

A New Hydro Booster Pumping System and a Common Area LED Lighting Upgrade at the Neptune Will Pay for Themselves in Less Than Two Years

PUMP IT UP!

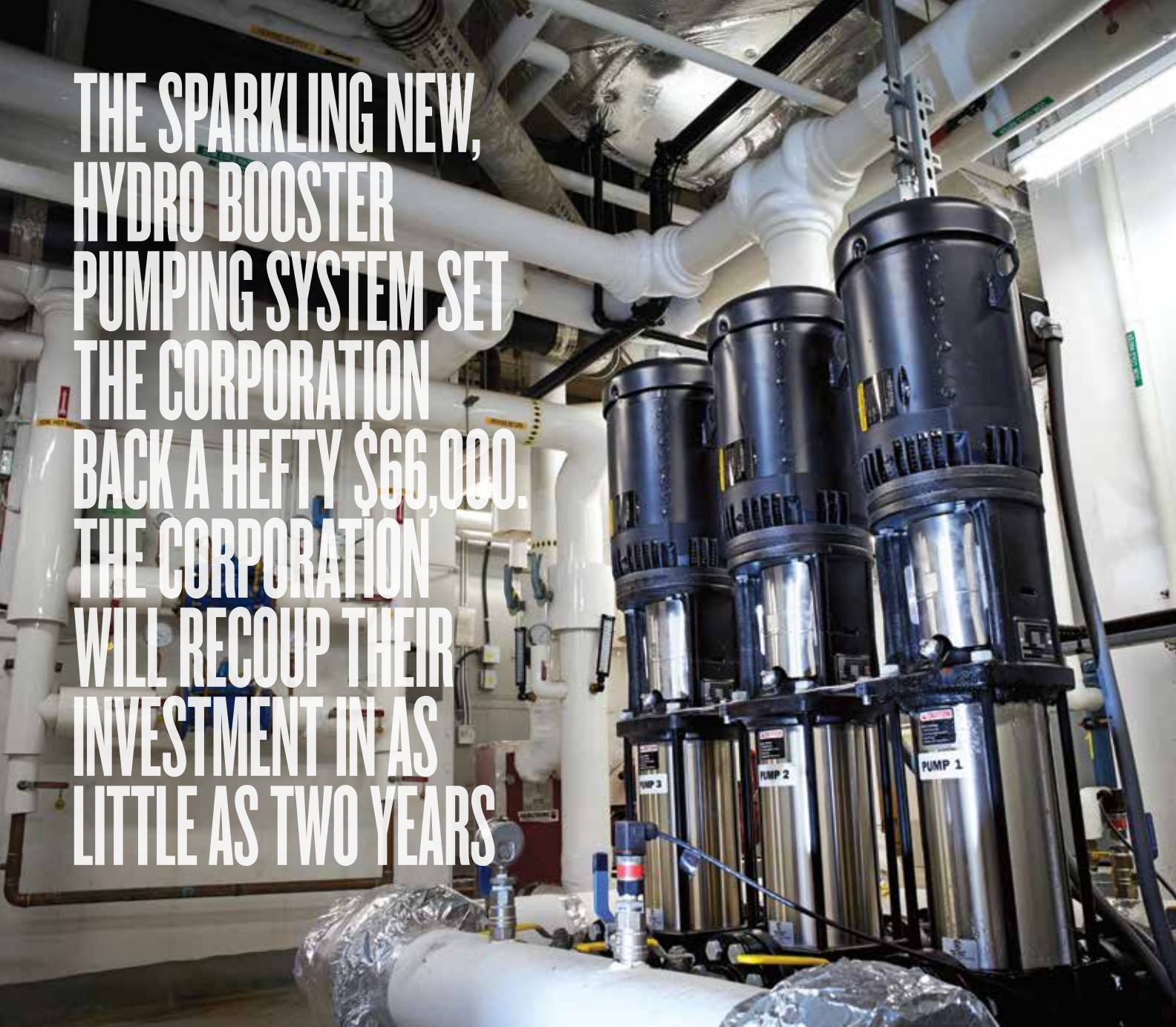


Condo Profile

By James M. Russell
Newsletters et Cetera

The Romans revered the deity Neptune as the god of freshwater, and although the residents of the Neptune condominium truly love their building, none kneel before it on the sidewalk. Still, when it comes to handling fresh water, the Neptune's new hydro booster pumping system deserves a round of applause at the very least.

The Neptune, comprised of 861 units, is centrally located at 209 and 215 Fort York Blvd in the heart of Toronto's waterfront, mere cannon-fire distance from Old Fort York on the north and, on the south, close enough to feel the spray off Lake Ontario on a windy day. An idyllic setting for sure, yet, good governance trumps location, so no sooner had the paint dried, the grass laid, the workers departed, and the lumbering moving vans arrived to begin unloading the first resident's possessions, than Neptune's Board began studying their 'energy usage', a budget line item that bedevils every condominium board.



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After commissioning an audit, the Neptune's five-member Board identified several opportunities for energy savings. And perched on the summit of that list was the auditor's recommended replacement of their woefully inefficient, energy-hogging, domestic cold-water booster pump system.

The Scoop on the Pumps

The City of Toronto's main water feed typically enters the Neptune at 73 pounds per square inch gauge (psi), sufficient to reach the eighth floor, but without a water pressure reading north of the magic two hundred psig mark, residents living on floors nine to thirty-eight of the Neptune

would need to lower buckets to the ground then pull – hand over hand – the heavy vessels back up. And while 'twice daily water bucket grunting and lifting' is likely a good cardiovascular exercise, it is not an amenity any condominium wants to include in their sales brochure.

What The Neptune did want was an energy efficient system that would reduce their hydro dependence so, after doing their homework, "The Board ordered the booster pump system and had it promptly installed," says Board President Dan Kennedy.

The sparkling new, hydro booster pump-

ing system set the corporation back a hefty \$66,000, but the budgetary pain was partially offset by Ontario Power Authority's 'Save on Energy' rebate of \$18,000. Dan calculates that the corporation will recoup their investment in as little as two years. "In fact, we noticed a significant drop in our hydro bill the first month after the system was installed," says First Services District Manager Mark Bartoloni. Although the Neptune's Board did not know it at the time, the installation was fortuitous as mere months later, the Ontario Energy Board approved Toronto Hydro's application for a five-year 1.7% per month rate increase.

Contributing to the efficiency of the three, 15 hp pumps at the heart of the pumping system is its CU 352 controller, an 'intelligent cascade control system' that only activates the pumps required to meet the demand. So instead of their three older pumps running constantly, as was the case with the previous system, the new pumping system calls on only one of the three pumps during times of diminished demand, and on all three during peak periods - typically in the mornings and evenings when residents are showering, cooking, and washing.

Given the considerable forethought and planning the Board and management put into the project, it is not surprising that the transition to the new system was flawless and only required a part-day shutdown of the building's water system.

The Neptune's sister building - Neptune II - also has a booster pump upgrade in its future but because Neptune II is only sixteen storeys (versus Neptune I's thirty-eight), the capital cost-to-energy saving ratio is significantly lower. So low that the auditor's report projected it would take nearly five years beyond the project's completion

before the corporation began realizing a return on its investment.

Let There be Light!

Fluorescent tubes produce a narrow, and often unsettling, spectrum of light while halogen bulbs require transformers that use electricity even when the light is off, so it was not surprising that the villainous pair were next on the Board's energy conservation 'hit list'.

It was early this year that the Board decided to proceed with the common area lighting upgrade, including the Neptune's lobby, garage, elevators, stairwells, recreation facilities, and exterior areas. After pruning the long list of companies that responded to the Board's tender, a Toronto-based LED company was chosen to complete the work. In response to concerns voiced by some residents, and several Board members, the Board asked the LED company to install a representative sample in several small areas around the building and parking garage to confirm that the new LED technology wouldn't result in decreased lumens or an unacceptable colour cast. The lights passed the

test and the \$189,000 LED retrofit was completed early this year. Factoring in the \$31,086.45 rebate they received from the Ontario Power Authority, the Board predicts an impressive twelve to fifteen-month payback. Especially impressive since their new LED units last, on average, 50 times longer than incandescents, 25 times longer than halogens, and 10 times longer than CFLs .

The 3,246 bulb lighting project consisted of:

- Retrofitting the hallway's twin lamp 18w CFL PL base wall sconces with 15w LED panels and drivers
- Retrofitting the lobby's 50w metal halide Par 20 and Par 30 potlights with RENO LED Par 20 and Par 30 Sylvania's.
- Re-lamping the stairwell twin lamp 32w 4ft fluorescent fixtures with RENO LED 15w T8 Sylvania's.
- Re-lamping the parking garage fixtures and replacing the twin lamp 32w 4ft fluorescents with a RENO LED 15w T8 Sylvania's.
- And on the exterior, retrofitting the 70w metal halide lamps with RENO LED 17w A19 Sylvania's.



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Left to Right: Mike Spence and Kenny Erlich, LED installers; and Mark Bartoloni, District Manager



FACTORING IN THE \$31,086.45 REBATE THEY RECEIVED FROM THE ONTARIO POWER AUTHORITY, THE BOARD PREDICTS AN IMPRESSIVE TWELVE TO FIFTEEN-MONTH PAYBACK FOR THE \$189,000 LED RETROFIT

To maintain, and in some cases, improve, the shade of lighting, the LED company used 40 Kelvin bulbs in all areas except the exterior, where they installed 50 Kelvin lamps.

Energised Well Into the Future

What's next for the Neptune? Well, with Toronto Hydro's business rates starting at 8.7 cents per kWh during off-peak times and climbing to a staggering 18 cents per kWh, Mark says, "We're actively looking into how we can better exploit time-of-use savings."

"And solar on our roof," adds Dan, who

thinks that solar panels, seen frequently atop industrial buildings throughout the GTA but rarely on multi-residential properties, will become more and more attractive to condominium boards as their advantages become widely reported and apparent. And Dan is correct. The Canadian Apartment Magazine reported in an April 2014 article that solar panels, "make a personal and direct contribution to clean sustainable energy for the community and the world by using solar panels, with less reliance on controversial nuclear power and undesirable fossil fuel power." Additionally, solar panels require little, and sometimes, no maintenance, last upward

of forty years, and, in addition to their intended use, act as a kind of quasi-second roof that can lengthen the lifespan of a multi-residential property's expensive-to-replace original crown.

Emperor Flavius Arcadius Augustus allowed Romans to sacrifice bulls in honour of only three of their many, immortal gods. Neptune was one of those three. With their proactive energy conservation initiatives the Board, management, and the residents of the Neptune are sacrificing nothing, and instead, gaining something more precious than immortality – a lower utility bill and Mother Nature's gratitude. **CV**