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Canada Green Building Council

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ISSUE 2, SPRING 2012, Manitoba Chapter, CaGBC Regional Publication / **SABMag**
SUSTAINABLE ARCHITECTURE & BUILDING PRACTICE

Winnipeg's James Armstrong Richardson International Airport

Canada's newest and greenest

Paterson GlobalFoods

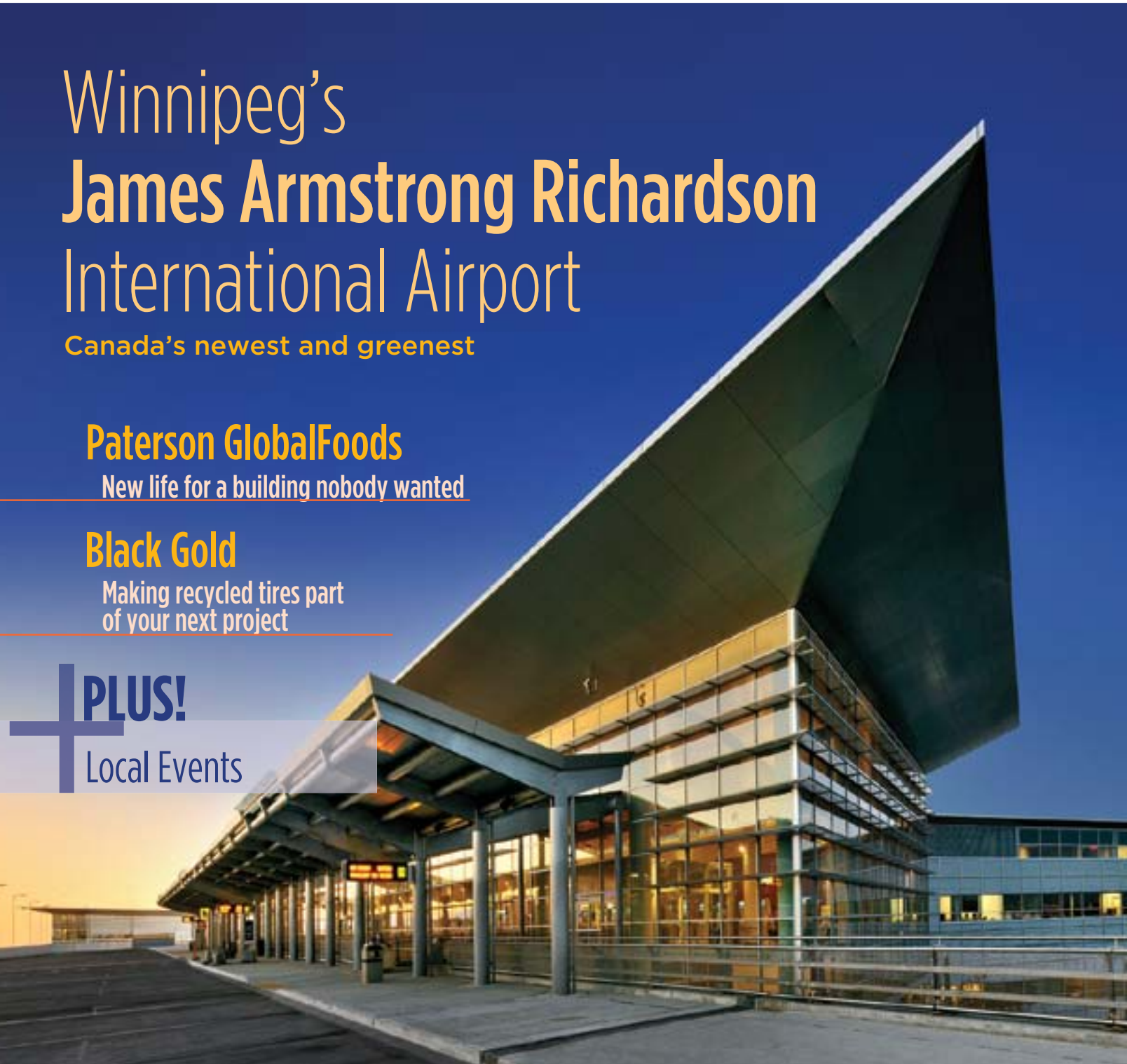
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4 News and Events

5

Mountain Equipment Co-op



14

Black Gold



7

Building Green and Expanding Together



Cover photo courtesy of Gerry Kopelow

Featured articles



8 Winnipeg's James Armstrong Richardson International Airport



11 Paterson Global Foods

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Environmental savings for this issue:

9 trees

31,818 L of water

482 kg of waste

1,253 kg of CO₂



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JUNE LUNCH SEMINAR: BE SMART ABOUT POWER SMART: NAVIGATING THE WORLD OF THE MANITOBA HYDRO COMMERCIAL POWER SMART PROGRAM

Date: Tuesday, June 5, 2012
Place: Manitoba Hydro Building
Time: 11:30 - 1:30
Cost: Members \$25
 Future Members \$30
 Students \$20

You can improve the energy efficiency of your business and reduce your energy costs. Manitoba Hydro offers a variety of Power Smart programs that will help reduce the amount of energy that your business consumes. Come hear about the different programs available to commercial building creators, builders, owners, and operators and see how you can improve the efficiency of your building and make it more sustainable!

Please contact admin@mbcagbc.org for more information.

MANITOBA CHAPTER, CANADA GREEN BUILDING COUNCIL ANNUAL GENERAL MEETING & GALA DINNER

When: Thursday, May 24, 2012
Where: Fort Gary Hotel

Master of Ceremonies: Douglas Clark, Executive Director of the University of Manitoba Faculty of Architecture Partners Program

Keynote Speaker: Stanis Smith, Stantec Senior Vice President for Buildings
 Airports and Airport Authorities have lagged behind other sectors in responding proactively to global environmental concerns. The Winnipeg Airports Authority is the rare exception, demonstrating leadership in mandating that its new Terminal set a global standard for sustainable design. This presentation will look at what the Aviation industry in general is doing to become more environmentally responsible, and will focus on the Winnipeg Airport Terminal as an outstanding case-study.

Speakers: Thomas Mueller, President & CEO of Canada Green Building Council
 The evening will also feature live music.
 Please contact admin@mbcagbc.org for more information.

2012 BETTER BUILDINGS CONFERENCE

When: Tuesday, April 24, 2012

Where: Winnipeg Convention Centre

One day of instructional and inspiring programming and ample networking. Colleagues from across Manitoba and beyond gather to share their interest and passion for improving the built environment. Change is a certainty, but not always welcomed with open arms. Join us as we delve deeper into the tools of change in existing buildings & new construction and discuss the milestones marking the changes ahead.

Why attend?

- Hear about recent developments in defining successful change.
- Discuss new milestones in the ongoing process of improving existing buildings and new designs.
- Get in touch with colleagues and leaders in the areas of sustainable design, advanced facility performance and policy development.
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Building Green and Expanding Together

You will soon be able to buy lumber on Main Street in Winnipeg again, just as you could 100 years ago when the strip was the centre of a bustling, growing gateway to the west.

Pollock's Hardware Co-op has joined with two socially conscious and green enterprises to open a building materials warehouse, house a energy retrofit business and expand a carpentry training centre in an old warehouse, less than five minutes from Portage and Main in downtown Winnipeg.

The 1924 red brick building at 765 Main Street is believed to be a former immigrant depot and post office for newcomers and mail unloading at the former CP Rail station.

In addition to being the home to Pollock's new building materials store, the 32,000 square foot building will house Building Urban Industries for Local Development [BUILD] and Manitoba Green Retrofit [MGR]. The three organizations have jointly bought the building supported by Assiniboine Credit Union.

The co-habitation seemed like a natural fit for the three organizations that have been working together for years and are all poised to expand.



BUILD was established in 2006 as a pilot project to provide energy and water retrofits in homes in lower income neighbourhoods, to help reduce utility bills and improve the environment. It fulfilled that vision by training people who live in the same neighbourhoods they serve.

"We use that work to train people who have employment issues, like ex-gang members, people with criminal records or without a high school diploma," says BUILD Executive Director Shaun Loney.

LUCAS STEWART, MANITOBA GREEN RETROFIT [LEFT], MIKE WOLCHOCK, POLLOCK'S HARDWARE CO-OP [RIGHT] AND THE STAFF AND TRAINEES OF BUILD

By 2008, BUILD was doing \$500,000 of home renovations with eight employees. In the last fiscal year that grew to \$2.4 million with 60 employees, and the expectation is that the BUILD revenue will reach \$3.5 million next year, says Shaun.

Many of BUILD's trainees go to work at Manitoba Green Retrofit, also a non-profit social enterprise that does property maintenance, energy retrofitting and bed bug remediation. MGR works chiefly on property maintenance and small renovations in the North End, West Broadway, Spence, North Point Douglas and Centennial areas.

"As a social enterprise we have a social agenda so we use our dollars differently. We buy local and use local services so that people's dollars have a longer circulation in the community," says Lucas Stewart, MGR General Manager, and an ACU member.

"Pollock's is one of the only local hardware supply companies that has taken an active interest in the North End. We know when we buy from them our dollars stay in the North End longer as opposed to buying from a multi-national warehouse where the money leaves the country," Lucas says.

Pollock's General Manager Mike Wolchock says their new business park for social and green enterprises will be open to the public, and will be a big relief for neighborhood handymen and homeowners.

"Previously if you wanted to buy a couple of sheets of drywall you'd have to go to the big box malls, then rent a vehicle to get it home or pay a ridiculous delivery charge," says Mike. "At our original store we've been getting more and more smaller contractors asking for drywall and lumber, and we're going to finally be able to help them out."

Source: Assiniboine Credit Union, Winnipeg, CaGBC-Manitoba Chapter sponsor

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Winnipeg's James Armstrong Richardson International Airport

Canada's Newest and Greenest Airport

By Sandy Leishman

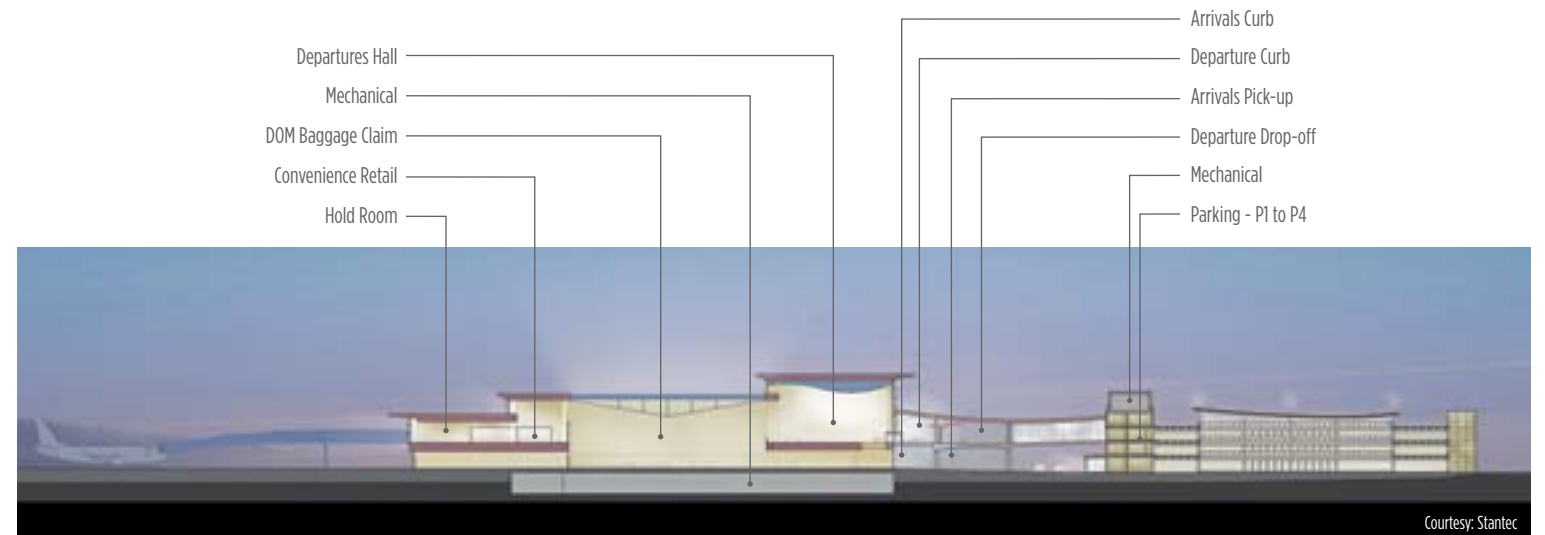
Canada's newest and greenest airport in Winnipeg focuses on the principles of Sustainable and Universal Design to create a high-performance building that is striving for a Silver LEED accreditation while becoming a unique Manitoban landmark.

The building footprint is 22,779 sq.m and stands four storeys high with innovative ventilation and lighting inside while providing 25,612 sq.m of open space with native prairie grass plantings outside.

"We were very excited to work with local Winnipeg talent in building this world-class airport facility. This project initiates a bold, new era of transportation for Manitoba and beyond. Our team worked collaboratively with the team from Pelli Clarke Pelli Architects to create a facility that integrates the newest innovations in universal design, energy efficiency and airport flow," says Stanis Smith, Stantec Senior Vice President.

A design objective to reduce energy consumption by over 52% versus national energy standards makes Winnipeg's James Armstrong Richardson International Airport one of the most efficient airports in Canada. The Winnipeg Airports Authority worked with the Manitoba Hydro Power Smart team to develop a new way to measure conservation using a whole-building approach.

Those strategies include high-efficiency glazing, heat recovery systems, automatic temperature sensors and radiant floor heating systems. Many facets of universal design have been considered, and have become important components in an integrated effort to create a highly accessible and effective space.



For example, an advanced electrical demand management system enables the airport to shed discretionary electrical loads. The design team produced a highly resilient electrical distribution system that cost-effectively provides four megawatts of 100% back-up generation so that services such as check-in and baggage handling will continue to operate in the event of power failure.

The use of advanced LED and fibre optic lighting reduces the use of power, resulting in consumption figures that are lower than commonly required. The electrical consultant team produced a daylighting study that maximized active daylight harvesting opportunities and saves a significant amount of energy each year through the use of indirect lighting and daylight sensors. This has resulted in creating the most beautiful areas in the entire building, the ceiling over the domestic baggage claim, which has 54 blue-rimmed skylights that fill the room with natural light.

At each end, wing-shaped roof projections cantilever past the building face for almost 14 metres, creating glare-reducing shade while emanating a strong architectural design. Floor-to-ceiling windows integrate the facility with the prairie landscape and Winnipeg's downtown skyline.

DRAMATIC WING-SHAPED ROOF PROJECTIONS CANTILEVER 14 METRES PAST THE BUILDING TO REDUCE GLARE. INSULATED AND CLAD EXTERIOR PANELS ARE BY VICWEST. THE CEILING OVER THE DOMESTIC BAGGAGE CLAIM, HAS 54 BLUE-RIMMED SKYLIGHTS. WINNIPEG-BASED ANTEX WESTERN PROVIDED SUB-CONTRACTING SERVICES.



CLIENT The Winnipeg Airports Authority - PRIME CONSULTANT Stantec Architecture - DESIGN COLLABORATORS Pelli Clarke Pelli Architects - STRUCTURAL ENGINEERING Crosier Kilgour and Partners - MECHANICAL AND ELECTRICAL ENGINEERING SMS Engineering - PHOTOGRAPHY Gerry Kopelow

Paterson Global Foods Institute

New life for a building no one wanted

By Lisa Saunders

Winnipeg's historic Union Bank Tower was the building no one wanted to renovate. Looked over as a possible location for a hotel, condos and municipal office space, the one-time financial hub faced a future of further disrepair and abandonment.

That is, until a handful of architects, academic staff and inner-city revitalization proponents decided to take a chance on the aging gem – pitching it as the new home for Red River College's hospitality programs and the site of the college's first student residence.



“It had been abandoned for 19 years. There was extensive water damage and people were hesitant to get involved,”

says Dudley Thompson, principal architect of Prairie Architects Inc., the Winnipeg-based architects in charge of the project.

Thompson's firm then conducted a study that not only convinced the college that the national historic site would work, but that it could also achieve LEED Gold certification.

The 90,000 sf \$27 million Paterson GlobalFoods Institute is set to open its doors in April 2012, and will house Red River College's Hospitality programs: Culinary Arts, Hospitality and Tourism Management and Professional Baking and Patisserie. It will also include three street-level restaurants and seven floors of housing accommodating 110 residents.

“It's quite an accomplishment when you consider that a significant portion of this project involves the rehabilitation of a skyscraper that was built a century before LEED came into existence,” says Red River College Communications Manager Colin Fast.

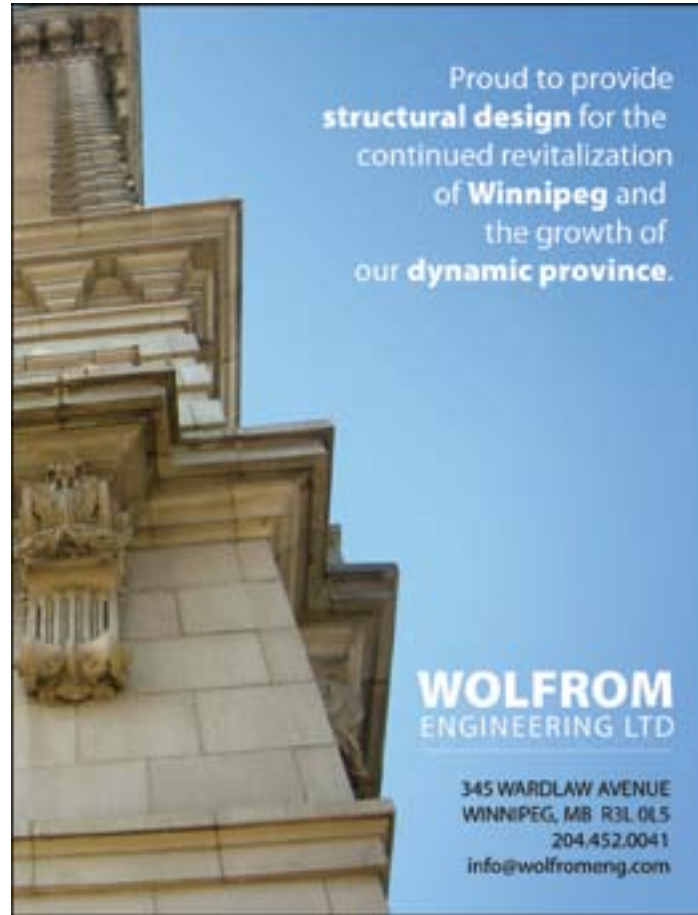
But while everyone was quick to laud the renovations, the parties involved admit this transformation didn't come easy. One major obstacle was determining how to insulate the existing building. “You can't typically insulate high rise masonry and steel buildings because if you do, it is possible that there could be significant movement in the brick,” said Thompson. The solution? Open cell foam insulation applied directly to the inside of the brick exterior.

Extensive mould from water damage had to be cryoblasted, elevator shafts that were out of plumb required mitigation – all the while salvaging as many parts of the Grade I historic building as possible. The original maple hardwood and marble flooring, majestic four-metre high fluted pilaster columns, and breathtakingly ornate masonry work have all remained intact.



CLIENT Red River College - ARCHITECTURAL AND LEED CONSULTING Prairie Architects Inc - GENERAL CONTRACTOR Mansfield Construction - STRUCTURAL ENGINEER Wolfrom Engineering - MECHANICAL ENGINEER Faraci Engineering - ELECTRICAL ENGINEER MCW/AGE - LANDSCAPE Hilderman Thomas Frank Cram - CIVIL ENGINEERING Genivar - KITCHEN CONSULTANT A Day in the Life Food Service Department - BUILDING ENVELOPE CONSULTANT Crosier Kilgour & Partners - COMMISSIONING AGENT Demand Side Energy Consultants Inc. - COST CONSULTANT Hanscomb Ltd - PHOTOS Bryan Scott

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Mountain Equipment Co-op

Catalyst for change - 10 years later

By Ted Preston

Ten years ago this spring Mountain Equipment Co-op [MEC] opened a new, two-storey retail store on the corner of Portage Avenue and Donald Street in downtown Winnipeg. "It was a green building - no one knew what a green building was," says Dudley Thompson, principal architect at Prairie Architects, Inc., designers of the MEC building.

Stantec Consulting Limited recently completed an energy audit of all of MEC's stores and warehouses in Canada and found that MEC's Winnipeg facility was 47% more energy-efficient than the national average for a non-green building of similar size [2,337 m² of office and retail space]. Across the board, MEC's 16 facilities nation-wide are 46% more energy-efficient.

Trying Something New

Prairie Architects argued for dismantling the existing buildings on the site and reclaiming almost all structural material. "I think we recycled 97% by weight," chuckles Thompson. "We didn't know what we were doing at the time but as we quantified it and put metrics to it, it was pretty astounding. The new material we put in there was kind of negligible."

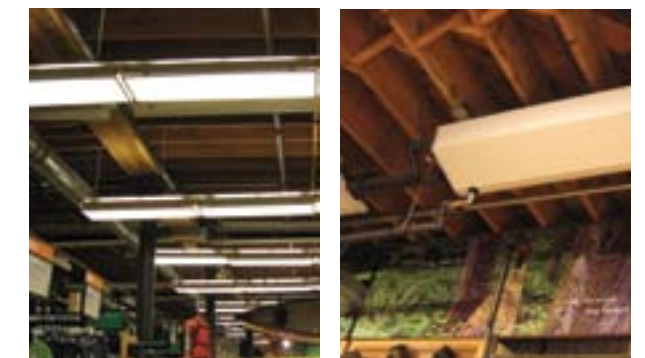
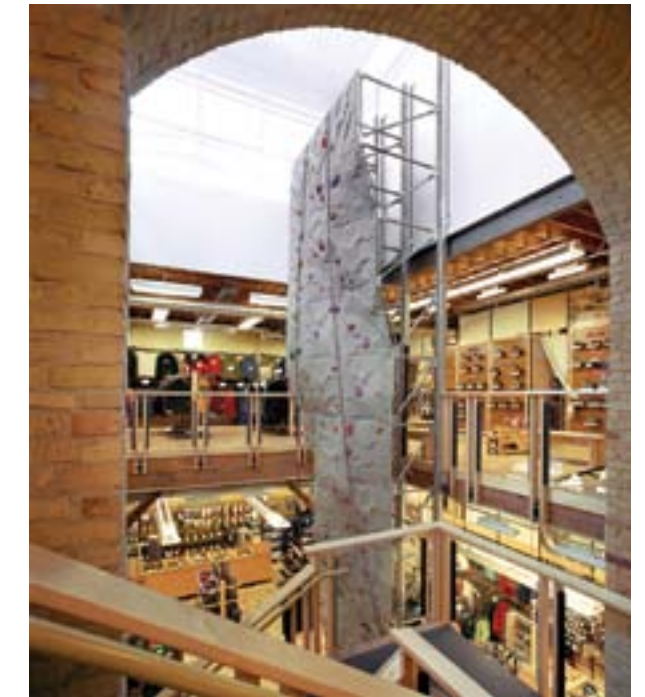
Most of the lighting is energy-efficient T5 and T8 fluorescents which operate on occupancy sensors and daylight sensors. The mechanical system is progressive, even by today's standards, including: high-efficiency condensing boilers that are typically 10 to 20% more efficient than standard boilers; in-floor radiant heating which allows the building to operate at a lower temperature; passive chilled beams which don't require fan energy to provide cooling; and energy recovery ventilation which provides latent [and sensible] heat recovery between the exhaust and outdoor air.

Water savings come from low-flow fixtures, composting toilets [a first in a commercial building in Winnipeg] and rainwater recycling feeding a rooftop garden using pumps powered by solar panels. "We built it cheaper than the budget. It was \$90 a square foot at the time," notes Thompson. "Which even then was pretty cheap for a commercial building."

Catalyst for Downtown Renewal

"There was a lot of hope in what the MEC store would mean to downtown Winnipeg," says the store's manager Ken Berg. "For the first time in, I don't know how many years, there will soon be no empty storefronts on downtown Portage Avenue."

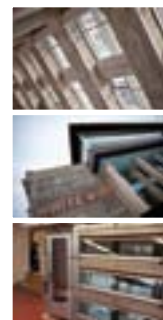
According to Berg, another legacy remains. "To this day, people still come to see the composting toilets!"



Renewing Downtown, Revitalizing Industry



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Red River College is committed to being a sustainability leader through our operations, academic programs and applied research.



Black Gold

Making recycled or repurposed tire part of your next project

by Sandy Leishman

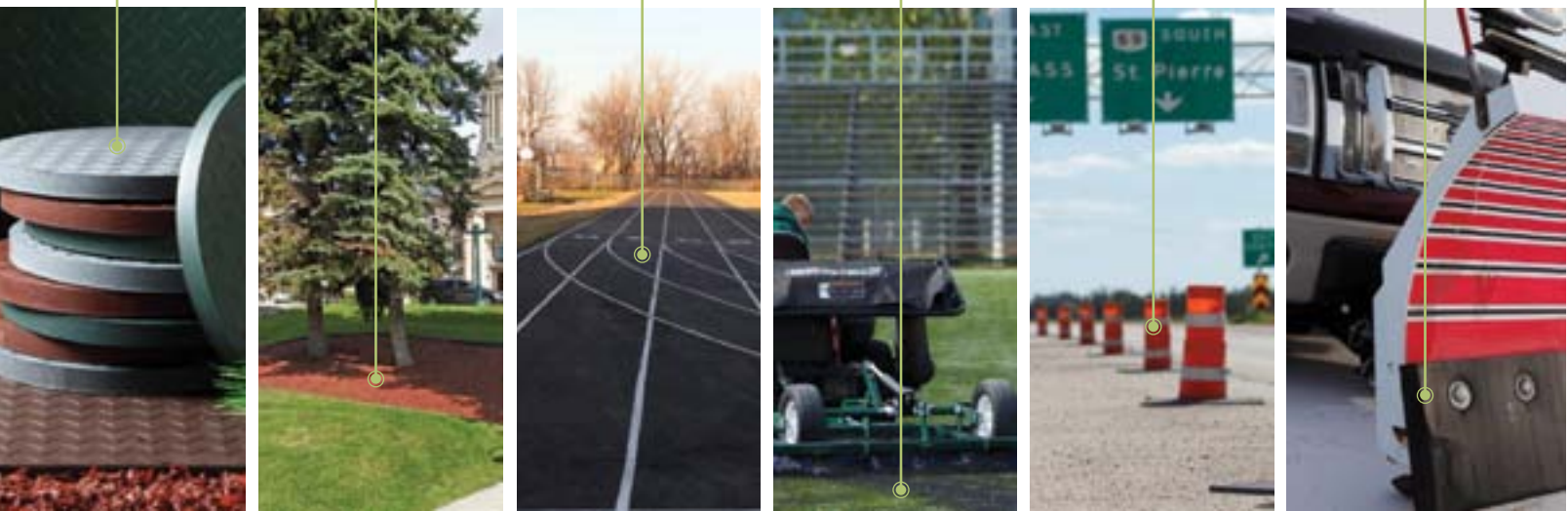
Recycling tires saves millions of used tires from ending up in landfills. According to the Canadian Association of Tire Recycling Agencies [CATRA], 93% of the scrap tires generated are recycled into new products and materials. In Canada, the equivalent of one passenger tire per person is recycled annually or 350,000 metric tons of material.

Manitoba Tire Stewardship, a not-for-profit organization formed to manage Manitoba's tire recycling program, knows the uses and benefits include:

- + geotechnical applications for permeable ground stabilization and insulation
- + relatively inexpensive
- + colour can be added to produce a variety of shades
- + causes no significant risk to human health or the environment
- + can contribute toward LEED credits
- + inert and UV-resistant material is long lasting
- + keeps tires out of landfills and the environment
- + can be used in a multitude of ways for many products

Tire rubber is being reused in innovative ways that promote safety and represent ingenuity. Today recycled or repurposed rubber is found in many products such as: paving stones, snow plow blades, playground surfaces, recycled spray-on rubber roofs, rooftop support block systems, blasting mats, anti-fatigue mats, landscape mulch and more. Replacing a grass field with a synthetic athletic field utilizing recycled rubber can save as much as 50,000 gallons of water per week during the peak growing season. It also eliminates the need to use toxic pesticides and fertilizers.

For more information contact Brett Eckstein, Executive Director of Manitoba Tire Stewardship, at www.tirestewardshipmb.ca or 204.661.3242.



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June 11-13, 2012 | Toronto, ON

Beyond Buildings: The Green City



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