St. Joseph's Health Care London

ENERGY CONSERVATION AND DEMAND MANAGEMENT (CDM) PLAN

Made for Ontario Regulation 507/18 – The Electricity Act

Prepared by Facilities Management
2019-2024

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Introduction

St. Joseph's Health Care London (St. Joseph's) has created the conservation demand management (CDM) plan to promote environmental stewardship and to fulfill its obligations to O. Reg. 507/18 Electricity Act, 1998. SJHC posted its former CDM plan in 2014 under the Green Energy Act, O.Reg 397/11, which was repealed with Bill 34, Green Energy Repeal Act, 2018. Provisions regarding energy and greenhouse gas emission reporting and the conservation demand management plan were re-enacted in the Electricity Act and the requirements prescribed by the new regulation must include the following information:

1. A summary of annual energy consumption for each of the public agency's prescribed operations.
2. A description and a forecast of the expected results of current and proposed activities and measures to conserve the energy consumed by the public agency's prescribed operations and to otherwise reduce the amount of energy consumed by the public agency, including employing such energy conservation and demand management methods as may be prescribed.
3. A summary of the progress and achievements in energy conservation and other reductions described in paragraph 2 since the previous plan.

St. Joseph's energy conservation and demand management program will reduce overall energy consumption, operating costs, and greenhouse gas emissions. It will be posted on both the internal and external SJHC websites and available to anyone in hard copy upon request at head office.

Past CDM Results Summary (2014 – 2019)

Through new building design and past conservation and demand initiatives, St. Joseph's has achieved the following results:

- **11% reduction in annual in energy use**
- **$817,158 reduction in annual energy cost**
- **4,377,465 kWh reduction in annual electricity consumption**
- **23,598,836 lb reduction in annual steam consumption**
- **1,840,842 kg reduction in annual greenhouse gas emissions**

Annual utility costs are a significant part of overall operating costs. St. Joseph's annual energy consumption and related costs/emissions for 2017 were:

- **Utility costs were $11,000,000 annually.**
- **Facility related O&M costs are $23,000,000 annually**
- **Energy related emissions for 2017 equaled 12,642 tCO_2e.**
- **Facility total project costs including LEED buildings are estimated at $586,263,337**

Benchmark – the Hospital's Energy Use Index (EUI) for 2017 was as follows:

Hospital Energy Use Index (ekWh/ft^2)	
Family Medical and Dental Centre	34
Parkwood Institute - Main	41
Parkwood Institute - RMHC	23
Southwest Centre for Forensic Mental Health	35
St. Joseph's Hospital	63

Future CDM Forecast Summary (2019 - 2024)

With energy management an integral part of business decisions, St. Joseph's can expect to achieve the following targets by 2024:

- **9% reduction in annual energy use**
- **$1,134,350 reduction in annual energy cost**
- **4,126,226 kWh reduction in annual electricity consumption**
- **13,214,286 lb reduction in annual steam consumption**
- **1,064,083 kg reduction in annual greenhouse gas emissions**

To further strengthen and obtain full value from energy management activities, a strategic approach will be taken. The organization will fully integrate energy management into its business decision-making, policies, and operating procedures.

Active management of energy related costs and risks in this manner will provide a significant economic return to the organization and will support other key organizational objectives.

Past Measures from 2014 CDM Plan

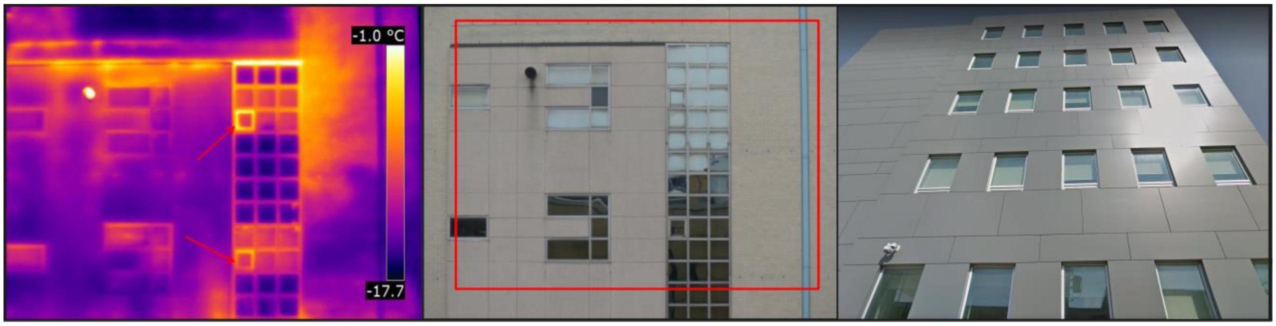
In July 2014, St. Joseph's developed goals and objectives for decreasing the facilities annual energy consumption and resulting greenhouse gas emissions. The following activities, completed between 2014 and 2019, are associated with managing overall energy consumption, lowering annual operating costs, and reducing greenhouse gas emissions.

St. Joseph's Hospital

- Exterior and interior lighting controls were improved to offer more control and better match the occupancy schedule of given areas in the facility.
- A LEED silver building ('A' Block) was constructed and opened in 2018.
- Exterior cladding was reconstructed on the 'B' Zone building.
- A new roof was put on the Lawson building.
- Exterior lighting and parking garage lighting were retrofitted with LED technology

These measures cost **$54,185,327**, received **$32,064** in incentive money and are saving **$134,653** per year. They have reduced annual electricity use by **911,041 kWh**, annual steam use by **2,381,794 lbs**, and annual greenhouse gas emissions by **1,840,842 kg**.

Exterior Cladding – the original wall system comprised of pre-cast concrete panels, brick veneer, and curtain wall was replaced with new exterior cladding and three inches of spray-in, medium density, polyurethane foam insulation.



Parkwood Institute - Main

¶ Exterior lighting and lighting on the 5th floor was replaced with new LED technology.
¶ Variable frequency drives were installed on the Western Counties Wing cooling towers.
¶ A19's and occupancy sensors were upgraded in a custom lighting project.

These measures cost **$178,010**, received **$8,296** in incentive money and are saving **$27,888** per year. They have reduced annual electricity use by **250,792 kWh** and annual GHG emissions by **7,238 kg**.

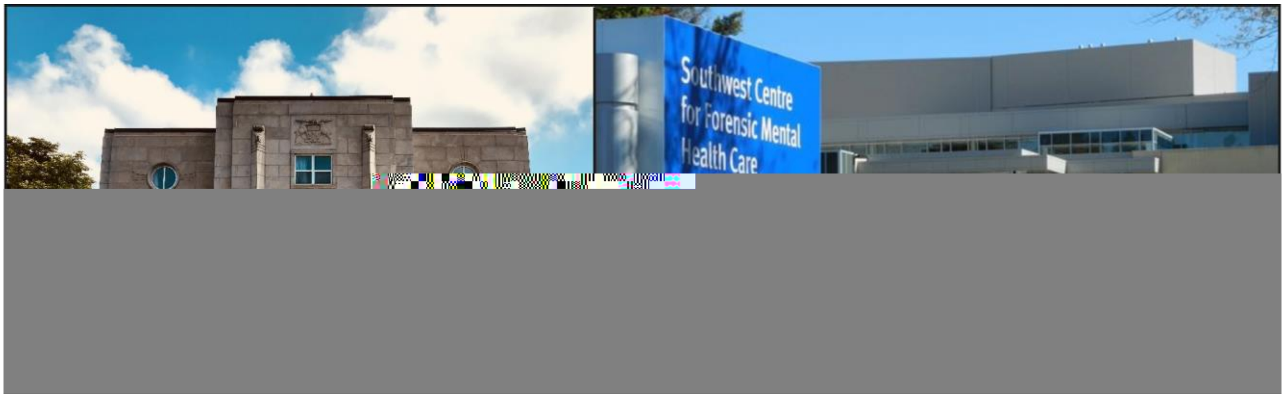
Parkwood Institute – RMHC

¶ The new LEED Gold building constructed on Wellington Road in London replaced the old Regional Mental Health Care building on Highbury Road and is now the most energy efficient building at St. Joseph's Health Care, London at only 23 EkWh/ft^2.

The new mental health building cost **$341,000,000** to construct and is saving **$485,345** in energy costs. It has reduced annual electricity use by **2,284,769 kWh**, annual steam use by **16,519,900 lbs** and reduced annual greenhouse gas emissions by **1,266,146 kg**.

Regional Mental Health Care, St. Thomas – Southwest Centre for Forensic Mental Health
The RMHC-L building on Highbury Road was closed down after its long standing service to the community since 1870. A new Leadership in Energy and Environmental Design (LEED) Gold building was constructed at Parkwood Institute, which opened in 2014. This LEED Gold building was recognized for excellence and innovation in the Institutional Healthcare category at the Don Smith Commercial Building Awards. The new building is very energy efficient at only 35 $EkWh/ft^2$.

¶ The new forensic mental health building cost **$190,000,000** to construct and is saving **$168,106** in energy costs. It has reduced annual electricity use by **920,863 kWh**, annual steam use by **4,697,143 lbs** and reduced annual greenhouse gas emissions by **367,834 kg**.



Mount Hope Centre for Long Term Care
¶ Instead of improving the cooling tower operation using VFDs it was decided to put in two new high efficiency HVAC units to serve this building.

This measure cost **$900,000** and is saving **$1,112** per year. It has reduced annual electricity use by **10,000 kWh** and reduced annual GHG emissions by **289 kg**.

Energy Management Vision

St. Joseph's Health Care London understands that providing the best quality of patient care includes acting responsibly with energy resources and minimizing the negative impact that the organization has on the environment. It is our vision to consider energy efficiency from the design and construction of new buildings and space through standards such as LEED, to the retrofit of existing buildings and equipment with more efficiency systems and technology, to engaging the end user in energy efficient behaviour at work. This practice follows the "First Do No Harm" motto for Canadian Healthcare and helps to protect our patients from the many environmentally sensitive illnesses we treat.