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Oakville Hospital Rooftop Solar Array

2016 Canadian Consulting Engineering Awards

HATCH

Summary

Halton Healthcare has installed a state-of-the-art rooftop solar array at their Oakville Trafalgar Memorial Hospital.

The array along with engineering, design, procurement, construction management, and commissioning services worth over \$3 million, was donated by Hatch.

Power generated and sold through the FIT Program will provide the Oakville Hospital

Foundation with revenue of \$6.85 million over the next 20 years, and highlights the value of public and private sectors working together to benefit the general public.





The rooftop solar array will generate \$6.85 million over the next 20 years through a FIT contract with the Ontario Power Authority. This profit will go to the Oakville Hospital Foundation, which funds essential equipment for the hospital.

Project details

The new Oakville Trafalgar Memorial Hospital opened its doors in mid-December 2015 to serve the Oakville region. The hospital's goal is to provide the highest quality patient-centered care within an environment that supports physical, mental, emotional and spiritual needs. The new building showcases new technologies, leading-edge design features, and an environment that promises tremendous benefit to the community.

To support its commitment to provide state-of-the-art healthcare for the community, Halton Healthcare Services and Hatch saw an opportunity to work together—Hatch would donate a solar array that would sit atop the hospital's car parking garage. The idea was to connect the array to the Ontario power grid, and through a Feed-in-Tariff (FIT) contract with Ontario Power Authority, it would generate electricity that could be sold into the grid. Revenues from power sales would be donated to the Oakville Hospital Foundation, which partners with the community to fund essential medical equipment for Oakville's hospital to enable high-quality patient care.

Hatch committed to provide all services for the design and installation of the 500-kilowatt array, worth over \$3 million.

Hatch's services included:

- Engineering for the photovoltaic system
- FIT Program application and permitting
- Procurement and delivery to site
- Installation and construction management
- Commissioning
- Operation and maintenance plan
- Handover to Halton Healthcare Services.

The elevated array on the parking garage roof was designed to be architecturally unique. The design allows for full functionality of the top deck as a parking area, and complements the building's original architecture with a series of rooftop arches. Hatch used best-in-class energy components for this installation to provide a consistent revenue stream over the duration of the FIT contract, with minimum operation and maintenance costs for Halton Healthcare.

Effort and Complexity

The gift from Hatch consisted of capital expenditure plus full design of the structure and modules, as well as procurement, permitting, construction, commissioning, and finally handover to Halton Healthcare. Almost 13,000 staff hours were donated by Hatch to bring this ambitious project to life.

Design and planning work took two years followed by a five-month construction period. Construction was complete and the array connected to the Ontario power grid on November 16, 2015.

The project faced multiple challenges during development and construction, the most persistent of which was the ongoing final installation and commissioning activities for the hospital. The goal of the project was to have zero impact on other on-site activities, a goal

that was achieved by detailed pre-construction schedule planning and a nimble construction implementation team.

The racking superstructure is a unique Hatch design and, in addition to a graceful shape to match the existing architectural themes, features a number of innovations required to meet both the structural and operational requirements of the project without negative impact to the facility.

The structural integration into the parking structure minimized the footprint to such an extent that no parking capacity or accessibility was lost to racking structure footings. The design also features a “snowbreak” bar to prevent shed snow from impacting the vehicles and pedestrians below, as well as integrated lighting to provide well-distributed illumination at night.



The panel racking structure features a unique design that allows for parking underneath and includes a number of innovations required to meet both the structural and operational requirements of the project without negative impact to the facility.

Social, economic and other benefits

The hospital rooftop PV project demonstrates Hatch's commitment to solar power and the local community. The hospital is located close to Hatch's corporate headquarters, and serves many Hatch employees who live in the area. In recognition of this generous gift, the hospital named one of three hospital blocks the Hatch Patient Care Centre, which provides outpatient services and clinics, including rehabilitation and palliative care.

Power generated and sold through the solar array will provide the Oakville Hospital Foundation with revenue of approximately \$6.85 million over a 20-year period, through the Ontario Power Authority's Feed-In Tariff (FIT) Program and provide clean renewable power for the broader community to help with the transition to a lower carbon economy.

The project uses best-in-class energy components, all meeting domestic content requirements for components manufactured in Ontario, and shows how energy generation can be integrated into new construction in ways that benefits community stakeholders.

The project is just one example of ways that consulting engineers can contribute to their local communities.

"Halton Healthcare is proud of the many new technologies and leading-edge design features in the new Oakville-Trafalgar Memorial Hospital, including the rooftop solar array on our 6-storey parking garage. Hatch's latest solar technology combined with an innovative rooftop design makes this a winning partnership that will generate green power for the community and revenue to help fund OTMH's emerging priorities." — Bill Bailey, Vice-President, Redevelopment, Halton Healthcare

"The Oakville Hospital is important to Hatch in many ways. First, we wanted to make a long-term contribution by generating revenue through clean energy. Second, the solar array itself showcases the innovative design of Hatch engineers. Our team collaborated with the hospital and construction partners to complete the project to coincide with the hospital's opening. Many of our corporate office employees live in the area. When visiting the hospital, they can be proud of the innovative contribution that Hatch has made to their community."
—John Bianchini, CEO, Hatch



Hatch CEO, John Bianchini (centre) and Hatch Global Managing Director, Metals, Joe Lombard (left) stand in front of the Hatch Patient Care Centre with Bill Bailey, Halton Healthcare's Vice-President, Redevelopment