

CASE STUDY

Whiteshell School District Uses ioAirFlow to Identify Covid-19 Risk & Ventilation Performance

Schools Tested:

Pinawa Secondary | Nov 22-29, 2021

F.W Gilbert Elementary | Nov 29-Dec 06, 2021

Health Canada recognizes that implementing enhanced ventilation systems is a highly effective measure for reducing the risk of COVID-19 transmission within educational settings. By prioritizing increased ventilation, schools can effectively improve indoor air quality and minimize the spread of the virus among students, teachers, and staff.

Problem: Safe Ventilation vs. HVAC Efficiency

- ➔ Unknown whether ventilation levels safe for students and teachers.

- ➔ Ventilation system constantly running at maximum capacity causing system failures and increasing energy costs.

A return to in-person learning amid a pandemic brings with it a unique set of challenges for school divisions.

Prior to ioAirFlow, the Whiteshell School District struggled to understand whether their schools' ventilation systems were keeping students and teachers safe from an increased risk of COVID-19 transmission. Older mechanical equipment meant there weren't built-in sensors to accurately monitor ventilation levels. Consequently, the systems were tuned to maximum capacity in an attempt to minimize risk.

As a result of running at this increased capacity during cold winter months, the system was being overworked, and one air handling unit broke down.

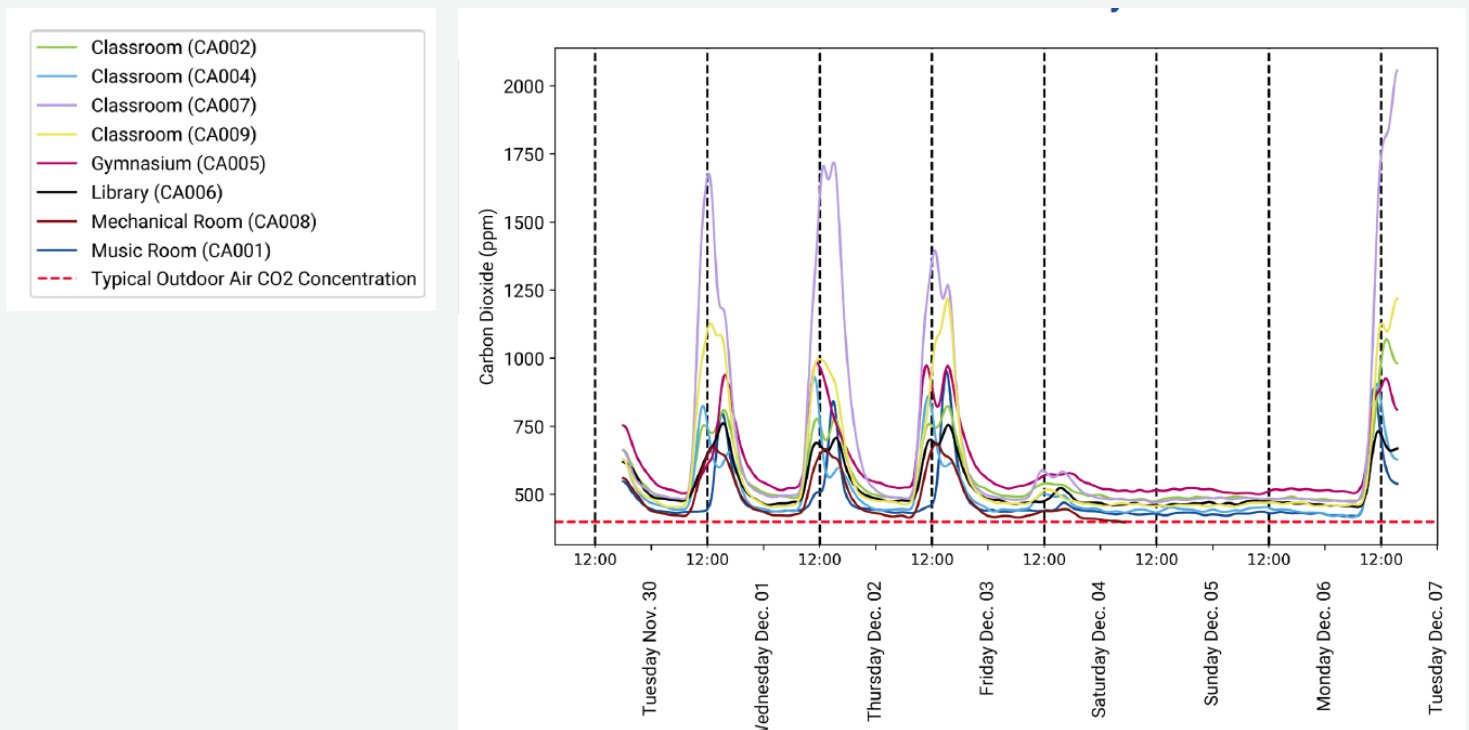
Solution: Accurate Data and Automated Reporting

To understand current ventilation levels, non-permanent sensors were placed for one week in each building. These sensors collected accurate, time-based measurement of ventilation and CO2 levels. ioAirFlow software then generated for each school:

- ✓ A detailed analysis of ventilation performance for overall buildings and specific rooms
- ✓ High-level, quantitative scores for virus transmission prevention, CO2 levels, and ventilation performance based on industry research and standards
- ✓ A summary report highlighting problem areas and recommendations to improve ventilation, reduce the risk of COVID-19 transmission, and enable sustainable and cost-effective operation of HVAC systems.

Carbon Dioxide Concentration over Time for F.W. Gilbert Elementary

Examining levels of CO2 in indoor air can provide information of the building's occupant densities and the effectiveness of the ventilation. High CO2 levels may indicate a problem with overcrowding or inadequate outdoor air ventilation rates.



The Results



10x reduction in maintenance costs
(by investing in preventative over
reactive maintenance)

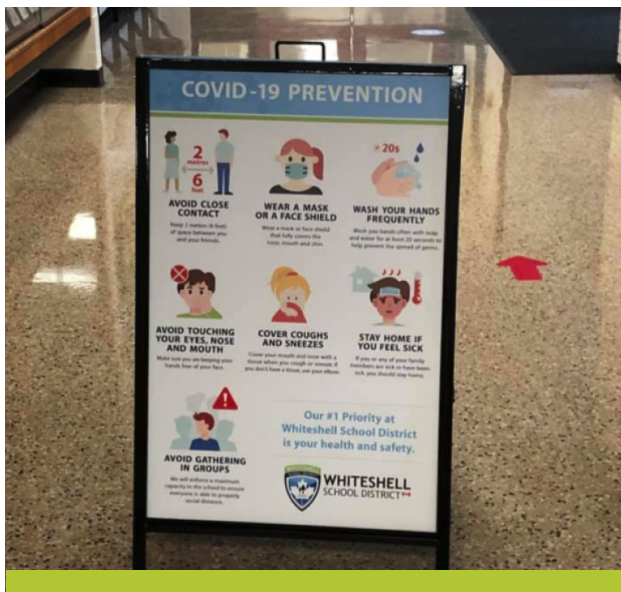


Reduction in risk of airborne
infectious disease transmission

In the secondary school, ioAirFlow's analysis identified that the ventilation rate exceeded minimum requirements to prevent airborne COVID-19 transmission, without the system needing to operate at full capacity.

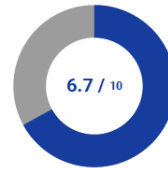
In the primary school, ioAirFlow identified several classrooms where CO2 levels exceeded minimum acceptable thresholds, which meant a targeted increase in ventilation rates or reduced occupancy was needed.

Both schools were able to immediately make simple, effective changes that protected the health of their staff and students.

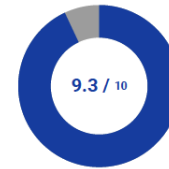


Pinawa Secondary School

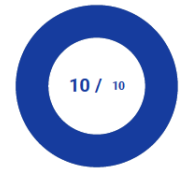
Virus Transmission
Prevention Score



Acceptable CO₂
Level Score

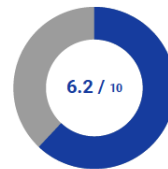


Ventilation System
Performance Score

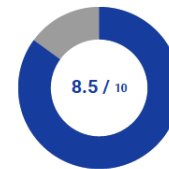


F.W. Gilbert Elementary School

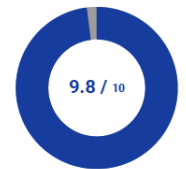
Virus Transmission
Prevention Score



Acceptable CO₂
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Ventilation System
Performance Score



"We wanted to test our district's schools to ensure that our space was safe for students and teachers. ioAirFlow's data analysis allowed us to understand how the buildings' ventilation systems were operating, and what we could do to improve the indoor air quality of the spaces."

Tim Stefanishyn
Superintendent
Whiteshell School District, MB

If you're interested in learning more about how ioAirflow can help you, book a demo today!