Conservation & Demand Management Plan

2014

St. Joseph's Healthcare Hamilton

1 Executive Summary

The following Energy Conservation and Demand Management Plan is written in accordance with sections 6 and 7 of the Green Energy Act, 2009, O. Reg. 397/11. Energy management initiatives can produce environmental, economic and social benefits, including reducing greenhouse gas (GHG) emissions, cost avoidance and increasing savings. Our energy efficient capital and operating process improvements are key components to our success and will be outlined in this report.

This Conservation and Demand Management Plan will highlight our facility's total annual utility consumption in terms of ekWh along with an Energy Utilisation Index (EUI) for all three campuses and will be compared to the Ontario Hospital industry average. Also included in this report is a greenhouse gas analysis including a baseline and a reduction target.

Following our analysis we have concluded that the average of our three facilities consume 14.05% less energy than the Ontario healthcare industry average. We are committed to reducing our annual energy consumption by at least 300kWh annually at each campus. The analysis taking place in this report will assist us in financial decision-making, and generating programs to further reduce our environmental impact and promote a more efficient and effective processes to serve our community.

Goals and Objectives:

- We will strive to lower our current levels of energy consumption and demand, keeping us well below the industry average for Ontario Hospitals
- We will implement measures toward reducing our greenhouse gas emissions over the next five years
- We will strive to become leaders in energy efficiency for hospitals in Ontario

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3 Introduction

The purpose of St. Joseph's Healthcare Hamilton energy management plan is to promote sustainable stewardship of the environment, guide financial decision-making, better allocate resources, and comply with the requirements of the *Green Energy Act* (O.Reg 397/11).

To obtain full value from energy management activities, and to strengthen our conservation initiatives, a strategic approach will be taken. Our organization will strive to fully integrate energy management into our practices by considering indoor environmental quality, operational efficiency, and sustainably sourced resources into major financial decision-making.

Our Strategic Plan *Mapping our future* seeks to find progressive change, innovation, community and interconnection to help navigate the transformation of our organizational structure to support our unique Continuum of Care. We will integrate these efforts with sustainability and conservation strategies to ensure our future evolves with the needs of our community.

The fundamental principle of our plan is to drive to be the best in quality in each service we provide. The strategic directions outlined in this plan will help shape our services to develop the tactics and goals that will achieve this vision.

Get to Know St. Joe's

As a premier academic and research healthcare organization, St. Joseph's Healthcare Hamilton (SJHH) is committed to making a difference in people's lives and creating a lasting future for our community through integrated health services and internationally recognized programs. Our threefold mission is to provide dynamic research, revolutionary methods in health sciences education, and the highest standard of clinical care in a spirit of compassion, innovation and commitment.

SJHH is affiliated with McMaster University, Mohawk College and the St. Joseph's Health System (SJHS) and home to the prestigious Firestone Institute for Respiratory Health and the high-tech Brain-Body Institute. Also among SJHH's prominent teaching contributions is the internationally renowned Centre for Minimal Access Surgery (CMAS).

SJHH has earned a national reputation for outstanding patient care and innovative medical and surgical treatments. The Hospital is particularly well known for excellence in respiratory care, kidney and urinary care, mental health and addictions, surgical services, cancer surgery and women's and infants' care. We are also recognized as a leading academic and research centre.

SNAPSHOT

- 344 acute inpatient beds
- 265 acute and tertiary mental health beds
- 82 rehab and CC beds
- 53 bassinets
- 370 long term care beds
- 107 senior life equity suites
- 8 respite beds
- 5,980 staff
- 600 physicians
- 700 volunteers
- 25,000 inpatient cases
- 110,000 emergency & urgency care visits
- 450,000 ambulatory visits
- 250,000 diagnostic visits
- 75,000 in-home nursing visits
- 2,300 community clients served
- 3 supportive housing & community outreach services

(Based on 2012 Strategic Plan)

MISSION

Living the Legacy:
Compassionate Care.
Faith.
Discovery.

VISION

On behalf of those we are privileged to serve, we will deliver an integrated high quality care experience, pursue and share knowledge, and respect our rich diversity, always remaining faithful to our Roman Catholic values and traditions.

VALUES

We commit ourselves to demonstrate in all that we undertake, the vision and values that inspired our Founders, the Sisters of St. Joseph. These are: Dignity, Respect, Service, Justice, Responsibility and Enquiry.

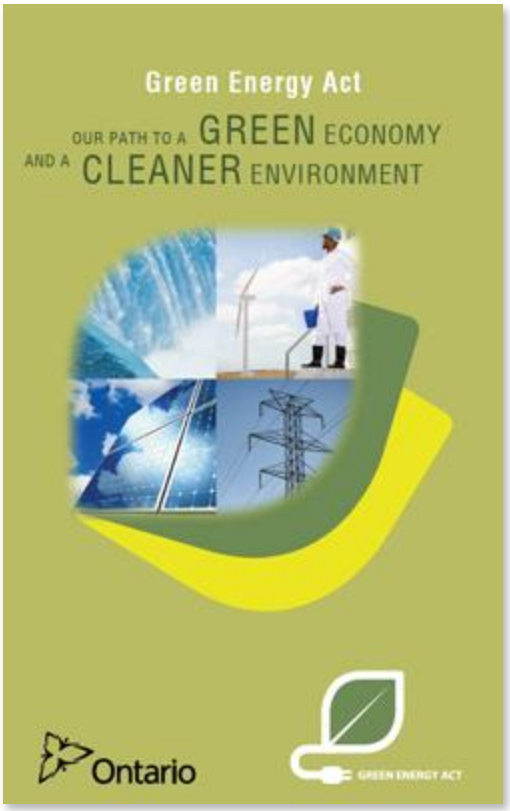
4 Ontario's Green Energy Act – Overview

Ontario's Green Energy Act (GEA) was created to expand renewable energy generation, encourage energy conservation and promote the creation of clean energy jobs.

4.1 Promoting Energy Conservation

Conserving energy not only saves money for families and businesses, it also lowers demand on the electricity system and helps reduce greenhouse gas emissions.

Through conservation, Ontario homeowners, businesses and industry have saved more than 1,900 megawatts of peak demand electricity since 2005 – the equivalent of more than 600,000 homes being taken off the grid.



The GEA continues to promote conservation by:

- Making energy efficiency a key element of Ontario's building code
- Creating new energy efficiency standards for household appliances
- Working with local utilities to reach assigned conservation targets
- Protecting low-income Ontarians through targeted conservation programs

5 Building Survey

5.1 Charlton Campus

St. Joseph's Healthcare Hamilton Charlton Campus is a 487 bed acute care facility located in downtown Hamilton at 50 Charlton Avenue East. The campus is home to the world- renowned Firestone Institute for Respiratory Health, the Centre for Minimal Access Surgery, Brain Body Institute and the highly regarded Father Sean O'Sullivan Research Centre with its satellite organization the Centre for the Evaluation of Medicine. Our busy Emergency Department and Women's and Infants' programs are located at this campus, along with our Surgical Centre.

Research facilities are prevalent throughout the Charlton Campus location reflecting our drive to integrate basic and clinical research. Bringing research to the bedside also strengthens and underscores our partnerships with McMaster University's Faculty of Health Sciences and Mohawk College.

Table 1 Charlton Campus

St. Joseph's Healthcare Hamilton	
Address:	50 Charlton Ave., Hamilton ON.
Gross Area (Ft.^{2})	1,300,000
Facility Use:	The facility provides both chronic and acute care

5.2 King Campus

An out-patient facility located at 2757 King St. East, St. Joseph's King Campus is a pioneer in Ontario's health care system. With a focus on delivering patient-centred care to the residents of Stoney Creek, East Hamilton, and the broader Hamilton-Wentworth Region, programs and services at our King Campus range from a Regional Eye Institute (providing eye care and cataract surgery) to pain management services, a Mature Women's Health Centre, a 39-bed satellite Dialysis Clinic, and education programs including asthma management, nutrition and diabetes clinics.

Our King Campus is also home to St. Joseph's Urgent Care Centre, providing access to care for non-life threatening emergencies, with volumes equal to those of the Emergency Department at the Charlton Campus.

Table 2 King Campus

St. Joseph's Healthcare Center	
Address:	2752 King St. East
Gross Area (Ft.^{2})	107,000
Facility Use:	The facility provides both chronic and acute care

5.3 Former West 5th Campus

In February 2014, St. Joseph's opened up doors to the redeveloped West 5th campus that specializes in the treatment of mental health and medical care. In the year 2012, the facilities operations were still taking place at the old facility. The data in this report will reflect the energy consumed at the old campus, since one year's utility data is still not available for the new campus. Any of the recommended energy efficient measures will be for the new facility.

Located at 100 West 5th Street, St. Joseph's Healthcare Hamilton's West 5th Campus was home to the regional specialized mental health services for South Central Ontario, providing inpatient and outpatient care to those suffering with mental health or addiction.

Table 3 West 5th Campus

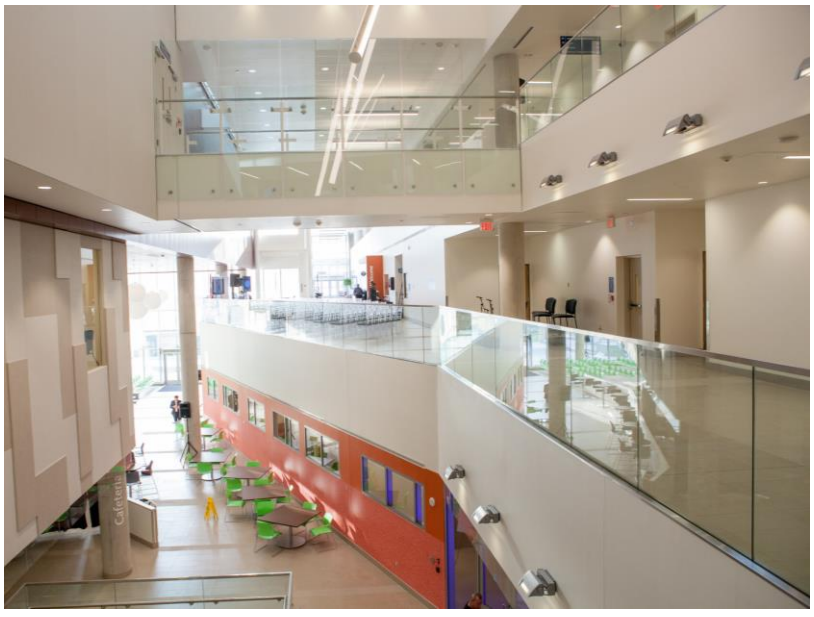
St. Joseph's Healthcare Center	
Address:	100 West 5th St. East
Gross Area ($Ft.^2$)	348,966
Facility Use:	The facility provides both chronic and acute care

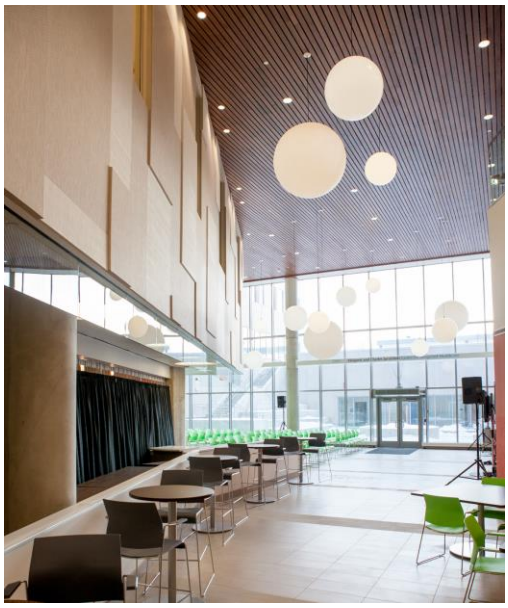
6 Redevelopment of the West 5th Campus

The redevelopment of the West 5th Campus enabled us to bring all of our mental health and addiction services together under one roof in a modern, comfortable and professional setting. Our centre provides patients with access to the best possible prevention, diagnosis and treatment services in a space they feel comfortable. The new West 5th Campus is central to care in our community; it provides diagnostic services like MRI and imaging services, as well as outpatient medical clinics.

The new West 5th Campus is also designed to meet the Leadership in Energy and Environmental Design (LEED®) Silver Certification standards. LEED is a third-party program that certifies buildings that are designed, constructed and maintained using environmentally friendly materials and systems. The new building at West 5th includes the following LEED features:

- Adequate space for secure bicycle storage and shower facilities for staff
- Close proximity to public transportation routes
- Preservation of mature trees on the central and west portions of the Campus with over 500 new trees planted, which includes native and drought species
- Storm Water Management System to minimize water pollution
- Highly efficient plumbing fixtures to reduce indoor water usage by 20%
- Low emitting materials used during construction to ensure improved indoor environmental quality
- PVC roof and strategic east-west orientation of building to increase building heat from the sun
- 90% of construction materials come from landfills and recyclable products





7 Annual Energy Consumption

The following section outlines the energy breakdown for our facility throughout a 365 day period. This section will explain a complete breakdown of all the utility load levels (exempting water).

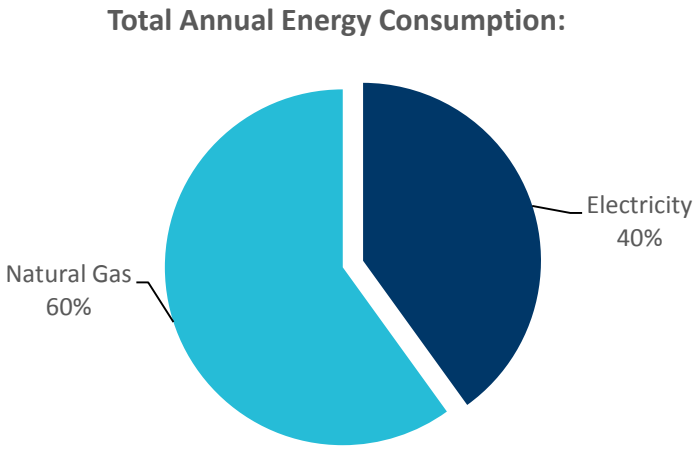
In order to compare different energy sources, within this report, energy will be expressed in units of ekWh—or equivalent kilo watt hours. The energy contained in a cubic meter of Natural Gas will be converted to ekWh, and consumption or savings will be expressed thusly.

7.1 Charlton Campus

The table below outlines the annual utility consumption for 2012 and the ekWh equivalent for each energy source at the Charlton Campus.

Table 4 Annual Energy Consumption 2012

Energy/Utility Source	Annual Consumption in Units	Annual Consumption (ekWh)
Electricity (kWh)	32,440,731.11 kWh	32,440,731.11
Natural Gas (m^3)	4,687,365.90 m^3	48,566,319.44
Total Annual Energy Consumption:		**81,007,050.55**

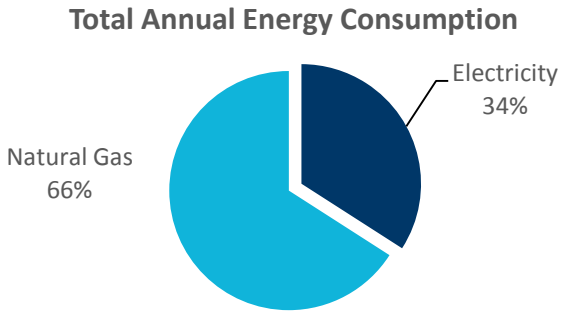


7.2 King Campus

The table below outlines the annual utility consumption for 2012 and the ekWh equivalent for each energy source at the King Campus.

Table 5 Annual Energy Consumption 2012

Energy/Utility Source	Annual Consumption in Units	Annual Consumption (ekWh)
Electricity (kWh)	3,359,945.99 kWh	3,359,945.99
Natural Gas (m^3)	627,249.99 m^3	6,499,005.55
Total Annual Energy Consumption:		**6,858,951.54**

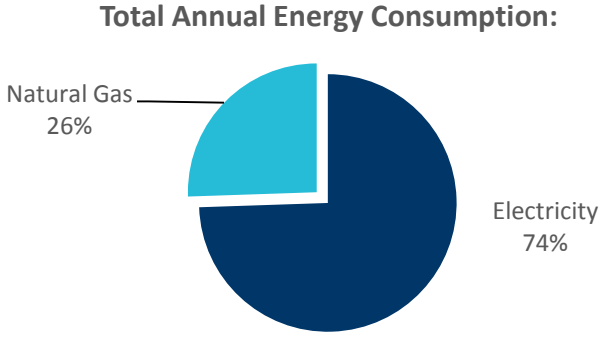


7.3 Former West 5th Campus

The table below outlines the annual utility consumption for 2012 and the ekWh equivalent for each energy source at the former West 5th Campus.

Table 6 Annual Energy Consumption 2012

Energy/Utility Source	Annual Consumption in Units	Annual Consumption (ekWh)
Electricity (kWh)	7,090,249.06 kWh	7,090,249.06
Natural Gas (m^3)	234,640.81 m^3	2,431,139.44
Total Annual Energy Consumption:		**9,521,388.50**

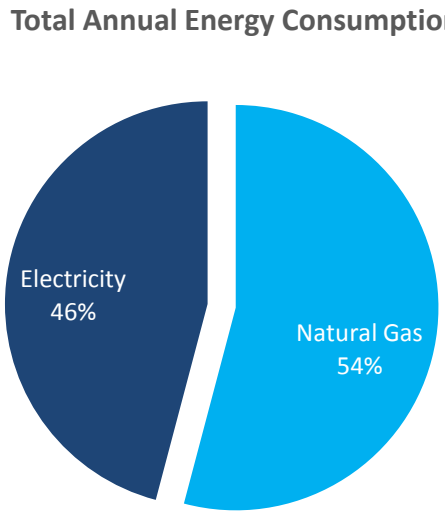


7.4 New West 5th Campus

The facility has three above ground floors plus the penthouse and one partially below grade floor. The building is divided into four pods, labeled A thru D, plus three main areas, labeled E, F, and G. The pods contain mostly in patient units and associated support spaces. The central areas include a gym, retail space, lobby, pharmacy, diagnostic services, food services, and administration. Facility operations began in December 2013. Movement of patients from the old facility to the new facility was done in phases. Some areas of the facility will not be open until 2016 or 2017.

The table below outlines the predicted annual utility consumption for 2014 and the ekWh equivalent for each energy source at the new West 5th campus.

Energy/Utility Source	Annual Consumption in Units	Annual Consumption (ekWh)
Electricity (kWh)	14,722,222 kWh	14,722,222 ekWh
Natural Gas (m^3)	1,156,230 m^3	12,305,555 ekWh
Total Annual Energy Consumption:		**27,027,777**



8 Energy Utilization Index

Energy Utilization Index (EUI) is a measure of how much energy a facility uses per-square-foot. Breaking down a facility's energy consumption on a per-square-foot-basis allows facilities of different sizes to be compared with ease.

In this case, we are comparing our facility to the industry average for Ontario hospitals, derived from Natural Resources Canada's *Commercial and Institutional Consumption of Energy Survey*. The figure below compares our annual energy consumption per square foot to the industry average for Ontario hospitals—67.09 ekWh/ft^2 –provided by Natural Resources Canada (2007).

Based on NRCan's 2007 summary report of commercial and institutional consumption of energy survey hospitals ranked the highest energy intensity by sector. Such an amount of energy consumed on site per square foot is the result of specialized and sophisticated equipment, as well long hours of operation.

The EUI for St. Joseph's Healthcare Hamilton is as follows:

Table 7 EUI Camparison for St. Joseph's Healthcare Hamilton

Facility	EUI (ekWh/ft^2)	Comparison to Industry Average
Charlton Campus	**64.78**	This campus has an EUI that is **LESS** than the Ontario hospital industry average

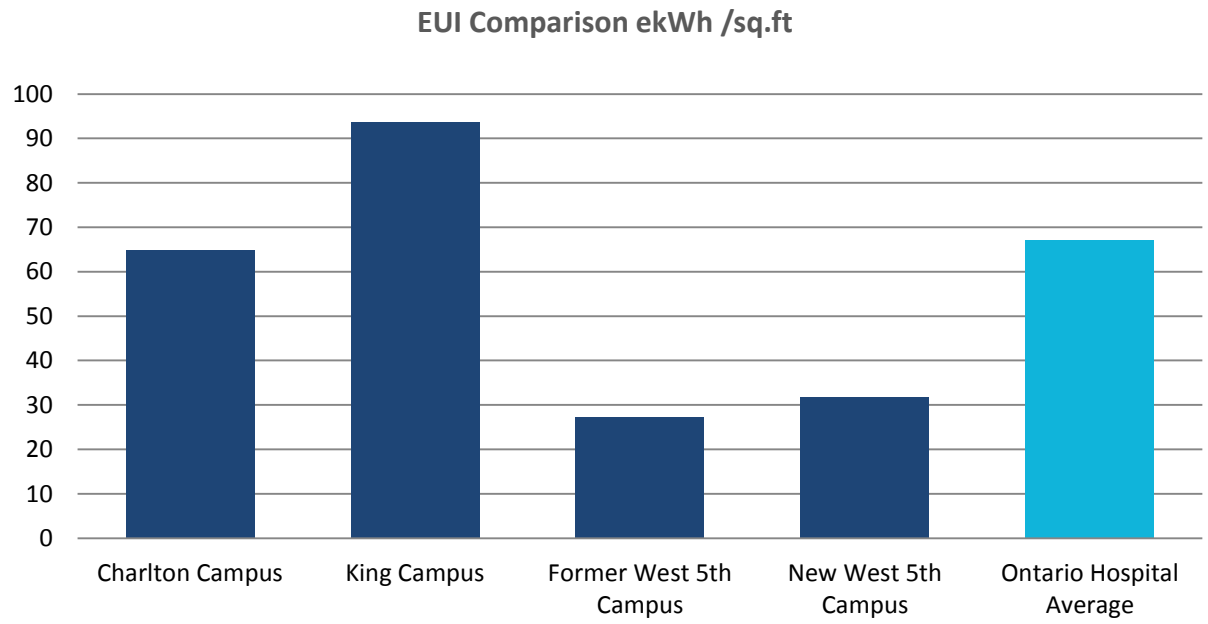
Facility	EUI (ekWh/ft^2)	Comparison to Industry Average
King Campus	**93.70**	This campus has an EUI that is **MORE** than the Ontario hospital industry average

Facility	EUI (ekWh/ft^2)	Comparison to Industry Average
Former West 5th Campus	**27.28**	This campus has an EUI that is **LESS** than the Ontario hospital industry average

Facility	EUI (ekWh/ft^2)	Comparison to Industry Average
New West 5th Campus	**31.79**	This campus has an EUI that is **LESS** than the Ontario hospital industry average

8.1 Energy Utilization Index Analysis

The figure below compares our annual energy consumption to the Ontario Hospital industry average provided by Natural Resources Canada (2007). The EUI of the New West 5th facility is significantly lower than the Ontario Hospital Average due to the energy conscious design. The facilities have shorter operating hours, and do not utilize the energy intensive equipment that is needed at full service hospitals. Annual energy consumption used for the new West 5th site is estimated, since the sight recently began its operations in February 2014. Building systems and operations are being optimized, and a more accurate EUI will be available in the future.



Although the New West 5th site has been constructed to meet LEED silver certification standards, the EUI of the facility is higher than the old site. This is because the new site hosts more hospital services that require energy intensive equipment. Since the data featured is also an estimated annual consumption, an accurate EUI will be available for the year 2015, once building systems have optimized.

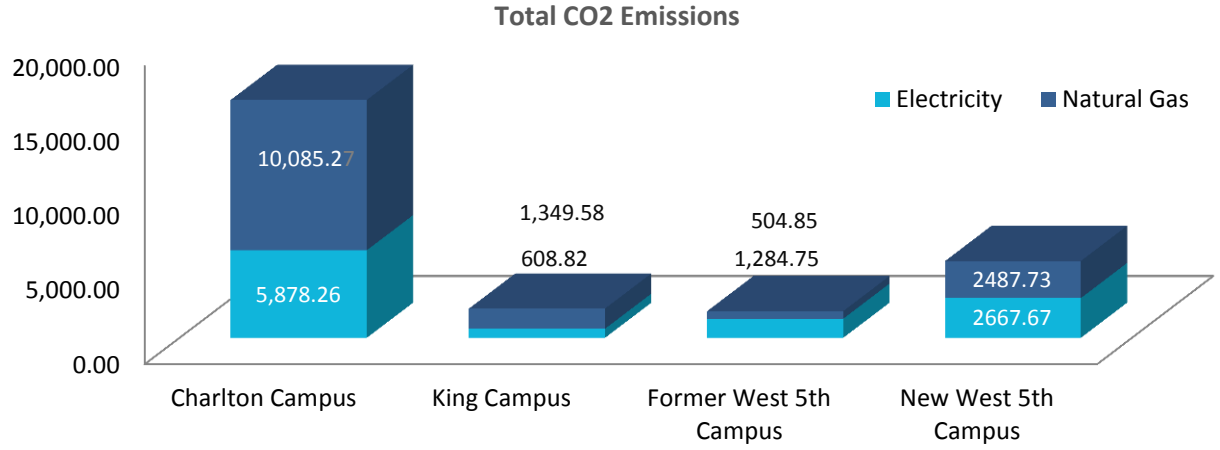
9 Greenhouse Gas Emission Reporting

Greenhouse Gas emissions are expressed in terms of equivalent tons of Carbon Dioxide. The GHG emissions associated with a facility are dependent on the fuel source—hydroelectricity produces fewer greenhouse gases than coal-fired plants, or light fuel oil produces fewer GHGs than heavy fuel.

Electricity from the grid in Ontario is relatively 'clean' as a large portion is derived from low-GHG hydroelectricity, and coal-fired plants have been phased out. Ontario's other main source of electricity is generated by nuclear power plants, releasing minimal greenhouse gases.

Table 8 GHG Emission Campus Comparison

Campus	Utility Type	Units/Year	Tons of CO_2
Charlton Campus	Electricity (kWh)	32,440,731.11	5,878.26
	Natural Gas (m^3)	4,687,365.90	10,085.27
King Campus	Electricity (kWh)	3,359,945.99	608.82
	Natural Gas (m^3)	627,249.99	1,349.58
Former West 5th Campus	Electricity (kWh)	7,090,249.06	1,284.75
	Natural Gas (m^3)	234,640.81	504.85
New West 5th Campus	Electricity (kWh)	14,722,222	2,667.67
	Natural Gas (m^3)	1,156,230	2,487.73
	Total CO_2 Emissions		**24,866.93**



10 Environmental Vision & Action

In order to meet the growing need in our community to protect the environment, SJHH is focusing on a green program that will create a healthier environment for our staff, patients and community. SJHH will demonstrate an understanding of the inextricable links between human, public and ecosystem health.

SJHH is determined to use energy resources more responsibly by improving the energy efficiency of our organization and introducing cleaner, renewable sources of energy into the energy mix that powers our hospital. Engaging in these activities will not only help our environment but will also reduce our energy consumption which will intern be financially beneficial.

"We are committed to using our resources responsibly and protecting the environment."

- **SJHH Values Statement**

In order to drive these outcomes forward, working groups have been established comprised of dedicated and passionate SJHH staff and volunteers focusing on the following areas

- Recycling and waste reduction
- Energy and efficiency innovation
- Culture of commuting
- New construction opportunities
- Clinical greening opportunities
- Measurements, targets and communication
- Green purchasing, local products and working with suppliers
- Pharmacy greening

10.1 History of Green Success at SJHH

St. Joseph's Healthcare Hamilton selected Honeywell to deliver a comprehensive Energy Saving and Facility Renewal Program that is both fiscally and environmentally responsible. New technologies, energy efficient equipment and automated facility controls replaced older, inefficient systems to reduce our usage of electricity, natural gas and water, while improving indoor air quality and lowering environmental emissions.

Prior to the program, our utility costs were close to $6 million annually. The implemented conservation efforts and improved efficiencies helped us reduce costs and manage utility risks. The hospital has saved close to $1 million annually in utility and operational costs, a 15% reduction. The program also lowered our carbon dioxide emission by 3,752 metric tonnes annually – this is equivalent to removing 590 cars from the road each year.

Additional Program Benefits Include:

- Increase in comfort for patients and staff
- Demonstrates St. Joseph's commitment to environmental stewardship
- Improves the long term health of the community
- Addresses deferred maintenance and capital renewal needs
- Guaranteed savings throughout the life of the program

11 Implemented Conservation Measures

Conservation measures that have implemented as a result of the Honeywell program are summarized in the table below outlining the targeted utilities.

11.1 Implemented measures at the Charlton and King Campus

Table 9 Existing Conservation Measures at the Charlton and King Campus

Measure	Utility Affected	Description
Building Envelope	**Natural Gas/ Electricity**	Includes sealing cracks on roof top and wall interfaces, calking windows, and installing weather stripping on doors and windows.
Steam Trap Upgrade	**Natural Gas**	Replaces and repaired leaking steam traps.
Linkage – less Burner Control	**Natural Gas**	Replaced mechanical linkages that drive and modulate the gas valve and combustion air damper.
Electric DHW Heater	**Electricity/ Natural Gas**	Installed an electric DHW heater in order to shut down a large steam line for summer.
Recycling Programs	**Waste Management**	Includes recycling practices and manageable strategies for waste reduction.
Culture Programs	**All Utilities**	Includes an EVA, Environmental Vision and Act, & Green Strategic Plan.
Water Conservation	**Water**	Replaced toiled bowls, flush valves, showerheads, and flow moderators to higher efficient models (Sister Mary Grace Wing only)
Lighting Upgrades	**Electricity**	Lighting system was upgraded to energy efficient models that increased the illumination with the facility. The system was also equipped with a control system that included occupancy sensors for further energy savings.
AHU/EF Optimization	**Electricity**	Optimum start/stop scheduling, including occupancy sensors and CO2 control. Heat Recovery on Exhaust Fans.
Chiller Upgrade	**Electricity**	Chiller Upgrade to high efficiency plant, and shutdown of chiller auxiliary.
BAS Upgrade	**All Utilities**	BAS upgrade and enhancement of energy conservation strategies.
VAV System	**Natural Gas/ Electricity**	VAV and Zone damper control by occupancy sensor, scheduling, and option for reduced speed operation.
Cooling Tower	**Electricity**	Variable Frequency Drive installed on cooling towers.
Vending Misers	**Electricity**	Infra-red sensors installed on vending machines to detect occupants and monitor compressor operation.
Motor Control	Electricity	Installed variable speed drives on various fans, pumps, and motors.

11.2 Implemented Measures at the New West 5th Campus

The following table expresses the conservation measures put in place at the West 5th Campus. The new campus was built to meet LEED Silver Certification standards.

Table 10 Conservation Measures at the West 5th Campus

Measure	Utility Affected	Description
Heat Recovery Ventilation	**Natural Gas**	Heat recovery ventilation on eight AHUs serving inpatient units
VFD's on Chillers	**Electricity**	One non-VFD chiller, two VFD chillers provide chilled water to the building
Condensing Boilers	**Natural Gas**	91% efficiency on condensing boilers
Waterside Economizer	**Natural Gas**	Economizer was installed on the waterside system
Efficient Pumps	**Electricity**	Premium efficient pumps with variable speed control
Insulation Upgrade	**Natural Gas / Electricity**	Increased insolation levels in walls and roof (RSI-3.5(walls) RSI – 4.2 (roof)
Windows	**Natural Gas / Electricity**	High performance windows with glazing plus frame
Ductwork	**Electricity**	Efficient design of AHU's and duct work to reduce fan power
Lighting	**Electricity**	Design and extensive use of occupancy sensors

The West 5th Campus has also implemented proactive maintenance strategies in order to ensure productivity and optimal energy performance throughout the building. These include:

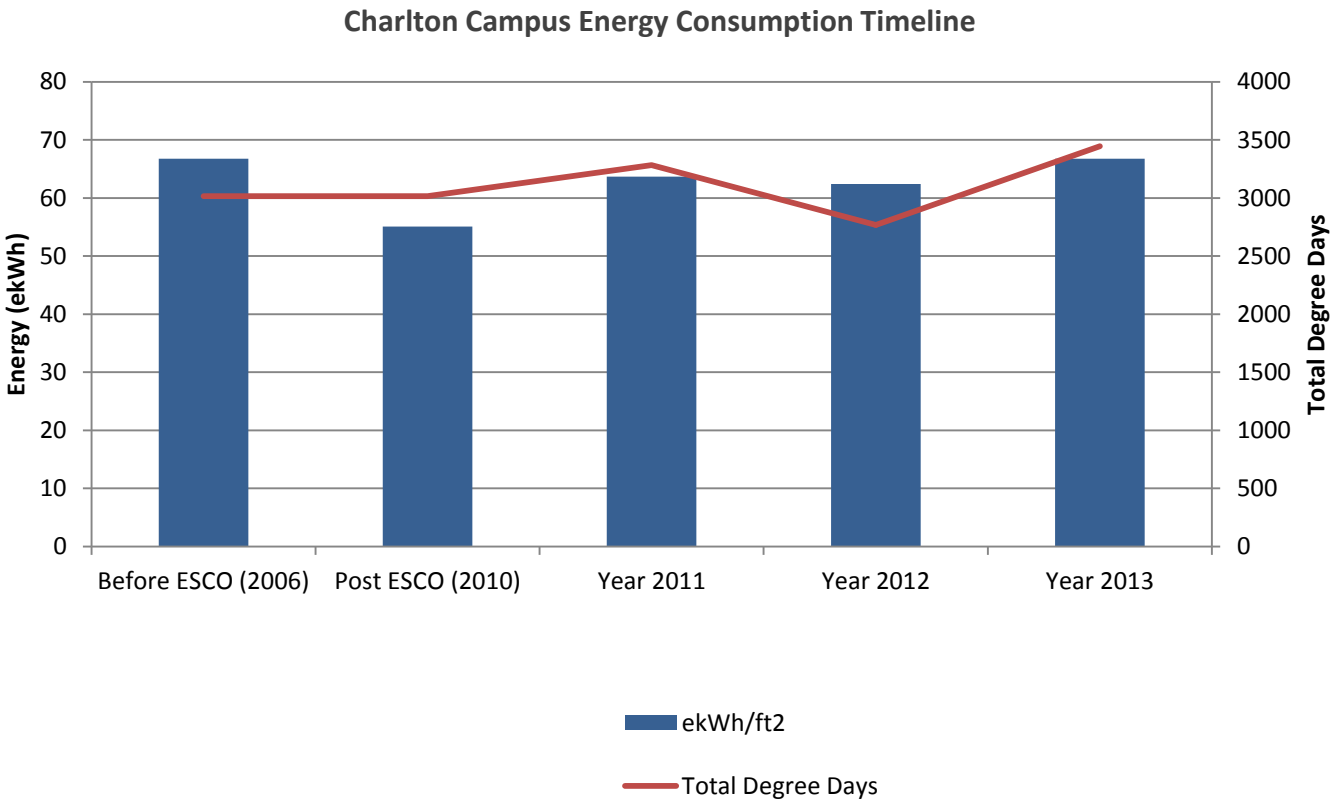
- Periodic commissioning to the HVAC, Lighting and DHW systems to ensure optimum performance
- Monthly and Quarterly measurement and verification reports showing building performance and targets
- Implementation of all recommendations from Durable Buildings Report
- Educating building occupants on the ACT! Earth program

11.3 Energy Consumption Timeline

The following graph's demonstrates how the Honeywell project impacted our energy consumption levels.

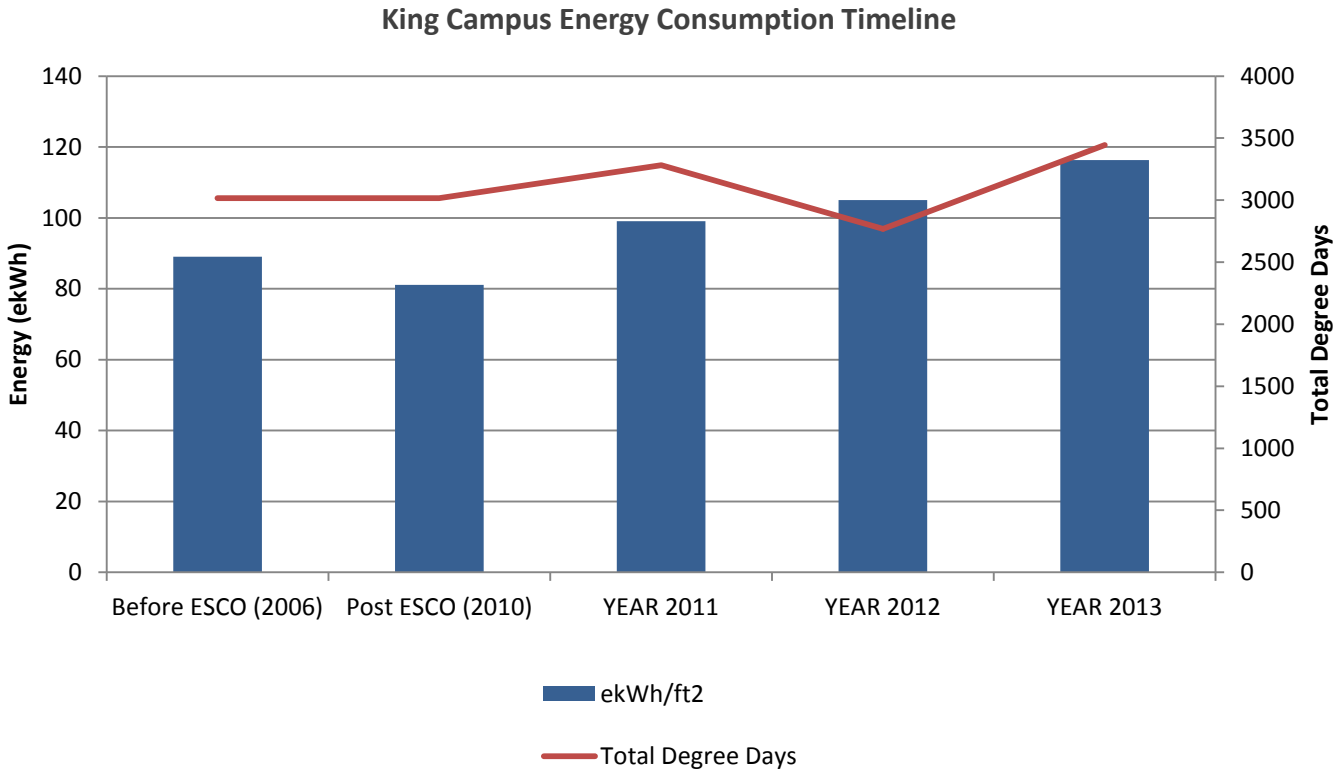
Charlton Campus

The Charlton Campus is a full service hospital that is open 24 hours a day, with a large amount of energy intensive equipment. The campus completed an ESCO project in 2006, which had a significant impact on the facilities energy consumption. The graph below shows a decrease in energy use per square foot compared to the baseline year prior to project completion. In 2011, the facility saw an increase of energy consumption due to an increase in square footage from 1,226,620 Sq.ft to 1,300,000 Sq.ft. with the addition of an energy intensive Surgical Centre.



King Campus

The King Campus houses an out-patient facility, a surgery centre and the satellite dialysis facility. SJHH completed an ESCO project in 2011 at this facility, and continues to look for energy conservation opportunities as the activity at this campus increases in intensity. Optimization of the existing building system is currently underway, and will aim to significantly reduce the facilities overall energy consumption.



12 Conservation & Demand Management Strategies

The following section summarizes the recommended water and energy efficiency measures that will be explored by our team in the next 5 years. The first chart includes the energy efficient measures that are currently being implemented at the facility, followed by a chart that summarizes the potential future measures. Each chart includes the estimated project cost, and the estimated annual savings associated with each measure.

12.1 Energy Efficiency Measures in Progress

The following strategies are currently being implanted at our Charlton and King Campus.

Table 11 Efficiency Measures currently being implemented at the Charlton Campus

Efficiency Measure	Estimated Project cost	Estimated Annual Savings
VFD's on Cooling Towers	$24,000	$9,600.00
BAS Optimization	$80,000	TBD
Chiller Replacement	$300,000	$15,000.00
Mary Grace Roof Replacement	TBD	TBD
Hire Embedded Energy Manager	TBD	TBD
Gas Laundry Dryers	$40,000	$2,500.00

Table 12 Efficiency Measures currently being implemented at the King Campus

Efficiency Measure	Estimated Project cost	Estimated Annual Savings
BAS Optimization	$25,000	$40,000
Roof Replacement	$750,000	TBD

12.2 Charlton Campus – Proposed Measures

The chart below shows energy conservation measures that will be explored over the next 5 years at the Charlton Campus.

Table 13 Proposed Efficiency Measures for the Charlton Campus

Proposed Measure	Priority level	Estimated Project cost	Estimated Annual Savings
Surgical Center HVAC Controls	1	$110,000	$116,000
Lighting Upgrade (LED or New Gen. T8)	2	$250,000	$83,000
Chiller Plant Optimization	1	$40,000	$29,000
Surgical Center Lighting Controls	3	$65,000	$15,000
Cold Water Laundry System	2	$10,000	$3,300
Window Coating (on parking bridge)	3	$10,000	$2,500
Upgrade Filters to High Efficiency	3	$35,000	$11,700
Steam Trap Surveys	1	$7,500	TBD
Fan Coil Upgrade	4	$165,000	$20,650
Auto Water Treatment & Blow Down control	1	$40,000	$12,000
Building Envelope Survey	2	$10,000	TBD
Culture Programs	1	$5,000	TBD
New Retherm Carts	1	$180,000	$45,000
Measurement and Verification	2	$8,000	TBD
Further Sub metering for Buildings	3	$20,000	TBD

12.3 King Campus – Proposed Measures

The following energy conservation measures will be explored at the King Campus.

Table 14 King Campus Proposed Measures

Proposed Measure	Priority level	Estimated Project cost	Estimated Annual Savings
Lighting Upgrade (LED or New Gen. T8)	2	$75,000	$18,000.00
Chiller Plant RCx	1	$20,000	$7,500
Upgrade to High Efficiency Filters	3	$12,000	$3,500.00
Steam Trap Surveys	1	$4,000	TBD
Building Envelope Survey	2	$7,500	TBD
Culture Programs	1	$2,000	TBD
Boiler Replacement	2	$250,000	$8,000.00

12.4 New West 5th Campus

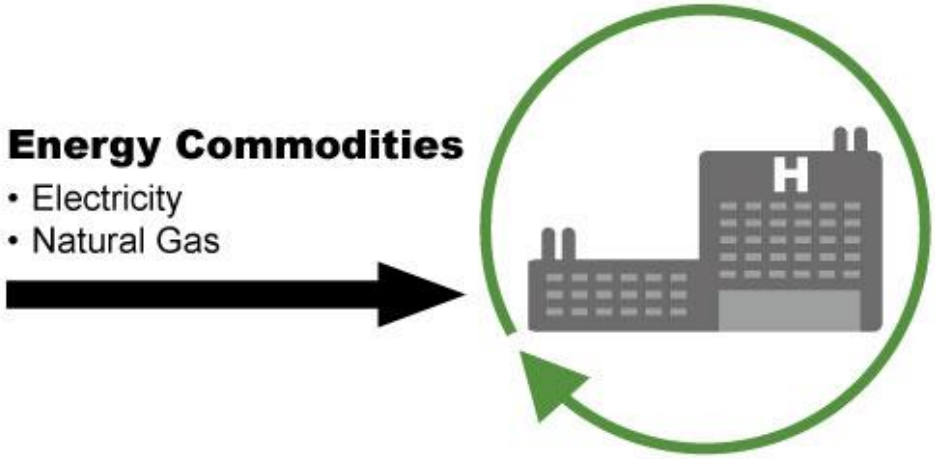
The New West 5th Campus, has been designed to LEED Silver standards, and features a variety of energy efficient design elements. Our current conservation activities have already achieved great savings and sustainable practices. The following section outlines some additional strategies our new West 5th Campus is undertaking to ensure that we meet our energy savings targets and remain active in achieving energy management and resource efficiency objectives.

- Monthly and annual analysis and reporting of utility consumption
- Preventative maintenance on operational systems
- Strategic energy and asset planning involvement

Lastly, we are constantly reviewing new emerging technologies that would provide us with cost effective energy savings solutions. Incorporation of new technologies and systems will be vetted on a regular basis and implemented if they provide cost savings and energy reduction that are economically viable.

12.5 Energy Commodities Management

Energy management refers to both how energy is purchased and how energy is used for building operations. An important aspect of energy management is putting in place an adaptable energy commodities procurement strategy to be able to adjust to fluctuating commodity prices. We currently work with Blackstone Energy Management Services Inc. to assist us in our energy commodities procurement. Working with Blackstone allows us to meet or reduce our energy commodity budgets.



12.6 Housekeeping, Sanitization and Disinfection

Cleaning, disinfection and infection control are important aspects of our hospital environment. As part of our Conservation and Demand Management Plan we believe that the right combination of housekeeping and infection control practices can further support our sustainable efforts while improving patient care. As part of our on-going commitment to sustainability, we are currently reviewing the use of different strategies such as microfiber cleaning systems, antimicrobial coatings, and environmentally friendly cleaning and disinfection products.

12.7 A Model for Environmental Excellence

SJHH's Team Environmental Vision & Action has been developed around a Model for Environmental Excellence that will guide us in achieving our important goal of becoming a leader of environmental stewardship. In order to drive these outcomes forward, working groups have been established of dedicated and passionate SJHH staff and volunteers focusing on the following areas.

Recycling & Waste Reduction

Encouraging everyday recycling practices and manageable strategies for waste reduction.

Energy & Efficiency Innovation

Promoting efficient use of energy and resources, as well as alternative forms of energy.

Culture of Commuting

Encouraging opportunities for alternative, as well as healthier, modes of transportation, other than single occupancy vehicles.

New Construction Opportunities

Ensuring green standards are strived for in redevelopment goals and design choices.

Green Purchasing, Local Products & Working with Suppliers

Establishing strategies for purchasing products that are environmentally sustainable and cost effective.

Measurements, Targets & Communication

Promoting the benefits of 'greening' across all levels of the organization, as well as setting and monitoring targets for reducing our environmental impact.

Clinical Greening Opportunities

Fostering healthy and sustainable clinical practices throughout the organization.

Pharmacy Greening

Promotes Efficient and safe waste reduction practices within our pharmacy.

13 Closing Comments

We would like to express our gratitude to all who contributed to St. Joseph's Healthcare Hamilton Conservation & Demand Management Plan. We consider our facility a primary source of giving care, and an integral part of the local community. The key to this relationship is being able to use our facilities efficiently and effectively to maximize our ability to provide the highest quality of healthcare services while integrating environmental stewardship into all aspects of facility operations.

On behalf of the senior management team here at St. Joseph's Healthcare Hamilton, we approve this Conservation & Demand Management Plan.

Dr. David Higgins
President SJHH

Karen Langstaff
Chief Planning Officer SJHH

APPROVED

This report was prepared through collaboration between the St. Joseph's Healthcare Hamilton's executive and facilities management staff, HELO, Horizon Utilities, Honeywell and the Blackstone Energy team.