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## Technology and Applications of LEDs

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#### LED streetlighting: the Light at Night Falls Bright

07 Dec 2007

*Welland, Ontario has launched the first phase of its LED lighting scheme and has installed 47 luminaires from Relume, writes Brian Owen.*

By George, they've got it! Much like the alliteration from My Fair Lady, LED has evolved from its rough edges of past and arrived as a Lady in diamonds in the City of Welland, Ontario, Canada. On Tuesday, December 5th, the City launched the first phase of its LED outdoor lighting installations through the unveiling of a pilot on Fitch Street. Maybe not by George, but definitely by Peter; Peter Hochstein that is of Relume Technologies of Oxford, Michigan, USA. Relume was awarded the first phase of the contract which called for the supply of LED lighting in a roadway application.

As darkness fell on the streets of Welland, Peter Hochstein (second from right in the photo) joined Welland Mayor Damian Goulbourne, Peter Love, Ontario's Chief Energy Conservation Officer and Tim Clutterbuck, Chair of the Welland Hydro-Electric System Corp. under the well-lit cool white daylight appearance created by the Relume LED luminaires, which illuminated the street.



A total of 47 luminaires line the street, spanning 2 linear kilometres and encompassing over 300 residences, high rise apartments, 2 schools and a community shopping centre. While a number of pedestrian street lighting applications are in the pilot stage, such as in Torraca, Italy and Ann Arbor, Michigan, USA, this is the first LED outdoor lighting application to be installed on a full street in a roadway application in Canada and North America.

Relume comes to the street with years of experience in LED technology and commercial signage and now in general illumination in outdoor lighting. "An important focus of our current research is the development of full cut-off LED lamp fixtures that are Dark Sky compliant," stated Peter Hochstein, adding, "In the near future, we will have LED lamps with programmable intensity controls and some will have a two colour feature to further mitigate light pollution and permit astronomical observation."

The design of the Relume roadway product is modeled on the traditional 'cobra head' luminaire. Hochstein also commented that, "We [Relume] are currently working with other municipalities in Canada and the US to relamp entire metropolitan areas with our LED cobra heads and decorative street lamps." As the regulation of operating temperature is an integral part of luminaire development, Hochstein also noted that, "Relume is one of the leaders in this science and has the installations to validate that claim."

The Relume luminaires utilize 90 watts of power compared to the 175 watts used by high-pressure sodium lamps being replaced.

Welland's Mayor, Damian Goulbourne, is encouraged by the changes he is seeing in Welland. "Focusing on projects that enhance the environment while ensuring responsible use of taxpayers' dollars is just one way the City is working toward achieving its strategic goals and objectives. The installation of LED streetlights on Fitch Street is a good example of such projects. We look forward to getting as much feedback as possible from our citizens about the new streetlights by accessing the online survey or by simply calling City Hall."

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### Public education and awareness

An important part of this process is that Welland is keen to learn what the public thinks of the new lighting and has contracted greenTbiz, an energy efficiency and environmental practices program, to undertake a public consultation and perception analysis that will gather comments and public opinion through door-to-door and online surveys.

"This is fundamental in the public education and awareness process and will primarily result in the gathering of pertinent information to assist the City of Welland in the decision making process" stated Chantal Brundage, Program Manager of greenTbiz. Ms. Brundage added that "We have gained significant input and knowledge through public opinion research in our Toronto LED pilots and LED City (Toronto) efforts and we are pleased to be a part of this project in Welland."

As with other municipalities, such as the parking garage research conducted in Raleigh, NC, USA, important information is learned about public perception and safety. Because of the scotopic value of ED light, visual acuity is increased and the cool white light also offers a better feeling of safety. Results of the greenTbiz survey will help Welland Council with the decision and process how to further implement LED lights across the City.

### Replacement LED lamps

Another prominent LED developer and manufacturer was also showcased during the evening, as CRS Electronics of Welland, Ontario hosted a reception at their facility to honour the event in Welland.



CRS unveiled its direction in LED interior lighting to the group of dignitaries and invited guests. Known for years of experience with LED in the transportation industry and with many other architectural and military applications, CRS has developed an LED solution to the MR16, which is typically implemented with halogen technology, and the linear tube, which has typically been fluorescent.

"I am pleased to be a part of this vision in Welland and to take a local company to the international stage." commented Scott Riesebosch, President of CRS Electronics, adding "This good for Welland, for Ontario and Canada and for the environment throughout the world."

Recently back from eeGLOBAL in Washington, DC, USA, an international energy efficiency exposition and forum, CRS has received overwhelming interest in the new products and has been awarded a substantial contract to retrofit an entire 44-story condominium building. LEDs Magazine will be following this story with further details to come in the New Year. Dignitaries and guests were invited to view the new LED products and to tour the production line at CRS.

### Ontario Power Authority recognition

Following the reception at CRS, Chief Conservation Officer Love attended at Welland City Hall to present Mayor Goulbourne and Council with a Certificate of Recognition Award for their outstanding leadership in energy efficiency with this LED project. "We at the Ontario Power Authority believe that energy efficiency is one of the best ways to save electricity, and LED lights are extremely energy efficient," said Love. "The City will save money that can be put to use elsewhere. Welland is definitely setting an example for others to follow."



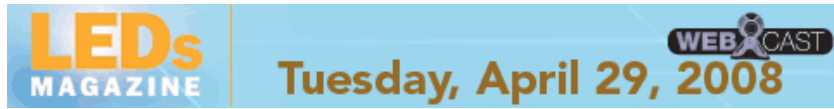
Welland now joins the efforts of many cities exploring LED technology in their municipal applications. Welland may only have a population of just around 50,000 compared to Toronto's 2.5 million and may only have just over 6500 street lights also compared to Toronto's 160,000, but they have to be given credit to investigate a commitment to go all the way with 100% LED over 3 to 5 years, definitely making Welland a strong contender to join the ranks of others in the LED City program.

The City of Welland will continue to explore pilots with LED roadway lighting manufacturers. At present, they are also in discussions with Leotek / electromega, CRS Electronics, RUUD Lighting and NeoPac for the purpose of reviewing product and developing pilot installations. Much of the success of these projects and the overall program can be attributed to Dave Ferguson, Manager of Traffic and Parking

Operations, who leads this initiative.

**About the Author**

Brian Owen is the President of [FIRSTeam Corporation](#) and the Principal of LEDesignWorks. He is also the Program Advisor to [greenTbiz](#), which facilitates the LED City Toronto initiative. He is actively involved in the development and operation of energy conservation programs for government, municipalities and utilities and specializes in capacity building, commercialization and market transformation. greenTbiz provides energy conservation and environmental awareness programs to the small business sector in Toronto, Canada. Brian can be contacted by email at ([Brian@greenTbiz.org](mailto:Brian@greenTbiz.org) or [bkowen@firsteam.ca](mailto:bkowen@firsteam.ca)).



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