

IEA, INC.

2022 - 2023 IAQ Walkthrough



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Saint Paul Public Schools Four Seasons A+ Elementary School

Walkthrough Date:
Tuesday, February 14, 2023

Project Description

IEA conducted an Indoor Air Quality (IAQ) walkthrough at Four Seasons A+ Elementary 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 two (2) 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 1975.
- There are additions to the building, in the following year(s): 1999 and 2000.
- 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 | | | | | 451 | 0.8 | 49.8 | 440.0 |
| 1211 CUSTODIAL OFFICE | 1 | No | | No | 753 | 0.8 | 27.5 | 70.5 |
| 1208 KITCHEN OFFICE | 0 | No | | No | 666 | 0.5 | 29.2 | 71.4 |
| 1107A KITCHEN | 0 | No | | No | 1,029 | 0.5 | 32.4 | 71.1 |
| 1101 CAFETRIA | 80 | No | | No | 711 | 0.5 | 31.2 | 70.9 |
| 1201 GYMNASIUM | 26 | No | | No | 550 | 0.4 | 28.5 | 70.9 |
| 1202 OFFICE | 0 | No | | No | 524 | 0.4 | 28.3 | 71.1 |
| 1106 | 3 | No | | No | 590 | 0.6 | 29.1 | 70.7 |
| 1103 | 1 | No | | No | 597 | 0.5 | 30.3 | 70.2 |
| 1104 | 1 | No | | No | 615 | 0.5 | 29.9 | 70.3 |
| 1102 | 2 | No | | No | 599 | 0.5 | 30.0 | 70.0 |
| 1501 | 2 | No | | No | 517 | 0.5 | 28.6 | 69.6 |
| 1002 MAIN OFFICE | 1 | No | | No | 570 | 0.5 | 29.4 | 69.4 |
| 1004 OFFICE | 0 | No | | No | 503 | 0.4 | 29.0 | 69.8 |
| 1006 COT ROOM | 1 | No | | No | 541 | 0.5 | 29.6 | 69.6 |
| 1006B NURSE OFFICE | 2 | No | | No | 532 | 0.4 | 29.5 | 70.0 |
| 1007 WORKROOM | 0 | No | | No | 524 | 0.5 | 28.4 | 70.3 |
| 1009 OFFICE | 0 | No | | No | 559 | 0.5 | 28.3 | 70.7 |
| 1010 OFFICE | 1 | No | | No | 581 | 0.6 | 29.1 | 70.5 |
| 1301 | 0 | No | | No | 539 | 0.5 | 28.7 | 70.2 |
| 1305 PRIVACY ROOM | 0 | No | | No | 565 | 0.4 | 29.5 | 69.6 |

| Room / Location | Number of Occupants | Odor Present | Observations | Dust Accumulation | CO ₂ (ppm) | CO (ppm) | RH (%) | Temp (°F) |
|----------------------|---------------------|--------------|--------------|-------------------|-----------------------|----------|--------|-----------|
| 1304 | 17 | No | | No | 597 | 0.5 | 30.0 | 69.6 |
| 1308 OFFICE | 1 | No | | No | 656 | 0.5 | 28.4 | 69.8 |
| 1310 | 0 | No | | No | 659 | 0.5 | 28.0 | 70.0 |
| 1310 SOUTH | 0 | No | | No | 704 | 0.5 | 28.4 | 70.2 |
| 1310 NORTH | 1 | No | | No | 682 | 0.5 | 27.1 | 70.3 |
| 1311 | 0 | No | | No | 646 | 0.5 | 28.6 | 70.2 |
| 1309 | 4 | No | | No | 684 | 0.5 | 29.1 | 70.0 |
| 1306 OFFICE | 0 | No | | No | 562 | 0.5 | 29.4 | 69.8 |
| 1008 CONFERENCE | 0 | No | | No | 552 | 0.5 | 29.4 | 69.8 |
| 1403 OFFICE | 0 | No | | No | 549 | 0.5 | 29.4 | 69.8 |
| 1501A OFFICE | 0 | No | | No | 523 | 0.5 | 29.5 | 69.6 |
| 1502 | 12 | No | | No | 574 | 0.5 | 30.4 | 69.6 |
| 1504 OFFICE | 1 | No | | No | 707 | 0.5 | 30.3 | 69.6 |
| 1506 AND 1505 MUSIC | 22 | No | | No | 874 | 0.5 | 30.4 | 69.4 |
| 1507 SPARE CLASSROOM | 0 | No | | No | 639 | 0.5 | 27.4 | 69.4 |
| 1509 OFFICE | 0 | No | | No | 780 | 0.5 | 29.3 | 69.4 |
| 1510 OFFICE | 0 | No | | No | 631 | 0.5 | 28.6 | 69.8 |
| 1604 | 7 | No | | No | 755 | 0.5 | 31.0 | 69.6 |
| 1600 | 13 | No | | No | 740 | 0.5 | 31.0 | 70.3 |
| 1605 | 3 | No | | No | 643 | 0.5 | 30.0 | 70.2 |
| 1606 | 0 | No | | No | 566 | 0.5 | 29.7 | 69.8 |
| MEDIA CENTER | 0 | No | | No | 635 | 0.5 | 30.7 | 69.8 |
| 2005 | 20 | No | | No | 795 | 0.5 | 32.5 | 69.8 |
| 2503 OFFICE | 1 | No | | No | 644 | 0.5 | 30.2 | 70.2 |
| 2504 | 15 | No | | No | 801 | 0.5 | 31.2 | 69.8 |
| 2506 | 0 | No | | No | 609 | 0.5 | 30.2 | 69.6 |

| Room / Location | Number of Occupants | Odor Present | Observations | Dust Accumulation | CO ₂ (ppm) | CO (ppm) | RH (%) | Temp (°F) |
|-----------------|---------------------|--------------|--------------|-------------------|-----------------------|----------|--------|-----------|
| 2501 | 0 | No | | No | 878 | 0.5 | 29.7 | 69.3 |
| 2007 | 23 | No | | No | 698 | 0.5 | 33.5 | 69.4 |
| 2004 | 23 | No | | No | 793 | 0.5 | 33.0 | 69.6 |
| 2006 | 1 | No | | No | 559 | 0.5 | 31.6 | 69.8 |
| 2008 | 3 | No | | No | 959 | 0.5 | 32.2 | 70.0 |
| 2009 | 20 | No | | No | 861 | 0.5 | 33.4 | 70.3 |
| 2010 | 29 | No | | No | 1,119 | 0.6 | 35.6 | 70.5 |
| 2011 | 17 | No | | No | 845 | 0.5 | 32.3 | 70.5 |
| 2303 | 0 | No | | No | 934 | 0.5 | 31.0 | 69.8 |
| 2304 | 0 | No | | No | 673 | 0.5 | 30.2 | 69.3 |
| 2305 | 1 | No | | No | 699 | 0.5 | 30.1 | 69.3 |
| 2301 OFFICE | 1 | No | | No | 602 | 0.5 | 32.2 | 68.5 |

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 thirty-one (31) 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.