



Canadian Olympic School Program **Case Study**



SCHOOL PROGRAM  
PROGRAMME SCOLAIRE

# ENVIRONMENTAL SUSTAINABILITY and the Vancouver 2010 Olympic Winter Games

**Business** – Corporate responsibility, **Science & Technology**



[www.olympicschool.ca](http://www.olympicschool.ca)

PRESENTED BY  
PRÉSENTÉ PAR





It wasn't long after Vancouver won the rights to host the 2010 Olympic Winter Games that the organizers set the lofty goal of hosting the "greenest" Games ever. Since 1999, all host nations have been required to make environmental sustainability a priority. The Vancouver Olympic Organizing Committee (VANOC) would have to outdo the initiatives of all previous host nations, making it an ambitious goal for organizers.

Any time that a major sporting event is held, there will be a significant environmental impact. Energy is needed to heat buildings, make snow, freeze rinks and sliding tracks, operate equipment, and transport people and goods. All of these produce greenhouse gas emissions and all of them comprise what is known as the carbon footprint of the Games.

Working with organizations such as the David Suzuki Foundation and the Centre for Sustainability and Social Innovation at University of British Columbia,

VANOC estimated that the 2010 Games (including the seven years of planning) would generate 270,000 tonnes of carbon emissions if no action was taken. The strategy would be to build environmentally friendly venues, adopt green practices and draft sustainably minded policies in order to avoid emissions. The remaining direct carbon footprint would then be offset through the purchase of carbon credits.

"We wanted to reduce our carbon footprint in a way that showcased Vancouver and BC and to show the world our new technologies," explains Linda Coady, VANOC's Vice President of Sustainability. "We wanted to put our mark on the map for the green economy. We were driven by the values of the people of BC who told us during the bid phase that environmental sustainability was important to them."

The first task was to construct venues that would be as environmentally friendly as possible. This included choosing the

right building practices and materials, and trying to reduce the size of some venues to save old growth forests or reduce the impact on wildlife.

"Everything we did started with the vision of having a green Olympic Games," says Dan Doyle, VANOC's Executive Vice-President in charge of construction. "I have been in construction all of my life, and I have never seen anything constructed as green as these Olympic Games were."

Much of a building's carbon footprint comes from how it is heated, or in the case of winter sport venues, how the ice surfaces are cooled. Venues such as the Vancouver Olympic Centre (curling) and the Richmond Oval (speed skating) were constructed using the latest technology to capture the heat generated by refrigeration units to heat other parts of the building. Waste heat was re-circulated to heat the adjoining spectator areas or domestic hot water. At the Vancouver Olympic Village, heat



Among the many roles the IOC plays, one is:

"to encourage and support a responsible concern for environmental issues, to promote sustainable development in sport and to require that the Olympic Games are held accordingly."

Rule 2, Paragraph 13  
 Olympic Charter





from the city's main sewage line was re-captured and used as a source of heat for the athlete living areas. The Whistler Olympic Village received up to 90 per cent of the energy needed for heating and domestic hot water by reclaiming the heat generated at a local sewage treatment plant.

Buildings were constructed to meet Leadership in Energy and Environmental design (LEED®) Gold or Platinum standards. For example, the Vancouver Convention Centre (the international broadcast and media hub during the Games) is LEED® Platinum certified. Its 2.4 hectare roof is covered by more than 400,000 indigenous plants and grasses that provide a home to birds, butterflies and insects, while insulating building and playing a key role in storm water reuse. On-site sewage treatment and desalination systems have reduced the potable water use by 60-70 per cent compared to similar buildings. These design qualities reduce the building's environmental impact.

Hosting an Olympic Games requires a huge number of official vehicles to transport people and goods between venues. VANOC instituted a number of key policies that helped to reduce the impact of this movement. All fleet VANOC vehicles had a no-idling policy, minimum tire tread requirements and reduced driving speeds. This helped to reduce fleet emissions by 19 per cent. All Olympic tickets entitled the bearer to free public transit and none of the venues had public parking. This forced spectators out of their cars and onto more sustainable public transportation.

Estimates are that these initiatives reduced the Vancouver 2010 carbon footprint by 18 per cent or 57,000 tonnes of carbon emissions. While this is impressive, it was not sufficient to earn the title of "greenest" Games ever. To achieve that distinction, VANOC was the first Olympic Games host to secure a carbon offset sponsor. Offsetters, a Canadian carbon credit management company, used clean technology projects to counteract the direct carbon

emissions from the Games. Although the emission has occurred, investments are made in projects that help to reduce greenhouse gas production elsewhere. For instance, Offsetters' carbon credits were applied to a project to reduce carbon emissions through the generation of electricity from hydrogen fuel cells. VANOC also convinced many of their partners and sponsors to voluntarily offset their Games-related carbon emissions, further reducing the 2010 carbon footprint.

As the world increasingly focuses on climate change, it is likely that most major sporting events will be following the IOC's environmental lead and more hosts will turn to VANOC's successes to "green" their events.

"We set some new benchmarks for the Olympic Movement," Coady proudly states. "When the International Olympic Committee speaks of where we excelled, they frequently mention our environmental initiatives."

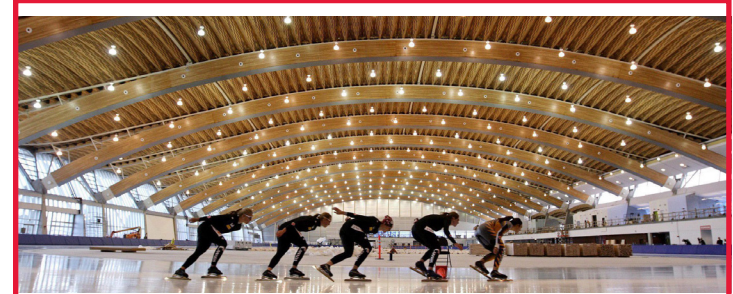
LEED® ratings recognize achievement in the construction of sustainable buildings. Platinum rated buildings have been constructed to the highest standards of energy conservation, water use reduction, and lowered maintenance and operations impacts.





## Case Questions

1. Justify why you believe that major sporting events should or should not be concerned about the environment.
2. After reviewing the environmental initiatives VANOC made in venue construction, research ways the London 2012 Organizing Committee is constructing its venues to shrink their carbon footprint. List some of the different challenges that London may be facing as they host a Summer Games compared to Vancouver's Winter Games.
3. Identify the elements of your daily life that contribute to your carbon footprint. Create a personal action plan to reduce your footprint in the next three weeks, three months and three years. Consider your activities at school, in your community and at home.



### THE OVAL

The signature venue of the Vancouver 2010 Olympic Winter Games is the Richmond Oval, home of the long track speed skating competitions. The Oval's ceiling is constructed from salvaged wood from British Columbia's pine beetle infestation. Rainwater is captured from the roof and used to supplement toilet flushing and to irrigate the surrounding landscape. The waste heat from the ice-making process is used for domestic hot water and heating and cooling systems. It was hoped that the global attention from the Olympic Games would showcase Canada's innovation in green buildings and would promote the affordability of green building technologies.





SCHOOL PROGRAM  
PROGRAMME SCOLAIRE





## Case Extensions

Consider extending the case study by including a research component.

1. Compare and contrast the environmental sustainability initiatives of the Vancouver 2010 Olympic Winter Games to either the Torino 2006 Olympic Winter Games or the Beijing 2008 Olympic Games. Based on this comparison, do you think that VANOC met its goal of being the “greenest” Games ever?

2. Do other major sport events (e.g., FIFA World Cup, Commonwealth Games, various World Championships) share a similar focus on sustainability as the IOC? Justify your statement with examples found through researching these other events.

Incorporate writing skills by having the students write a persuasive paragraph that argues for or against these statements.

1. Organizations such as the IOC have a moral responsibility to be leaders in environmental stewardship.

2. The IOC should require all Olympic Games and national Olympic Teams to be carbon neutral.

## Case Projects

The following case projects are more lengthy, but will allow your students to examine the topic in more depth.

1. Your environmental consulting firm has been hired to provide recommendations to the Sochi 2014 Olympic Winter Games Organizing

Committee as to how they can host a “green” Games. Research the climate and geography of Sochi, and write a consultant’s report outlining some initiatives that would help them reduce the carbon footprint of the 2014 Games.

2. As part of VANOC’s sustainability team, you are asked to deliver a power point presentation at the 8th World Conference on Sport and the Environment (<http://www.wcse2009.com/>).

Design a presentation that outlines VANOC’s plans and initiatives to host the “greenest” Games ever.

## SUPPORT RESOURCES

Visit [www.olympschool.ca/library](http://www.olympschool.ca/library) under Environmental Sustainability in the Research Centre for the following resources:

1. 8th World Conference on Sport and the Environment
2. The Carbon Management Program for Vancouver 2010
3. Canada Aims for Green Games
4. Sustainability Video- VANOC
5. Sustainable Venues- VANOC
6. Whistler Olympic Park- Inspired by Nature- VANOC





SCHOOL PROGRAM  
PROGRAMME SCOLAIRE

**The Canadian Olympic School Program wishes to thank and acknowledge the contributions of the following people. Without their efforts and creativity, this project would not have been possible.**

Bruce Deacon – **Story Writer**  
Andy Maier – **Graphic Designer**

**The Canadian Olympic School Program was developed by:**

Georgina Gray	Isabelle Hodge
Jeff Jurmain	Dennis Kim
Dana Tomiczek	Lisa Wallace

The Canadian Olympic Committee thanks RBC Financial Group for their generous support of the Canadian Olympic School Program. Specifically, we would like to acknowledge the contributions of Jacqueline Ryan and Josh Epstein.

