

REDUCING ENERGY, INCREASING COST SAVINGS

BY ENROLLING IN THE CONTINUOUS OPTIMIZATION PROGRAM, WORKSAFE BC IMPLEMENTED ENERGY-SAVINGS MEASURES AT MINIMAL COST, WITH MAXIMUM EFFECT.

WorkSafeBC is an organization dedicated to promoting workplace health and safety for workers and employers in British Columbia. In alignment with this mandate, they have a longstanding commitment to sound environmental practices, including energy conservation, GHG reduction and waste management. As a BC Hydro Power Smart partner, WorkSafeBC knew that participating in the Continuous Optimization program (C.Op) was a natural next step.

The C.Op program involves recommissioning a building's operations, and incorporates an Energy Management Information System (EMIS) that allows customers to continually monitor and maintain their building's performance. WorkSafeBC utilized the program to upgrade their 530,000-square-foot office in Richmond, BC.

"In the past we had done energy audits and projects such as lighting upgrades, motion sensors and equipment replacements, but we didn't do as much on the mechanical side," explains Rob Critchley, WorkSafeBC's Energy Manager. "Working with C.Op's recommissioning consultant, Prism Engineering, gave us a chance to look closely at our mechanical equipment and figure out how to run it more efficiently."

"We also have an older building," adds Rob. "So when we first sat down, we knew there was probably room to find out where we were misusing power and what we could do to improve the use of our older infrastructure equipment."

For Rob and his team, the biggest surprise was finding out how implementing simple measures can have a huge impact on energy savings. "What was most interesting was learning how some of these small things can have such a big effect



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on how a building operates,” says Rob. “There were a lot of minor items that were identified, giving us more efficiency with our equipment and its programming.”

“Some of the measures we were able to implement right away, like revised DDC program schedules and modifications to optimize the start-up sequence of equipment. We found areas where we had exhaust fans running 24/7 when they didn’t need to be”, adds Rob. “We integrated variable frequency drives on our supply and return fans and we also put in some occupancy sensors, implemented nightly shutdown for some water pumps, and started shutting down some heat pumps when the rooms weren’t being occupied.

BC Hydro also upgraded the BC Hydro and FortisBC utility meters to provide 15-minute interval data to the EMIS, so that WorkSafeBC staff can view their building’s energy use profile, along with other types of analysis and reporting.

Since implementing the program, WorkSafeBC has had a total cost savings of over \$53,000 annually. They’ve reduced their annual power consumption by approximately 449,000 kWh (a 4% reduction), with natural gas savings estimated at 3,386 GJ (an 11% reduction).

As importantly, Critchley notes that the C.Op measures have inspired them to make changes at eight of the satellite offices in the province. “C.Op was great because it gave us ideas to utilize for our smaller buildings, which aren’t large enough to be in the C.Op program,” explains Rob. “So we’ve started implementing interval data energy meters on eight of our buildings throughout the province.”

“It’s impressive that WorkSafe BC has taken this initiative and been so successful in this program,” notes Alison Wilson, WorkSafe BC’s Key Account Manager at BC Hydro. “And now they’re looking across their whole portfolio of buildings. They keep striving for the next level of energy savings, and it’s really paying off.”



WORKSAFE BC'S CONTINUOUS OPTIMIZATION MEASURES

Some of the C.Op energy efficiency measures undertaken:

- Revised weekly schedule to align with occupancy
- Revised DDC program code and schedule
- Implemented standby routine and revised supply air temperature control
- Reduced operation and duration of flush periods
- Aligned weekly schedules of air handling units with occupancy
- Added occupancy sensors and isolation dampers to supply and return air ducts to main gym
- Implemented demand control ventilation
- Implemented occupancy control and optimum start routines for fan coil units

CONTINUOUS OPTIMIZATION PROGRAM

The BC Hydro Power Smart Continuous Optimization Program, in partnership with FortisBC, provides continuous improvement and savings on your electricity and natural gas. Contact your BC Hydro Key Account Manager directly or email Customer.Care.KAM@bchydro.com for more information.