



2010 REASONS TO DO BUSINESS IN CANADA



CANADIAN OLYMPIC INFRASTRUCTURE DEVELOPMENT

From the torch to the new Vancouver Olympic and Paralympic Centre, Canada has raised the bar for future Olympic venues. The Vancouver 2010 Olympic and Paralympic Winter Games were conceived to showcase the best in Canadian architecture, urban planning, construction, engineering and green building by incorporating elements of sustainable design and innovation. To minimize the Games carbon footprint, sustainable design principles were behind every decision made by the Vancouver Organizing Committee for the Olympic and Paralympic Winter Games (VANOC). This included site planning, water efficiency, energy efficiency, hybrid transportation and conservation of materials including post-Games planning.

From small firms to large consortiums, Canadian companies have developed Games-related services and technologies that also incorporate principles of environmental stewardship and corporate social responsibility. Examples can be found in the design and construction of a number of Olympic venues such as the Whistler Nordic Centre, the Whistler Sliding Centre track, the Richmond Olympic Oval and the Olympic Village. With sustainable objectives in mind, the team ensured that the venue minimized environmental impact by reducing the site's footprint and the venue integrated with the existing landscape.

A number of Olympic venues delivered sustainable solutions. For example, the Whistler Sliding Centre incorporates energy-efficient features such as the harvesting and reuse of

waste heat energy from ice refrigeration plants and the replacement of diesel generators with cleaner hydro power. The venue is integrated into Whistler's long-term resort development plan and serves as an excellent post-Games site to introduce sliding sports to the area's many visitors.

Vancouver's expanded Convention Centre is a showcase of design and sustainability, incorporating a "living roof," seawater heating and cooling, on-site water treatment and even fish habitat built into the foundation. During the 2010 Winter Games, it served as the international broadcast centre.



The Richmond Olympic Oval demonstrates how architecture and engineering solutions can be applied toward environmental development objectives. The hybrid building, designed to qualify for a silver certification under the Leadership in Energy and Environmental Design (LEED) rating



system, features an energy-efficient structure with an innovative wood wave roof. The building incorporates timber that was harvested from the construction site, while the roof features salvaged wood which would otherwise be left in the forest to decompose. The Centre incorporates eco-friendly features such as toilets, showers and sinks that use rainwater and low-flow water systems. This building has received multiple awards, including a prestigious international engineering prize for its structural design from the Institution of Structural Engineers and an Innovation in Architecture Award at the 2009 Awards of Excellence from the Royal Architectural Institute of Canada.



Similarly, all 16 residential buildings in the city's Olympic and Paralympic Village were designed to meet the gold certification under LEED standards. Furthermore, a 30,000-square-foot community center there will be certified LEED Platinum. The 100-acre site faces west, thereby maximizing day lighting and natural ventilation strategies. Other sustainable features include rainwater harvesting, a sewer-heat recovery system, intensive green roofs; and interiors that will contain low-VOC materials made of recycled or sustainable resources.

Green Building Design, Engineering and Construction

Green design, engineering and construction projects in Canada have garnered worldwide reputation for innovation and excellence. Canadian companies are actively engaged in this

growing industry and have developed highly-efficient energy systems and stringent building codes to withstand the country's climate extremes. Canadian industry offers a full range of products, technologies and services used in green buildings.

Canadian capabilities in architecture, design, engineering and construction include expertise in:

- integrated processes that bring together architecture, design, engineering and contracting to provide a full range of project services
- designing and building for cold climates, including addressing issues such as permafrost instability, materials logistics, and extreme weather conditions, amongst others
- urban design, architecture and sustainable community planning
- lightweight steel framing, including wall studs, floor joists and roof trusses
- wood frame construction, including seismic performance and fire resistance, for low-rise and multi-storey construction up to six storeys
- high-end prefabricated building solutions, including panelized, timber frame and log systems
- hybrid construction solutions combining wood frame, concrete and/or steel
- advanced building envelope construction

Advanced Building Materials, Systems and Technologies

Canadian government and industry support innovative applications and sustainability in building materials including lightweight steel framing, concrete applications, and wood framing. Wood framing is the most commonly used building material in the Canadian residential sector and Canada has considerable wood framing expertise for residential and commercial buildings. Canadian companies and researchers also develop, manufacture and install products and technologies that increase energy efficiency and reduce water consumption in residential and commercial/institutional buildings.

Canadian capabilities include:

- high-performance windows and doors
- recycled and natural content insulation
- advanced air and weather barriers
- design, engineering, construction and installation of heat pump systems for homes, buildings and communities
- water efficiency technologies, including grey water reuse/recycling
- engineered wood products, including structural components such as roof and floor trusses, prefabricated-joists and various open-web joists
- innovative concrete applications including high-performance concrete, pervious and permeable concrete pavements, precast/pre-stressed concrete, post-tensioned concrete, insulated concrete forms, structural insulated panels, translucent concrete, and tilt-up construction

The Canadian Trade Commissioner Service (TCS)

The Canadian Trade Commissioner Service is a key resource for anyone interested in doing business internationally. Our global network of trade offices and dedicated officers are there to provide assistance and resources to maximize engagement with companies and government. For more information on Canadian expertise, we encourage you to contact one of Canada's local Trade Commissioners. You can access their knowledge and networks at:

www.tradecommissioner.gc.ca

Foreign Affairs and International Trade Canada:
www.dfait-maeci.gc.ca

Industry Canada, Industry Sector:
www.ic.gc.ca

Canada Mortgage and Housing Corporation:
www.cmhc-schl.gc.ca

National Research Council Canada, Institute for Research in Construction:

www.irc.nrc-cnrc.gc.ca

Natural Resources Canada, Canadian Forest Service:

www.cfs.nrcan.gc.ca

Natural Resources Canada, CanmetENERGY:
canmetenergy.nrcan.gc.ca

Association of Consulting Engineers Canada (ACEC):

www.acec.ca

Canadian Construction Association (CCA) :
www.cca-acc.com

Royal Architectural Institute of Canada (RAIC):
www.raic.org

For More Information...