

BC Pavilion Corporation - 2009 Carbon Neutral Action Report

Executive Summary

BC Pavilion Corporation currently operates BC Place Stadium and the Vancouver Convention Centre (East and West Buildings).

The Vancouver Convention Centre has made considerable progress towards meeting carbon neutral and sustainability goals through completion of its West expansion (April 2009) and the ongoing renovation of its existing East facility. In addition to maintaining and adding to its established program of green operating practices, the facility was able to improve efficiencies and reduce carbon emissions generated from building operations. The Vancouver Convention Centre West was successful in achieving LEED Platinum Certification while the Convention Centre East retains its certification under BOMA Go Green.



BC Place continues to move forward towards meeting its carbon neutral and sustainability goals as set out in the Sustainability Master Plan for BC Place that was developed in 2009. BC Place, through the decision to renovate the existing facility at its present location, has avoided the generation of approximately 120,000 tonnes of construction related GHG emissions. This estimate is based on the volume of materials required for the construction of a new facility, including approximately 25,000 cubic meters of concrete, 20,000 tonnes of reinforcing steel, 30,000 tonnes of structural steel, 250,000 square meters of glass, 30 tonnes of machinery and equipment, and 6 tonnes of finishes, fixtures and seating. In addition to maintaining and adding to its established program of green operating practices, the facility was able to improve efficiencies and reduced carbon emissions generated from building operations.



Overview

Actions Taken to Reduce Greenhouse Gas Emissions in 2009

Actions completed at the Vancouver Convention Centre this year include: upgrades to all energy systems as part of retrofit of the East building; fine-tuning of energy systems in the newly constructed West building to maximize efficiencies, continuation of discreet programming of HVAC to match activity levels; occupancy and motion sensors to control lights; launch of a client-focused guideline to Sustainable Events to better engage them in the facility's efforts; increased internal training and communication for staff and suppliers on steps to reduce GHG emissions; individual actions to support the facility's sustainable practices.

At BC Place Stadium upgrades to Levels 200, 300 and 400 were completed. New technology and energy efficient fixtures have been added; including the acquisition of Green Seal furniture and energy efficient lighting in the renovated areas to facilitate expansion of existing programs. A Green Committee was formed in 2009 and work begins on developing the guidelines and goals that will assist with further improvement in

the reduction GHG emissions. Fine tuning of the building control systems and monitoring of utility consumption continues, newly purchased consumables will be Green Seal certified, and work with suppliers to reduce the carbon footprint is ongoing.

Operational Changes in 2009

At the Vancouver Convention Centre the greatest impact on GHG emissions to the organization is the tripling of space in 2009. In addition, the anomaly being host venue for the Main Media Centre during the 2010 Olympic and Paralympics Winter Games impacted emissions for the last quarter of calendar 2009 and the first quarter of calendar 2010.

A major impact on GHG emissions for BC Place was being a host venue for the Winter Olympic for the Opening and Closing ceremonies, nightly medal ceremonies and the opening Ceremonies for the Paralympics Winter Games. Through a cooperative effort, BC Place managed to recycle & compost approximately 63% of collected waste.

Plans to Continue Reducing Greenhouse Gas Emissions 2010 – 2012

For the Vancouver Convention Centre, of primary importance is the stabilization of building systems and normalizing of operations following a unique year that included the completion of a major expansion and renovation and the Winter Games.

For BC Place, 2010 will be a challenge as the building will be closed to normal operations and becomes a construction site, reopening in 2011 with a new retractable roof as it virtually becomes an outdoor venue by option.

The target for all of PavCo's facilities continues to be an annual 3% decrease, following the BC Provincial Government reduction target of 33% by 2020.

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Actions Towards Carbon Neutrality

The actions listed below contribute to a reduction in greenhouse gas emissions from sources for which public sector organizations are responsible under the carbon neutral government regulation of the *Greenhouse Gas Reduction Targets Act*.

Action	Status (as of 12/31/09)	Performance to Date (as of 12/31/09)	Steps Taken in 2009	Steps Planned for 2010 -2012	Start Year	End Year
Mobile Fuel Combustion (Fleet and other mobile equipment)						
Vehicle fuel efficiency						
Replace vehicles with more fuel-efficient models	Ongoing/In Progress	0 % of vehicles are fuel- efficient models	Proper and regular maintenance of all our fleet to ensure continued operating efficiency.	BC Place we will be assessing it's current fleet during during the period of roof construction (during which the facility is closed), most of which is 25 years old and develop a plan for replacement. At Vancouver Convention Centre (VCC) two vehicles will be reduced to 1 on April 1, 2010. When the remaining vehicle is due for replacement, a more fuel-efficient model will be sought.	2011	No End Date (Continuous)
Perform regular fleet maintenance to improve fuel-efficiency	Ongoing/In Progress	100 % of vehicles are subject to regular maintenance for fuel efficiency	Proper and regular maintenance to ensure continued operating efficiency.	BC Place we will be assessing it's current fleet during during the period of roof construction (during which the facility is closed), most of which is 25 years old and develop a plan for replacement. At Vancouver Convention Centre (VCC) two vehicles will be reduced to 1 on April 1, 2010. When the remaining vehicle is due for replacement, a more fuel-efficient model will be sought.	2011	No End Date (Continuous)
Behaviour change program						
Introduce anti-idling policy and/or raise anti-idling awareness for fleet drivers (e.g., signs, stickers, messages)	Complete		This has been in place for several years at BC Place as it is an indoor facility and the guidelines are posted at every vehicle entry, this also applies to the exterior of the facility	Continue with our program when applicable	1990	No End Date (Continuous)
Encourage carpooling in fleet vehicles	Ongoing/In Progress		Formal & informal presentations have been provided at meetings and briefings to discuss carpooling using fleet vehicles and personal to and from work commuting. Preferred carpool parking spots have been allocated at VCC. This has also been included in our Personnel Hand Book at BC Place.	Periodic and regular reminders to staff and suppliers.	2004	No End Date (Continuous)
Promote alternatives to fleet vehicle travel where possible (e.g., bicycles, public transit, walking)	Ongoing/In Progress		Formal & informal presentations have been provided at meetings and briefings to discuss carpooling using fleet vehicles and personal to and from work commuting. Preferred carpool parking spots have been allocated.	Periodic and regular reminders to staff and suppliers.	2004	No End Date (Continuous)
Stationary Fuel Combustion, Electricity and Fugitive Emissions (Buildings)						
Planning/management						
Install a real time metering system (e.g. Pulse, Reliable Controls, Houle Controls)	In Development			Monitoring & Metering system recently purchased for installation & implementation.	2010	No End Date (Continuous)
Owned buildings						
Establish energy performance baseline for owned buildings	In Development			At VCC baselines will be developed for "normalized operations" for both East & West buildings. At BC Place Once the building is reopened, new baselines will need to be developed; when the building is occupied for events; and when its unoccupied; for normal dark days	2010	2012

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Action	Status (as of 12/31/09)	Performance to Date (as of 12/31/09)		Steps Taken in 2009	Steps Planned for 2010 -2012	Start Year	End Year
Register for performance labelling/certification for operations and maintenance of owned buildings (e.g., LEED EB:O&M)	Complete	100	% of owned buildings have operations and maintenance labelling/certification	VCC East facility is BOMA GO GREEN certified; West building is LEED Platinum certified		2007	No End Date (Continuous)
Achieve LEED NC Gold certification at a minimum for new construction or major renovations	Complete	100	% of owned buildings are certified LEED NC Gold or LEED NC Platinum	VCC West building is LEED NC Platinum certified		2006	2010
Incorporate a refrigerant management strategy into regular building management/maintenance to reduce fugitive emissions	Complete			As part of the new VCC west building start up the CFC/Refrigerant monitoring program was established and is in place.	No further steps required. In place and monitoring regularly.	2009	No End Date (Continuous)
Retrofitting owned buildings							
Upgrade mechanical systems (heating, cooling, ventilation) during retrofits	Ongoing/In Progress	20	% of retrofits (captured above) had heating, cooling, and ventilation systems upgrades		At BC Place upgrades to major systems is being planned for the next Phase of construction	2009	No End Date (Continuous)
Upgrade lighting systems during retrofits	Ongoing/In Progress	20	% of retrofits (captured above) had lighting systems upgrades	At BC Place Level 300 was upgraded including new, energy efficient lighting and improved cooling	At BC Place during our Phase 2 construction, we will be upgrading all of our event and support lighting to more energy efficient fixtures	2010	2011
Upgrade/adjust control systems during retrofits	Ongoing/In Progress	50	% of retrofits (captured above) had control system upgrades or adjustments		At BC Place a new master building control system with today's technology will be added to control our 32 different sub-systems	2010	2011
Leased buildings							
Lease space with operations and maintenance performance labelling/certification (e.g., LEED EB:O&M)	Complete	100	% of leased buildings have operations and maintenance labelling/certification	East building is BOMA GO GREEN certified.		2003	No End Date (Continuous)
Lease space with commercial interiors performance labelling/certification (e.g., LEED CI)	Ongoing/In Progress			Completed replacement of all lighting and installation of new lighting controls in conjunction with the B.C. Hydro Powersmart program with estimated reduction of 600,000 KWHrs.	Monitoring by BC Hydro PowerSmart to ensure we have effectively achieved the anticipated reductions.	2008	2009
IT power management							
Implement server virtualization	Ongoing/In Progress	10	% of servers have been virtualized since start year indicated	Installed latest VMware virtualization software, moved 4 physical servers to virtual environment.	Currently evaluating other servers to be virtualized.	2007	No End Date (Continuous)
Apply auto-sleep settings on computer monitors and CPUs	Ongoing/In Progress	10	% of computers have auto-sleep settings applied	Applied to laptop computers	Looking at options for implementing sleep settings on monitors used.	2010	2012
Remove stand-alone printers, copiers, and/or fax machines and install multi-function devices	Complete	100	% reduction in printers, copiers, and/or fax machines since start year indicated	Completed full replacement of outdated and inefficient office equipment with multi-function devices, auto-sleep and Energy Star equipment.		2008	2009
Apply auto-sleep settings on printers, copiers, fax machines, and/or multi-function devices	Complete	100	% of devices have auto-sleep settings applied	Completed full replacement of outdated and inefficient office equipment with multi-function devices, auto-sleep and Energy Star equipment.		2008	2009
Replace computers with ENERGY STAR models during regular computer upgrades	Complete	100	% of computers are ENERGY STAR rated	Completed full replacement of outdated and inefficient office equipment with multi-function devices, auto-sleep and Energy Star equipment.		2008	2009

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Action	Status (as of 12/31/09)	Performance to Date (as of 12/31/09)		Steps Taken in 2009	Steps Planned for 2010 -2012	Start Year	End Year
Appliances and electronic devices							
Replace refrigerators with ENERGY STAR models or source ENERGY STAR models for future purchases	Ongoing/In Progress	90	% of fridges are ENERGY STAR rated	VCC employs Cooler that do not use Freon. At BC Place, the suite level renovations was completed in 2009 and bar fridges were Energy Star models.	Any remaining refrigerators at BC Place will be replaced with ENERGY STAR models.	2008	2012
Behaviour change program							
Ask staff to unplug electrical equipment or switch off power bars when not in use	Ongoing/In Progress			Periodic and regular reminders for staff and suppliers	Continuation of reminders using a variety of methods including meetings, notices, online	2007	No End Date (Continuous)
Encourage staff to use air dry setting on dishwashers	Ongoing/In Progress			At BC Place there are regular reminders to user groups. At VCC there are periodic reviews with housekeeping staff on use of dishwashers	Continuation of reminders using a variety of methods including meetings, notices, online	2007	No End Date (Continuous)
Encourage use of stairs instead of elevators	Ongoing/In Progress			Periodic and regular reminders for staff and suppliers	Continuation of reminders using a variety of methods including meetings, notices, online	2009	No End Date (Continuous)
Provide reminders for turning off lights (e.g., signs, stickers, messages)	Ongoing/In Progress			Periodic and regular reminders for staff and suppliers	Continuation of reminders using a variety of methods including meetings, notices, online	2007	No End Date (Continuous)
Promote hot water conservation	Ongoing/In Progress			Periodic and regular reminders for staff and suppliers for water conservation in general and reduction in use of bottled water.	Continuation of reminders using a variety of methods including meetings, notices, online	2008	No End Date (Continuous)
Supplies (Paper)							
Paper Type							
Purchase 30% post-consumer recycled paper	Complete	40	% of total paper purchased contains 30% recycled content	Continuation of previously established guidelines for printing. At BC Place this category is 100% of the paper used.		2005	No End Date (Continuous)
Purchase 100% post-consumer recycled paper	Complete	60	% of total paper purchased contains 100% recycled content	Continuation of previously established guidelines for photocopy paper.		2007	No End Date (Continuous)
Printer/document settings							
Switch networked printers and photocopiers to automatic double-sided	Complete	100	% of network printers or photocopiers are set to automatic double-sided	Switch networked printers and photocopiers to automatic settings.		2009	2010
Electronic media in place of paper							
Post materials online that were previously printed	Ongoing/In Progress			Stopped printing event planning manuals and reduced printing of forms, plans and collateral material	Complete steps to allow customers to order and pay for services online.	2009	No End Date (Continuous)
Switch to an electronic payroll notification system in place of paper pay stubs	In Development				PavCo is reviewing the feasibility of electronic payroll notification	2010	2012
Behaviour change program							
Encourage staff to hold paperless meetings or presentations (i.e., no handouts)	Ongoing/In Progress			Launched intranet to facilitate sharing internal & staff information; enhanced the Sales' teams PowerPoint presentation skills; eliminated printed agendas where feasible.	At VCC there are ongoing assessment on a case by case basis of need for paper in a meeting setting. At BC Place it is part of the Green Committee's initiative.	2007	No End Date (Continuous)
Encourage re-use of scrap paper	Ongoing/In Progress			At VCC scrap paper is reused as a matter of course in printers.	continue to reuse paper printed on one side	2010	No End Date (Continuous)

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Actions to Reduce Provincial Emissions and Improve Sustainability

The actions listed below contribute to a reduction in greenhouse gas emissions from sources that fall outside of the reporting requirements defined in the carbon neutral government regulation of the *Greenhouse Gas Reduction Targets Act*. Public sector organizations can optionally use this section to report on actions that will help British Columbia meet its provincial greenhouse gas reduction targets, engage the public, and improve environmental sustainability across all aspects of their organization.

Action	Status (as of 12/31/09)	Performance to Date (as of 12/31/09)	Steps Taken in 2009	Steps Planned for 2010 -2012	Start Year	End Year
Business Travel						
Policy and budgeting						
Create a low-carbon travel policy or travel reduction goal	Complete		Meetings are combined to make the most of each trip.		2007	No End Date (Continuous)
Virtual meeting technology						
Install video-conferencing units in meeting rooms or provide mobile video-conferencing units	Complete	100	% of meeting rooms have access to video-conferencing equipment	All spaces wired with video-conferencing capabilities.	2006	2009
Behaviour change program						
Train staff in video-conferencing or provide technical support for video-conferencing set-up	Ongoing/In Progress	100	% of staff are trained in video-conferencing or have access to technical support	All staff have access to on-site technical support. At BC Place 30% of the Staff have access to Video conferencing	2006	2013
Encourage staff to consider virtual attendance/presentation at events where possible	In Development				2007	No End Date (Continuous)
Encourage carpooling to meetings	Complete			Staff currently carpool where possible.	2000	No End Date (Continuous)
Encourage alternative travel to meetings (e.g., bicycles, public transit, walking)	Ongoing/In Progress			Staff currently use alternate travel where possible and practicable.	2000	No End Date (Continuous)
Education, Awareness, and Engagement						
Team-building						
Create Green, Sustainability, Energy Conservation, or Climate Action Teams with executive endorsement	Complete			At BC Place Sustainability Committee was formed in 2009. At VCC the sustainability Committee has been active since 2007	2007	No End Date (Continuous)
Provide resources and/or dedicated staff to support teams	Complete			Completed staff training, launched client information, updated website information.	2009	No End Date (Continuous)
Staff Professional Development						
Support green professional development (e.g., workshops, conferences, training)	Ongoing/In Progress			Support is provided to staff for formal training, industry activities and other professional development opportunities relating to sustainability of our industry.	2009	2010
Staff awareness/education						
Provide education to staff about the science of climate change	Complete			At BC Place presentation was given in the Lunch & Learn Program. AT VCC presentation was provided by the facility's GHG Consultants	2009	2011

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Action	Status (as of 12/31/09)	Performance to Date (as of 12/31/09)	Steps Taken in 2009	Steps Planned for 2010 -2012	Start Year	End Year
Provide education to staff about the conservation of water, energy, and raw materials	Ongoing/In Progress		At BC Place presentation was given in the Lunch & Learn Program. Regular overviews and reminders of individual actions to improve conservation of resources.	Continue this support to staff, and provide additional in-house training.	2008	No End Date (Continuous)
Provide green tips on staff website or in newsletters	In Development			Green tips & information will be part of the staff intranet	2010	No End Date (Continuous)
Provide sustainability education during new staff orientation	In Development			At VCC there is development of a new "on-boarding" orientation is in progress for implementation. At BC Place there is an initiative from the Green Committee.	2010	2011
Client/public awareness/education						
Provide education to clients/public about the conservation of water, energy, and raw materials	Complete		At VCC information currently available on our website, through the online Facility Services Guide, and online guidebook on planning Sustainable Events	At BC Place information will be available on the web-site in the future (2012)	2008	No End Date (Continuous)
Provide green tips on client/public website or in newsletters	Complete		Information currently available on our website, through the online Facility Services Guide, and online guidebook on planning Sustainable Events		2007	No End Date (Continuous)
Other Sustainability Actions						
Water conservation						
Establish a water conservation strategy which includes a plan or policy for replacing water fixtures with efficient models	Complete		At VCC this was completed with new construction of expansion and renovation of existing facilities. At BC Place fixtures were upgraded in the Phase 1 construction	BC Place is replacing fixtures with more modern and efficient models.	2005	No End Date (Continuous)
Introduce a storm water management landscape strategy (e.g., vegetated roofs, permeable paving, rain gardens, bioswales)	Complete		Completed with new construction of expansion		2005	2009
Waste reduction/diversion						
Put in place an operations policy to facilitate the reduction and diversion of building occupant waste from landfills or incineration facilities	Ongoing/In Progress		Extensive program in place for building operations as well as for clients' events which is managed on an event by event basis depending on the type and nature of the event.	Continuation of the program.	1991	No End Date (Continuous)
Implement a hazardous waste reduction and disposal strategy	Complete		Ongoing program and ongoing annual training in place.		2000	No End Date (Continuous)
Procurement (non-paper supplies)						
Incorporate minimum recycled content standards into procurement policy for consumable, non-paper supplies (e.g., writing instruments, binders, toner cartridges, etc.)	Ongoing/In Progress		Evaluation of vendors and products completed.	Continue assessment process for any new and incoming vendors/products.	2009	2010
Implement sustainable purchasing program for cleaning products, disposable paper products and trash bags	Complete		All cleaning products are Green Seal certified or EcoLogo certified	BC Place continues to replace all new cleaning products with Green Seal (2009)	2007	No End Date (Continuous)
Building construction, renovation, and leasing						
Establish a policy to reuse materials where possible and divert construction and demolition debris from landfills and incineration facilities	Ongoing/In Progress		Currently the practice.	Continuation of the practice.	2000	No End Date (Continuous)
Indoor air quality						

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Enforce a scent-free policy (e.g., no strong perfumes, deodorants, etc.)	Complete		Incorporated as part of the Employee Appearance Guidelines	Continuation of the policy & the practices.	1995	No End Date (Continuous)
Commuting to and from home						
Introduce telework/work from home policy	In Development		During the Olympics VCC sales staff telecommuted as the facility was mostly in lock down.	Continue with pilot	2010	No End Date (Continuous)
Encourage commuting by foot, bicycle, carpool or public transit	Complete		At BC Place this is part of the Lunch & Learn Program. At VCC incentives are offered to trade parking benefits for green alternatives and via Corporate Transit program.		1990	No End Date (Continuous)
Provide shower or locker facilities for staff/students who commute by foot or by bicycle	Complete		Facilities provided for.		1990	No End Date (Continuous)
Provide secure bicycle storage	Complete		Facilities provided for.		1995	No End Date (Continuous)
Modify parking fees or parking availability for staff/students	Complete		Incentives offered to trade parking benefits for green alternatives		1990	No End Date (Continuous)