

IEA, INC.

# Jordan Public Schools



## 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

13432 ELMWOOD DRIVE, STE. #5  
BAXTER, MN 56425  
218-454-0703

### MARSHALL OFFICE

1420 EAST COLLEGE DRIVE  
MARSHALL, MN 56258  
507-476-3599

### NORTHEAST OFFICE

5525 EMERALD AVENUE  
MOUNTAIN IRON, MN 55768  
218-410-9521

[www.ieasafety.com](http://www.ieasafety.com)

[info@ieasafety.com](mailto:info@ieasafety.com)

800-233-9513



## 2016-2017 IAQ Walkthrough

## Jordan High School

Inspection Date:

**February 28, 2017**



# Project Description

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IEA conducted an annual IAQ walkthrough survey for Jordan High School. This survey was conducted using a standardized protocol with the intent of gathering basic air quality data which will assist the district in making informed and proactive decisions to improve and maintain acceptable air quality in Jordan Public Schools. This survey satisfies and follows the "EPA Tools for Schools" IAQ guidelines.

Observations gathered during the walkthrough survey may identify issues which require additional testing, evaluation, or further investigation.

The protocol used for conducting the IAQ walkthrough survey includes two primary components:

- **Collect General Building Information:** A brief interview with building maintenance personnel for each facility to collect information on use of the building, water infiltration, and/or indoor air quality concern areas, and recent renovations or upgrades to the building.
- **Walkthrough Evaluation:** Conduct a walkthrough of the occupied spaces in each building to document obvious water intrusion problems, obvious ventilation failures/problems, obvious building/structure failures and/or problems, overall cleanliness of buildings and classrooms, and the need for operation and maintenance programs.

The two components of the walkthrough investigation are interrelated. Therefore, effective interpretation and evaluation of indoor air quality issues must rely on the information obtained in both phases of the investigation.

IEA employs an internal review process throughout the survey and in developing a written final report. The findings, conclusions, and recommendations presented herein are believed to be accurate and representative of Jordan High School at the time of the survey.



# **Building Description**

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**Building description does not apply to this building.**



# Observations and Air Quality Measurements

## Building Observations (with Air Sampling Results)

Observations and air sampling results collected on February 28, 2017 are outlined in the following table:

Room # or Location	Time	# of Occ.	CO <sub>2</sub> (ppm)	CO (ppm)	RH (%)	Temp (°F)	Comments
MAIN OFFICE	9:22 AM	2	551	0	24	72	
N100	9:28 AM	21	1484	0	30	71	
N102	9:30 AM	22	1722	0	30	71	
N103	9:32 AM	18	1377	0	28	71	
N105	9:34 AM	1	1000	0	25	70	
N106	9:35 AM	6	1285	0	29	70	
N109	9:37 AM	15	2141	0	33	70	Burning Odor from Lab
N111	9:39 AM	15	1431	0	29	70	
N115	9:41 AM	22	2182	0	34	72	
M308	9:43 AM	1	635	0	24	72	
N116	9:45 AM	16	913	0	25	71	
N117	9:46 AM	15	853	0	27	68	
E401	9:50 AM	5	848	0	26	69	
M312	9:52 AM	5	599	0	24	70	
E405	9:53 AM	0	915	0	24	70	Stained ceiling tiles
E403	9:55 AM	0	782	0	24	70	
E406	9:56 AM	1	856	0	25	70	
S519	9:58 AM	10	701	0	23	69	
S515	10:01 AM	11	1398	0	30	70	
S511	10:03 AM	28	1477	0	29	71	
S509	10:05 AM	11	1210	0	29	71	
S510	10:07 AM	12	1329	0	28	72	
S505	10:10 AM	13	1674	0	30	71	
S506	10:11 AM	2	1481	0	29	71	
S502	10:13 AM	10	1684	0	32	71	
S500	10:15 AM	9	926	0	24	71	
MEDIA CENTER	10:20 AM	8	699	0	24	72	
M304	10:21 AM	2	1003	0	24	72	Stained ceiling tiles
O210	10:28 AM	1	511	0	24	72	
COMMONS	10:30 AM	3	732	0	24	71	
KITCHEN	10:31 AM	5	680	0	26	70	Food Odor
K713 MAINTENANCE	10:34 AM	1	547	0	25	70	
A824 CHOIR	10:37 AM	60	1203	0	30	71	
A819 BAND	10:39 AM	2	958	0	29	70	
STAGE	10:42 AM	0	536	0	25	71	
AUDITORIUM	10:43 AM	0	513	0	23	72	
AB15 PRACTICE ROOM	10:45 AM	0	1043	0	26	72	Stained ceiling tiles
GYM	10:47 AM	22	782	0	27	68	



**JORDAN PUBLIC SCHOOLS**  
**JORDAN HIGH SCHOOL**

Observations and air sampling results collected on February 28, 2017 are outlined in the following table:

Room # or Location	Time	# of Occ.	CO <sub>2</sub> (ppm)	CO (ppm)	RH (%)	Temp (°F)	Comments
GIRLS PE LOCKER ROOM	10:52 AM	0	861	0	28	70	
GIRLS ATHLETIC LOCKER ROOM	10:54 AM	0	916	0	27	71	
BOYS' PE LOCKER ROOM	10:57 AM	1	873	0	40	70	
BOYS' ATHLETIC LOCKER ROOM	10:59 AM	1	701	0	37	70	
WEIGHT ROOM	11:01 AM	1	523	0	30	68	
MULTI-PURPOSE ROOM	11:03 AM	1	473	0	27	70	
OUTDOORS	11:04 AM	0	437	1	29	58	

ppm = parts per million



# Summary of Identified Concerns

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## Obvious moisture issues

- Stained ceiling tile was found in the following room(s):
  - E405
  - M304
  - AB15 PRACTICE ROOM

## Overall cleanliness of building and classrooms

- The following area(s) contained taxidermy mounts:
  - S505
  - N105
- The following area(s) contained plants:
  - N102
  - S509
  - N103
  - N117
  - N105
  - MAIN OFFICE
- The following odor(s) were observed during the site survey:

<u>Room #</u>	<u>Odor Description</u>
N109	Burning Odor from Lab
KITCHEN	Food Odor

## Obvious ventilation failures and/or problems

- The following area(s) had carbon dioxide (CO<sub>2</sub>) levels that were higher than 1,200 ppm:
  - N102
  - S515
  - S509
  - N103
  - N109
  - S505
  - N100
  - A824 CHOIR
  - S502
  - S506
  - S510
  - N115
  - N106
  - S511
  - N111

## Obvious building/structural failures and/or problems

- No obvious interior or exterior structural issues were observed at the time of the site survey.

## Assess the need for O&M programs (e.g., ventilation, carpet, building components)

- O&M issues identified above may require changes to the existing building O&M program. See the following recommendations.



## Recommendations

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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.

Carbon dioxide measurements over 1,200 ppm were detected in the building. IEA considers carbon dioxide measurements above 1,200 ppm as an indication of a possible ventilation issue. The air-handling systems serving the locations 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.

ASHRAE recommends an indoor relative humidity range of 30-60%. Relative humidity levels identified in one or more areas of this building were 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.

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 alternatives to animals. If this is not feasible or appropriate, IEA recommends the following:

- Taxidermy mounts should be dusted or vacuumed regularly to prevent excessive dust accumulation.

Plants in an occupied location can be a source of allergen to sensitized individuals due to 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 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 which will limit air currents over the plants and may prevent pollen or mold spores from becoming airborne.

Odors were detected during the site visit in the building. The source for odors should be investigated. If the source for the odor cannot be identified, it is recommended that further investigation be conducted by a professional consulting service.