GDI AINSWORTH

CASE STUDY

Turnkey Energy Efficiency Project

CIUSSS du Centre-Ouest-de-l'Île-de-Montréal (CIUSSS CODIM)

Project Details

Location
Montreal, Quebec

Number of Buildings
9 (190 164 m^2 total)

System Implemented
LED lighting, boiler room modernization and steam-to-hot-water conversion, automation, low-temperature conversion, variable-flow kitchen hoods, exhaust air heat recovery, heat pumps and air-to-water heat pumps, data collection system

Project Goal
Significantly reduce GHG emissions and energy costs at nine healthcare facilities under a self-financed ESCO energy performance contract funded by the savings generated

Impact at a Glance

- **49 %** reduction in GHG emissions (6,173 tons of CO_2 per year)
- **$1,3 M** in annual energy savings
- 47 energy efficiency measures implemented

Challenge

The CIUSSS du Centre-Ouest-de-l'Île-de-Montréal (CIUSSS CODIM) is a key player in Montreal's healthcare network, bringing together renowned institutions such as the Jewish General Hospital, Mount Sinai Hospital, and the Maimonides Donald Berman Geriatric Center. Covering 54 km^2, it serves a population of approximately 371,500 residents spread across five boroughs and five associated municipalities, with some 11,000 employees.

These nine health- and long-term care facilities had heterogeneous and aging mechanical infrastructure, energy-intensive steam heating systems, and insufficient automation. The complexity of the project stemmed from the need to maintain the continuity of essential services at all times in active hospital environments, while simultaneously managing 47 measures across nine distinct sites. The onset of the COVID-19 pandemic during the course of the work added a major operational constraint, requiring constant adaptation of execution methods.

Methodology

Detailed feasibility study across nine sites to establish baseline consumption profiles and identify opportunities for improvement.

Assessment of existing mechanical systems, distribution networks, and automation levels to target priority inefficiencies.

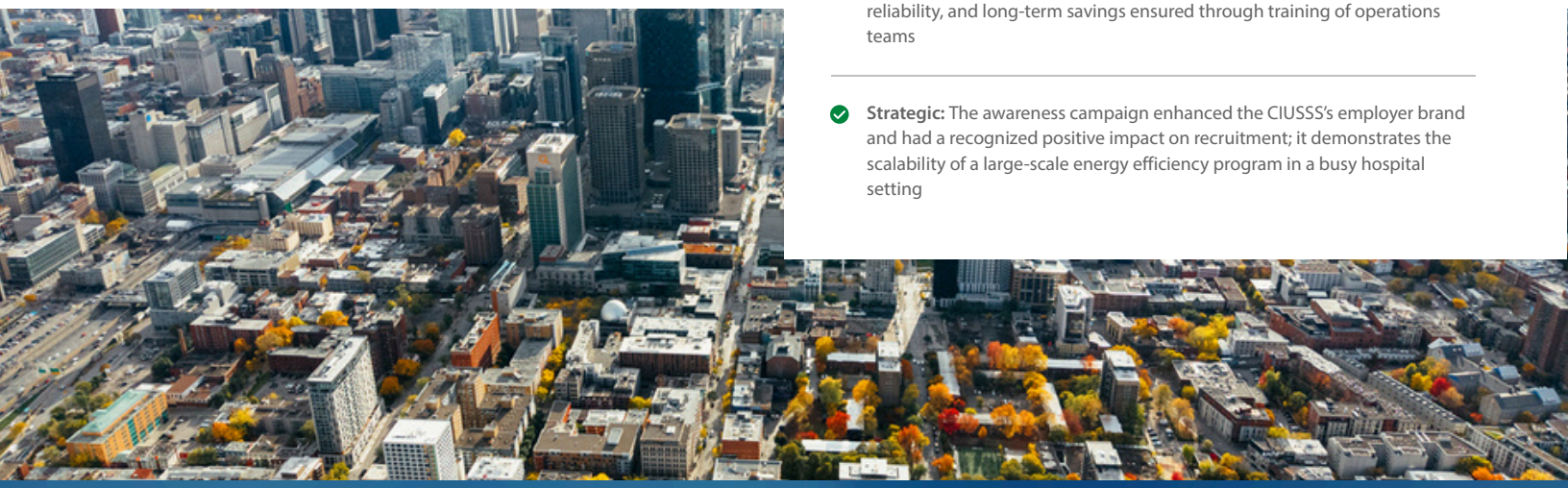
Design of an integrated program of 47 measures covering lighting, mechanical systems, automation, and energy recovery.

Optimization of grant applications to Hydro-Québec and Énergir to maximize available funding for the client.

ESCO delivery model (design-build) with guarantees on costs, savings, and grants, including project management, engineering, construction, commissioning, training, awareness, and measurement & verification (M&V).

Solution

- Comprehensive replacement of lighting with LED fixtures across all nine facilities.
- Modernization of boiler rooms and conversion of steam systems to hot water systems.
- Upgrading or installation of new automation systems.
- Conversion of hot water systems to low-temperature systems.
- Installation of variable-flow kitchen hoods and heat recovery on exhaust fans.
- Installation of heat pumps and air-to-water heat pumps at the Jewish General Hospital, Mount Sinai Hospital, and Maimonides Geriatric Centre.
- Deployment of a data collection system to monitor energy performance.
- Employee awareness campaign (videos, posters, social media).

The Ripple Effect

- **Financial:** $1.3 million in annual savings, self-financing a $16.4 million investment; grants increased from $7.0 million to $7.8 million through optimized applications to Hydro-Québec and Énergir, enabling the project's scope to be expanded
- **Environmental / ESG:** Reduction of 6,173 tons of CO_2 per year, representing 49% of the facilities' total emissions; direct contribution to the CIUSSS's sustainable development commitments
- **Operational:** Improved occupant comfort (enhanced lighting and thermal control), strengthened climate resilience of the sites, increased system reliability, and long-term savings ensured through training of operations teams
- **Strategic:** The awareness campaign enhanced the CIUSSS's employer brand and had a recognized positive impact on recruitment; it demonstrates the scalability of a large-scale energy efficiency program in a busy hospital setting