

BETHANY RIVERVIEW



Managing Building Information to Optimize Lifecycle Performance

Location

Calgary, Alberta

Project Completion

June 2018

Project Cost

\$53 Million

PROJECT DESCRIPTION

Bethany Riverview is a four storey, 200,000 ft² facility that was designed with seniors' care in mind. Bethany Riverview can accommodate varying levels of care, with its 90 rooms designed for dementia care residents, 118 rooms designed for long-term care residents, and two bariatric resident rooms. Every space intentionally considers how residents will use the space. Visual and sensory clues help residents to feel safe and comfortable when navigating the facility. The Rotary Atrium – a beautiful space filled with wandering paths, benches, and lush greenery – provides a year-round oasis and hub for activities and gathering.

Bethany Riverview's complex, modern design features several technology benefits. Systems such as

Nursecall, lighting, and climate control add to functionality of the space, as well as provide resident comfort and safety benefits. The lighting control system shifts lighting within the facility between yellow and blue hues depending on the time of day – a feature that helps balance circadian rhythms and provides a sense of calm to residents. Temperature control is very important to maintaining resident comfort. Sensors and analytics are used to monitor the building systems, ensuring that heating and cooling issues are constantly monitored, and issues are resolved quickly well ahead of causing negative impacts on residents. The Nursecall system offers an added level of safety and security for patients and staff.

During the first winter that the building was operational, there were some challenges with the boiler system. We were seeing boiler failure during the early morning hours, which posed a significant risk to building performance and user comfort. Using the data, we were able to gather from Bird-Stuart Olson analytics, we identified that the boiler control panel was not interfacing properly with the building control system. While we worked with the project team to accurately pinpoint the root cause of this issue, we set up alerts ahead of failure so that the issue would never cause a negative impact on residents due to rapidly declining building temperature.

BETHANY RIVERVIEW

The Rotary Atrium posed a unique challenge with respect to temperature control. High ceilings and glazing create an interesting dynamic when trying to maintain ambient temperature throughout Alberta's often rapidly fluctuating, extreme temperatures.

The Bird-Stuart Olson team came up with an updated sequence of operations to maintain enhanced control of the space. Throughout the warranty period, we continued to work with the team on site to ensure we maintain the correct temperature and humidity within the Atrium, for both the seniors who use the space and the significant number of plants that live within the space.

Bethany has been very pleased with the level of insights we have been able to offer them through the implementing smart building technology and analytics within their project. We continue to work with Bethany post-warranty, offering them life-cycle services and advice regarding building performance and analytics. We have provided their maintenance team with the tools and training to be able to accurately identify building performance issues, and deal with equipment issues ahead of failure. The data we have given them has allowed the Bethany maintenance team to carry out proactive maintenance and reduce catastrophic equipment failure.

We are very pleased to have been given the opportunity to build a durable, comfortable, and energy efficient space for our client, and will continue to partner with them to achieve continual improvement, efficient maintenance, and a reduction in energy consumption.



INNOVATION AT WORK

- Analytics identified several Rooftop Unit air handling units not responding correctly to calls for heating. The Contractors attended site to troubleshoot the issues which were solved allowing the equipment to function as intended.
- Equipment air filter pressure drops were flagged by analytics as being dirty. As a consequence, variable speed fans will often run at higher speeds to compensate for this. Wasted energy is now prevented as technicians have replaced many of the dirty filters.
- Monitoring the operation of air handling unit fan drives allowed analytics rules to flag units which were not operational. Once investigated it was discovered that the drives had not been properly commissioned and were unable to run. Technicians rectified these issues resulting in the overall building comfort by ensuring the building remains positive pressurized and prevents cold outside air from migrating into the space.
- Analytics rules applied to the heat exchanger indicated the system was not supplying heat at the correct temperature. Further investigation revealed manual isolation valves were in the closed position as well as circulation pumps overridden to off at the local control panel. This was rectified and heating performance returned to expected levels.
- Analytics monitored laundry dryers indicated an issue with lint traps and run status points. Run status would falsely indicate a dryer was running in addition to the units tripping on a door switch and stop. Monitoring the equipment allowed us to ensure vital equipment remained functional.

