



The Ralph Klein Legacy Park Environmental Education Centre | LEED Platinum

BUILDING FOR A BETTER TOMORROW

Welcome to the New Age of Sustainable Design

Canada's aggressive environmental commitments are spurring the building industry to new heights when it comes to increasing energy performance. That said, older properties, which make up a significant portion of our cities' diverse building stock, present the greatest challenges and opportunities for owners.

"We've known for a while that if we want to get moving on these environmental goals, we need to be focusing on existing buildings," affirms Duncan Rowe, Associate, Building Science and Restoration with RJC Engineers. "Every year that we don't address these buildings, we add another 3 per cent to the next year."

Fortunately, the benefits of investing in energy-efficient retrofits go beyond protecting the environment. Today's building projects can result in substantial money savings for the owner, increased comfort for the tenant, and a longer-lasting structure that has a better chance of remaining viable well into the future.

But, unlike the "low-hanging-fruit" retrofits of yesterday (i.e. the LED fixtures and low-flow toilets) deeper, more disruptive work is

required to obtain the results today's building owners are looking for.

"You don't need consultants to tell you to change your lightbulbs or install low-flow toilets. Today, everyone just does that," says Rowe. "What we need to be pursuing are the deeper, more interesting and meaningful retrofits, like upgrading the building's mechanical, cladding, and glazing systems."

CULTURE SHIFT: EMBRACING TECHNOLOGY AND TRANSPARENCY

As sustainable technologies improve and as greater environmental transparency is required by pension funds, REITs, and even privately owned portfolios, large-scale sustainable initiatives are picking up pace. GRESB's 2018 data revealed a strong improvement over 2017 in terms of building energy performance, reflecting the

industry's commitment to further integrate best practices related to the environment.

"A lot of pension funds have sustainability targets, but with all the easy stuff having been done already, the focus has turned toward larger retrofits with greater, long-term impact," says Rowe.

From college campuses to institutions, residences to office towers, Canada's building sector is seeing some sizable retrofit initiatives unfold, resulting in a significant reduction of greenhouse gasses and huge savings for the owners.

"The appetite for doing these larger, more in-depth sustainability retrofit projects is growing," notes Rowe. "There's a culture shift occurring where property managers and owners are looking at their portfolio and saying, 'How do we make this building last for the next 30 years.'"

CREATIVE THINKING, PRACTICAL RESULTS

In today's built environment, being innovative while delivering practical design solutions specific to any given project are what designers, architects and engineers strive for. Creating a space that achieves the owner's sustainability goals while also fulfilling the needs of its occupants relies on vision, collaboration, passion and a commitment to adhering to the highest set of standards. Here are a few sustainable designs that exemplify this holistic approach:



U of T Scarborough – Environmental Science and Chemistry Building | LEED Gold

Location: Scarborough, ON

University of Toronto Scarborough Campus' Environmental Science & Chemistry Building is comprised of a number of new research and teaching labs including additional meeting rooms, office space and a tunnel to connect to the existing adjacent Instructional Centre. Constructed with a \$500M budget, the building is five-storeys with a gross floor area of 110,000 square feet. Recent awards for the building include: Institutional (Large) Award and Canada Green Building Awards (2018).

Langara College Science & Technology Building | LEED Gold

Location: Vancouver, BC

Located in beautiful Vancouver, BC, this five-storey, \$48.9M building consists of 131,000 square feet of student spaces and 35 new laboratories and classrooms. RJC was brought in early to consult with Langara College on every aspect of the



building enclosure during concept design, detailed design and construction. The most notable building feature is a dramatic 16-metre cantilevered portion incorporating a skylight window to allow natural daylight to penetrate through to the ground below. Certified LEED Gold, the building advances the College's sustainability goals by using highly-efficient building systems and fully integrating healthy living components. Sustainable design features include an energy-efficient building enclosure; low-flow fume hoods with adjustable sashes; and energy-efficient mechanical and electrical systems. Awards in 2018 include: Lieutenant Governor of BC Awards in Architecture "Award of Merit", Architectural Institute of British Columbia, Institutional (Large) Award, and Canada Green Building Awards.



Camosun College Centre for Trades Education & Innovation | LEED Gold

Location: Victoria, BC

The 80,000 square-foot Centre for Trades Education & Innovation at Camosun College

includes new facilities for a marine and metal trades training program. Spanning over the main entrance atrium, a stunning glulam truss resembles a ship's hull. The \$30M facility met BC's Wood First policy by incorporating nail laminated timber and exposed glulam framing in the classrooms, providing live examples of the trades being taught within the spaces.



Interior Heart and Surgical Centre | LEED Gold

Location: Kelowna, BC

The \$75M Interior Heart and Surgical Centre (IHSC) in Kelowna is the newest addition to the Kelowna General Hospital, providing a permanent home for the hospital's cardiac program. Equipped with state-of-the-art equipment, the four-storey LEED Gold facility showcases the use of BC timber products in accordance with BC's Wood First Act. Wood is used extensively throughout the facility as both a structural and a decorative element, promoting a warm and natural aesthetic that supports the form and function of the Centre as a facility dedicated to healing and well-being. ■

Certainly, the tide is changing. Interest in sustainable building projects is growing. Discover the options and learn more about the science of building retrofits by visiting rjc.ca. To contact Duncan Rowe, please visit his profile page at rjc.ca/about/ourpeople/toronto



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Engineers