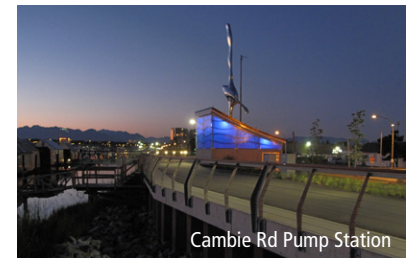
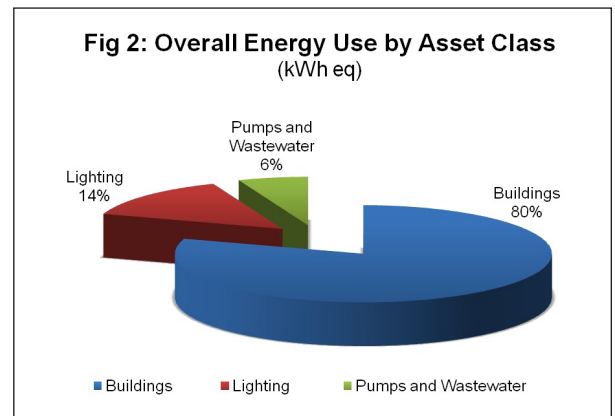
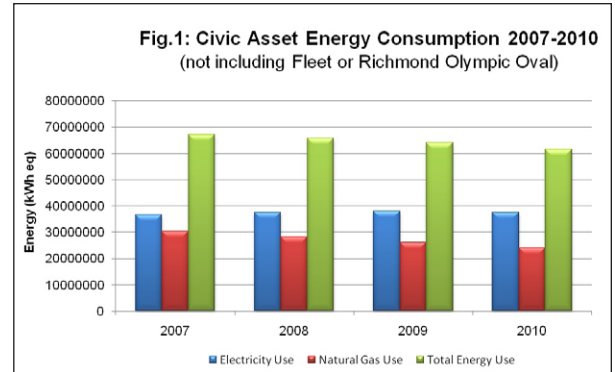


Energy Update Report

Summary 2010/2011



- Cost of energy in 2010 for the City of Richmond buildings (not including the Oval), lighting, pumps and wastewater systems = **\$4.4 million dollars or 61,573,000 kWh (electricity and natural gas).**
- As compared with 2009 energy consumption for these services decreased by approximately **2,611,000 kWh** or enough energy to power approximately 300 homes in the Lower Mainland.
- Energy use at civic buildings accounted for **approximately 80%** of the total 61,573,000 kWh used in 2010 (48,676,000 kWh), which consists of approximately 90 facilities.



- Of the 90 civic facilities under City stewardship, energy use in 2010 at only **11** facilities accounted for over **80%** of the overall civic building energy use.
- Recreational pools and ice arenas were our highest energy consuming facilities - with **Watermania, Richmond Ice Centre, Minoru Pools and Minoru Arenas** accounted for 43% of the energy used by civic buildings in 2010.
- Given this large percentage of civic energy used by a small number of facilities, high priority should be placed on investment for energy management initiatives at these locations foremost.
- As well placing a high priority on efficient energy system design during the development phase of new facilities (specifically pools and ice arenas), will go a long way in ensuring that our corporate energy and GHG reduction targets can be met in the long term.



Watermania Aquatic Centre

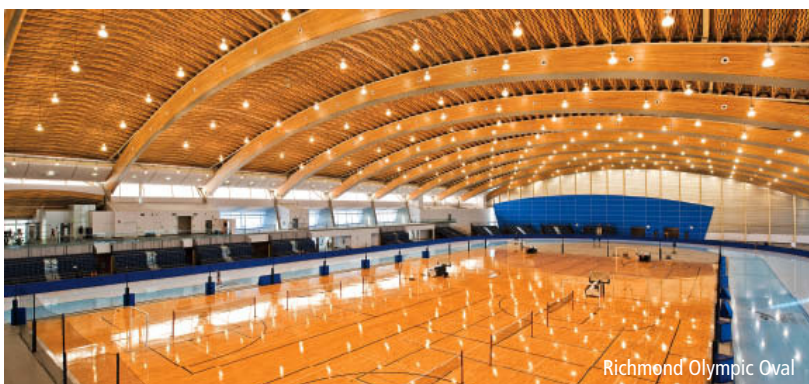


Richmond Ice Centre



Minoru Aquatic Centre

- Secured approximately **\$500,000** of external funding to support the Energy Management Program.
- To reduce our civic natural gas use, solar thermal hot water systems, to pre-heat water, were installed at Steveston Outdoor pool, South Arm Outdoor Pool, and Minoru Pool.
- Helped facilitate a ballast and lighting retrofit at the Richmond Olympic Oval, which is estimated to save approximately **500,000 kWh** of electrical energy per year.
- Developed a corporate energy awareness program, with support of BC Hydro, to promote energy conservation measures, which the City has entitled Because Energy Awareness Matters (BEAM).
- Under this program Year 1 of the BC Hydro Workplace Conservation Awareness (WCA) program was recently completed with lots of support from our designated energy champions and staff. The WCA program included initiatives such as a monitor shutdown challenge and a workspace tune-up tutorial.
- Initiatives and strategies for Year 2 will be developed this fall to further build on the WCA program's initial successes.



- Three LEED certifiable Gold buildings will have been opened in 2011 – Hamilton Community Centre, Steveston Fire Hall (No.2), and the new Safety building.
- Numerous energy saving measures were included in these projects, to reduce energy use and green house gas emissions.



Hamilton Community Centre



Steveston Fire Hall (No.2)



Steveston Fire Hall (No.2)

- Energy saving measures at the new buildings included;
 - geothermal heating and cooling system at the Steveston Fire Hall – to reduce heating costs and natural gas use
 - solar hot water systems – to reduce domestic hot water heating costs and natural gas use
 - installation of high efficiency heat pumps and mechanical systems – to reduce heating and cooling costs and energy use
 - green living roofs – to reduce run off, urban heat island effect and heating and cooling costs
 - daylight harvesting where using skylights and large windows – to reduce lighting cost and electrical use
- These buildings continue the tradition of constructing “sustainable high performing buildings”, such as Sea Island and Hamilton Fire Halls, which were built to LEED Silver and Gold standards, respectively in 2007.



- Continue leadership role of the Municipality in regards to energy management best practices
- Align the Energy Management Program so it is more connected with the Sustainability Framework
- Empower the organization and community, with a focus on energy awareness knowledge programs

energy reduction initiatives and awareness, and encourages information sharing between the City and stakeholders

- Continue to facilitate energy reduction projects through the BC Hydro Power Smart Program
- Real-time energy monitoring data collection - to reduce electrical and gas use from between 5-20% at each of the facilities involved
- Complete Year 2 of the workplace conservation awareness program
- Develop an energy auditing and study schedule and scope of work for City assets, to be able to reliably and continually identify worthwhile energy management projects, and independently evaluate projects after completion.
- Establish corporate energy and GHG emissions reduction targets for the City

Action Items include:

- Develop and deliver an introduction presentation for City energy use stakeholders (i.e. community centres) and corporate partners (i.e. city departments), to inform and empower
- Develop and deliver an energy reduction challenge pilot program to run at our respective community centres, that rewards community centres for

