Bubbling/Peeling Paint



2104

Moisture Impacted Materials