PREMISE HQ

CASE STUDY

Heritage Building Ensures Long Term Tenant Comfort with Short Term Data Collection

Downtown Winnipeg Heritage (nominated) Building

The test building was originally built as a 7-story mixed-use building in 1906. Four years after its completion, 2 new stories were added, making it the 9 story classic Chicago school style building it is today. Predominantly used as retail and office space, it stands on its original site, and still maintains a good structural condition, thanks in part to its solid foundation of reinforced concrete, brick, and stone.

Home to numerous government, non-profit and for-profit tenants, comfort is of the utmost importance to its current renters.

The Client Challenge

Tenant complaints related to thermal discomfort.

Thermostats are measuring consistent temperatures which are within ASHRAE acceptable

standards. However, tenants have highlighted ongoing issues related to hot and cold spots in various locations throughout the building.

ioAirflow Data Analytics Platform

ioAirFlow installed 57 LPWAN battery-powered sensors on floors four, seven, and nine collecting over 200,000 data points over a 2 week period, requiring only one standard wall plug to power the gateway. The purpose of the test was to measure whether existing thermostats are telling the whole story of what is happening in the building. The wireless sensors were used to track variables related to thermal comfort.

As they do not require any type of plug and can be placed anywhere throughout the building, the placement process was not disruptive to tenants. Data was stored securely on site and without a need for an internet connection, there were no security risks, or risk of disruption to the buildings networks.

Data was collected to test for multiple problems including:

- Thermostat placement
- HVAC functionality
- Occupancy comfort
- Temperature set point optimization
- Airflow optimization

After two weeks, sensors and data were collected and analyzed through the proprietary analysis software. Sources of thermal comfort issues were identified, and solutions were recommended based on these findings.



The Results



3x less expensive to test space (over manual inspection labour costs)



7%+ reduction in onsite energy consumption (once all recommendations implemented)



Increased tenant satisfaction & comfort

ioAirFlow's analysis confirmed and quantified the high levels of discomfort reported by tenants throughout the building. By placing our sensors immediately adjacent to the building's existing, wired thermostats, we identified that one of the building's thermostats was measuring high temperature values; however, the issue was masked behind a four thermostat average.

This demonstrated that while the building appeared to be well-conditioned, the tenant experience was dramatically different and inconsistent throughout the building.

The issue is being addressed, and once adjustments have been implemented, ioAirFlow will return to conduct additional measurement and verification to ensure that the issue has been resolved.

Here's what our partners in the energy services industry are saying.

"The amount and resolution of data provided by the sensor arrays and the customized reporting provides a cost effective opportunity to study a building on a much wider scale than with traditional data collection."



Cameron Regier Commissioning Engineer Integrated Designs Inc.

