



SUN LIFE FINANCIAL CENTRE



NATIONAL BANK BANQUE NATIONALE

BANQUE NATIONALE

SUN LIFE FINANCIAL



BACKGROUND

Bentall Kennedy, one of North America's largest real estate investment advisory and services firms, serves the interests of over 500 institutional investors and manages 134 million square feet of office, retail, industrial and multi-residential property throughout the United States and Canada.

Sun Life Financial Center, one of Bentall Kennedy's properties, includes more than a million square feet of leasable area in two Class A office towers connected by the main atrium.

Sun Life Financial Center is located in downtown Ottawa and is composed of two buildings that occupy an entire city block: 99 Bank Street (built in 1976) and 50 O'Connor Street (built in 1984). Both have their original cooling systems in place. Over the years, mechanical upgrades have been done such as two new chillers, a refrigerant conversion from R11, and a chilled water interconnection between the two buildings.



THE CHALLENGES

The plant requires year-round chiller and cooling tower operations, yet Alliance had to implement a workable schedule that would not disrupt building operations. When Bentall Kennedy identified the need for end-of-life equipment replacement in one of the building's cooling plants, they decided to evaluate the equipment in both towers, seeking to improve efficiency throughout the complex and align with the firm's commitment to sustainability.

Bentall Kennedy presented Alliance with these project objectives. Alliance was contracted to:

- Update the equipment as it had reached end of life
- Search out options for system replacement not just equipment replacement
 - Look at "outside the box" options
 - Drive down operating expenses
 - Maximize utility incentives
- Implement the project with minimal disruption to the operation of the buildings



THE SOLUTIONS

To simplify the complexity, Alliance and Bentall Kennedy conducted an in-depth design/costing study using a calibrated building simulation model constructed by Halsall (now part of WSP Global) to evaluate several upgrade scenarios. Alliance and Bentall Kennedy compared each scenario to a base case minimum performance level based upon a simple like-for-like replacement using the latest technology. Comparison metrics included energy performance, investment, return and greenhouse gas (GHG) impact. At the same time, Alliance put together real construction costs for each option.

The study revealed that upgrading Sun Life Financial Center with a replacement heat recovery chiller, along with a second upsized chiller to replace the two existing units would provide a positive net present value, operational redundancy and fuel switching capabilities. 50% of the cost of the study was support by government incentives.



THE RESULT

Alliance successfully implemented its schedule without causing any downtime or major interruption to the smooth running of the plant. Since the 99 Bank Street plant operated during the winter, special planning was acquired to phase the removal and installation of wintertime chillers and cooling towers.

Over the course of the winter and spring, Alliance successfully implemented all facets of the project. Typically, like all complex projects, some small obstacles arose. Even so, these were easily overcome and the project was delivered on time and on budget.

For an incremental cost of \$26,025 above the base case, this option generated an additional \$90,000 annual savings for a total annual energy reduction of 1,340 mWh.

The Project was awarded the single largest incentive ever by Hydro Ottawa totaling \$536,839. Achieved more than the targeted overall greenhouse gas emission reductions of 2.5% CO2e.

