Cherishome Citadel Building

AT A GLANCE

TECHNOLOGY	PoE and DC power distribution, Thermistors - temperature measurement, Motor control and automation, Wireless RF mesh network for IoT devices
CONNECTED DEVICES	Natural Gas Solenoid Valve - ASCO RedHat, Exhaust Fans/Blowers - Loren Cook 150SQN-B (x2), Motor, Driver/Controller - VARI-FLOW SIMPLIDRIVE (x2), 16x Gas powered heavy duty laundry Dryers
PRODUCTS	SpacrNode-I/O, SpacrApp - remote monitoring and control
CLIENT	Cherishome Living
SPACE	Residential Communal Laundry Facility in their building called "The Citdel"
LOCATION	Toronto, Ontario
DEPLOYED IN	April 2021
SAVINGS SUMMARY	CapEx: roughly 50%, OpEx: roughly 60%

About the Client

Cherishome is an international asset management company that strives to create thriving, safe communities.

- 13 properties, and 2000+ suites in Canada
- 9 communities and 2100+ suites in the United States
- Owner of "The Citadel" building in Toronto, ON. Argentum partnered with them to improve a problem they were having with The Citadel's dryers in their residential communal laundry room.

The Cherishome Toronto team had this to say about their company:

> "We believe it is our obligation to have an appreciation for our own blessings in life, having the desire to be caring, making courteous service our great passion, and in doing so, being a thankful team of people living out our gratitude by truly caring for others." - Cherishome Toronto Team

The Challenge

The client was experiencing concrete damage in stairwells caused by the dryer exhaust system blowing acidic moisture into them. Because of this, Cherishome decided they needed to redirect exhaust from the underground laundry rooms to the main floor. When they partnered with us here at Argentum they explained this, as well as that they needed to automatically control exhaust fan speeds based on the number of dryers being used at the same time.

The ability to control fan speeds was necessary because, without that ability:

- The temperature of the exhaust could rise to dangerous levels, putting tenants and people in the building at risk.
- Fans could've damaged idle dryers due to over extraction of the exhaust
- The energy used to operate fans connected to idle dryers would be wasted, unnecessarily increasing electricity costs.

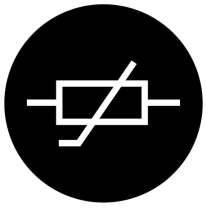
The Solution

Argentum decided that the best method to automatically detect if dryers are being overused would be to use thermistors to measure the exhaust's air temperature, and send that information to the SpacrNode-I/O product, as well as the SpacrApp (includes digital twin software). These are two of the most common products that we implement for clients because of their powerful data collection and control software features.

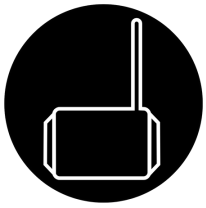
With these products, we were able to implement a wireless mesh network to control and automate the central exhaust system for all dryers:

Digital Twin Software

Wireless Sensors



Thermistors

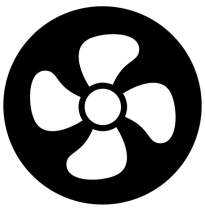


Wireless Mesh Network

The combination of these technologies, provides Cherishome these benefits:

- The natural gas supply will automatically shut off in the case of an exhaust fan failure.
- Automating the exhaust fan so that its speed is increased or decreased based on usage of the dryers provides demand controlled ventilation (DCV), which saves energy and operating costs.
- A wireless mesh network spans from the laundry rooms to the natural gas supply location, saving Cherishome the cost of very long lengths of wire, and a very complicated installation process.

Devices connected to the Argentum system:



Exhaust Fans/Blowers

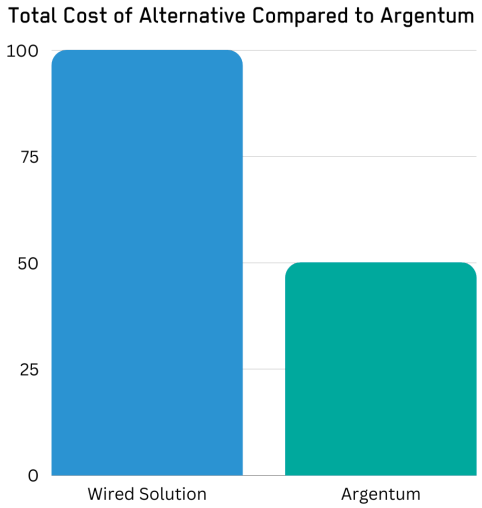
Laundry Dryers

By integrating these devices with air temperature sensors, a wireless mesh network, and our digital twin software (SpacrApp), we enabled Cherishome to monitor, control and automate their dryers and exhaust fans based on real-time usage and safety protocols. This allows Cherishome to optimize energy consumption, as well as occupant safety.

The Results

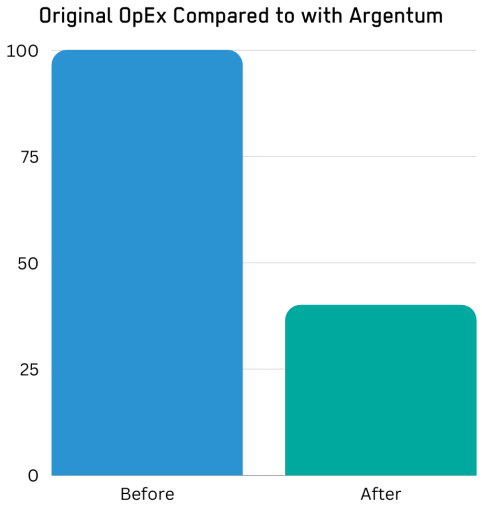
- A safer laundry room, with dryers optimized for performance and efficiency.
- Wireless sensors, wireless mesh network, and data collection and analytics software installed to enable Cherishome to monitor energy consumption and savings.

Financial Results



50% Capital Expenditure Savings

- Implementing Argentum's wireless and programmable system with radio frequency (RF) links eliminated the cost of wires that would've been necessary with the alternative.



60% Savings on Operational Costs

- Argentum's data collection software enabled us to understand that our solution saves Cherishome 10 - 15 kWh annually on energy consumption of motors.

All in all, since the implementation of our system, Cherishome has been able to save energy costs, reduce emissions, improve occupant safety, and improve the performance of their dryers.