

IEA, INC.

2017 - 2018 IAQ Walkthrough



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Springfield Public Schools

K-12

Inspection Date
02-15-2018



Observations and Air Quality Measurements

Observations and air sampling results are outlined in the following table:

Room / Location	Time	Number of Occupants	CO2 (ppm)	CO (ppm)	RH (%)	Temp. (F)	Comments/Observations
C167	9:50 AM	1	570	2	19	71	
District Office	9:52 AM	2	644	1	20	71	
C172	9:53 AM	17	945	1	23	72	Stained ceiling/ceiling tiles
C177	10:18 AM	1	693	1	20	71	
C179	10:20 AM	0	663	1	20	71	
Technology/Community Education	10:21 AM	1	682	1	20	71	Stained ceiling/ceiling tiles
C132	10:23 AM	1	506	1	19	71	
C145	10:26 AM	0	670	1	19	73	
C138	10:27 AM	0	824	1	21	71	Plants, Taxidermy
C150 Media Center	10:29 AM	8	682	1	20	71	Stained ceiling/ceiling tiles
C120	10:32 AM	1	606	1	20	71	
C123	10:33 AM	6	636	1	20	71	
C124	10:34 AM	11	774	1	21	72	
C125	10:35 AM	0	741	1	20	72	
C232	10:36 AM	1	824	1	20	73	Bubbling/peeling paint
C233	10:38 AM	0	719	1	19	72	Stained ceiling/ceiling tiles
C234	10:40 AM	1	934	1	19	73	Bubbling/peeling paint
C235	10:41 AM	7	1344	1	24	73	Bubbling/peeling paint
C236	10:43 AM	7	1228	1	24	72	
C213	10:44 AM	0	904	1	21	73	
C227	10:45 AM	17	913	1	21	74	
C212	10:46 AM	1	940	1	20	74	Stained ceiling/ceiling tiles
C207 High School Office	10:48 AM	3	721	1	18	74	
C233	10:49 AM	1	739	1	18	74	
C218	10:50 AM	3	965	1	18	75	Bubbling/peeling paint
C217	10:53 AM	1	692	1	18	74	
C216	10:54 AM	21	1007	1	21	75	
C201	10:55 AM	0	665	2	18	73	Stained ceiling/ceiling tiles
B201	10:57 AM	10	716	1	19	72	
B202	10:58 AM	1	728	1	19	73	Stained ceiling/ceiling tiles
B205	10:59 AM	2	771	1	19	74	Stained ceiling/ceiling tiles
B206	11:01 AM	14	1470	0	25	76	
B208	11:02 AM	23	1021	1	20	75	
B178	11:06 AM	6	632	1	18	73	
B191 Auditorium	11:07 AM	0	450	1	17	73	
B151 Gym	11:10 AM	23	668	1	22	73	
B140 Band	11:12 AM	3	486	1	18	73	Stained ceiling/ceiling tiles, Bubbling/peeling paint
B113	11:14 AM	0	878	1	22	72	
Cafeteria	11:17 AM	150	1259	0	27	75	
D121	11:21 AM	4	858	1	19	75	
B126	11:23 AM	8	1459	1	24	74	
C102 Elementary Gym	11:25 AM	0	522	1	20	70	Stained ceiling/ceiling tiles, Bubbling/peeling paint

Room / Location	Time	Number of Occupants	CO2 (ppm)	CO (ppm)	RH (%)	Temp. (F)	Comments/Observations
Elementary Gym Office	11:27 AM	0	506	1	22	67	Bubbling/peeling paint, Efflorescence
C112	11:30 AM	0	554	0	20	70	
A116	12:33 PM	0	574	2	19	70	
A117	12:34 PM	6	676	1	20	71	
A118	12:35 PM	22	695	1	21	71	
A119	12:37 PM	21	853	1	22	71	
A120	12:38 PM	18	731	1	21	71	
A121	12:40 PM	1	693	1	20	72	
Elementary Office	12:41 PM	2	685	1	20	71	
A132	12:43 PM	0	586	1	19	72	Stained ceiling/ceiling tiles
A134	12:44 PM	0	780	1	21	72	
A135	12:46 PM	3	624	1	19	71	
A136	12:47 PM	23	1086	1	23	71	
A137	12:48 PM	23	1331	1	26	71	
A138	12:50 PM	24	1135	1	23	71	
A141	12:51 PM	22	1042	1	22	72	Plants
A142	12:53 PM	18	891	1	21	71	
A143	12:55 PM	18	943	0	21	73	
A144	12:56 PM	0	864	1	21	74	
A109	12:58 PM	20	947	1	25	72	
A108	1:00 PM	7	812	1	22	73	
A106	1:01 PM	9	837	1	21	73	
A102	1:02 PM	15	749	1	20	72	Stained ceiling/ceiling tiles
A101	1:04 PM	2	625	1	19	72	Aquariums

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 areas 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. An evaluation of the ventilation system controls, performance and operation is recommended. Low relative humidity is common in buildings during the heating season.

C167	C235	B191 Auditorium	A132
District Office	C236	B151 Gym	A134
C172	C213	B140 Band	A135
C177	C227	B113	A136
C179	C212	Cafeteria	A137
Technology/Community Education	C207 High School Office	D121	A138
C132	C223	B126	A141
C145	C218	C102 Elementary Gym	A142
C138	C217	Elementary Gym Office	A143
C150 Media Center	C216	C112	A144
C120	C201	A116	A109
C123	B201	A117	A108
C124	B202	A118	A106
C125	B205	A119	A102
C232	B206	A120	A101
C233	B208	A121	
C234	B178	Elementary Office	

IEA recorded area(s) with carbon dioxide measurements over 1,200 ppm in the building. IEA considers carbon dioxide measurements above 1,200 ppm as an indication of a possible ventilation issue. The air-handling system serving the location with these levels should be evaluated. Possible issues with air distribution and/or the control system may be the source for the carbon dioxide measurements.

C235	B206	B126
C236	Cafeteria	A137

IEA recorded area(s) with temperatures outside the recommended range. During the heating season, ASHRAE recommends that temperatures be between 68° and 75°F. Evaluation of temperature controls and/or ventilation system performance and operation is recommended.

B206	Elementary Gym Office
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Water Stained Ceiling Concerns

Water-impacted ceiling materials should be replaced when discoloration or water staining is observed. Water-impacted ceiling materials can be a source for microbial growth. The source for the moisture infiltration should be investigated and repaired.

C172	C233	B202	C102 Elementary Gym
Technology/Community Education	C212	B205	A132
C150 Media Center	C201	B140 Band	A102
Hallway at Art Room			

Efflorescence Concerns

During the walkthrough, IEA identified area(s) with efflorescence. IEA recommends checking the area to note humidity levels and investigating moisture concerns in the area.

Elementary Gym Office

Bubbling/Peeling Paint Concerns

IEA observed bubbling/peeling paint in area(s) throughout the building. 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.

C232
C234

C235
C218

B140 Band
C102 Elementary Gym

Elementary Gym Office

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, the following actions are recommended:

- Water plants from the bottom to aid in preventing fungal growth on the soil surface
- Do not locate plants on top of air unit ventilators, if present in a room, to prevent soil and leaves from falling into the units.
- Do not locate plants near air supply diffusers, this will limit air currents over the plants and may prevent pollen or mold spores from becoming airborne.

C138
A141

Taxidermy

IEA observed area(s) with taxidermy mounts present. Individuals with allergies or asthma may be sensitive to dust, animal fur, dander, body fluids, and feces and may have a reaction when exposed to these allergens. IEA recommends using an alternative to animals if allergen symptoms are found by occupants within the classroom.

C138