

BC HYDRO SUCCESS STORY

CITY OF RICHMOND SAVES BIG

CITY OF RICHMOND SAVES \$60,000 A YEAR BY CHANGING TO HIGH-BAY FLUORESCENTS

The City of Richmond has done it again. As B.C.'s only municipal Power Smart Leader, Richmond has a long track record of completing innovative and successful energy-saving projects. And the latest are no exception.

In early 2009, Richmond finished the last of four major lighting projects at three locations: the Richmond Ice Centre, Minoru Arenas and Watermania recreation centre. At all three locations, the City replaced older, less energy-efficient fixtures—353 in total, mostly metal halides—with T5 high-output fluorescents.

The result, says City of Richmond Energy Manager Mark Roozbahani, "is estimated to save the City about \$55,000 a year on energy and \$5,000 a year on maintenance."

THE FOUR PROJECTS

The four projects included replacing the light fixtures over six ice rinks at Richmond Ice Centre, two ice rinks at Minoru Arenas, the wave pool, swimming pool, and all other areas at Watermania.

All four projects were completed under BC Hydro's Power Smart Partner High-Bay Lighting Initiative, which offers financial incentives and tools to help commercial customers identify, design and install more effective and energy-efficient lighting in high-bay facilities, such as Richmond's arenas and pools, as well as schools, warehouses and large retail stores.

"Two of the projects," says City of Richmond Mayor Malcolm Brodie, "had never been tried before. We are the first to use fixtures with individual sensors in our ice arenas—it's truly innovative." Now the fixtures above the ice rinks at Richmond Ice Centre and Minoru Arenas are tied to occupancy controls that turn each fixture on only when required.

"Unless we knew we had a solid block of time where we knew no one would be using the ice," says Greg Wheeler, City of Richmond's Coordinator of Arena Services,



MEETING THE TRIPLE BOTTOM LINE

"The high-bay lighting retrofits are in line with the City's goals for economic, social and environmental sustainability. They help reduce our energy costs—savings that will be passed on to our taxpayers. They improve the look and feel of our recreational areas. And they expect to reduce our greenhouse gas emissions significantly by approximately 25 tonnes equivalent CO₂ annually."

– Mayor Malcolm Brodie,
City of Richmond

“we used to leave the lights on—up to 18 to 20 hours a day, every day of the year except Christmas and Canada Day. Otherwise people would have to track down staff to ask them to turn the lights on, and then it would take up to five minutes for the old lights to warm up.”

In contrast, with the new energy-efficient lighting systems, the City keeps just enough lights on at all times to ensure safety on and off the ice, but the rest come on—instantly—as soon as someone moves into a sensor area.

BRIGHTER, LIGHTER FACILITIES

Richmond went out on a limb to be the first to try motion-controlled lighting in their ice rinks only after much internal discussion between Mark Roozbahani as Energy Manager, Greg Wheeler at the ice rinks, and Phil Hogg, City of Richmond’s Manager of Facilities and Operations.

“I think other facilities were scared to move to this kind of system because they worried about what would happen in a fast-paced hockey game, for example,” says Mark Roozbahani. “Would the lights go on and off?”

The expense, too, was a concern, but, says Mayor Brodie, “BC Hydro stepped up to help pay for over 50 per cent of the up-front costs for the retrofits. In effect, we got brand-new lighting systems for half the cost—and the response, especially at the arenas, has been great. You wouldn’t believe how many positive comments we’ve had from players and referees. They noticed immediately how the new lighting decreased shadows and increased visibility.”

“Our existing lights were coming to the end of their effectiveness,” says Greg Wheeler, “so the timing was right and it was an opportunity we could not pass up. Lower operating costs for us means lower taxes for the people of Richmond.”

THE BENEFITS OF ENERGY-EFFICIENT HIGH-BAY FLUORESCENTS VS. HIGH-INTENSITY DISCHARGE (HID) FIXTURES

- Reduced operating costs. Fluorescents are more energy-efficient.
- Reduced maintenance costs. Fluorescents last longer. Longer equipment life means longer periods between expensive and time-consuming re-lamping.
- Improved lighting quality and working conditions. Fluorescents offer better colour rendition, more uniform light and less glare.
- Improved switching. Flexible sensors and control systems allow for virtually instant re-strike capabilities.
- Sustained light output levels. Light stays the same as lamps age.
- Better reliability. High-bay fluorescent systems have between four and six lamps per luminaire, versus one for HID systems: if one lamp fails, the others will continue to provide light.



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