

Carbon Neutral Action Report Royal BC Museum Corporation

Executive Summary

The Royal BC Museum Corporation is committed to acting responsibly for the purchase, use, and disposal of energy or materials that have an impact on the environment. In addition, we aim to educate and assist members of the RBCM community to understand and fulfill their responsibilities to practice environmental sustainability.

Sustainability is commonly defined as "improving the quality of human life while living within the carrying capacity of supporting ecosystems" Sustainable development meets the needs of the present without compromising the ability of future generations to meet their own needs. - 1987, the World Commission on Environment and Development Bruntland Report.

The Royal BC Museum Corporation contributes to the overall success of the BC Government's Climate Action initiatives through its activities in environmental awareness, energy management and sustainability - both as an organization and through the research it undertakes, and the public education it delivers.

The concept of sustainability applies to long term objectives which are achieved by short and medium term actions, and the term "sustainability" can be applied to many activities undertaken by the RBCM. The RBCM has already been practicing sustainability throughout its operations for decades. For example the use of tropical hardwoods for exhibit construction was discontinued in the 1970's; fluorescent lights were upgraded in office spaces throughout the entire facility in 2004 to a more energy efficient model of lighting; and a significant lighting retrofit is underway in the exhibit galleries; the RBCM does not offer fossils for sale; and the RBCM encourages its onsite food services operators to use ceramic (washable) or biodegradable beverage containers (no styrofoam); and does not use styrofoam as a packing material.

Objectives

The Royal BC Museum Corporation will demonstrate leadership through implementing initiatives that support sustainable operations. The RBCM will demonstrate its commitment towards environmental awareness, sustainability, energy conservation/management through its research, employee performance and development plans, community outreach, and any other initiatives that will result in a reduction of green house gas emissions and the saving of energy.

This will be within the context that preservation of the collection for future generations requires controlling the environment of the facility where the objects are exhibited or housed; which may impact on the energy requirements of the corporation.

To demonstrate its leadership in sustainable operations, the RBCM will

- commit to undertake economic and other measures to increase the organization's energy efficiency and resulting positive effect on sustainability;
- embark on a 5-year plan, under which appropriate funding will be allocated to implement sustainability and energy management initiatives;
- promote practices that are influenced by our academic and research activities. Priority will be given to identifying ways to improve the long-term quality and capacity of the environmental, social and economic systems that support the RBCM's activities and needs. These activities will include influencing use and acquisition of environmentally friendly/sustainable products in the development of exhibitions; goods and services that are consumed and/or sold on the site (e.g., by food services providers and shops) and the use of environmentally friendly products by the property management services provider.
- minimize its consumption of non-renewable energy, minimize water consumption, and grow its recycling program to include compostable materials;

- landscape using environmentally friendly plants and reduce the water use on its grounds;
- implement sustainable building design and construction principles when renovating or constructing new buildings or exhibits;
- balance quality, cost and environmental sustainability in its purchasing and investment decisions including considering long term and life-cycle costs to achieve this balance;
- support the BC Government's Climate Action initiatives by assessing the sustainability impacts associated with its activities and report specific targets, priorities and timetables for achieving its renewed sustainability and energy management objectives;
- use its capacity and leadership role in the museum/archives community to promote and educate others about sustainability within and beyond the borders of the institution (e.g., through initiatives like the climate change gallery and BC Map film and research);
- encourage the active engagement of all members of the RBCM community and its on-site partners in issues of sustainability and will support sustainability awareness and action in the greater community; and
- develop, adopt and promote environmentally sustainable practices and processes in all of its operations, including video and phone conferencing and internet meeting (e.g., LiveMeeting) instead of traveling to meetings.

Part 1 Actions Taken to Reduce Greenhouse Gas Emissions in 2008

Executive Summary

At the Royal BC Museum we consider ourselves a leader in our sustainability initiatives. But this isn't new thinking around here!

We've been practicing good environmental stewardship for decades. As the keeper of BC's environmental history, it's our business.

We take the stairs as often as we can, to support an elevator modernization project, but also to practice healthy living.

We have implemented a comprehensive recycling and composting program; installed solar-powered trash compactors, low-flush toilets and motion-sensor lighting; and switched to high-efficiency LED and CFL lighting and use partially recycled paper in copiers and printers; and we have landscaped with low-water or native plants, to help reduce our water consumption.

We are a bottled- water-free zone. The Corporation does not buy bottled water for its meetings or events; and we are trying to influence our on-site partners to provide non-bottled water for visitors, but we recognize that sometimes our visitors prefer to purchase bottled water from the Cafe or IMAX, which are private companies working on our site.

In Phase 1 of a multi phase renewal project, we have installed a state-of the-art, energy-efficient heating, ventilation and air conditioning (HVAC) system for our feature exhibition gallery that creates an optimum environment for the artefacts in our care.

We have completed a comprehensive water audit and energy management assessment and devised and implemented a carbon management strategy.

We have an active staff Sustainability Committee to keep us moving forward. Our people are passionate about continued greening of our practices.

We consider, with every undertaking, how our actions will impact (and be judged by) future generations of British Columbians; and display our world-renowned research on climate change within our gallery spaces and scientific journals and publications.

We look for ways to get people thinking about living sustainably through noon hour talks, tips, and newsletters.

We turn off all of our non-essential power at night.

1.1 Mobile Fuel Combustion			
Action	Action Taken	Outcome/Performance Measure	Notes Clarifying Action Taken
Replaced # of TYPE OF VEHICLE with MORE EFFICIENT VEHICLE/Hybrid	in progress	current vehicle lease expires 2011. We are sourcing a hybrid vehicle that will serve our purpose.	new fuel efficient vehicle should be in place for 2011
Provided driver training to reduce fuel use		vehicle used as little as possible, especially for meetings in downtown Victoria	n/a
Initiated new fleet maintenance program (could include – changing filters, checking tire pressure, regular check-ups)		our vehicle is regularly maintained through the PHH program	n/a
Established anti-idling behaviour change program (e.g. signs, stickers, messages)	complete		
Encouraged car pooling in fleet vehicles		vehicle used as little as possible, especially for meetings in downtown Victoria	we encourage staff to carpool, use transit, or walk or cycle to work
Encouraged use of public transit/active transportation		vehicle used as little as possible, especially for meetings in downtown Victoria	n/a
Encouraged alternatives to travel in fleet vehicles – bicycles, scooters, electric carts		vehicle used as little as possible, especially for meetings in downtown Victoria	n/a
Changed from gas to electric lawn maintenance equipment		our landscaping contractor has changed to new energy efficient gas powered equipment	n/a
Changed to manual lawn and yard maintenance equipment		our landscaping contractor has changed to new energy efficient gas powered equipment	n/a
Established travel reduction goals	in progress	RBCM is using Net Meeting for as many meetings as possible.	Our Board subcommittee meetings (3 subcommittees who meet 4 times per year) are all held as conference calls
Adopted a travel policy		travel budget reduced to only essential travel	RBCM has already been practicing travel restraint, including requiring CEO permission for out of province travel
1.2 Stationary fuel combustion and electricity			
Action	Action Taken	Outcome/Performance Measure	Notes Clarifying Action Taken
Undertaken workstation tune-ups to help staff understand what they can do to reduce personal energy use	in progress	non essential lights are turned off, computers are turned off, blinds are pulled, and energy savings are noted in real kWh	staff are encouraged to turn out the lights, put computers on standby; pull the blinds (to help HVAC) and other things that require human intervention
Supplied power bars – to turn off power to non-essential items when not in use (e.g. phone chargers)	complete	all work stations have power bars as required	
Undertaken Monitor turn-off challenge	in progress	software to automatically turn off computers will be installed in 2009	will report on progress for centrally controlled software that turns off computers/monitors in 2009
Replaced # computers with EnergyStar models	in progress	replacement computers will be Energy Star models	purchase of energy efficient computers is one of the considerations of our IT refresh program.
Asked staff to close blinds daily	in progress	blinds are closed	Staff have been asked to do this, and Sustainability Committee will be rewarding this positive behaviour through our energy walkabouts

Used air dry setting on dishwashers		RBCM does not have a dishwasher	
Encouraged staff to use stairs	in progress	Mount Waddington Stair Challenge will be launched in 2009 - report out for 2009	many people already take the stairs - we are adding incentives to do so more regularly.
Turned off lights in unused rooms	in progress	all unnecessary lights are turned off.	BC Hydro "turn it off" stickers are on most light switches, not just the unused rooms. Lights are turned off every evening by computer system; and our security team also turns off lights during rounds every night.
Replaced Refrigerators (EnergyStar rated appliance)	complete	3 refrigerators replaced in 2008	more will be replaced in 2009
Replaced other appliances (with EnergyStar rated appliance)	in progress	freezers will be replaced with Energy Star	will be replaced in 2009
Installed multi-function devices (and removed stand-alone printers/faxes)	complete	removed standalone hardware 1 printer 1 photocopiers and 1 fax installed 1 multi-functional device	It should be noted that the RBCM as a matter of practice installs multifunctional devices wherever practical. We currently operate an additional 4 multifunctional devices on our site; which replaced 4 photocopiers, faxes and standalone printers in previous years.
Replaced standard bulbs with CFLs	complete	standard bulbs replaced with CFL's in all Corporation spaces.	
Installed motion activated lights	complete	motion activated lights installed in all public washrooms in the facility in 2008	
Undertaken lighting retrofit	in progress	lighting retrofit undertaken in 2004 (T12 ballasts changed to T8's);	and lighting upgrade in galleries will be complete by mid 2009 (to be reported in 2009). LEDs replace most exterior lighting
Implemented server virtualization	complete	7 physical servers replaced with 2 "Master" virtual servers savings of more than 16,000 kWh per year 60% reduction in energy used by servers 9% reduction in energy used overall by IT hardware	Replaces individual physical computers with 'virtual servers' ... Software running on a pair of Master Servers. Adds High Availability to ensure 24X7 access to applications. Reduces hardware and costs and energy used by IT infrastructure. Scalable ... helps us to be able to efficiently grow to meet our business needs. savings of energy from 27,723 kwh per year to 11,089 kWh per year
Utilized desk-top power management settings on computer	in progress	all computers powered down at night	software purchased and to be implemented in 2009
Initiated corporate computer shut-down/wake-up for maintenance	in progress	all computers powered down at night	software purchased and to be implemented in 2009
Unplugged unused equipment	complete	unused equipment unplugged at night	unused equipment also surplus
Undertaken building energy audit at LOCATION(s)	complete	BC Hydro completed energy audit and management framework in 2008 for entire RBCM complex (675 Belleville Street, Victoria BC)	implementation of recommendations began in 2008 and will continue

Initiated or completed a building energy retrofit	in progress	HVAC upgrade for temporary gallery started in 2008 (scheduled for completion in 2009)	Phase 1 of a multiphase HVAC replacement project
installed solar power trash compactors	complete	4 solar power trash compactors were installed on our site in 2008	
some members of our security team use hydrogen powered flashlights (Angstrom Power - BC technology)	complete	hydrogen powered flashlights in use and technology on display in our main lobby	funding for these flashlights received in 2005 from Ministry of Energy, Mines and Petroleum Resources

1.3 Supplies

Action	Action Taken	Outcome/Performance Measure	Notes Clarifying Action Taken
Committed to use 30% recycled paper	complete	30% recycled paper is the standard for all our printing requirements	
Committed to use 100% recycled paper	complete	use 100% recycled paper for some corporation brochures	planning to switch to 100% recycled paper for all uses in 2009
Initiated automatic double sided printing	complete	computer settings are set to double sided printing	
Changed document template margins	in progress	document templates in development	
Committed to hold paperless meetings	in progress	corporate staffing process is paperless; approximately 1 package (500 sheets) of paper is saved per competition; and the RBCM had staffing actions in 2008.	some meetings lend themselves to "no paper" so we are trying to go that route!
Developed document library (online and one printed copy) for large documents	in progress	we have established project folders on our internal network which allows for document sharing and retrieval	
Re-used non-confidential scrap paper	complete	non-confidential scrap paper re-used as a matter of practice.	we have been doing this forever! We just finally used up our supply of letterhead from when we were still a branch in the Ministry of Municipal Affairs - more than 10 years ago.
Used laptops/tablets	in progress	laptops installed in all Corporate boardrooms	the use of laptops is not standard for our organization - but we do have laptops assigned to each boardroom which could be used if required.
Restructured a process to use less paper	in progress	recruitment process is paperless	see above - our recruitment process is mostly paperless (we request that applicants e-mail their applications; for paper ones we PDF them. The panel reviews the applications on-line (either Word or PDF) through a special (secure) folder on LAN. We discourage printing applications etc. The only thing we print is the final documentation, which requires signatures.

Chose "Green" items from Distribution Centre	complete	green purchase practices are implemented	we purchase Green as part of our mandate - including reusable steel supports for our exhibition galleries and any other construction we undertake
Encouraged re-use of furniture and equipment	complete	redeployment of furniture and equipment is the norm.	we have always redeployed furniture and equipment; and we also reuse as much of what we build in the exhibitions as we can - e.g., cases are used again for future exhibitions; wood is reused for new applications

1.4 Travel

Action	Action Taken	Outcome/Performance Measure	Notes Clarifying Action Taken
Set a X% Travel reduction goal			RBCM is a crown corporation and is not required to report per column 1.4; however we are already doing things to manage our corporate travel
Trained staff in the use of Live Meeting (or other desktop collaborative software)	complete		We have been using NetMeeting as the collaborative software for conference call meetings
Initiated Travel Policy			All out of province travel requires CEO approval
Supported alternative travel (bike/skateboard/walk/transit) for meetings	complete		We do this as a matter of practice; we support bike to work (through 25+ bike racks in the staff areas); encourage "walking to meetings" in the City of Victoria core; etc

1.5 Employee Engagement

Action	Action Taken	Outcome/Performance Measure	Notes Clarifying Action Taken
Provided climate change education	in progress	<p>quarterly Property Management and Operations (PMO) Newsletters</p> <p>established a corporate Sustainability Policy</p> <p>an exhibition on Climate Change is seen by the public every day;</p> <p>a climate action film is shown 20 times per day on our BC Map in Clifford Carl Hall</p>	As researchers and scientists, we continue to study the effects of climate change on the natural environment. The RBCM scientists publish their research and are recognized by peers around the world for their knowledge. We share this knowledge with our visitors through our website, publications, onsite exhibition and film, and through partnerships like 2008's BC Hydro-Free Spirit Conservation Tour which reached 6 cities in BC.
Provided conservation education	complete	supported the conservation message to 6 locations in the province in partnership with BC Hydro	participated with BC Hydro on the Free Spirit Conservation Tour - supporting the conservation message to 6 locations around the province in 2008
Developed Green Teams	complete	established a Sustainability Committee in 2008	terms of reference for the committee established,

Supported Green Teams (resources)	complete	Sustainability Committee projects are funded through base operations (Property Management and Operations primarily)	projects are initiated pending funding, and as recommended by both the Hydro Energy Manager report and the Sustainability Committee
Provided green tips	in progress	green tips are included in every Property Management & Operations newsletter	
Supported professional development	in progress	EPDPs will reflect professional development in environmental sustainability	
Added green work goal to performance management	in progress	selected EPDPs will reflect responsibility for environmental sustainability	
encouraged all staff to sign up for the BC Hydro Team Powersmart	complete		sent several e-mails to staff inviting them to join BC Hydro Team PowerSmart
participated in Earth Hour (March 2008)	complete	RBCM turns off all non-essential lights/power - OVERNIGHT in support of Earth Hour	this will be an annual event - in addition to turning off non-essential power all the time, the RBCM visibly reduces its power consumption on Earth Hour day - but doesn't turn the power back on after it is shut off until the next morning when it is required to open the RBCM.

1.6 Sustainability Actions (others)

Action	Action Taken	Outcome/Performance Measure	Notes Clarifying Action Taken
Took water conservation measures – low flow showers or toilets, fix leaks	in progress	replacing (or have replaced) all toilets in public washrooms with low flow fixtures or motion activated fixtures	
Ran dishwasher only when full		RBCM does not have a dishwasher	
Reduced/replaced bottled water with filtered or refrigerated water	complete	RBCM is a bottled-water-free zone.	RBCM does not purchase bottled water for meetings, etc as a Corporate entity; and we are trying to influence our partners to follow suit, however we recognize that our visitors may prefer to purchase bottled water at either the cafe or IMAX which are separately manmade companies on our site.
Improved recycling measures	in progress	the RBCM has always been an active recycler - we have had a paper recycling program in place for more than 17 years, providing steady employment for a person with a disability. In 2008, composting was added as an option; as was wood, hard plastic and styrofoam recycling.	this is noted as "in progress" because other recycling options will be added in the future as they become available (e.g., recycling fluorescent bulbs; batteries etc).
Supported composting	complete	active composting program since early 2008	tonnage of composting savings will be reported in 2009

Used re-usable dishes	in progress	the Museum Cafe only uses re-usable dishes for "eat in"; uses paper take out soup bowls; and corn based take out coffee cups. The IMAX snack bar uses traditional takeout cups.	Both organizations are separately managed companies.
Purchased green cleaning products	complete	as part of their contract, our on-site cleaning services provider is required to use biodegradable cleaning products (besides being great for the environment, is essential to keep our collections safe).	
Used green (low-e paints)	complete	this has been a practice for many years to ensure the paint fumes do not adversely affect our collections.	
Supported sustainable procurement practices	in progress	we purchase 30% recycled paper (only); and try to use 100% recycled for appropriate products (e.g., our brochure); we try to purchase locally wherever possible.	
Adopted low-carbon contracting practices	in progress	we have asked our landscaper (the primary user of carbon emitting equipment) to use the most energy efficient models they can find, and they have.	

Part 2 Plans to Continue Reducing Greenhouse Gas Emissions 2009 -- 2011

Overview

The RBCM intends to continue with its sustainability programs. We will continue to install more motion detector lighting; finish the replacement of low-flow water fixtures; continue to education our staff (and visitors). Our partnership with BC Hydro is very important to us, and not only do we wish to continue to foster that relationship; but we want to demonstrate that we "walk the talk" on sustainability activities within our own organizations. As funding permits, we hope to replace more outdated/obsolete equipment with more energy efficient equipment. We will be reviewing the recommendations from our Energy management framework (Avalon) and GHG reduction report (Golder) to implement low cost, high impact items over the coming year.

2.1 Mobile Fuel Combustion

Action	Action Planned	Outcome/Performance Measure	Notes Clarifying Action Taken	Timeframe
Replace # of TYPE OF VEHICLE with MORE EFFICIENT VEHICLE/Hybrid	planned	replace current vehicle with more fuel efficient type (hybrid pickup/canopy)	We only have one vehicle and it is primarily used to pick up large equipment, collections, lumber etc. It is not a fleet vehicle in the sense of it being a people transporter so it is not used as such. The lease for this vehicle expires in 2011, and it will be replaced with a more fuel efficient vehicle at that point.	2011
Initiate new fleet maintenance program (could include – changing filters, checking tire pressure, regular check-ups)	in progress		we do this now, through PHH and this would continue	
Establish anti-idling behaviour change program (e.g. signs, stickers, messages)	in progress		we do this now, and this would continue	

Encourage car pooling in fleet vehicles	in progress	we do this now as a matter of practice (carpooling)	the use of the RBCM vehicle is expected to continue to decrease
Encourage use of public transit/active transportation	in progress		we do this now as a matter of practice (walk to meetings in the downtown Victoria core; share a cab)
Change from gas to electric lawn maintenance equipment		landscaper uses energy efficient equipment	landscaper is using low emission gas powered tools; due to the size of our property electric lawn and yard maintenance equipment is not practical.
Change to manual lawn and yard maintenance equipment			due to the size of our property, manual lawn and yard maintenance equipment is not practical

2.2 Stationary Fuel Combustion (including electricity)

Action	Action Taken	Outcome/Performance Measure	Notes Clarifying Action Taken	
Undertake workstation tune-ups to help staff understand what they can do to reduce personal energy use	planned	ongoing education sessions (1 per quarter)	lunch & learns are planned for 2009	2009 & onward
Undertaken Monitor turn-off challenge	planned	monitors turned off at night	software to be implemented in 2009	2009
Replace # computers with EnergyStar models	planned	computers replaced with Energy Star models	upgrades pending computer refresh cycle	ongoing
Ask staff to close blinds daily	planned	blinds are closed 100% of the time	reminders to staff will be made; Sustainability Committee will monitor through energy walkabouts	ongoing
Encourage staff to use stairs	planned	staff document that they are using the stairs	Mount Waddington & Mount Everest climbing challenge - spreadsheet is added to on a weekly basis	ongoing
Replace Refrigerators (EnergyStar rated appliance)			others will be replaced as funding permits	2009 and onward
Replace other appliances (with EnergyStar rated appliance)			others will be replaced as funding permits	
Install motion activated lights			others will be replaced as funding permits	2009 and onward
Undertake lighting retrofit	in progress	LED's, CFLs, gallery and exterior lighting upgraded per the lighting retrofit plan	to be completed in 2009	2009
Utilize desk-top power management settings on computer	planned	all computers have power management settings enabled	software to be implemented in 2009	2009
Initiate corporate computer shut-down/wake-up for maintenance	planned	all computers managed through shut down wake/up cycles	software to be implemented in 2009	2009
Initiate or complete a building energy retrofit	planned	implement recommendations from Golder GHG Management and Avalon Energy Management reports	to be implemented as funding permits	2009 and onward

2.3 Supplies

Action	Action Planned	Outcome/Performance Measure	Notes Clarifying Action Taken	Timeframe
Commit to use 100% recycled paper	planned	corporate brochure is printed on 100% recycled paper	corporate paper supply will be transition to 100% recycled paper. The RBCM corporate brochure is already printed on 100% recycled.	2009 and onward

Change document template margins	planned		pending development of corporate templates	2009
Commit to hold paperless meetings	planned		Sustainability Committee already held as "paperless" meeting	2009
Use collaborative software to edit on-line		standard practice to edit using track changes in Word/Excel	Word/Excel used to edit on-line	
Restructure a process to use less paper	planned	identify one process per year to move to paperless	Recruitment Process already paperless; others to be explored	2009

2.4 Travel

Action	Action Planned	Outcome/Performance Measure	Notes Clarifying Action Taken	Timeframe
Set a X% Travel reduction goal	planned	5% reduction in travel	corporate travel budget is very small; only essential travel is being considered today	2010
Train staff in the use of Live Meeting (or other desktop collaborative software)	planned	Live Meeting or Net Meeting used	conference calls will use live meeting or net meeting	2010
Initiate Travel Policy	planned	travel policy will be clarified	current travel policy requires CEO approval for out of province travel	2010

2.5 Employee Engagement

Action	Action Planned	Outcome/Performance Measure	Notes Clarifying Action Taken	Timeframe
Provide climate change education	in progress	ongoing - and not only employee based - but also visitor based!	The RBCM is proud of our climate change exhibition; the climate change (water) film on our BC Map, and the research performed and studied world-wide by our scientists	2009 and onward
Provide conservation education	in progress	continue with ongoing activities		
Hold contests to change behaviour/make pledge	planned	reward conservation behaviours of staff	Sustainability Committee will recognize conservation activities through its energy "walkabout" beginning in 2009	2009
Develop Green Teams	in progress			
Support Green Teams (resources)	in progress			
Provide green tips	in progress			
Support professional development	planned	sustainability professional development is funded by the HR training budget	include and support sustainability professional development where appropriate in EPDPS	2009
Add a green work goal to performance management	planned	responsibility for sustainability is added to selected EPDPS	include responsibility for sustainability where appropriate in EPDPS	2009

2.6 Sustainability Actions (others)

Action	Action Planned	Outcome/Performance Measure	Notes Clarifying Action Taken	Timeframe
Take water conservation measures – low flow showers or toilets, fix leaks			complete 2008	
Run dishwasher only when full			RBCM does not have a dishwasher	
Reduce/replace bottled water with filtered or refrigerated water			complete 2008	
Improve recycling measures			complete 2008	
Support composting			complete 2008	
Use re-usable dishes			complete 2008	
Purchase green cleaning products			complete 2008	
Use green (low-e paints)			complete 2008	
Support sustainable procurement practices			complete 2008	
Adopt low-carbon contracting practices			complete 2008	